Certificate of Compliance

Certificate: 70181802 **Master Contract:** 272557

Project: 80119797 **Date Issued:** 2022-08-30

Issued To: **Techno Controls**
Plot No. 54/1, survey No. 299
Meladi Estate, Nr. Gota Rly. Crossing
Gota, Ahmedabad, Gujarat, 382481
India

Attention: Daxesh Shah

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Issued by: Ashutosh Joshi

C US

PRODUCTS
CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations
CLASS 2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations - Certified to US Standards

IS Class I, Division 1, Groups A, B, C and D
Ex ia IIC Ga
Class I, Zone 0, AEx ia IIC Ga
-50ºC < T_{amb} < 180ºC

TSR* and TBTD-* series
The TSR* and TBTD-* series resistance temperature devices (RTDs) are typically used to measure internal temperatures of motors/generators. The TSR* series RTDs are slot resistance thermometers, whereas the TBTD-*

series RTDs are bearing temperature detectors. Both series are available with 2, 3 or 4 wire options and are connected by means of flying leads to a suitably certified intrinsically safe barrier supply.

TSR* series, TBTD-K, TBTD-L and TBTD-O electrical ratings: Ui/Vmax = 12V, Ii/Imax = 35mA, Pi = 105mW

TBTD* series electrical ratings: Ui/Vmax = 12V, Ii/Imax = 35mA, Pi = 105mW, Ci = 5.9nF, Li = 2.5mH

Notes:

1. The above model is fixed connection, Pollution Degree 2, Overvoltage Category I.
2. Environmental Conditions: Extended, Outdoor use, -50°C to +180°C.

Conditions of Acceptability:

1. For Zone 0 'ia'/Division 1 applications, equipment must be fed by a suitably certified intrinsically safe barrier supply, of the following entity parameters:

Ui/Vmax	Ii/Imax	Pi	Ci	Li
12V	35mA	105mW	5.9nF*	2.5mH*

   *cable inductance and capacitance only.
2. The maximum operating temperature of the equipment is -50ºC < T_{amb} <180ºC. External sources of heating due to the intended equipment application are to be taken into consideration during installation in order to ensure the maximum ambient temperature of equipment is not exceeded. This condition is subjected to acceptance of local authorities having jurisdiction.
3. End-user shall ensure proper earthing of the equipment upon installation in accordance with applicable CEC and NEC codes. The mounting of the equipment into installation must ensure that the metallic body is reliably connected to system earth, continuity to be checked and confirmed.
4. 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.

CLASS 2258 02 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations
CLASS 2258 82 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations - Certified to US Standards

Class I, Division 2, Groups A, B, C and D
Ex eb IIC Gb
Class I, Zone 1, AEx eb IIC Gb
-50ºC < T_{amb} < 180ºC
-50ºC < T_{amb} < 100ºC (for TBTD* series at the termination part)

TSR* and TBTD* series

The TSR* and TBTD* series resistance temperature devices (RTDs) are typically used to measure internal temperatures of motors/generators. The TSR* series RTDs are slot resistance thermometers, whereas the TBTD*

series RTDs are bearing temperature detectors. Both series are available with 2, 3 or 4 wire options and are connected by means of flying leads to a Class 2 low power supply;

TSR* series electrical ratings: V = 10V, I = 10mA, P = 1.5W

TBTD* series electrical ratings: V = 1.6V, I = 10mA, P = 16mW

Notes:

1. The above model is fixed connection, Pollution Degree 2, Installation Category I.
2. Environmental Conditions: Extended, outdoor use (For Zone 1 'eb' applications: within a certified Ex e enclosure minimum IP54 rating, with flying leads terminated by means of Ex e terminals, or a suitable protection method as detailed in CSA/UL60079-0. For Division 2 installations, the equipment shall be housed in an enclosure acceptable to the local authorities having jurisdiction.) -50°C to +180°C.
   (-50°C to +100°C for TBTD* series at termination part)

Conditions of Acceptability:

1. The equipment is to be connected to a Class 2 or limited energy power source according to CSA 61010-1-12 and ISA 61010-1 3rd Edition with a maximum voltage of 30Vrms, 42.4V peak, or 60V dc.
   (Equipment electrical rating is: 10V, 10mA, 1.5W.)
2. For Division 2 installations, the equipment shall be housed in an enclosure acceptable to the local authorities having jurisdiction.
3. For Zone 1 'eb' installation, the equipment shall be housed in a certified Ex e enclosure minimum IP54 with field wiring terminated by means of Ex e terminals, or a suitable protection method as detailed in CSA/UL60079-0. In case the equipment is to be housed inside a non-metallic enclosure for outdoor applications, the non-metallic enclosure shall meet UV requirements of UL 746C.
4. For Zone 1 'eb'/Division 2 applications the wiring method and termination shall meet the requirements of CEC (for Canada) and NEC (for USA) for Zone 1/Division 2 applications and is subjected to acceptance of local authorities having jurisdiction.
5. End-user shall ensure proper earthing of the equipment upon installation in accordance with applicable CEC and NEC codes. The mounting of the equipment into installation must ensure that the metallic body is reliably connected to system earth, continuity to be checked and confirmed.
6. The maximum operating temperature of the equipment is -50ºC < Tamb <180ºC. External sources of heating due to the intended equipment application are to be taken into consideration during installation in order to ensure the maximum ambient temperature of equipment is not exceeded. This condition is subjected to acceptance of local authorities having jurisdiction.
7. For Zone 1 'eb' High voltage test to be performed upon final installation within motor assembly.
8. Sensors are only to be connected to measuring equipment suitable for PT100/PT1000 sensors.

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APPLICABLE REQUIREMENTS

UL 61010-1 (2012) AMD1:2018 3rd Edition	Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use - Part 1: General Requirements - Third Edition
CAN/CSA C22.2 No. 61010-1-12, UPD1:2015, UPD2: 2016, AMD1:2018	Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use - Part 1: General Requirements - Third Edition
CSA Std. C22.2 No. 213-2017	Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations
ANSI/ISA-12.12.01-2017	Non-Incendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
CAN/CSA-C22.2 No. 60079-0:19	Explosive Atmospheres - Part 0: Equipment - General requirements
CAN/CSA-C22.2 No. 60079-11:14	Explosive Atmospheres – Part 11: Equipment protection by intrinsic safety "i"
CAN/CSA-C22.2 No. 60079-7:16 + AMD1:2018 (R2021)	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
ANSI/UL 60079-0-2020 *Seventh Edition*	Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements
ANSI/UL 60079-11:13	Electrical apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety “i”
ANSI/UL 60079-7-2021	Explosive Atmospheres - Part 7: Equipment Protection by Increased Safety "e"
UL 913, 8th Edition, R2019	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations

Notes:

Products certified under Class C225802, C225804, C225882, C225884 have been certified under CSA’s ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca

SCC Accredited CB-P/S OCPS Accrédité CCN TM

Supplement to Certificate of Compliance

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The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80119797	2022-08-30	Evaluation to update cCSAus report 70181802 for Class I, Division 1 and Zone 0 intrinsically safe TSR* and TBTD-* series RTDs and Class I, Division 2 or increased safety "eb" TSR* series RTDs for addition of the following models: TBTD-H (Ex eb), TBTD-I (Ex eb), TBTD-L (Ex eb), TBTD-O (Ex eb), TBTD-Q (Ex eb & Ex ia) and TBTD-U (Ex eb & Ex ia). Updates to latest editions of CSA/UL 60079-0, 60079-7 and UL 913 included in scope of project.
80075189	2021-06-28	Update to cCSAus report 70181802 to add a Multiple Marking label for intrinsically safe and increased safety for TSR* series resistance temperature devices and some minor corrections to 4 drawings.
70181802	2018-08-14	CSA c-us Certification for TSR* and TBTD-* series resistance temperature devices (RTDs): Class I, Div. 1 Groups A, B, C, D; Ex ia IIC Ga; Class I, Zone 0, AEx ia IIC Ga Class I, Div. 2 Groups A, B, C, D; Ex eb IIC Gb; Class I, Zone 1, AEx eb IIC Gb