


[1]

EU-TYPE EXAMINATION CERTIFICATE

- [2] Component Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- [3] EU-Type Examination Certificate Number: **Presafe 18 ATEX 12507U** **Issue 1**
- [4] Component: **Resistance Temperature Detector for Stator Windings & Bearing**
- [5] Manufacturer: **Techno Controls**
- [6] Address: **54/1, Meladi Estate Gota Railway Crossing, Gota Ahmedabad – 382481, Gujarat, India**
- [7] This component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- [8] DNV Product Assurance AS, notified body number 2460, in accordance with Article 17 and Article 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
- The examination and test results are recorded in confidential reports listed in item 16.
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with: **EN IEC 60079-0:2018 , EN IEC 60079-7:2015/A1:2018 & EN 60079-11:2012**
- Where additional criteria beyond those given here have been used, they are listed at item 18 in the Schedule.
- [10] The sign "U" placed behind the certificate number indicates that this certificate should not be confounded with certificates issued for equipment or protective systems. This partial certification may be used as a basis for certification of an equipment or protective systems.
- [11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified component in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this component. These are not covered by this certificate.
- [12] The marking of the component shall include the following:

 **II 2 G Ex eb IIC Gb**
II 1 G Ex ia IIC Ga



Date of issue:
2021-10-19



Ståle Sandstad
For DNV Product Assurance AS
The Certificate has been digitally signed.
See www.dnv.com/digitalsignatures for info

[13] **Schedule**

[14] **EU-Type Examination Certificate No:** **Presafe 18 ATEX 12507U** **Issue 1**

[15] **Description of Component**

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

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:

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:

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

Routine tests

Dielectric strength test according to clause 6.1 EN IEC 60079-7,

Stator winding temperature detectors:

- For TSRA - 3 KV/50-60Hz for 1 minute
- For TSRB/-ET - 3 KV/50-60Hz for 1 minute
- For TSRC/-ET - 5 KV/50-60Hz for 1 minute
- For TSRD /-ET - 3 KV/50-60Hz for 1 minute
- For TSRK - 5 KV/50-60Hz for 1 minute

Bearing temperature detectors:

TBTD-H, TBTD-I, TBTD-J, TBTD-K, TBTD-L, TBTD-N, TBTD-O, TBTD-Q, TBTD-U
 TBTD-H-ET, TBTD-I-ET, TBTD-J-ET, TBTD-K-ET, TBTD-L-ET, TBTD-N-ET, TBTD-O-ET, TBTD-Q-ET,
 TBTD-U-ET - 1500 VAC for 1 minute.

[16] **Report No.:** D0003262

[17] **Schedule of Limitations**

- For Ex eb, The terminations need to be protected by suitable protection method according to 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.

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

Met by compliance with the requirements mentioned in item 9.

[19] **Drawings and documents**

Number	Title	Rev.	Date
16062021	Annexure-1 – List of Technical Documents for Presafe 18 ATEX 12507U Issue 1	01	2021-09-25

[20] **Certificate History**

Issue	Description	Issue date	Report no.
0	Original issue and replaces DNV-2008-OSL-ATEX-40059U	2018-05-09	D0003262
1	Assessment for IEC 60079-0 Ed 7 Inclusion of bearing temperature detector TBTD /-ET Inclusion of TSRB-ET, TSRC-ET, TSRD-ET Assessment for Ex ia	2021-10-19	D0003262, r1

END OF CERTIFICATE

