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-2001-OSL-ATEX-0176** Rev. **1**

[4] Equipment or Protective System: **Junction Box**

[5] Applicant – Manufacturer or Authorized representative: **Technor Safe Ex 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. : **2008-3217 & 2009-3422**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0: 2006, EN 60079-7: 2007, EN 61241-0: 2006 and EN 61241-1: 2004

[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 **Ex e II T5-T4**
II 2 D **Ex tD A21 IP66-68 *T85°C-110°C***

Høvik, 2009-09-10
for Det Norske Veritas Certification AS

Marianne Spæren
Certification Manager

NORWEGIAN ACCREDITATION
PROD 002

Håkon S. Håkonsen
Technical Reviewer

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-2001-OSL-ATEX-0176 **Rev.** 1

Certificate History

Revision	Description	Issue date
-	Original certificate	2003-01-17
1	Updated according to recent standards and add standards for dust	2009-09-10

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

15.1 The TNCN Junction Box comprises a stainless steel enclosure in various sizes up to max 1000x2000xXXX, the quantity and sizes of terminals is based upon heat dissipation, not limited to samples as described below:
Enclosures can be delivered with screws, hinges and screws, hinges and quick locks.
The enclosure may also be used as a connection box for intrinsically safe circuits, the code is: Ex [ia] IIC T6.

Option 1:
Enclosures can be delivered with screws, hinges and screws, hinges and quick locks.
T_{amb} = -40°C to + 40°C, Ex e II T5. Internal wiring must have a temperature rating of at least 85°C.
For dust: tD A21 IP66-IP68 *T85°C*
T_{amb} = -40°C to + 60°C, Ex e II T4. Internal wiring must have a temperature rating of at least 110°C.
For dust: tD A21 IP66 -IP68 *T110°C*

Option 2:
Extended Tamb to -50°C. Enclosures can be delivered with screws, hinges and screws, silicone gasket.
T_{amb} = -50°C to + 40°C, Ex e II T5. Internal wiring must have a temperature rating of at least 85°C.
For dust: tD A21 IP66 *T85°C*
T_{amb} = -50°C to + 60°C, Ex e II T4. Internal wiring must have a temperature rating of at least 110°C.
For dust: tD A21 IP66 *T110°C*

Ingress protection of enclosures:
Option 1: IP66 / IP67. With silicone gasket IP68 (0.2 bar for 30 minutes)
Option 2: For enclosure with silicone gasket, cover screws, cover screws and hinges, and extended Tamb: IP66

Operating temperature for neoprene gasket - 40°C to + 100°C.
Operating temperature for silicon gasket -50 to + 200°C.

15.2 Power dissipation in the various sizes of the enclosure:
The size is indicated in cm W*H*D. Where D is indicated as xx the depth may be 10cm or larger.

Size	Max. dissipated Power at Ta=40
121009	6 W
1515xx	15 W
2828xx	30 W
2838xx	40 W
3020xx	30 W
3838xx	40 W
3845xx	50 W
3857xx	65 W
5757xx	90 W
5776xx	120 W
7676xx	180 W
7695xx	200 W
9595xx	240 W
76114xx	240 W
95114xx	240 W
95152xx	240 W
95200xx	240 W

Intermediate sizes between the sizes described in the table may use the dissipated power of the nearest smaller size.

15.2 Dissipated power in the terminals:

	Box up to TNCN1515XX		Box up to TNCN2828XX		Box up to TNCN5757XX	
Terminal size	Dissipated power		Dissipated power		Dissipated power	
1,5 mm^2	0.9W @ 16A	0,4W @ 10A	2,2W @ 16A	0,9W @ 10A	3,0W @ 16A	1,2W @ 10A
2,5 mm^2	0,9W @ 20A	0,6W @ 16A	1,4W @ 20A	0,9W @ 16A	2,8W @ 20A	1,8W @ 16A
4 mm^2	0,9W @ 25A	0,6W @ 20A	1,4W @ 25A	0,9W @ 20A	2,7W @ 25A	1,7W @ 20A
6 mm^2	0,8W @ 31A	0,6W @ 25A	1,0W @ 31A	0,9W @ 25A	2,7W @ 31A	1,8W @ 25A
10 mm^2	1,0W @ 43A	0,7W @ 35A	1,7W @ 43A	1,1W @ 35A	3,1W @ 43A	2,0W @ 35A
16 mm^2	1,6W @ 65A	1,0W @ 52A	2,6W @ 65A	1,7W @ 52A	4,7W @ 65A	3,0W @ 52A
35 mm^2	2,7W @ 120A	1,7W @ 96A	4,2W @ 120A	2,7W @ 96A	7,4W @ 120A	4,7W @ 96A
50 mm^2	4,8W @ 135A	3,8W @ 120A	6,1W @ 135A	4,8W @ 120A	9,0W @ 135A	7,1W @ 120A
95 mm^2	7,5W @ 210A	3,1W @ 135A	9,2W @ 210A	3,8W @ 135A	12,9W @ 210A	5,3W @ 135A
150 mm^2	11,7W @ 250A	8,2W @ 210A	13,2W @ 250A	9,3W @ 210A	16,5W @ 250A	11,6W @ 210A
185 mm^2	15,3W @ 350A	7,8W @ 250A	17,1W @ 350A	8,7W @ 250A	21,1W @ 350A	10,8W @ 250A
240 mm^2	6,3W @ 307A	3,6W @ 234A	8,1W @ 307A	4,7W @ 234A	12,2W @ 307A	7,1W @ 234A
300 mm^2	12,1W @ 452A	5,6W @ 307A	14,5W @ 452A	6,7W @ 307A	19,9W @ 452A	9,2W @ 307A

	Box up to TNCN95114XX		Box up to TNCN95152XX		Box up to TNCN100200XX	
Terminal size	Dissipated power		Dissipated power		Dissipated power	
1,5 mm^2	3,3W @ 16A	1,3W @ 10A	6,5W @ 16A	2,5W @ 10A	7,5W @ 16A	4,8W @ 10A
2,5 mm^2	5,0W @ 20A	3,2W @ 16A	6,0W @ 20A	3,9W @ 16A	7,5W @ 20A	4,8W @ 16A
4 mm^2	4,9W @ 25A	3,1W @ 20A	5,9W @ 25A	3,8W @ 20A	7,3W @ 25A	4,7W @ 20A
6 mm^2	5,0W @ 31A	3,3W @ 25A	6,0W @ 31A	3,9W @ 25A	7,5W @ 31A	4,8W @ 25A
10 mm^2	5,6W @ 43A	3,7W @ 35A	6,7W @ 43A	4,4W @ 35A	8,3W @ 43A	5,5W @ 35A
16 mm^2	8,3W @ 65A	5,3W @ 52A	9,9W @ 65A	6,3W @ 52A	12,3W @ 65A	7,8W @ 52A
35 mm^2	13,1W @ 120A	8,4W @ 96A	15,6W @ 120A	10,0W @ 96A	19,0W @ 120A	12,0W @ 96A
50 mm^2	14,0W @ 135A	11,1W @ 120A	16,2W @ 135A	12,8W @ 120A	19,4W @ 135A	15,3W @ 120A
95 mm^2	19,4W @ 210A	8,0W @ 135A	22,2W @ 210A	9,2W @ 135A	26,3W @ 210A	10,9W @ 135A
150 mm^2	22,2W @ 250A	15,7W @ 210A	24,7W @ 250A	17,4W @ 210A	28,4W @ 250A	20,1W @ 210A
185 mm^2	28,1W @ 350A	14,4W @ 250A	31,1W @ 350A	15,9W @ 250A	35,6W @ 350A	18,2W @ 250A
240 mm^2	19,3W @ 307A	11,2W @ 234A	22,4W @ 307A	13,0W @ 234A	26,9W @ 307A	15,6W @ 234A
300 mm^2	29,2W @ 452A	13,5W @ 307A	33,2W @ 452A	15,3W @ 307A	39,2W @ 452A	18,1W @ 307A

For loads on terminals below 4 A: The quantity will be limited by the available space inside the box. There is no restriction in the number of terminals. The temperature class will then be T6.

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15.3 Variations:

15.3.1 The enclosure can be equipped with windows in lid up to a max size of 0.3 m² for each window. Material of window can be either glass and/or Lexan. If Lexan window is used the following label must be present on the TNCN box "WARNING - POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS"

15.3.2 Mounting of all types of approved transit frames is allowed.

15.3.3 Several TNCN junction boxes may be mounted together using a special flange connection, or welded together.

15.3.4 TNCN may be supplied with gland plates.

15.3.5 TNCN may be supplied with one or several doors.

15.3.6 TNCN may be supplied with a self-regulating trace heating cable.

15.3.7 TNCN may be used as connection box for flameproof equipment.

15.3.8 TNCN may be equipped with certified connectors, glands and plugs.

[16] Report No.: 2008-3217 & 2009-3422
Project No.: PRJC-59216-2008-PRC-NOR

Descriptive Documents

Number	Title	Rev.	Date
CNX-170-5	Type label for TNCN Ex e	H	2009-09-01
CNX-176-4	General arrangement drawing Mounting of MCT	A	2002-06-10
CNX-177-4	General arrangement drawing Mounting detail for window in TNCN box/cabinet	A	2002-06-10
CNX-175-4	Alternative locking details for TNCN boxes	C	2008-04-14
CNX-179-4	Arrangement of flange plates or flange connection of TNCN junction boxes	A	2002-06-10
CNX-174-4	General arrangement drawing door for TNCN	A	2002-06-06
CNX-178-4	General arrangement drawing for TNCN box/cabinet	A	2002-06-10
CNX-181-4	Installation of self-regulating heat trace cables in TNCN EEx e enclosures	A	2002-08-23
CNX-180-4	Connection of TNCN boxes/cabinets	A	2002-06-10
51-CNX-5	User manual TNCN Ex e Junction Box	C	2008-04-14
52-CNX-5	Terminal list TNCN	A	2003-01-15

[17] Special Conditions for Safe Use
None

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

END OF CERTIFICATE

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