OPERATION MANUAL

DIGIFORCE® 9307
Interfaces manual

Valid from: **06.03.2017**
Applies to: **DIGIFORCE® 9307-V0X0X**

2565-BA9307IEN-5170-031520

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Contents

1   For your safety

The following symbols on the DIGIFORCE® 9307 and in this operation manual warn of hazards.

1.1   Symbols used in the instruction manual

1.1.1   Signal words

The following signal words are used in the operation manual according to the specified hazard classification.

⚠ **DANGER**
High degree of risk: indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠ **WARNING**
Moderate degree of risk: indicates a hazardous situation which, if not avoided, may result in death or serious injury.
⚠ **CAUTION**
Low degree of risk: indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE
Property damage to the equipment or the surroundings will result if the hazard is not avoided.

Note: It is important to heed these safety notices in order to ensure you handle the DIGIFORCE® 9307 correctly.

Caution: Follow the information given in the operation manual.

1.1.2   Pictograms

Symbol	Description
⚠	**Warning concerning the use and installation of the device and software.**
!	Observe the advice for protecting the instrument.

1.2   Symbols and precautionary statements on the instrument

Symbol	Description
	Hazard warning Disconnect the power plug before opening–Follow safety instructions–Professional servicing only
Warning ! To prevent electrical shock do not open device.	**Warning of electrical shock hazard** Do not open the unit.
To prevent fire replace only with same type and rating of fuse !	**Warning of fire hazard** Always replace the fuse with a fuse of the same type and rating.

2   Introduction

2.1   General safety instructions

⚠	**⚠ DANGER**
	Warning concerning installation of the device and software Installation of the device and the interface must be carried out by qualified personnel only. Qualified personnel meets the following requirements: • You are familiar with the safety designs used in automation engineering, and understand how to deal with them in your capacity as configuration engineer. • You are an operator of automation systems and have been instructed in how to handle the system. You are familiar with the operation of the equipment described in this documentation. • You are a commissioning or service engineer and have successfully completed a training course qualifying you to repair automation systems. In addition you are authorized to commission, ground and label circuits and equipment in accordance with safety engineering standards. Always observe the current safety and accident prevention regulations when commissioning the equipment. Install automation engineering equipment and installations with sufficient protection against accidental actuation.
⚠	**⚠ DANGER**
	Warning concerning use of the device • Take suitable precautions in both the hardware and software to prevent any undefined states of the automation installation in the event of an open circuit. • In installations where major damage to property or even personal injury may be caused by a malfunction, take suitable precautions to establish a safe operating state in the event of a fault. This may be achieved using limit switches, mechanical interlocks etc. for example. • Do not make unauthorized modifications to the device or to the interfaces.
!	**NOTICE**
	• Install the power, signal and sensor cables so as to prevent electromagnetic interference from impairing operation of the equipment. • Proper transportation, storage, installation and assembly plus careful operation and maintenance are essential for trouble-free and safe operation of the equipment. • Have non-functional instruments inspected by the manufacturer.

!	**NOTICE**
	• Only the commands described in this operation manual should be used. Use of undocumented commands can cause incorrect unit operation. • No commas can occur within a parameter. • A point '.' is used in floating-point numbers. • The number of parameters must always be adhered to.

2.2   Intended use

The DIGIFORCE® 9307 is an instrument for monitoring repetitive production processes. Its core function is to record and analyze signals from processes in which physical variables, such as force, pressure or torque, vary as a function of displacement, angle or time according to a defined curve. The resultant measurement curve is analyzed using graphical evaluation elements such as windows, envelopes and thresholds. The result of the analysis is classified as "OK" or "NOT OK" (NOK) and can be retrieved from various interfaces.

The instrument is not a substitute for a safety device; for instance it cannot be used as an emergency stop device in a press for when the pressure exceeds a set limit.

2.3   Electromagnetic compatibility

2.3.1   Interference immunity

Interference immunity to EN 61326-1:2013

Industrial locations

2.3.2   Emitted interference

Emitted interference to EN 61326-1:2013

Class A

EN 61000-3-2:2014

EN 61000-3-3:2013

2.4   Notes on CE labeling

burster equipment carrying the CE mark meets the requirements of the EU directives and the harmonized European standards (EN) cited therein.

The EU declarations of conformity are available to the relevant authorities as specified in the directives. A copy of the declaration of conformity is included in the relevant equipment documentation.

3 General communication info

The DIGIFORCE® 9307 lets you control certain device functions from a remote host and read out all evaluation and measurement results. There are two communication modes to choose from: USB or Ethernet (UDP protocol). The configuration parameters for each port can be found in operation manual DIGIFORCE® Model 9307 chapter 4.4 "Interfaces".

Before reading out evaluation or measurement results, you are recommended to execute the command **MSTA**. This checks whether the device has ended the current measurement and the new measurement data are available.

!	**NOTICE**
	Please bear in mind that the commands in this manual are described using the example of the USB communications protocol.

3.1 Communication via RS232

Figure 1: Communication via RS232

You will find the RS232 socket on the back side of the DIGIFORCE®. With help of an RS232 cable you can either connect the device to your PC or to an USB to RS232 converter in case your PC does not have an RS232 port. You can set the transmission parameters in the following menu:

„Config(F5)->Config(F5)->Basic setup menu->Interface setup->RS232->More(F5)"

Baud rates	9600, 19200, 38400, 56000, 57600, 115000(*)
Data bits	8
Stop bits	1(*) or 2
Parity	none(*), even, odd
Block check	On(*) - or Off

No hardware handshake (optional configurable)

(*) → Default setting after initialization

Before you write your own program, you can check a command using our **Serial Console** (Windows OS only). The console shows you the communication telegrams between your PC and DIGIFORCE® and can also calculate the block checksum if you activate this option in the device interface settings. Just use the button Calculate block check for it.
You will find this tool either on the bursterDVD or you can download it from our website

At first go to Edit->General Settings->Interface to ensure that transmission parameters match the parameters you set in the interface setup menu (see above) of the DIGIFORCE®:
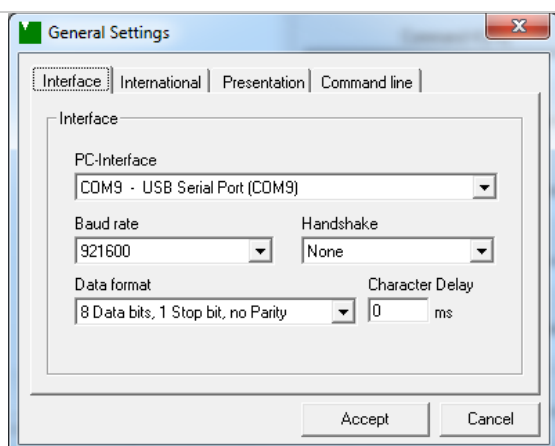
Now you can type in the required commands consecutevely into the field Character to send and then click on Send Characters.
Here is an example for the INFO? command (see details in section "Fast selection"):
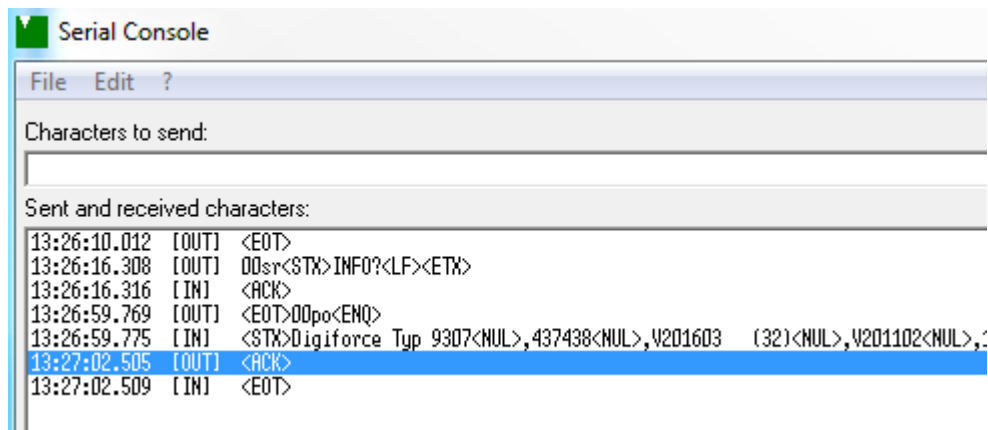
Yor can execute commonly used commands via the function keys F1-F8 of your PC. Please use the Command Configuration fields to store the desired command:
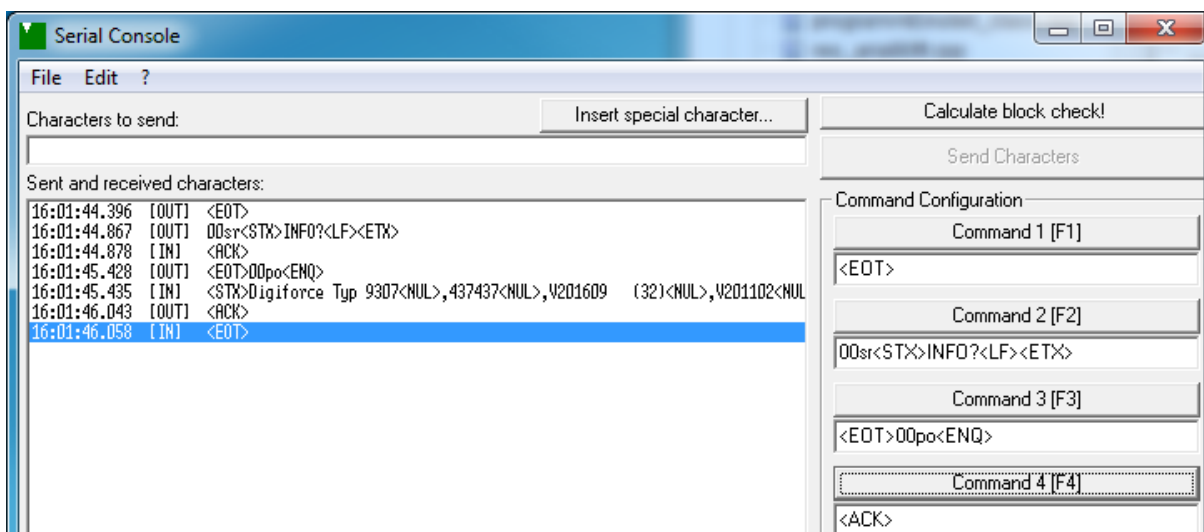
3.2 Communication via the USB port
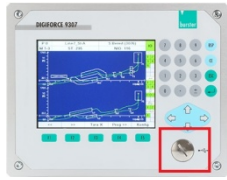
Figure 2: Communication via USB port

The USB port is on the front of the device and is protected against dirt behind a screw-in cover (see figure on the left).

Before accessing the device via the USB port, you have to install an FTDI driver for the OS environment first. The latest FTDI drivers can be downloaded from http://www.ftdichip.com/FTDrivers.htm. The drivers available at present are for some Windows, MAC OS, and Android versions.

Note: This is not necessary when Windows is the communications platform and *"DigiControl"* has already been installed.
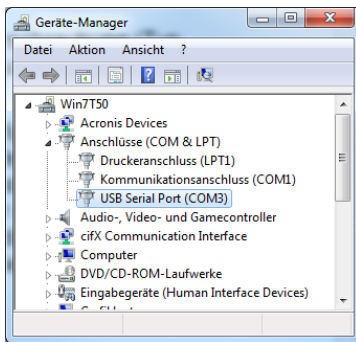
Once the FTDI driver has been installed and the device connected via USB, your operating system creates a new COM port. Please note the COM port number, which you will need to open this. Please also note that this port number may change when the device is reconnected. For this reason, you are recommended to implement a function that finds devices on the installed ports or allow manual COM port selections.

The figure on the left depicts the created COM port USB Serial Port (COM3) in Windows Device Manager.

Figure 3: Device Manager

You have to enter the following settings for the COM port parameters,

Baud rate	921600
Data bits	8
Stop bits	1
Parity	None
Block check	Disabled* - or Enabled

* Default setting after initialization, can be changed in the menu

Config(F5)->Config(F5)-> Basic setup menu->Interface setup->USB->More

Note: Please refer to the *Serial Console* described in section *Communication via RS232* of this document to be able to check the communication telegrams between the DIGIFORCE® and PC.

General procedure under Windows

This is how it works

1. Open COM port
2. Configure COM port (set baud rate, data/stop bits, parity, timeout)
3. Send/receive data
4. Close COM port

3.2.1 The communications protocol

ANSII standard X3.28-1976 Subcategory 2.5, A4 is used as the communications protocol. This standard is used in systems in which a number of secondary stations exists in a non-switched multipoint connection, and all commands are sent by a control station. Only one transmitter (master) and one receiver (slave) are ever active on the bus at one time. One station is the control station. The control station is given master status and sends commands to a selected slave station, or relinquishes its master status to a secondary station and assumes slave status to receive data. A connection between two secondary stations is not allowed. The control station monitors the connection continuously.

3.2.2 Establishing a connection

Before a connection is established, the control station has master status and none of the secondary stations have slave status. The connection can be established in two different ways:

Selection with response

In this case, device addressing and command sending do not take place in the same communications step. This method is useful when you want to send several commands to the same device and then retrieve the responses to these commands in one go (see example communication in chapter 3.2.3 "Selection with response").

Fast selection

This method eliminates the need to address the device before the first command is sent. Instead, the device address is appended to each command (see example communication in chapter 3.2.4 "Fast selection").

When establishing a connection, the control station can

either

- define a slave to establish a connection, i.e. send a command to the addressed slave

or

- poll in order to relinquish its master status to a secondary station, i.e. query for a response to a previously sent command and hence assign the transmit right to the slave.

3.2.3   Selection with response

The control station sends a "selection supervisory sequence". The selection supervisory sequence is used to initialize the 9307 as a slave so that it is subsequently possible to send commands to it. The prefix calls up a single secondary station. **<ENQ>** defines the end of the selection supervisory sequence. This method requires the device number to be sent to the device prior to the first command only. All further commands are executed without device number.

The selection supervisory sequence of the 9307 has the following format.

```
<Address>sr<ENQ>
```

Parameter	Value	Meaning
<Address>	0x30, 0x30	Device address, ASCII character for 00
sr	0x73, 0x72	ASCII characters "s" and "r"
<ENQ>	0x05	Enquiry

A secondary station that recognizes its selection supervisory sequence assumes slave status and sends one of two responses:

If the station is ready to receive data, it sends **<ACK>**. On receiving this response, the master station initiates data transfer.

If the station is not ready to receive data, it sends **<NAK>**. With this response the master station can try to select the same station again.

If the master station receives an invalid response or none at all, it can try to address the same station again or end the transmission.

Example

This example queries the INFO command with enabled and disabled block check.

Controller sends: **<EOT>**

to make sure that any existing connections are terminated and the 9307 receive buffer is cleared.

Controller sends: **00sr<ENQ>**

Selection: controller wishes to address the 9307 with address 0

9307 replies with: **<ACK>**

The 9307 signals that it accepts the addressing

Controller sends: **<STX>INFO?<LF><ETX>[BCC] (here BCC = 0xB8)**
                         Caution: Only if BCC On (see example in chapter 3.2.6 "Data transfer").

Command sequence: the info? command is to be executed

9307 replies with: **<ACK>**

The 9307 signals that it recognizes and has understood the info? command

Controller sends: **<EOT>**

The host controller unaddresses the device in order to start a polling sequence immediately.

Controller sends: **00po<ENQ>**

The 9307 with address 0 is requested to send all existing responses

9307 replies with: **<STX>Digiforce Typ 9307<NUL>,437438<NUL>,V201605 (32)<NUL>,V201102<NUL>,4<NUL>,EIP-V1401<NUL>,7<NUL>,22.08.2014<NUL>,22.08.2014<NUL><LF><ETX>[BCC] (hier BCC = 0x88)**

This is the correct response to the info? command

Controller sends: **<ACK>**

The controller has received the response and accepted it. Does the 9307 have other queries saved for which a response can now be sent?

9307 replies with: **<EOT>**

No. This ends the communication sequence and the 9307 has unaddressed itself.

3.2.4   Fast selection

Instead of selection with response, the master station can send a selection supervisory sequence without **<ENQ>**. This will designate a secondary station as the slave station. It then initiates data transfer directly without waiting for the acknowledge response from the secondary station. This method requires the device address to be appended to each command.

The fast selection supervisory sequence of the 9307 has the following format.

```
<Address>sr<STX>Command<ETX>[BCC]
```

Parameter	Value	Meaning
<Address>	0x30, 0x30	Device address, ASCII character for 00
sr	0x73, 0x72	ASCII characters "s" and "r"
<STX>	0x02	ASCII character STX
Command	e.g. INFO?	Command sequence
<ETX>	0x03	Enquiry
[BCC]	0 to 255	Optional block check (see 3.2.6 "Data transfer")

Example

In the following example, the INFO command is executed with block check disabled. The 9307 has the address 00.

Controller sends: **<EOT>**
to make sure that any existing connections are terminated and the 9307 receive buffer is cleared.

Controller sends: **00sr<STX>INFO?<LF><ETX>**
Command sequence: The 9307 with address 0 is to be addressed and the info? command is to be executed

9307 replies with: **<ACK>**
The 9307 signals that it accepts the addressing and recognizes and has understood the info? command

Controller sends: **<EOT>00po<ENQ>**
The 9307 with address 0 is requested to send all existing responses

9307 replies with: **<STX>Digiforce Typ 9307<NUL>,437438<NUL>,V201605 (32)<NUL>,V201102<NUL>,4<NUL>,EIP-V1401<NUL>,7<NUL>,22.08.2014<NUL>,22.08.2014<NUL><LF><ETX>**
This is the correct response to the info? command

Controller sends: **<ACK>**
The controller has received the response and accepted it. Does the 9307 have other queries saved for which a response can now be sent?

9307 replies with: **<EOT>**
No. This ends the communication sequence and the 9307 has unaddressed itself.

3.2.5 Polling

The control station sends a polling supervisory sequence. The polling supervisory sequence is used to retrieve requested data from the 9307. The prefix selects a single station. **<ENQ>** defines the end of the polling supervisory sequence:

The polling supervisory sequence of the 9307 has the following format:

```
<Address>po<ENQ>
```

Parameter	Value	Meaning
<Address>	0x30, 0x30	Device address, ASCII character for 00
po	0x70, 0x6F	ASCII characters "p" and "o"
<ENQ>	0x05	Enquiry

A secondary station that recognizes its polling supervisory sequence responds using one of two options:

- If the station has data ready to send, it starts the data transfer. The control station assumes the slave status.

- If the station has no data ready to send, it sends **<EOT>**, which terminates its master status. The master status returns to the control station.

If the control station receives an invalid response or none at all, it terminates the connection by sending **<EOT>**.

3.2.6 Data transfer

After establishing the connection, the data is transferred in accordance with the rules of subcategory A4. The master station begins the transfer with **<STX>**. Then the corresponding data are sent. The data block is terminated with **<ETX>**. The **<ETX>** character is followed by the optional block check character **[BCC]**. This is formed from all the bytes that come **after <STX>**, **including <ETX>**. The **[BCC]** is obtained by performing an exclusive-OR operation on all these bytes. 80hex is also OR'ed with the result of this operation in order to prevent any possible mix up with control characters.

Example

Calculating the checksum from the command **<STX>INFO?<LF><ETX>**

BCC		Character	ASCII		Result	Type
0	^	I	(0x49)	=	0x49	XOR
0x49	^	N	(0x4E)	=	0x07	XOR
0x07	^	F	(0x46)	=	0x41	XOR
0x41	^	O	(0x4F)	=	0x0E	XOR
0x0E	^	?	(0x3F)	=	0x31	XOR
0x31	^	<LF>	(0x0A)	=	0x3B	XOR
0x3B	^	<ETX>	(0x03)	=	0x38	XOR
0x38			-	(0x80)	=	0xB8	OR

C++ example

```cpp
unsigned char CalculateBCC(char *chrCmd)
{
  unsigned char chrBCC = 0;

  for (int i = 0; i < (int)strlen(chrCmd); i++) // Calculate checksum
  {
      chrBCC ^= chrCmd[i];                       // Form XOR from all characters
  }
  return (chrBCC | 0x80);// 0x80 to prevent identification as control character
}
```

The slave station sends one of two possible responses after detecting the [BCC]:

- If the data have been accepted and the station is ready to receive new data, it sends **<ACK>**. On receiving this, the master station either sends new data or terminates the data transfer.

- If the data were not accepted and the slave station is ready to receive new data, it sends **<NAK>**. On receiving this, the master station may send other data or terminate the connection.

3.2.7   Timers

Two software timers are used to monitor the USB communication. The first timer A (response timer) is used to guard against an invalid response or no response from the control station. Timer B (receive timer), on the other hand, guards against non-identification of the <ETX> character. The timeout for both timers is set to 5 seconds.

Timer A (response timer)

- **Start**: Timer A is started after data transfer has been terminated with **<ETX>**.
  The instrument waits for an acknowledgement by the master.

- **Stop**: Timer A is stopped if a valid response **<ACK>** has been received.

- **Timeout**: If a timeout occurs, the DIGIFORCE® 9307 sends an **<EOT>** and returns to its initial state (ready for a new command).

Timer B (receive timer)

- **Start**: Timer B is started after receiving the **<STX>**character

- **Restart**: Timer B is restarted as long as data are being received in order to allow variable datablock lengths to be received.

- **Stop**: Timer B is stopped when the **<ETX>** character has been received

- **Timeout**: If a timeout occurs, the received data (command) are discarded.
  The instrument enters the initial state and waits for new commands.

3.2.8   Terminating a connection

The master station sends **<EOT>** to indicate that it has no more data to transfer. **<EOT>** returns the master status to the control station.

3.3 Communication via the Ethernet port
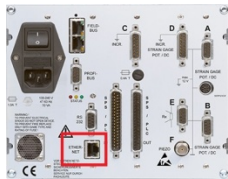
The Ethernet RJ45 port is on the rear side of the device. Please use a Cat 5e or higher patch cable to connect the device to your Ethernet network. The relevant Ethernet parameters like IP address and port number can be found in the following device menu:

Config(F5)->Config(F5)->Basic setup menu->Interface setup->Ethernet->More

(for further information please see operation manual DIGIFORCE® Model 9307 chapter 4.4 "Interfaces").

Figure 4: USB port

3.3.1 The UDP transmission protocol

Communication with the DIGIFORCE® 9307 is based on UDP (User Datagram Protocol). UDP is a connectionless communications protocol used on IP networks. UDP is not a reliable protocol, so the DIGIFORCE® 9307 implements block checksum functions that analyse datagram consistency. This XORs all datagram bytes following **<STX>**(including **<ETX>**). 80hex is also OR'ed with the result of this operation in order to prevent any possible mix up with control characters. The calculated checksum is then appended to the end of the datagram. An example block check calculation can be found in chapter 3.2.6 "Data transfer".

For larger data quantities (> 1450 bytes), the datagrams are fragmented.

Datagram format–Request to device

```
<STX>Code,ID,Command<LF><ETX>BCC
```

Parameter	Value		Meaning
<STX>	0x02		ASCII character STX
Code	bit 0	0: 1:	Message is not encrypted Message is encrypted (for internal purposes)
	bit 1	0: 1:	Other command IPEX! command
ID	1 to 999		Sequential number 1-999 (ASCII) for identifying device's later response
Command	e.g. INFO?		Command (ASCII) **or** <ACK> for acknowledgements
<LF>	0x0A		Line Feed
<ETX>	0x03		ASCII character ETX
BCC	0 to 255		1 byte block check; XOR all bytes following STX including ETX/ENQ, and additionally OR with 0x80hex (see 3.2.6 "Data transfer")

Datagram format–Device response to request with data (e.g. INFO?; see example below)

```
<STX>Code,ID,Status,Number,DataEndCharBCC
```

Parameter	Value		Meaning
<STX>	0x02		ASCII character STX
Code	bit 0	0: 1:	Message is not encrypted Message is encrypted (for internal purposes)
	bit 1	0: 1:	Other command IPEX! Command
ID	1 to 999		Sequential number 1–999 (ASCII). The device responds with the same number as received
Status	0 1 2 3 4 5 6 7 8 9 A B C D E F G H		No error NAK Not used Timeout on internal serial port STX not detected ID not detected ETX not detected Checksum error No response Unknown error Measurement running Invalid host IP address Unencrypted message received (internal res.) Invalid code ID Device was locked by another master Invalid MAC address Problems entering MAC address Device is in edit mode
Number	0 1...		No fragmentation or no first fragment number Fragment number
Data	e.g. DIGIFORCE® model 9307...		User data in ASCII format
End mark	0x0A, 0x03 **or** 0x0A, 0x05		<LF><ETX> unfragmented transmission <LF><<ENQ> fragmented transimission
BCC	0 to 255		1 byte block check; XOR all bytes following STX including ETX/ENQ (see 3.2.6 "Data transfer")

Example "INFO?" request

Controller sends: **<STX>0,2,INFO?<LF><ETX>BCC (here BCC = 0xBA)**
        Note: For BCC calculations, see example in chapter 3.2.6 "Data transfer".

9307 replies with: **<STX>0,2,0,0,Digiforce Typ 9307<NUL>,437438<NUL>,V201605_(32)<NUL>,V201102<NUL>,4<NUL>,EIP-V1401<NUL>,7<NUL>,22.08.2014<NUL>,22.08.2014<NUL><LF><ETX>BCC (here BCC = 0x8A)**

Datagram format–Device response to command with acknowledgement (see example below)

```
<STX>Code,ID,Status,Number,Acknowledgement<LF><ETX>BCC
```

Parameter	Value		Meaning
<STX>	0x02		ASCII character STX
Code	bit 0	0: 1:	Message is not encrypted Message is encrypted (for internal purposes)
	bit 1	0: 1:	Other command IPEX! command
ID	1 to 999		Sequential number 1-999 (ASCII). The device responds with the same number as received.
Status	0 1 2 3 4 5 6 7 8 9 A B C D E F G H		No error NAK Not used Timeout on internal serial port STX not detected ID not detected ETX not detected Checksum error No response Unknown error Measurement running Invalid host IP address Unencrypted message received (internal res.) Invalid code ID Device was locked by another master Invalid MAC address Problems entering MAC address Device is in edit mode
Number	0 1...		No fragmentation or no first fragment number Fragment number
Acknowledgement	0x06 0x15		<ACK> (0x06) Command processed OK <NAK> (0x15) Command processing error
<LF>	0x0A		Line feed
<ETX>	0x03		End of Text
BCC	0 to 255		1 byte block check; XOR all bytes following STX including ETX/ENQ, and additionally OR with 0x80hex (see 3.2.6 "Data transfer")

Example assigning of function key F2 as "Start/Stop"

Controller sends: **<STX>0,2,FKEY! 1,8<LF><ETX>BCC (here BCC = 0xBE)**

9307 replies with: **<STX>0,2,0,0,<ACK><LF><ETX>BCC (here BCC = 0x8D)**
Note: For BCC calculations, see example in chapter 3.2.6 "Data transfer".

Data splitting for fragmented transfer (if data >= 1450 bytes)

1. Fragment:

```
<STX>Code,ID,Status,0,Data 1...1450<LF><ENQ>BCC
```

2. Fragment:

```
<STX>Code,ID,Status,1,Data 1451...2900<LF><ENQ>BCC
```

3. Fragment:

```
<STX>Code,ID,Status,2,Data 2901...3000<LF><ENQ>BCC
```

Note: The host must acknowledge every datagram ending on **<ENQ>** with a special datagram before it receives the next datagram from the 9307.

(*) → Default setting after initialization

Before you write your own program, you can check a command using our **UDP Console** (Windows OS only). The console shows you the communication telegrams between your PC and DIGIFORCE® and can also calculate the block checksum for you. Just use the button Calculate block check for it. You will find this tool either on the bursterDVD or you can download it from our website

At first go to Edit->General Settings->Interface to ensure that transmission parameters match the parameters you set in the interface setup menu (see above) of the DIGIFORCE®:
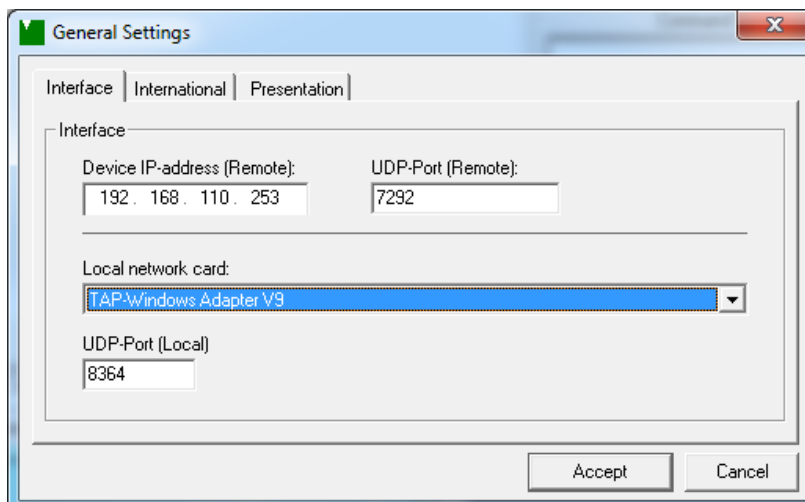
Now you can type in the required parameters into the field Character to send and then click on Send characters.
Here is an example for the INFO? command (see details in INFO? example above):
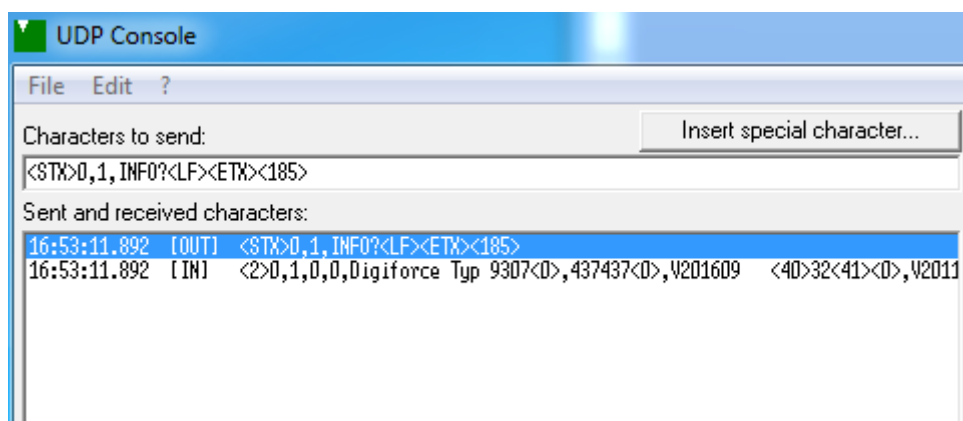
Note: Yor can execute commonly used commands via the function keys F3-F8 of your PC. The fileds F1 and F2 are preconfigured for the *INFO?* commands of DIGIFORCE® 9310 and DIGIFORCE® 9307/9311 and can not be changed.

Please use the *Command Configuration* fields to store the desired commands in the F3-F8:
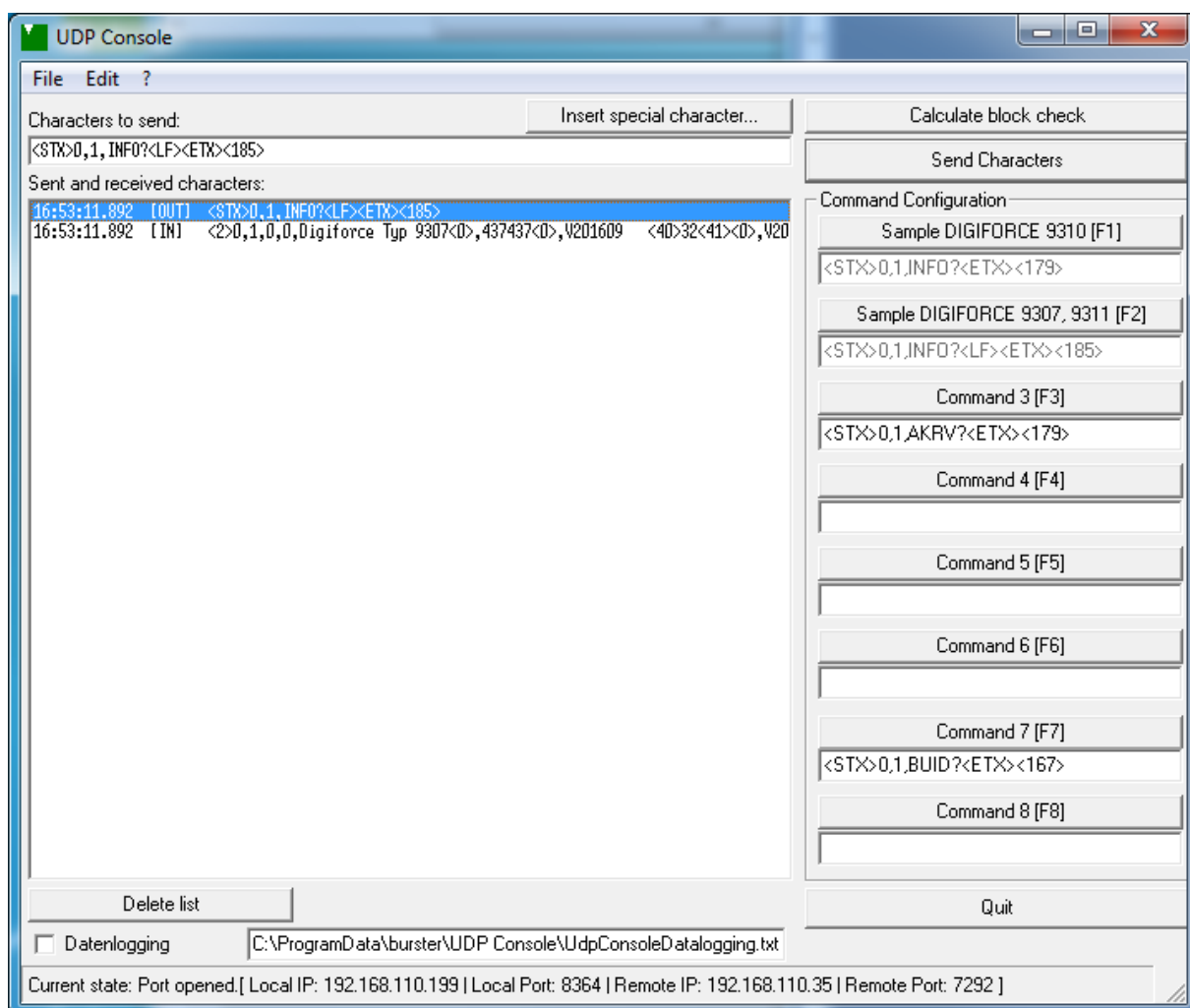
4 Commands

Before executing individual commands, you should first familiarize yourself with their structure. Every command has a name that always consists of four letters. When data are read out of the device, a question mark (e.g. INFO?) is appended to the command name. This is an exclamation mark (e.g. STAN!) when data are being written. Commands taking parameters are appended with these additional parameters separated by commas.

Control characters

Designation	Hex value	Meaning
<NUL>	0x00	NULL character
<STX>	0x02	Start of Text
<ETX>	0x03	End of Text
<EOT>	0x04	End Of Transmission
<ENQ>	0x05	Enquiry
<ACK>	0x06	Acknowledge
<BEL>	0x07	ACK in edit mode
<LF>	0x0A	Line Feed
<NAK>	0x15	Not Acknowledge
<SYN>	0x16	ACK in edit mode
<S>	0x20	Space

Command format

```
aaaaB[<S>P1,P2,P3,Px]<LF>
```

Parameter	Value	Meaning
aaaa		Command name, 4 ASCII characters
B	0x3F or 0x21	Command type, ´?´ for queries, ´!´ for executions
[<S>]	0x20	ASCII character <S>, for commands taking parameters only
[P1,P2,...,Px]		Parameters 1 to x, for commands taking parameters only
[<LF>]	0x0A	Line Feed

Device response to a command with 3 parameters

```
<STX>P1<NUL>,P2<NUL>,P3<NUL><LF><ETX>
```

Parameter	Value	Meaning
P1, P2, P3		Parameters 1 to 10
<NUL>	0x00	ASCII character <NUL>,
[<LF>]	0x0A	Line Feed

	NOTICE
!	• There are no **<NUL>** characters for the commands KUSX, KSY1,KSY2, HRYM, HDMI, HDMA, DXKO, DY1K, DY2K, RFX1, RFX2, RFY1, RFY2, KURX, KUY1, KUY2 • Commands in either upper or lower case, not mixed. • For example communications with protocol, see chapter 3.2.3 "Selection with response" and 3.2.4 "Fast selection".

4.1 Device status

4.1.1 FSTA - 9307 Query device status

Execute – Query form only

Query FSTA?

With the command FSTA? queries the device error status. Once read out, the error status is reset. The error status is a bit-coded 32-bit word. More than one bit can be set when multiple events have occurred since the last readout. The error status is in hexadecimal. Except for USB stick errors, the error bits are set only when the evaluation or the execution of a port command encounters an error.

Host sends: <Address>sr<STX>FSTA?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value	
P1	Device error statuses	0x00000000	No error
		0x00000001	PREFIX addressing error
		0x00000002	Enquiry received in slave mode
		0x00000004	Block check error
		0x00000008	Command error
		0x00000010	Parameter error
		0x00000020	Timeout Receive Timer
		0x00000040	Timeout Response Timer
		0x00000080	Invalid ! or ?
		0x00000100	Invalid configuration
		0x00000200	Scaling error
		0x00000400	No valid measurement found
		0x00000800	A/D converter overdriven
		0x00001000	EEPROM read error
		0x00002000	Scaling overdrive
		0x00004000	Measurement curve readout interrupted by start of new measurement
		0x00008000	Invalid envelope limits
		0x00010000	Calibration failed

4.1.2   TEMP Query the current device temperature (V2016.0.2 and higher)

Execute TEMP!

This command does not have a ! form.

Query TEMP?

The command TEMP? queries the current temperature inside of the device

Host sends: <Address>sr<STX>TEMP?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Current temperature	0 to 255

4.2   General commands

4.2.1   GOTO - Go to Measurement or Setup menu

Execute GOTO!

This goes to a measurement or setup menu during port communication. Except for the UPDA command, this is the only command that updates the device's process display.

The command GOTO! defines the menu that is opened during port communication. This menu is also opened after the command has been executed.

Host sends: <Address>sr<STX>GOTO! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The GOTO target	0 → Go to measurement menu 1 → Go to graphic setup menu 2 → Go to complex setup menu

Query GOTO?

The command GOTO? can read out the menu jumped to during port communication

Host sends: <Address>sr<STX>GOTO?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The GOTO target	0 → Go to Measurement menu 1 → Go to graphic setup menu 2 → Go to complex setup menu

4.2.2 UPDA - Perform display update

Execute UPDA!

For time reasons, normal port communication does not update the device's process display.

The explicit command UPDA! updates the device's process display.

Host sends: <Address>sr<STX>UPDA!<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Updating the display	

Query UPDA?

This command does not have a query form.

4.2.3 MEFR - Enable start of measurement on/off

Caution: Command not allowed when measurement running.

Execute MEFR!

The command MEFR! locks the start of a new measurement.

Host sends: <Address>sr<STX>MEFR! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement enable	0 → Measurement locked 1 → Measurement enabled

Query MEFR?

The command MEFR? reads out the current status of measurement enable.

Host sends: `<Address>sr<STX>MEFR?<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P1<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement enable	0 → Measurement locked 1 → Measurement enabled

4.2.4   EIZA - Query or reset power up counter

This counter increments every time the device is switched On.

Execute EIZA!

The command EIZA! resets the power up counter to 0.

Host sends: `<Address>sr<STX>EIZA!<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Query EIZA?

The command EIZA? queries the power up counter.

Host sends: `<Address>sr<STX>EIZA?<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P1<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Current reading of the power up counter	Unsigned 32 bit long integer

4.2.5   EIGE - Query or reset counter setting changed

"Counter setting changed" increments after every change in the channel settings, measurement mode, or one of the evaluation menus.

Execute EIGE!

The command EIGE! resets "Counter setting changed" to 0.

If "Counter setting changed" for the current measurement program

Host sends: <Address>sr<STX>EIGE!<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

If "Counter setting changed" for the transferred program number

Host sends: <Address>sr<STX>EIGE! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware) or between 0 and 127 (128 program version of firmware)

Query EIGE?

The command EIGE? queries "Counter setting changed".

If "Counter setting changed" for the current measurement program

Host sends: <Address>sr<STX>EIGE?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Current reading of "Counter setting changed"	Unsigned 32 bit integer

If "Counter setting changed" for the transferred program number

Host sends:	<Address>sr<STX>EIGE? P1<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>P2<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware) or between 0 and 127 (128 program version of firmware)
P2	Current reading of "Counter setting changed"	Unsigned 32 bit integer

4.3 Minimum setup menu

4.3.1 PRNR - Select measurement program

Execute PRNR!

The PRNR! command selects a measurement program

Host sends: <Address>sr<STX>PRNR! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware) or between 0 and 127 (128 program version of firmware)

Query PRNR?

The command PRNR? reads out the set measurement program.

Host sends: <Address>sr<STX>PRNR?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the set measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware) or between 0 and 127 (128 program version of firmware)

4.3.2 PNAM - the name of the measurement program

Execute PNAM!

The PNAM! command assigns a name to a measurement program.

If 1 parameter, a name is assigned to the measurement program currently selected.

Host sends: <Address>sr<STX>PNAM! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measuring program name	ASCII string <= 20 characters

If 2 parameters, a name is assigned to the measurement program corresponding to the transferred number

Host sends: <Address>sr<STX>PNAM! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware) or between 0 and 127 (128 program version of firmware)
P2	Measuring program name	ASCII string <= 20 characters

Query PNAN?

If no parameters, Query the name of the measurement program currently selected.

Host sends: <Address>sr<STX>PNAM?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measuring program name	ASCII string <= 20 characters

If 1 parameter: Query the name of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>PNAM? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware) or between 0 and 127 (128 program version of firmware)
P2	Measuring program name	ASCII string <= 20 characters

4.3.3 RSPR - Reset measurement program statistics

Execute RSPR!

The RSPR! command resets a measurement program's statistics

If no parameters, reset the statistics of the measurement program currently selected.

Host sends: <Address>sr<STX>RSPR!<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

If 1 parameter, reset the statistics of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>RSPR! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)

No query form

4.3.4 RSET - Reset all measurement program statistics

Execute RSET!

The RSET! command resets all measurement programs' statistics

Host sends: <Address>sr<STX>RSET!<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

No query form

4.3.5 CMPR - Checks the measurement program names

Execute CMPR!

This command does not have a ! form.

Query CMPR?

The command CMPR? checks all measurement program names for differences form the default

Host sends: <Address>sr<STX>CMPR?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	String with zeroes and ones; A string of length corresponding to the number of programs (32 or 128)	A "0" in the string means the measurement program has the default name. A "1" in the string means the measuring program name has changed. The position in the string corresponds to the measurement program number - a value between 0 and 31 or between 0 and 127 (128 program version of firmware)

4.4 Assigning function keys

4.4.1 FKEY - Set or query function key assignments

Execute FKEY!

The FKEY! command sets the F key assignments 1 to 4 in the measurement menus.

Host sends: <Address>sr<STX>FKEY! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	F key number	0 -> F1 key 1 -> F2 key 2 -> F3 key 3 -> F4 key
P2	Assignment	0 -> Off 1 -> Next menu page 2 -> Previous menu page 3 -> Increment measurement program 4 -> Decrement measurement program 5 -> Tare X 6 -> Tare Y1 7 -> Tare Y2 8 -> Start/stop measurement 9 -> Acknowledge OK parts 10 -> Acknowledge NOK parts 11 -> Sensor test 12 -> Reference measurement 13 -> Edit mode

Query FKEY?

The FKEY? command queries the F key assignments.

Host sends: <Address>sr<STX>FKEY? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	F key number	0 -> F1 key 1 -> F2 key 2 -> F3 key 3 -> F4 key
P2	Assignment	0 -> Off 1 -> Next menu page 2 -> Previous menu page 3 -> Increment measurement program 4 -> Decrement measurement program 5 -> Tare X 6 -> Tare Y1 7 -> Tare Y2 8 -> Start/stop measurement 9 -> Acknowledge OK parts 10 -> Acknowledge NOK parts 11 -> Sensor test 12 -> Reference measurement 13 -> Edit mode

4.5   PLC outputs

4.5.1   SPSA - Set selectable PLC output assignments

Execute SPSA!

The SPSA! command sets the selectable PLC output assignments.

Host sends: <Address>sr<STX>SPSA! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the PLC output	0 -> Output 1 (pin 2) 1 -> Output 2 (pin 6) 2 -> Output 3 (pin 8) 3 -> Output 4 (pin 9) 4 -> Output 5 (pin 10) 5 -> Output 6 (pin 11) 6 -> Output 7 (pin 12) 7 -> Output 8 (pin 13) 8 -> Output 9 (pin 16) 9 -> Output 10 (pin 17) 10 -> Output 11 (pin 21) 11 -> Output 12 (pin 22) 12 -> Output 13 (pin 23) 13 -> Output 14 (pin 24) 14 -> Output 15 (pin 25) 15 -> Output 16 (pin 26) 16 -> Output 17 (pin 27) 17 -> Output 18 (pin 28) 18 -> Output 19 (pin 29)

		19 -> Output 20 (pin 30) 20 -> Output 21 (pin 31) 21 -> Output 22 (pin 32) 22 -> Output 23 (pin 33)
P2	Assignment of the PLC output	0 -> OUT_S3 1 -> OUT_S4 2 -> OUT_STROBE 3 -> OUT_PROG0 4 -> OUT_PROG1 5 -> OUT_PROG2 6 -> OUT_PROG3 7 -> OUT_PROG4 8 -> OUT_WARNING_TARE 9 -> OUT_WARNING_TOOLCOUNTER 10 -> OUT_WARNING_TOTAL 11 -> OUT_OK_STEST 12 -> OUT_TEST_OP_SIMPLE 13 -> OUT_TEST_OP_COMPLEX 14 -> OUT_MEAS_ACTIVE 15 -> OUT_CONFIGURATION 16 -> OUT_ACK_ALARM 17 -> OUT_ACK_LOCK 18 -> OUT_ACK_OK 19 -> OUT_ACK_NOK 20 -> OUT_NOK_WINDOW_1 21 -> OUT_NOK_WINDOW_2 22 -> OUT_NOK_WINDOW_3 23 -> OUT_NOK_WINDOW_4 24 -> OUT_NOK_WINDOW_5 25 -> OUT_NOK_WINDOW_6 26 -> OUT_NOK_WINDOW_7 27 -> OUT_NOK_WINDOW_8 28 -> OUT_NOK_WINDOW_9 29 -> OUT_NOK_WINDOW_10 30 -> OUT_NOK_TRAPEZE_X1 31 -> OUT_NOK_TRAPEZE_X2 32 -> OUT_NOK_TRAPEZE_Y1 33 -> OUT_NOK_TRAPEZE_Y2 34 -> OUT_NOK_THRESHOLD_1 35 -> OUT_NOK_THRESHOLD_2 36 -> OUT_NOK_THRESHOLD_3 37 -> OUT_NOK_THRESHOLD_4 38 -> OUT_NOK_ENVELOPE_1 39 -> OUT_NOK_ENVELOPE_2 40 -> OUT_NOK_MATHE_1 41 -> OUT_NOK_MATHE_2 42 -> OUT_NOK_MATHE_3 43 -> OUT_NOK_MATHE_4 44 -> OUT_NOK_MATHE_5 45 -> OUT_NOK_MATHE_6 46 -> OUT_NOK_CURVE_Y1 47 -> OUT_NOK_CURVE_Y2 48 -> OUT_NOK_ROTSWITCH_1 49 -> OUT_NOK_ROTSWITCH_2 50 -> OUT_PC _LOGGING 51 -> OUT_REF_MEAS_OK 52 -> OUT_PROG5 (128 program FW-version only)

		53 -> OUT_PROG6 (128 program FW-version only) 54 -> OUT_OK_CURVE_Y1 55 ->OUT_OK_CURVE_Y2

Query SPSA?

The SPSA? command queries the selectable PLC output assignments.

Host sends: <Address>sr<STX>SPSA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the PLC output	0 -> Output 1 (pin 2) 1 -> Output 2 (pin 6) 2 -> Output 3 (pin 8) 3 -> Output 4 (pin 9) 4 -> Output 5 (pin 10) 5 -> Output 6 (pin 11) 6 -> Output 7 (pin 12) 7 -> Output 8 (pin 13) 8 -> Output 9 (pin 16) 9 -> Output 10 (pin 17) 10 -> Output 11 (pin 21) 11 -> Output 12 (pin 22) 12 -> Output 13 (pin 23) 13 -> Output 14 (pin 24) 14 -> Output 15 (pin 25) 15 -> Output 16 (pin 26) 16 -> Output 17 (pin 27) 17 -> Output 18 (pin 28) 18 -> Output 19 (pin 29) 19 -> Output 20 (pin 30) 20 -> Output 21 (pin 31) 21 -> Output 22 (pin 32) 22 -> Output 23 (pin 33)
P2	Assignment of the PLC output	0 -> OUT_S3 1 -> OUT_S4 2 -> OUT_STROBE 3 -> OUT_PROG0 4 -> OUT_PROG1 5 -> OUT_PROG2 6 -> OUT_PROG3 7 -> OUT_PROG4 8 -> OUT_WARNING_TARE 9 -> OUT_WARNING_TOOLCOUNTER 10 -> OUT_WARNING_TOTAL 11 -> OUT_OK_STEST

		12 -> OUT_TEST_OP_SIMPLE
		13 -> OUT_TEST_OP_COMPLEX
		14 -> OUT_MEAS_ACTIVE
		15 -> OUT_CONFIGURATION
		16 -> OUT_ACK_ALARM
		17 -> OUT_ACK_LOCK
		18 -> OUT_ACK_OK
		19 -> OUT_ACK_NOK
		20 -> OUT_NOK_WINDOW_1
		21 -> OUT_NOK_WINDOW_2
		22 -> OUT_NOK_WINDOW_3
		23 -> OUT_NOK_WINDOW_4
		24 -> OUT_NOK_WINDOW_5
		25 -> OUT_NOK_WINDOW_6
		26 -> OUT_NOK_WINDOW_7
		27 -> OUT_NOK_WINDOW_8
		28 -> OUT_NOK_WINDOW_9
		29 -> OUT_NOK_WINDOW_10
		30 -> OUT_NOK_TRAPEZE_X1
		31 -> OUT_NOK_TRAPEZE_X2
		32 -> OUT_NOK_TRAPEZE_Y1
		33 -> OUT_NOK_TRAPEZE_Y2
		34 -> OUT_NOK_THRESHOLD_1
		35 -> OUT_NOK_THRESHOLD_2
		36 -> OUT_NOK_THRESHOLD_3
		37 -> OUT_NOK_THRESHOLD_4
		38 -> OUT_NOK_ENVELOPE_1
		39 -> OUT_NOK_ENVELOPE_2
		40 -> OUT_NOK_MATHE_1
		41 -> OUT_NOK_MATHE_2
		42 -> OUT_NOK_MATHE_3
		43 -> OUT_NOK_MATHE_4
		44 -> OUT_NOK_MATHE_5
		45 -> OUT_NOK_MATHE_6
		46 -> OUT_NOK_CURVE_Y1
		47 -> OUT_NOK_CURVE_Y2
		48 -> OUT_NOK_ROTSWITCH_1
		49 -> OUT_NOK_ROTSWITCH_2
		50 -> OUT_PC _LOGGING
		51 -> OUT_REF_MEAS_OK
		52 -> OUT_PROG5 (128 program FW-version only)
		53 -> OUT_PROG6 (128 program FW-version only)
		54 -> OUT_OK_CURVE_Y1
		55 ->OUT_OK_CURVE_Y2

4.5.2   PCLO - Set or reset the PLC output signal OUT_PC_LOGGING

Execute PCLO!

The PCLO! command sets or resets the PLC output signal OUT_PC_LOGGING.

Host sends: <Address>sr<STX>PCLO! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	OUT_PC_LOGGING status	0 -> OUT_PC_LOGGING = 0 1 -> OUT_PC_LOGGING = 1

Query PCLO?

This command does not have a query form

4.6   Access permissions

4.6.1   MPAS - master password

Execute MPAS!

The MPAS! command lets the user enter a new master password.

Host sends: <Address>sr<STX>MPAS! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The new master password	It must consist of 4 numbers (0 to 9)

Query MPAS?

The MPAS? command queries the master password.

Host sends: <Address>sr<STX>MPAS?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The set master password	4 numerics (0 to 9)

4.6.2　MRES - Reset master password to default

Execute MRES!

The MRES! command resets the master password to its default

Host sends:　　　　　　<Address>sr<STX>MRES!<LF><ETX>[<BCC>]

DIGIFORCE responds:　<ACK>

Host sends:　　　　　　<EOT>

Query MPAS?

This command does not have a ? form.

4.6.3　UPAS -　user password

Execute UPAS!

The UPAS! command lets the user enter a new user password.

Host sends:　　　　　　<Address>sr<STX>UPAS!　P1<LF><ETX>[<BCC>]

DIGIFORCE responds:　<ACK>

Host sends:　　　　　　<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The new user password	It must consist of 4 numerics (0 to 9)

Query UPAS?

The UPAS? command queries the user password.

Host sends:　　　　　　<Address>sr<STX>UPAS?<LF><ETX>[<BCC>]

DIGIFORCE responds:　<ACK>

Host sends:　　　　　　<EOT>

Host sends:　　　　　　<Address>po<ENQ>

DIGIFORCE responds:　<STX>P1<LF><ETX>[<BCC>]

Host sends:　　　　　　<ACK>

DIGIFORCE responds:　<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The set user password	4 numbers (0 to 9)

4.6.4 PASP - Query or enable/disable password protection

Execute PASP!

The PASP! command enables or disables password protection

Host sends: <Address>sr<STX>PASP! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Setting password protection	0 -> Password protection Off 1 -> Password protection On

Query PASP?

The PASP? command queries the password protection setting.

Host sends: <Address>sr<STX>PASP?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The set password protection	0 -> Password protection Off 1 -> Password protection On

4.6.5 ZUGR - Enable/lock or query access levels

Execute ZUGR!

The ZUGR! command locks or disables the various access levels.

Host sends: <Address>sr<STX>ZUGR! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Access level number	0 -> Basic setup menu 1 -> Minimal setup menu 2 -> Main setup menu 3 -> Channel settings menu 4 -> Measurement mode menu 5 -> Evaluation menu 6 -> Switching points menu 7 -> Test operation simple menu 8 -> Test operation complex menu 9 -> Sensor test menu 10 -> User-defined values menu 11 -> Copy programs menu
P2	Setting the access level	0 -> Access level locked 1 -> Access level enabled

Query ZUGR?

The ZUGR? command queries the access level settings.

Host sends: <Address>sr<STX>ZUGR? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Access level number	0 -> Basic setup menu 1 -> Minimal setup menu 2 -> Main setup menu 3 -> Channel settings menu 4 -> Measurement mode menu 5 -> Evaluation menu 6 -> Switching points menu 7 -> Test operation simple menu 8 -> Test operation complex menu 9 -> Sensor test menu 10 -> User-defined values menu 11 -> Copy programs menu
P2	Setting the access level	0 -> Access level locked 1 -> Access level enabled

4.7 Enabling measurement menus

4.7.1 MFRE - Measurement menu enable

Execute MFRE!

The MFRE! command enables or locks the various measurement menus.

Host sends: <Address>sr<STX>MFRE! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement menu enable	0 -> Graphic measurement curves 1 -> Curve array 2 -> General curve data 3 -> Total result 4 -> Entries/exits 5 -> User def values 6 -> Statistics 7 -> Order sheet 8 -> Rotary switch
P2	Setting the measurement menu enable for all measurement menus except Total For Total measurement menu	0 -> Measurement menu locked 1 -> Measurement menu enabled 0 -> Measurement menu locked 1 -> Smiley 2 -> Pass/fail

Query MFRE?

The MFRE? command queries the measurement menu enable settings.

Host sends: <Address>sr<STX>MFRE? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement menu enable	0 -> Graphic measurement curves 1 -> Curve array 2 -> General curve data 3 -> Total result 4 -> Entries/exits 5 -> User def values 6 -> Statistics 7 -> Order sheet 8 -> Rotary switch
P2	Setting the measurement menu enable for all measurement menus except Total	0 -> Measurement menu locked 1 -> Measurement menu enabled
	For Total measurement menu	0 -> Measurement menu locked 1 -> Smiley 2 -> Pass/fail

4.8   Info menu

4.8.1   INFO - Device info query

Execute – No ! form

Query INFO?

The INFO? command queries the device information.

Host sends: <Address>sr<STX>INFO?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,P3,P4,P5,P6,P7,P8,P9<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Device ID	Digiforce Type 9307
P2	Serial number	Max 10 character ASCII string
P3	Device software version	Max 15 character ASCII string
P4	Boot software version	Max 15 character ASCII string
P5	Fieldbus ID	0 -> No Fieldbus 1 -> PROFIBUS 2 -> EtherCAT (not available at present) 3 -> PROFINET 4 -> Ethernet/IP

P6	Fieldbus software version	Max 15 character ASCII string (not relevant if no Fieldbus)
P7	Optional analogue card ID	0 -> No option 1 -> Torque 2 -> Piezoelectric 3 -> Torque + Piezoelectric 4 -> Potentiometer 5 -> Torque + Resistance 6 -> Piezoelectric + Resistance 7 -> Torque + Piezoelectric + Resistance
P8	Main analogue card calibration date	Max 10 character ASCII string
P9	Optional analogue card calibration date	Max 10 character ASCII string

4.8.2 SERN - Serial number

Execute – No ! form

Query SERN?

The SERN? command queries the serial number.

Host sends: <Address>sr<STX>SERN?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The serial number	Max 11 character ASCII string

4.8.3 STAN - Station name

Execute STAN!

The STAN! command lets the user enter the station name

Host sends: <Address>sr<STX>STAN! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The station name	Max 15 character ASCII string

Query STAN?

The STAN? command queries the station name.

Host sends: `<Address>sr<STX>STAN?<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P1<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The station name	Max 15 character ASCII string

4.8.4   WZZA - Tool counter

Execute - No ! form

Query WZZA?

The WZZA? command queries the value of the tool counter.

Host sends: `<Address>sr<STX>WZZA?<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P1<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Tool counter current value	0 to 4.294.967.296 (unsigned 32 integer)

4.8.5   WZVO - Tool counter preset value

Execute WZVO!

The WZVO! command sets the tool counter preset value.

Host sends: `<Address>sr<STX>WZVO!  P1<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Tool counter preset value	0 to 4.294.967.296 (unsigned 32 integer)

Query WZVO?

The WZVO? command queries the tool counter preset value.

Host sends: \<Address>sr\<STX>WZVO?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Tool counter preset value	0 to 4.294.967.296 (unsigned 32 integer)

4.8.6   WZRE - Reset tool counter

Execute WZRE!

The WZRE command performs reset of the tool counter to 0

Host sends: \<Address>sr\<STX>WZRE!\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Query WZRE?

There is no ? form of this command.

4.9   LCD setting

4.9.1   LCDK - Set LCD contrast

Execute LCDK!

The LCDK! command sets the LCD display contrast.

Host sends: \<Address>sr\<STX>LCDK! P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The LCD contrast	Value between 1 and 10 10 -> Max contrast

Query LCDK?

The LCDK? command queries the LCD display contrast.

Host sends: <Address>sr<STX>LCDK?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The LCD contrast	Value between 1 and 10 10 -> Max contrast

4.9.2　HIGA–Background design of the graphical view

Execute HIGA!

The HIGA! command sets the background design of the graphical view.

Host sends: <Address>sr<STX>HIGA! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Design ID of the graphical view	0 -> Dark 1 -> Bright

Query HIGA?

The HIGA? command queries the background design ID of the graphical view.

Host sends: <Address>sr<STX>HIGA?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Design ID of the graphical view	0 -> Dark 1 -> Bright

4.10 Date and time

4.10.1 DATE - Set or query date

Execute DATE!

The DATE! command sets the RTC date.

Host sends: \<Address>sr\<STX>DATE! P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The date	String in the form: dd.mm.yyyy Example: 23.07.2016

Query DATE?

The DATE? command queries the RTC date.

Host sends: \<Address>sr\<STX>DATE?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The date	String in the form: dd.mm.yyyy Example: 23.07.2016

4.10.2 TIME - Set or query the time of day

Execute TIME!

The TIME! command sets the RTC time.

Host sends: \<Address\>sr\<STX\>TIME! P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The time of day	String in the form: hh:mm:ss Example: 08:11:34

Query TIME?

The TIME? command queries the RTC time.

Host sends: \<Address\>sr\<STX\>TIME?\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P1\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The time of day	String in the form: hh:mm:ss Example: 08:11:34

4.11 User languages

4.11.1 SPRA - Set or query user language

Execute SPRA!

The SPRA! command sets the user language.

Host sends: \<Address\>sr\<STX\>SPRA! P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Operating language	0 -> German 1 -> English 2 -> French 3 -> Spanish 4 -> Italian

Query SPRA?

The SPRA? command queries the user language.

Host sends: \<Address>sr\<STX>SPRA?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Operating language	0 -> German 1 -> English 2 -> French 3 -> Spanish 4 -> Italian 5 -> Chinese

4.12   Acknowledgement function

4.12.1   AMPL - ACK function on/off

Execute AMPL!

The AMPL! command sets the ACK function.

Host sends: \<Address>sr\<STX>AMPL! P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Selecting the ACK function	0 -> Off 1 -> On

Query AMPL?

The AMPL? command queries the ACK function setting.

Host sends: <Address>sr<STX>AMPL?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Setting the ACK function	0 -> Off 1 -> On

4.12.2 QUIO - OK ACK on/off

Execute QUIO!

The QUIO! command sets OK ACK.

Host sends: <Address>sr<STX>QUIO! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Setting OK ACK	0 -> Off 1 -> On

Query QUIO?

The QUIO? command queries the OK ACK setting.

Host sends: <Address>sr<STX>QUIO?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Setting OK ACK	0 -> Off 1 -> On

4.12.3 QNIO - NOK ACK on/off

Execute QNIO!

The QNIO! command sets NOK ACK.

Host sends: <Address>sr<STX>QNIO! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Setting NOK ACK	0 -> Off 1 -> On

Query QNIO?

The QNIO? command queries the NOK ACK setting.

Host sends: <Address>sr<STX>QNIO?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Setting NOK ACK	0 -> Off 1 -> On

4.12.4 LASU - Buzzer volume

Execute LASU!

The LASU! command sets the buzzer volume.

Host sends: <Address>sr<STX>LASU! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Buzzer volume	Value between 0 and 10 10 -> Max volume

Query LASU?

The LASU? command queries the buzzer volume.

Host sends: <Address>sr<STX>LASU?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Buzzer volume	Value between 0 and 10 10 -> Max volume

4.13 Fieldbuses

4.13.1 FELD - Which Fieldbus is implemented on the NETX circuit board

Execute - There is no ! form

Query FELD?

The FELD? command queries which Fieldbus is implemented.

Host sends: <Address>sr<STX>FELD?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Version	0 ->No Fieldbus 1 -> PROFIBUS 2 -> EtherCAT 3 -> PROFINET 4 -> EtherNet/IP 9 -> Invalid setting

4.13.2 PBIN - Device controlled via Fieldbus or PLC

Execute PBIN!

The PBIN! command sets the source of device control.

Host sends: <Address>sr<STX>PBIN! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Source of device control	0 -> PLC 1 -> Fieldbus

Query PBIN?

The PBIN? command queries the source of device control.

Host sends: <Address>sr<STX>PBIN?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Source of device control	0 -> PLC 1 -> Fieldbus

4.14 PROFIBUS settings

4.14.1 PBAD - Set PROFIBUS address

Execute PBAD!

The PBAD! command sets the PROFIBUS address.

Host sends: <Address>sr<STX>PBAD! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	PROFIBUS address	Value between 0 and 125 (126 is a factory setting, and the devices denies writing to this)

Query PBAD?

The PBAD? command queries the PROFIBUS address.

Host sends: <Address>sr<STX>PBAD?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	PROFIBUS address	Value between 0 and 126

4.14.2 PINF - PROFIBUS info

Execute – There is no ! form

Query PINF?

The PINF? command queries the PROFIBUS information.

Host sends: <Address>sr<STX>PINF?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Version	Max 20 character string
P2	PROFIBUS data mode	0 to 5

4.15   EtherCAT settings

4.15.1 EINF - EtherCAT info

Execute – There is no ! form

Query EINF?

The EINF? command queries the EtherCAT information.

Host sends: <Address>sr<STX>EINF?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Version	Max 20 character string
P2	EtherCAT operating state	0 -> INIT 1 -> PREOP 2 -> SAVEOP 3 -> OP 4 -> BOOTSTRAP 5 -> Invalid state

4.16 PROFINET settings

4.16.1 PNIF - PROFINET info

Execute – There is no ! form

Query PNIF?

The PNIF? command queries the PROFINET information.

Host sends: <Address>sr<STX>PNIF?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	PROFINET SW version	Max 20 character string
P2	PROFINET device name	Max 63 character string
P3	PROFINET IP address	15 character string
P4	PROFINET subnet mask	15 character string
P5	PROFINET gateway IP address	15 character string

4.16.2 FBKS - Fieldbus board serial number

Query FBKS?

FBKS? queries the serial number received form the Fieldbus board during booting.

Host sends: <Address>sr<STX>FBKS?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Fieldbus board serial number	Max 20 character string

4.16.3   FBMA - Fieldbus board MAC addresses

Query FBMA?

FBMA? queries the MAC addresses received form the Fieldbus board during booting.

Host sends: <Address>sr<STX>FBMA?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Device MAC address of the Fieldbus board	String in the form: 00-23-6e-xx-xx-xx
P2	Port1 MAC address of the Fieldbus board	String in the form: 00-23-6e-xx-xx-xx
P3	Port2 MAC address of the Fieldbus board	String in the form: 00-23-6e-xx-xx-xx

4.16.4   FSER - Checks whether a serial number has been programmed in the Fieldbus board flash memory

Execute – There is no ! form

Query FSER?

The FSER? command checks whether a serial number has been programmed in the Fieldbus board flash memory.

Goldfire reads it directly out of thed NETX flash memory.

Host sends: <Address>sr<STX>FSER?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Is the serial number programmed into the Fieldbus board flash memory?	0 → There is no serial number 1 → There is a serial number
P2	Otherwise, if none is programmed in flash memory, the serial number is a string of 0s.	The serial number as a string. If there is one, then 11 0s

4.16.5 FMAC - Checks whether the MAC addresses have been programmed in the Fieldbus board flash memory

Execute - There is no ! form

Query FMAC?

The FMAC? command checks whether the 3 MAC addresses have been programmed in the Fieldbus board flash memory

Coldfire reads it directly out of thed NETX flash memory.

Host sends: \<Address>sr\<STX>FMAC?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1,P2,P3,P4\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Are the MAC addresses programmed in the Fieldbus board flash memory?	0 → There are no MAC addresses 1 → There are MAC addresses
P2	Device MAC address, if programmed Else 0s	00-23-6e-xx-xx-xx 00-00-00-00-00-00, if no MAC
P3	Port 1 MAC address, if programmed Else 0s	00-23-6e-xx-xx-xx 00-00-00-00-00-00, if no MAC
P4	Port 2 MAC address, if programmed Else 0s	00-23-6e-xx-xx-xx 00-00-00-00-00-00, if no MAC

4.17 EtherNet/IP settings

4.17.1 ETHI - EtherNet/IP settings

Execute ETHI!

The ETHI! command can transfer the Ethernet/IP IP setting.

Host sends: <Address>sr<STX>ETHI! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	EtherNet/IP IP address	15 character string in the form xxx.xxx.xxx.xxx
P2	EtherNet/IP subnet mask	15 character string in the form xxx.xxx.xxx.xxx
P3	EtherNet/IP gateway address	15 character string in the form xxx.xxx.xxx.xxx

Query ETHI?

The ETHI? command queries the Ethernet/IP settings.

Host sends: <Address>sr<STX>ETHI?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	EtherNet/IP SW version	Max 20 character string
P2	EtherNet/IP IP configuration	0 -> DHCP 1-> BOOTP 2 -> Static 3 -> DHCP and BOOTP
P3	EtherNet/IP IP address	15 character string in the form xxx.xxx.xxx.xxx
P4	EtherNet/IP subnet mask	15 character string in the form xxx.xxx.xxx.xxx
P5	EtherNet/IP gateway address	15 character string in the form xxx.xxx.xxx.xxx

4.18   Order sheet

4.18.1   AUWE - Order sheet: Operator

Execute AUWE!

The AUWE! command lets the user enter the worker's name given on the order sheet.

Host sends: <Address>sr<STX>AUWE! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Worker's name	Max 64 character ASCII string

Query AUWE?

The AUWE? command queries the worker's name given on the order sheet.

Host sends: <Address>sr<STX>AUWE?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Worker's name	Max 64 character ASCII string

4.18.2   AUNR - Order sheet: Order number

Execute AUNR!

The AUNR! command lets the user enter the order number given on the order sheet.

Host sends: <Address>sr<STX>AUNR! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Order number	Max 64 character ASCII string

Query AUNR?

The AUNR? command queries the order number given on the order sheet.

Host sends: <Address>sr<STX>AUNR?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Order number	Max 64 character ASCII string

4.18.3 AUCH - Order sheet: Batch

Execute AUCH!

The AUCH! command lets the user enter the batch given on the order sheet.

Host sends: <Address>sr<STX>AUCH! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Batch	Max 64 character ASCII string

Query AUCH?

The AUCH? command queries the batch given on the order sheet.

Host sends: <Address>sr<STX>AUCH?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Batch	Max 64 character ASCII string

4.18.4   AUBA - Order sheet: Component identification

Execute AUBA!

The AUBA! command lets the user enter the component identification given on the order sheet.

Host sends: \<Address>sr\<STX>AUBA! P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Component identification	Max 64 character ASCII string

Query AUBA?

The AUBA? command queries the component identification given on the order sheet.

Host sends: \<Address>sr\<STX>AUBA?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Component identification	Max 64 character ASCII string

4.18.5   AUS1 - Order sheet Serial number 1

Execute AUS1!

The AUS1! command lets the user enter serial number 1 given on the order sheet.

Host sends: \<Address>sr\<STX>AUS1! P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Serial number 1	Max 64 character ASCII string

Query AUS1?

The AUS1? command queries serial number 1 given on the order sheet.

Host sends: <Address>sr<STX>AUS1?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Serial number 1	Max 64 character ASCII string

4.18.6 AUS2 - Order sheet Serial number 2

Execute AUS2!

The AUS2! command lets the user enter serial number 2 given on the order sheet.

Host sends: <Address>sr<STX>AUS2! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Serial number 2	Max 64 character ASCII string

Query AUS2?

The AUS2? command queries serial number 2 given on the order sheet.

Host sends: <Address>sr<STX>AUS2?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Serial number 2	Max 64 character ASCII string

4.18.7 SINR - Shift number

Execute SINR!

The SINR! command lets the user enter shift number given on the order sheet.

Host sends: <Address>sr<STX>SINR! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Shift number	Integer value between 1 and 6

Query SINR?

The SINR? command queries shift number given on the order sheet.

Host sends: <Address>sr<STX>SINR?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Shift number	Integer value between 1 and 6

4.18.8 SINA - Shift name

Execute SINA!

The SINA! command lets the user enter shift name given on the order sheet.

If 1 parameter, the name will be assign to the currently selected shift

Host sends: <Address>sr<STX>SINA! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Shift name	Max 64 character ASCII string

If 2 parameters, the name will be assigned the shift number corresponding to the transferred shift number

Host sends: <Address>sr<STX>SINA! P1, P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Shift number	Integer value between 1 and 6
P2	Shift name	Max 64 character ASCII string

Query SINA?

The SINA? command queries shift name given on the order sheet.

If no parameters, the name of the currently selected shift will be returned.

Host sends: <Address>sr<STX>SINA?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Shift name	Max 64 character ASCII string

If 1 parameter, the name of the shift number corresponding to the transferred shift number will be returned.

Host sends: <Address>sr<STX>SINA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Shift number	Integer value between 1 and 6
P2	Shift name	Max. 64 character ASCII string

4.18.9 SIRE - Reset shift counter

Execute SIRE!

The SIRE! command performs a reset of the shift counter .

If no parameters, the counter of the currently selected shift will be reset

Host sends: <Address>sr<STX>SIRE!<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

If 1 parameter, the counter of the shift number corresponding to the transferred shift number will be reset.

Host sends: <Address>sr<STX>SIRE! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Shift number	Integer value between 1 and 6

Query SIRE?

There is no ? form of this command.

4.18.10 SIST - Shift piece counter

Execute - There is no ! form

Query SIST?

The SIST? command queries shift piece counter.

If no parameters, the piece counter of the currently selected shift will be returned.

Host sends: <Address>sr<STX>SIST?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Shift piece counter	0 to 4.294.967.296 (unsigned 32 integer)

If 1 parameter, the shift piece counter of the shift number corresponding to the transferred shift number will be returned.

Host sends: <Address>sr<STX>SIST? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Shift number	Integer value between 1 and 6
P2	Shift piece counter	0 to 4.294.967.296 (unsigned 32 integer)

4.18.11 ANIO - Shift NOK counter

Execute – There is no ! form

Query ANIO?

The ANIO? command queries NOK shift piece counter

If no parameters, the shift NOK piece counter of the currently selected shift will be returned.

Host sends: <Address>sr<STX>ANIO?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Shift piece counter	0 to 4.294.967.296 (unsigned 32 integer)

If 1 parameter, the shift NOK piece counter of the shift number corresponding to the transferred shift number will be returned.

Host sends:	<Address>sr<STX>ANIO? P1<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>
Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>P2<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Shift number	Integer value between 1 and 6
P2	NOK Shift piece counter	0 to 4.294.967.296 (unsigned 32 integer)

4.19 Measurement mode

4.19.1 ABTX - X sampling on/off

Execute ABTX!

The ABTX! command sets X sampling.

If 1 parameter, the X sampling for the currently selected measurement program is set

Host sends: <Address>sr<STX>ABTX! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The X sampling	0 -> Off 1 -> On

If 2 parameters, the X sampling is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>ABTX! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	The X sampling	0 -> Off 1 -> On

Query ABTX?

The ABTX? command queries the X sampling.

If no parameter, the X sampling for the currently selected measurement program is queried

Host sends: <Address>sr<STX>ABTX?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The X sampling	0 -> Off 1 -> On

If 1 parameter, the X sampling is queried of the measurement program corresponding to the transferred number.

Host sends: \<Address\>sr\<STX\>ABTX? P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P2\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	The X sampling	0 -> Off 1 -> On

4.19.2 ABY1 - Y1 sampling on/off

Execute ABY1!

The ABY1! command sets Y1 sampling.

If 1 parameter, the Y1 sampling for the currently selected measurement program is set

Host sends: \<Address\>sr\<STX\>ABY1! P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The Y1 sampling	0 -> Off 1 -> On

If 2 parameters, the Y1 sampling is set of the measurement program corresponding to the transferred number.

Host sends: \<Address\>sr\<STX\>ABY1! P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	The Y1 sampling	0 -> Off 1 -> On

Query ABY1?

The ABY1? command queries the Y1 sampling.

If no parameter, the Y sampling for the currently selected measurement program is queried

Host sends: <Address>sr<STX>ABY1?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The Y1 sampling	0 -> Off 1 -> On

If 1 parameter, the Y1 sampling is queried of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>ABY1? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	The Y1 sampling	0 -> Off 1 -> On

4.19.3 ABY2 - Y2 Sampling on/off

Execute ABY2!

The ABY2! command sets Y2 sampling.

If 1 parameter, the Y2 sampling for the currently selected measurement program is set

Limitation: If channel Y2 is Off the !-form of this command is not allowed.

Host sends: <Address>sr<STX>ABY2! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The Y2 sampling	0 -> Off 1 -> On

If 2 parameters, the Y2 sampling is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>ABY2! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	The Y2 sampling	0 -> Off 1 -> On

Query ABY2?

The ABY2? command queries the Y2 sampling.

If no parameter, the Y sampling for the currently selected measurement program is queried

Host sends: <Address>sr<STX>ABY2?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The Y2 sampling	0 -> Off 1 -> On

If 1 parameter, the Y2 sampling is queried of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>ABY2? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	The Y2 sampling	0 -> Off 1 -> On

4.19.4 ABTZ - Time sampling on/off

Execute ABTZ!

The ABTZ! command sets time sampling.

If 1 parameter, the time sampling for the currently selected measurement program is set

Host sends: <Address>sr<STX>ABTZ! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The time sampling	0 -> Off 1 -> On

If 2 parameters, the time sampling is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>ABTZ! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware).
P2	The time sampling	0 -> Off 1 -> On

Query ABTZ?

The ABTZ? command queries the time sampling.

If no parameter, the time sampling for the currently selected measurement program is queried

Host sends: <Address>sr<STX>ABTZ?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	The time sampling	0 -> Off 1 -> On

If 1 parameter, the time sampling is queried of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>ABTZ? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware).
P2	The time sampling	0 -> Off 1 -> On

4.19.5 ABSX - Set or query X sample rate

Execute ABSX!

The ABSX! command sets X sample rate.

If 1 parameter, the X sample rate for the currently selected measurement program is set

Host sends: <Address>sr<STX>ABSX! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	X sample rate	Floating point value 0 to 999999

If 2 parameters, the X sample rate is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>ABSX! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	X sample rate	Floating point value 0 to 999999

Query ABSX?

The ABTX? command queries X sample rate.

If no parameter, the X sample rate for the currently selected measurement program is queried

Host sends: <Address>sr<STX>ABSX?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	X sample rate	Floating point value 0 to 999999

If 1 parameter, the X sample rate is set of the measurement program corresponding to the transferred number.

Host sends: \<Address>sr\<STX>ABSX? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	X sample rate	Floating point value 0 to 999999

4.19.6 ASY1 - Y1 sample rate

Execute ASY1!

The ASY1! command sets Y1 sample rate.

If 1 parameter, the Y1 sample rate for the currently selected measurement program is set

Host sends: \<Address>sr\<STX>ASY1! P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y1 sample rate	Floating point value 0 to 999999

If 2 parameters, the Y1 sample rate is set of the measurement program corresponding to the transferred number.

Host sends: \<Address>sr\<STX>ASY1! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y1 sample rate	Floating point value 0 to 999999

Query ASY1?

The ASY1? command queries Y1 sample rate.

If no parameter, the Y1 sample rate for the currently selected measurement program is queried

Host sends: <Address>sr<STX>ASY1?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y1 sample rate	Floating point value 0 to 999999

If 1 parameter, the Y1 sample rate is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>ASY1? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y1 sample rate	Floating point value 0 to 999999

4.19.7 ASY2 - Y2 sample rate

Execute ASY2!

The ASY2! command sets Y2 sample rate.

If 1 parameter, the Y2 sample rate for the currently selected measurement program is set

Host sends: <Address>sr<STX>ASY2! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y2 sample rate	Floating point value 0 to 999999

If 2 parameters, the Y2 sample rate is set of the measurement program corresponding to the transferred number.

Host sends: \<Address>sr\<STX>ASY2! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y2 sample rate	Floating point value 0 to 999999

Query ASY2?

The ASY2? command queries Y2 sample rate.

If no parameter, the Y2 sample rate for the currently selected measurement program is queried

Host sends: \<Address>sr\<STX>ASY2?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y2 sample rate	Floating point value 0 to 999999

If 1 parameter, the Y2 sample rate is set of the measurement program corresponding to the transferred number.

Host sends: \<Address>sr\<STX>ASY2? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y2 sample rate	Floating point value 0 to 999999

4.19.8 ABSZ - Time sample rate

Execute ABSZ!

The ABSZ! command sets time sample rate.

If 1 parameter, the time sample rate for the currently selected measurement program is set

Host sends: \<Address>sr\<STX>ABSZ! P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Time sample rate	Floating point value 0.0001 to 99999

If 2 parameters, the time sample rate is set of the measurement program corresponding to the transferred number.

Host sends: \<Address>sr\<STX>ABSZ! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Time sample rate	Floating point value 0.0001 to 99999

Query ABSZ?

The ABSZ? command queries time sample rate.

If no parameter, the time sample rate for the currently selected measurement program is queried

Host sends: <Address>sr<STX>ABSZ?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Time sample rate	Floating point value 0.0001 to 99999

If 1 parameter, the time sample rate is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>ABSZ? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Time sample rate	Floating point value 0.0001 to 99999

4.19.9 BZUG - Reference

Execute BZUG!

The BZUG! command sets the reference.

If 1 parameter, the reference for the currently selected measurement program is set

Host sends: <Address>sr<STX>BZUG! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Reference	0 -> Absolute 1 -> Final force 2 -> Y1 reference line above reference 3 -> Y1 reference line below reference 4 -> Y1 trigger above reference 5 -> Y1 trigger below reference 6 -> Y2 reference line above reference (only if Y2 is On) 7 -> Y2 reference line below reference (only if Y2 is On) 8 -> Y2 trigger above reference (only if Y2 is On) 9 -> Y2 trigger below reference (only if Y2 is On) Comment: Below reference not permitted if the affected channel is set to time.

If 2 parameters, the reference is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>BZUG! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Reference	0 -> Absolute 1 -> Final force 2 -> Y1 reference line above reference 3 -> Y1 reference line below reference 4 -> Y1 trigger above reference 5 -> Y1 trigger below reference 6 -> Y2 reference line above reference (only if Y2 is On) 7 -> Y2 reference line below reference (only if Y2 is On) 8 -> Y2 trigger above reference (only if Y2 is On) 9 -> Y2 trigger below reference (only if Y2 is On) Comment: Below reference not permitted if the affected channel is set to time.

Query BZUG?

The BZUG? command queries the reference.

If no parameter, the reference for the currently selected measurement program is queried

Host sends: <Address>sr<STX>BZUG?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Reference	0 -> Absolute 1 -> Final force 2 -> Y1 reference line above reference 3 -> Y1 reference line below reference 4 -> Y1 trigger above reference 5 -> Y1 trigger below reference 6 -> Y2 reference line above reference (only if Y2 is On) 7 -> Y2 reference line below reference (only if Y2 is On) 8 -> Y2 trigger above reference (only if Y2 is On) 9 -> Y2 trigger below reference (only if Y2 is On) Comment: Below reference not permitted if the affected channel is set to time.

If 1 parameter, the reference is queried for the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>BZUG? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Reference	0 -> Absolute 1 -> Final force 2 -> Y1 reference line above reference 3 -> Y1 reference line below reference 4 -> Y1 trigger above reference 5 -> Y1 trigger below reference 6 -> Y2 reference line above reference (only if Y2 is On) 7 -> Y2 reference line below reference (only if Y2 is On) 8 -> Y2 trigger above reference (only if Y2 is On) 9 -> Y2 trigger below reference (only if Y2 is On) Comment: Below reference not permitted if the affected channel is set to time.

4.19.10 BEY1 - Reference line Y1

Execute BEY1!

The BEY1! command sets the Y1 reference line.

If 1 parameter, the Y1 reference line for the currently selected measurement program is set

Host sends: <Address>sr<STX>BEY1! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y1 reference line	Floating point value -999999 to 999999

If 2 parameters, the Y1 reference line is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>BEY1! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y1 reference line	Floating point value -999999 to 999999

Query BEY1?

The BEY1? command queries the Y1 reference line.

If no parameter, the Y1 reference line for the currently selected measurement program is queried

Host sends: \<Address>sr\<STX>BEY1?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y1 reference line	Floating point value -999999 to 999999

If 1 parameter, the Y1 reference line is queried for the measurement program corresponding to the transferred number.

Host sends: \<Address>sr\<STX>BEY1? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y1 reference line	Floating point value -999999 to 999999

4.19.11 BEY2 - Reference line Y2

Execute BEY1!

The BEY2! command sets the Y2 reference line.

If 1 parameter, the Y2 reference line for the currently selected measurement program is set

Host sends: \<Address>sr\<STX>BEY2! P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y2 reference line	Floating point value -999999 to 999999

If 2 parameters, the Y2 reference line is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>BEY2! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y2 reference line	Floating point value -999999 to 999999

Query BEY2?

The BEY2? command queries the Y2 reference line.

If no parameter, the Y2 reference line for the currently selected measurement program is queried

Host sends: <Address>sr<STX>BEY2?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y2 reference line	Floating point value -999999 to 999999

If 1 parameter, the Y2 reference line is queried for the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>BEY2? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y2 reference line	Floating point value -999999 to 999999

4.19.12 TRY1 - Trigger line Y1

Execute TRY1!

The TRY1! command sets the Y trigger line.

If 1 parameter, the Y1 trigger line for the currently selected measurement program is set

Host sends: \<Address>sr\<STX>TRY1! P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y1 trigger line	Floating point value -999999 to 999999

If 2 parameters, the Y1 trigger line is set of the measurement program corresponding to the transferred number.

Host sends: \<Address>sr\<STX>TRY1! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y1 trigger line	Floating point value -999999 to 999999

Query TRY1?

The TRY1? command queries the Y1 trigger line.

If no parameter, the Y1 trigger line for the currently selected measurement program is queried

Host sends: <Address>sr<STX>TRY1?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y1 trigger line	Floating point value -999999 to 999999

If 1 parameter, the Y1 trigger line is queried for the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>TRY1? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y1 trigger line	Floating point value -999999 to 999999

4.19.13 TRY2 - Trigger line Y2

Execute TRY2!

The TRY2! command sets the Y2 trigger line.

If 1 parameter, the Y2 trigger line for the currently selected measurement program is set

Host sends: <Address>sr<STX>TRY2! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y2 trigger line	Floating point value -999999 to 999999

If 2 parameters, the Y2 trigger line is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>TRY2! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y2 trigger line	Floating point value -999999 to 999999

Query TRY1?

The TRY1? command queries the Y2 trigger line.

If no parameter, the Y2 trigger line for the currently selected measurement program is queried

Host sends: <Address>sr<STX>TRY2?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y2 trigger line	Floating point value -999999 to 999999

If 1 parameter, the Y2 trigger line is queried for the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>TRY2? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y2 trigger line	Floating point value -999999 to 999999

4.19.14 PRTR - Pre-trigger view

Execute PRTR!

The PRTR! activates the pre-trigger view.

If 1 parameter, the pre-trigger view for the currently selected measurement program is set

Host sends: <Address>sr<STX>PRTR! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Pre-trigger view	0 -> Off 1 -> On

If 2 parameters, the pre-trigger view is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>PRTR! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Pre-trigger view	0 -> Off 1 -> On

Query PRTR?

The PRTR? command queries the pre-trigger view setting.

If no parameter, the pre-trigger setting for the currently selected measurement program is queried

Host sends: \<Address>sr\<STX>PRTR?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Pre-trigger view	0 -> Off 1 -> On

If 1 parameter, the pre-trigger setting is queried for the measurement program corresponding to the transferred number.

Host sends: \<Address>sr\<STX>PRTR? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Pre-trigger view	0 -> Off 1 -> On

4.19.15 UPKT - Return point

Execute UPKT!

The UPKT! command sets the return point.

If 1 parameter, the return point for the currently selected measurement program is set

Host sends: <Address>sr<STX>UPKT! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Return point	0 -> XMIN 1 -> XMAX 2 -> YMIN 3 -> YMAX

If 2 parameters, the return point is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>UPKT! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Return point	0 -> XMIN 1 -> XMAX 2 -> YMIN 3 -> YMAX

Query UPKT?

The UPKT? command queries the return point.

If no parameter, the return point for the currently selected measurement program is queried

Host sends: <Address>sr<STX>UPKT?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Return point	0 -> XMIN 1 -> XMAX 2 -> YMIN 3 -> YMAX

If 1 parameter, the return point is queried for the measurement program corresponding to the transferred number.

Host sends: \<Address>sr\<STX>UPKT? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Return point	0 -> XMIN 1 -> XMAX 2 -> YMIN 3 -> YMAX

4.19.16 KERF - Record curve to

Execute KERF!

The KERF! command sets the recorded curve section.

If 1 parameter, the recorded curve section for the currently selected measurement program is set

Host sends: \<Address>sr\<STX>KERF! P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Recorded curve section	0 -> Complete curve 1 -> To return point

If 2 parameters, the recorded curve section is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>KERF! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Recorded curve section	0 -> Complete curve 1 -> To return point

Query KERF?

The KERF? command queries the recorded curve section.

If no parameter, the recorded curve section for the currently selected measurement program is queried

Host sends: <Address>sr<STX>KERF?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Recorded curve section	0 -> Complete curve 1 -> To return point

If 1 parameter, the recorded curve section is queried for the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>KERF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Recorded curve section	0 -> Complete curve 1 -> To return point

4.19.17 STAM - Start mode

Execute STAM!

The STAM! command sets the start mode.

If 1 parameter, the start mode for the currently selected measurement program is set

Host sends: <Address>sr<STX>STAM! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Start mode	0 -> External 1 -> X above reference 2 -> X below reference 3 -> Y1 above reference 4 -> Y1 below reference 5 -> Y2 above reference (only if Y2 is On) 6 -> Y2 below reference (only if Y2 is On) Comment: Below or above reference not permitted if the affected channel is set to piezo or time.

If 2 parameters, the start mode is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>STAM! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Start mode	0 -> External 1 -> X above reference 2 -> X below reference 3 -> Y1 above reference 4 -> Y1 below reference 5 -> Y2 above reference (only if Y2 is On) 6 -> Y2 below reference (only if Y2 is On Comment: Below or above reference not permitted if the affected channel is set to piezo or time.

Query STAM?

The STAM? command queries the start mode.

If no parameter, the start mode for the currently selected measurement program is queried

Host sends: \<Address>sr\<STX>STAM?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Start mode	0 -> External 1 -> X above reference 2 -> X below reference 3 -> Y1 above reference 4 -> Y1 below reference 5 -> Y2 above reference (only if Y2 is On) 6 -> Y2 below reference (only if Y2 is On) Comment: Below or above reference not permitted if the affected channel is set to piezo or time.

If 1 parameter, the start mode is queried for the measurement program corresponding to the transferred number.

Host sends: \<Address>sr\<STX>STAM? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Start mode	0 -> External 1 -> X above reference 2 -> X below reference 3 -> Y1 above reference 4 -> Y1 below reference 5 -> Y2 above reference (only if Y2 is On) 6 -> Y2 below reference (only if Y2 is On Comment: Below or above reference not permitted if the affected channel is set to piezo or time.

4.19.18 STOM - Stop mode

Execute STOM!

The STOM! command sets the stop mode.

If 1 parameter, the stop mode for the currently selected measurement program is set

Host sends: <Address>sr<STX>STOM! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Stop mode	0 -> External 1 -> X above reference 2 -> X below reference 3 -> Y1 above reference 4 -> Y1 below reference 5 -> Timeout 6 -> Number of readings 7 -> Y2 above reference (only if Y2 is On) 8 -> Y2 below reference (only if Y2 is On Comment: Below reference not permitted if the affected channel is set to time.

If 2 parameters, the stop mode is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>STOM! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Stop mode	0 -> External 1 -> X above reference 2 -> X below reference 3 -> Y1 above reference 4 -> Y1 below reference 5 -> Timeout 6 -> Number of readings 7 -> Y2 above reference (only if Y2 is On) 8 -> Y2 below reference (only if Y2 is On) Comment: Below reference not permitted if the affected channel is set to time.

Query STOM?

The STOM? command queries the stop mode.

If no parameter, the stop mode for the currently selected measurement program is queried

Host sends: <Address>sr<STX>STOM?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Stop mode	0 -> External 1 -> X above reference 2 -> X below reference 3 -> Y1 above reference 4 -> Y1 below reference 5 -> Timeout 6 -> Number of readings 7 -> Y2 above reference (only if Y2 is On) 8 -> Y2 below reference (only if Y2 is On) Comment: Below reference not permitted if the affected channel is set to time.

If 1 parameter, the stop mode is queried for the measurement program corresponding to the transfered number.

Host sends: <Address>sr<STX>STOM? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Stop mode	0 -> External 1 -> X above reference 2 -> X below reference 3 -> Y1 above reference 4 -> Y1 below reference 5 -> Timeout 6 -> Number of readings 7 -> Y2 above reference (only if Y2 is On) 8 -> Y2 below reference (only if Y2 is On Comment: Below reference not permitted if the affected channel is set to time.

4.19.19 STAX - Start value X

Execute STAX!

The STAX! command sets the X start value.

If 1 parameter, the X start value for the currently selected measurement program is set

Host sends: <Address>sr<STX>STAX! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	X start value	Floating point value -999999 to 999999

If 2 parameters, the X start value is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>STAX! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	X start value	Floating point value -999999 to 999999

Query STAX?

The STAX? command queries the X start value.

If no parameter, the X start value for the currently selected measurement program is queried

Host sends: `<Address>sr<STX>STAX?<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P1<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	X start value	Floating point value -999999 to 999999

If 1 parameter, the X start value is queried for the measurement program corresponding to the transferred number.

Host sends: `<Address>sr<STX>STAX? P1<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P2<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	X start value	Floating point value -999999 to 999999

4.19.20 SAY1 - Start value Y1

Execute SAY1!

The SAY1! command sets the Y1 start value.

If 1 parameter, the Y1 start value for the currently selected measurement program is set

Host sends: <Address>sr<STX>SAY1! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y1 start value	Floating point value -999999 to 999999

If 2 parameters, the Y1 start value is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>SAY1! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y1 start value	Floating point value -999999 to 999999

Query SAY1?

The SAY1? command queries the Y1 start value.

If no parameter, the Y1 start value for the currently selected measurement program is queried

Host sends: <Address>sr<STX>SAY1?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y1 start value	Floating point value -999999 to 999999

If 1 parameter, the Y2 start value is queried for the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>SAY1? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y1 start value	Floating point value -999999 to 999999

4.19.21 SAY2 - Start value Y2

Execute SAY2!

The SAY2! command sets the Y2 start value.

If 1 parameter, the Y2 start value for the currently selected measurement program is set

Host sends: <Address>sr<STX>SAY2! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y2 start value	Floating point value -999999 to 999999

If 2 parameters, the Y2 start value is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>SAY2! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y2 start value	Floating point value -999999 to 999999

Query SAY2?

The SAY2? command queries the Y2 start value.

If no parameter, the Y2 start value for the currently selected measurement program is queried

Host sends: <Address>sr<STX>SAY2?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y2 start value	Floating point value -999999 to 999999

If 1 parameter, the Y2 start value is queried for the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>SAY2? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y2 start value	Floating point value -999999 to 999999

4.19.22 STOX - X stop value

Execute STOX!

The STOX! command sets the X stop value.

If 1 parameter, the X stop value for the currently selected measurement program is set

Host sends: <Address>sr<STX>STOX! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	X stop value	Floating point value -999999 to 999999

If 2 parameters, the X stop value is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>STOX! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	X stop value	Floating point value -999999 to 999999

Query STOX?

The STOX? command queries the X stop value.

If no parameter, the X stop value for the currently selected measurement program is queried

Host sends: <Address>sr<STX>STOX?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	X stop value	Floating point value -999999 to 999999

If 1 parameter, the X stop value is queried for the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>STOX? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	X stop value	Floating point value -999999 to 999999

4.19.23 SOY1- Y1 stop value

Execute SOY1!

The SOY1! command sets the Y1 stop value.

If 1 parameter, the Y1 stop value for the currently selected measurement program is set

Host sends: <Address>sr<STX>SOY1! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y1 stop value	Floating point value -999999 to 999999

If 2 parameters, the Y1 stop value is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>SOY1! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y1 stop value	Floating point value -999999 to 999999

Query SOY1?

The SOY1? command queries the Y1 stop value.

If no parameter, the Y1 stop value for the currently selected measurement program is queried

Host sends: `<Address>sr<STX>SOY1?<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P1<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y1 stop value	Floating point value -999999 to 999999

If 1 parameter, the Y1 stop value is queried for the measurement program corresponding to the transferred number.

Host sends: `<Address>sr<STX>SOY1? P1<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P2<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y1 stop value	Floating point value -999999 to 999999

4.19.24 SOY2 - Y2 stop value

Execute SOY2!

The SOY2! command sets the Y2 stop value.

If 1 parameter, the Y2 stop value for the currently selected measurement program is set

Host sends: <Address>sr<STX>SOY2! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y2 stop value	Floating point value -999999 to 999999

If 2 parameters, the Y2 stop value is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>SOY2! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y2 stop value	Floating point value -999999 to 999999

Query SOY2?

The SOY2? command queries the Y2 stop value.

If no parameter, the Y2 stop value for the currently selected measurement program is queried

Host sends: <Address>sr<STX>SOY2?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Y2 stop value	Floating point value -999999 to 999999

If 1 parameter, the Y2 stop value is queried for the measurement program corresponding to the transferred number.

Host sends: \<Address>sr\<STX>SOY2? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Y2 stop value	Floating point value -999999 to 999999

4.19.25 STOT - Stop timeout value

Execute STOT!

The STOT! command sets the stop timeout value.

If 1 parameter, the stop timeout value for the currently selected measurement program is set

Host sends: \<Address>sr\<STX>STOT! P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Stop timeout value	Floating point value 0.0001 to 99999

If 2 parameters, the stop timeout value is set of the measurement program corresponding to the transferred number.

Host sends: \<Address>sr\<STX>STOT! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Stop timeout value	Floating point value 0.0001 to 99999

Query STOT?

The STOT? command queries the stop timeout value.

If no parameter, the stop timeout value for the currently selected measurement program is queried

Host sends: \<Address>sr\<STX>STOT?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Stop timeout value	Floating point value 0.0001 to 99999

If 1 parameter, the stop timeout value is set of the measurement program corresponding to the transferred number.

Host sends: \<Address>sr\<STX>STOT? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Stop timeout value	Floating point value 0.0001 to 99999

4.19.26 STOA - Number of readings stop mode

Execute STOA!

The STOA! command sets the number of readings stop mode.

If 1 parameter, the number of readings stop mode for the currently selected measurement program is set

Host sends: <Address>sr<STX>STOA! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of readings stop mode	Integer value between 0 and 5000 (unsigned 16 bit)

If 2 parameters, the number of readings stop mode is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>STOA! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Number of readings stop mode	Integer value between 0 and 5000 (unsigned 16 bit)

Query STOA?

The STOA? command queies the number of readings stop mode.

If no parameter, the number of readings stop mode for the currently selected measurement program is queried

Host sends: <Address>sr<STX>STOA?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of readings stop mode	Integer value between 0 and 5000

If 1 parameter, the number of readings stop mode is queried for the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>STOA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Number of readings stop mode	Integer value between 0 and 5000 (unsigned 16 bit)

4.19.27 AUFB - Bend-up factor

Execute AUFB!

The AUFB! command sets the bend-up factor value.

If 1 parameter, the bend-up factor for the currently selected measurement program is set

Host sends: <Address>sr<STX>AUFB! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Bend-up factor	Floating-point value between - 999999 and 999999

If 2 parameters, the bend-up factor value is set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>AUFB! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Bend-up factor	Floating-point value between -999999 and 999999

Query AUFB?

The AUFB? command queries the bend-up factor value.

If no parameter, the bend-up factor value for the currently selected measurement program is queried

Host sends: <Address>sr<STX>AUFB?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Bend-up factor	Floating-point value between -999999 and 999999

If 1 parameter, the bend-up factor value is queried for the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>AUFB? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Bend-up factor	Floating-point value between -999999 and 999999

4.20　Channel settings

4.20.1　KANA - Set channels (connection, sensor)

Execute KANA!

The KANA! command assigns connections or sensors to the channels.

If 3 parameters, the channels for the currently selected measurement program are set

Host sends:　　　　　　<Address>sr<STX>KANA! P1,P2,P3,<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends:　　　　　　<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel X sensor and connection	0 –> Connector A, strain gauge 1 -> Connector A, potentiometer 2 -> Connector A, standard signal 3 -> Connector B, strain gauge 4 -> Connector B, potentiometer 5 -> Connector B, standard signal 6 –> Connector C, incr. TTL 7 -> Connector C, Incr. sinus 1 Vpp 8 -> Connector C, Incr. sinus 11 uApp 9 -> Connector D, strain gauge 10 -> Connector D, potentiometer 11 -> Connector D, standard signal 12 –> Connector D, incr. TTL. 13 -> Connector E, resistance 14 -> Connector F, piezoelectric 15 -> Time 17 -> Connector C, SSI 18 –> Connector C, EnDat
P2	Channel Y1 sensor and connection	0 –> Connector A, strain gauge 1 -> Connector A, potentiometer 2 -> Connector A, standard signal 3 -> Connector B, strain gauge 4 -> Connector B, potentiometer 5 -> Connector B, standard signal 6 –> Connector C, incr. TTL 7 -> Connector C, Incr. sinus 1 Vpp 8 -> Connector C, Incr. sinus 11 uApp 9 -> Connector D, strain gauge 10 -> Connector D, potentiometer 11 -> Connector D, standard signal 12 –> Connector D, incr. TTL. 13 -> Connector E, resistance 14 -> Connector F, piezoelectric 15 -> Time 17 -> Connector C, SSI 18 –> Connector C, EnDat

P3	Channel Y2 sensor and connection	0 –> Connector A, strain gauge
		1 -> Connector A, potentiometer
		2 -> Connector A, standard signal
		3 -> Connector B, strain gauge
		4 -> Connector B, potentiometer
		5 -> Connector B, standard signal
		6 –> Connector C, incr. TTL
		7 -> Connector C, Incr. sinus 1 Vpp
		8 -> Connector C, Incr. sinus 11 uApp
		9 -> Connector D, strain gauge
		10 -> Connector D, potentiometer
		11 -> Connector D, standard signal
		12 –> Connector D, incr. TTL.
		13 -> Connector E, resistance
		14 -> Connector F, piezoelectric
		15 -> Time
		16 -> Off
		17 -> Connector C, SSI
		18 –> Connector C, EnDat

If 4 parameters, the channels are set of the measurement program corresponding to the transferred number.

Host sends: <Address>sr<STX>KANA! P1,P2,P3,P4<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel X sensor and connection	0 –> Connector A, strain gauge
		1 -> Connector A, potentiometer
		2 -> Connector A, standard signal
		3 -> Connector B, strain gauge
		4 -> Connector B, potentiometer
		5 -> Connector B, standard signal
		6 –> Connector C, incr. TTL
		7 -> Connector C, Incr. sinus 1 Vpp
		8 -> Connector C, Incr. sinus 11 uApp
		9 -> Connector D, strain gauge
		10 -> Connector D, potentiometer
		11 -> Connector D, standard signal
		12 –> Connector D, incr. TTL.
		13 -> Connector E, resistance
		14 -> Connector F, piezoelectric
		15 -> Time
		17 -> Connector C, SSI
		18 –> Connector C, EnDat
P3	Channel Y1 sensor and connection	0 –> Connector A, strain gauge
		1 -> Connector A, potentiometer
		2 -> Connector A, standard signal
		3 -> Connector B, strain gauge
		4 -> Connector B, potentiometer
		5 -> Connector B, standard signal

		6 –> Connector C, incr. TTL 7 -> Connector C, Incr. sinus 1 Vpp 8 -> Connector C, Incr. sinus 11 uApp 9 -> Connector D, strain gauge 10 -> Connector D, potentiometer 11 -> Connector D, standard signal 12 –> Connector D, incr. TTL. 13 -> Connector E, resistance 14 -> Connector F, piezoelectric 15 -> Time 17 -> Connector C, SSI 18 –> Connector C, EnDat
P4	Channel Y2 sensor and connection	0 –> Connector A, strain gauge 1 -> Connector A, potentiometer 2 -> Connector A, standard signal 3 -> Connector B, strain gauge 4 -> Connector B, potentiometer 5 -> Connector B, standard signal 6 –> Connector C, incr. TTL 7 -> Connector C, Incr. sinus 1 Vpp 8 -> Connector C, Incr. sinus 11 uApp 9 -> Connector D, strain gauge 10 -> Connector D, potentiometer 11 -> Connector D, standard signal 12 –> Connector D, incr. TTL. 13 -> Connector E, resistance 14 -> Connector F, piezoelectric 15 -> Time 16 -> Off 17 -> Connector C, SSI 18 –> Connector C, EnDat

Query KANA?

The KANA? command queries the channel settings.

If no parameter, the channel settings for the currently selected measurement program are queried

Host sends: <Address>sr<STX>KANA?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel X sensor and connection	0 –> Connector A, strain gauge 1 -> Connector A, potentiometer 2 -> Connector A, standard signal 3 -> Connector B, strain gauge 4 -> Connector B, potentiometer 5 -> Connector B, standard signal 6 –> Connector C, incr. TTL 7 -> Connector C, Incr. sinus 1 Vpp 8 -> Connector C, Incr. sinus 11 uApp 9 -> Connector D, strain gauge 10 -> Connector D, potentiometer 11 -> Connector D, standard signal 12 –> Connector D, incr. TTL. 13 -> Connector E, resistance 14 -> Connector F, piezoelectric 15 -> Time 17 -> Connector C, SSI 18 –> Connector C, EnDat
P2	Channel Y1 sensor and connection	0 –> Connector A, strain gauge 1 -> Connector A, potentiometer 2 -> Connector A, standard signal 3 -> Connector B, strain gauge 4 -> Connector B, potentiometer 5 -> Connector B, standard signal 6 –> Connector C, incr. TTL 7 -> Connector C, Incr. sinus 1 Vpp 8 -> Connector C, Incr. sinus 11 uApp 9 -> Connector D, strain gauge 10 -> Connector D, potentiometer 11 -> Connector D, standard signal 12 –> Connector D, incr. TTL. 13 -> Connector E, resistance 14 -> Connector F, piezoelectric 15 -> Time 17 -> Connector C, SSI 18 –> Connector C, EnDat
P3	Channel Y2 sensor and connection	0 –> Connector A, strain gauge 1 -> Connector A, potentiometer 2 -> Connector A, standard signal 3 -> Connector B, strain gauge 4 -> Connector B, potentiometer 5 -> Connector B, standard signal 6 –> Connector C, incr. TTL 7 -> Connector C, Incr. sinus 1 Vpp 8 -> Connector C, Incr. sinus 11 uApp 9 -> Connector D, strain gauge 10 -> Connector D, potentiometer 11 -> Connector D, standard signal 12 –> Connector D, incr. TTL. 13 -> Connector E, resistance 14 -> Connector F, piezoelectric 15 -> Time 16 ->Off

		17 -> Connector C, SSI 18 –> Connector C, EnDat

If 1 parameter, the channel settings corresponding to the transferred measurement program number are queried.

Host sends: \<Address>sr\<STX>KANA? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2,P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel X sensor and connection	0 –> Connector A, strain gauge 1 -> Connector A, potentiometer 2 -> Connector A, standard signal 3 -> Connector B, strain gauge 4 -> Connector B, potentiometer 5 -> Connector B, standard signal 6 –> Connector C, incr. TTL 7 -> Connector C, Incr. sinus 1 Vpp 8 -> Connector C, Incr. sinus 11 uApp 9 -> Connector D, strain gauge 10 -> Connector D, potentiometer 11 -> Connector D, standard signal 12 –> Connector D, incr. TTL. 13 -> Connector E, resistance 14 -> Connector F, piezoelectric 15 -> Time 17 -> Connector C, SSI 18 –> Connector C, EnDat
P3	Channel Y1 sensor and connection	0 –> Connector A, strain gauge 1 -> Connector A, potentiometer 2 -> Connector A, standard signal 3 -> Connector B, strain gauge 4 -> Connector B, potentiometer 5 -> Connector B, standard signal 6 –> Connector C, incr. TTL 7 -> Connector C, Incr. sinus 1 Vpp 8 -> Connector C, Incr. sinus 11 uApp

		9 -> Connector D, strain gauge 10 -> Connector D, potentiometer 11 -> Connector D, standard signal 12 –> Connector D, incr. TTL. 13 -> Connector E, resistance 14 -> Connector F, piezoelectric 15 -> Time 17 -> Connector C, SSI 18 –> Connector C, EnDat
P4	Channel Y2 sensor and connection	0 –> Connector A, strain gauge 1 -> Connector A, potentiometer 2 -> Connector A, standard signal 3 -> Connector B, strain gauge 4 -> Connector B, potentiometer 5 -> Connector B, standard signal 6 –> Connector C, incr. TTL 7 -> Connector C, Incr. sinus 1 Vpp 8 -> Connector C, Incr. sinus 11 uApp 9 -> Connector D, strain gauge 10 -> Connector D, potentiometer 11 -> Connector D, standard signal 12 –> Connector D, incr. TTL. 13 -> Connector E, resistance 14 -> Connector F, piezoelectric 15 -> Time 16 -> Off 17 -> Connector C, SSI 18 –> Connector C, EnDat

Caution: Only one sensor can be set for the one connector at any one time.

4.20.2 FILT - Filters

Caution: Not permitted if connection Off or set to time.
Command not allowed when measurement running.

Execute FILT!

The FILT! command sets the filters for each of the channels.

If 2 parameters, the filter for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>FILT! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Filter	0 -> Off 1 -> 5 Hz filter 2 -> 10 Hz filter 3 -> 25 Hz filter 4 -> 50 Hz filter 5 -> 100 Hz filter 6 -> 200 Hz filter 7 -> 400 Hz filter 8 -> 800 Hz filter

If 3 parameters, the filter for the transferred channel and for the measurement program corresponding to the transferred number is set.

Host sends: \<Address>sr\<STX>FILT! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Filter	0 -> Off 1 -> 5 Hz filter 2 -> 10 Hz filter 3 -> 25 Hz filter 4 -> 50 Hz filter 5 -> 100 Hz filter 6 -> 200 Hz filter 7 -> 400 Hz filter 8 -> 800 Hz filter

Query FILT?

The FILT? command queries the channel filters.

If 1 parameter, the filter for the transferred channel and the currently selected measurement program is queried

Host sends: \<Address>sr\<STX>FILT? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Filter	0 -> Off 1 -> 5 Hz filter 2 -> 10 Hz filter 3 -> 25 Hz filter 4 -> 50 Hz filter 5 -> 100 Hz filter 6 -> 200 Hz filter 7 -> 400 Hz filter 8 -> 800 Hz filter

If 2 parameters, the filter for the transferred channel corresponding to the transferred measurement program number is queried.

Host sends: <Address>sr<STX>FILT? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Filter	0 -> Off 1 -> 5 Hz filter 2 -> 10 Hz filter 3 -> 25 Hz filter 4 -> 50 Hz filter 5 -> 100 Hz filter 6 -> 200 Hz filter 7 -> 400 Hz filter 8 -> 800 Hz filter

4.20.3 TRAN - Transmitter supply

Caution: Not permitted if connection Off or set to time or piezo.

Execute TRAN!

The TRAN! command sets the transmitter supplies for each of the channels.

If 2 parameters, the transmitter supply for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>TRAN! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Transmitter supply	0 -> Off 1 -> On

If 3 parameters, the transmitter supply for the transferred channel and for the measurement program corresponding to the transferred number is set.

Host sends: <Address>sr<STX>TRAN! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Transmitter supply	0 -> Off 1 -> On

Query TRAN?

The TRAN? command queries the transmitter supplies for the channels.

If 1 parameter, the transmitter supply for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>TRAN? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Transmitter supply	0 -> Off 1 -> On

If 2 parameters, the transmitter supply for the transferred channel corresponding to the transferred measurement program number is queried.

Host sends: \<Address>sr\<STX>TRAN? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Transmitter supply	0 -> Off 1 -> On

4.20.4 EINH - Select or query unit

Execute EINH!

Caution: Not permitted if connection Off or set to time or resistance.

The **EINH**! command sets the unit for each of the channels.

If 2 parameters, the unit for the transferred channel and the currently selected measurement program is set

Host sends: \<Address>sr\<STX>EINH! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Units	0 -> User defined unit 1 1 -> User defined unit 2 2 -> User defined unit 3 3 -> mm 4 -> N 5 -> kN 6 -> Nm 7 -> Ncm 8 -> degrees 9 -> bar 10 -> V 11 -> s 12 -> ms

If 3 parameters, the unit for the transferred channel corresponding to the transferred measurement program number is set.

Host sends: <Address>sr<STX>EINH! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Units	0 -> User defined unit 1 1 -> User defined unit 2 2 -> User defined unit 3 3 -> mm 4 -> N 5 -> kN 6 -> Nm 7 -> Ncm 8 -> degrees 9 -> bar 10 -> V 11 -> s 12 -> ms

Query **EINH**?

The EINH? command queries the unit for each of the channels.

If 1 parameter, the unit for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>EINH? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Units	0 -> User defined unit 1 1 -> User defined unit 2 2 -> User defined unit 3 3 -> mm 4 -> N 5 -> kN 6 -> Nm 7 -> Ncm 8 -> degrees 9 -> bar 10 -> V 11 -> s 12 -> ms

If 2 parameters, the unit for the transferred channel corresponding to the transferred measurement program number is queried.

Host sends: <Address>sr<STX>EINH? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Units	0 -> User defined unit 1 1 -> User defined unit 2 2 -> User defined unit 3 3 -> mm 4 -> N 5 -> kN 6 -> Nm 7 -> Ncm 8 -> degrees 9 -> bar 10 -> V 11 -> s 12 -> ms

4.20.5 BEIN - Set or query user defined units

Execute BEIN!

The BEIN! command sets the user defined units.

If 2 parameters, the user defined units for the currently selected measurement program are set

Host sends: <Address>sr<STX>BEIN! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the user defined units	0, 1, 2
P2	User defined units	Max 4 character string

If 3 parameters, the user defined units corresponding to the transferred measurement program number are set.

Host sends: <Address>sr<STX>BEIN! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Number of the user defined units	0, 1, 2
P3	User defined units	Max 4 character string

Query BEIN?

The BEIN? command queries the user defined units.

If 1 parameter, the user defined units for the currently selected measurement program are queried.

Host sends: `<Address>sr<STX>BEIN? P1<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P2<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the user defined units	0, 1, 2
P2	User defined units	Max 4 character string

If 2 parameters, the user defined units corresponding to the transferred measurement program number are queried.

Host sends: `<Address>sr<STX>BEIN? P1,P2<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P3<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Number of the user defined units	0, 1, 2
P3	User defined units	Max 4 character string

4.20.6 SKAL - Scaling; receive and implement values

Execute **SKAL**!

Caution: Not permitted if connection set to time.

Lower scale and upper scale as well as lower calibration value and upper calibration value may not be equal to each other.

The SKAL! command receives the scaling values and executes scaling.

If 2 parameters, the values for the currently selected measurement program are received.

Host sends: <Address>sr<STX>SKAL! P1,P2,P3,P4,P5<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Lower scale	Floating-point value between -999999 and 999999
P3	Upper scale	Floating-point value between -999999 and 999999
P4	Lower calibration value	Floating-point value between -999999 and 999999
P5	Upper calibration value	Floating-point value between -999999 and 999999

If 3 parameters, the values corresponding to the transferred measurement program number are received.

Host sends: <Address>sr<STX>SKAL! P1,P2,P3,P4,P5,P6<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Lower scale	Floating-point value between -999999 and 999999
P4	Upper scale	Floating-point value between -999999 and 999999
P5	Lower calibration value	Floating-point value between -999999 and 999999
P6	Upper calibration value	Floating-point value between -999999 and 999999

Query SKAL?

The SKAL? command queries the scaling values.

If 1 parameter, the values for the currently selected measurement program are queried.

Host sends: <Address>sr<STX>SKAL? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Lower scale	Floating-point value between -999999 and 999999
P3	Upper scale	Floating-point value between -999999 and 999999
P4	Lower calibration value	Floating-point value between -999999 and 999999
P5	Upper calibration value	Floating-point value between -999999 and 999999

If 2 parameters, the values corresponding to the transferred measurement program number are queried

Host sends: <Address>sr<STX>SKAL? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5,P6<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Lower scale	Floating-point value between -999999 and 999999
P4	Upper scale	Floating-point value between -999999 and 999999
P5	Lower calibration value	Floating-point value between -999999 and 999999
P6	Upper calibration value	Floating-point value between -999999 and 999999

4.20.7 MKAL - Teach in cal values

Caution: Not permitted if connection set to time. Command not allowed when measurement running.

Execute – There is no ! form of this command

Query **MKAL**?

The MKAL? command teaches in a cal value

Host sends: <Address>sr<STX>MKAL? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Measured calibration value	Floating-point value between -999999 and 999999

4.20.8 TABM - Tare at start of measurement

Caution: Not permitted if connection set to time or piezo.

Execute TABM!

The TABM! command sets the tare at the start of measurements for each of the channels.

If 2 parameters, the tare at the start of measurements for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>TABM! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Tare at meas. start	0 -> Off 1 -> On

If 3 parameters, the tare at the start of measurements for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>TABM! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Tare at meas. start	0 -> Off 1 -> On

Query TABM?

The TABM? command queries the tare at the start of measurements for each of the channels.

If 1 parameter, the tare at the start of measurements for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>TABM? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Tare at meas. start	0 -> Off 1 -> On

If 2 parameters, the tare at the start of measurements for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>TABM? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Tare at meas. start	0 -> Off 1 -> On

4.20.9 TAVO - Set or query tare default

Caution: Not permitted if connection set to time or piezo.

Execute TAVO!

The TAVO! command sets the tare default for each of the channels.

If 2 parameters, the tare default for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>TAVO! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Tare default	Floating-point value between -999999 and 999999

If 3 parameters, the tare default for the transferred channel and the transferred measurement program is set.

Host sends: \<Address>sr\<STX>TAVO! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Tare default	Floating-point value between -999999 and 999999

Query TAVO?

The TAVO? command queries the tare default for each of the channels.

If 1 parameter, the tare default at the start of measurements for the transferred channel and the currently selected measurement program is queried.

Host sends: \<Address>sr\<STX>TAVO? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Tare default	Floating-point value between -999999 and 999999

If 2 parameters, the tare default for the transferred channel and the transferred measurement program is queried.

Host sends: \<Address>sr\<STX>TAVO? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Tare default	Floating-point value between -999999 and 999999

4.20.10 TAWA - Tare warning

Caution: Permitted only if a strain gauge, pot, or standard signal sensor is set.

Execute TAWA!

The TAWA! command sets the tare warning for each channel (X, Y1, Y2).

If 2 parameters, the tare warning for the transferred channel and the currently selected measurement program is set

Host sends: \<Address>sr\<STX>TAWA! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Tare warning	0 -> Off 1 -> On

If 3 parameters, the tare warning for the transferred channel and the transferred measurement program is set.

Host sends: \<Address>sr\<STX>TAWA! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Tare warning	0 -> Off 1 -> On

Query TAWA?

The TAWA? command queries the tare warning for each of the channels.

If 1 parameter, the tare warning for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>TAWA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Tare warning	0 -> Off 1 -> On

If 2 parameters, the tare warning for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>TAWA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Tare warning	0 -> Off 1 -> On

4.20.11 TAWG - Tare warning limit

Caution: Permitted only if a strain gauge, potentiometer or standard signal sensor is set.

Execute TAWG!

The TAWG! command sets the tare warning limit for each channel (X, Y1, Y2).

If 2 parameters, the tare warning for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>TAWG! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Tare warning limit	Floating-point value between 1.0 and 20.0

If 3 parameters, the tare warning limit for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>TAWG! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Tare warning limit	Floating-point value between 1.0 and 20.0

Query TAWG?

The TAWG? command queries the tare warning limit for each of the channels.

If 1 parameter, the tare warning limit for the transferred channel and the currently selected measurement program is queried.

Host sends:	<Address>sr<STX>TAWG? P1<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>P2<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Tare warning limit	Floating-point value between 1.0 and 20.0

If 2 parameters, the tare warning limit for the transferred channel and the transferred measurement program is queried.

Host sends:	<Address>sr<STX>TAWG? P1,P2<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>P3<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Tare warning limit	Floating-point value between 1.0 and 20.0

4.20.12 TARA - Perform tare

Caution: Not permitted if connection set to time or piezo.

Execute TARA!

The TARA! command performs or undoes a tare for each of the channels.

Host sends: <Address>sr<STX>TARA! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Performing a tare	1 -> Perform tare 0 -> Reset the tared-off value to 0

Query TARA?

The TARA? command queries tared-off value for each of the channels.

Host sends: <Address>sr<STX>TARA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Tared value	Floating-point value between -999999 and 999999

4.20.13 TAWE - Tare value

Caution: Not permitted if connection set to time or piezo.

Execute TAWE!

The TAWE! command sets the tare for each channel to a particular value.

If 2 parameters, the tare value for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>TAWE! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Standard tare value	Floating-point value between -999999 and 999999

If 3 parameters, the tare value for the transferred channel and the transferred measurement program is set.

Host sends: \<Address>sr\<STX>TAWE! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Standard tare value	Floating-point value between -999999 and 999999

Query TAWE?

The TAWE? command queries the tared-off value for each of the channels.

If 1 parameter, the tared-off value for the transferred channel and the currently selected measurement program is queried.

Host sends: \<Address>sr\<STX>TAWE? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Tared value	Floating-point value between -999999 and 999999

If 2 parameters, the tared-off value for the transferred channel and the transferred measurement program is queried.

Host sends: \<Address\>sr\<STX\>TAWE? P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P3\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Tared value	Floating-point value between -999999 and 999999

4.20.14 POSP–Potentiometer excilation voltage

Caution: Not permitted if connection set to time or piezo.

Execute POSP!

The POSP! command sets the excilation voltage for each channel.

If 2 parameters, the excilation voltage for the transferred channel and the currently selected measurement program is set

Host sends: \<Address\>sr\<STX\>POSP! P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Excilation voltage	0 -> 5V 1 -> 10V

If 3 parameters, the excilation voltage for the transferred channel and the transferred measurement program is set.

Host sends: \<Address\>sr\<STX\>POSP! P1,P2,P3\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Excilation voltage	0 -> 5V 1 -> 10V

Query POSP?

The POSP? command queries the excilation voltage for each of the channels.

If 1 parameter, the excilation voltage for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>POSP? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Excilation voltage	0 -> 5V 1 -> 10V

If 2 parameters, the excilation voltage for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>POSP? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Excilation voltage	0 -> 5V 1 -> 10V

4.21 Standard signal input

4.21.1 NOEI - Standard signal input range

Caution: Permitted only if standard signal set.

Execute NOEI!

The NOEI! command sets the standard signal input range for each channel (X, Y1, Y2).

If 2 parameters, the standard signal input range for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>NOEI! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Standard signal input range	0 -> 5 V range 1 -> 10 V range

If 3 parameters, the standard signal input range for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>NOEI! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Standard signal input range	0 -> 5 V range 1 -> 10 V range

Query NOEI?

The NOEI? command queries the standard signal input range for each of the channels.

If 1 parameter, the standard signal input range for the transferred channel and the currently selected measurement program is queried.

Host sends: \<Address>sr\<STX>NOEI? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Standard signal input range	0 -> 5 V range 1 -> 10 V range

If 2 parameters, the standard signal input range for the transferred channel and the transferred measurement program is queried.

Host sends: \<Address>sr\<STX>NOEI? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Standard signal input range	0 -> 5 V range 1 -> 10 V range

4.22   Strain gauge sensor

4.22.1   DMSP - Excilation voltage

Execute DMSP!

The DMSP! command sets the excilation voltage for each channel.

If 2 parameters, the excilation voltage for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>DMSP! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Excilation voltage	0 -> 2.5V 1 -> 5V 2 -> 10V

If 3 parameters, the excilation voltage for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>DMSP! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Excilation voltage	0 -> 2.5V 1 -> 5V 2 -> 10V

Query DMSP?

The DMSP? command queries the excilation voltage for each of the channels.

If 1 parameter, the excilation voltage for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>DMSP? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P2<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Excilation voltage	0 -> 2.5V 1 -> 5V 2 -> 10V

If 2 parameters, the excilation voltage for the transferred channel and the transferred measurement program is queried.

Host sends: `<Address>sr<STX>DMSP? P1,P2<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P3<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Excilation voltage	0 -> 2.5V 1 -> 5V 2 -> 10V

4.22.2 DMEI - Strain gauge input range

Caution: Permitted only if strain gauge set.

Execute DMEI!

The DMEI! command sets the strain gauge input range for each channel (X, Y1, Y2).

If 2 parameters, the strain gauge input range for the transferred channel and the currently selected measurement program is set

Host sends: `<Address>sr<STX>DMEI! P1,P2<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Strain gauge input range	0 -> 1 mV/V input range 1 -> 2 mV/V input range 2 -> 4 mV/V input range 3 -> 10 mV/V input range 4 -> 20 mV/V input range 5 -> 40 mV/V input range (not allowed at 10V excilation voltage)

If 3 parameters, the strain gauge input range for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>DMEI! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Strain gauge input range	0 -> 1 mV/V input range 1 -> 2 mV/V input range 2 -> 4 mV/V input range 3 -> 10 mV/V input range 4 -> 20 mV/V input range 5 -> 40 mV/V input range (not allowed at 10V excilation voltage)

Query DMEI?

The DMEI? command queries the strain gauge input range for each of the channels.

If 1 parameter, the strain gauge input range for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>DMEI? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Strain gauge input range	0 -> 1 mV/V input range 1 -> 2 mV/V input range 2 -> 4 mV/V input range 3 -> 10 mV/V input range 4 -> 20 mV/V input range 5 -> 40 mV/V input range (not allowed at 10V excilation voltage)

If 2 parameters, the strain gauge input range for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>DMEI? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Strain gauge input range	0 -> 1 mV/V input range 1 -> 2 mV/V input range 2 -> 4 mV/V input range 3 -> 10 mV/V input range 4 -> 20 mV/V input range 5 -> 40 mV/V input range (not allowed at 10V excilation voltage)

4.22.3 DMNK - Strain gauge sensitivity

Caution: Permitted only if strain gauge sensor set.

Execute DMNK!

The DMNK! command sets the strain gauge sensitivity for each channel (X, Y1, Y2).

If 2 parameters, the strain gauge sensitivity for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>DMNK! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Strain gauge sensitivity	Floating-point value between 0.01 and 100.0

If 3 parameters, the strain gauge sensitivity for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>DMNK! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Tare warning limit	Floating-point value between 0.01 and 100.0

Query DMNK?

The DMNK? command queries the strain gauge sensitivity for each of the channels.

If 1 parameter, the strain gauge sensitivity for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>DMNK? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Strain gauge sensitivity	Floating-point value between 0.01 and 100.0

If 2 parameters, the strain gauge sensitivity for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>DMNK? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Strain gauge sensitivity	Floating-point value between 0.01 and 100.0

4.22.4 DMAS - Strain gauge output level

Caution: Permitted only if strain gauge sensor set.

Execute – This command does not have a ! form.

Query DMAS?

The DMAS? command queries the strain gauge output level for each of the channels.

If 1 parameter, the strain gauge output level for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>DMAS? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Strain gauge output level	Floating-point value between 0.01 and 100.0

If 2 parameters, the strain gauge output level for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>DMAS? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Strain gauge output level	Floating-point value between 0 and 999999

4.22.5 DMSH - Strain gauge shunt

Caution: Permitted only if strain gauge set.

Execute DMSH!

The DMSH! command sets the shunt resistor value for each channel (X, Y1, Y2).

If 2 parameters, the shunt resistor value for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>DMSH! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Shunt value	0 -> Off 1 -> 10 kOhm 2 -> 59 kOhm 3 -> 80 kOhm 4 -> 100 kOhm 5 -> 300 kOhm

If 3 parameters, the shunt resistor value for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>DMSH! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Shunt value	0 -> Off 1 -> 10 kOhm 2 -> 59 kOhm 3 -> 80 kOhm 4 -> 100 kOhm 5 -> 300 kOhm

Query DMSH?

The DMSH? command queries the shunt resistor value for each of the channels.

If 1 parameter, the shunt resistor value for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>DMSH? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Shunt value	0 -> Off 1 -> 10 kOhm 2 -> 59 kOhm 3 -> 80 kOhm 4 -> 100 kOhm 5 -> 300 kOhm

If 2 parameters, the shunt resistor value for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>DMSH? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Shunt value	0 -> Off 1 -> 10 kOhm 2 -> 59 kOhm 3 -> 80 kOhm 4 -> 100 kOhm 5 -> 300 kOhm

4.23 Resistance

4.23.1 WIEI - Resistance input range

Caution: Permitted only if strain gauge set.

Execute WIEI!

The WIEI! command sets the resistance range for each channel (X, Y1, Y2).

If 2 parameters, the resistor range for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>WIEI! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Resistor range	0 -> 1 mOhm range 1 -> 1 kOhm range 2 -> 100 kOhm range

If 3 parameters, the resistance range for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>WIEI! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Resistor range	0 -> 1 mOhm range 1 -> 1 kOhm range 2 -> 100 kOhm range

Query WIEI?

The WIEI? command queries the resistance range for each of the channels.

If 1 parameter, the resistor range for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>WIEI? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Resistor range	0 -> 1 mOhm range 1 -> 1 kOhm range 2 -> 100 kOhm range

If 2 parameters, the resistance range for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>WIEI? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Resistor range	0 -> 1 mOhm range 1 -> 1 kOhm range 2 -> 100 kOhm range

4.24 Piezo sensor

4.24.1 PIEI - Input range of piezoelectric sensor

Caution: Permitted only if piezo set.

Execute PIEI!

The PIEI! command sets the piezo input range for each channel (X, Y1, Y2).

If 2 parameters, the piezo input range for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>PIEI! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Piezo input range	0 -> 1 nC range 1 -> 2 nC range 2 -> 5 nC range 3 -> 10 nC range 4 -> 20 nC range 5 -> 40 nC range 6 -> 80 nC range 7 -> 200 nC range 8 -> 400 nC range 9 -> 1 uC range

If 3 parameters, the piezo input range for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>PIEI! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Piezo input range	0 -> 1 nC range 1 -> 2 nC range 2 -> 5 nC range 3 -> 10 nC range 4 -> 20 nC range 5 -> 40 nC range

		6 -> 80 nC range 7 -> 200 nC range 8 -> 400 nC range 9 -> 1 uC range

Query PIEI?

The PIEI? command queries the piezo input range for each of the channels.

If 1 parameter, the piezo input range for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>PIEI? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Piezo input range	0 -> 1 nC range 1 -> 2 nC range 2 -> 5 nC range 3 -> 10 nC range 4 -> 20 nC range 5 -> 40 nC range 6 -> 80 nC range 7 -> 200 nC range 8 -> 400 nC range 9 -> 1 uC range

If 2 parameters, the piezo input range for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>PIEI? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Piezo input range	0 -> 1 nC range 1 -> 2 nC range 2 -> 5 nC range 3 -> 10 nC range 4 -> 20 nC range 5 -> 40 nC range 6 -> 80 nC range 7 -> 200 nC range 8 -> 400 nC range 9 -> 1 uC range

4.24.2 PIKZ - Open/close piezo input short circuit

Caution: Permitted only if piezo set.

Execute PIKZ!

The PIKZ command short circuits or opens the piezo input

Host sends: <Address>sr<STX>PIKZ! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Piezo input range	0 -> Do not short circuit piezo input 1 -> Short circuit piezo input

Query PIKZ?

There is no ? form of this command.

4.25 Incremental sensor

4.25.1 INTP - Incremental grating period

Caution: Permitted only if incremental sensor set.

Execute INTP!

The INTP! command sets the incremental grating period for each channel (X, Y1, Y2).

If 2 parameters, the incremental grating period for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>INTP! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Incremental grating period	Floating-point value between 0 and 999999.0

If 3 parameters, the incremental grating period for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>INTP! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Incremental grating period	Floating-point value between 0 and 999999.0

Note: **The signal interval is calculated from the grating period and the interpolation: Grating pitch / interpolation. The resolution is calculated from the signal interval: Signal interval / 4**

Query INTP?

The INTP? command queries the incremental grating period for each of the channels.

If 1 parameter, the incremental grating period for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>INTP? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Incremental grating period	Floating-point value between 0 and 999999.0

If 2 parameters, the incremental grating period for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>INTP? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Incremental grating period	Floating-point value between 0 and 999999.0

4.25.2 INGA - Nominal increment

Caution: Permitted only if incremental sensor set.

This value is relevant only to distance-coded reference marks.

Execute INGA!

The INGA! command sets the nominal increment for incremental sensors with distance-coded reference marks for each of the channels (X, Y1, Y2).

If 2 parameters, the nominal increment for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>INGA! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Nominal increment	Floating-point value between 0 and 999999.0

If 3 parameters, the nominal increment for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>INGA! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Nominal increment	Floating-point value between 0 and 999999.0

Query INGA?

The INGA? command queries the nominal increment for each of the channels.

If 1 parameter, the nominal increment for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>INGA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Nominal increment	Floating-point value between 0 and 999999.0

If 2 parameters, the nominal increment for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>INGA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Nominal increment	Floating-point value between 0 and 999999.0

4.25.3 INIP - Interpolation

Caution: Permitted only if incremental sensor set.

Execute INIP!

The INIP! command sets the interpolation for incremental sensors with distance-coded reference marks for each of the channels (X, Y1, Y2).

If 2 parameters, the interpolation for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>INIP! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Interpolation	Integer value between 1 and 65000 (unsigned 16 bit)

If 3 parameters, the interpolation for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>INIP! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Interpolation	Integer value between 1 and 65000 (unsigned 16 bit)

Note: **The signal interval is calculated from the grating period and the interpolation: Grating pitch / interpolation. The resolution is calculated from the signal interval: Signal interval / 4.**

Query INIP?

The INIP? command queries the interpolation for each of the channels.

If 1 parameter, the interpolation for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>INIP? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Interpolation	Integer value between 1 and 65000 (unsigned 16 bit)

If 2 parameters, the interpolation for the transferred channel and the transferred measurement program is queried.

Host sends: \<Address>sr\<STX>INIP? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Interpolation	Integer value between 1 and 65000 (unsigned 16 bit)

4.25.4 INRF - Incremental reference mark on/off

Caution: Permitted only if incremental sensor set.
If the reference mark is set to distance-coded, the reference traverse is activated automatically and the function 'Set value at start' deactivated.
If the reference mark is deactivated, the reference traverse is deactivated automatically.

Execute INRF!

The INRF! command sets the incremental reference mark for each channel (X, Y1, Y2).

If 2 parameters, the incremental reference mark for the transferred channel and the currently selected measurement program is set

Host sends: \<Address>sr\<STX>INRF! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Incremental reference mark	0 -> Reference mark Off 1 -> Reference mark On 2 -> Reference mark distance-coded

If 3 parameters, the incremental reference mark for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>INRF! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Incremental reference mark	0 -> Reference mark Off 1 -> Reference mark On 2 -> Reference mark distance-coded

Query INRF?

The INRF? command queries the incremental reference mark for each of the channels.

If 1 parameter, the incremental reference mark for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>INRF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Incremental reference mark	0 -> Reference mark Off 1 -> Reference mark On

If 2 parameters, the incremental reference mark for the transferred channel and the transferred measurement program is queried.

Host sends: \<Address>sr\<STX>INRF? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Incremental reference mark	0 -> Reference mark Off 1 -> Reference mark On

4.25.5 INRW - Standard reference mark value

Caution: Permitted only if incremental sensor set.

Execute INRW!

The INRW! command sets the standard reference mark value for each channel (X, Y1, Y2).

If 2 parameters, the standard reference mark value for the transferred channel and the currently selected measurement program is set

Host sends: \<Address>sr\<STX>INRW! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Standard reference mark value	Floating-point value between -999999.0 and 999999.0

If 3 parameters, the standard reference mark value for the transferred channel and the transferred measurement program is set.

Host sends: \<Address>sr\<STX>INRW! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Standard reference mark value	Floating-point value between -999999.0 and 999999.0

Query INRW?

The INRW? command queries the standard reference mark value for each of the channels.

If 1 parameter, the standard reference mark value for the transferred channel and the currently selected measurement program is queried.

Host sends: \<Address>sr\<STX>INRW? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Standard reference mark value	Floating-point value between -999999.0 and 999999.0

If 2 parameters, the standard reference mark value for the transferred channel and the transferred measurement program is queried.

Host sends: \<Address>sr\<STX>INRW? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Standard reference mark value	Floating-point value between -999999.0 and 999999.0

4.25.6 IRFF - Reference traverse on/off

Caution: Permitted only if incremental sensor set. Not permitted if reference mark Off or distance-coded.

Execute IRFF!

The IRFF! command sets the reference traverse for each channel (X, Y1, Y2).

If 2 parameters, the reference traverse for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>IRFF! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Reference traverse	0 -> Off 1 -> On

If 3 parameters, the reference traverse for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>IRFF! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Reference traverse	0 -> Off 1 -> On

Query IRFF?

The IRFF? command queries the reference traverse for each of the channels.

If 1 parameter, the reference traverse for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>IRFF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Reference traverse	0 -> Off 1 -> On

If 2 parameters, the reference traverse for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>IRFF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Reference traverse	0 -> Off 1 -> On

4.25.7 INST - Set value at start on/off

Caution: Permitted only if incremental sensor set.
Permitted only if reference traverse deactivated

Execute INST!

The INST! command sets "Set value at start" for each channel (X, Y1, Y2).

If 2 parameters, "Set value at start" for the transferred channel and the currently selected measurement program is set

Host sends: `<Address>sr<STX>INST! P1,P2<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Set value at start	0 -> Off 1 -> On

If 3 parameters, "Set value at start" for the transferred channel and the transferred measurement program is set.

Host sends: `<Address>sr<STX>INST! P1,P2,P3<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Set value at start	0 -> Off 1 -> On

Query INST?

The INRF? command queries "Set value at start" for each of the channels.

If 1 parameter, "Set value at start" for the transferred channel and the currently selected measurement program is queried.

Host sends: `<Address>sr<STX>INST? P1<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Set value at start	0 -> Off 1 -> On

If 2 parameters, "Set value at start" for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>INST? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Set value at start	0 -> Off 1 -> On

4.25.8 INSW - Standard start value

Caution: Permitted only if incremental sensor set.

Execute INSW!

The INSW! command sets the standard start value for each channel (X, Y1, Y2).

If 2 parameters, the standard start value for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>INSW! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Standard start value	Floating-point value between -999999.0 and 999999.0

If 3 parameters, the standard start value for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>INSW! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Standard start value	Floating-point value between -999999.0 and 999999.0

Query INSW?

The INSW? command queries the reference mark start value for each of the channels.

If 1 parameter, the standard start value for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>INSW? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Standard start value	Floating-point value between -999999.0 and 999999.0

If 2 parameters, the standard start value for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>INSW? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Standard start value	Floating-point value between -999999.0 and 999999.0

4.25.9 INAB - Incremental terminating resistance on/off

Caution: Permitted only if incremental sensor set. (not for incr. Sinus 11 uAss)

Execute INAB!

The INAB! command sets the incremental terminating resistance for each channel (X, Y1, Y2).

If 2 parameters, the incremental terminating resistance for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>INAB! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Incremental terminating resistance	0 -> Off 1 -> On

If 3 parameters, the incremental terminating resistance for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>INAB! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Incremental terminating resistance	0 -> Off 1 -> On

Query INAB?

The INAB? command queries the incremental terminating resistance for each of the channels.

If 1 parameter, the incremental terminating resistance for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>INAB? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Incremental terminating resistance	0 -> Off 1 -> On

If 2 parameters, the incremental terminating resistance for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>INAB? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Incremental terminating resistance	0 -> Off 1 -> On

4.25.10 INZR - Incremental sensor count direction

Caution: Permitted only if incremental sensor set.

Execute INZR!

The INZR! command sets the incremental sensor count direction for each channel (X, Y1, Y2).

If 2 parameters, the incremental sensor count direction for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>INZR! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	count direction	0 -> positive 1 -> negative

If 3 parameters, the incremental sensor count direction for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>INZR! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	count direction	0 -> positive 1 -> negative

Query INZR?

The INZR? command queries the incremental sensor count direction for each channel (X, Y1, Y2).

If 1 parameter, the incremental sensor count direction for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>INZR? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	count direction	0 -> positive 1 -> negative

If 2 parameters, the incremental sensor count direction for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>INZR? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	count direction	0 -> positive 1 -> negative

4.25.11 SINC - Initialize incremental counter with a standard value

Caution: Permitted only if incremental sensor set

Execute SINC!

The SINC! command initializes the incremental counter with the set standard value

Host sends: <Address>sr<STX>SINC! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2

Query SINC?

The SINC? command queries the set standard value.

Host sends: <Address>sr<STX>SINC? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Standard value	Floating-point value between -999999 and 999999

4.26   SSI Sensor

4.26.1   SSEN - SSI Sensor type

Plese also refer to SBMA command!

Execute SSEN!

The SSEN! command sets the sensor type for each channel (X, Y1, Y2).

If 2 parameters, the sensor type for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>SSEN! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Sensor type	0 -> Displacement sensor 1 -> Singleturn encoder 2 -> Multiturn encoder

If 3 parameters, the sensor type for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>SSEN! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Sensor type	0 -> Displacement sensor 1 -> Singleturn encoder 2 -> Multiturn encoder

Query SSEN?

The SSEN? command queries the sensor type for each of the channels.

If 1 parameter, the reference traverse for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>SSEN? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Sensor type	0 -> Displacement sensor 1 -> Singleturn encoder 2 -> Multiturn encoder

If 2 parameters, the sensor type for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>SSEN? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Sensor type	0 -> Displacement sensor 1 -> Singleturn encoder 2 -> Multiturn encoder

4.26.2 SKOD SSI coding

Plese also refer to SBMA command!

Execute SKOD!

The SKOD! command sets the SSI coding for each channel (X, Y1, Y2).

If 2 parameters, the SSI coding for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>SKOD! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn^

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	SSI coding	0 -> Binary 1 -> Gray code

If 3 parameters, the SSI coding for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>SKOD! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	SSI coding	0 -> Binary 1 -> Gray code

Query SKOD?

The SKOD? command queries SSI coding for each of the channels.

If 1 parameter, the SSI coding for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>SKOD? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	SSI coding	0 -> Binary 1 -> Gray code

If 2 parameters, the SSI coding for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>SKOD? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	SSI coding	0 -> Binary 1 -> Gray code

4.26.3 SFOR SSI format

Plese also refer to SBMA command!

Execute SFOR!

The SFOR! command sets the SSI format for each channel (X, Y1, Y2).

If 2 parameters, the SSI format for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>SFOR! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn^

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	SSI format	0 -> Right aligned 1 -> Tree

If 3 parameters, the SSI format for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>SFOR! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	SSI format	0 -> Right aligned 1 -> Tree

Query SFOR?

The SFOR? command queries SSI format for each of the channels.

If 1 parameter, the SSI format for the transferred channel and the currently selected measurement program is queried.

Host sends: \<Address>sr\<STX>SFOR? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	SSI format	0 -> Right aligned 1 -> Tree

If 2 parameters, the SSI format for the transferred channel and the transferred measurement program is queried.

Host sends: \<Address>sr\<STX>SFOR? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	SSI format	0 -> Right aligned 1 -> Tree

4.26.4 SPAR - SSI parity

Plese also refer to SBMA command!

Execute SPAR!

The SPAR! command sets the SSI format for each channel (X, Y1, Y2).

If 2 parameters, the SSI parity for the transferred channel and the currently selected measurement program is set

Host sends: \<Address>sr\<STX>SPAR! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn^

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	SSI parity	0 -> Off 1 -> Even

If 3 parameters, the SSI parity for the transferred channel and the transferred measurement program is set.

Host sends: \<Address>sr\<STX>SPAR! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	SSI parity	0 -> Off 1 -> Even

Query SPAR?

The SPAR? command queries SSI parity for each of the channels.

If 1 parameter, the SSI format for the transferred channel and the currently selected measurement program is queried.

Host sends: `<Address>sr<STX>SPAR? P1<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P2<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	SSI parity	0 -> Off 1 -> Even

If 2 parameters, the SSI parity for the transferred channel and the transferred measurement program is queried.

Host sends: `<Address>sr<STX>SPAR? P1,P2<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P3<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	SSI parity	0 -> Off 1 -> Even

4.26.5 STAK - SSI clock frequency

Please also refer to SBMA command!

Execute STAK!

The STAK! command sets the SSI clock frequency for each channel (X, Y1, Y2).

If 2 parameters, the SSI clock frequency for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>STAK! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn^

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	SSI clock frequency	0 -> 100 kHz 1 -> 200 kHz 2 -> 1 MHz

If 3 parameters, the SSI clock frequency for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>STAK! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	SSI clock frequency	0 -> 100 kHz 1 -> 200 kHz 2 -> 1 MHz

Query STAK?

The STAK? command queries SSI clock frequency for each of the channels.

If 1 parameter, the SSI format for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>STAK? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	SSI clock frequency	0 -> 100 kHz 1 -> 200 kHz 2 -> 1 MHz

If 2 parameters, the SSI format for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>STAK? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	SSI clock frequency	0 -> 100 kHz 1 -> 200 kHz 2 -> 1 MHz

4.26.6 SAUF - SSI resolution

Plese also refer to SBMA command!

Applicable to displacement sensors only!

Execute SAUF!

The SAUF! command sets the SSI resolution for each channel (X, Y1, Y2).

If 2 parameters, the SSI resolution for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>SAUF! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	SSI resolution	Floating-point value between -999999 and 999999

If 3 parameters, the SSI resolution for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>SAUF! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	SSI resolution	Floating-point value between -999999 and 999999

Query SAUF?

The SAUF? command queries SSI resolution for each of the channels.

If 1 parameter, the SSI format for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>SAUF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	SSI resolution	Floating-point value between -999999 and 999999

If 2 parameters, the SSI resolution for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>SAUF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	SSI resolution	Floating-point value between -999999 and 999999

4.26.7 SABG - Total number of bits

Plese also refer to SBMA command!

Execute SABG!

The SABG! command sets the SSI total number of bits for each channel (X, Y1, Y2).

If 2 parameters, the SSI total number of bits for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>SABG! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	SSI total number of bits	Integer value between 0 and 48

If 3 parameters, the SSI total number of bits for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>SABG! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	SSI total number of bits	Integer value between 0 and 48

Query SABG?

The SABG? command queries SSI total number of bits for each of the channels.

If 1 parameter, the SSI total number of bits for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>SABG? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	SSI total number of bits	Integer value between 0 and 48

If 2 parameters, the SSI total number of bits for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>SABG? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	SSI total number of bits	Integer value between 0 and 48

4.26.8 SABI - Number of bits for angle singleturn or displacement sensors

Plese also refer to SBMA command!

Execute SABI!

The SABI! command sets the number of bits for angle singleturn or displacement sensors for for each channel (X, Y1, Y2).

If 2 parameters, the number of bits for angle singleturn or displacement sensors for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>SABI! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Number of bits	Integer value between 0 and 32

If 3 parameters, the number of bits for angle singleturn or displacement sensors for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>SABI! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Number of bits	Integer value between 0 and 32

Query SABI?

The SABI? command queries the number of bits for angle singleturn or displacement sensors for each of the channels.

If 1 parameter, the SSI total number of bits for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>SABI? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Number of bits	Integer value between 0 and 48

If 2 parameters, the number of bits for angle singleturn or displacement sensors for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>SABI? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Number of bits	Integer value between 0 and 32

4.26.9 SABU - Number of rotations bits for multiturn sensors

Plese also refer to SBMA command!

Execute SABU!

The SABU! command sets the number of rotation bits for multiturn sensors for each channel (X, Y1, Y2).

If 2 parameters, the number of rotation bits for multiturn sensors for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>SABU! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Number of rotation bits	Integer value between 0 and 32

If 3 parameters, the number of rotation bits for multiturn sensors for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>SABU! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Number of rotation bits	Integer value between 0 and 32

Query SABU?

The SABU? command queries the number of rotation bits for multiturn sensors for each of the channels.

If 1 parameter, the number of rotation bits for multiturn sensors for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>SABU? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Number of rotation bits	Integer value between 0 and 48

If 2 parameters, the number of rotation bits for multiturn sensors for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>SABU? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Number of rotation bits	Integer value between 0 and 32

4.26.10 SBMA - Plausibility check and FPGA setup

Execute SBMA!

The SBMA! command performs a plausibility check of the SSI settings. While this plausibility check the SSI settings may be corrected. Masks for the calculation of measurement values are created. If current or no program number is handing over the FPGA setup is also performed.

If 1 parameter, the SSI settings for the transferred channel and the currently selected measurement program are affected

Host sends: <Address>sr<STX>SBMA! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2

If 2 parameters, the SSI settings for the transferred channel and the transferred measurement program are affected.

Host sends: <Address>sr<STX>SBMA! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2

Query SBMA?

This command does not have a query form

4.27 EnDat Sensor

4.27.1 ETAK - Clock frequency

Plese also refer to EBMA command!

Execute ETAK!

The ETAK! command sets the EnDat clock frequency for each channel (X, Y1, Y2).

If 2 parameters, the EnDat clock frequency for the transferred channel and the currently selected measurement program is set

Host sends: <Address>sr<STX>ETAK! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	EnDat clock frequency	0 -> 100 kHz 1 -> 200 kHz 2 -> 1 MHz 3 -> 2 MHz

If 3 parameters, the number EnDat clock frequency for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>ETAK! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	EnDat clock frequency	0 -> 100 kHz 1 -> 200 kHz 2 -> 1 MHz 3 -> 2 MHz

Query ETAK?

The ETAK? command queries the EnDat clock frequency for each of the channels.

If 1 parameter, the number of rotation bits for multiturn sensors for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>ETAK? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	EnDat clock frequency	0 -> 100 kHz 1 -> 200 kHz 2 -> 1 MHz 3 -> 2 MHz

If 2 parameters, the EnDat clock frequency for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>ETAK? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	EnDat clock frequency	0 -> 100 kHz 1 -> 200 kHz 2 -> 1 MHz 3 -> 2 MHz

4.27.2 ELSD - Readout of EnDat sensor data

Plese also refer to EBMA command!

Execute ELSD!

The ELSD! command reads out the data from a connected EnDat sensor and stores them according to the transferred channel and measurement program.

If 1 parameter, the EnDat sensor data are read out and stored according to the transferred channel and the currently selected measurement program.

Host sends: <Address>sr<STX>ELSD! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2

If 2 parameters, EnDat sensor data are read out and stored according to the transferred channel and the transferred measurement program.

Host sends: <Address>sr<STX>ELSD! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2

Query ELSD?

This command does not have a query form

4.27.3 EBMA - Plausibility check, FPGA setting

Execute EBMA!

The EBMA! command performs a plausibility check of the EnDat settings. While this plausibility check the EnDat settings may be corrected. Masks for the calculation of measurement values are created. If current or no program number is handing over the FPGA setup is also performed.

To configure an EnDat sensor at first the sensor data have to be read out with ELSD!

Then a valid clock frequence has to be set with the ETAK! command.

Finally this EBMA! command has to be executed.

If 1 parameter, the EnDat settings for the transferred channel and the currently selected measurement program are affected

Host sends: <Address>sr<STX>EBMA! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2

If 2 parameters, the EnDat settings for the transferred channel and the transferred measurement program are affected.

Host sends: <Address>sr<STX>EBMA! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2

Query EBMA?

This command does not have a query form

4.27.4 EPAR - Reading and writing of sensor data

The EPAR! command copies the sensor data which had been read out over the ELSD command for backup purposes. The data is being read with EPAR? and written with EPAR! commands. The purpose of this command is NOT to change the sensor data. A correct acquisition of the position via an EnDat sensor as well as a correct calculation of the measurement value can not be guaranteed if the data has being changed after reading out.

Execute EPAR!

The EPAR! command writes the sensor data.

If 13 parameters, the EnDat sensor data for the transferred channel and the currently selected measurement program is set.

Host sends: <Address>sr<STX>EPAR! P1,P2,P3,P4,P5,....P12,P13<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	EnDat state	0 -> Ready 1 -> Error
P3	EnDat norm	0 -> EnDat 2.1 1 -> EnDat 2.2
P4	Sensor description (EnDat 2.2 only)	Max 20 character ASCII string
P5	Sensor serial	Max 20 character ASCII string
P6	Sensor type	0 -> Displacement 1 -> Singleturn 2 -> Multiturn
P7	Number of total bits	16-Bit Integer value between 0 and 48

P8	Number of bits displacement/singleturn	16-Bit Integer value between 0 and 32
P9	Number of bits multiturn	16-Bit Integer value between 0 and 32
P10	Resoluttion	Floating-point value
P11	Measurement length (Displacement sensor)	16-Bit integer value
P12	Unit of measurement length	0 -> PP (pitch period) 1 -> um (micrometer) 2 -> mm 3 -> m
P13	Max clock frequency (EnDat 2.2 only)	16-Bit Integer value

If 14 parameters, the EnDat sensor data for the transferred channel and the transferred measurement program is set.

Host sends: <Address>sr<STX>EPAR! P1,P2,P3,P4,P5,….P13,P14<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	EnDat state	0 -> Ready 1 -> Error
P4	EnDat norm	0 -> EnDat 2.1 1 -> EnDat 2.2
P5	Sensor description (EnDat 2.2 only)	Max 20 character ASCII string
P6	Sensor serial	Max 20 character ASCII string
P7	Sensor type	0 -> Displacement 1 -> Singleturn 2 -> Multiturn
P8	Number of total bits	16-Bit Integer value between 0 and 48
P9	Number of bits displacement/singleturn	16-Bit Integer value between 0 and 32
P10	Number of bits multiturn	16-Bit Integer value between 0 and 32
P11	Resoluttion	Floating-point value
P12	Measurement length (Displacement sensor)	16-Bit integer value
P13	Unit of measurement length	0 -> PP (pitch period) 1 -> um (micrometer) 2 -> mm 3 -> m
P14	Max clock frequency (EnDat 2.2 only)	16-Bit Integer value

Query EPAR?

The EPAR? command queries the EnDat sensor data for each of the channels.

If 1 parameter, the EnDat sensor data for the transferred channel and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>EPAR? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4,P5,….P12,P13<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	EnDat state	0 -> Ready 1 -> Error
P3	EnDat norm	0 -> EnDat 2.1 1 -> EnDat 2.2
P4	Sensor description (EnDat 2.2 only)	Max 20 character ASCII string
P5	Sensor serial	Max 20 character ASCII string
P6	Sensor type	0 -> Displacement 1 -> Singleturn 2 -> Multiturn
P7	Number of total bits	16-Bit Integer value between 0 and 48
P8	Number of bits displacement/singleturn	16-Bit Integer value between 0 and 32
P9	Number of bits multiturn	16-Bit Integer value between 0 and 32
P10	Resoluttion	Floating-point value
P11	Measurement length (Displacement sensor)	16-Bit integer value
P12	Unit of measurement length	0 -> PP (pitch period) 1 -> um (micrometer) 2 -> mm 3 -> m
P13	Max clock frequency (EnDat 2.2 only)	16-Bit Integer value

If 2 parameters, the EnDat sensor data for the transferred channel and the transferred measurement program is queried.

Host sends: <Address>sr<STX>EPAR? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5,P6….P13,P14<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	EnDat state	0 -> Ready 1 -> Error
P4	EnDat norm	0 -> EnDat 2.1 1 -> EnDat 2.2
P5	Sensor description (EnDat 2.2 only)	Max 20 character ASCII string
P6	Sensor serial	Max 20 character ASCII string
P7	Sensor type	0 -> Displacement 1 -> Singleturn 2 -> Multiturn
P8	Number of total bits	16-Bit Integer value between 0 and 48
P9	Number of bits displacement/singleturn	16-Bit Integer value between 0 and 32
P10	Number of bits multiturn	16-Bit Integer value between 0 and 32
P11	Resoluttion	Floating-point value
P12	Measurement length (Displacement sensor)	16-Bit integer value
P13	Unit of measurement length	0 -> PP (pitch period) 1 -> um (micrometer) 2 -> mm 3 -> m
P14	Max clock frequency (EnDat 2.2 only)	16-Bit Integer value

4.28 Evaluating the square window

4.28.1 FEST - Switch on/off square window

Execute FEST!

The FEST! command enables or disables a square window.

If 2 parameters, the square window for the transferred window number and the currently selected measurement program is enabled or disabled.

Host sends: \<Address\>sr\<STX\>FEST! P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Window on/off	0 -> Off 1 -> On

If 3 parameters, the square window for the transferred window number and the currently selected measurement program is enabled or disabled.

Host sends: \<Address\>sr\<STX\>FEST! P1,P2,P3\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Window on/off	0 -> Off 1 -> On

Query FEST?

The FEST? command queries whether the square window is enabled or disabled.

If 1 parameter, the square window for the transferred window number and the currently selected measurement program is queried for its enabled/disabled status.

Host sends: \<Address\>sr\<STX\>FEST? P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P2\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Window on/off	0 -> Off 1 -> On

If 2 parameters, the square window for the transferred window number and the transferred measurement program is queried for its enabled/disabled status.

Host sends: <Address>sr<STX>FEST? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Window on/off	0 -> Off 1 -> On

4.28.2 FGRZ - Square window limits

Execute FGRZ!

The FGRZ! command sets the square window limits.

If 5 parameters, the window limits are set with the transferred window number and the currently selected measurement program

Host sends: <Address>sr<STX>FGRZ! P1,P2,P3,P4,P5<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Xmin window limit	Floating-point value between -999999 and 999999
P3	Xmax window limit	Floating-point value between -999999 and 999999
P4	Ymin window limit	Floating-point value between -999999 and 999999
P5	Ymax window limit	Floating-point value between -999999 and 999999

If 6 parameters, the window limits are set with the transferred window number and the transferred measurement program

Host sends: <Address>sr<STX>FGRZ! P1,P2,P3,P4,P5,P6<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Xmin window limit	Floating-point value between -999999 and 999999
P4	Xmax window limit	Floating-point value between -999999 and 999999
P5	Ymin window limit	Floating-point value between -999999 and 999999
P6	Ymax window limit	Floating-point value between -999999 and 999999

Note: Xmax must be greater than Xmin, and Ymax must be greater than Ymin.

Query FGRZ?

The FGRZ? command queries the square window limits.

If 1 parameter, the window limits are queried with the transferred window number and the currently selected measurement program

Host sends: <Address>sr<STX>FGRZ? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Xmin window limit	Floating-point value between -999999 and 999999
P3	Xmax window limit	Floating-point value between -999999 and 999999
P4	Ymin window limit	Floating-point value between -999999 and 999999
P5	Ymax window limit	Floating-point value between -999999 and 999999

If 2 parameters, the window limits are queried with the transferred window number and the transferred measurement program

Host sends: <Address>sr<STX>FGRZ? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5,P6<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Xmin window limit	Floating-point value between -999999 and 999999
P4	Xmax window limit	Floating-point value between -999999 and 999999
P5	Ymin window limit	Floating-point value between -999999 and 999999
P6	Ymax window limit	Floating-point value between -999999 and 999999

4.28.3 FEAU - Square window entry and exit sides

Execute   **FEAU**!

The FEAU! command sets the square window entry and exit sides

If 9 parameters, the square window entry and exit sides are set with the transferred window number and the currently selected measurement program

Host sends: <Address>sr<STX>FEAU! P1,P2,P3,P4,P5,P6,P7,P8,P9
                                               <LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Entry left	0 -> No 1 -> Yes
P3	Entry right	0 -> No 1 -> Yes
P4	Entry bottom	0 -> No 1 -> Yes
P5	Entry top	0 -> No 1 -> Yes
P6	Exit left	0 -> No 1 -> Yes
P7	Exit right	0 -> No 1 -> Yes
P8	Exit bottom	0 -> No 1 -> Yes
P9	Exit top	0 -> No 1 -> Yes

If 10 parameters, the entry and exit sides are set for the window with the transferred window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>FEAU! P1,P2,P3,P4,P5,P6,P7,P8,P9,P10
                      \<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Entry left	0 -> No 1 -> Yes
P4	Entry right	0 -> No 1 -> Yes
P5	Entry bottom	0 -> No 1 -> Yes
P6	Entry top	0 -> No 1 -> Yes
P7	Exit left	0 -> No 1 -> Yes
P8	Exit right	0 -> No 1 -> Yes
P9	Exit bottom	0 -> No 1 -> Yes
P10	Exit top	0 -> No 1 -> Yes

Query **FEAU**?

The FEAU? command queries the square window entry and exit sides.

If 1 parameter, the entry and exit sides of the window are set queried with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FEAU? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4,P5,P6,P7,P8,P9<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Entry left	0 -> No 1 -> Yes
P3	Entry right	0 -> No 1 -> Yes
P4	Entry bottom	0 -> No 1 -> Yes
P5	Entry top	0 -> No 1 -> Yes
P6	Exit left	0 -> No 1 -> Yes
P7	Exit right	0 -> No 1 -> Yes
P8	Exit bottom	0 -> No 1 -> Yes
P9	Exit top	0 -> No 1 -> Yes

If 2 parameters, the entry and exit sides are queried for the window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FEAU? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5,P6,P7,P8,P9,P10<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Entry left	0 -> No 1 -> Yes
P4	Entry right	0 -> No 1 -> Yes
P5	Entry bottom	0 -> No 1 -> Yes
P6	Entry top	0 -> No 1 -> Yes
P7	Exit left	0 -> No 1 -> Yes
P8	Exit right	0 -> No 1 -> Yes
P9	Exit bottom	0 -> No 1 -> Yes
P10	Exit top	0 -> No 1 -> Yes

4.28.4 FBEW - Evaluation of sqaure window

Execute FBEW!

The FBEW! command enables/disables the evaluation of a square window.

If 2 parameters, the square window's evaluation is set with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FBEW P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Square window evaluation	0 -> Off 1 -> On

If 3 parameters, the square window's evaluation is set with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FBEW! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Square window evaluation	0 -> Off 1 -> On

Query FBEW?

The FBEW? command queries the square window's evaluation status.

If 1 parameter, the square window's evaluation status is queried for the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address\>sr\<STX\>FBEW? P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P2\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Square window evaluation	0 -> Off 1 -> On

If 2 parameters, the square window's evaluation status is queried for the square window with the transferred window number and the transferred measurement program.

Host sends: \<Address\>sr\<STX\>FBEW? P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P3\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Square window evaluation	0 -> Off 1 -> On

4.28.5   FKAB - Curve section over which a square window is evaluated

Execute FKAB!

The FKAB! command sets the curve section over which a square window is evaluated.

If 2 parameters, the square window's curve section is set with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FKAB! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Curve segment	0 -> Forward 1 -> Return 2 -> Complete

If 3 parameters, the square window's curve section is set with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FKAB! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Curve segment	0 -> Forward 1 -> Return 2 -> Complete

Query FKAB?

The FKAB? command queries the curve section over which a square window is evaluated.

If 1 parameter, the curve section is queried for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FKAB? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Curve segment	0 -> Forward 1 -> Return 2 -> Complete

If 2 parameters, the curve section is queried for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FKAB? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Curve segment	0 -> Forward 1 -> Return 2 -> Complete

4.28.6 FOBE - Online evaluation for a square window

Execute FOBE!

Caution: Only two windows per measurement program can be activated for the online evaluation!

The FOBE! command sets the evaluation of a square window.

If 2 parameters, the online evaluation is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>FOBE! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Online evaluation	0 -> Off 1 -> Left–Right 2 -> Right–Left 3 -> Bottom–Top 4 -> Top–Bottom

If 3 parameters, the online evaluation is set for the square window with the transferred window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>FOBE! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Online evaluation	0 -> Off 1 -> Left–Right 2 -> Right–Left 3 -> Bottom–Top 4 -> Top–Bottom

Query FOBE?

The FKAB? command queries the evaluation of a square window.

If 1 parameter, the online evaluation is queried for the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>FOBE? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Online evaluation	0 -> Off 1 -> Left–Right 2 -> Right–Left 3 -> Bottom–Top 4 -> Top–Bottom

If 2 parameters, the online evaluation is queried for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FOBE? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Online evaluation	0 -> Off 1 -> Left–Right 2 -> Right–Left 3 -> Bottom–Top 4 -> Top–Bottom

4.28.7 FOSN - Online signal number for a square window

Execute FOSN!

Caution: You must first activate the online evaluation for a window before you can set an online signal number for it.

The FOSN! command sets the online signal number for a square window.

If 2 parameters, the online signal number is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address\>sr\<STX\>FOSN! P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Online signal number	1 or 2

If 3 parameters, the online signal number is set for the square window with the transferred window number and the transferred measurement program.

Host sends: \<Address\>sr\<STX\>FOSN! P1,P2,P3\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Online signal number	1 or 2

Query FOSN?

The FOSN? command queries the online signal level for a square window.

If 1 parameter, the online signal number is queried for the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address\>sr\<STX\>FOSN? P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Online signal number	1 or 2

If 2 parameters, the online signal number is queried for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FOSN? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Online signal number	1 or 2

4.28.8 FOLV - Online signal level for a square window

Execute FOLV!

Caution: You must first activate the online evaluation for a window before you can set an online signal level for it.

The FOLV! command sets the online signal level for a square window.

If 2 parameters, the online signal level is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FOLV! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Online signal level	0 -> Low active 1 -> High active

If 3 parameters, the online signal level is set for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FOLV! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Online signal level	0 -> Low active 1 -> High active

Query FOLV?

The FOLV? command queries the online signal level for a square window.

If 1 parameter, the online signal level is queried for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FOLV? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Online signal level	0 -> High active 1 -> Low active

If 2 parameters, the online signal level is queried for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FOLV? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Online signal level	0 -> High active 1 -> Low active

4.28.9 FDUB - Evaluation of first passage only

Execute FDUB!

The FDUB! command causes the square window is being evaluated at first passage only .

If 2 parameters, the evaluation option is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FDUB! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

If 3 parameters, the evaluation option is set for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FDUB! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

Query FDUB?

The FDUB? command determines if a square window is being evaluated at first passage only.

If 1 parameter, the evaluation option is queried for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FDUB? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

If 2 parameters, the evaluation option is queried for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FDUB? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

4.28.10 FKAN - Evaluation channel

Execute FKAN!

The FKAN! command sets the channel for the evaluation of a square window.

If 2 parameters, the evaluation channel is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address\>sr\<STX\>FKAN! P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

If 3 parameters, the evaluation channel is set for the square window with the transferred window number and the transferred measurement program.

Host sends: \<Address\>sr\<STX\>FKAN! P1,P2,P3\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

Query FKAN?

The FKAN? command queries the evaluation channel for a square window.

If 1 parameter, the evaluation channel is queried for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FKAN? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

If 2 parameters, the evaluation channel is queried for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FKAN? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

4.28.11 FBEF - Evaluation result of a square window (OK/NOK)

Execute FBEF!

There is no ! form of this command

Query FBEF?

The FBEF? command queries the evaluation result of a square window.

If 1 parameter, the evaluation result is queried for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FBEF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Evaluation result	0 -> NOK 1 -> OK

If 2 parameters, the evaluation result is queried for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FBEF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Evaluation result	0 -> NOK 1 -> OK

4.28.12 FNIO - Number of NOKs for a square window

Execute FNIO!

There is no ! form of this command

Query FNIO?

The FNIO? command queries the number of NOKs for a square window.

If 1 parameter, the number of NOKs is queried for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FNIO? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Number of NOKs	Numerical integer >= 0

If 2 parameters, the number of NOKs is queried for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FNIO? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Number of NOKs	Numerical integer >= 0

4.28.13 FAAF - Determination of the absolute maximum within a square window on/off

The FAAF! command enables/disables the determination of the absolute maximum within a square window.

If 2 parameters, the determination of the absolute maximum is set for the square window with the transferred window number and the currently selected measurement program.

Host sends:	<Address>sr<STX>FAAF! P1,P2<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the absolute maximum	0 -> Off 1 -> On

If 3 parameters, the determination of the absolute maximum is set for the square window with the transferred window number and the transferred measurement program.

Host sends:	<Address>sr<STX>FAAF! P1,P2,P3<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the absolute maximum	0 -> Off 1 -> On

The FAAF? command queries the determination of the absolute maximum within a square window.

If 1 parameter, the determination of the absolute maximum is queried with the transferred window number and the currently selected measurement program.

Host sends:	<Address>sr<STX>FAAF? P1<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the absolute maximum	0 -> Off 1 -> On

If 2 parameters, the determination of the absolute maximum is queried with the transferred window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>FAAF? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the absolute maximum	0 -> Off 1 -> On

4.28.14 FIAF–Determination of the absolute minimum within a square window on/off

Execute FIAF!

The FIAF! command enables/disables the determination of the absolute minimum within a square window.

If 2 parameters, the determination of the absolute minimum is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>FIAF! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the absolute minimum	0 -> Off 1 -> On

If 3 parameters, the determination of the absolute minimum is set for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FIAF! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the absolute minimum	0 -> Off 1 -> On

Query FIAF?

The FIAF? command queries the determination of the absolute minimum within a square window.

If 1 parameter, the determination of the absolute minimum is queried with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FIAF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the absolute minimum	0 -> Off 1 -> On

If 2 parameters, the determination of the absolute minimum is queried with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FIAF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the absolute minimum	0 -> Off 1 -> On

4.28.15 FALF - Determination of the local maximum within a square window on/off

Execute FALF!

The FALF! command enables/disables the determination of the local maximum within a square window.

If 2 parameters, the determination of the local maximum is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FALF! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the local maximum	0 -> Off 1 -> On

If 3 parameters, the determination of the local maximum is set for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FALF! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the local maximum	0 -> Off 1 -> On

Query FALF?

The FALF? command queries the determination of the local maximum within a square window.

If 1 parameter, the determination of the local maximum is queried with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FALF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the local maximum	0 -> Off 1 -> On

If 2 parameters, the determination of the local maximum is queried with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FALF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the local maximum	0 -> Off 1 -> On

4.28.16 FILF - Determination of the local minimum within a square window on/off

Execute FILF!

The FILF! command enables/disables the determination of the local minimum within a square window.

If 2 parameters, the determination of the local minimum is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FILF! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the local minimum	0 -> Off 1 -> On

If 3 parameters, the determination of the local minimum is set for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FILF! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the local minimum	0 -> Off 1 -> On

Query FILF?

The FILF? command queries the determination of the local minimum within a square window.

If 1 parameter, the determination of the local minimum is queried with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FILF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the local minimum	0 -> Off 1 -> On

If 2 parameters, the determination of the local minimum is queried with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FILF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the local minimum	0 -> Off 1 -> On

4.28.17 FKNF - Bend point within a square window

Execute FKNF!

The FKNF! command enables/disables the determination of the bending point within a square window.

If 2 parameters, the determination of the bending point is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FKNF! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the bending point	0 -> Off 1 -> On

If 3 parameters, the determination of the bending point is set for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FKNF! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the bending point	0 -> Off 1 -> On

Query FKNF?

The FKNF? command queries the determination of the bending point within a square window.

If 1 parameter, the determination of the bending point is queried with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FKNF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the bending point	0 -> Off 1 -> On

If 2 parameters, the determination of the bending point is queried with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FKNF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the bending point	0 -> Off 1 -> On

4.28.18 FGRF - Determination of the gradient within a square window on/off

Execute FGRF!

The FGRF! command enables/disables the determination of the gradient within a square window.

If 2 parameters, the determination of the gradient is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FGRF! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the gradient	0 -> Off 1 -> On

If 3 parameters, the determination of the gradient is set for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FGRF! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the gradient	0 -> Off 1 -> On

Query FGRF?

The FGRF? command queries the determination of the gradient within a square window.

If 1 parameter, the determination of the gradient is queried with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FGRF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the gradient	0 -> Off 1 -> On

If 2 parameters, the determination of the gradient is queried with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FGRF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the gradient	0 -> Off 1 -> On

4.28.19 FMIF–Mean value within a square window on/off

Execute FMIF!

The FMIF! command enables/disables the determination of mean value within a square window.

If 2 parameters, the determination of the mean value is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>FMIF! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the mean value	0 -> Off 1 -> On

If 3 parameters, the determination of the mean value is set for the square window with the transferred window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>FMIF! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the mean value	0 -> Off 1 -> On

Query FMIF?

The FMIF? command queries the determination of the mean value within a square window.

If 1 parameter, the determination of mean value is queried with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FMIF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the mean value	0 -> Off 1 -> On

If 2 parameters, the determination of the mean value is queried with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FMIF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the mean value	0 -> Off 1 -> On

4.28.20 FFLF–Determination of the area under curve on/off

Execute FFLF!

The FFLF! command enables/disables the determination of the area under curve within a square window.

If 2 parameters, the determination of the area under curve is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FFLF! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the area under curve	0 -> Off 1 -> On

If 3 parameters, the determination of the area under curve is set for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FFLF! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the area under curve	0 -> Off 1 -> On

Query FFLF?

The FFLF? command queries the determination of the area under curve within a square window.

If 1 parameter, the determination of the area under curve is queried with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FFLF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Determination of the area under curve	0 -> Off 1 -> On

If 2 parameters, the determination of the area under curve is queried with the transferred window number and the transferred measurement program.

Host sends: \<Address\>sr\<STX\>FFLF? P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P3\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Determination of the area under curve	0 -> Off 1 -> On

4.28.21 FMAA - Query the absolute maximum within a square window

Execute FMAA!

There is no ! form of this command

Query FMAA?

The FMAA? command queries the absolute maximum within a square window.

If 1 parameter, the absolute maximum is queried within the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address\>sr\<STX\>FMAA? P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P2,P3\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	X coordinate of the absolute maximum	Floating-point value
P3	The absolute maximum (of the Y value)	Floating-point value

If 2 parameters, the absolute maximum is queried within the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FMAA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	X coordinate of the absolute maximum	Floating-point value
P4	The absolute maximum (of the Y value)	Floating-point value

4.28.22 FMIA - Query the absolute minimum within a square window

Execute FMIA!

There is no ! form of this command

Query FMIA?

The FMIA? command queries the absolute minimum within a square window.

If 1 parameter, the absolute minimum is queried within the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FMIA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	X coordinate of the absolute minimum	Floating-point value
P3	The absolute minimum (of the Y value)	Floating-point value

If 2 parameters, the absolute minimum is queried within the square window with the transferred window number and the transferred measurement program.

Host sends: \<Address\>sr\<STX\>FMIA? P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P3,P4\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	X coordinate of the absolute minimum	Floating-point value
P4	The absolute minimum (of the Y value)	Floating-point value

4.28.23 FMAL - Local maximum within a square window

Execute FMAL!

There is no ! form of this command

Query FMAL?

The FMAL? command queries the local maximum within a square window.

If 1 parameter, the local maximum is queried within the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address\>sr\<STX\>FMAL? P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2,P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	X coordinate of the local maximum	Floating-point value
P3	The local maximum (of the Y value)	Floating-point value

If 2 parameters, the local maximum is queried within the square window with the transferred window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>FMAL? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3,P4\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	X coordinate of the local maximum	Floating-point value
P4	The local maximum (of the Y value)	Floating-point value

4.28.24 FMIL - Local minimum within a square window

Execute FMIL!

There is no ! form of this command

Query FMIL?

The FMIL? command queries the local minimum within a square window.

If 1 parameter, the local minimum is queried within the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FMIL? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	X coordinate of the local minimum	Floating-point value
P3	The local minimum (of the Y value)	Floating-point value

If 2 parameters, the local minimum is queried within the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FMIL? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	X coordinate of the local minimum	Floating-point value
P4	The local minimum (of the Y value)	Floating-point value

4.28.25 FKNI–Bending point within a square window

Execute FKNI!

There is no ! form of this command

Query FKNI?

The FKNI? command queries the the bending point within a square window.

If 1 parameter, the bending point is queried within the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address\>sr\<STX\>FKNI? P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P2,P3\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	X coordinate of the bending point	Floating-point value
P3	X coordinate of the bending point	Floating-point value

If 2 parameters, the bending point is queried within the square window with the transferred window number and the transferred measurement program.

Host sends: \<Address\>sr\<STX\>FKNI? P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	X coordinate of the bending point	Floating-point value
P4	Y coordinate of the bending point	Floating-point value

4.28.26 FGRA–Gradient within a square window

Execute FGRA!

There is no ! form of this command

Query FGRA?

The FGRA? command queries the the gradient within a square window.

If 1 parameter, the gradient is queried within the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FGRA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Gradient	Floating-point value

If 2 parameters, the gradient is queried within the square window with the transferred window number and the transferred measurement program.

Host sends:	\<Address>sr\<STX>FGRA? P1,P2\<LF>\<ETX>[\<BCC>]
DIGIFORCE responds:	\<ACK>
Host sends:	\<EOT>

Host sends:	\<Address>po\<ENQ>
DIGIFORCE responds:	\<STX>P3\<LF>\<ETX>[\<BCC>]
Host sends:	\<ACK>
DIGIFORCE responds:	\<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Gradient	Floating-point value

4.28.27 FMIT - Y-mean value within a square window

Execute FMIT!

There is no ! form of this command

Query FMIT?

The FMIT? command queries the the Y-mean value within a square window.

If 1 parameter, the Y-mean value is queried within the square window with the transferred window number and the currently selected measurement program.

Host sends:	\<Address>sr\<STX>FMIT? P1\<LF>\<ETX>[\<BCC>]
DIGIFORCE responds:	\<ACK>
Host sends:	\<EOT>

Host sends:	\<Address>po\<ENQ>
DIGIFORCE responds:	\<STX>P2\<LF>\<ETX>[\<BCC>]
Host sends:	\<ACK>
DIGIFORCE responds:	\<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Y-mean value	Floating-point value

If 2 parameters, the Y-mean value is queried within the square window with the transferred window number and the transferred measurement program.

Host sends:	<Address>sr<STX>FMIT? P1,P2<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>P3<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Y-mean value	Floating-point value

4.28.28 FFLA–Area under curve within a square window

Execute FFLA!

There is no ! form of this command

Query FFLA?

The FFLA? command queries the area under curve within a square window.

If 1 parameter, the area under curve is queried within the square window with the transferred window number and the currently selected measurement program.

Host sends:	<Address>sr<STX>FFLA? P1<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>P2<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Area under curve within a square window	Floating-point value

If 2 parameters, the area under curve is queried within the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FFLA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Area under curve within a square window	Floating-point value

4.28.29 FDMA–Delta value to determine the local maximum within a square window

Execute FDMA!

The FDMA! command sets the delta value to determine the local maximum within a square window

If 2 parameters, the delta value to determine the local maximum is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FDMA! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Delta value to determine the local maximum	Floating-point value

If 3 parameters, the delta value to determine the local maximum is set for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FDMA! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Delta value to determine the local maximum	Floating-point value

Query FDMA?

The FDMA? command queries the delta value to determine the local maximum within a square window.

If 1 parameter, the delta value to determine the local maximum is queried within the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FDMA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Delta value to determine the local maximum	Floating-point value

If 2 parameters, the delta value to determine the local maximum is queried within the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FDMA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Delta value to determine the local maximum	Floating-point value

4.28.30 FDMI–Delta value to determine the local minimum within a square window

Execute FDMI!

The FDMI! command sets the delta value to determine the local minimum within a square window

If 2 parameters, the delta value to determine the local minimum is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FDMI! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Delta value to determine the local minimum	Floating-point value

If 3 parameters, the delta value to determine the local minimum is set for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FDMI! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Delta value to determine the local minimum	Floating-point value

Query FDMI?

The FDMI? command queries the delta value to determine the local minimum within a square window.

If 1 parameter, the delta value to determine the local minimum is queried within the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>FDMI? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Delta value to determine the local minimum	Floating-point value

If 2 parameters, the delta value to determine the local minimum is queried within the square window with the transferred window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>FDMI? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Delta value to determine the local minimum	Floating-point value

4.28.31 FDYK - Delta value to determine the bending point within a square window

Execute FDYK!

The FDYK! command sets the delta value to determine the bending point within a square window

If 2 parameters, the delta value to determine the bending point is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>FDYK! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Delta value to determine the the bending point	0 -> Off 1 -> On

If 3 parameters, the delta value to determine the bending point is set for the square window with the transferred window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>FDYK! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Delta value to determine the bending point	0 -> Off 1 -> On

Query FDYK?

The FDYK? command queries the delta value to determine the bending point within a square window.

If 1 parameter, the delta value to determine the bending point is queried within the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>FDYK? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Delta value to determine the bending point	Floating-point value

If 2 parameters, the delta value to determine the bending point is queried within the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FDYK? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Delta value to determine the bending point	Floating-point value

4.28.32 FDSK - Delta gradient value to determine the bending point within a square window

Execute FDSK!

The FDSK! command sets the delta gradient value to determine the bending point within a square window

If 2 parameters, the delta gradient value to determine the bending point is set for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FDSK! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Delta gradient value to determine the bending point	Floating-point value

If 3 parameters, the delta gradient value to determine the bending point is set for the square window with the transferred window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>FDSK! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Delta gradient value to determine the bending point	Floating-point value

Query FDSK?

The FDSK? command queries the delta delta gradient value to determine the bending point within a square window.

If 1 parameter, the delta gradient value to determine the bending point is queried within the square window with the transferred window number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>FDSK? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Window number	1 to 10
P2	Delta gradient value to determine the bending point	Floating-point value

If 2 parameters, the delta gradient value to determine the bending point is queried within the square window with the transferred window number and the transferred measurement program.

Host sends: `<Address>sr<STX>FDSK? P1,P2<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P3<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Delta gradient value to determine the bending point	Floating-point value

4.28.33 FEIN - Curve entry values of a square window

Execute FEIN!

There is no ! form of this command

Query FEIN?

The FEIN? command queries the curve entry values of a square window.

If 1 parameter, the entry values are queried for the square window with the transferred window number and the currently selected measurement program.

Host sends: `<Address>sr<STX>FEIN? P1<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P2,P3,P4<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P!	Window number	1 to 10
P2	Index of the entry	Integer value (unsigned 16 bit)
P3	X coordinate of the entry	Floating-point value
P4	Y coordinate of the entry	Floating-point value

If 2 parameters, the entry values are queried for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FEIN? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Index of the entry	Integer value (unsigned 16 bit)
P4	X coordinate of the entry	Floating-point value
P5	Y coordinate of the entry	Floating-point value

4.28.34 FAUS - Curve exit values of a square window

Execute FAUS!

There is no ! form of this command

Query FAUS?

The FAUS? command queries the curve exit values of a square window.

If 1 parameter, the exit values are queried for the square window with the transferred window number and the currently selected measurement program.

Host sends: <Address>sr<STX>FAUS? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P!	Window number	1 to 10
P2	Index of the exit	Integer value (unsigned 16 bit)
P3	X coordinate of the exit	Floating-point value
P4	Y coordinate of the exit	Floating-point value

If 2 parameters, the exit values are queried for the square window with the transferred window number and the transferred measurement program.

Host sends: <Address>sr<STX>FAUS? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Window number	1 to 10
P3	Index of the exit	Integer value (unsigned 16 bit)
P4	X coordinate of the exit	Floating-point value
P5	Y coordinate of the exit	Floating-point value

4.29 Evaluating thresholds

4.29.1 SWST - Thresholds on/off

Execute SWST!

The SWST! command enables or disables a threshold.

If 2 parameters, the threshold for the transferred threshold number and the currently selected measurement program is enabled or disabled.

Host sends: \<Address>sr\<STX>SWST! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Threshold on/off	0 -> Off 1 -> On

If 3 parameters, the threshold for the transferred threshold number and the transferred measurement program is enabled or disabled.

Host sends: \<Address>sr\<STX>SWST! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Threshold on/off	0 -> Off 1 -> On

Query SWST?

The SWST? command queries whether the threshold is enabled or disabled.

If 1 parameter, the threshold for the transferred threshold number and the currently selected measurement program is queried for its enabled/disabled status.

Host sends: \<Address>sr\<STX>SWST? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Threshold on/off	0 -> Off 1 -> On

If 2 parameters, the threshold for the transferred threshold number and the transferred measurement program is queried for its enabled/disabled status.

Host sends: <Address>sr<STX>SWST? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Threshold on/off	0 -> Off 1 -> On

4.29.2 STYP - Threshold type (X/Y threshold)

Execute STYP!

The STYP! command sets the threshold type (X or Y threshold).

If 2 parameters, the threshold type corresponding to the transferred threshold number and the currently selected measurement program is set.

Host sends: <Address>sr<STX>STYP! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Threshold type	0 -> X threshold 1 -> Y threshold

If 3 parameters, the threshold type corresponding to the transferred threshold number and the transferred measurement program is set.

Host sends: \<Address>sr\<STX>STYP! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Threshold type	0 -> X threshold 1 -> Y threshold

Query STYP?

The STYP? command queries the threshold type (X or Y threshold).

If 1 parameter, the threshold type corresponding to the transferred threshold number and the currently selected measurement program is queried.

Host sends: \<Address>sr\<STX>STYP? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Threshold type	0 -> X threshold 1 -> Y threshold

If 2 parameters, the threshold type corresponding to the transferred threshold number and the transferred measurement program is queried.

Host sends: \<Address>sr\<STX>STYP? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Threshold type	0 -> X threshold 1 -> Y threshold

4.29.3 SGRZ - Threshold limits

Execute SGRZ!

The SGRZ! command sets the threshold limits.

If 4 parameters, the threshold limits are set with the transferred threshold number and the currently selected measurement program

Host sends: \<Address\>sr\<STX\>SGRZ! P1,P2,P3,P4\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	For X threshold: X value of threshold, for Y threshold: Y value of threshold	Floating-point value between -999999 and 999999
P3	For X threshold: Ymin; for Y threshold: Xmin	Floating-point value between -999999 and 999999
P4	For X threshold: Ymax; for Y threshold: Xmax	Floating-point value between -999999 and 999999

If 5 parameters, the threshold limits are set with the transferred threshold number and the transferred measurement program.

Host sends: \<Address\>sr\<STX\>SGRZ! P1,P2,P3,P4,P5\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	For X threshold: X value of threshold, for Y threshold: Y value of threshold	Floating-point value between -999999 and 999999
P4	For X threshold: Ymin; for Y threshold: Xmin	Floating-point value between -999999 and 999999
P5	For X threshold: Ymax; for Y threshold: Xmax	Floating-point value between -999999 and 999999

Note: Xmax must be greater than Xmin, and Ymax must be greater than Ymin.

Query SGRZ?

The SGRZ? command queries the threshold limits.

If 1 parameter, the threshold limits are queried with the transferred threshold number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>SGRZ? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2,P3,P4\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	For X threshold: X value of threshold, for Y threshold: Y value of threshold	Floating-point value between -999999 and 999999
P3	For X threshold: Ymin; for Y threshold: Xmin	Floating-point value between -999999 and 999999
P4	For X threshold: Ymax; for Y threshold: Xmax	Floating-point value between -999999 and 999999

If 2 parameters, the threshold limits are queried with the transferred threshold number and the transferred measurement program.

Host sends: \<Address>sr\<STX>SGRZ? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3,P4,P5\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	For X threshold: X value of threshold, for Y threshold: Y VALUE of threshold	Floating-point value between -999999 and 999999
P4	For X threshold: Ymin; for Y threshold: Xmin	Floating-point value between -999999 and 999999
P5	For X threshold: Ymax; for Y threshold: Xmax	Floating-point value between -999999 and 999999

4.29.4 SDUR - Threshold intersection

Execute SDUR!

The SDUR! command sets the threshold intersections. Left–right or right–left
for an X threshold, and bottom–top or top–bottom for a Y threshold.

If 3 parameters, the threshold intersections are set with the transferred threshold number and the currently selected measurement program

Host sends: <Address>sr<STX>SDUR! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Left–right intersection for X threshold Bottom–top intersection for Y threshold	0 -> No 1 -> Yes
P3	Right–left intersection for X threshold Top–bottom intersection for Y threshold	0 -> No 1 -> Yes

If 4 parameters, the threshold intersections are set with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SDUR! P1,P2,P3,P4<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Left–right intersection for X threshold Bottom–top intersection for Y threshold	0 -> No 1 -> Yes
P4	Left–right intersection for X threshold Bottom–top intersection for Y threshold	0 -> No 1 -> Yes

Query SDUR?

The SDUR? command queries the threshold intersections.

If 1 parameter, the threshold intersections are queried with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SDUR? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Left–right intersection for X threshold Bottom–top intersection for Y threshold	0 -> No 1 -> Yes
P3	Left–right intersection for X threshold Bottom–top intersection for Y threshold	0 -> No 1 -> Yes

If 2 parameters, the threshold intersections are queried with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SDUR? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Left–right intersection for X threshold Bottom–top intersection for Y threshold	0 -> No 1 -> Yes
P4	Left–right intersection for X threshold Bottom–top intersection for Y threshold	0 -> No 1 -> Yes

4.29.5 SBEW–Evaluation of a threshold on/off

Execute SBEW!

The SBEW! command enables/disables the evaluation of a threshold.

If 2 parameters, the evaluation of a threshold is set with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SBEW! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Evaluation of a threshold	0 -> On 1 -> Off

If 3 parameters, the evaluation of a threshold is set with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SBEW! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Evaluation of a threshold	0 -> On 1 -> Off

Query SBEW?

The SBEW? command queries the threshold's evaluation status.

If 1 parameter, the evaluation status of a threshold is queried with the transferred threshold number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>SBEW? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Evaluation of a threshold	0 -> On 1 -> Off

If 2 parameters, the evaluation status of a threshold is queried with the transferred threshold number and the transferred measurement program.

Host sends: \<Address>sr\<STX>SBEW? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Evaluation of a threshold	0 -> On 1 -> Off

4.29.6 SKAB - Curve section over which a threshold is evaluated

Execute SKAB!

The SKAB! command sets the curve section over which a threshold is evaluated.

If 2 parameters, the threshold's curve section is set with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SKAB! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Curve segment	0 -> Forward 1 -> Return 2 -> Total

If 3 parameters, the threshold's curve section is set with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SKAB! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Curve segment	0 -> Forward 1 -> Return 2 -> Total

Query SKAB?

The SKAB? command queries the curve section over which a threshold is evaluated.

If 1 parameter, the threshold's curve section is queried with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SKAB? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Curve segment	0 -> Forward 1 -> Return 2 -> Total

If 2 parameters, the threshold's curve section is queried with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SKAB? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Curve segment	0 -> Forward 1 -> Return 2 -> Total

4.29.7 SDUB–Evaluation of first passage only

Execute SDUB!

The SDUB! command causes the threshold is being evaluated at first passage only .

If 2 parameters, the evaluation option is set for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SDUB! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 10
P2	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

If 3 parameters, the evaluation option is set for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SDUB! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 10
P3	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

Query SDUB?

The SDUB? command determines if a threshold is being evaluated at first passage only.

If 1 parameter, the evaluation option is queried for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SDUB? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 10
P2	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

If 2 parameters, the evaluation option is queried for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SDUB? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 10
P3	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

4.29.8 SKAN - Evaluation channel

Execute SKAN!

The SKAN! command sets the channel for the evaluation of a threshold.

If 2 parameters, the evaluation channel is set for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SKAN! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

If 3 parameters, the evaluation channel is set for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SKAN! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

Query SKAN?

The SKAN? command queries the evaluation channel for a threshold.

If 1 parameter, the evaluation channel is queried for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SKAN? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

If 2 parameters, the evaluation channel is queried for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SKAN? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

4.29.9 SAAF–Determination of the absolute maximum of a threshold on/off

Execute SAAF!

The SAAF! command enables/disables the determination of the absolute maximum of a threshold.

If 2 parameters, the determination of the absolute maximum is set for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SAAF! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the absolute maximum	0 -> Off 1 -> On

If 3 parameters, the determination of the absolute maximum is set for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SAAF! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the absolute maximum	0 -> Off 1 -> On

Query SAAF?

The SAAF? command queries the determination of the absolute maximum of a threshold.

If 1 parameter, the determination of the absolute maximum is queried with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SAAF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the absolute maximum	0 -> Off 1 -> On

If 2 parameters, the determination of the absolute maximum is queried with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SAAF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the absolute maximum	0 -> Off 1 -> On

4.29.10 SIAF–Determination of the absolute minimum of a threshold on/off

Execute SIAF!

The SIAF! command enables/disables the determination of the absolute minimum of a threshold.

If 2 parameters, the determination of the absolute minimum is set for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SIAF! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the absolute minimum	0 -> Off 1 -> On

If 3 parameters, the determination of the absolute minimum is set for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SIAF! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the absolute minimum	0 -> Off 1 -> On

Query SIAF?

The SIAF? command queries the determination of the absolute minimum of a threshold.

If 1 parameter, the determination of the absolute minimum is queried with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SIAF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the absolute minimum	0 -> Off 1 -> On

If 2 parameters, the determination of the absolute minimum is queried with the transferred threshold number and the transferred measurement program.

Host sends: `<Address>sr<STX>SIAF? P1,P2<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P3<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the absolute minimum	0 -> Off 1 -> On

4.29.11 SALF - Determination of the local maximum of a threshold on/off

Execute SALF!

The SALF! command enables/disables the determination of the local maximum of a threshold.

If 2 parameters, the determination of the local maximum is set for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: `<Address>sr<STX>SALF! P1,P2<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the local maximum	0 -> Off 1 -> On

If 3 parameters, the determination of the local maximum is set for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: \<Address\>sr\<STX\>SALF! P1,P2,P3\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the local maximum	0 -> Off 1 -> On

Query SALF?

The SALF? command queries the determination of the local maximum of a threshold.

If 1 parameter, the determination of the local maximum is queried with the transferred threshold number and the currently selected measurement program.

Host sends: \<Address\>sr\<STX\>SALF? P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P2\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the local maximum	0 -> Off 1 -> On

If 2 parameters, the determination of the local maximum is queried with the transferred threshold number and the transferred measurement program.

Host sends: \<Address\>sr\<STX\>SALF? P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the local maximum	0 -> Off 1 -> On

4.29.12 SILF - Determination of the local minimum of a threshold on/off

Execute SILF!

The SILF! command enables/disables the determination of the local minimum of a threshold.

If 2 parameters, the determination of the local minimum is set for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SILF! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the local minimum	0 -> Off 1 -> On

If 3 parameters, the determination of the local minimum is set for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SILF! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the local minimum	0 -> Off 1 -> On

Query SILF?

The SILF? command queries the determination of the local minimum of a threshold.

If 1 parameter, the determination of the local minimum is queried with the transferred threshold number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>SILF? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the local minimum	0 -> Off 1 -> On

If 2 parameters, the determination of the local minimum is queried with the transferred threshold number and the transferred measurement program.

Host sends: \<Address>sr\<STX>SILF? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the local minimum	0 -> Off 1 -> On

4.29.13 SKNF - Bend point of a threshold

Execute SKNF!

The SKNF! command enables/disables the determination of the bending point of a threshold.

If 2 parameters, the determination of the bending point is set for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends:	<Address>sr<STX>SKNF! P1,P2<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the bending point	0 -> Off 1 -> On

If 3 parameters, the determination of the bending point is set for the threshold with the transferred threshold number and the transferred measurement program.

Host sends:	<Address>sr<STX>SKNF! P1,P2,P3<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the bending point	0 -> Off 1 -> On

Query SKNF?

The SKNF? command queries the determination of the bending point of a threshold.

If 1 parameter, the determination of the bending point is queried with the transferred threshold number and the currently selected measurement program.

Host sends:	<Address>sr<STX>SKNF? P1<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>P2<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the bending point	0 -> Off 1 -> On

If 2 parameters, the determination of the bending point is queried with the transferred threshold number and the transferred measurement program.

Host sends: \<Address>sr\<STX>SKNF? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the bending point	0 -> Off 1 -> On

4.29.14 SGRF - Determination of the gradient of a threshold on/off

Execute SGRF!

The SGRF! command enables/disables the determination of the gradient of a threshold.

If 2 parameters, the determination of the gradient is set for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>SGRF! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the gradient	0 -> Off 1 -> On

If 3 parameters, the determination of the gradient is set for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SGRF! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the gradient	0 -> Off 1 -> On

Query SGRF?

The SGRF? command queries the determination of the gradient of a threshold.

If 1 parameter, the determination of the gradient is queried with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SGRF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the gradient	0 -> Off 1 -> On

If 2 parameters, the determination of the gradient is queried with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SGRF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the gradient	0 -> Off 1 -> On

4.29.15 SMIF - Mean value of a threshold on/off

Execute SMIF!

The SMIF! command enables/disables the determination of mean value of a threshold.

If 2 parameters, the determination of the mean value is set for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: `<Address>sr<STX>SMIF! P1,P2<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the mean value	0 -> Off 1 -> On

If 3 parameters, the determination of the mean value is set for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: `<Address>sr<STX>SMIF! P1,P2,P3<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the mean value	0 -> Off 1 -> On

Query SMIF?

The SMIF? command queries the determination of the mean value of a threshold.

If 1 parameter, the determination of mean value is queried with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SMIF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the mean value	0 -> Off 1 -> On

If 2 parameters, the determination of the mean value is queried with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SMIF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the mean value	0 -> Off 1 -> On

4.29.16 SFLF - Determination of the area under curve on/off

Execute SFLF!

The SFLF! command enables/disables the determination of the area under curve of a threshold.

If 2 parameters, the determination of the area under curve is set for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SFLF! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the area under curve	0 -> Off 1 -> On

If 3 parameters, the determination of the area under curve is set for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SFLF! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the area under curve	0 -> Off 1 -> On

Query SFLF?

The SFLF? command queries the determination of the area under curve of a threshold.

If 1 parameter, the determination of the area under curve is queried with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SFLF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Determination of the area under curve	0 -> Off 1 -> On

If 2 parameters, the determination of the area under curve is queried with the transferred threshold number and the transferred measurement program.

Host sends:	<Address>sr<STX>SFLF? P1,P2<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>P3<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Determination of the area under curve	0 -> Off 1 -> On

4.29.17 SDMA–Delta value to determine the local maximum of a threshold

Execute SDMA!

The SDMA! command sets the delta value to determine the local maximum of a threshold

If 2 parameters, the delta value to determine the local maximum is set for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends:	<Address>sr<STX>SDMA! P1,P2<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Delta value to determine the local maximum	Floating-point value

If 3 parameters, the delta value to determine the local maximum is set for the threshold with the transferred threshold number and the transferred measurement program.

Host sends:	<Address>sr<STX>SDMA! P1,P2,P3<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Delta value to determine the local maximum	Floating-point value

Query SDMA?

The SDMA? command queries the delta value to determine the local maximum of a threshold.

If 1 parameter, the delta value to determine the local maximum is queried within the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SDMA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Delta value to determine the local maximum	Floating-point value

If 2 parameters, the delta value to determine the local maximum is queried within the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SDMA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Delta value to determine the local maximum	Floating-point value

4.29.18 SDMI - Delta value to determine the local minimum of a threshold

Execute SDMI!

The SDMI! command sets the delta value to determine the local minimum of a threshold

If 2 parameters, the delta value to determine the local minimum is set for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>SDMI! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Delta value to determine the local minimum	Floating-point value

If 3 parameters, the delta value to determine the local minimum is set for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: \<Address>sr\<STX>SDMI! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Delta value to determine the local minimum	Floating-point value

Query SDMI?

The SDMI? command queries the delta value to determine the local minimum of a threshold.

If 1 parameter, the delta value to determine the local minimum is queried within the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>SDMI? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Delta value to determine the local minimum	Floating-point value

If 2 parameters, the delta value to determine the local minimum is queried within the threshold with the transferred threshold number and the transferred measurement program.

Host sends: \<Address>sr\<STX>SDMI? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Delta value to determine the local minimum	Floating-point value

4.29.19 SDYK - Delta value to determine the bending point of a threshold

Execute SDYK!

The SDYK! command sets the delta value to determine the bending point of a threshold

If 2 parameters, the delta value to determine the bending point is set for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SDYK! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Delta value to determine the the bending point	0 -> Off 1 -> On

If 3 parameters, the delta value to determine the bending point is set for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SDYK! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Delta value to determine the bending point	0 -> Off 1 -> On

Query SDYK?

The SDYK? command queries the delta value to determine the bending point of a threshold.

If 1 parameter, the delta value to determine the bending point is queried within the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SDYK? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Delta value to determine the bending point	Floating-point value

If 2 parameters, the delta value to determine the bending point is queried within the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SDYK? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Delta value to determine the bending point	Floating-point value

4.29.20 SDSK - Delta gradient value to determine the bending point of a threshold

Execute SDSK!

The SDSK! command sets the delta gradient value to determine the bending point of a threshold

If 2 parameters, the delta gradient value to determine the bending point is set for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SDSK! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Delta gradient value to determine the bending point	Floating-point value

If 3 parameters, the delta gradient value to determine the bending point is set for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: \<Address>sr\<STX>SDSK! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Delta gradient value to determine the bending point	Floating-point value

Query SDSK?

The SDSK? command queries the delta delta gradient value to determine the bending point of a threshold.

If 1 parameter, the delta gradient value to determine the bending point is queried within the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>SDSK? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Delta gradient value to determine the bending point	Floating-point value

If 2 parameters, the delta gradient value to determine the bending point is queried within the threshold with the transferred threshold number and the transferred measurement program.

Host sends: \<Address>sr\<STX>SDSK? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Delta gradient value to determine the bending point	Floating-point value

4.29.21 SBEF - Evaluation result of a threshold (OK/NOK)

Execute SBEF!

There is no ! form of this command

Query SBEF?

The SBEF? command queries the evaluation result of a threshold.

If 1 parameter, the threshold's evaluation result is queried with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SBEF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Evaluation result	0 -> NOK 1 -> OK

If 2 parameters, the threshold's evaluation result is queried with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SBEF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Evaluation result	0 -> NOK 1 -> OK

4.29.22 SNIO - NOK counter for a threshold

Execute SNIO!

There is no ! form of this command

Query SNIO?

The SNIO? command queries the NOK counter for a threshold.

If 1 parameter, the NOK counter is queried for the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SNIO? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	NOK counter for a threshold	Integer value >= 0

If 2 parameters, the NOK counter is queried for the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SNIO? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	NOK counter for a threshold	Integer value >= 0

4.29.23 SDKO - The curve's intersection points through a threshold

Execute SDKO!

There is no ! form of this command

Query SDKO?

The SDKO? command queries the curve's intersection points through a threshold.

If 1 parameter, the intersection points are queried through the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SDKO? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Index of curve intersection	Integer value >= 0
P3	Crossover X coordinate	Floating-point value
P3	Crossover Y coordinate	Floating-point value

If 2 parameters, the intersection points are queried through the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SDKO? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3,P4,P5\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Index of curve intersection	Integer value >= 0
P4	Crossover X coordinate	Floating-point value
P5	Crossover Y coordinate	Floating-point value

4.29.24 SMAA - Query the absolute maximum of a threshold

Execute SMAA!

There is no ! form of this command

Query SMAA?

The SMAA? command queries the absolute maximum of a threshold.

If 1 parameter, the absolute maximum is queried within the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>SMAA? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2,P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	X coordinate of the absolute maximum	Floating-point value
P3	The absolute maximum (of the Y value)	Floating-point value

If 2 parameters, the absolute maximum is queried within the threshold with the transferred threshold number and the transferred measurement program.

Host sends: \<Address\>sr\<STX\>SMAA? P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P3,P4\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	X coordinate of the absolute maximum	Floating-point value
P4	The absolute maximum (of the Y value)	Floating-point value

4.29.25 SMIA - Absolute minimum of a threshold

Execute SMIA!

There is no ! form of this command

Query SMIA?

The SMIA? command queries the absolute minimum of a threshold.

If 1 parameter, the absolute minimum is queried within the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: \<Address\>sr\<STX\>SMIA? P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P2,P3\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	X coordinate of the absolute minimum	Floating-point value
P3	The absolute minimum (of the Y value)	Floating-point value

If 2 parameters, the absolute minimum is queried within the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SMIA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	X coordinate of the absolute minimum	Floating-point value
P4	The absolute minimum (of the Y value)	Floating-point value

4.29.26 SMAL - Local maximum of a threshold

Execute SMAL!

There is no ! form of this command

Query SMAL?

The SMAL? command queries the local maximum of a threshold.

If 1 parameter, the local maximum is queried within the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SMAL? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	X coordinate of the local maximum	Floating-point value
P3	The local maximum (of the Y value)	Floating-point value

If 2 parameters, the local maximum is queried within the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SMAL? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	X coordinate of the local maximum	Floating-point value
P4	The local maximum (of the Y value)	Floating-point value

4.29.27 SMIL - Local minimum of a threshold

Execute SMIL!

There is no ! form of this command

Query SMIL?

The SMIL? command queries the local minimum of a threshold.

If 1 parameter, the local minimum is queried within the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SMIL? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	X coordinate of the local minimum	Floating-point value
P3	The local minimum (of the Y value)	Floating-point value

If 2 parameters, the local minimum is queried within the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SMIL? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	X coordinate of the local minimum	Floating-point value
P4	The local minimum (of the Y value)	Floating-point value

4.29.28 SKNI - Bending point of a threshold

Execute SKNI!

There is no ! form of this command

Query SKNI?

The SKNI? command queries the the bending point of a threshold.

If 1 parameter, the bending point is queried within the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SKNI? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	X coordinate of the bending point	Floating-point value
P3	X coordinate of the bending point	Floating-point value

If 2 parameters, the bending point is queried within the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SKNI? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	X coordinate of the bending point	Floating-point value
P4	Y coordinate of the bending point	Floating-point value

4.29.29 SGRA - Gradient of a threshold

Execute SGRA!

There is no ! form of this command

Query SGRA?

The SGRA? command queries the the gradient of a threshold.

If 1 parameter, the gradient is queried within the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SGRA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Gradient	Floating-point value

If 2 parameters, the gradient is queried within the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SGRA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Gradient	Floating-point value

4.29.30 SMIT - Y-mean value of a threshold

Execute SMIT!

There is no ! form of this command

Query SMIT?

The SMIT? command queries the the Y-mean value of a threshold.

If 1 parameter, the Y-mean value is queried within the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: <Address>sr<STX>SMIT? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Y-mean value	Floating-point value

If 2 parameters, the Y-mean value is queried within the threshold with the transferred threshold number and the transferred measurement program.

Host sends: <Address>sr<STX>SMIT? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Y-mean value	Floating-point value

4.29.31 SFLA - Area under curve of a threshold

Execute SFLA!

There is no ! form of this command

Query SFLA?

The SFLA? command queries the area under curve of a threshold.

If 1 parameter, the area under curve is queried within the threshold with the transferred threshold number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>SFLA? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Threshold number	1 to 4
P2	Area under curve of a threshold	Floating-point value

If 2 parameters, the area under curve is queried within the threshold with the transferred threshold number and the transferred measurement program.

Host sends: \<Address>sr\<STX>SFLA? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Threshold number	1 to 4
P3	Area under curve of a threshold	Floating-point value

4.30 Evaluating the X-trapezoid window

4.30.1 TXST- Trapezoid window X on/off

Execute TXST!

The TXST! command enables or disables a X-trapezoid window.

If 2 parameters, the X-trapezoid window for the transferred trapezoid window number and the currently selected measurement program is enabled or disabled.

Host sends: <Address>sr<STX>TXST! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	X-trapezoid window on/off	0 -> Off 1 -> On

If 3 parameters, the X-trapezoid window for the transferred trapezoid window number and the transferred measurement program is enabled or disabled.

Host sends: <Address>sr<STX>TXST! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	X-trapezoid window on/off	0 -> Off 1 -> On

Query TXST?

The TXST? command queries whether the X-trapezoid window is enabled or disabled.

If 1 parameter, the X-trapezoid window for the transferred trapezoid window number and the currently selected measurement program is queried for its enabled/disabled status.

Host sends: <Address>sr<STX>TXST? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	X-trapezoid window on/off	0 -> Off 1 -> On

If 2 parameters, the X-trapezoid window for the transferred trapezoid window number and the transferred measurement program is queried for its enabled/disabled status.

Host sends: <Address>sr<STX>TXST? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	X-trapezoid window on/off	0 -> Off 1 -> On

4.30.2 TXGR - X-trapezoid window limits

Execute TXGR!

The TXGR! command sets the X-trapezoid window limits.

If 7 parameters, the X-trapezoid window limits are set with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TXGR! P1,P2,P3,P4,P5,P6,P7<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Xmin	Floating-point value
P3	Xmax	Floating-point value
P4	Y value top left	Floating-point value
P5	Y value top right	Floating-point value
P6	Y value bottom left	Floating-point value
P7	Y value bottom right	Floating-point value

If 8 parameters, the X-trapezoid window limits are set with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TXGR! P1,P2,P3,P4,P5,P6,P7,P8<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Xmin	Floating-point value
P4	Xmax	Floating-point value
P4	Y value top left	Floating-point value
P5	Y value top right	Floating-point value
P6	Y value bottom left	Floating-point value
P7	Y value bottom right	Floating-point value

Query TXGR?

The TXGR? command queries the X-trapezoid window limits.

If 1 parameter, the X-trapezoid window limits are queried with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TXGR? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4,P5,P6,P7<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Xmin	Floating-point value
P3	Xmax	Floating-point value
P4	Y value top left	Floating-point value
P5	Y value top right	Floating-point value
P6	Y value bottom left	Floating-point value
P7	Y value bottom right	Floating-point value

If 2 parameters, the X-trapezoid window limits are queried with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TXGR? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5,>P6,P7,P8<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Xmin	Floating-point value

P4	Xmax	Floating-point value
P5	Y value top left	Floating-point value
P6	Y value top right	Floating-point value
P7	Y value bottom left	Floating-point value
P8	Y value bottom right	Floating-point value

4.30.3 TXEA - X-trapezoid window entries/exits

Execute TXEA!

The TXEA! command sets the X-trapezoid window entries/exits.

If 5 parameters, the X-trapezoid window entries/exits are set with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TXEA! P1,P2,P3,P4,P5<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Entry left	0 -> No 1 -> Yes
P3	Entry right	0 -> No 1 -> Yes
P4	Exit left	0 -> No 1 -> Yes
P5	Exit right	0 -> No 1 -> Yes

If 6 parameters, the X-trapezoid window entries/exits are set with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TXEA! P1,P2,P3,P4,P5,P6<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Entry left	0 -> No 1 -> Yes
P4	Entry right	0 -> No 1 -> Yes
P5	Exit left	0 -> No 1 -> Yes
P6	Exit right	0 -> No 1 -> Yes

Query TXEA?

The TXEA? command queries the X-trapezoid window entries/exits.

If 1 parameter, the entries/exits are queried of that X-trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>TXEA? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2,P3,P4,P5\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Entry left	0 -> No 1 -> Yes
P3	Entry right	0 -> No 1 -> Yes
P4	Exit left	0 -> No 1 -> Yes
P5	Exit right	0 -> No 1 -> Yes

If 2 parameters, the entries/exits are set queried of that X-trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>TXEA? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P3,P4,P5,>P6<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Entry left	0 -> No 1 -> Yes
P4	Entry right	0 -> No 1 -> Yes
P5	Exit left	0 -> No 1 -> Yes
P6	Exit right	0 -> No 1 -> Yes

4.30.4 TXBE - Evaluation of X-trapezoid window

Execute TXBE!

The TXBE! command enables/disables the evaluation of a X-trapezoid window.

If 2 parameters, the X-trapezoid window's evaluation is set with the transferred trapezoid window number and the currently selected measurement program.

Host sends: `<Address>sr<STX>TXBE! P1,P2<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Evaluation of a trapezoid window	0 -> Off 1 -> On

If 3 parameters, the X-trapezoid window's evaluation is set with the transferred trapezoid window number and the transferred measurement program.

Host sends: `<Address>sr<STX>TXBE! P1,P2,P3<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Evaluation of a trapezoid window	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Evaluation of a trapezoid window	0 -> Off 1 -> On

Query TXBE?

The TXBE? command queries the curve section over which a trapezoid window is evaluated.

If 1 parameter, the trapezoid window 's evaluation status is queried for the trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TXBE? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Evaluation of a trapezoid window	0 -> Off 1 -> On

If 2 parameters, the trapezoid window 's evaluation status is queried for the trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TXBE? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Evaluation of a trapezoid window	0 -> Off 1 -> On

4.30.5 TXKA - Curve section used to evaluate a X-trapezoid window

Execute TXKA!

The TXKA! command lets the user enter the curve section used to evaluate a X-trapezoid window.

If 2 parameters, the curve section is set for that X-trapezoid window with the transferred trapezoid window number and the currently selected measurement program

Host sends: \<Address>sr\<STX>TXKA! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Curve segment	0 -> Forward 1 -> Return 2 -> Total

If 3 parameters, the curve section is set for that X-trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>TXKA! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Curve segment	0 -> Forward 1 -> Return 2 -> Total

Query TXKA?

The TXKA? command queries the curve section used to evaluate a X-trapezoid window.

If 1 parameter, the curve section is queried for that X-trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TXKA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Curve segment	0 -> Forward 1 -> Return 2 -> Total

If 2 parameters, the curve section is queried for that X-trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TXKA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Curve segment	0 -> Forward 1 -> Return 2 -> Total

4.30.6 TXDU - Evaluation of first passage only

Execute TXDU!

The TXDU! command causes the trapezoid window is being evaluated at first passage only .

If 2 parameters, the evaluation option is set for the trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TXDU! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

If 3 parameters, the evaluation option is set for the trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TXDU! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

Query TXDU?

The TXDU? command determines if a trapezoid window is being evaluated at first passage only.

If 1 parameter, the evaluation option is queried for the trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TXDU? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

If 2 parameters, the evaluation option is queried for the trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>TXDU? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

4.30.7 TXKN - Evaluation channel

Execute TXKN!

The TXKN! command sets the channel (Y1 or Y2) for the evaluation of a trapezoid window .

If 2 parameters, the evaluation channel is set for the trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>TXKN! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

If 3 parameters, the evaluation channel is set for the trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TXKN! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

Query TXKN?

The TXKN? command queries the evaluation channel (Y1 or Y2) for a trapezoid window .

If 1 parameter, the evaluation channel is queried for the trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TXKN? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

If 2 parameters, the evaluation channel is queried for the trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TXKN? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

4.30.8 TXBF - Evaluation result of a X-trapezoid window (OK/NOK)

Execute TXBF!

There is no ! form of this command

Query TXBF?

The TXBF? command queries the evaluation result of a X-trapezoid window.

If 1 parameter, the evaluation result is queried for the X X-trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TXBF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Evaluation result	0 -> NOK 1 -> OK

If 2 parameters, the evaluation result is queried for the X-trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TXBF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Evaluation result	0 -> NOK 1 -> OK

4.30.9 TXNI - Query NOK counter for a X-trapezoid window

Execute TXNI!

There is no ! form of this command

Query TXNI?

The TXNI? command queries the NOK counter for a X-trapezoid window.

If 1 parameter, the NOK counter is queried for the X-trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TXNI? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	NOK counter	Integer value > 0

If 2 parameters, the NOK counter is queried for the X-trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TXNI? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	NOK counter	Integer value > 0

4.30.10 TXEI - Curve entry values of a X-trapezoid window

Execute TXEI!

There is no ! form of this command

Query TXEI?

The TXEI? command queries the curve entry values of a X-trapezoid window.

If 1 parameter, the entry values are queried for the X-trapezoid window with the transferred trapezoid window number and the currently selected measurement program

Host sends:	<Address>sr<STX>TXEI? P1<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>P2,P3,P4<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P!	Trapezoid window number	1 to 2
P2	Index of the entry	Integer value (unsigned 16 bit)
P3	X coordinate of the entry	Floating-point value
P4	Y coordinate of the entry	Floating-point value

If 2 parameters, the entry values are queried for the X-trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends:	<Address>sr<STX>TXEI? P1,P2<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Index of the entry	Integer value (unsigned 16 bit)
P4	X coordinate of the entry	Floating-point value
P5	Y coordinate of the entry	Floating-point value

4.30.11 TXAU - Curve exit values of a X-trapezoid window

Execute TXAU!

There is no ! form of this command

Query TXAU?

The TXAU? command queries the curve exit values of a X-trapezoid window.

If 1 parameter, the exit values are queried for the X-trapezoid window with the transferred trapezoid window number and the currently selected measurement program

Host sends: <Address>sr<STX>TXAU? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Index of the exit	Integer value (unsigned 16 bit)
P3	X coordinate of the exit	Floating-point value
P4	Y coordinate of the exit	Floating-point value

If 2 parameters, the exit values are queried for the X-trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TXAU? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Index of the exit	Integer value (unsigned 16 bit)
P4	X coordinate of the exit	Floating-point value
P5	Y coordinate of the exit	Floating-point value

4.31 Evaluating the Y-trapezoid window

4.31.1 TYST- Trapezoid window Y on/off

Execute TYST!

The TYST! command enables or disables a Y-trapezoid window.

If 2 parameters, the Y-trapezoid window for the transferred trapezoid window number and the currently selected measurement program is enabled or disabled.

Host sends: <Address>sr<STX>TYST! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Y-trapezoid window on/off	0 -> Off 1 -> On

If 3 parameters, the Y-trapezoid window for the transferred trapezoid window number and the transferred measurement program is enabled or disabled.

Host sends: <Address>sr<STX>TYST! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Y-trapezoid window on/off	0 -> Off 1 -> On

Query TYST?

The TYST? command queries whether the Y-trapezoid window is enabled or disabled.

If 1 parameter, the Y-trapezoid window for the transferred trapezoid window number and the currently selected measurement program is queried for its enabled/disabled status.

Host sends: <Address>sr<STX>TYST? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Y-trapezoid window on/off	0 -> Off 1 -> On

If 2 parameters, the Y-trapezoid window for the transferred trapezoid window number and the transferred measurement program is queried for its enabled/disabled status.

Host sends: <Address>sr<STX>TYST? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Y-trapezoid window on/off	0 -> Off 1 -> On

4.31.2 TYGR - Y-trapezoid window limits

Execute TYGR!

The TYGR! command sets the Y-trapezoid window limits.

If 7 parameters, the Y-trapezoid window limits are set with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TYGR! P1,P2,P3,P4,P5,P6,P7<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Xmin	Floating-point value
P3	Xmax	Floating-point value
P4	Y value top left	Floating-point value
P5	Y value top right	Floating-point value
P6	Y value bottom left	Floating-point value
P7	Y value bottom right	Floating-point value

If 8 parameters, the Y-trapezoid window limits are set with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TYGR! P1,P2,P3,P4,P5,P6,P7,P8<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Xmin	Floating-point value
P4	Xmax	Floating-point value

P5	Y value top left	Floating-point value
P6	Y value top right	Floating-point value
P7	Y value bottom left	Floating-point value
P8	Y value bottom right	Floating-point value

Query TYGR?

The TYGR? command queries the Y-trapezoid window limits.

If 1 parameter, the Y-trapezoid window limits are queried with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TYGR? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4,P5,P6,P7<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Xmin	Floating-point value
P3	Xmax	Floating-point value
P4	Y value top left	Floating-point value
P5	Y value top right	Floating-point value
P6	Y value bottom left	Floating-point value
P7	Y value bottom right	Floating-point value

If 2 parameters, the Y-trapezoid window limits are queried with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TYGR? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5,>P6,P7,P8<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Xmin	Floating-point value
P4	Xmax	Floating-point value
P5	Y value top left	Floating-point value
P6	Y value top right	Floating-point value
P7	Y value bottom left	Floating-point value
P8	Y value bottom right	Floating-point value

4.31.3 TYEA - Y-trapezoid window entries/exits

Execute TYEA!

The TYEA! command sets the Y-trapezoid window entries/exits.

If 5 parameters, the Y-trapezoid window entries/exits are set with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TYEA! P1,P2,P3,P4,P5<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Entry left	0 -> No 1 -> Yes
P3	Entry right	0 -> No 1 -> Yes
P4	Exit left	0 -> No 1 -> Yes
P5	Exit right	0 -> No 1 -> Yes

If 6 parameters, the Y-trapezoid window entries/exits are set with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TYEA! P1,P2,P3,P4,P5,P6<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Entry left	0 -> No 1 -> Yes
P4	Entry right	0 -> No 1 -> Yes
P5	Exit left	0 -> No 1 -> Yes
P6	Exit right	0 -> No 1 -> Yes

Query TYEA?

The TYEA? command queries the Y-trapezoid window entries/exits.

If 1 parameter, the entries/exits are queried of that Y-trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TYEA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Entry left	0 -> No 1 -> Yes
P3	Entry right	0 -> No 1 -> Yes
P4	Exit left	0 -> No 1 -> Yes
P5	Exit right	0 -> No 1 -> Yes

If 2 parameters, the entries/exits are set queried of that Y-trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TYEA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5,>P6<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Entry left	0 -> No 1 -> Yes
P4	Entry right	0 -> No 1 -> Yes
P5	Exit left	0 -> No 1 -> Yes
P6	Exit right	0 -> No 1 -> Yes

4.31.4 TYBE - Evaluation of Y-trapezoid window

Execute TYBE!

The TYBE! command enables/disables the evaluation of a Y-trapezoid window.

If 2 parameters, the Y-trapezoid window's evaluation is set with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TYBE! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Evaluation of a trapezoid window	0 -> Off 1 -> On

If 3 parameters, the Y-trapezoid window's evaluation is set with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TYBE! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Evaluation of a trapezoid window	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Evaluation of a trapezoid window	0 -> Off 1 -> On

Query TYBE?

The TYBE? command queries the curve section over which a trapezoid window is evaluated.

If 1 parameter, the trapezoid window 's evaluation status is queried for the trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>TYBE? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Evaluation of a trapezoid window	0 -> Off 1 -> On

If 2 parameters, the trapezoid window 's evaluation status is queried for the trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>TYBE? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Evaluation of a trapezoid window	0 -> Off 1 -> On

4.31.5 TYKA - Curve section used to evaluate a Y-trapezoid window

Execute TYKA!

The TYKA! command lets the user enter the curve section used to evaluate a Y-trapezoid window.

If 2 parameters, the curve section is set for that Y-trapezoid window with the transferred trapezoid window number and the currently selected measurement program

Host sends: <Address>sr<STX>TYKA! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Curve segment	0 -> Forward 1 -> Return 2 -> Total

If 3 parameters, the curve section is set for that Y-trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TYKA! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Curve segment	0 -> Forward 1 -> Return 2 -> Total

Query TYKA?

The TYKA? command queries the curve section used to evaluate a Y-trapezoid window.

If 1 parameter, the curve section is queried for that Y-trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TYKA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Curve segment	0 -> Forward 1 -> Return 2 -> Total

If 2 parameters, the curve section is queried for that Y-trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TYKA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Curve segment	0 -> Forward 1 -> Return 2 -> Total

4.31.6 TYDU - Evaluation of first passage only

Execute TYDU!

The TYDU! command causes the trapezoid window is being evaluated at first passage only .

If 2 parameters, the evaluation option is set for the trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TYDU! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

If 3 parameters, the evaluation option is set for the trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TYDU! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

Query TYDU?

The TYDU? command determines if a trapezoid window is being evaluated at first passage only.

If 1 parameter, the evaluation option is queried for the trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TYDU? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

If 2 parameters, the evaluation option is queried for the trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>TYDU? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Evaluation option	0 -> Evaluation of all passages 1 -> Evaluation of first passage only

4.31.7 TYKN - Evaluation channel

Execute TYKN!

The TYKN! command sets the channel (Y1 or Y2) for the evaluation of a trapezoid window .

If 2 parameters, the evaluation channel is set for the trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>TYKN! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

If 3 parameters, the evaluation channel is set for the trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>TYKN! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

Query TYKN?

The TYKN? command queries the evaluation channel (Y1 or Y2) for a trapezoid window .

If 1 parameter, the evaluation channel is queried for the trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>TYKN? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

If 2 parameters, the evaluation channel is queried for the trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: \<Address>sr\<STX>TYKN? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Evaluation channel	0 -> Channel Y1 1 -> Channel Y2

4.31.8 TYBF - Evaluation result of a Y-trapezoid window (OK/NOK)

Execute TYBF!

There is no ! form of this command

Query TYBF?

The TYBF? command queries the evaluation result of a Y-trapezoid window.

If 1 parameter, the evaluation result is queried for the Y-trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TYBF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Evaluation result	0 -> NOK 1 -> OK

If 2 parameters, the evaluation result is queried for the Y-trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TYBF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Evaluation result	0 -> NOK 1 -> OK

4.31.9 TYNI - NOK counter for a Y-trapezoid window

Execute TYNI!

There is no ! form of this command

Query TYNI?

The TYNI? command queries the NOK counter for a Y-trapezoid window.

If 1 parameter, the NOK counter is queried for the Y-trapezoid window with the transferred trapezoid window number and the currently selected measurement program.

Host sends: <Address>sr<STX>TYNI? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	NOK counter	Integer value > 0

If 2 parameters, the NOK counter is queried for the Y-trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TYNI? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	NOK counter	Integer value > 0

4.31.10 TYEI - Curve entry values of a Y-trapezoid window

Execute TYEI!

There is no ! form of this command

Query TYEI?

The TYEI? command queries the curve entry values of a Y-trapezoid window.

If 1 parameter, the entry values are queried for the Y-trapezoid window with the transferred trapezoid window number and the currently selected measurement program

Host sends: <Address>sr<STX>TYEI? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P!	Trapezoid window number	1 to 2
P2	Index of the entry	Integer value (unsigned 16 bit)
P3	X coordinate of the entry	Floating-point value
P4	Y coordinate of the entry	Floating-point value

If 2 parameters, the entry values are queried for the Y-trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TYEI? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Index of the entry	Integer value (unsigned 16 bit)
P4	X coordinate of the entry	Floating-point value
P5	Y coordinate of the entry	Floating-point value

4.31.11 TYAU - Curve exit values of a Y-trapezoid window

Execute TYAU!

There is no ! form of this command

Query TYAU?

The TYAU? command queries the curve exit values of a Y-trapezoid window.

If 1 parameter, the exit values are queried for the Y-trapezoid window with the transferred trapezoid window number and the currently selected measurement program

Host sends: <Address>sr<STX>TYAU? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Trapezoid window number	1 to 2
P2	Index of the exit	Integer value (unsigned 16 bit)
P3	X coordinate of the exit	Floating-point value
P4	Y coordinate of the exit	Floating-point value

If 2 parameters, the exit values are queried for the Y-trapezoid window with the transferred trapezoid window number and the transferred measurement program.

Host sends: <Address>sr<STX>TYAU? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Trapezoid window number	1 to 2
P3	Index of the exit	Integer value (unsigned 16 bit)
P4	X coordinate of the exit	Floating-point value
P5	Y coordinate of the exit	Floating-point value

4.32 Evaluating envelopes

4.32.1 HKST - Envelopes on/off

Execute HKST!

The HKST! command enables or disables an envelope.

If 2 parameters, the envelope for the currently selected measurement program is enabled or disabled.

Host sends: <Address>sr<STX>HKST! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Envelope on/off	0 -> Off 1 -> On

If 3 parameters, the envelope for the transferred measurement program is enabled or disabled.

Host sends: <Address>sr<STX>HKST! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P1	Envelope number	1 to 2
P2	Envelope on/off	0 -> Off 1 -> On

Query HKST?

The HKST? command queries whether an envelope is enabled or disabled.

If 1 parameter, the envelope for the currently selected measurement program is queried for its enabled/disabled status.

Host sends: <Address>sr<STX>HKST? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Envelope on/off	0 -> Off 1 -> On

If 2 parameters, the envelope for the transferred measurement program is queried for its enabled/disabled status.

Host sends: <Address>sr<STX>HKST? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Envelope on/off	0 -> Off 1 -> On

4.32.2 HKGR - Start and end values for envelopes

Execute HKGR!

The HKGR! command sets the start and end value of an envelope

If 3 parameters, the start and end value of that envelope with the currently selected measurement program are set.

Host sends: <Address>sr<STX>HKGR! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Start value of envelope	Floating-point value
P3	End value of envelope	Floating-point value

If 4 parameters, the start and end value of that envelope with the transferred measurement program are set.

Host sends: <Address>sr<STX>HKGR! P1,P2,P3,P4<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Start value of envelope	Floating-point value
P4	End value of envelope	Floating-point value

Query HKGR?

The HKGR? command queries the start and end value of an envelope.

If 1 parameter, the start and end value of that envelope with the currently selected measurement program are queried.

Host sends: <Address>sr<STX>HKGR? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Start value of envelope	Floating-point value
P3	End value of envelope	Floating-point value

If 2 parameter, the start and end value of that envelope with the transferred measurement program are queried.

Host sends: <Address>sr<STX>HKGR? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Start value of envelope	Floating-point value
P4	End value of envelope	Floating-point value

4.32.3 HKDE - Delta min and max values of envelopes

Execute HKDE!

The HKDE! command sets the Delta min and max values of an envelope

If 3 parameters, the Delta min and max values of that envelope with the currently selected measurement program are set.

Host sends: \<Address>sr\<STX>HKDE! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Delta min value of the envelope	Floating-point value
P3	Delta max value of the envelope	Floating-point value

If 4 parameters, the Delta min and max values of that envelope with the transferred measurement program are set.

Host sends: \<Address>sr\<STX>HKDE! P1,P2,P3,P4\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Delta min value of the envelope	Floating-point value
P4	Delta max value of the envelope	Floating-point value

Query HKDE?

The HKDE? command queries the Delta min and max values of an envelope.

If 1 parameter, the Delta min and max values of that envelope with the currently selected measurement program are queried.

Host sends: \<Address>sr\<STX>HKDE? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2,P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Delta min value of the envelope	Floating-point value
P3	Delta max value of the envelope	Floating-point value

If 2 parameter, the Delta min and max values of that envelope with the transferred measurement program are queried.

Host sends: <Address>sr<STX>HKDE? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Delta min value of the envelope	Floating-point value
P4	Delta max value of the envelope	Floating-point value

4.32.4 HKBE - Evaluation of envelope on/off

Execute HKBE!

The HKBE! command enables/disables the evaluation of an envelope.

If 2 parameters, the envelope evaluation is set with the transferred envelope number and the currently selected measurement program.

Host sends: <Address>sr<STX>HKBE P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Envelope evaluation	0 -> Off 1 -> On

If 3 parameters, the envelope evaluation is set with the transferred envelope number and the transferred measurement program.

Host sends: <Address>sr<STX>HKBE! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Envelope evaluation	0 -> Off 1 -> On

Query HKBE?

The HKBE? command queries the envelope evaluation status.

If 1 parameter, the envelope evaluation status is queried for the envelope with the transferred envelope number and the currently selected measurement program.

Host sends: <Address>sr<STX>HKBE? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Envelope evaluation	0 -> Off 1 -> On

If 2 parameters, the envelope evaluation status is queried for the envelope with the transferred envelope number and the transferred measurement program.

Host sends: <Address>sr<STX>HKBE? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Envelope evaluation	0 -> Off 1 -> On

4.32.5 HKES - Entry side of envelopes

Execute HKES!

The HKES! command sets the entry side of an envelope.

Note: If an envelope already exists, this is deleted when its entry side is changed.

If 2 parameters, the entry side of that envelope with the currently selected measurement program is set.

Host sends: <Address>sr<STX>HKES! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Entry side of envelope	0 -> left 1 -> right 2 -> bottom 3 -> top

If 3 parameters, the entry side of that envelope with the transferred measurement program is set.

Host sends: <Address>sr<STX>HKES! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Entry side of envelope	0 -> left 1 -> right 2 -> bottom 3 -> top

Caution: The envelope is deleted when its entry side is changed!

Query HKES?

The HKES? command queries the entry side of an envelope.

If 1 parameter, the entry side of that envelope with the currently selected measurement program is queried.

Host sends: \<Address\>sr\<STX\>HKES? P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P2\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Entry side of envelope	0 -> left 1 -> right 2 -> bottom 3 -> top

If 2 parameter, the entry side of that envelope with the transferred measurement program is queried.

Host sends: \<Address\>sr\<STX\>HKES? P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P3\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Entry side of envelope	0 -> left 1 -> right 2 -> bottom 3 -> top

4.32.6 HKKA - Curve section for envelopes

Execute HKKA!

The HKKA! command sets the curve section for an envelope (forward or return)

Note: If an envelope already exists, this is deleted when the curve section is changed.

If 2 parameters, the curve section of that envelope with the currently selected measurement program is set.

Host sends: \<Address>sr\<STX>HKKA! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Curve section for envelopes	0 -> Forward 1 -> Return

If 3 parameters, the curve section of that envelope with the transferred measurement program is set.

Host sends: \<Address>sr\<STX>HKKA! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Curve section for envelopes	0 -> Forward 1 -> Return

Caution: The envelope is deleted when the curve section is changed!

Query HKKA?

The HKKA? command queries the curve section of an envelope.

If 1 parameter, the curve section of that envelope with the currently selected measurement program is queried.

Host sends: \<Address>sr\<STX>HKKA? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Curve section for envelopes	0 -> Forward 1 -> Return

If 2 parameters, the curve section of that envelope with the transferred measurement program is queried.

Host sends: \<Address\>sr\<STX\>HKKA? P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P3\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Curve section for envelopes	0 -> Forward 1 -> Return

4.32.7 HKKN - Evaluation channel

Execute HKKN!

Note: If an envelope already exists, this will be deleted when its Y-channel is changed.

The HKKN! command sets the channel for the evaluation of an envelope.

If 2 parameters, the evaluation channel is set for the envelope with the transferred envelope number and the currently selected measurement program.

Host sends: \<Address\>sr\<STX\>HKKN! P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Evaluation channel	1 -> Channel Y1 2 -> Channel Y2

If 3 parameters, the evaluation channel is set for the envelope with the transferred envelope number and the transferred measurement program.

Host sends: \<Address>sr\<STX>HKKN! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Evaluation channel	1-> Channel Y1 2-> Channel Y2

Query HKKN?

The HKKN? command queries the evaluation channel for an envelope.

If 1 parameter, the evaluation channel is queried for the envelope with the transferred envelope number and the currently selected measurement program.

Host sends: \<Address>sr\<STX>HKKN? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Evaluation channel	1 -> Channel Y1 2 -> Channel Y2

If 2 parameters, the evaluation channel is queried for the envelope with the transferred envelope number and the transferred measurement program.

Host sends: \<Address>sr\<STX>HKKN? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Evaluation channel	1 -> Channel Y1 2 -> Channel Y2

4.32.8 HKBF - Evaluation result of an envelope (OK/NOK)

Execute HKBF!

There is no ! form of this command

Query HKBF?

The HKBF? command queries the evaluation result of an envelope.

If 1 parameter, the evaluation result of that envelope with the currently selected measurement program is queried.

Host sends: <Address>sr<STX>HKBF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Evaluation result	0 -> NOK 1 -> OK

If 2 parameters the evaluation result of that envelope with the transferred measurement program is queried.

Host sends: <Address>sr<STX>HKBF? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Evaluation result	0 -> NOK 1 -> OK

4.32.9   HKNI - NOK for an envelope

Execute HKNI!

There is no ! form of this command

Query HKNI?

The HKNI? command queries the NOK counter for an envelope.

If 1 parameter, the NOK counter of the envelope with the currently selected measurement program is queried.

Host sends: `<Address>sr<STX>HKNI? P1<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P2<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	NOK counter	Integer value > 0

If 2 parameters, the NOK counter of the envelope with the transferred measurement program is queried.

Host sends: `<Address>sr<STX>HKNI? P1,P2<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P3<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	NOK counter	Integer value > 0

4.32.10 HKEI - Curve entry values of an envelope

Execute HKEI!

There is no ! form of this command

Query HKEI?

The HKEI? command queries the curve entry values of an envelope.

If 1 parameter, the entry values of the envelope with the currently selected measurement program are queried.

Host sends: `<Address>sr<STX>HKEI? P1<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P2,P3,P4<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Index of the entry	Integer value (unsigned 16 bit)
P3	X coordinate of the entry	Floating-point value
P4	Y coordinate of the entry	Floating-point value

If 2 parameters, the entry values of the envelope with the transferred measurement program are queried.

Host sends: `<Address>sr<STX>HKEI? P1,P2<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P3,P4,P5<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Index of the entry	Integer value (unsigned 16 bit)
P4	X coordinate of the entry	Floating-point value
P5	Y coordinate of the entry	Floating-point value

4.32.11 HKAU - Curve exit values of an envelope

Execute HKAU!

There is no ! form of this command

Query HKAU?

The HKAU? command queries the curve exit values of an envelope.

If 1 parameter, the exit values of the envelope with the currently selected measurement program are queried

Host sends: <Address>sr<STX>HKAU? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Index of the entry	Integer value (unsigned 16 bit)
P3	X coordinate of the exit	Floating-point value
P4	Y coordinate of the exit	Floating-point value

If 2 parameter, the exit values of the envelope with the transferred measurement program are queried.

Host sends: <Address>sr<STX>HKAU? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Index of the entry	Integer value (unsigned 16 bit)
P4	X coordinate of the exit	Floating-point value
P5	Y coordinate of the exit	Floating-point value

4.32.12 HRAW - Index of the last point on the envelope reference curve

Execute HRAW!

The HRAW! command receives the index of the last point on the envelope reference curve

If 2 parameter, the index corresponding to the currently selected measurement program is set.

Host sends: <Address>sr<STX>HRAW! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Index of the last point on the reference curve	Integer value <= 4999 (unsigned 16 bit)

If 3 parameters, the index corresponding to the transferred measurement program is set.

Host sends: <Address>sr<STX>HRAW! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Index of the last point on the reference curve	Integer value <= 4999 (unsigned 16 bit)

Query HRAW?

The HRAW? command queries the index of the last point on the envelope reference curve.

If 1 parameter, the index corresponding to the currently selected measurement program is queried.

Host sends:	<Address>sr<STX>HRAW? P1<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>P2<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Index of the last point on the reference curve	Integer value <= 4999 (unsigned 16 bit)

If 2 parameter, the index corresponding to the transferred measurement program is queried.

Host sends:	<Address>sr<STX>HRAW? P1,P2<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>P3<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Index of the last point on the reference curve	Integer value <= 4999 (unsigned 16 bit)

4.32.13 HKGE - Generate envelope

Execute HKGE!

The HKGE! command generates an envelope based on the reference curve and the other envelope settings.

If 1 parameter, the envelope corresponding to the currently selected measurement program is generated.

Host sends: <Address>sr<STX>HKGE! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P2	Envelope number	1 to 2

If 2 parameter, the envelope corresponding to the transferred measurement program is generated.

Host sends: <Address>sr<STX>HKGE! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2

Query HKGE?

This command does not have a query form.

4.32.14 HKRX - Reference curve X coordinates for generating the envelope

Execute HKRX!

The HKRX! command transfers the reference curve X coordinates for generating the envelope.

If 4 parameters, Transferred are the reference curve X coordinates for generating the envelope corresponding to the transfered measurement program number.

Host sends: <Address>sr<STX>HKRX! P1,P2,P3,P4<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Block number	For RS232: A value between 1 and 125; the max 5000 coordinates are transferred in blocks of 40 values. For Ethernet: A value between 1 and 18. Ethernet can transfer up to 280 values at any one time
P4	Reference curve X coordinates for generating the envelope	See description below

If 3 parameters, transferred are the reference curve X coordinates for generating the envelope corresponding to the selected measurement program.

Host sends: <Address>sr<STX>HKRX! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
P2	Block number	For RS232: A value between 1 and 125; the max 5000 coordinates are transferred in blocks of 40 values. For Ethernet: A value between 1 and 18. Ethernet can transfer up to 280 values at any one time
P3	Reference curve X coordinates for generating the envelope	See description below

The max 40 coordinates (or max 280 for Ethernet) are transferred as binary code. Each coordinate is transferred as 5 bytes (4 bytes for a 32 bit floating point followed by a status byte). There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

Caution: Before transferring the coordinates, you must first have transferred the number of value pairs with the HRAW! command.

Query HKRX?

The HKRX? command reads out the reference curve X coordinates for generating the envelope.

If 2 parameter: read out are the reference curve X coordinates for generating the envelope corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>HKRX? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
K1...K50	Reference curve X coordinates for generating the envelope	See description below

If 1 parameter, queried are the reference curve X coordinates for generating the envelope corresponding to the selected measurement program.

Host sends: <Address>sr<STX>HKRX? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
K1...K50	Reference curve X coordinates for generating the envelope	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

4.32.15 HRYM–Y-coordinates of the reference curve mean values for generating the envelope

Execute HRYM!

The HRYM? command transfers the Y coordinates of the reference curve mean values for generating the envelope.

If 4 parameters, Transferred are the Y coordinates of the reference curve mean values for generating the envelope corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>HRYM! P1,P2,P3,P4<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Block number	For RS232: A value between 1 and 125; the max 5000 coordinates are transferred in blocks of 40 values. For Ethernet: A value between 1 and 18. Ethernet can transfer up to 280 values at any one time
P4	Y coordinates of the reference curve mean values for generating the envelope	See description below

If 3 parameters, Transferred are the Y coordinates of the reference curve mean values for generating the envelope corresponding to the selected measurement program.

Host sends: \<Address>sr\<STX>HRYM! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Block number	For RS232: A value between 1 and 125; the max 5000 coordinates are transferred in blocks of 40 values. For Ethernet: A value between 1 and 18. Ethernet can transfer up to 280 values at any one time
P2	Envelope number	1 to 2
P3	Y coordinates of the reference curve mean values for generating the envelope	See description below

The max 40 coordinates (or max 280 for Ethernet) are transferred as binary code. Each coordinate is transferred as 5 bytes (4 bytes for a 32 bit floating point followed by a status byte). There are no separators inside or between the coordinates.

\<K1Byte1>\<K1Byte2>\<K1Byte3>\<K1Byte4>\<K1StatusByte>\<K2Byte1>\<K2Byte2>\<K2Byte3>\<K2Byte4>\<K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

Caution: Before transferring the coordinates, you must first have transferred the number of value pairs with the HRAW! command.

Query HRYM?

The HRYM? command reads out the Y coordinates of the reference curve mean values for generating the envelope.

If 2 parameters, read out are the Y coordinates of the reference curve mean values for generating the envelope corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>HRYM? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
K1...K50	Y coordinates of the reference curve mean values for generating the envelope	See description below

If 1 parameter, queried are the Y coordinates of the reference curve mean values for generating the envelope corresponding to the selected measurement program.

Host sends: <Address>sr<STX>HRYM? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
K1...K50	Y coordinates of the reference curve mean values for generating the envelope	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after

<ACK> with <EOT>, signifying the end of coordinate transfer.

4.32.16 HDMI - Y-coordinates of the reference curve Delta min values for generating the envelope

Execute HDMI!

The HDMI? command transfers the Y coordinates of the reference curve Delta min values for generating the envelope.

If 4 parameters, transferred are the Y coordinates of the reference curve Delta min values for generating the envelope corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>HDMI! P1,P2,P3,P4<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Block number	For RS232: A value between 1 and 125; the max 5000 coordinates are transferred in blocks of 40 values. For Ethernet: A value between 1 and 18. Ethernet can transfer up to 280 values at any one time
P4	Y coordinates of the reference curve Delta min values for generating the envelope	See description below

If 3 parameters, Transferred are the Y coordinates of the reference curve Delta min values for generating the envelope corresponding to the selected measurement program.

Host sends: <Address>sr<STX>HDMI! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Block number	For RS232: A value between 1 and 125; the max 5000 coordinates are transferred in blocks of 40 values. For Ethernet: A value between 1 and 18. Ethernet can transfer up to 280 values at any one time
P2	Envelope number	1 to 2
P3	Y coordinates of the reference curve Delta min values for generating the envelope	See description below

The max 40 coordinates (or max 280 for Ethernet) are transferred as binary code. Each coordinate is transferred as 5 bytes (4 bytes for a 32 bit floating point followed by a status byte). There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

Caution: Before transferring the coordinates, you must first have transferred the number of value pairs with the HRAW! command.

Query HDMI?

The HDMI? command reads out the Y coordinates of the reference curve Delta min values for generating the envelope.

If 2 parameter: read out are the Y coordinates of the reference curve Delta min values for generating the envelope corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>HDMI? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
K1...K50	Y coordinates of the reference curve Delta min values for generating the envelope	See description below

If 1 parameter, queried are the Y coordinates of the reference curve Delta min values for generating the envelope corresponding to the selected measurement program.

Host sends: <Address>sr<STX>HDMI? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
K1...K50	Y coordinates of the reference curve Delta min values for generating the envelope	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after

<ACK> with <EOT>, signifying the end of coordinate transfer.

4.32.17 HDMA - Y-coordinates of the reference curve Delta max values for generating the envelope

Execute HDMA!

The HDMA? command transfers the Y coordinates of the reference curve Delta max values for generating the envelope.

If 4 parameters, Transferred are the Y coordinates of the reference curve Delta max values for generating the envelope corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>HDMA! P1,P2,P3,P4<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
P3	Block number	For RS232: A value between 1 and 125; the max 5000 coordinates are transferred in blocks of 40 values. For Ethernet: A value between 1 and 18. Ethernet can transfer up to 280 values at any one time
P4	Y coordinates of the reference curve Delta max values for generating the envelope	See description below

If 3 parameters, Transferred are the Y coordinates of the reference curve Delta max values for generating the envelope corresponding to the selected measurement program.

Host sends: <Address>sr<STX>HDMA! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Block number	For RS232: A value between 1 and 125; the max 5000 coordinates are transferred in blocks of 40 values. For Ethernet: A value between 1 and 18. Ethernet can transfer up to 280 values at any one time
P2	Envelope number	1 to 2
P3	Y coordinates of the reference curve Delta max values for generating the envelope	See description below

The max 40 coordinates (or max 280 for Ethernet) are transferred as binary code. Each coordinate is transferred as 5 bytes (4 bytes for a 32 bit floating point followed by a status byte). There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

Caution: Before transferring the coordinates, you must first have transferred the number of value pairs with the HRAW! command.

Query HDMA?

The HDMA? command reads out the Y coordinates of the reference curve Delta max values for generating the envelope.

If 2 parameters, read out are the Y coordinates of the reference curve Delta max values for generating the envelope corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>HDMA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Envelope number	1 to 2
K1...K50	Y coordinates of the reference curve Delta max values for generating the envelope	See description below

If 1 parameter, queried are the Y coordinates of the reference curve Delta max values for generating the envelope corresponding to the selected measurement program.

Host sends: <Address>sr<STX>HDMA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Envelope number	1 to 2
K1...K50	Y coordinates of the reference curve Delta max values for generating the envelope	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after

<ACK> with <EOT>, signifying the end of coordinate transfer.

4.32.18 HKDA - Are there envelopes at all

Execute HKDA!

There is no ! form of this command

Query HKDA?

The HKDA? command queries whether there is an envelope.

If no parameters, this queries whether there is an envelope in the currently selected measurement program

Host sends: <Address>sr<STX>HKDA?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Is there an envelope 1?	0 -> There is no envelope 1 1 -> There is an envelope 1
P2	Is there an envelope 2?	0 -> There is no envelope 2 1 -> There is an envelope 2

If 1 parameter, this queries whether there are envelopes in the measurement program corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>HKDA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Is there an envelope 1?	0 -> There is no envelope 1 1 -> There is an envelope 1
P3	Is there an envelope 2?	0 -> There is no envelope 2 1 -> There is an envelope 2

4.33 Mathematical functions

4.33.1 MAKO - Mathematical constants

Execute MAKO!

The MAKO! command sets the mathematical constants.

If 2 parameters, the constant corresponding to the transferred constant number and the currently selected measurement program is set.

Host sends: \<Address\>sr\<STX\>MAKO! P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Constant number	1 to 10
P2	Value of the constant	Floating-point value

If 3 parameters, the constant corresponding to the transferred constant number and the transferred measurement program number is set.

Host sends: \<Address\>sr\<STX\>MAKO! P1,P2,P3\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Constant number	1 to 10
P3	Value of the constant	Floating-point value

Query MAKO?

The MAKO? command queries the mathematical constants.

If 1 parameter, the constant corresponding to the transferred constant number and the currently selected measurement program is queried.

Host sends: \<Address\>sr\<STX\>MAKO? P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P2\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Constant number	1 to 10
P2	Value of the constant	Floating-point value

If 2 parameters, the constant corresponding to the transferred constant number and the transferred measurement program number is queried.

Host sends: <Address>sr<STX>MAKO? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Constant number	1 to 10
P3	Value of the constant	Floating-point value

4.33.2 MAFO - Mathematical formula

Execute MAFO!

The MAFO! command sets the mathematical formula.

If 4 parameters, the formula corresponding to the transferred formula number and the currently selected measurement program is set.

Host sends: <Address>sr<STX>MAFO! P1,P2,P3,P4<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Formula number	1 to 10
P2	Operand A	See operand table in appendix
P3	Operator	0 -> Add 1 -> Subtract 2 -> Multiply 3 -> Divide
P4	Operand B	See operand table in appendix

If 5 parameters, the formula corresponding to the transferred formula number and the transferred measurement program number is set.

Host sends: <Address>sr<STX>MAFO! P1,P2,P3,P4,P5<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Formula number	1 to 10
P3	Operand A	See operand table in appendix
P4	Operator	0 -> Add 1 -> Subtract 2 -> Multiply 3 -> Divide
P5	Operand B	See operand table in appendix

Query MAFO?

The MAFO? command queries the mathematical formula.

If 1 parameter, the formula corresponding to the transferred formula number and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>MAFO? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Formula number	1 to 10
P2	Operand A	See operand table in appendix
P3	Operator	0 -> Add 1 -> Subtract 2 -> Multiply 3 -> Divide
P4	Operand B	See operand table in appendix

If 2 parameters, the formula corresponding to the transferred formula number and the transferred measurement program number is queried.

Host sends: \<Address>sr\<STX>MAFO? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3,P4,P5\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Formula number	1 to 10
P3	Operand A	See operand table in appendix
P4	Operator	0 -> Add 1 -> Subtract 2 -> Multiply 3 -> Divide
P5	Operand B	See operand table in appendix

4.33.3 MABW - Mathematical evaluation values

Execute MABW!

The MABW! command sets the mathematical evaluation values.

If 4 parameters, the mathematical evaluation corresponding to the transferred evaluation number and the currently selected measurement program is set.

Host sends: \<Address>sr\<STX>MABW! P1,P2,P3,P4\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Evaluation number	1 to 6
P2	Operand	See operand table in appendix
P3	Min value for comparing	Floating-point value
P4	Max value for comparing	Floating-point value

If 5 parameters, the mathematical evaluation corresponding to the transferred evaluation number and the transferred measurement program number is set.

Host sends: \<Address\>sr\<STX\>MABW! P1,P2,P3,P4,P5\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Evaluation number	1 to 6
P3	Operand	See operand table in appendix
P4	Min value for comparing	Floating-point value
P5	Max value for comparing	Floating-point value

Caution: Min value must be less than max value!

Query MABW?

The MABW? command queries the mathematical evaluation values.

If 1 parameter, the mathematical evaluation corresponding to the transferred evaluation number and the currently selected measurement program is queried.

Host sends: \<Address\>sr\<STX\>MABW? P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P2,P3,P4\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Evaluation number	1 to 6
P2	Operand	See operand table in appendix
P3	Min value for comparing	Floating-point value
P4	Max value for comparing	Floating-point value

If 2 parameters, the mathematical evaluation corresponding to the transferred evaluation number and the transferred measurement program number is queried.

Host sends: \<Address\>sr\<STX\>MABW? P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Evaluation number	1 to 6
P3	Operand	See operand table in appendix
P4	Min value for comparing	Floating-point value
P5	Max value for comparing	Floating-point value

4.33.4 MABF - Mathematical evaluation results

Execute MABF!

This command does not have a ! form.

Query MABF?

The MABF? command queries the mathematical evaluation results.

If 1 parameter, the mathematical evaluation results corresponding to the transferred evaluation number and the currently selected measurement program are queried.

Host sends: <Address>sr<STX>MABF? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Evaluation number	1 to 6
P2	Evaluation result	1 -> OK 0 -> NOK
P3	Numerical result that has been evaluated	Floating-point value

If 2 parameters, the mathematical evaluation results corresponding to the transferred evaluation number and the transferred measurement program number are queried

Host sends: \<Address>sr\<STX>MABF? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3,P4\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Evaluation number	1 to 6
P3	Evaluation result	1 -> OK 0 -> NOK
P4	Numerical result that has been evaluated	Floating-point value

4.33.5 MANI - NOK counters for mathematical evaluations

Execute MANI!

This command does not have a ! form.

Query MANI?

The MANI? command queries the NOK counters for the mathematical evaluations.

If 1 parameter, the NOK counter for the mathematical evaluation corresponding to the transferred evaluation number and the currently selected measurement program is queried.

Host sends: \<Address>sr\<STX>MANI? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Evaluation number	1 to 6
P2	NOK counter	Integer value

If 2 parameters, the NOK counter for the mathematical evaluation corresponding to the transferred evaluation number and the transferred measurement program number is queried

Host sends: <Address>sr<STX>MANI? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Evaluation number	1 to 6
P3	NOK counter	Integer value

4.33.6 MAZW - Operand values and formula buffer

Execute MAZW!

This command does not have a ! form.

Query MAZW?

The MAZW? command queries the operand values and the mathematical formula buffer.

If 1 parameter, the values corresponding to the transferred formula number and the currently selected measurement program are queried.

Host sends: <Address>sr<STX>MAZW? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Formula number	1 to 10
P2	Value of operand A	Floating-point value
P3	Value of operand B	Floating-point value
P4	Buffer value	Floating-point value

If 2 parameters, the values corresponding to the transferred formula number and the transferred measurement program number are queried

Host sends: <Address>sr<STX>MAZW? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Formula number	1 to 10
P3	Value of operand A	Floating-point value
P4	Value of operand B	Floating-point value
P5	Buffer value	Floating-point value

4.34   Evaluation in general

4.34.1   TOBA - Tolerance bands

Execute TOBA!

The TOBA! command sets the tolerance bands for the evaluation elements.

If 3 parameters, the tolerance bands are set for the evaluation elements corresponding to the currently selected measurement program.

Host sends: <Address>sr<STX>TOBA! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Tolerance band X	Floating-point value
P2	Tolerance band Y1	Floating-point value
P3	Tolerance band Y2	Floating-point value

If 4 parameters, the tolerance bands are set for the evaluation elements corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>TOBA! P1,P2,P3,P4<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Tolerance band X	Floating-point value
P3	Tolerance band Y1	Floating-point value
P4	Tolerance band Y2	Floating-point value

Query TOBA?

The TOBA? command queries the tolerance bands for the evaluation elements.

If no parameters, the tolerance bands are queried for the evaluation elements corresponding to the currently selected measurement program.

Host sends: <Address>sr<STX>TOBA?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Tolerance band X	Floating-point value
P2	Tolerance band Y1	Floating-point value
P3	Tolerance band Y2	Floating-point value

If 1 parameter, the tolerance bands are queried for the evaluation elements corresponding to the transferred measurement program number

Host sends: <Address>sr<STX>TOBA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Tolerance band X	Floating-point value
P3	Tolerance band Y1	Floating-point value
P4	Tolerance band Y2	Floating-point value

4.35 Switching points

4.35.1 SCHA - Configuration of switching points

Execute SCHA!

The SCHA! command configures the switching points.

If 5 parameters, the switching point corresponding to the transferred switching point number and the currently selected measurement program is set.

Host sends: <Address>sr<STX>SCHA! P1,P2,P3,P4,P5<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Switching point number	1 to 4
P2	Switching value	Floating-point value
P3	Channel	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P4	Switching signal level	1 -> High active 0 -> Low active
P5	Switching point reference	0 -> Absolute reference 1 -> Trigger reference

If 6 parameters, the switching point corresponding to the transferred switching point number and the transferred measurement program number is set.

Host sends: <Address>sr<STX>SCHA! P1,P2,P3,P4,P5,P6<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Switching point number	1 to 4
P3	Switching value	Floating-point value

P4	Channel	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P5	Switching signal level	1 -> High active 0 -> Low active
P6	Switching point reference	0 -> Absolute reference 1 -> Trigger reference

Query SCHA?

The SCHA? command queries the switching point settings.

If 1 parameter, the switching point corresponding to the transferred switching point number and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>SCHA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Switching point number	1 to 4
P2	Switching value	Floating-point value
P3	Channel	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P4	Switching signal level	0 -> High active 1 -> Low active
P5	Switching point reference	0 -> Absolute reference 1 -> Trigger reference

If 2 parameters, the switching point corresponding to the transferred switching point number and the transferred measurement program number is queried.

Host sends: <Address>sr<STX>SCHA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5,P6<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Switching point number	1 to 4
P3	Switching value	Floating-point value
P4	Channel	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P5	Switching signal level	0 -> High active 1 -> Low active
P6	Switching point reference	0 -> Absolute reference 1 -> Trigger reference

4.36   Sensor test

4.36.1   STST - Sensor test on/off

Execute STST!

The STST! command enables or disables the sensor test for a particular channel (X, Y1, Y2).

If 2 parameters, the sensor test for the transferred channel number and the currently selected measurement program is enabled or disabled.

Host sends: <Address>sr<STX>STST! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Sensor test on/off	0 -> Off 1 -> On

If 3 parameters, the sensor test corresponding to the transferred channel number and the transferred measurement program is enabled or disabled.

Host sends: <Address>sr<STX>STST! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Sensor test on/off	0 -> Off 1 -> On

Query STST?

The STST? command queries whether the sensor test for a particular channel (X, Y1, Y2) is enabled or disabled.

If 1 parameter, the sensor test corresponding to the transferred channel number and the currently selected measurement program is queried for its enabled/disabled state.

Host sends: <Address>sr<STX>STST? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Sensor test on/off	0 -> Off 1 -> On

If 2 parameters, the sensor test corresponding to the transferred channel number and the transferred measurement program is queried for its enabled/disabled state.

Host sends: <Address>sr<STX>STST? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Sensor test on/off	0 -> Off 1 -> On

4.36.2 STRW - Sensor test reference value

Execute STRW!

The STRW! command sets the sensor test reference value for a particular channel (X, Y1, Y2).

If 2 parameters, the reference value for the sensor test corresponding to the transferred channel number and the currently selected measurement program is set.

Host sends: <Address>sr<STX>STRW! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Reference value	Floating-point value

If 3 parameters, the reference value for the sensor test corresponding to the transferred channel number and the transferred measurement program is set.

Host sends: <Address>sr<STX>STRW! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Reference value	Floating-point value

Query STRW?

The STRW? command queries the sensor test reference value for a particular channel (X, Y1, Y2).

If 1 parameter, the reference value for the sensor test corresponding to the transferred channel number and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>STRW? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Reference value	Floating-point value

If 2 parameters, the reference value for the sensor test corresponding to the transferred channel number and the transferred measurement program is queried.

Host sends: <Address>sr<STX>STRW? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Reference value	Floating-point value

4.36.3 STAB - Permitted sensor test tolerance

Execute STAB!

The STAB! command sets the permitted sensor test tolerance for a particular channel (X, Y1, Y2).

If 2 parameters, the permitted tolerance for the sensor test corresponding to the transferred channel number and the currently selected measurement program is set.

Host sends: <Address>sr<STX>STAB! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Permitted tolerance	Floating-point value

If 3 parameters, the permitted tolerance for the sensor test corresponding to the transferred channel number and the transferred measurement program is set.

Host sends: <Address>sr<STX>STAB! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Permitted tolerance	Floating-point value

Query STAB?

The STAB? command queries the permitted sensor test tolerance for a particular channel (X, Y1, Y2).

If 1 parameter, the permitted tolerance for the sensor test corresponding to the transferred channel number and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>STAB? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Permitted tolerance	Floating-point value

If 2 parameters, the permitted tolerance for the sensor test corresponding to the transferred channel number and the transferred measurement program is queried.

Host sends: <Address>sr<STX>STAB? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Permitted tolerance	Floating-point value

4.36.4　STME - Teach in sensor test reference value

Execute STME!

The STME! command teaches in the sensor test reference value for a particular channel (X, Y1, Y2).

Host sends: <Address>sr<STX>STME! P1<LF><ETX>[<BCC>]

DIGIFORCE responds:　<ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2

Query STME?

There is no ? form of this command

4.36.5　STDO - Perform a sensor test

Execute STDO!

This command does not have a ! form.

Query STDO?

The STDO? command performs a sensor test and returns the test results.

Host sends: <Address>sr<STX>STDO?<LF><ETX>[<BCC>]

DIGIFORCE responds:　<ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds:　<STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds:　<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Result of sensor test	0 -> NOK 1 -> OK

4.37 User-defined values

4.37.1 FRDW - User-defined values

Note: The live values can only be selected with the command LIVE and not with FDRW. When a query is performed with FRDW?–the DIGIFORCE® returns an 1 if a live value is set.

Execute FRDW!

The FRDW! command sets the user-defined values.

If 2 parameters, the user-defined value corresponding to the transferred value number and the currently selected measurement program is set.

Host sends: <Address>sr<STX>FRDW! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Value number	1 to 30, 25 to 30 are values which are displayed in the measurement menu "graphical measurement curves"
P2	User-defined value	See operand table in appendix

If 3 parameters, the user-defined value corresponding to the transferred value number and the transferred measurement program number is set.

Host sends: <Address>sr<STX>FRDW! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Value number	1 to 30, 25 to 30 are values which are displayed in the measurement menu "graphical measurement curves"
P3	User-defined value	See operand table in appendix

Query FRDW?

The FRDW? command queries the user-defined values.

If 1 parameter, the user-defined value corresponding to the transferred value number and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>FRDW? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P2,P3\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Value number	1 to 30, 25 to 30 are values which are displayed in the measurement menu "graphical measurement curves"
P2	User-defined value	See operand table in appendix
P3	Name of the user-defined value	String

If 2 parameters, the user-defined value corresponding to the transferred value number and the transferred measurement program number is queried.

Host sends: \<Address\>sr\<STX\>FRDW? P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P3,P4\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Value number	1 to 30, 25 to 30 are values which are displayed in the measurement menu "graphical measurement curves"
P3	User-defined value	See operand table in appendix
P4	Name of the user-defined value	String

4.37.2 LIVE - Live values

Note: A live value can only be set if no other user-defined value is selected. If a live value is selected, it can be overwritten with another user-defined value via the FRDW! command. A live values can only be selected with the command LIVE! and **not** with FDRW!.

Execute LIVE!

The LIVE! command sets the live values (X, Y1, Y2 value) that then appear on the graphical measurement menu.

If 2 parameters, the live value corresponding to the transferred channel number and the currently selected measurement program is set.

Host sends: <Address>sr<STX>LIVE! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Live values on/off	0 -> Live values off 1 -> Live values on

If 3 parameters, the live value corresponding to channel number and the transferred measurement program number is set.

Host sends: <Address>sr<STX>LIVE! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Live values on/off	0 -> Live values off 1 -> Live values on

Query LIVE?

The LIVE? command queries whether the live values are on or off.

If 1 parameter, the live value corresponding to the transferred channel number and the currently selected measurement program is queried.

Host sends: <Address>sr<STX>LIVE? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P2	Live values on/off	0 -> Live values off 1 -> Live values on

If 2 parameters, the live value corresponding to the transferred channel number and the transferred measurement program number is queried.

Host sends: \<Address>sr\<STX>LIVE? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel X 1 -> Channel Y1 2 -> Channel Y2
P3	Live values on/off	0 -> Live values off 1 -> Live values on

4.38   Initializing and copying measurement programs

4.38.1   PRKO - Copy all data between measurement programs

Execute PRKO!

The PRKO! command copies all of the configuration data from a measurement program to others. (Source is copied from the start to end targets.)

Host sends: \<Address>sr\<STX>PRKO? P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of source measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Number of start target measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P3	Number of end target measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)

Caution: The number of the start target measurement program may not be greater than the number of the end target measurement program.

Query PRKO?

There is no ? form of this command.

4.38.2 SEKO - Copy sensor data between measurement programs

Execute SEKO!

The SEKO! command copies the sensor data (channel settings) from a measurement program to others. (Source is copied from the start to end targets.)

Host sends: <Address>sr<STX>SEKO? P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of source measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Number of start target measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P3	Number of end target measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)

Caution: The number of the start target measurement program may not be greater than the number of the end target measurement program.

Query SEKO?

There is no ? form of this command.

4.38.3 INIT - Default initialization of measurement programs

Execute INIT!

The INIT! command executes a default initialization of the transferred measurement programs.

Host sends: <Address>sr<STX>INIT? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of start measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Number of end measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)

Caution: The number of the start target measurement program may not be greater than the number of the end target measurement program.

Query INIT?

There is no ? form of this command.

4.38.4 GINI - Default initialization of all measurement programs and device parameters

Execute GINI!

The GINI! command executes a default initialization of all measurement programs.

Host sends: <Address>sr<STX>GINI!<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Query GINI?

There is no ? form of this command.

4.39 Numerical configuration

4.39.1 TEST - Switch On test mode for numerical configuration

Note: Command not allowed when measurement running.

Execute TEST!

The TEST! command enables or disables the test mode. With test mode On, no measurements can be started. Although the device continues to read in the PLC inputs, it does not respond to them.

Host sends: <Address>sr<STX>TEST! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Test mode on/off	0 -> Test mode is switched off 1 -> Test mode is switched on

Query TEST?

The TEST? command queries the current status of the test mode.

Host sends: \<Address>sr\<STX>TEST?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Test mode on/off	0 -> Test mode is switched off 1 -> Test mode is switched on

4.39.2   TESA - Switching signals on/off in test mode

Execute TESA!

The TESA! command enables or disables switching signal reaction in test mode.

Host sends: \<Address>sr\<STX>TESA! P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Switching signal response in test mode	0 -> Switching signals off in test mode 1 -> Switching signals on in test mode

Query TESA?

The TESA? command queries the setting for switching signal reaction in test mode.

Host sends: \<Address>sr\<STX>TESA?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Switching signal response in test mode	0 -> Switching signals off in test mode 1 -> Switching signals on in test mode

4.39.3 MESS - Fetch current readings

Execute MESS!

This command does not have a ! form.

Query MESS?

The MESS? command fetches the current readings.

Host sends: <Address>sr<STX>MESS?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,P3,P4,P5,P6<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Current reading for channel X	Floating point value (32 bit)
P2	Current reading for channel Y1	Floating point value (32 bit)
P3	Current reading for channel Y2	Floating point value (32 bit)
P4	Current raw value for channel X	32 bit decimal value (signed long)
P5	Current raw value for channel Y1	32 bit decimal value (signed long)
P6	Current raw value for channel Y2	32 bit decimal value (signed long)

4.39.4 SPSI - Fetch PLC inputs

Execute SPSI!

This command does not have a ! form.

Query SPSI?

The SPSI? command reads the PLC inputs.

Host sends: <Address>sr<STX>SPSI?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	PLC input register 1 (SPSI1)	Byte hex coded (see table)
P2	PLC input register 2 (SPSI2)	Byte hex coded (see table)
P3	PLC input register 3 (SPSI3)	Byte hex coded (see table)
P4	Switching input register (SCHALT)	16-bit hex coded (see table)

PLC input register assignment

	D7	D6	D5	D4	D3	D2	D1	D0
SPSI1	----	IN_START	IN_RES1	IN_PROG4	IN_ PROG 3	IN_ PROG 2	IN_ PROG 1	IN_ PROG 0
SPSI2	IN_RES3	IN_RES2	IN_AUTO	IN_TEST_OPC	IN_TEST_OP	IN_ACK_NOK	IN_ACK_OK	IN_STROBE
SPSI3	IN_TAREY2	IN_TAREY1	IN_TAREX	IN_LTEST	IN_RES4	IN_STEST	IN_RES5	IN_RESET

Switching input register assignment

D15	D14	D13	D12	D11	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1	D0
--	--	--	--	S1	S2	S3	S4	Set S1	Set S2	Set S3	Set S4	Reset S1	Reset S2	Reset S3	Reset S4

4.39.5 SPSO - Set PLC outputs

Execute SPSO!

Note: This command is permitted only when test mode On.

The SPSO! command selectively sets the PLC outputs for test purposes.

Host sends: <Address>sr<STX>SPSO! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	PLC output byte 1	In hex format; see table
P2	PLC output byte 2	In hex format; see table

Query SPSO?

The SPSO? command queries the current status of the PLC outputs.

Host sends: <Address>sr<STX>SPSO?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	PLC output byte 1	In hex format; see table below
P2	PLC output byte 2	In hex format; see table below
P3	PLC output byte 3	In hex format; see table below
P4	PLC output byte 4	In hex format; see table below

PLC output register assignment

	D7	D6	D5	D4	D3	D2	D1	D0
Output byte 1	S2	S1	NOK	OK	NOK_ONLINE2	NOK_ONLINE1	OVERDRIVE	READY
Output byte 2	SEL1	SEL2	SEL3	SEL4	SEL5	SEL6	SEL7	SEL8
Output byte 3	SEL16	SEL15	SEL14	SEL13	SEL12	SEL11	SEL10	SEL9
Output byte 4	SEL17	SEL18	SEL19	SEL20	SEL21	SEL22	SEL23	---

4.40 Record errors/events in the logfile

4.40.1 LOGS - Port operation logging on/off

Execute LOGS!

The command LOGS! enables or disables error/event logging during port operations.

Host sends: <Address>sr<STX>LOGS! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Error/event logging	1 → Logging On 0 → Logging Off

Query LOGS?

The command LOGS? queries whether error/event logging during port operations is enabled or disabled.

Host sends: `<Address>sr<STX>LOGS?<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P1<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Error/event logging	1 → Logging On 0 → Logging Off

4.40.2 LOGL - Delete logfile, query index of last entry

Query LOGL?

The command LOGL? queries the index of the last entry

Host sends: `<Address>sr<STX>LOGL?<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P1<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Index of last entry	0 to 255

4.40.3 LOGD - Query logfile entries

Execute LOGD!

This command does not have a ! form.

Query LOGD?

The command LOGD? queries a logfile entry

Host sends:	<Address>sr<STX>LOGD? P1<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>P2,P3,….,P11<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Entry index	0 to 255
P2	Entry code	0 -> no error 1 -> Memory error detected 2 -> Voltage supply error detected 3 -> PLC driver error detected 4 -> Main analog board EEPROM error detected 5 -> Optional analog board EEPROM error detected 32 -> Tare warning limit reached 33 -> Start/Stop without measurement 35 -> Channel X overdrive 36 -> Channel Y1 overdrive 37 -> Channel Y2 overdrive 38 -> Measurement storage overflow 39 -> Start of measurement without READY 40 -> Change of analog interface 41 -> Change of optional analog interface 42 -> Device power up 43 -> Error on communication interface 44 -> Unauthorized access on USB Interface 45 -> Software update 64 -> Activation resistance 65 -> Activation piezoelectric sensor 66 -> Activation torque sensor 67 -> Activation fieldbus 128 -> Menu: Channel setup X 129 -> Menu: Channel setup Y1 130 -> Menu: Channel setup Y2 131 -> Menu: Measurement mode 132 -> Menu: Evaluation–window 133 -> Menu: Evaluation–window andvanced 134 -> Menu: Evaluation- trapezoid window X 135 -> Menu: Evaluation- trapezoid window Y 136 -> Menu: Evaluation–threshold

		137 -> Menu: Evaluation threshold advanced 138 -> Menu: Evaluation - envelope 139 -> Menu: Mathematical function calculation 140 -> Menu: Mathematical function evaluation 141 -> Main menu: Evaluation 142 -> Menu: Assignment PLC-Outputs 143 -> Menu: Interface RS232 144 -> Menu: Interface USB 145 -> Menu: Interface Ethernet 146 -> Copy sensor setup 147 -> Initialization of program 148 -> Copy whole setup 149 -> Setup real-time switch points
P3	Measurement program number	0 to 31, or 0 to 127 (128 program version of firmware)
P4	Access	0 -> No access protection 1 -> Master access 2 -> User access 4 -> Access via port
P5	Date: year	Integer value (unsigned 16 bit)
P6	Date: month	Integer value (unsigned 16 bit)
P7	Date: day	Integer value (unsigned 16 bit)
P8	Time: hour	Integer value (unsigned 16 bit)
P9	Time: minute	Integer value (unsigned 16 bit)
P10	Time: second	Integer value (unsigned 16 bit)
P11	Repetitions of the last entry	Integer value (unsigned 16 bit)

4.41 Voltage monitor

4.41.1 UKNO - Measure and test node voltage

Note: Command not allowed when measurement running.

Execute UKNO!

This command does not have a ! form.

Query UKNO?

The command UKNO? measures and tests the node voltage and returns the results

Host sends: <Address>sr<STX>UKNO?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Node voltage status	0 → Node voltage OK 1 → Node voltage outside tolerance
P2	Value of measured node voltage	Floating-point value with units

4.41.2 UGND - Measure and test GND potential

Note: Command not allowed when measurement running.

Execute UGND!

This command does not have a ! form.

Query UGND?

The command UGND? measures and tests the GND potential and returns the results

Host sends: <Address>sr<STX>UGND?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	GND potential status	0 → GND potential OK 1 → GND potential outside tolerance
P2	Value of measured GND potential	Floating-point value with units

4.41.3 USPA - Measure and test channel A excitation

Note: Command not allowed when measurement running.

Execute USPA!

This command does not have a ! form.

Query USPA?

The command USPA? measures and tests channel A excitation and returns the results

Host sends: <Address>sr<STX>USPA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel A excitation voltage	0 → 0 V 1 → 2.5 V 2 → 5 V 3 → 10 V
P2	Channel A excitation voltage status	0 → Excitation voltage OK 1 → Excitation voltage outside tolerance
P3	Value of measured excitation voltage	Floating-point value with units

4.41.4 USPB - Measure and test channel B excitation

Note: Command not allowed when measurement running.

Execute USPB!

This command does not have a ! form.

Query USPB?

The command USPB? measures and tests channel B excitation and returns the results

Host sends: <Address>sr<STX>USPB? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel B excitation voltage	0 → 0 V 1 → 2.5 V 2 → 5 V 3 → 10 V
P2	Channel B excitation voltage status	0 → Excitation voltage OK 1 → Excitation voltage outside tolerance
P3	Value of measured excitation voltage	Floating-point value with units

4.41.5 USPD - Measure and test channel D excitation

Note: Command not allowed when measurement running.

Execute USPD!

This command does not have a ! form.

Query USPD?

The command USPD? measures and tests channel D excitation and returns the results

Host sends: <Address>sr<STX>USPD? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel D excitation voltage	0 → 0 V 1 → 2.5 V 2 → 5 V 3 → 10 V
P2	Channel D excitation voltage status	0 → Excitation voltage OK 1 → Excitation voltage outside tolerance
P3	Value of measured excitation voltage	Floating-point value with units

4.42   Amplifier test

4.42.1 VTKA - Channel A amplifier test

Note: Command not allowed when measurement running.

Execute VTKA!

The VTKA! command configures the hardware for the channel A amplifier test.

Host sends: <Address>sr<STX>VTKA! P1,P2,P3,P4<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Ground bonding	0 → Ground bondig off 1 → Ground bondig on
P2	Excitation voltage	0 → 0 V 1 → 2.5 V 2 → 5 V 3 → 10 V
P3	Input range	0 → 2.5 mV range 1 → 5 mV range 2 → 10 mV range 3 → 25 mV range 4 → 50 mV range 5 → 100 mV range 6 → 200 mV range 7 → 5 V range 8 → 10 V range
P4	Set hardware	0 → The hardware will be configured to the transferred parameters 1 → The hardware will be reset to the original values The transferred parameters (ground bonding, excitation, range) are ignored.

Query VTKA?

The command VTKA? reads out the value measured by the channel A amplifier test

Host sends: <Address>sr<STX>VTKA?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	A/D converter value (LSBs)	Floating-point value
P2	Measured voltage value	Floating-point value with units

4.42.2 VTKB - Channel B amplifier test

Note: Command not allowed when measurement running.

Execute VTKB!

The VTKB! command configures the hardware for the channel B amplifier test.

Host sends: <Address>sr<STX>VTKB! P1,P2,P3,P4<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Ground bondig	0 → Ground bondig off 1 → Ground bondig on
P2	Excitation voltage	0 → 0 V 1 → 2.5 V 2 → 5 V 3 → 10 V
P3	Input range	0 → 2.5 mV range 1 → 5 mV range 2 → 10 mV range 3 → 25 mV range 4 → 50 mV range 5 → 100 mV range 6 → 200 mV range 7 → 5 V range 8 → 10 V range
P4	Set hardware	0 → The hardware will be configured to the transferred parameters 1 → The hardware will be reset to the original values The transferred parameters (Ground bondig, excitation, range) are ignored.

Query VTKB?

The command VTKB? reads out the value measured by the channel B amplifier test

Host sends: <Address>sr<STX>VTKB?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	A/D converter value (LSBs)	Floating-point value
P2	Measured voltage value	Floating-point value with units

4.42.3   VTKD - Channel D amplifier test

Note: Command not allowed when measurement running.

Execute VTKD!

The VTKD! command configures the hardware for the channel D amplifier test.

Host sends: <Address>sr<STX>VTKD! P1,P2,P3,P4<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Ground bondig	0 → Ground bondig off 1 → Ground bondig on
P2	Excitation voltage	0 → 0 V 1 → 2.5 V 2 → 5 V 3 → 10 V
P3	Input range	0 → 2.5 mV range 1 → 5 mV range 2 → 10 mV range 3 → 25 mV range 4 → 50 mV range 5 → 100 mV range 6 → 200 mV range 7 → 5 V range 8 → 10 V range
P4	Set hardware	0 → The hardware will be configured to the transferred parameters 1 → The hardware will be reset to the original values The transferred parameters (Ground bondig, excitation, range) are ignored.

Query VTKD?

The command VTKD? reads out the value measured by the channel D amplifier test

Host sends: <Address>sr<STX>VTKD?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	A/D converter value (LSBs)	Floating-point value
P2	Measured voltage value	Floating-point value with units

4.42.4 VTKE - Channel E amplifier test

Note: Command not allowed when measurement running.

Execute VTKE!

The VTKE! command configures the hardware for the channel E amplifier test.

Host sends: <Address>sr<STX>VTKE! P1,P2,P3,P4<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Excitation voltage cable break test	0 → No excitation voltage 1 → Positive excitation voltage 2 → Negative excitation voltage
P2	Excitation voltage	0 → Excitation voltage off 1 → Excitation voltage on
P3	Input range	0 → 100 mOhm range 1 → 1 kOhm range 2 → 100 kOhm range
P4	Set hardware	0 → The hardware will be configured to the transferred parameters 1 → The hardware will be reset to the original values. The transferred parameters (Ground bondig, excitation, range) are ignored.

Query VTKE?

The command VTKE? reads out the value measured by the channel E amplifier test

Host sends: <Address>sr<STX>VTKE?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	A/D converter value (LSBs) of I	Floating-point value
P2	A/D converter value (LSBs) of U	Floating-point value
P3	Resistance value	Floating-point value with units

4.42.5 VTKF - Channel F amplifier test

Note: Command not allowed when measurement running.

Execute VTKF!

The VTKF! command configures the hardware for the channel F amplifier test.

Host sends: \<Address>sr\<STX>VTKF! P1,P2,P3\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Ground bondig	0 → Ground bondig Off 1 → Ground bondig On
P2	Input range	0 → 1nC range 1 → 2nC range 2 → 5nC range 3 → 10nC range 4 → 20nC range 5 → 40nC range 6 → 80nC range 7 → 200nC range 8 → 400nC range 9 → 1uC range

P3	Set hardware	0 → The hardware will be configured to the transferred
		          parameters
		1 → The hardware will be reset to the original values
		          The transferred parameters (Ground bondig, range)
		are ignored.

Query VTKF?

The command VTKF? reads out the value measured by the channel F amplifier test

Host sends: \<Address>sr\<STX>VTKF?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1,P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	A/D converter value (LSBs)	Floating-point value
P2	Measured voltage value	Floating-point value with units

4.43 Measurement results

4.43.1 KRVA - Supplementary data for current measurement curve

Execute KRVA!

This command does not have a ! form.

Query KRVA?

The command KRVA? queries supplementary data for the current measurement curve.

If 1 parameter, queried are the data corresponding to the transferred measurement program number.

Host sends:	`<Address>sr<STX>KRVA? P1<LF><ETX>[<BCC>]`
DIGIFORCE responds:	`<ACK>`
Host sends:	`<EOT>`

Host sends:	`<Address>po<ENQ>`
DIGIFORCE responds:	`<STX>P2,P3,P4, .....,P20<LF><ETX>[<BCC>]`
Host sends:	`<ACK>`
DIGIFORCE responds:	`<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Piece counter	32 bit integer value (unsigned long)
P3	NOK counter	32 bit integer value (unsigned long)
P4	Total evaluation result	0 → NOK 1 → OK
P5	Evaluation result Y1	0 → NOK 1 → OK
P6	Evaluation result Y2	0 → NOK 1 → OK
P7	Index of curve return point	16 bit integer value (unsigned short)
P8	Index of the last reading on the curve	16 bit integer value (unsigned short)
P9	A/D converter overdrive	0 → No overdrive 1 → Overdrive
P10	Recording date / year	16 bit integer value (unsigned short)
P11	Recording date / month	16 bit integer value (unsigned short)
P12	Recording date / day	16 bit integer value (unsigned short)
P13	Recording time / hour	16 bit integer value (unsigned short)
P14	Recording time / minute	16 bit integer value (unsigned short)
P15	Recording time / second	16 bit integer value (unsigned short)
P16	Channel X unit	String

P17	Channel Y1 unit	String
P18	Channel Y2 unit	String
P19	Changing counter	32 bit integer value (unsigned long)
P20	NOK causes summary	32 bit integer value (unsigned long), bit coded See following table

If no parameters, queried are the data of the currently selected measurement program.

Host sends: `<Address>sr<STX>KRVA?<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>P1,P2,P3,.....,P19<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Piece counter	32 bit integer value (unsigned long)
P2	NOK counter	32 bit integer value (unsigned long)
P3	Total evaluation result	0 → NOK 1 → OK
P4	Evaluation result Y1	0 → NOK 1 → OK
P5	Evaluation result Y2	0 → NOK 1 → OK
P6	Index of curve return point	16 bit integer value (unsigned short)
P7	Index of the last reading on the curve	16 bit integer value (unsigned short)
P8	A/D converter overdrive	0 → No overdrive 1 → Overdrive
P9	Recording date / year	16 bit integer value (unsigned short)
P10	Recording date / month	16 bit integer value (unsigned short)
P11	Recording date / day	16 bit integer value (unsigned short)
P12	Recording time / hour	16 bit integer value (unsigned short)
P13	Recording time / minute	16 bit integer value (unsigned short)
P14	Recording time / second	16 bit integer value (unsigned short)
P15	Channel X unit	String
P16	Channel Y1 unit	String
P17	Channel Y2 unit	String
P18	Changing counter	32 bit integer value (unsigned long)
P19	NOK causes summary	32 bit integer value (unsigned long), bit coded See following table

Sources that can lead to NOKs

Bit no.	Function
0	Square window 1
1	Square window 2
2	Square window 3
3	Square window 4
4	Square window 5
5	Square window 6
6	Square window 7
7	Square window 8
8	Square window 9
9	Square window 10
10	Trapezoid window X1 evaluation
11	Trapezoid window X2 evaluation
12	Trapezoid window Y1 evaluation
13	Trapezoid window Y2 evaluation
14	Threshold 1 evaluation
15	Threshold 2 evaluation
16	Threshold 3 evaluation
17	Threshold 4 evaluation
18	Envelope 1 evaluation
19	Envelope 2 evaluation
20	Mathematical evaluation 1
21	Mathematical evaluation 2
22	Mathematical evaluation 3
23	Mathematical evaluation 4
24	Mathematical evaluation 5
25	Mathematical evaluation 6
26	Rotary switch 1 evaluation

27	Rotary switch 2 evaluation
28	Measurement channel overdrive
29	NOK channel Y1
30	NOK channel Y2
31	NOK total

4.43.2 MSTA - Measurement status; is there a new measurement curve?

Execute MSTA!

This command does not have a ! form.

Query MSTA?

The command MSTA? queries whether there is a new measurement curve

If 1 parameter, queried is the measurement status corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>MSTA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Index of the last reading on the curve	16 bit integer (unsigned short); 0 means there is no measurement curve
P3	Running measurement curve counter	32 bit integer (unsigned long); this counter increments every time a new measurement curve is recorded.

If no parameters, queried is the measurement status of the currently selected measurement program.

Host sends: <Address>sr<STX>MSTA?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Index of the last reading on the curve	16 bit integer (unsigned short); 0 means there is no measurement curve
P2	Running measurement curve counter	32 bit integer (unsigned long); this counter increments every time a new measurement curve is recorded.

4.43.3 MEVE - Measurement curves

For the last 10 recorded measurement curves, the measurement program and the measurement curve counter are stored in an array.

This command can query the array and reset an entry.

Execute MEVE!

The command MEVE! resets an entry in the array. The entry corresponding to the number of the parameter is reset. The number of the measurement program is set to 255. The measurement curve counter is set to 0.

Host sends: <Address>sr<STX>MEVE! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the array	1 to 10

Query MEVE?

The command MEVE? queries the program number and measurement curve counter for the last 10 measurements.

The last parameter returns the current measurement program number

Host sends: <Address>sr<STX>MEVE?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P3,P2,P3, … P21<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program entry 1	A value between 0 and 31 or between 0 and 127 (255 if still no measurement curve)
P2	Measurement curve counter entry 1	1 to 255 (0 if still no measurement curve)
P3	Number of the measurement program entry 2	A value between 0 and 31 or between 0 and 127 (255 if still no measurement curve)

P4	Measurement curve counter entry 2	1 to 255 (0 if still no measurement curve)
P5	Number of the measurement program entry 3	A value between 0 and 31 or between 0 and 127 (255 if still no measurement curve)
P6	Measurement curve counter entry 3	1 to 255 (0 if still no measurement curve)
P7	Number of the measurement program entry 4	A value between 0 and 31 or between 0 and 127 (255 if still no measurement curve)
P8	Measurement curve counter entry 4	1 to 255 (0 if still no measurement curve)
P9	Number of the measurement program entry 5	A value between 0 and 31 or between 0 and 127 (255 if still no measurement curve)
P10	Measurement curve counter entry 5	1 to 255 (0 if still no measurement curve)
P11	Number of the measurement program entry 6	A value between 0 and 31 or between 0 and 127 (255 if still no measurement curve)
P12	Measurement curve counter entry 6	1 to 255 (0 if still no measurement curve)
P13	Number of the measurement program entry 7	A value between 0 and 31 or between 0 and 127 (255 if still no measurement curve)
P14	Measurement curve counter entry 7	1 to 255 (0 if still no measurement curve)
P15	Number of the measurement program entry 8	A value between 0 and 31 or between 0 and 127 (255 if still no measurement curve)
P16	Measurement curve counter entry 8	1 to 255 (0 if still no measurement curve)
P17	Number of the measurement program entry 9	A value between 0 and 31 or between 0 and 127 (255 if still no measurement curve)
P18	Measurement curve counter entry 9	1 to 255 (0 if still no measurement curve)
P19	Number of the measurement program entry 10	A value between 0 and 31 or between 0 and 127 (255 if still no measurement curve)
P20	Measurement curve counter entry 10	1 to 255 (0 if still no measurement curve)
P21	Currently set measurement program number	A value between 0 and 31 or between 0 and 127 (255 if still no measurement curve)

Note: Entry 1 is the oldest measurement.
Entry 10 is the newest measurement.

4.43.4 PRAW - Supplementary data for current pretrigger curve

Execute PRAW!

This command does not have a ! form.

Query PRAW?

The command PRAW? queries supplementary data for the pretrigger curve.

If 1 parameter, queried are the data corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>PRAW? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Pritrigger recording	0 → off 1 → on
P3	Total number of pretrigger values (all values, not only recorded)	32 bit integer value (unsigned long)
P4	Index of the first pretrigger value	Integer value between 0 and 255
P5	Index of the last pretrigger value	Integer value between 0 and 255

If no parameters, queried are the data of the currently selected measurement program.

Host sends: <Address>sr<STX>PRAW?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Pritrigger recording	0 → off 1 → on
P2	Total number of pretrigger values (all values, not only recorded)	32 bit integer value (unsigned long)
P3	Index of the first pretrigger value	Integer value between 0 and 255
P4	Index of the last pretrigger value	Integer value between 0 and 255

Note: Total number of pretrigger values means the number of all values which has been measured afrer the start and before a trigger event. However only the last 256 values are recorded.

4.43.5 AKY1 - General curve data Y1

Execute AKY1!

This command does not have a ! form.

Query AKY1?

The command AKY1? queries the general curve data

If 1 parameter, queried are the general curve data corresponding to the transferred measurement program number.

Host sends: \<Address\>sr\<STX\>AKY1? P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P2,P3,....,P15\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	X minimum, X coordinate	Floating-point value
P3	X minimum, Y1 coordinate	Floating-point value
P4	X maximum, X coordinate	Floating-point value
P5	X maximum, Y1 coordinate	Floating-point value
P6	Y1 minimum, X coordinate	Floating-point value
P7	Y1 minimum, Y1 coordinate	Floating-point value
P8	Y1 maximum, X coordinate	Floating-point value
P9	Y1 maximum, Y1 coordinate	Floating-point value
P10	First value X coordinate	Floating-point value
P11	First value Y1 coordinate	Floating-point value
P12	Last value X coordinate	Floating-point value
P13	Last value Y1 coordinate	Floating-point value
P14	Return point X coordinate	Floating-point value
P15	Return point Y1 coordinate	Floating-point value

If no parameters, queried are the general curve data of the currently selected measurement program.

Host sends: <Address>sr<STX>AKY1?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,...,P14<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	X minimum, X coordinate	Floating-point value
P2	X minimum, Y1 coordinate	Floating-point value
P3	X maximum, X coordinate	Floating-point value
P4	X maximum, Y1 coordinate	Floating-point value
P5	Y1 minimum, X coordinate	Floating-point value
P6	Y1 minimum, Y1 coordinate	Floating-point value
P7	Y1 maximum, X coordinate	Floating-point value
P8	Y1 maximum, Y1 coordinate	Floating-point value
P9	First value X coordinate	Floating-point value
P10	First value Y1 coordinate	Floating-point value
P11	Last value X coordinate	Floating-point value
P12	Last value Y1 coordinate	Floating-point value
P13	Return point X coordinate	Floating-point value
P14	Return point Y1 coordinate	Floating-point value

4.43.6 AKY2 - General curve data Y2

Execute AKY2!

This command does not have a ! form.

Query AKY2?

The command AKY2? queries the general curve data

If 1 parameter, queried are the general curve data corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>AKY2? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,....,P15<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	X minimum, X coordinate	Floating-point value
P3	X minimum, Y2 coordinate	Floating-point value
P4	X maximum, X coordinate	Floating-point value
P5	X maximum, Y2 coordinate	Floating-point value
P6	Y2 minimum, X coordinate	Floating-point value
P7	Y2 minimum, Y2 coordinate	Floating-point value
P8	Y2 maximum, X coordinate	Floating-point value
P9	Y2 maximum, Y2 coordinate	Floating-point value
P10	First value X coordinate	Floating-point value
P11	First value Y2 coordinate	Floating-point value
P12	Last value X coordinate	Floating-point value
P13	Last value Y2 coordinate	Floating-point value
P14	Return point X coordinate	Floating-point value
P15	Return point Y2 coordinate	Floating-point value

If no parameters, queried are the general curve data of the currently selected measurement program.

Host sends: <Address>sr<STX>AKY2?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,...,P14<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	X minimum, X coordinate	Floating-point value
P2	X minimum, Y2 coordinate	Floating-point value
P3	X maximum, X coordinate	Floating-point value

P4	X maximum, Y2 coordinate	Floating-point value
P5	Y2 minimum, X coordinate	Floating-point value
P6	Y2 minimum, Y2 coordinate	Floating-point value
P7	Y2 maximum, X coordinate	Floating-point value
P8	Y2 maximum, Y2 coordinate	Floating-point value
P9	First value X coordinate	Floating-point value
P10	First value Y2 coordinate	Floating-point value
P11	Last value X coordinate	Floating-point value
P12	Last value Y2 coordinate	Floating-point value
P13	Return point X coordinate	Floating-point value
P14	Return point Y2 coordinate	Floating-point value

4.43.7 FRER - Query measurement results of the user-defined values

Execute FRER!

This command does not have a ! form.

Query FRER?

The FRER? command queries the measurement results of the user-defined values.

If 1 parameter, the measurement result is queried for that user-defined value corresponding to the transferred value number and the currently selected measurement program.

Host sends: <Address>sr<STX>FRER? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Value number	1 to 30, 25 to 30 are values which are displayed in the measurement menu "graphical measurement curves"
P2	Number of the user-defined value	See operand table in appendix
P3	Measurement value of the user-defined value	Floating-point value
P4	Unit of the user-defined value	String

If 2 parameters, the measurement result is queried for that user-defined value corresponding to the transferred value number and the transferred measurement program number.

Host sends: <Address>sr<STX>FRER? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Value number	1 to 30, 25 to 30 are values which are displayed in the measurement menu "graphical measurement curves"
P3	Number of the user-defined value	See operand table in appendix
P4	Measurement value of the user-defined value	Floating-point value
P5	Unit of the user-defined value	String

4.43.8 FRAL - Measurement results of all user-defined values

Execute FRAL!

This command does not have a ! form.

Query FRAL?

The FRAL? command queries all of the measurement results of the user-defined values as purely numerical values.

If 1 parameter, the measurement results are queried for the user-defined values in the current program

Host sends: <Address>sr<STX>FRAL? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,......Px<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Block of user-defined values	1 → Values 1 to 12 2 → Values 13 to 24 3 → Values 25 to 30
P2…Px x=13 or 7	Measurement values of each user-defined value	Block 1 and 2 return 12 floating point values. Block 3 returns 6 floating point values.

If 2 parameters, the measurement results are queried for the user-defined values in the transferred program

Host sends: \<Address\>sr\<STX\>FRAL? P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P3……..Px\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P1	Block of user-defined values	1 → Values 1 to 12 2 → Values 13 to 24 3 → Values 25 to 30
P3…Px x=14 or 8	Measurement values of each user-defined value	Block 1 and 2 return 12 floating point values. Block 3 returns 6 floating point values.

4.43.9 HITR - Measurement results of all user-defined values

Execute HITR!

This command does not have a ! form.

Query HITR?

The HITR? command queries all of the statistics measurement results incl. the histogram and the trend diagram.

If 2 parameters, the statistics measurement results are queried for the transferred evaluation number and the current program

Host sends: \<Address\>sr\<STX\>HITR? P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>P3,P4…P23\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Evaluation element number	1 to 24 (see evaluation element table)
P2	Entry or exit values	0 → Enty values 1 → Exit values
P3	Enabling of evaluation element for statistics	0 → Disabled 1 → Enabled
P4	Statistics channel number	0 → Channel X 1 → Channel Y1 2 → Channel Y2
P5	Number of OK measurements for the statistics	32 bit integer value (unsigned long)
P6	Number of NOK measurements for the statistics	32 bit integer value (unsigned long), not considered in the statistics
P7	Minimum of the evaluation element	Floating point value
P8	Maximum of the evaluation element	Floating point value
P9	Mean value of the evaluation element	Floating point value
P10	Standard deviation of the evaluation element	Floating point value
P11	Number of values in histogram class 0; NOKs	32 bit integer value (unsigned long)
P12	Number of values in histogram class 1	32 bit integer value (unsigned long)
P13	Number of values in histogram class 2	32 bit integer value (unsigned long)
P14	Number of values in histogram class 3	32 bit integer value (unsigned long)
P15	Number of values in histogram class 4	32 bit integer value (unsigned long)
P16	Number of values in histogram class 5	32 bit integer value (unsigned long)
P17	Number of values in histogram class 6	32 bit integer value (unsigned long)
P18	Number of values in histogram class 7	32 bit integer value (unsigned long)
P19	Number of values in histogram class 8	32 bit integer value (unsigned long)
P20	Minimal limit for trend presentation	Floating point value
P21	Maximal limit for trend presentation	Floating point value
P22	Number of values in the trend buffer	16 bit integer value (unsigned short) 0 to 100
P23	Index of the next entry in the trend buffer	16 bit integer value (unsigned short) 0 to 99. The entry is in (index-1), if index = 0 then in 99

If 3 parameters, the statistics measurement results are queried for the transferred evaluation number in the transferred program

Host sends: \<Address>sr\<STX>HITR? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3……..P24\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Evaluation element number	1 to 24 (see evaluation element table)
P3	Entry or exit values	0 → Enty values 1 → Exit values
P4	Enabling of evaluation element for statistics	0 → Disabled 1 → Enabled
P5	Statistics channel number	0 → Channel X 1 → Channel Y1 2 → Channel Y2
P6	Number of OK measurements for the statistics	32 bit integer value (unsigned long)
P7	Number of NOK measurements for the statistics	32 bit integer value (unsigned long), not considered in the statistics
P8	Minimum of the evaluation element	Floating point value
P9	Maximum of the evaluation element	Floating point value
P10	Mean value of the evaluation element	Floating point value
P11	Standard deviation of the evaluation element	Floating point value
P12	Number of values in histogram class 0; NOKs	32 bit integer value (unsigned long)
P13	Number of values in histogram class 1	32 bit integer value (unsigned long)
P14	Number of values in histogram class 2	32 bit integer value (unsigned long)
P15	Number of values in histogram class 3	32 bit integer value (unsigned long)
P16	Number of values in histogram class 4	32 bit integer value (unsigned long)
P17	Number of values in histogram class 5	32 bit integer value (unsigned long)
P18	Number of values in histogram class 6	32 bit integer value (unsigned long)

P19	Number of values in histogram class 7	32 bit integer value (unsigned long)
P20	Number of values in histogram class 8	32 bit integer value (unsigned long)
P21	Minimal limit for trend presentation	Floating point value
P22	Maximal limit for trend presentation	Floating point value
P23	Number of values in the trend buffer	16 bit integer value (unsigned short) 0 to 100
P24	Index of the next entry in the trend buffer	16 bit integer value (unsigned short) 0 to 99. The entry is in (index-1), if index = 0 then in 99

Evaluation element table

Number of evaluation element	Evaluation element
1	Square window 1
2	Square window 2
3	Square window 3
4	Square window 4
5	Square window 5
6	Square window 6
7	Square window 7
8	Square window 8
9	Square window 9
10	Square window 10
11	Threshold 1
12	Threshold 2
13	Threshold 3
14	Threshold 4
15	Trapezoid window X1
16	Trapezoid window X2
17	Trapezoid window Y1
18	Trapezoid window Y2
19	Envelope 1
20	Envelope 2
21	Mathematical calculation 1
22	Mathematical calculation 2
23	Mathematical calculation 3
24	Mathematical calculation 4

4.43.10 TRBW - OK/NOK buffer for trend diagram

Execute TRBW!

This command does not have a ! form.

Query TRBW?

The TRBW? command queries the values of OK/NOK buffer for the trend diagram.

If 1 parameter, the values for the trend presentation are queried in the current program

Host sends: <Address>sr<STX>TRBW?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,…,P101<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Evaluation element number	1 to 24 (see evaluation element table of the HIRT command)
P2 to max P101	OK/NOK evaluation of the evaluation element	0 → NOK 1 → OK

If 2 parameters, the values for the trend presentation are queried for the transferred evaluation number in the transferred program

Host sends: <Address>sr<STX>TRBW? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,…,P102<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Evaluation element number	1 to 24 (see evaluation element table of the HIRT command)
P3 to max P102	OK/NOK evaluation of the evaluation element	0 → NOK 1 → OK

Note: The OK/NOK buffer contains max. 100 values. Only as many values are transferred as the buffer contains. The number of values and the index of the next entry (index) can be queried over the command HITR. If there are less as 100 values in the buffer, the oldest value is at the index 0 and the newest at (index-1). If there are 100 values in the buffer, the newest value is at (index-1) and the oldest one at index. If index = 0 then (index -1) = 99. The parameters are transferred without <NUL> (NUL-character, 0x00).

4.43.11 TEKO - Entry coordinates for the trend diagram

Execute TEKO!

This command does not have a ! form.

Query TEKO?

The TEKO? command reads out the entry coordinates for the trend presentation.

If 2 parameter: read out are the entry coordinates for the trend presentation corresponding to the transferred evaluation element number and transferred measurement program number.

Maximum 100 coordinates

Host sends: <Address>sr<STX>TEKO? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Evaluation element number	1 to 24 (see evaluation element table of the HIRT command)
K1...K50	Entry coordinates for the trend diagram	See description below

If 1 parameter, queried are the entry coordinates for the trend presentation corresponding to the selected measurement program.

Host sends: <Address>sr<STX>TEKO? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Evaluation element number	1 to 24 (see evaluation element table of the HIRT command)
K1...K50	Entry coordinates for the trend diagram	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

4.43.12 TAKO - Entry coordinates for the trend diagram

Execute TAKO!

This command does not have a ! form.

Query TAKO?

The TAKO? command reads out the exit coordinates for the trend presentation.

If 2 parameter: read out are the exit coordinates for the trend presentation corresponding to the transferred evaluation element number and transferred measurement program number.

Maximum 100 coordinates

Host sends:	<Address>sr<STX>TAKO? P1,P2<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>K1K2K3....K50<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds:	<STX>K1...Kn<LF><ETX>[<BCC>]
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Evaluation element number	1 to 24 (see evaluation element table of the HIRT command)
K1...K50	Exit coordinates for the trend diagram	See description below

If 1 parameter, queried are the exit coordinates for the trend presentation corresponding to the selected measurement program.

Host sends:	<Address>sr<STX>TAKO? P1<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Evaluation element number	1 to 24 (see evaluation element table of the HIRT command)
K1...K50	Exit coordinates for the trend diagram	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

4.43.13 RDYM - PC Ready Mode on/off

Execute RDYM!

The command RDYM! enables or disables the PC Ready Mode. With PC Ready Mode switched On

the PC decides when Ready Mode is again set.

Host sends: <Address>sr<STX>RDYM! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	PC Ready Mode	1 → Ready Mode On 0 → Ready Mode Off

Query RDYM?

The command RDYM? reads out the current PC Ready Mode status.

Host sends: <Address>sr<STX>RDYM?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	PC Ready mode	1 → PC Ready Mode On 0 → PC Ready Mode Off

4.43.14 REDY - Ready signal enable if Ready Mode On

Execute REDY!

The PC uses the command REDY! to enable the ready signal. With ready mode On, this command must enable the ready signal in order to set this after every measurement.

Host sends: <Address>sr<STX>REDY!<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Query REDY?

This command does not have a ? form.

4.43.15 KSAN - Number of curves in the curve array

Execute KSAN!

This command does not have a ! form.

Query KSAN?

The command KSAN? queries the number of curves in the curve array and the index of the newest curve in the curve array.

There are 10 curves at the most.

If 1 parameter, queried are the values of the curves corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>KSAN? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Number of curves in the curve array	Integer between 0 and 10
P3	Index of the newest curve in the curve array	Integer between 0 and 9

If no parameters, queried are the data for the curves of the currently selected measurement program.

Host sends: <Address>sr<STX>KSAN?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of curves in the curve array	Integer between 0 and 10
P2	Index of the newest curve in the curve array	Integer between 0 and 9

4.43.16 KUSA - Return point and last value of the curves in the curve array

Execute KUSA!

This command does not have a ! form.

Query KUSA?

The KUSA? command queries the return point and the last value of the curve in the curve array.

If 1 parameter, the return point and the last value of the curve corresponding to the transferred curve number and the currently selected measurement program are queried.

Host sends: <Address>sr<STX>KUSA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Curve number	1 to 10
P2	Index of curve return point	16 bit integer value (unsigned short)
P3	Index of the last point on the curve	16 bit integer value (unsigned short)

If 2 parameters, the return point and the last value of the curve corresponding to the transferred curve number and the transferred measurement program number are queried.

Host sends: <Address>sr<STX>KUSA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Curve number	1 to 10
P3	Index of curve return point	16 bit integer value (unsigned short)
P4	Index of the last point on the curve	16 bit integer value (unsigned short)

4.43.17 KSPW - Supplementary data for a pretrigger curve inside of the curve array

Execute KSPW!

This command does not have a ! form.

Query KSPW?

The command KSPW? queries supplementary data for a pretrigger curve inside of the curve array.

Only max. 256 values before a trigger event are recorded.

If 2 parameter, queried are the data corresponding to the transferred curve number and the measurement program number.

Host sends: <Address>sr<STX>KSPW? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5,P6<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Curve number	1 to 10
P3	Pretrigger recording	0 → off 1 → on
P4	Total number of pretrigger values (all values, not only recorded)	32 bit integer value (unsigned long)
P5	Index of the first pretrigger value	Integer value between 0 and 255
P6	Index of the last pretrigger value	Integer value between 0 and 255

If 1 parameter, queried are the data of the currently selected measurement program.

Host sends: <Address>sr<STX>KSPW? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4,P5<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Curve number	1 to 10
P2	Pretrigger recording	0 → off 1 → on

P3	Total number of pretrigger values (all values, not only recorded)	32 bit integer value (unsigned long)
P4	Index of the first pretrigger value	Integer value between 0 and 255
P5	Index of the last pretrigger value	Integer value between 0 and 255

Note: Total number of pretrigger values means the number of all values which has been measured afrer the start and before a trigger event. However only the last 256 values are recorded

4.43.18 KURX - Read out the X coordinates of the current measurement curve

Execute KURX!

This command does not have a ! form.

Query KURX?

The command KURX? reads out the X coordinates of the current measurement curve.

If 1 parameter, read out are the X coordinates of the measurement curve corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>KURX? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
K1...K50	X coordinates of the measurement curve	See description below

If no parameters, queried are the X coordinates of the measurement curve corresponding to the selected measurement program.

Host sends: <Address>sr<STX>KURX?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>K1K2K3....K50\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<STX\>K1K2K3....K50\<LF\>\<ETX\>[\<BCC\>]

etc.

etc.

etc.

DIGIFORCE responds: \<STX\>K1...Kn\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
K1...K50	X coordinates of the measurement curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

\<K1Byte1\>\<K1Byte2\>\<K1Byte3\>\<K1Byte4\>\<K1StatusByte\>\<K2Byte1\>\<K2Byte2\>\<K2Byte3\>\<K2Byte4\>\<K2StatusByte\>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

\<STX\>K1K2....K50\<LF\>\<ETX\>

Ethernet transfers 290 coordinates (K1 to K290)

\<STX\>K1K2....K290\<LF\>\<ETX\>

After \<ACK\>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after \<ACK\> with \<EOT\>, signifying the end of coordinate transfer.

4.43.19 KUY1- Read out the Y1 coordinates of the current measurement curve

Execute KUY1!

This command does not have a ! form.

Query KUY1?

The command KUY1? reads out the Y1 coordinates of the current measurement curve.

If 1 parameter, read out are the Y1 coordinates of the measurement curve corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>KUY1? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
K1...K50	Y1 coordinates of the measurement curve	See description below

If no parameters, queried are the Y1 coordinates of the measurement curve corresponding to the selected measurement program.

Host sends: <Address>sr<STX>KUY1?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
K1...K50	Y1 coordinates of the measurement curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

4.43.20 KUY2- Read out the Y2 coordinates of the current measurement curve

Execute KUY2!

This command does not have a ! form.

Query KUY2?

The command KUY2? reads out the Y2 coordinates of the current measurement curve.

If 1 parameter, read out are the Y2 coordinates of the measurement curve corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>KUY2? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
K1...K50	Y2 coordinates of the measurement curve	See description below

If no parameters, queried are the Y2 coordinates of the measurement curve corresponding to the selected measurement program.

Host sends: <Address>sr<STX>KUY2?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
K1...K50	Y2 coordinates of the measurement curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

4.43.21 KUSX - Read out the X coordinates of a measurement curve from the curve array

Execute KUSX!

This command does not have a ! form.

Query KUSX?

The KUSX? command reads out the X coordinates of a measurement curve from the curve array.

If 2 parameters, read out are the X coordinates of the measurement curve corresponding to the transferred curve number and measurement program number.

Host sends: <Address>sr<STX>KUSX? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Curve number	1 to 10
K1...K50	X coordinates of the measurement curve	See description below

If 1 parameter, queried are the X coordinates of the measurement curve corresponding to the transferred curve number and the selected measurement program.

Host sends: <Address>sr<STX>KUSX? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Curve number	1 to 10
K1...K50	X coordinates of the measurement curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

\<STX\>K1K2....K50\<LF\>\<ETX\>

Ethernet transfers 290 coordinates (K1 to K290)

\<STX\>K1K2....K290\<LF\>\<ETX\>

After \<ACK\>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after \<ACK\> with \<EOT\>, signifying the end of coordinate transfer.

4.43.22 KSY1 - Read out the Y1 coordinates of a measurement curve from the curve array

Execute KSY1!

This command does not have a ! form.

Query KSY1?

The KSY1? command reads out the Y1 coordinates of a measurement curve from the curve array.

If 2 parameters, read out are the Y1 coordinates of the measurement curve corresponding to the transferred curve number and measurement program number.

Host sends: \<Address\>sr\<STX\>KSY1? P1,P2\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: \<Address\>po\<ENQ\>

DIGIFORCE responds: \<STX\>K1K2K3....K50\<LF\>\<ETX\>[\<BCC\>]

Host sends: \<ACK\>

DIGIFORCE responds: \<STX\>K1K2K3....K50\<LF\>\<ETX\>[\<BCC\>]

etc.

etc.

etc.

DIGIFORCE responds: \<STX\>K1...Kn\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<EOT\>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Curve number	1 to 10
K1...K50	Y1 coordinates of the measurement curve	See description below

If 1 parameter, queried are the Y1 coordinates of the measurement curve corresponding to the transferred curve number and the selected measurement program.

Host sends: \<Address\>sr\<STX\>KSY1? P1\<LF\>\<ETX\>[\<BCC\>]

DIGIFORCE responds: \<ACK\>

Host sends: \<EOT\>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Curve number	1 to 10
K1...K50	Y1 coordinates of the measurement curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer

4.43.23 KSY2 - Read out the Y2 coordinates of a measurement curve from the curve array

Execute KSY2!

This command does not have a ! form.

Query KSY2?

The KSY2? command reads out the Y2 coordinates of a measurement curve from the curve array.

If 2 parameters, read out are the Y2 coordinates of the measurement curve corresponding to the transferred curve number and measurement program number.

Host sends: <Address>sr<STX>KSY2? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Curve number	1 to 10
K1...K50	Y2 coordinates of the measurement curve	See description below

If 1 parameter, queried are the Y2 coordinates of the measurement curve corresponding to the transferred curve number and the selected measurement program.

Host sends: <Address>sr<STX>KSY2? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Curve number	1 to 10
K1...K50	Y2 coordinates of the measurement curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer

4.43.24 PRTX - Read out the X coordinates of the pretrigger curve

Execute PRTX!

This command does not have a ! form.

Query PRTX?

The PRTX? command reads out the X coordinates of the pretrigger curve.

If 1 parameter, read out are the X coordinates of the pretrigger curve corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>PRTX? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
K1...K50	X-coordinates of the pretrigger curve	See description below

If no parameter, queried are the X coordinates of the pretrigger curve corresponding to the selected measurement program.

Host sends: <Address>sr<STX>PRTX?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
K1...K50	X-coordinates of the pretrigger curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer

4.43.25 PRY1 - Read out the Y1 coordinates of the pretrigger curve

Execute PRY1!

This command does not have a ! form.

Query PRY1?

The PRY1? command reads out the Y1 coordinates of the pretrigger curve.

If 1 parameter, read out are the Y1 coordinates of the pretrigger curve corresponding to the transferred measurement program number.

Host sends:	<Address>sr<STX>PRY1? P1<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>K1K2K3....K50<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
K1...K50	Y1-coordinates of the pretrigger curve	See description below

If no parameter, queried are the Y1 coordinates of the pretrigger curve corresponding to the selected measurement program.

Host sends: <Address>sr<STX>PRY1?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
K1...K50	Y1-coordinates of the pretrigger curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer

4.43.26 PRY2 - Read out the Y2 coordinates of the pretrigger curve

Execute PRY2!

This command does not have a ! form.

Query PRY2?

The PRY2? command reads out the Y2 coordinates of the pretrigger curve.

If 1 parameter, read out are the Y2 coordinates of the pretrigger curve corresponding to the transferred measurement program number.

Host sends: \<Address>sr\<STX>PRY2? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>K1K2K3....K50\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<STX>K1K2K3....K50\<LF>\<ETX>[\<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: \<STX>K1...Kn\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
K1...K50	Y2-coordinates of the pretrigger curve	See description below

If no parameter, queried are the Y2 coordinates of the pretrigger curve corresponding to the selected measurement program.

Host sends: \<Address>sr\<STX>PRY2?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
K1...K50	Y2-coordinates of the pretrigger curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer

4.43.27 PRSX - Read out the X coordinates of a pretrigger curve from the curve array

Execute PRSX!

This command does not have a ! form.

Query PRSX?

The PRSX? command reads out the X coordinates of a pretrigger curve from the curve array.

If 2 parameters, read out are the X coordinates of the pretrigger curve corresponding to the transferred curve number and measurement program number.

Host sends: <Address>sr<STX>PRSX? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Curve number	1 to 10
K1...K50	X coordinates of the pretrigger curve	See description below

If 1 parameter, queried are the X coordinates of the pretrigger curve corresponding to the transferred curve number and the selected measurement program.

Host sends: <Address>sr<STX>PRSX? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Curve number	1 to 10
K1...K50	X coordinates of the pretrigger curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

4.43.28 PSY1 - Read out the Y1 coordinates of a pretrigger curve from the curve array

Execute PSY1!

This command does not have a ! form.

Query PSY1?

The PSY1? command reads out the Y1 coordinates of a pretrigger curve from the curve array.

If 2 parameters, read out are the Y1 coordinates of the pretrigger curve corresponding to the transferred curve number and measurement program number.

Host sends: <Address>sr<STX>PSY1? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>K1K2K3....K50\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<STX>K1K2K3....K50\<LF>\<ETX>[\<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: \<STX>K1...Kn\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Curve number	1 to 10
K1...K50	Y1 coordinates of the pretrigger curve	See description below

If 1 parameter, queried are the Y1 coordinates of the pretrigger curve corresponding to the transferred curve number and the selected measurement program.

Host sends: \<Address>sr\<STX>PSY1? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>K1K2K3....K50\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<STX>K1K2K3....K50\<LF>\<ETX>[\<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: \<STX>K1...Kn\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Curve number	1 to 10
K1...K50	Y1 coordinates of the pretrigger curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

4.43.29 PSY2 - Read out the Y2 coordinates of a pretrigger curve from the curve array

Execute PSY2!

This command does not have a ! form.

Query PSY2?

The PSY2? command reads out the Y2 coordinates of a pretrigger curve from the curve array.

If 2 parameters, read out are the Y2 coordinates of the pretrigger curve corresponding to the transferred curve number and measurement program number.

Host sends:	<Address>sr<STX>PSY2? P1,P2<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>K1K2K3....K50<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Curve number	1 to 10
K1...K50	Y2 coordinates of the pretrigger curve	See description below

If 1 parameter, queried are the Y2 coordinates of the pretrigger curve corresponding to the transferred curve number and the selected measurement program.

Host sends: `<Address>sr<STX>PSY2? P1<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<ACK>`

Host sends: `<EOT>`

Host sends: `<Address>po<ENQ>`

DIGIFORCE responds: `<STX>K1K2K3....K50<LF><ETX>[<BCC>]`

Host sends: `<ACK>`

DIGIFORCE responds: `<STX>K1K2K3....K50<LF><ETX>[<BCC>]`

etc.

etc.

etc.

DIGIFORCE responds: `<STX>K1...Kn<LF><ETX>[<BCC>]`

DIGIFORCE responds: `<EOT>`

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Curve number	1 to 10
K1...K50	Y2 coordinates of the pretrigger curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

`<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>...` etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

4.43.30 MENU - current measurement menu

Execute MENU!

The MENU! command sets the measurement menu that is to be shown.

If 1 parameter, the measurement menu display is set according to the currently selected measurement program

Host sends: <Address>sr<STX>MENU! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement menu display	101 -> Y1-Measurement curve display 102 -> Y2-Measurement curve display 103 -> Y1 and Y2 Measurement curve display 104 -> General curve data Y1 105 -> General curve data Y2 106 -> Smiley or Pass/Fail indicator 107 -> Entries/exits of the square windows 108 -> Entries/exits of the evaluation elements (except square window) 109 -> User-defined values 1 to 12 110 -> User-defined values 13 to 24 111 -> Statistics display 112 -> Order sheet 113 -> Evaluation results of rotary switches

If 2 parameters, the measurement menu display is set according to the transferred measurement program number.

Host sends: <Address>sr<STX>MENU! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Measurement menu display	101 -> Y1-Measurement curve display 102 -> Y2-Measurement curve display 103 -> Y1 and Y2 Measurement curve display

		104 -> General curve data Y1 105 -> General curve data Y2 106 -> Smiley or Pass/Fail indicator 107 -> Entries/exits of the square windows 108 -> Entries/exits of the evaluation elements (except square window) 109 -> User-defined values 1 to 12 110 -> User-defined values 13 to 24 111 -> Statistics display 112 -> Order sheet 113 -> Evaluation results of rotary switches

Query MENU?

The MENU? command queries which measurement menu is now being shown.

If no parameters, the measurement menu display is queried for the currently selected measurement program

Host sends: \<Address>sr\<STX>MENU?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P1\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement menu display	101 -> Y1-Measurement curve display 102 -> Y2-Measurement curve display 103 -> Y1 and Y2 Measurement curve display 104 -> General curve data Y1 105 -> General curve data Y2 106 -> Smiley or Pass/Fail indicator 107 -> Entries/exits of the square windows 108 -> Entries/exits of the evaluation elements (except square window) 109 -> User-defined values 1 to 12 110 -> User-defined values 13 to 24 111 -> Statistics display 112 -> Order sheet 113 -> Evaluation results of rotary switches

If 1 parameter, the measurement menu display is queried for the transferred measurement program number

Host sends: \<Address>sr\<STX>MENU? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P2\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Measurement menu display	101 -> Y1-Measurement curve display 102 -> Y2-Measurement curve display 103 -> Y1 and Y2 Measurement curve display 104 -> General curve data Y1 105 -> General curve data Y2 106 -> Smiley or Pass/Fail indicator 107 -> Entries/exits of the square windows 108 -> Entries/exits of the evaluation elements (except square window) 109 -> User-defined values 1 to 12 110 -> User-defined values 13 to 24 111 -> Statistics display 112 -> Order sheet 113 -> Evaluation results of rotary switches

4.44   Measurement data logger

4.44.1   DSTA - Enabling and status information of measurement data logger

Execute DSTA!

This command does not have a ! form.

Query DSTA?

The command DSTA? queries the status information of the measurement data logger.

Host sends: <Address>sr<STX>DSTA?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,P3<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement data logger on/off	0 → off 1 → on
P2	Number of data record entries	Integer value 0 to 50
P3	Index of the next data record entry	Integer 0 to 49

4.44.2 DADA - Query general data for a measurement data logger record

Execute DADA!

This command does not have a ! form.

Query DADA?

The command DADA? queries diverse information for a data record stored by the measurement data logger.

Host sends: <Address>sr<STX>DADA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2,P3,P4,P5,P6,P7,P8,P9,P10,P11,P12<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the data record	Integer value 0 to 49
P2	Index of the data record return point	16 bit integer value (unsigned short)
P3	Index of the last value in the data record	16 bit integer value (unsigned short)
P4	Overall evaluation result of the data record	0 → NOK 1 → OK
P5	Measurement program number of the data record	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P6	Changing counter for the data record	32 bit integer value (unsigned long)
P7	Data record date / year	16 bit integer value (unsigned short)
P8	Data record date / month	16 bit integer value (unsigned short)
P9	Data record date / day	16 bit integer value (unsigned short)
P10	Data record time / hour	16 bit integer value (unsigned short)
P11	Data record time / minute	16 bit integer value (unsigned short)
P12	Data record time / second	16 bit integer value (unsigned short)

4.44.3 DRFE - Query square window data for a measurement data logger record

Execute DRFE!

This command does not have a ! form.

Query DRFE?

The command DRFE? queries the square window information for a data record stored by the measurement data logger.

Host sends: <Address>sr<STX>DRFE? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5,P6,P7<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the data record	Integer value 0 to 49
P2	Window number	Integer value 1 to 10
P3	Window evaluation result	0 → NOK 1 → OK
P4	Window entry X coordinate	Floating-point value
P5	Window entry Y coordinate	Floating-point value
P6	Window exit X coordinate	Floating-point value
P7	Window exit Y coordinate	Floating-point value

4.44.4 DTFX - Query X-trapezoid window data for a measurement data logger record

Execute DTFX!

This command does not have a ! form.

Query DTFX?

The command DTFX? queries the X-trapezoid window information for a data record stored by the measurement data logger.

Host sends: <Address>sr<STX>DTFX? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5,P6,P7<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the data record	Integer value 0 to 49
P2	Window number	Integer value 1 to 2
P3	Window evaluation result	0 → NOK 1 → OK
P4	Window entry X coordinate	Floating-point value
P5	Window entry Y coordinate	Floating-point value
P6	Window exit X coordinate	Floating-point value
P7	Window exit Y coordinate	Floating-point value

4.44.5 DTFY - Query Y-trapezoid window data for a measurement data logger record

Execute DTFY!

This command does not have a ! form.

Query DTFY?

The command DTFY? queries the Y-trapezoid window information for a data record stored by the measurement data logger.

Host sends: <Address>sr<STX>DTFY? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5,P6,P7<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the data record	Integer value 0 to 49
P2	Window number	Integer value 1 to 2
P3	Window evaluation result	0 → NOK 1 → OK
P4	Window entry X coordinate	Floating-point value
P5	Window entry Y coordinate	Floating-point value
P6	Window exit X coordinate	Floating-point value
P7	Window exit Y coordinate	Floating-point value

4.44.6 DHUE - Query envelope data for a measurement data logger record

Execute DHUE!

This command does not have a ! form.

Query DHUE?

The command DHUE? queries the envelope information for a data record stored by the measurement data logger.

Host sends: \<Address>sr\<STX>DHUE? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3,P4,P5,P6,P7\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the data record	Integer value 0 to 49
P2	Envelope number	Integer value 1 to 2
P3	Envelope evaluation result	0 → NOK 1 → OK
P4	Envelope entry X coordinate	Floating-point value
P5	Envelope entry Y coordinate	Floating-point value
P6	Envelope exit X coordinate	Floating-point value
P7	Envelope exit Y coordinate	Floating-point value

4.44.7 DSCH - Query threshold data for a measurement data logger record

Execute DSCH!

This command does not have a ! form.

Query DSCH?

The command DSCH? queries the threshold information for a data record stored by the measurement data logger.

Host sends: \<Address>sr\<STX>DSCH? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3,P4,P5\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the data record	Integer value 0 to 49
P2	Threshold number	Integer value 1 to 2
P3	Threshold evaluation result	0 → NOK 1 → OK
P4	Threshold intersection X coordinate	Floating-point value
P5	Threshold intersection Y coordinate	Floating-point value

4.44.8 DMAT - Mathematical evaluation data for a measurement data logger record

Execute DMAT!

This command does not have a ! form.

Query DMAT?

The command DMAT? queries the mathematical evaluation information for a data record stored by the measurement data logger.

Host sends: \<Address>sr\<STX>DMAT? P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>P3,P4\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the data record	Integer value 0 to 49
P2	Mathematical evaluation number	Integer value 1 to 6
P3	Mathematical evaluation result	0 → NOK 1 → OK
P4	Actual mathematical value	Floating-point value

4.44.9 DXKO - Read the X coordinates of a measurement curve from the data logger

Execute DXKO!

This command does not have a ! form.

Query DXKO?

The DXKO? command reads the X coordinates of a measurement curve from the data logger.

Host sends: <Address>sr<STX>DXKO? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Curve number	1 to 50
K1...K50	X coordinates of the measurement curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

4.44.10 DY1K - Read the Y1 coordinates of a measurement curve from the data logger

Execute DY1K!

This command does not have a ! form.

Query DY1K?

The DY1K? command reads the Y1 coordinates of a measurement curve from the data logger.

Host sends: <Address>sr<STX>DY1K? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Curve number	1 to 50
K1...K50	Y1 coordinates of the measurement curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

4.44.11 DY2K - Read the Y2 coordinates of a measurement curve from the data logger

Execute DY2K!

This command does not have a ! form.

Query DY2K?

The DY2K? command reads the Y2 coordinates of a measurement curve from the data logger.

Host sends:	<Address>sr<STX>DY2K? P1<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>
Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>K1K2K3....K50<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<STX>K1K2K3....K50<LF><ETX>[<BCC>]
etc.	
etc.	
etc.	
DIGIFORCE responds:	<STX>K1...Kn<LF><ETX>[<BCC>]
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Curve number	1 to 50
K1...K50	Y2 coordinates of the measurement curve	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

4.45   Graphical scaling

4.45.1   ASKA - Autoscaling

Execute ASKA!

The ASKA! command sets the graphical autoscaling.

If 1 parameter, the autoscaling corresponding to the currently selected measurement program is set

Host sends: <Address>sr<STX>ASKA! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Autoscaling	0 -> Autoscaling Off 1 -> Autoscaling On

If 2 parameters, the autoscaling corresponding to the transferred measurement program number is set.

Host sends: <Address>sr<STX>ASKA! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Autoscaling	0 -> Autoscaling Off 1 -> Autoscaling On

Query ASKA?

The ASKA? command queries the graphical autoscaling.

If no parameters, the autoscaling corresponding to the currently selected measurement program is queried

Host sends: <Address>sr<STX>ASKA?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Autoscaling	0 -> Autoscaling Off 1 -> Autoscaling On

If 1 parameter, the autoscaling corresponding to the transferred measurement program number is queried.

Host sends: <Address>sr<STX>ASKA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Autoscaling	0 -> Autoscaling off 1 -> Autoscaling on

4.45.2 MSKA - Manual scaling

Execute MSKA!

The MSKA! command sets the limits for the manual scaling.

If 5 parameters, the scaling limits corresponding to the currently selected measurement program and the transferred channel number are set.

Host sends: <Address>sr<STX>MSKA! P1,P2,P3,P4,P5<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel Y1 1 -> Channel Y2
P2	Xmin scaling limit	Floating-point value
P3	Xmax scaling limit	Floating-point value
P4	Ymin scaling limit	Floating-point value
P5	Ymax scaling limit	Floating-point value

If 6 parameters, the scaling limits corresponding to the transferred measurement program number and the transferred channel number are set.

Host sends: <Address>sr<STX>MSKA! P1,P2,P3,P4,P5,P6<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel Y1 1 -> Channel Y2
P3	Xmin scaling limit	Floating-point value
P4	Xmax scaling limit	Floating-point value
P5	Ymin scaling limit	Floating-point value
P6	Ymax scaling limit	Floating-point value

Query MSKA?

The MSKA? command queries the graphical autoscaling.

If 1 parameter, the scaling limits corresponding to the currently selected measurement program and the transferred channel number are queried.

Host sends: <Address>sr<STX>MSKA? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1,P2,P3,P4<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Channel number	0 -> Channel Y1 1 -> Channel Y2
P2	Xmin scaling limit	Floating-point value
P3	Xmax scaling limit	Floating-point value
P4	Ymin scaling limit	Floating-point value
P5	Ymax scaling limit	Floating-point value

If 2 parameters, the scaling limits corresponding to the transferred measurement program number and the transferred channel number are queried.

Host sends: <Address>sr<STX>MSKA? P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P3,P4,P5,P6<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Channel number	0 -> Channel Y1 1 -> Channel Y2
P3	Xmin scaling limit	Floating-point value
P4	Xmax scaling limit	Floating-point value
P5	Ymin scaling limit	Floating-point value
P6	Ymax scaling limit	Floating-point value

4.46   Reference curve

4.46.1   RFAN - Show/hide reference curve

Execute RFAN!

The RFAN! command shows or hides the reference curve.

If 1 parameter, the value corresponding to the currently selected measurement program is set.

Host sends: <Address>sr<STX>RFAN! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Show reference curve	0 -> Do not show reference curve 1 -> Show reference curve

If 2 parameters, the value corresponding to the transferred measurement program is set.

Host sends: <Address>sr<STX>RFAN! P1,P2 ,P3,P4<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Show reference curve	0 -> Do not show reference curve 1 -> Show reference curve

Query RFAN?

The RFAN! command queries whether the reference curve is shown or not.

If no parameters, the value corresponding to the currently selected measurement program is queried.

Host sends:	<Address>sr<STX>RFAN?<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>P1<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Show reference curve	0 -> Do not show reference curve 1 -> Show reference curve

If 1 parameter, the value corresponding to the transferred measurement program is queried.

Host sends:	<Address>sr<STX>RFAN? P1<LF><ETX>[<BCC>]
DIGIFORCE responds:	<ACK>
Host sends:	<EOT>

Host sends:	<Address>po<ENQ>
DIGIFORCE responds:	<STX>P2<LF><ETX>[<BCC>]
Host sends:	<ACK>
DIGIFORCE responds:	<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Show reference curve	0 -> Do not show reference curve 1 -> Show reference curve

4.46.2 RAY1 - Number of value pairs for reference curve

Execute RAY1!

The RAY1! command sets the number of value pairs for the reference curve from the channel Y1.

If 1 parameter, the number of value pairs for the reference curve from the channel Y1 is set corresponding to the currently selected measurement program.

Host sends: <Address>sr<STX>RAY1! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of value pairs for reference curve Y1	16 bit integer value (unsigned short) <= 160

If 2 parameters, the number of value pairs for the reference curve from the channel Y1 is set corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>RAY1! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Number of value pairs for reference curve Y1	16 bit integer value (unsigned short) <= 160

Query RAY1?

The RAY1? command queries the number of value pairs for the reference curve from the channel Y1.

If no parameters, the number of value pairs for the reference curve from the channel Y1 corresponding to the currently selected measurement program is queried.

Host sends: <Address>sr<STX>RAY1?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of value pairs for reference curve Y1	16 bit integer value (unsigned short) <= 160

If 1 parameter, the number of value pairs for the reference curve from the channel Y1 corresponding to the transferred measurement program number is queried.

Host sends: <Address>sr<STX>RAY1? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Number of value pairs for reference curve Y1	16 bit integer value (unsigned short) <= 160

4.46.3 RAY2 - Number of value pairs for reference curve

Execute RAY2!

The RAY2! command sets the number of value pairs for the reference curve Y2.

If 1 parameter, the number of value pairs for the reference curve Y2 is set corresponding to the currently selected measurement program.

Host sends: <Address>sr<STX>RAY2! P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of value pairs for reference curve Y2	16 bit integer value (unsigned short) <= 160

If 2 parameters, the number of value pairs for the reference curve Y2 is set corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>RAY2! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Number of value pairs for reference curve Y2	16 bit integer value (unsigned short) <= 160

Query RAY2?

The RAY2? command queries the number of value pairs for the reference curve Y2.

If no parameters, the number of value pairs for the reference curve Y2 corresponding to the currently selected measurement program is queried.

Host sends: <Address>sr<STX>RAY2?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P1<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of value pairs for reference curve Y2	16 bit integer value (unsigned short) <= 160

If 1 parameter, the number of value pairs for the reference curve Y2 corresponding to the transferred measurement program number is queried.

Host sends: <Address>sr<STX>RAY2? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>P2<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Measurement program number	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Number of value pairs for reference curve Y2	16 bit integer value (unsigned short) <= 160

4.46.4 RFX1 - X-coordinates of the reference curve from channel Y1

Execute RFX1!

The command RFX1? transfers the X coordinates of the reference curve of chanel Y1.

If 3 parameters, transferred are the X coordinates of the reference curve from the channel Y1 corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>RFX1! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Block number	A value between 1 and 4; the max 160 coordinates are transferred in blocks of 40 values. Ethernet can transfer up to 280 values at any one time
P3	X coordinates of the reference curve from the channel Y1	See description below

If 2 parameters, Transferred are the X coordinates of the reference curve from the channel Y1 corresponding to the selected measurement program.

Host sends: <Address>sr<STX>RFX1! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Block number	A value between 1 and 4; the max 160 coordinates are transferred in blocks of 40 values. Ethernet can transfer up to 280 values at any one time
P2	X coordinates of the reference curve from the channel Y1	See description below

The max 40 coordinates (or max 280 for Ethernet) are transferred as binary code. Each coordinate is transferred as 5 bytes (4 bytes for a 32 bit floating point followed by a status byte). There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

Caution: Before transferring the coordinates, you must first have transferred the number of value pairs with the RFAW! command.

Query RFX1?

The command RFX1? reads out the X coordinates of the reference curve from the channel Y1.

If 1 parameter, read out are the X coordinates of the reference curve from the channel Y1 corresponding to the transferred measurement program number.

Host sends: \<Address>sr\<STX>RFX1? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: \<Address>po\<ENQ>

DIGIFORCE responds: \<STX>K1K2K3....K50\<LF>\<ETX>[\<BCC>]

Host sends: \<ACK>

DIGIFORCE responds: \<STX>K1K2K3....K50\<LF>\<ETX>[\<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: \<STX>K1...Kn\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
K1...K50	X coordinates of the reference curve from the channel Y1	See description below

If no parameters, queried are the X coordinates of the reference curve from the channel Y1 corresponding to the selected measurement program.

Host sends: \<Address>sr\<STX>RFX1?\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
K1...K50	X coordinates of the reference curve from the channel Y1	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

4.46.5 RFY1 - Y-coordinates of the reference curve from channel Y1

Execute RFY1!

The command RFY1? transfers the Y coordinates of the reference curve of channel Y1.

If 3 parameters, transferred are the Y coordinates of the reference curve from the channel Y1 corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>RFY1! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Block number	A value between 1 and 4; the max 160 coordinates are transferred in blocks of 40 values. Ethernet can transfer up to 280 values at any one time
P3	Y coordinates of the reference curve from the channel Y1	See description below

If 2 parameters, transferred are the Y1 coordinates of the reference curve from the channel Y1 corresponding to the selected measurement program.

Host sends: \<Address>sr\<STX>RFY1! P1,P2\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Block number	A value between 1 and 4; the max 160 coordinates are transferred in blocks of 40 values. Ethernet can transfer up to 280 values at any one time
P2	Y coordinates of the reference curve from the channel Y1	See description below

The max 40 coordinates (or max 280 for Ethernet) are transferred as binary code. Each coordinate is transferred as 5 bytes (4 bytes for a 32 bit floating point followed by a status byte). There are no separators inside or between the coordinates.

\<K1Byte1>\<K1Byte2>\<K1Byte3>\<K1Byte4>\<K1StatusByte>\<K2Byte1>\<K2Byte2>\<K2Byte3>\<K2Byte4>\<K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

Caution: Before transferring the coordinates, you must first have transferred the number of value pairs with the RFAW! command.

Query RFY1?

The command RFY1? reads out the Y coordinates of the reference curve from the channel Y1.

If 1 parameter, read out are the Y coordinates of the reference curve from the channel Y1 corresponding to the transferred measurement program number.

Host sends: \<Address>sr\<STX>RFY1? P1\<LF>\<ETX>[\<BCC>]

DIGIFORCE responds: \<ACK>

Host sends: \<EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
K1...K50	Y coordinates of the reference curve from the channel Y1	See description below

If no parameters, queried are the Y coordinates of the reference curve from the channel Y1 corresponding to the selected measurement program.

Host sends: <Address>sr<STX>RFY1?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
K1...K50	Y coordinates of the reference curve from the channel Y1	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

4.46.6 RFX2 - X-coordinates of the reference curve from channel Y2

Execute RFX2!

The command RFX2? transfers the X coordinates of the reference curve of chanel Y2.

If 3 parameters, transferred are the X coordinates of the reference curve from the channel Y2 corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>RFX2! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Block number	A value between 1 and 4; the max 160 coordinates are transferred in blocks of 40 values. Ethernet can transfer up to 280 values at any one time
P3	X coordinates of the reference curve from the channel Y2	See description below

If 2 parameters, Transferred are the X coordinates of the reference curve from the channel Y2 corresponding to the selected measurement program.

Host sends: <Address>sr<STX>RFX2! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Block number	A value between 1 and 4; the max 160 coordinates are transferred in blocks of 40 values. Ethernet can transfer up to 280 values at any one time
P2	X coordinates of the reference curve from the channel Y2	See description below

The max 40 coordinates (or max 280 for Ethernet) are transferred as binary code. Each coordinate is transferred as 5 bytes (4 bytes for a 32 bit floating point followed by a status byte). There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

Caution: Before transferring the coordinates, you must first have transferred the number of value pairs with the RFAW! command.

Query RFX2?

The command RFX2? reads out the X coordinates of the reference curve from the channel Y2.

If 1 parameter, read out are the X coordinates of the reference curve from the channel Y2 corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>RFX2? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
K1...K50	X coordinates of the reference curve from the channel Y2	See description below

If no parameters, queried are the X coordinates of the reference curve from the channel Y2 corresponding to the selected measurement program.

Host sends: <Address>sr<STX>RFX2?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
K1...K50	X coordinates of the reference curve from the channel Y2	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

4.46.7   RFY2 - Y-coordinates of the reference curve from channel Y2

Execute RFY2!

The command RFY2? transfers the Y coordinates of the reference curve of channel Y2.

If 3 parameters, transferred are the Y coordinates of the reference curve from the channel Y2 corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>RFY2! P1,P2,P3<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
P2	Block number	A value between 1 and 4; the max 160 coordinates are transferred in blocks of 40 values. Ethernet can transfer up to 280 values at any one time
P3	Y coordinates of the reference curve from the channel Y2	See description below

If 2 parameters, transferred are the Y2 coordinates of the reference curve from the channel Y1 corresponding to the selected measurement program.

Host sends: <Address>sr<STX>RFY2! P1,P2<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Block number	A value between 1 and 4; the max 160 coordinates are transferred in blocks of 40 values. Ethernet can transfer up to 280 values at any one time
P2	Y coordinates of the reference curve from the channel Y2	See description below

The max 40 coordinates (or max 280 for Ethernet) are transferred as binary code. Each coordinate is transferred as 5 bytes (4 bytes for a 32 bit floating point followed by a status byte). There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

Caution: Before transferring the coordinates, you must first have transferred the number of value pairs with the RFAW! command.

Query RFY2?

The command RFY2? reads out the Y coordinates of the reference curve from the channel Y2.

If 1 parameter, read out are the Y coordinates of the reference curve from the channel Y1 corresponding to the transferred measurement program number.

Host sends: <Address>sr<STX>RFY2? P1<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
P1	Number of the measurement program	A value between 0 and 31 or between 0 and 127 (128 program version of firmware)
K1...K50	Y coordinates of the reference curve from the channel Y2	See description below

If no parameters, queried are the Y coordinates of the reference curve from the channel Y2 corresponding to the selected measurement program.

Host sends: <Address>sr<STX>RFY2?<LF><ETX>[<BCC>]

DIGIFORCE responds: <ACK>

Host sends: <EOT>

Host sends: <Address>po<ENQ>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

Host sends: <ACK>

DIGIFORCE responds: <STX>K1K2K3....K50<LF><ETX>[<BCC>]

etc.

etc.

etc.

DIGIFORCE responds: <STX>K1...Kn<LF><ETX>[<BCC>]

DIGIFORCE responds: <EOT>

Meaning of parameter Pn

Parameter	Meaning	Value
K1...K50	Y coordinates of the reference curve from the channel Y2	See description below

The coordinates are transferred as binary code followed by a status byte. In other words, each coordinate consists of 5 bytes.

There are no separators inside or between the coordinates.

<K1Byte1><K1Byte2><K1Byte3><K1Byte4><K1StatusByte><K2Byte1><K2Byte2><K2Byte3><K2Byte4><K2StatusByte>... etc.

The 32 bit floating point for each coordinate is transferred byte by byte (4 bytes). To prevent these 4 bytes from being interpreted as control codes, the highest significant bit is set (if not already set). The status byte indicates whether the highest significant bit has been set in one of these 4 bytes. The status byte is additionally transmitted as the 5th byte together with the 4 bytes of the associated coordinate.

The highest significant bit of the status byte is always set. Bit D0 is set if the highest significant bit of Byte1 has been set. Bit D1 is set if the highest significant bit of Byte2 has been set. Bit D2 is set if the highest significant bit of Byte3 has been set. Bit D3 is set if the highest significant bit of Byte4 has been set.

After polling, no more than 50 coordinates (K1 to K50) are transferred.

<STX>K1K2....K50<LF><ETX>

Ethernet transfers 290 coordinates (K1 to K290)

<STX>K1K2....K290<LF><ETX>

After <ACK>, the next set of coordinates (max 50/290) are transferred.

This continues until all coordinates have been transferred. In this case, the device responds after <ACK> with <EOT>, signifying the end of coordinate transfer.

5   Appendix - Operand table

ID of operand	Number
Off	0
Live value (This value is set with the command LIVE and **not** with FRDW)	
Intermediate Result 1	100
Intermediate Result 2	101
Intermediate Result 3	102
Intermediate Result 4	103
Intermediate Result 5	104
Intermediate Result 6	105
Intermediate Result 7	106
Intermediate Result 8	107
Intermediate Result 9	108
Intermediate Result 10	109
Constant 1	200
Constant 2	201
Constant 3	202
Constant 4	203
Constant 5	204
Constant 6	205
Constant 7	206
Constant 8	207
Constant 9	208
Constant 10	209
General curve data Y1–Start X	300
General curve data Y1–Start Y	301
General curve data Y1–End X	302
General curve data Y1–End Y	303
General curve data Y1–Abs. Xmax X-coordinate	304
General curve data Y1–Abs. Xmax Y-coordinate	305
General curve data Y1–Abs. Xmin X-coordinate	306

General curve data Y1–Abs. Xmin Y-coordinate	307
General curve data Y1–Abs. Ymax X-coordinate	308
General curve data Y1–Abs. Ymax Y-coordinate	309
General curve data Y1–Abs. Ymin X-coordinate	310
General curve data Y1–Abs. Ymin Y-coordinate	311
General curve data Y1–Return point X-coordinate	312
General curve data Y1–Return point Y-coordinate	313
Reference point	314
General curve data Y2–Start X	400
General curve data Y2–Start Y	401
General curve data Y2–End X	402
General curve data Y2 –End Y	403
General curve data Y2–Abs- Xmax X-coordinate	404
General curve data Y2–Abs. Xmax Y-coordinate	405
General curve data Y2–Abs. Xmin X-coordinate	406
General curve data Y2–Abs. Xmin Y-coordinate	407
General curve data Y2–Abs. Ymax X-coordinate	408
General curve data Y2–Abs. Ymax Y-coordinate	409
General curve data Y2–Abs. Ymin X-coordinate	410
General curve data Y2–Abs. Ymin Y-coordinate	411
General curve data Y2–Return point X-coordinate	412
General curve data Y2–Return point Y-coordinate	413
Reference point	414
Window 1–Entry X	500
Window 1–Entry Y	501
Window 1–Exit X	502
Window 1–Exit Y	503
Window 1–Abs. minimum X	504
Window 1–Abs. minimum Y	505
Window 1–Abs. maximum X	506
Window 1–Abs. maximum Y	507
Window 1–Loc. minimum X	508

Window 1–Loc. minimum Y	509
Window 1–Loc. maximum X	510
Window 1–Loc. maximum Y	511
Window 1–Bend X	512
Window 1–Bend Y	513
Window 1–Mean value Y	514
Window 1–Gradient	515
Window 1–Area	516
Window 1–Coordinate Xmin	517
Window 1–Coordinate Xmax	518
Window 1–Coordinate Ymin	519
Window 1–Coordinate Ymax	520
Window 2–Entry X	600
Window 2–Entry Y	601
Window 2–Exit X	602
Window 2–Exit Y	603
Window 2–Abs. minimum X	604
Window 2–Abs. minimum Y	605
Window 2–Abs. maximum X	606
Window 2–Abs. maximum Y	607
Window 2–Loc. minimum X	608
Window 2–Loc. minimum Y	609
Window 2–Loc. maximum X	610
Window 2–Loc. maximum Y	611
Window 2–Bend X	612
Window 2–Bend Y	613
Window 2–Mean value Y	614
Window 2–Gradient	615
Window 2–Area	616
Window 2–Coordinate Xmin	617
Window 2–Coordinate Xmax	618
Window 2–Coordinate Ymin	619
Window 2–Coordinate Ymax	620

Window 3–Entry X	700
Window 3–Entry Y	701
Window 3–Exit X	702
Window 3–Exit Y	703
Window 3–Abs. minimum X	704
Window 3–Abs. minimum Y	705
Window 3–Abs. maximum X	706
Window 3–Abs. maximum Y	707
Window 3–Loc. minimum X	708
Window 3–Loc. maximum Y	709
Window 3–Loc. maximum X	710
Window 3–Loc. maximum Y	711
Window 3–Bend X	712
Window 3–Bend Y	713
Window 3–Mean value Y	714
Window 3–Gradient	715
Window 3–Area	716
Window 3–Coordinate Xmin	717
Window 3–Coordinate Xmax	718
Window 3–Coordinate Ymin	719
Window 3–Coordinate Ymax	720
Window 4–Entry X	800
Window 4–Entry Y	801
Window 4–Exit X	802
Window 4–Exit Y	803
Window 4–Abs. minimum X	804
Window 4–Abs. minimum Y	805
Window 4–Abs. maximum X	806
Window 4–Abs. maximum Y	807
Window 4–Loc. minimum X	808
Window 4–Loc. minimum Y	809
Window 4–Loc. maximum X	810

Window 4–Loc. maximum Y	811
Window 4–Bend X	812
Window 4–Bend Y	813
Window 4–Mean value Y	814
Window 4–Gradient	815
Window 4–Area	816
Window 4–Coordinate Xmin	817
Window 4–Coordinate Xmax	818
Window 4–Coordinate Ymin	819
Window 4–Coordinate Ymax	820
Window 5–Entry X	900
Window 5–Entry Y	901
Window 5–Exit X	902
Window 5–Exit Y	903
Window 5–Abs. minimum X	904
Window 5–Abs. minimum Y	905
Window 5–Abs. maximum X	906
Window 5–Abs. maximum Y	907
Window 5–Loc. minimum X	908
Window 5–Loc. minimum Y	909
Window 5–Loc. maximum X	910
Window 5–Loc. maximum Y	911
Window 5–Bend X	912
Window 5–Bend Y	913
Window 5–Mean value Y	914
Window 5–Gradient	915
Window 5–Area	916
Window 5–Coordinate Xmin	917
Window 5–Coordinate Xmax	918
Window 5–Coordinate Ymin	919
Window 5–Coordinate Ymax	920
Window 6–Entry X	1000

Window 6–Entry Y	1001
Window 6–Exit X	1002
Window 6–Exit Y	1003
Window 6–Abs. minimum X	1004
Window 6–Abs. maximum Y	1005
Window 6–Abs. maximum X	1006
Window 6–Abs. maximum Y	1007
Window 6–Loc. minimum X	1008
Window 6–Loc. minimum Y	1009
Window 6–Loc. maximum X	1010
Window 6–Loc. maximum Y	1011
Window 6–Bend X	1012
Window 6–Bend Y	1013
Window 6–Mean value Y	1014
Window 6–Gradient	1015
Window 6–Area	1016
Window 6–Coordinate Xmin	1017
Window 6–Coordinate Xmax	1018
Window 6–Coordinate Ymin	1019
Window 6–Coordinate Ymax	1020
Window 7–Entry X	1100
Window 7–Entry Y	1101
Window 7–Exit X	1102
Window 7–Exit Y	1103
Window 7–Abs. minimum X	1104
Window 7–Abs. minimum Y	1105
Window 7–Abs. maximum X	1106
Window 7–Abs. maximum Y	1107
Window 7–Loc. minimum X	1108
Window 7–Loc. minimum Y	1109
Window 7–Loc. maximum X	1110
Window 7–Loc. maximum Y	1111
Window 7–Bend X	1112

Window 7–Bend Y	1113
Window 7–Mean value Y	1114
Window 7–Gradient	1115
Window 7–Area	1116
Window 7–Coordinate Xmin	1117
Window 7–Coordinate Xmax	1118
Window 7–Coordinate Ymin	1119
Window 7–Coordinate Ymax	1120
Window 8–Entry X	1200
Window 8–Entry Y	1201
Window 8–Exit X	1202
Window 8–Exit Y	1203
Window 8–Abs. minimum X	1204
Window 8–Abs. minimum Y	1205
Window 8–Abs. maximum X	1206
Window 8–Abs. maximum Y	1207
Window 8–Loc. minimum X	1208
Window 8–Loc. minimum Y	1209
Window 8–Loc. maximum X	1210
Window 8–Loc. maximum Y	1211
Window 8–Bend X	1212
Window 8–Bend Y	1213
Window 8–Mean value Y	1214
Window 8–Gradient	1215
Window 8–Area	1216
Window 8–Coordinate Xmin	1217
Window 8–Coordinate Xmax	1218
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Window 9–Entry X	1300
Window 9–Entry Y	1301
Window 9–Exit X	1302

Window 9–Exit Y	1303
Window 9–Abs. minimum X	1304
Window 9–Abs. minimum Y	1305
Window 9–Abs. maximum X	1306
Window 9–Abs. maximum Y	1307
Window 9–Loc. minimum X	1308
Window 9–Loc. minimum Y	1309
Window 9–Loc. maximum X	1310
Window 9–Loc. maximum Y	1311
Window 9–Bend X	1312
Window 9–Bend Y	1313
Window 9–Mean value Y	1314
Window 9–Gradient	1315
Window 9–Area	1316
Window 9–Coordinate Xmin	1317
Window 9–Coordinate Xmax	1318
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Window 9–Coordinate Ymax	1320
Window 10–Entry X	1400
Window 10–Entry Y	1401
Window 10–Exit X	1402
Window 10–Exit Y	1403
Window 10–Abs. minimum X	1404
Window 10–Abs. minimum Y	1405
Window 10–Abs. maximum X	1406
Window 10–Abs. maximum Y	1407
Window 10–Loc. minimum X	1408
Window 10–Loc. minimum Y	1409
Window 10–Loc. maximum X	1410
Window 10–Loc. maximum Y	1411
Window 10–Bend X	1412
Window 10–Bend Y	1413
Window 10–Mean value Y	1414

Window 10–Gradient	1415
Window 10–Area	1416
Window 10–Coordinate Xmin	1417
Window 10–Coordinate Xmax	1418
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Window 10–Coordinate Ymax	1420
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Trapezoid window X1–Entry Y	1501
Trapezoid window X1–Exit X	1502
Trapezoid window X1–Exit Y	1503
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Trapezoid window X1–Coordinate Ymin left	1506
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Trapezoid window X1–Coordinate Ymax left	1508
Trapezoid window X1–Coordinate Ymax right	1509
Trapezoid window X2–Entry X	1600
Trapezoid window X2–Entry Y	1601
Trapezoid window X2–Exit X	1602
Trapezoid window X2–Exit Y	1603
Trapezoid window X2–Coordinate Xmin	1604
Trapezoid window X2–Coordinate Xmax	1605
Trapezoid window X2–Coordinate Ymin left	1606
Trapezoid window X2–Coordinate Ymin right	1607
Trapezoid window X2–Coordinate Ymax left	1608
Trapezoid window X2–Coordinate Ymax right	1609
Trapezoid window Y1–Entry X	1700
Trapezoid window Y1–Entry Y	1701
Trapezoid window Y1–Exit X	1702
Trapezoid window Y1–Exit Y	1703
Trapezoid window Y1–Coordinate Ymin	1704

Trapezoid window Y1–Coordinate Ymax	1705
Trapezoid window Y1–Coordinate Xmin bottom	1706
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Trapezoid window Y2–Entry X	1800
Trapezoid window Y2–Entry Y	1801
Trapezoid window Y2–Exit X	1802
Trapezoid window Y2–Exit Y	1803
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Trapezoid window Y2–Coordinate Ymax	1805
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Trapezoid window Y2–Coordinate Xmax bottom	1808
Trapezoid window Y2–Coordinate Xmax top	1809
Threshold 1–Pass X	1900
Threshold 1–Pass Y	1901
Threshold 1–Abs. minimum X	1902
Threshold 1–Abs. minimum Y	1903
Threshold 1–Abs. maximum X	1904
Threshold 1–Abs. maximum Y	1905
Threshold 1–Loc. minimum X	1906
Threshold 1–Loc. minimum Y	1907
Threshold 1–Loc. maximum X	1908
Threshold 1–Loc. maximum Y	1909
Threshold 1–Bend X	1910
Threshold 1–Bend Y	1911
Threshold 1–Mean value Y	1912
Threshold 1–Gradient	1913
Threshold 1–Area	1914
Threshold 1–Coordinate value	1915
Threshold 1–Coordinate min	1916

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Threshold 2–Pass X	2000
Threshold 2–Pass Y	2001
Threshold 2–Abs. minimum X	2002
Threshold 2–Abs. minimum Y	2003
Threshold 2–Abs. maximum X	2004
Threshold 2–Abs. maximum Y	2005
Threshold 2–Loc. minimum X	2006
Threshold 2–Loc. minimum Y	2007
Threshold 2–Loc. maximum X	2008
Threshold 2–Loc. maximum Y	2009
Threshold 2–Bend X	2010
Threshold 2–Bend Y	2011
Threshold 2–Mean value Y	2012
Threshold 2–Gradient	2013
Threshold 2–Area	2014
Threshold 2–Coordinate value	2015
Threshold 2–Coordinate min	2016
Threshold 2–Coordinate max	2017
Threshold 3–Pass X	2100
Threshold 3–Pass Y	2101
Threshold 3–Abs. minimum X	2102
Threshold 3–Abs. minimum Y	2103
Threshold 3–Abs. maximum X	2104
Threshold 3–Abs. maximum Y	2105
Threshold 3–Loc. minimum X	2106
Threshold 3–Loc. minimum Y	2107
Threshold 3–Loc. maximum X	2108
Threshold 3–Loc. maximum Y	2109
Threshold 3–Bend X	2110
Threshold 3–Bend Y	2111
Threshold 3–Mean value Y	2112

Threshold 3–Gradient	2113
Threshold 3–Area	2114
Threshold 3–Coordinate value	2115
Threshold 3–Coordinate min	2116
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Threshold 4–Pass X	2200
Threshold 4–Pass Y	2201
Threshold 4–Abs. minimum X	2202
Threshold 4–Abs. minimum Y	2203
Threshold 4–Abs. maximum X	2204
Threshold 4–Abs. maximum Y	2205
Threshold 4–Loc. minimum X	2206
Threshold 4–Loc. minimum Y	2207
Threshold 4–Loc. maximum X	2208
Threshold 4–Loc. maximum Y	2209
Threshold 4–Bend X	2210
Threshold 4–Bend Y	2211
Threshold 4–Mean value Y	2212
Threshold 4–Gradient	2213
Threshold 4–Area	2214
Threshold 4–Coordinate value	2215
Threshold 4–Coordinate min	2216
Threshold 4–Coordinate max	2217
Envelope 1–Entry X	2300
Envelope 1–Entry Y	2301
Envelope 1–Exit X	2302
Envelope 1–Exit Y	2303
Envelope 1–Coordinate Start X	2304
Envelope 1–Coordinate End X	2305
Envelope 2–Entry X	2400
Envelope 2–Entry Y	2401

Envelope 2–Exit X	2402
Envelope 2–Exit Y	2403
Envelope 2–Coordinate Start X	2404
Envelope 2–Coordinate End X	2405