IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx PRE 14.0001

Issue No: 3

Certificate history:
Issue No. 3 (2018-02-06)
Issue No. 2 (2017-02-02)
Issue No. 1 (2016-04-12)
Issue No. 0 (2014-05-15)

Status: **Current**

Date of Issue: **2018-02-06**

Applicant: **R. Stahl Tranberg AS**
Strandsvingen 6
4032 Stavanger
Norway

Equipment: **Junction boxes**

Optional accessory: *Terminal blocks, thermostats, push buttons, control switches, signal lights, bus bars, high voltage isolators and splicing boxes*

Type of Protection: **Increased safety, flameproof, encapsulation, intrinsic safety and optical radiation**

Marking:

Ex db eb mb ia/ib op pr IIC Gb

T6/T5/T4

Approved for issue on behalf of the IECEx Certification Body: Bjørn Spongsveen

Position: Certification Manager

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DNV GL Nemko Presafe AS
Veritasveien 3
1363 Høvik
Norway

A DNV GL & NEMKO COMPANY

IECEx Certificate of Conformity

Certificate No: IECEx PRE 14.0001 Issue No: 3

Date of Issue: **2018-02-06** Page 2 of 6

Manufacturer: **Tranberg AS**
Strandsvingen 6
4032 Stavanger
Norway

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-18 : 2014 Edition:4.0	Explosive atmospheres – Part 18: Equipment protection by encapsulation “m”
IEC 60079-28 : 2015 Edition:2	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
IEC 60079-7 : 2015 Edition:5.0	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

NO/PRE/ExTR14.0001/00 NO/PRE/ExTR14.0001/01 NO/PRE/ExTR14.0001/02
NO/PRE/ExTR14.0001/03

Quality Assessment Report:

NO/NEM/QAR10.0006/06

IECEx Certificate of Conformity

Certificate No: IECEx PRE 14.0001 Issue No: 3

Date of Issue: 2018-02-06 Page 3 of 6

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

This certificate covers increased safety boxes equipped with different equipment.

This includes terminal blocks, signal lamps, push button, control switches, thermostats, bus bars, isolators, baffles, A-bricks and op pr splicing box.

The boxes can be used to terminate Ex i circuits, the current and voltage are then limited according to Technical Data.
Termination can be combined with or without Ex e circuits. See limitations for non-is circuits in combination with is circuits in technical standards and document 100A111238

This certification also cover the use of certified op pr optical splicing box in combination with increased safety enclosure

It covers four types/series of boxes, TEF 10aa bb c d , TEF 1060 a b c together with special prepared thermostat boxes TEF 1058256x and TEF 1058258x.Two different gaskets may be used, EPDM rubber or Silicone

Isolators and baffle plates increases the voltage range for terminals and bus bars

SPECIFIC CONDITIONS OF USE: NO

IECEx Certificate of Conformity

EQUIPMENT (continued):

Technical data and type of designation

Voltage max 11000V

Amperes max 2100A

Electrical Safety Parameters, is and non-is combination
Voltage: max 90V
Amperes: max 3A
Non-Is voltage: max 1000V

Degrees if protection

IP66 or IP66/67
IP 54 with some optional components

For Temperature Class, Operating Temperature/Tamb. and exact Type designation, see Annex IECEx PRE 14.0001 Issue 3

IECEx Certificate of Conformity

Certificate No: IECEx PRE 14.0001 Issue No: 3

Date of Issue: **2018-02-06** Page 5 of 6

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Updated reference to certificates in drawings. Update of standards IEC 60079-1, IEC 60079-7 and IEC 60079-18.

IECEx Certificate of Conformity

Certificate No: IECEx PRE 14.0001 Issue No: 3

Date of Issue: **2018-02-06** Page 6 of 6

Additional information:

Annex:

ANNEX TO IECEx PRE 14.0001_Issue3.pdf

ANNEX to Certificate of Conformity IECEx PRE 14.0001 Issue 3

Description of Equipment or Protective System

This certificate covers increased safety boxes equipped with different equipment.

This includes terminal blocks, signal lamps, push button, control switches, thermostats, bus bars, isolators, baffles, A-bricks and op pr splicing box.

The boxes can be used to terminate Ex i circuits, the current and voltage are then limited according to Technical Data.

Termination can be combined with or without Ex e circuits. See limitations for non-is circuits in combination with is circuits in technical standards and document 100A111238

This certification also covers the use of certified op pr optical splicing box in combination with increased safety enclosure

It covers four types/series of boxes, TEF 10aa bb b c, TEF 1060 a b c together with special prepared thermostat boxes TEF 1058256x and TEF 1058258x. For details see under type designation.

Technical data

Voltage	max 11000V
Amperes	max 2100A (see table 1)

For bus-bar systems, the cable maximum rating is according to IEC TR 60890

Electrical Safety Parameters, is and non-is combination

Voltage:	max 90V
Amperes:	max 3A
Non-Is voltage:	max 1000V

Operating temperature – T_{amb}

Two different gasket types may be used with the operating temperature range:

TEF1058 and TEF1059:
EPDM gasket -40°C to +80°C and Silicone -60°C to +135°C

TEF1060:
EPDM gasket -20°C to +60°C and Silicone -50°C to +100°C

The operating temperature range /Tamb for the total enclosure, box included optional components are calculated by documented method (100A10247), with minimum/maximum operating temperature -60°C to +135°C, depended if silicone gasket is used. EPDM gives respectively -40°C to +80°C.

Temperature class T4, T5 or T6 (dependent on internal components / T_{amb})

Type designation

TEF 10aa bb c d,

aa	58 or 59
bb	Dimension: 00 = Custom specific 1 to 99 = Predefined dim.
c	Surface treatment: 0 = Bright chemical dip. 1 = Electro polished 2 to 9. Not defined
d	Configuration 0 = Empty Enclosure 1 = With horizontal terminal rail PE bus bar 2 to 9. Not defined

TEF 1060 a b c

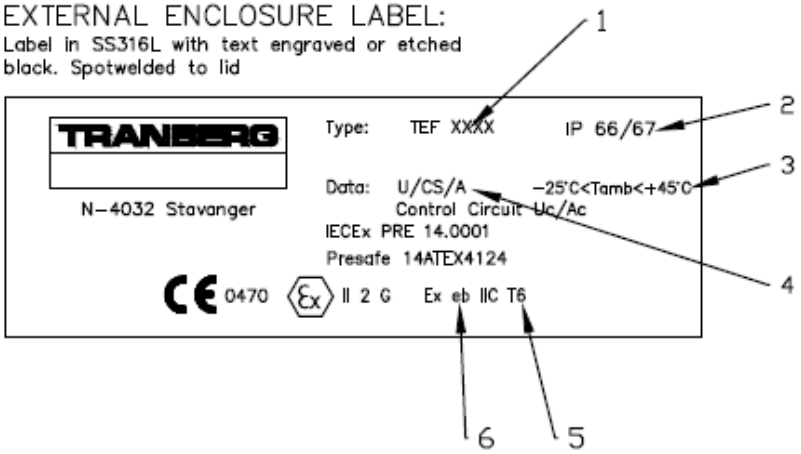
a Enclosure configuration
0 = Hinged with window
2 = Hinged
1, 3 to 9. Not defined

b Lid configuration
0 = Hinged lid with screw electro polished
1 = Hinged lid with cam lock
2 to 9. Not defined

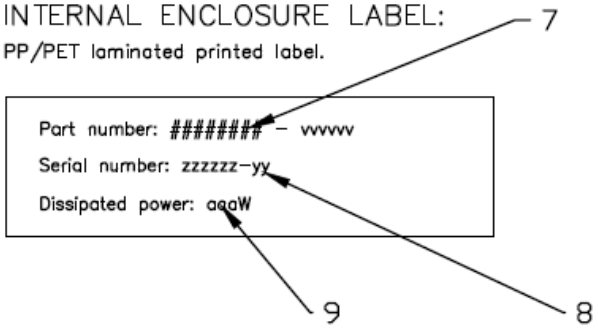
c Dimension
0 = Empty enclosure
1 = With horisontal terminal rail and PE bar
2 to 9. Not defined

TEF 1058256x and TEF 1058258x

EXTERNAL ENCLOSURE LABEL:
Label in SS316L with text engraved or etched black. Spotwelded to lid



INTERNAL ENCLOSURE LABEL:
PP/PET laminated printed label.



1)Type Designatiopn: 1058, 1059 or 1060.

2)Ingress protection Level: IP 66 or IP 66/67 See DOC 100A108205 for component variation giving the IP

3)Ambient Temperature: None or specified range within service temperature range for enclosure and/or components and calculations according to document 100A10247. This document gives rules for equipping the enclosures and calculation according to this document shall be performed for variations in ambient temperature.

4)Electrical data: U=rated voltage, CS=crossection and A= rated current at given crossection, see table 1. For enclosure with different circuits all is to be defined. Circuits related to controll equipment as push buttons etc. max rated voltad shall be 230V AC/DC and 3 A. For copper bar solutions, CS is the cross section of the cables specified by the customer upon order or the cross section of the copper bar itself.

4b) For enclosures containing only terminals certified as components, the marking may be MAX allowed voltage, cross section and current for the given enclosure size, with the text :"For maximum current values for other cross-sections, see table 2 in user manual". Table 2 in the user manual is the same table as table 1 in this drawing.

5)Temperature Class: T4, T5 or T6. See DOC 100A108205 for component variation giving in temperature class

6)Type of protection: Ex eb IIC, Ex d e IIC Gb or Ex e mb IIC Gb. See DOC 100A108205 for component variation giving the protection type.

7)Partnumber on enclosure. In case of variation, partnumber will include a variation number. See part number matrix.

8)Serial number: Production work order number and year. Year may be replased by consecutive number

9)Dissipated power: Calculation given by doc 100A10247 for each enclosure size.

Internal enclosure label can in addition hold all information given on extrenal enclosure label and other relevant information of technical or commersial matter.

Addtional marking for other certifications may be added

Table 1

Current rating for terminals, not copper bus bar solutions

Terminal size / Crossection	Load	Terminal size / Crossection	Load
1,5mm^2 AWG16	10A	50mm^2 AWG1/0	135A
2,5mm^2 AWG14	16A	70mm^2 AWG2/0	165A
4mm^2 AWG12	20A	95mm^2 AWG4/0	210A
6mm^2 AWG10	25A	120mm^2 AWG250	230A
10mm^2 AWG8	35A	150mm^2 AWG300	250A
16mm^2 AWG6	63A	185mm^2 AWG400	300A
25mm^2 AWG4	80A	240mm^2 AWG500	350A
35mm^2 AWG1	100A	300mm^2 AWG600	450A

List of optional Ex components.

The technical differences between EN 60079-0:2006, EN 60079-1:2004 and EN 60079-0:2009, EN 60079-1:2007 for **separately certified components according to component list 100A108205**. The IECEx / ExTAG decision 2014/007 (March 2014) has been used.

Optional components (for details, see full list - descriptive document 100A108205)

Ex component	Certificate	ATEX Standard	IECEx Standard	Comments
Phoenix. Terminal blocks : -UK1,5N; UK2,5N; UK3N; UK5N; UK6N	KEMA 98ATEX1651U/ IECEx KEM 06.0034U	EN 60079-0:2009, EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-7:2006	1)
Phoenix. Terminal blocks : -UK10N;UK16N; UK35; UKH 50; UKH 95	KEMA 98ATEX1786U/ IECEx KEM 06.0029U	EN 60079-0:2009, EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-7:2006	1)
Phoenix. Terminal blocks : -USLKG3;	KEMA 97ATEX1622U/ IECEx KEM 06.0035U	EN 60079-0:2009, EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-7:2006	1)
Phoenix. Terminal blocks : '-USLKG1,5N; USLKG5; USLKG10N; USLKG16N;	KEMA 99ATEX4487U/ IECEx KEM 06.0035U	EN 60079-0:2009, EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-7:2006	1)
Phoenix. Terminal blocks : '-USLKG2,5N; USLKG2,5N-1; USLKG6N; USLKG6N-1	KEMA 96ATEX4370U/ IECEx KEM 06.0035U	EN 60079-0:2009, EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-7:2006	1)
Phoenix. Terminal blocks : -MXK 4	PTB 99ATEX3132U/ IECEx PTB 06.0100U	EN 60079-0:2004, EN 60079-7:2003	IEC 60079-0:2004 IEC 60079-7:2006	1)
Phoenix. Terminal blocks : -ST2,5	KEMA 00ATEX2052U/ IECEx KEM 06.0051U	EN 60079-0:2012, EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-7:2006	1)
Phoenix. Terminal blocks : -ST4, ST6	KEMA 00ATEX2129U/ IECEx KEM 06.0050U	EN 60079-0:2006, EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-7:2006	1)

Phoenix. Terminal blocks : -ST10, 16, 35	KEMA 01ATEX2260U/ IECEx KEM 06.0033U	EN 60079-0:2012, EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-7:2006	1)
Phoenix. Terminal blocks : -MBK 3/E-Z; MBK6/E; MSLKG 6	KEMA 01ATEX2134U/ IECEx KEM 07.0008U	EN 60079-0:2012, EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-7:2006	1)
Phoenix. Terminal blocks : '-UK 5-TWIN; MSLKG 5	KEMA 00ATEX2100U/ IECEx KEM 07.0035U	EN 60079-0:2006, EN 60079-7:2007	IEC 60079-0:2004 IEC 60079-7:2006	1)
Phoenix. Terminal blocks : -UT series	KEMA 04ATEX2048U/ IECEx KEM 06.0027U	EN 60079-0: 2006, EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-7:2006	1)
Phoenix. Terminal blocks : -QTC series	KEMA03ATEX2557U/ IECEx KEM 07.0015U	EN 60079-0: 2006, EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-7:2006	1)
Phoenix. Terminal blocks : '-UKH 150; UKH 240	KEMA 99ATEX8332U/ IECEx KEM 06.0030U	EN 60079-0:2009, EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-7:2006	1)
Weidmuller. Terminal blocks: -WDU 2,5N; WDU2,5; WDU 4; WDU 6; WDU 10; WDU 16; WDU 35; WDU 70	KEMA 98ATEX1683U/ IECEx ULD 05.0008U	EN 60079-0:2006, EN 60079-7:2007	IEC 60079-0:2004 IEC 60079-7:2006	1)
Weidmuller. Terminal blocks: -WDK series	KEMA 98ATEX1687U/ IECEx ULD 05.0008U	EN 60079-0:2004, EN 60079-7:2007	IEC 60079-0:2004 IEC 60079-7:2001	1)
Weidmuller. Terminal blocks: -WDK series	KEMA 00ATEX2061U IECEx ULD 05.0008U	EN 60079-0:2004, EN 60079-7:2003	IEC 60079-0:2004 IEC 60079-7:2001	1)
Weidmuller. Terminal blocks: -ZDU series	KEMA 97ATEX2521U/ IECEx ULD 05.0009U	EN 60079-0:2004, EN 60079-7: 2003	IEC 60079-0:2004 IEC 60079-7:2001	1)

Weidmuller. Terminal blocks: -ZDU series	KEMA 97ATEX 4677U IECEx ULD 05.0009U	EN 60079-0: 2006, EN 60079-7:2007	IEC 60079-0:2004 IEC 60079-7:2001	1)
Weidmuller. Terminal blocks: -ZDU series	KEMA 99ATEX5514U IECEx ULD 05.0009U	EN 60079-0:2004, EN 60079-7: 2003	IEC 60079-0:2004 IEC 60079-7:2001	1)
Weidmuller. Terminal blocks: -ZDU series	KEMA 00ATEX2107U IECEx ULD 05.0009U	EN 60079-0:2004, EN 60079-7: 2003	IEC 60079-0:2004 IEC 60079-7:2001	1)
Weidmuller. Terminal blocks: '-WFF 35..WFF300	KEMA 98ATEX1684U/ IECEx KEM 07.0053U	EN 60079-0:2004, EN 60079-7: 2003	IEC 60079-0:2004 IEC 60079-7:2001	1)
Weidmuller. Terminal blocks: -WDU series -WPE series	DEMKO 14 ATEX 1338U Rev. 1 IECEx ULD 14.0005U	EN 60079-0:2012 + A11:2013 EN 60079-7:2007	IEC 60079-0 : 2011 IEC 60079-7 : 2006-07	
Bartec, Pushbuttons, control switches, potentiometers and signal lamps:	PTB 99ATEX1043U/ IECEx PTB 07.0046U	EN 60079-0:2009, EN 60079-1:2007, EN 60079-7:2007	IEC 60079-0:2007 IEC 60079-1:2007 IEC 60079-7:2007	IP-degree determined by the actuating enclosure. See Bartec actuator element below
Bartec Signal lights bottom mount., pnel mount.	PTB 97ATEX1064U/ IECEx PTB 10.0014U	EN 60079-0:2009, EN 60079-1:2007, EN 60079-7:2007	IEC 60079-0:2007 IEC 60079-1:2007 IEC 60079-7:2006	IP-degree determined by the actuating enclosure. See Bartec actuator element below.
Bartec Actuator element	PTB 00ATEX3114U/ IECEx PTB 08.0037U	EN 60079-0:2012 EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-7:2006	IP54 (temp. range -55°C to +70°C) IP65, or IP 66/67 (temp. range -20°C to +60°C)
Bartec Actuator element	PTB 13ATEX1019U/ IECEx PTB 13.0047U	EN 60079-0:2012 EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-7:2006	IP54 (temp. range -60°C to +70°C) IP65, or IP 66/67 (temp. range -20°C to +70°C)
Tranberg AS Thermostat	NEMKO 03ATEX 1470X/ IECEx NEM 11.0007X	EN 60079-0:2009 EN 60079-18:2009	IEC 60079-0:2011 IEC 60079-18:2009	IP54 IP 66 according to IEC 60529

R. Stahl Actuator attachment Type 8602*3**	PTB 01 ATEX 1019U/ IECEx 13.0047U	EN 60079-0:2012 EN 60079-7:2007	IEC 60079-0:2011 IEC 60079-1:2007	IP54 IP 66/67 according to IEC 60529
Jumo Ex Thermostat	EPS 11 ATEX 1354/ EPS 13.0015U	EN 60079-0:2009, EN 60079-1:2007, EN 60079-7:2007	IEC 60079-0:2007 IEC 60079-1:2007	1)
Bartec Limit- and position switch	EPS 14 ATEX 1 766 X / ~~PTB 00 ATEX 1093 X~~ IECEx EPS 14.0092X / IECEx PTB 07.0045X	EN 60079-0:2012 EN 60079-1:2007 (IEC 60079-1:2014) EN 60079-31:2014	IEC 60079-0:2011 IEC 60079-1:2014 IEC 60079-31:2013	Max. -60 °C < Ta < +75 °C (T6), Max. -60 °C < Ta < +90 °C (T5) IP 66
Controll buttons	PTB 00 ATEX 1031 U IECEx PTB 06.0011U	EN 60079-0:2012 EN 60079-1 :2007 EN 60079-7:2007	IEC 60079-0 : 2011 IEC 60079-1 : 2007 IEC 60079-7 : 2006	-60 °C to+ 70 °C
Actuator attachment type 8602*3-***-*	PTB 13 ATEX 1019 U IECEx PTB 13.0047U	EN 60079-0:2012 EN 60079-7:2007 EN 60079-31:2009	IEC 60079-0 : 2011 IEC 60079-31 : 2013 IEC 60079-7 : 2006	
Indicating lamp	PTB 01 ATEX 1160 U IECEx PTB 06.0016U	EN 60079-0 :2012 EN 60079-1 :2007 EN 60079-7 :2007 EN 60079-11:2012	IEC 60079-0 : 2011 IEC 60079-1 : 2007 IEC 60079-11: 2011 IEC 60079-7 : 2006	IP 20
Splice cassette	PTB 10 ATEX 2015 U IECEx PTB 10.0060U	EN 60079-0 :2012 EN 60079-28 :2007	IEC 60079-0 : 2007 IEC 60079-28 : 2006	-40 °C to+ 60 °C
Push-in terminal, Feed-through terminal blocks	PTB 09ATEX1111U IECEx PTB 10.0021U	EN 60079-0:2012 EN 60079-7:2007 EN 60079-31:2009	IEC 60079-0 : 2011 IEC 60079-7 : 2006	-60 °C to +110 °C
Push-in terminal, Feed-through terminal blocks	PTB 09ATEX1112U IECEx PTB 10.0046U	EN 60079-0:2012 EN 60079-7:2007	IEC 60079-0 : 2011 IEC 60079-7 : 2006	-60 °C to +110 °C

1) See Appendix A.1 NO/PRE/ExTR14.0001/00 and Appendix A.1 NO/PRE/EXTR 14.0001/03 regarding previous edition of standards. To be mounted inside junction boxes IP66/67