



Certificate of Compliance

Certificate: 70000097

Master Contract: 257312

Project: 70125347

Date Issued: November 22, 2017

Issued to: Thermo Engineering S.r.l

Via Giuseppina, 19

26030 Malagnino (CR)

Italy

Attention: Mr. BOZZETTI

The products listed below are eligible to bear the CSA Mark shown



Issued by: *E. Giusti*
E.Giusti

PRODUCTS

CLASS 2258 02 – PROCESS CONTROL EQUIPMENT – For Hazardous Locations

CLASS 2258 82 – PROCESS CONTROL EQUIPMENT – For Hazardous Locations – certified to U.S. standards

Class I, Division 2, Groups A, B, C, D

Class I, Zone 2, AEx nA IIC, T6, T5, T4

Ex nA IIC T6, T5, T4

Temperature Sensor Probe models **215TE --/ExnA:**

Models 215TE02/ExnA, 215TE03/ExnA, 215TE04/ExnA, 215TE05/ExnA, 215TE06/ExnA, 215TE07/ExnA, 215TE08/ExnA, 215TE09/ExnA, 215TE10/ExnA and 215TE11/ExnA.

Temperature Sensor Probe models 215TE02/ExnA to 215TE11/ExnA are rated 30VDC, 100mA max.

Note:

-Probes model 215TE02 and 215TE03 are certified as Component Type when delivered with flying leads in hazardous locations Class I, Division / Zone 2: they shall be protected integrally by suitable mechanical means (i.e. rigid conduit, certified liquid tight conduit, etc...). Suitability of the final assembly is determined by Local Authorities having jurisdiction.



REPORT: 70000097
PROJECT: 70125347

Master Contract: 257312
Date Issued: November 22, 2017

-Probes provided with flying leads shall be connected either in safe area or in an enclosure suitably certified for the hazardous area.

Class I, Division 1, Groups B, C, D
Ex d IIC, T6, T5, T4 or T3
Class I, Zone 1, AEx d IIC, T6, T5, T4 or T3

Temperature Sensor Probe models **111TE---/Exd**, rated 20 Vdc, 50 mA, 135 mW (per temperature sensing element) equipped with connection head model TST series and model TE-00041 series, ambient temperature from -60°C.

Max.Ambient Temp.	T-code	Cable Temperature
70 °C	T6	70°C
85 °C	T5	80°C
120 °C	T4	120°C
180 °C	T3	180°C

Model code: 111TE_ _ _/Exd

1st digit : process coupling

- 0 : without thermowell
- 1 : threaded thermowell
- 2 : flanged thermowell
- 3 : skin-point assembly
- 4 : soldered thermowell

2nd digit : connection head material

- 0 : Light alloy UNI 3049
- 1 : AISI 303 / 304 / 316 stainless steel

3rd digit : output signal

- 0 : without transmitter
- 1 : with transmitter

4th digit : ambient temperature

Always 0 (Tamb.is written specially on the marking label)

5th digit : certified

- 2 : ATEX and CSA certified
- 3 : ATEX & IECEx and CSA certified

6th digit : cable/conduit entry

- 0 : 3/4" NPT
- 1 : 1/2" NPT
- 2 : 3/4"GK UNI6125
- 3 : 1/2"GK UNI6125
- 4 : 3/4" ISO228
- 5 : 1/2" ISO228
- 6 : M25x1,5 ISO 262
- 7 : M20x1,5 ISO 262



REPORT: 70000097
PROJECT: 70125347

Master Contract: 257312
Date Issued: November 22, 2017

8 : PG 16 DIN40430
9 : PG 13,5 DIN40430

Notes:

- Probes provided with flying leads shall be connected either in safe area or in an enclosure suitably certified for the hazardous area.
 - gap and diametral clearance of the different flamepath is longer than the values specified in the table 1 of CAN/CSA C22.2 / ANSI/UL 60079-1.
 - length of the different flamepath are lower than the values specified in the table 1 of CAN/CSA C22.2 / ANSI/UL 60079-1.
- As an option, CSA certified Temperature transmitter manufacturer by PR Electronics, model PR 5335D (T.E. code 00967) may be installed inside the connection head. In this case intrinsically safe parameters of the transmitter shall be taken from PR Electronics certificate and documentation.

Class I, Zone 0, AEx ma IIC T6, T5, T4
Ex ma IIC T6, T5, T4

Temperature Sensor Probe models **113TE---/Exm**, rated 1 Vdc, 3 mA (per temperature sensing element) .
Ambient temperature is as follows:

- 50°C or -60°C ÷ + 70°C (T6)
- 50°C or -60°C ÷ + 85°C (T5)
- 50°C or -60°C ÷ + 120°C (T4)

Model code: 113TE_ _ _/Exm

1st digit : probe type

- 0 : with connection head (see dwg 113TE03)
- 1 : with nipple (see drawing 113TE04)
- 3 : without sleeve (see drawing 113TE06)

2nd digit : thermowell

- 0 : without thermowell
- 1 : with thermowell

3rd digit : probe type

- 0 : simple RTD
- 1 : double RTD
- 2 : simple TC
- 3 : double TC

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 U.S



REPORT: 7000097
PROJECT: 70125347

Master Contract: 257312
Date Issued: November 22, 2017

Class I, Division 1, Groups A, B, C and D
Class I, Zone 0, AEx ia IIC T6, T5, T4
Ex ia IIC T6, T5, T4

Temperature Sensor Probe models 215TE02/Ex ia to 215TE11/Exia, intrinsically safe with Entity parameters as per table below:

Group	Vmax (Ui)	I _{max} (Ii)	Ci (nF)	Li (μH)
IIC	30	100	5*	30*
IIB	30	250	5*	30*
IIA	30	340	5*	30*

* with integral cable, 30m maximum

For dual probes product where the separation distance is below 0.5mm (resp.0.7mm) through the solid insulation (resp.through resin/compound), the entity parameters, for each probe are

Group	Vmax (Ui)	I _{max} (Ii)	Ci (nF)	Li (μH)
IIC	20	50	5*	30*
IIB	20	130	5*	30*
IIA	20	190	5*	30*

* with integral cable, 30m maximum

Temperature probe models 215TE02/Ex ia, 215TE03/Ex ia, 215TE04/Ex ia, 215TE05/Ex ia, 215TE06/Ex ia, 215TE07/Ex ia and 215TE10/Ex ia are equipped with an integral cable when 215TE08/Exia, 215TE09/Exia and 215TE11/Exia are provided with cylindrical or conical threaded cable entry.

Temperature probe model 215TE06 is insulated in Teflon or epoxy resin in order to be installed within slots of insulating material of stator windings.

Thermal data for all probes:

The temperature class of the probe models 215TE_{xx}/Ex ia and 215TE_{xx}/Ex nA depend on the ambient and process temperatures as listed in the table below

Temperature class of the probes	Ambient temperature [°C]
T6	-50 / +70
T5	-50 / +85
T4	-50 / +120

Temperature probe models **112TE_ _ _/Exia**, intrinsically safe with entity parameters as per table below:



REPORT: 7000097
PROJECT: 70125347

Master Contract: 257312
Date Issued: November 22, 2017

Group	Vmax (Ui)	I _{max} (Ii)	Ci (nF)	Li (μH)
IIC	30	100	5*	30*
IIB	30	250	5*	30*
IIA	30	340	5*	30*

* with integral cable, 30m maximum

Relation between T-code and Max Ambient Temp. is as follows, for $P_i < 0.13W$:

Max.Ambient Temp.	T-code	Cable Temperature
70 °C	T6	80°C
85 °C	T5	95°C
120 °C	T4	130°C
180 °C	T3	190°C

For dual probes product where the separation distance is below 0.5mm (resp.0.7mm) through the solid insulation (resp.through resin/compound), the entity parameters, for each probe are

Group	Vmax (Ui)	I _{max} (Ii)	Ci (nF)	Li (μH)
IIC	20	50	5*	30*
IIB	20	130	5*	30*
IIA	20	190	5*	30*

* with integral cable, 30m maximum

Relation between T-code and Max Ambient Temp. is as follows, for $P_i < 0.06W$:

Max.Ambient Temp.	T-code	Cable Temperature
70 °C	T6	80°C
85 °C	T5	95°C
120 °C	T4	130°C
180 °C	T3	190°C

Output signals being 4 to 20 mA, 0 to 10 V, profi-bus or hart protocol (when transmitter is integrated in connection head.)

As an option, CSA certified Temperature transmitter manufacturer by PR Electronics, model PR 5335D (T.E. code 00967) may be installed inside the connection head. In this case intrinsically safe parameters of the transmitter shall be taken from PR Electronics certificate and documentation.

Model Code: 112TE__/_/Exia
 1st digit : process coupling

0 : without thermowell



REPORT: 7000097
PROJECT: 70125347

Master Contract: 257312
Date Issued: November 22, 2017

- 1 : threaded thermowell
- 2 : flanged thermowell
- 3 : skin-point assembly
- 4 : soldered thermowell

2nd digit : connection head material

- 0 : Light alloy UNI 3049
- 1 : AISI 303 / 304 / 316 stainless steel

3rd digit : output signal

- 0 : without transmitter
- 1 : with transmitter

4th digit : ambient temperature

Always 0 (Tamb.is written specially on the marking label)

Note:

- Documentation for 112TE---/Exia includes the fact that the probes shall be supplied by galvanically isolated associated apparatus.

Temperature probe models **114TE_ _ _/Exia**, intrinsically safe with entity parameters as per table below:

Group	Vmax (Ui)	I _{max} (Ii)	Ci (nF)	Li (μH)
IIC	30	100	5*	30*
IIB	30	250	5*	30*
IIA	30	340	5*	30*

* with integral cable, 30m maximum

For dual probes product where the separation distance is below 0.5mm (resp.0.7mm) through the solid insulation (resp.through resin/compound), the entity parameters, for each probe are

Group	Vmax (Ui)	I _{max} (Ii)	Ci (nF)	Li (μH)
IIC	20	50	5*	30*
IIB	20	130	5*	30*
IIA	20	190	5*	30*

* with integral cable, 30m maximum

Model code: 114TE_ _ _/Exia

1st digit : probe type

- 1 : with nipple (see drawing 114TE04)
- 3 : without sleeve (see drawing 114TE06)
- 4 : with stainless steel connection head (see drawing 114TE03)

2nd digit : thermowell

- 0 : without thermowell
- 1 : with thermowell



REPORT: 7000097
PROJECT: 70125347

Master Contract: 257312
Date Issued: November 22, 2017

3rd digit : probe type

- 0 : simple RTD
- 1 : double RTD
- 2 : simple TC
- 3 : double TC

The temperature class of the probe models 114TE---/Exia depends on the ambient and process temperatures as listed in the table below

Temperature class of the probes	Ambient temperature [°C]
T6	-50 or -60 / +70
T5	-50 or -60 / +85
T4	-50 or -60 / +120

APPLICABLE REQUIREMENTS

- CSA C22.2 No. 0-M91 -General Requirements - Canadian Electrical Code, Part II
- CAN/CSA C22.2 No. 142-M1987 (R2009) – Process Control Equipments
- CSA C22.2 No. 157-M1992 - Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations
- CSA C22.2 No. 213-M2016 - Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations
- CSA C22.2 No 60079-0:15 - Explosive atmospheres - Part 0: Equipment - General requirements
- CSA C22.2 No 60079-1:16 - Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
- CSA C22.2 No 60079-11:14 - Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
- CSA C22.2 No 60079-15:16- Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus
- CSA C22.2 No 60079-18: 09 - Explosive atmospheres - Part 18: Encapsulation "m";
- CSA C22.2 No. 30-M1986 (R2012) – Explosion-Proof Enclosures for Use in Class I Hazardous Locations
- UL916: 2007 - Energy Management Equipment
- ISA 60079-0 (12.00.01): 2013 - Electrical Apparatus for Use in Class I, Zone 0, 1 & 2 Hazardous (Classified) Locations: General requirements
- ISA-60079-1 (12.22.01): 2009 R2013 - Electrical Apparatus for Use in Class I, Zone 1 Hazardous (Classified) Locations: Type of Protection Flameproof "d"
- ISA 60079-11 (12.02.01): 2014 - Electrical Apparatus for Use in Class I, Zone 0, 1 & 2 Hazardous (Classified) Locations - Intrinsic Safety "i"
- ISA 60079-15 (12.12.02): 2012 - Electrical Apparatus for Use in Class I, Zone 2 Hazardous (Classified) Locations: Type of protection "n"
- ANSI/ISA 60079-18 (12.23.01): 2009 - Explosive atmospheres - Part 18: Encapsulation "m";
- FM3600 : 2011 - Electrical Apparatus for Use in Hazardous (Classified) Locations – General Requirements
- FM3615 : 2006 - Explosionproof Electrical Equipment General Requirements



REPORT: 70000097
PROJECT: 70125347

Master Contract: 257312
Date Issued: November 22, 2017

MARKINGS

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only. Markings etched on metallic nameplates attached to temperature probes.

1. Submitter's identification (company name and/or file number and/or registered tradename);
2. Model designation;
3. Date of manufacture (or traceable serial number);
4. The _CCSA_{US} Monogram
5. Hazardous area;
6. Ambient temperature range;
7. Electrical ratings;
8. CSA Certificate number CSA.13. 70000097
9. Warning: 'DO NOT OPEN WHILE ENERGIZED/NE PAS OUVRIR SOUS TENSION' on Ex d/flameproof connection head

Markings are presented in drawings 111TE01, 112TE01, 113TE01, 114TE01, 215TE01.

Note: the marking shown on drawing 215TE01 is also representative for 215TE02 and 03.

Nameplate adhesive label material approval information:

NA



Supplement to Certificate of Compliance

Certificate: 70000097

Master Contract: 257312

*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
70125347	November 16, 2017	Update to report 70000097 to include new options on existing models and to modify existing Ex ia parameters
70007567	October 30, 2014	Update to report 70000097 to include new options on existing models and to modify existing Ex ia
70000097	October 10, 2013	Original Certification