HEITRONICS
Infrarot Messtechnik

TNXCC
Ex-Schutz-Gehäuse
BARTEC TECHNOR

Handbuch

95583145
01/02/16d

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INHALT

Seite

Handbuch (Übersetzung aus dem englischen Original)
TNXCC Komplettes Ex-Gehäuse, DNV zertifiziert (BARTEC TECHNOR)

Kennzeichnung

Das Gehäuse wird durch ein Zertifizierungs-Typenschild gekennzeichnet (siehe Abb. 1). Wenn nicht anderweitig festgehalten, beträgt die Standard-Umgebungstemperatur -20 °C bis +40 °C.

Handhabung

Aufgrund des Gewichts und der Beschaffenheit der Gehäuse sollten Vorsichtsmaßnahmen beachtet werden, um Beschädigungen an Geräten und Personen zu vermeiden. Der Flammenpfad des Gehäuses muss sicher geschützt werden, um jeglichen Schaden zu vermeiden. Alle Öffnungen zum Exd Bereich, die nicht verschlossen sind, sind ein Flammenpfad.

Installation / Demontage

Bei der Befestigung des Gehäuses sollte darauf geachtet werden, dass die Halterung stark genug ist, das volle Gewicht des Gehäuses zu tragen. Sind Verwindungen oder Biegungen wahrscheinlich, sollten Unterlegscheiben oder Gegenplatten nach Bedarf verwendet werden, bevor die Schrauben oder Sicherungsmuttern festgezogen
werden.

DER GEHÄUSEDECKEL DARF NICHT GEÖFFNET WERDEN, BEVOR DAS GEHÄUSE SICHER BEFESTIGT IST!

Werden Kabel verbunden, muss sichergestellt sein, dass eingehende Kabel/Leitungen von jeglichen Stromquellen isoliert werden/spannungsfrei sind. Die Installation erfolgt nach IEC 60079-14 (NEK 420) und/oder entsprechend der Anforderungen des tatsächlichen Installationsorts.

HINWEIS! Bevor das Gehäuse mit Strom versorgt wird, müssen stets die Bedingungen des Zertifikats sowie der Dokumentation des Gehäuses (Anschlussplan usw.) gelesen werden!

Die technischen Daten des Gehäuses und diejenigen des zu verbindenden Gehäuses müssen von dem Unternehmen, das das Gehäuse installiert, aufeinander abgestimmt werden.
Besondere Beachtung gilt den Ex- und Sicherheitsaspekten.

Alle Zugänge zum Gehäuse müssen ex-zugelassen sein und alle anderen Öffnungen durch einen zugelassenen Blindstopfen verblendet werden.
Die Stromversorgung darf nicht hergestellt werden, solange die Installation nicht abgeschlossen ist und der Deckel am Gehäuse befestigt wurde.
Bei der Demontage des Gehäuses gelten die gleichen Vorsichtsmaßnahmen wie bei der Installation.

Überprüfung / Wartung

TNXCC Gehäuse bestehen aus rostfreiem Edelstahl und sind demnach keiner Korrosion unterworfen.
Verwenden Sie Kupferfett für Deckel, Schraubengewinde, konische Öffnungen usw.
Wir empfehlen die Wartung in Übereinstimmung mit IEC 60079-17/60079-1 (NEK 420) Standards durchzuführen.
Es ist unerlässlich, Gewinde mit Kupferfett oder anderen bewährten Fetten zu schützen, nachdem sie ausgebaut wurden.

Wenn Beschädigungen auftreten, sollte das Gehäuse außer Betrieb gesetzt und der Hersteller kontaktiert werden. Weitere technische Informationen sind erhältlich auf **www.bartec.no**

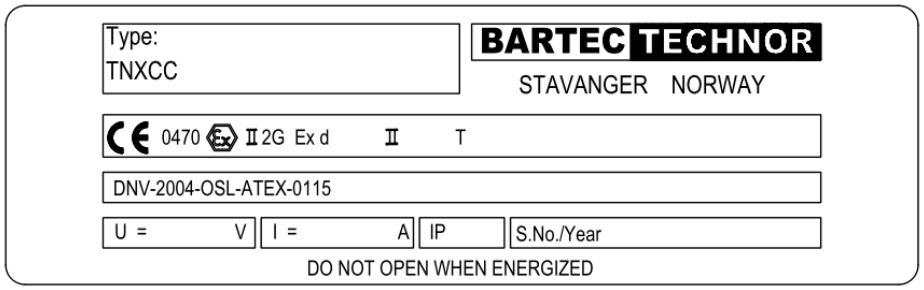
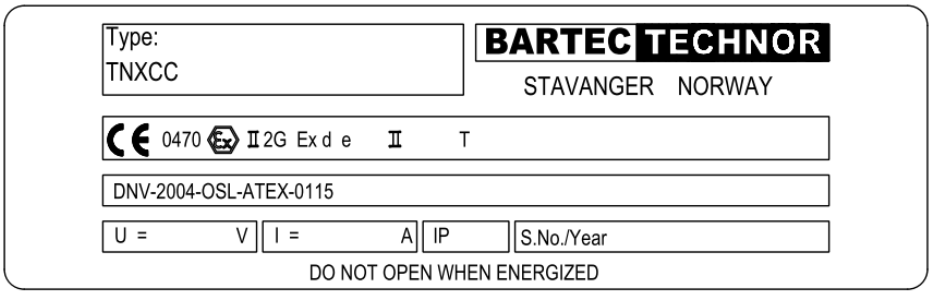


Abbildung 1



Option

Marking

A certification label is attached to the enclosure, ref. Fig 1. If not otherwise noted with a special label the standard T.amb. is –20 to +40 degr. C

Handling

Due to the weight and nature of the enclosures precautions have to be taken to avoid damages to the equipment and the individual. The enclosures flame path must be securely protected to avoid damage, all openings to the exd part that are not sealed is a flame path.

Installation/ Dismantling

When mounting the enclosure ensure that the mounting support is able to take the full weight of the enclosure. If any twisting or bending is likely, use washers or packing plates as necessary before the screws or nuts are tightened.

DO NOT OPEN LID BEFORE THE ENCLOSURE IS SECURELY FASTENED.

When connecting cables, ensure the incoming cables/wires are isolated from all sources of power. Installation to be performed according standard IEC 60079-14 (NEK 420) and/or the requirements for the actual installation site.

NOTE! Always read the requirements in the certificate and in the documentation for the enclosure (wiring diagram etc.), before connecting the enclosure to power source and other equipment intended for the enclosure.

It is the company installing the enclosure that is responsible that the technical data for the enclosure match the technical data to which the cabinet is connected. Special attention to be made on the ex and safety aspects.

All entries to the enclosure must be of ex-approved types and all other openings blinded with an approved blindplug.

Do not connect the power before installation is completed and lid mounted on enclosure.

When removing the enclosure, the same precautions apply as those observed when mounting the enclosure.

Inspection / Maintenance

TNXCC enclosures are made of acid resistant stainless steel and thereof not subject to corrosion.

Apply copper grease to lid, bolt threads and tapered holes, etc.

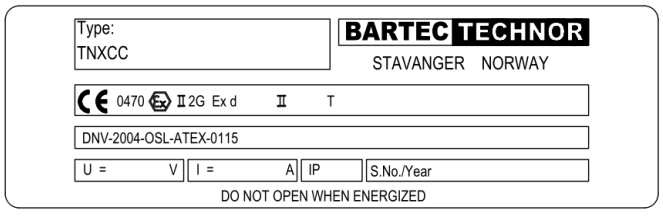
We recommend that maintenance is performed in accordance with the IEC 60079-17/60079-1 (NEK 420) standards.

It is vital that threads are protected with copper grease or other approved greases after they have been dismantled.

If any damages are found, the enclosure should be put out of service and the manufacture contacted.

Further technical information's is available on www.bartec.no

Fig.1



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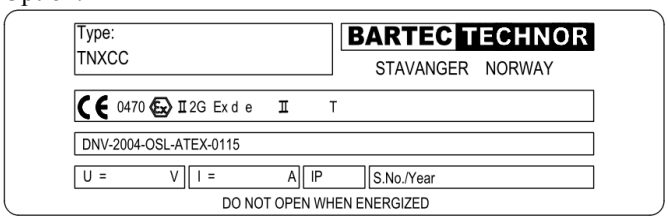
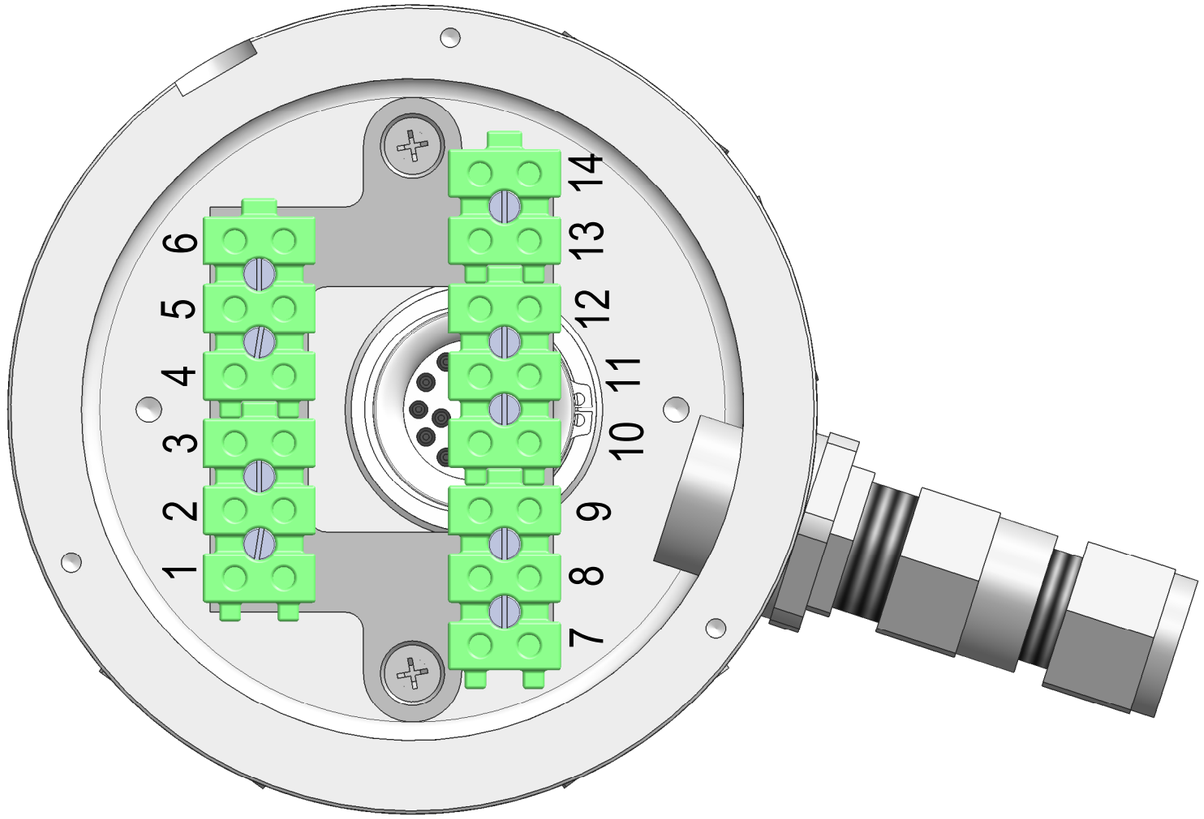


Klemme 13 clamp 13 Klemme 14 clamp 14	braun brown weiß white	+ -	Versorgungsspannung Supply voltage
Klemme 7 clamp7 Klemme 8 clamp 8	gelb yellow grün green	+ -	Analogausgang Analog output
Klemme 9 clamp 9	rosa pink		TXD
Klemme 10 clamp 10	blau blue		RXD
Klemme 11 clamp 11	schwarz black		COM
Klemme 12 clamp 12	rot red		CTS
Klemme 3 clamp 3	braun/weiß brown/white rot/blau red/blue		DTR Open-Collector-Ausgang
Klemme 4 clamp 4	violett		RTS
Klemme 1 clamp 1	grün/weiß green/white grau/rosa grey/pink		+Thermoschalter - thermal switch Analogeingang - analog input Schalteingang - switch input Galvanisch getrennter - isolated digital Digitaleingang (DI) input 24V-Logik / 5Volt-Logik - 24V-logic / 5V logic Open-Collector - openCollector logic Ausgang 2 (DO2) output 2 (DO2)
Klemme 2 clamp 2	grau grey		-Thermoschalter Analogeingang Schalteingang DI/DO-Null (Gnd) DI/DO/DO2-Null (Gnd)
Klemme 5 clamp 5			Heizung +
Klemme 6 clamp 6			Heizung -



Index NO.	Änderung REVISION	Datum DATE	Name NAME
1	---	04.02.2015	Hofer

	Datum/DATE	Name/NAME
Gezeich. DRAW BY	04.02.2015	Hofer
Geprüft CHECK.BY		

CAD-Zeichnung SolidWorks

HEITRONICS
Infrarot Messtechnik

Benennung/TITLE
Klemmenbelegung

Zeichnungs Nr. DRAWING NO. Z5516335

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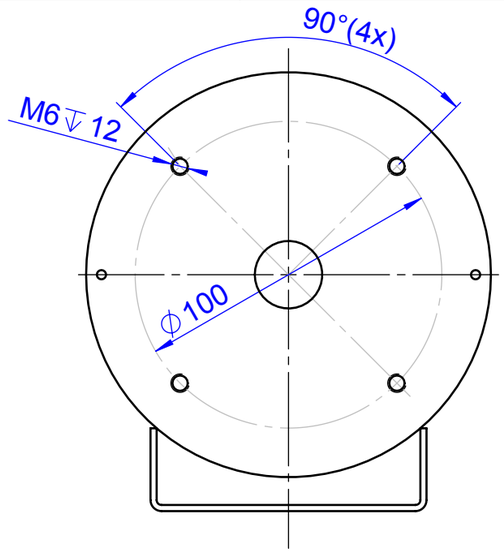
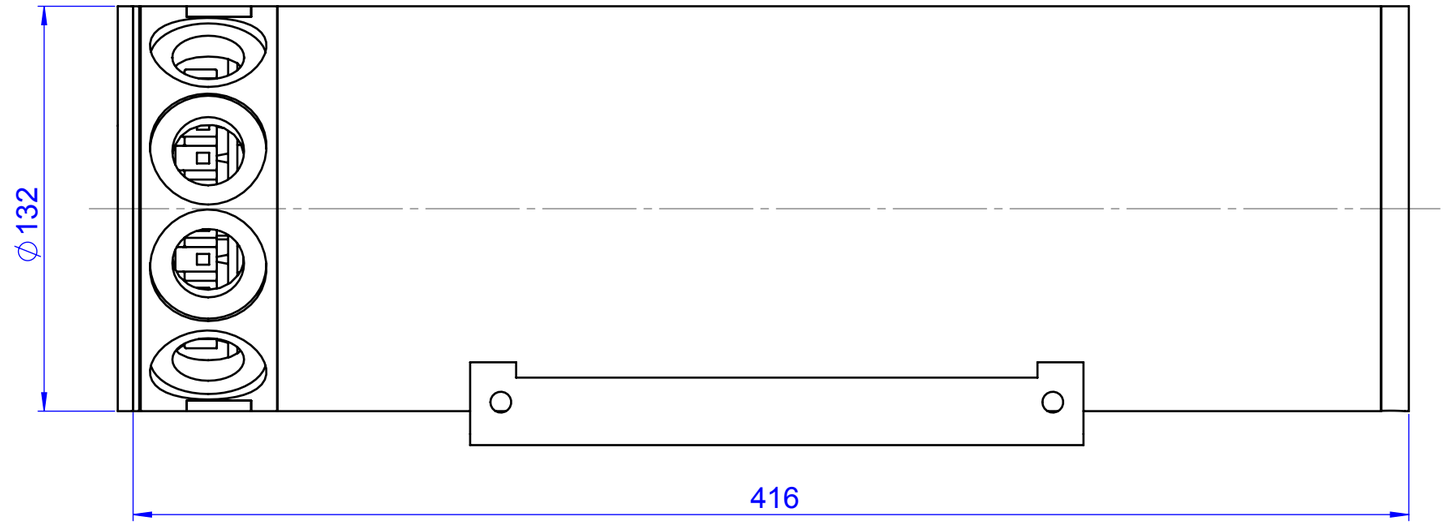
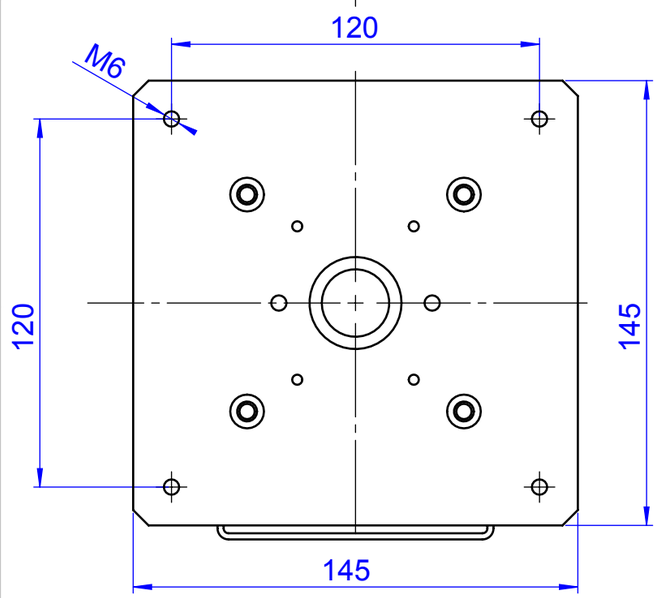
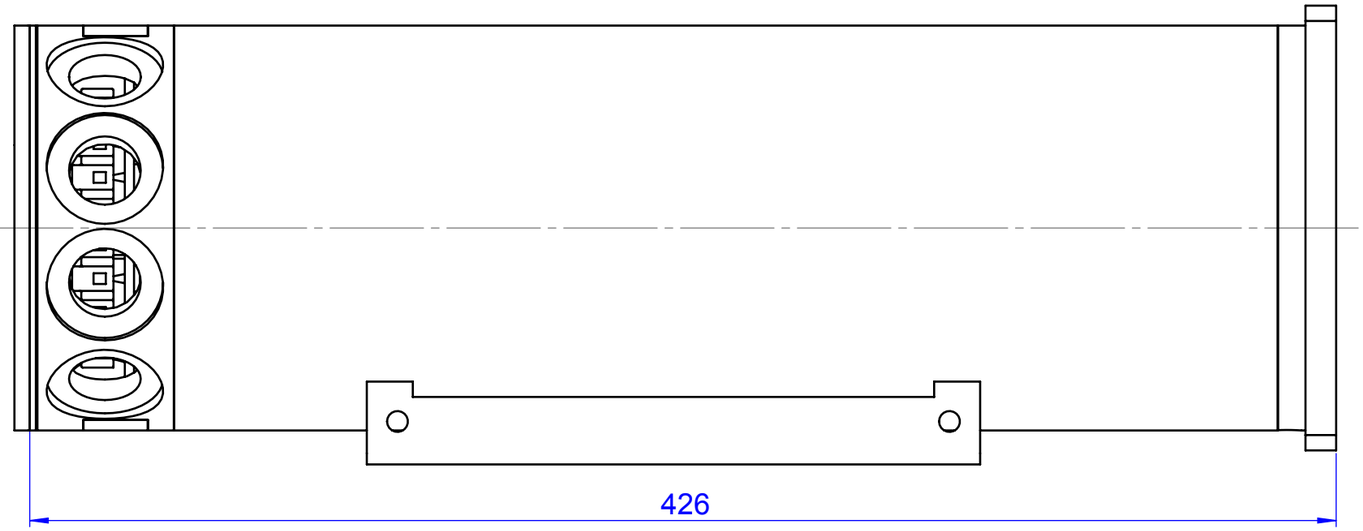
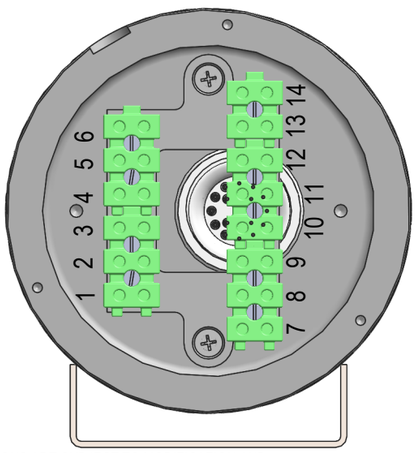








Mit Adapterplatte



Klemmraum

Index NO.	Änderung REVISION	Datum DATE	Name NAME
1	---	05.01.2015	Hofer

Projektion ISO 1 (E)

	Datum/DATE	Name/NAME
Gezeich. DRAW BY	05.01.2015	Hofer
Geprüft CHECK.BY		

CAD-Zeichnung SolidWorks

HEITRONICS
Infrarot Messtechnik

Benennung/TITLE: Ex-Schutz Gehäuse

Zeichnungs Nr. DRAWING NO.: Z5516331

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BARTEC TECHNOR AS

EC-DECLARATION OF CONFORMITY

[2] EQUIPMENT INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERE, DIRECTIVE 94/9/EC

[3] EC-Declaration of Conformity Number: **TEC-16-ATEX-HEITRONICS-381434-C**

[4] Equipment: **TNXCC 130**
Ex d enclosure with Infrared Thermometer

[5] Applicant-Manufacturer: **Bartec Technor AS**

[6] Address: P.O.Box 658, Dusavikveien 39
4003 Stavanger
Norway

[7] This document and any acceptable variation specified in the schedule to this declaration and the documents therein refered to is manufactured under control of the PRODUCTION QUALITY ASSURANCE NOTIFICATION no: Nemko 00ATEX465Q by Nemko notified body no. 0470

[8] EC-type Examination Certificate valid for this declaration: **DNV-2004-OSL-ATEX-0115**

[9] Bartec Technor AS, declares that this equipment has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the 94/9/EC Directive. Other relevant directives: **2004/108/EC**

The examination and test results are recorded in confidential report no. **16-HEITRONICS-381434**

[10] Compliance with the Essential Health and Safety Requirements has been assured by following:

a. Harmonized standards: **EN60079-0:2012, EN60079-1:2007, EN60079-7:2007**

b. Non-harmonized standards: **NA**

[11] This EC-Declaration of Conformity relates only to the design and construction of the specified equipment described and document refered to in this declaration. Compliance during installation, use and maintenance can only be achieved by observing the state of the art, applicable installation standards and manufacturer instructions.

[12] The marking of the equipment shall include the following:

II 2 G, Ex d e IIC T5 Gb
Tamb: -50°C to + 60°C

Stavanger **17.02.2016**
On behalf of Bartec Technor AS

Additional marking: **NA**

X

Egil Tønnesen
QA/HSE Director / ATEX-IEC responsible person
Signert av: Egil Tønnesen

X

Terje Hettervik
Certification Engineer
Signert av: Terje Hettervik

This Declaration of Conformity in accordance to the European Standard EN 17050-1 "Conformity assessment - Supplier's declaration of conformity - Part 1 and standard EN 17050-2 "Conformity assessment - Supplier's declaration of conformity - Part 2

Note: This Declaration is subject to terms and conditions overleaf. Any changes in design or construction will render this Declaration invalid.

ANNEX TO USERMANUAL COVERED BY
EC-DECLARATION OF CONFORMITY No: TEC-16-ATEX-HEITRONICS-381434-C

[1] **Description of Equipment:**
The system comprises of an Ex d enclosure equipped with Infrared Thermometer
TNXCC 130 stainless steel enclosure (Dim Ø: 130mm L: 360mm)

[1.1] **Electrical Data**
Un = 12-24 VDC / 12-24 VAC
In = 300mA@12V / 150mA@24V

Tamb: -50°C to + 60°C

Degrees of protection (IP code)
IP: 66

[1.2] **Variations:**
- May be equipped with either Germanium or Sapphire window depending on application
- May be equipped with either
  Infrared Thermometer CT18
  Infrared Thermometer CT13
  Infrared Thermometer KT15
- Temperature on sealing compound for window must not exceed 75°C

[2] **Descriptive documents:**

Number	Title	Rev.
2134800-02-3	TNXCD1301360W Ex d e Heitronics Camera housing	B
Z5516314	EX-Schutz KT15	1
Z5516315	EX-Schutz CT18	1
Z5516309	Ex-Gehäuse Bartec	3
Z5516331	Ex-Schutz Gehäuse	1
Z5516334	EX-Gehäuse (Übersicht)	1
Z5516335	Klemmenbelegung	1
DNV-2004-OSL-ATEX-0115	Ex certificate TNXCC	

END OF ANNEX

DET NORSKE VERITAS

EC-TYPE EXAMINATION CERTIFICATE

[2] **EQUIPMENT OR PROTECTED SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC**

[3] EC-Type Examination Certificate Number: **DNV-2004-OSL-ATEX-0115**

[4] Equipment or Protective System: **TNXCC Flameproof enclosure**

[5] Applicant – Manufacturer or Authorized representative: **Technor AS**

[6] Address: **Dusavikveien 39, P.O.Box 658, 4001 Stavanger Norway**

[7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] DNV, notified body number 0575 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. : **2006-3024**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 50014: 1997 + A1: 1999 + A2: 1999, EN 50018: 2000 + A1: 2002, EN 50019: 2002 and EN 50281-1-1: 1998 + A1: 2002

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protected system. If applicable, further requirements of this Directive apply to the manufacturer and supply of this equipment or protective system.

[12] The marking of the equipment or protective system shall include the following :

II 2 G/D EEx d IIC/IIB or EEx de IIC/IIB

Høvik, 2006-01-12
for Det Norske Veritas Certification AS

Line Gangeskar
Head of Section

Håkon S. Håkonsen
Senior Engineer

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

[13] **Schedule**

[14] **EC-TYPE EXAMINATION CERTIFICATE No.:** DNV-2004-OSL-ATEX-0115

[15] **Description of Equipment or Protective System**

TNXCC is a stainless steel flameproof enclosure with a cylindrical shape. TNXCC 100 can also be made of aluminium. The enclosure may be used with glass window, dome or stainless steel top sections.

The certification of the enclosure is based upon technical specifications in certificate for TNXCD, DNV-2003-OSL-ATEX-0436U.

Type Identification

TNXCC D – L (diameter and length of Ex d enclosure see table below)

Type	Dimensions to be considered as the maximum size for the diameter of d/de enclosure, smaller dimentions are allowed	Dimensions to be considered as the maximum size for the length of d/de enclosure, smaller dimentions are allowed
TNXCC 100	101 mm	360 mm
TNXCC 130	132 mm	360 mm
TNXCC 195	196 mm	290 mm

Maximum ambient temperatures for the top sections that can be used

Top section	Temperature range
Dome R23	-50°C to + 60°C
Up to Dome R69	-20°C to + 60°C
Glass window	-50°C to + 60°C
Stainless steel end cover	-50°C to + 60°C

The ex-code will vary based on the components used. The flameproof enclosure may be equipped with cable glands, bushings, Ex-e components in the wall and intrinsically safe power supplies. A TNCN/TNCC/TNUP/TNUC or any other certified junction box may be used for indirect cable entry. This junction box may be equipped with Ex-d, e, m and ia/ib components. The Ex-code may vary as follows:

EEx	d	e	m	ia/ib	[ia/ib]	IIB/IIC	T6-T4	
								Temperature class measured on the flameproof enclosure, or based on components.
								Gas group IIC on the enclosure. May be IIB caused by components.
								IS outputs from the Ex-d enclosure
								IS components in the Ex-e enclosure
								Moulded components in the Ex-e enclosure
								TNCN/TNCC Ex-e junction box, and components in this enclosure
								Flameproof enclosure, and components mounted on this enclosure and in the Ex-e junction box

Routine Test(s)
The overpressure test was performed with 4 times reference pressure and the routine test is not necessary.
Tested at 45,4 bar.

Electrical Data

- Max 1000 volt
- Temperature class will be based upon internal load, when Ex-i components are mounted temperature test to be performed or termostate to be mounted.

Degrees of protection (IP Code)
IP 66, IP 67 and IP 68 (0,5 bar 2 hours)

[16] **Report No.:** 2006-3024
Project No.: 42035265

Descriptive Documents

Number	Title	Rev.	Date
XCC-12-5	Label for TNXCC... Atex certification	C	2004-08-24
XCC-13-5	Label for TNXCC / TNXAC Complete certificate	B	2004-08-24
XCC-19-4	General certification drawing TNXCC	A	2006-07-08
XCD-90-2	Arrangement drawing TNXCD 155 with internal arrangement	A	2005-10-20

[17] **Special Conditions for Safe Use**
For IIC enclosures not more than 60% of the cross-sectional area shall be used if not otherwise mentioned in descriptive documents. For IIA or IIB enclosures not more than 80% of the cross-sectional area shall be used if not otherwise mentioned in descriptive documents.

For dust applications (Ex II 2 D) the following apply:

- The minimum IP rating of all external components must be IP6X.
- The maximum surface temperature shall be marked as a temperature value.
- Drawing no. XCD-54-4 listed in DNV-2003-OSL-ATEX-0436U is not applicable for dust applications, because surface area of the conical dome is larger than 400 cm^2 (According to EN 50281-1-1: 1998 + A1: 2002)

[18] **Essential Health and Safety Requirements**
See part 9 of this certificate

END OF CERTIFICATE

DET NORSKE VERITAS

EC-TYPE EXAMINATION CERTIFICATE

[2] **COMPONENT INTENDED FOR USE IN EQUIPMENT OR PROTECTED SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC**

[3] EC-Type Examination Certificate Number: **DNV-2003-OSL-ATEX-0436U**

[4] Component: **TNXCD Flameproof enclosure**

[5] Applicant – Manufacturer or Authorized representative: **Technor ASA**

[6] Address: **Dusavikveien 39, P.O.Box 658, 4001 Stavanger Norway**

[7] This component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] DNV, notified body number **0575** in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this component has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. : **2004-3017**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with: **EN 50014: 1997 + A1: 1999 + A2: 1999, EN 50018: 2000 + A1: 2002 and EN 50019: 2002**

[10] The sign 'U' placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.

[11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified component. If applicable, further requirements of this Directive apply to the manufacturer and supply of this component.

[12] The marking of the equipment or protective system shall include the following :

II 2 G EEx d IIB or EEx de IIB

Høvik, 2005-07-20
for Det Norske Veritas Certification AS

Line Gangeskar
Head of Section

Håkon S. Håkonsen
Senior Engineer

[13] **Schedule**

[14] EC- DNV-2003-OSL-ATEX-0436U

[15] **Description of component**
TNXCD is a stainless steel flameproof enclosure with a cylindrical shape For TNXAD 100 also aluminium.
The enclosure may be used with glass window, dome or stainless steel top sections.

Type Identification
TNXAD 100
TNXCD D – L (diameter and length of Ex d enclosure see table below)

Type	Dimensions to be considered as the maximum size for the diameter of d/de enclosure, smaller dimentions are allowed	Dimensions to be considered as the maximum size for the length of d/de enclosure, smaller dimentions are allowed
TNXAD 100	101 mm	360 mm
TNXCD 100	101 mm	360 mm
TNXCD 130	132 mm	360 mm
TNXCD 195	196 mm	290 mm

Maximum ambient temperatures for the top sections that can be used

Top section	Temperature range
Dome R23	-50°C to + 60°C
Dome R43	-20°C to + 60°C
Dome R69	-20°C to + 60°C
Glass window	-50°C to + 60°C
Stainless steel end cover	-50°C to + 60°C

Degrees of protection (IP Code)
IP 66, IP 67 and IP 68 (0,5bar 2 hours)

[16] Report No.: 2004-3017
Project No.: 42035265

Descriptive Documents

Number	Title	Rev.	Date
XCD-19-4	Certification Drawing for TNXCD / AD Main Enclosure EEx de/ d	E	2005-06-22
XCD-20-4	Certification Drawing for TNXCD / AD Alternative bottom / top sections	E	2002-01-04
XCD-26-4	General arrangement drawing TNXCD../TNXAD..	A	2000-11-10
XCD-33-5	Produksjonstegning for alternativ løsning TNXCD / AD	C	2001-01-25
XCD-37-5	TNXCD / AD connection to EEx e Enclosure	C	2001-01-25
XCD-38-5	TNXCD / AD connection to EEx e Enclosure type 2	C	2001-01-25
XCD-51-4	Detail drawing alternative enclosure TNXCD	A	2001-11-23
XCD-52-4	Alternative type EEx d tube	A	2001-11-23
XCD-53-5	Alternative bottom section TNXCD	A	2001-12-19
XCD-54-4	General arrangement drawing conical dome	A	2001-12-20
XCD-55-4	Ring with threads for conical dome Ref. dwg. XCD-54-4	A	2002-01-04
XCD-81-5	Label for TNXCD ATEX certification	A	2004-05-27
XCD-82-5	Label for TNXCD/AD ATEX certification	A	2004-05-27
XCD-86-4	Certification drawing Lid with spigot joint TNXCD	B	2005-06-02
XCD-87-4	Certification drawing Adapter for spigot joint	B	2005-06-02

Routine Test(s)

The overpressure test was performed with 4 times reference pressure and the routine test is not necessary.
Tested at 45,4 bar.

[17] **Schedule of Limitations**

The temperature on the cementing, glass window and dome must not exceed 90°C
The temperature on the gasket of the EEx e enclosure must not exceed 60°C

[18] **Essential Health and Safety Requirements**

See part 9 of this certificate

END OF CERTIFICATE

SUPPLEMENT 1 to EC-TYPE EXAMINATION CERTIFICATE

EC-TYPE EXAMINATION CERTIFICATE No.: DNV-2003-OSL-ATEX-0436U

This EC-Type Examination Certificate is extended to include the following additional information:

The TNXCD flameproof enclosure has been tested as an empty enclosure according to the requirements for gas group IIC. An overpressure test was performed with 4 times reference pressure and the routine test is not necessary. Tested at 45,4 bar.

Report No.: 2004-3017 rev.02
Project No.: 42035265

Høvik, 2005-11-09
for Det Norske Veritas Certification AS

Line Gangeskar
Head of Section

Håkon S. Håkonsen
Senior Engineer

END OF SUPPLEMENT