



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

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

Ex COMPONENT CERTIFICATE

Certificate No.: **IECEX PRE 18.0032U** Page 1 of 4 Certificate history:
Status: **Current** Issue No: 1 [Issue 0 \(2018-05-09\)](#)
Date of Issue: 2021-10-19
Applicant: **Techno Controls**
54/1, Meladi Estate Gota Railway Crossing, Gota Ahmedabad – 382481, Gujarat
India
Ex Component: Stator Winding Temperature Detectors, Bearing Temperature Detectors

This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

Type of Protection: **Ex eb/ ia**

Marking: **Ex e-Protection type:**

Stator Winding Temperature Detectors:

TSRA, TSRB, TSRC, TSRD, TSRK
TSRB-ET, TSRC-ET, TSRD-ET

Bearing Temperature Detectors:

TBTD-H, TBTD-I, TBTD-J, TBTD-K, TBTD-L, TBTD-N, TBTD-O, TBTD-Q, TBTD-U
TBTD-HET, TBTD-IET, TBTD-JET, TBTD-KET, TBTD-LET, TBTD-NET, TBTD-OET, TBTD-QET, TBTD-UET

Ex eb IIC Gb

Ex i-Protection type:

Bearing Temperature Detectors: TBTD-Q, TBTD-K, TBTD-L, TBTD-O, TBTD-U & TBTD-QET, TBTD-KET, TBTD-LET, TBTD-OET, TBTD-UET

Stator Winding Temperature Detectors: TSRB, TSRC, TSRD, TSRK/ TSRB-ET, TSRC-ET, TSRD-ET

Ex ia IIC Ga

Approved for issue on behalf of the IECEx
Certification Body:

Ståle Sandstad

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 www.iecex.com or use of this QR Code.



Certificate issued by:

DNV Product Assurance AS
Veritasveien 3
Hovik 1363
Norway





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Issue No: 1

Manufacturer: **Techno Controls**
54/1, Meladi Estate Gota Railway Crossing, Gota Ahmedabad – 382481, Gujarat
India

Additional
manufacturing
locations:

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 equipment 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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with 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 Reports:

[NO/PRE/ExTR18.0026/00](#)

[NO/PRE/ExTR18.0026/01](#)

Quality Assessment Report:

[NO/DNV/QAR14.0003/04](#)



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Ex Component(s) covered by this certificate is described below:

Stator Winding Temperature Detectors - are used to measure winding temperature of motors/generators. The sensors are sandwiched between the windings of motors/generators. Unlike on-off device, it allows continuous measurement of temperature. Sensing Portion extends throughout the body and average temperature is measured. Thermal and high dielectric strength is basic requirement of this product. This component is a passive device and do not generate any heat out due to the very low energy levels. These RTD's are categorised as a component, hence only required clauses has been addressed. The type of protection is by method 'e'.

Bearing temperature detectors - are used to measure the bearing temperature , through the measuring slot provided for the sensors

Type designation

Stator Winding Temperature Detectors

TSRA, TSRB, TSRC, TSRD, TSRK
TSRB-ET, TSRC-ET, TSRD-ET

Bearing Temperature Detectors

TBTD-H, TBTD-I, TBTD-J, TBTD-K, TBTD-L, TBTD-N, TBTD-O, TBTD-Q, TBTD-U
TBTD-HET, TBTD-IET, TBTD-JET, TBTD-KET, TBTD-LET, TBTD-NET, TBTD-OET, TBTD-QET, TBTD-UET

Electrical Data

For Ex e applications: 1.6V- AC/DC, 10mA- AC/DC 16mW

Ex ia applications: (TBTD-Q , TBTD-K, TBTD-L, TBTD-O , TBTD-U& TBTD-QET , TBTD-KET, TBTD-LET, TBTD-OET, TBTD-UET
TSRB, TSRC, TSRD, TSRK / TSRB-ET, TSRC-ET, TSRD-ET, TSRK-ET
Ui=12V, Ii=35mA, Pi=105mW Ci=5.9nF , Li=2.5mH

For TBTD-*:

Temperature measuring range/Service temperature: -50°C to +180°C

-ET version:

Temperature measuring range/Service temperature: -40°C to +180°C

For TSR*:

Temperature measuring range/Service temperature: -50°C to +180°C

-ET version: -40°C to +180°C

SCHEDULE OF LIMITATIONS:

- For Ex eb, The terminations need to be protected by suitable protection method according IEC 60079-0:2017
- The electrical connection should be connected to approved unit according to application or to terminal box according to requirements at the connecting site. The sensors can only be connected to measuring equipment prepared for PT100/PT1000 sensors.
- **For TBTD-*:**
 - Service Temperature range on the termination part: -50°C to +100°C
- **-ET version:**
 - Service Temperature range on the termination part: -40°C to +100°C
- The high voltage test needs to be performed when completely assembled with the final assembly.
- TSR-* series only: where the insulated wiring has no overall sheath, the conductor insulation has a minimum thickness of only 0.09 mm (code Z) or 0.12 mm (codes Q, R, W, X, Y), so precautions shall be taken to prevent contact with other current-carrying conductors, for example by the use of additional insulation or routing away from other conductors
- Bearing temperature detector when used in the final application, proper protection shall be provided to the cable and cable gland shall be provided for the cable assembly.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

00- Initial Issue

01- Inclusion of bearing temperature detector TBTD /-ET, Inclusion of TSRB-ET, TSRC-ET, TSRD-ET, Assessment for Ex ia