

TCA HAZARDOUS AREA SENSORS IECEX CERTIFICATION

Thermocouples and RTD Sensors are a source of Ignition

Electrical equipment including temperature sensors for use in Hazardous Areas needs to be designed and constructed in such a way that it will not provide a source of ignition. This equipment should be fully tested and certified with a certificate of compliance issued by an Independent Authority. Temperature Controls Pty Ltd have developed a range of temperature sensors with Internationally recognized IECEX certification for Ex d Flameproof, Ex e Increased Safety and Ex tD Dust Ignition Proof. This approval covers the terminal head and the thermocouple or RTD sensor allowing Temperature Controls to supply a complete assembly with IECEX approval or fit any approved Transmitter Housing or Enclosure to our IECEX approved temperature element.

Temperature Controls are able to supply Thermocouples and RTD sensors with 4 x Types of Protection

Ex ia Intrinsically Safe Applications

Ex e Increased Safety Applications

Ex d Flame Proof Applications

Ex tD Protection by Enclosures in Dust



IECEX Certificate of Conformity

Our thermocouples & RTD sensors are Ex de Hazardous Area Certified

Ex ia " Intrinsically Safe " Protection

Suitable for use in Zone 0, 1 & 2

" The electrical energy available in circuits and equipment, is limited to a level too low to ignite the most easily ignitable gas mixtures in a hazardous area. Intrinsically safe barriers, Zener or Transformer isolated Intrinsically safe barriers are installed in the circuit to limit current and voltage in the hazardous area to prevent sparking under fault conditions"

RTD Sensors and thermocouples

RTD Sensors and thermocouples are considered to be simple apparatus and with appropriate barriers can be installed freely in IS circuits, (Ex ia) no further certification is required.

The RTD or Thermocouple must meet the requirements of the relevant IECEX Standard:

AS/NZS 60079.11:2006 Explosive Atmospheres Part 11 Equipment Protection by intrinsic safety 'i'.

Section 6.3.12 Dielectric strength requirement

"500 VAC RMS Test Voltage of Insulation Resistance between Conductors or Conductors & Sheath for 2 Minutes"

All thermocouples and RTD sensors in the catalogue meeting these requirements can be offered.

The sensor will have a label attached.

Sensor Tested: Suitable for use

Ex ia

Temperature Sensors with Transmitters, 4—20 mA signals are the most commonly used signal in the process control instrumentation; Temperature Controls have available a Multi Input PC programmable head mount transmitter with IECEX Certificate of Compliance along with matching IS transformer isolating barrier with IECEX Certificate of Compliance.

Transmitter Head Mounted 2 wire HART Protocol Ex ia

Multi thermocouple and RTD input

Upscale or Downscale burnout

11.5 to 30 V Supply



Certificate of Conformance

SD 1493

Data Sheet

SD 1492

MODEL	DESCRIPTION	PRICE
TCHMTXEXI	2 Wire Transmitter Ex ia	\$425.00
TCISB22IN	Intrinsically Safe Barrier Ex ia	\$535.00



Intrinsically Safe Barrier

Galvanic Isolation of 4—20 mA Current circuits and powering 2 wire transmitters.

Certificate of Conformance

SD 1496

Data Sheet

SD 1495

TCA HAZARDOUS AREA SENSORS IECEX CERTIFICATION

Thermocouples and RTD Sensors are a source of Ignition

Ex e " Increased Safety " Protection

suitable for use in Zone 1 & 2

" All electrical connections and equipment incorporate special measures to reduce the probability of excessive temperatures and the occurrence of arcs and sparks in normal service"

Ex d " Flameproof Enclosure " Protection

suitable for use in Zone 1 & 2

" All electrical connections and equipment are enclosed in a housing strong enough to contain any explosion and by using flame paths to prevent the transmission of flame that will ignite the surrounding atmosphere."

Ex tD " Protection by Enclosures in Dust"

There are 3 Zones for Dust , Zone 20; 21 & 22 Equipment must meet the requirements as per IEC 61241-1 : 2004

" Electrical apparatus for use in the presence of combustible dust Part 1 Protection by enclosures tD". For use in these zones Temperature Controls have a large number of IECEX approved assemblies and options to ensure a product complies.



Aluminum Enclosure
Certificate of Compliance
1/2" NPT Process Entry
M20 Cable Entry
IP66 Rated

SD 558

IECEX TSA 06.0007U



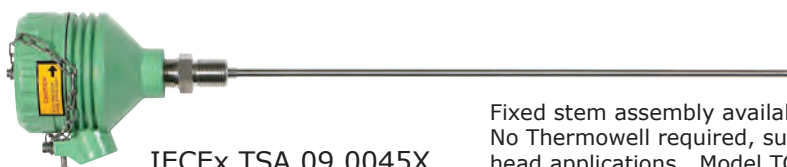
Optional Stainless Steel Enclosure
Certificate of Compliance
1/2" NPT Process Entry
M20 Cable Entry
IP68 Rated

SD 735

IECEX SIR 09.0006U

Ex Certified terminal heads supplied as components shall only be fitted to approved sensors.

MODEL NO.	DESCRIPTION	PRICE
TC20EXD1	ALUMINUM EX d	\$146.00
TC20EXE1	ALUMINUM EX e	\$177.00
TC20EXD1SS	STAINLESS STEEL EX d / DIP	\$228.00



IECEX TSA 09.0045X
Certificate of Conformance
for complete assembly.

6.0 mm Dia Mineral Insulated
Thermocouple / RTD Sensor

Fixed stem assembly available in Ex de and Ex tD Type of Protection.
No Thermowell required, suitable for air temperature or remote mount terminal head applications. Model TC20FIXTA



IECEX TSA 09.0045X
Certificate of Conformance
for complete assembly.

6.0 mm Dia Mineral Insulated
Thermocouple / RTD Sensor

Spring loaded stem assembly available in Ex de and Ex tD Type of Protection. Thermowell required to maintain IP protection rating. Model TC20SPRTA

SD 1369



IECEX TSA 09.0044U
Certificate of Conformance
for element component.

6.0 mm Dia Mineral Insulated
Thermocouple / RTD Sensor

Fixed Stem Element available in Ex de and Ex tD Type of Protection.
Must be fitted to approved Transmitter Housing or Terminal head.
No Thermowell required, suitable for air temperature or remote mount terminal head applications. Model TC20FIXTS



IECEX TSA 09.0044U
Certificate of Conformance
for element component.

6.0 mm Dia Mineral Insulated
Thermocouple / RTD Sensor

Spring Loaded Stem Element available in Ex de and Ex tD Type of Protection.
Must be fitted to approved Transmitter housing or terminal head. Thermowell required to maintain IP protection rating. Model TC20SPRTS

SD 1368