

# (1) EU-TYPE EXAMINATION CERTIFICATE



- (2) Equipment and Protective Systems intended for use in Potentially Explosive Atmosphere - **Directive 2014/34/EU**
- (3) EU-Type Examination Certificate Number

## TÜV 20 ATEX 8603 X

Issue: 00

- (4) Equipment: **TEMPERATURE PROBES type 215TE\_/\_/Exia**
- (5) Manufacturer: **THERMO ENGINEERING Srl**
- (6) Address: **Via Giuseppina 19  
26030 – Malagnino (CR) - Italy**

- (7) This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
- (8) The TÜV Rheinland Zertifizierungsstelle für Explosionsschutz of TÜV Rheinland Industrie Service GmbH, Notified Body No. 0035 in accordance with Article 21 of the Council Directive 2014/34/EU of 26<sup>th</sup> February 2014, certifies this product which has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmosphere, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report IT/Ex 8603.00/20

- (9) Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:

**EN IEC 60079-0: 2018**

**EN 60079-11: 2012**

- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.
- (11) This EU-Type Examination Certificate relates only to the design and specification for construction of the equipment or protective system. It does not cover the process for actual manufacture or supply of the equipment or protective system, for which further requirements of the directive are applicable.
- (12) The marking of the equipment shall include the following:



**II 1 G Ex ia IIC T6,T5,T4 Ga**  
**II 1 D Ex ia IIIC T85°C,T100°C,T135°C Da**

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz

Cologne, 2023-04-15

Dipl.-Ing. Klaus Peter Graffi

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TÜV Rheinland Industrie Service GmbH TÜV Rheinland Group Am Grauen Stein 51105 Köln  
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(13) Annex

(14) **EU Type Examination Certificate**

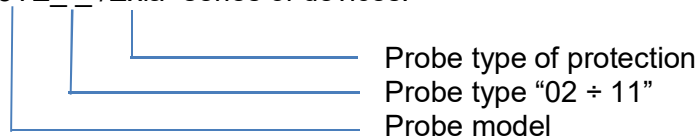
**TÜV 20 ATEX 8603 X** Issue: 00

(15) Description of equipment

15.1 Equipment and type:

These temperature probes are thermocouple or RTD (Resistance Temperature Detector) sensors. There are 10 probes versions which get the references from 215TE02/Exia to 215TE11/Exia. The enclosure materials of all the sensors are metallic (stainless steel) except for the type 215TE06/Exia which is in Teflon or fiber glass and epoxy resin. All temperature probes are protected by intrinsic safety "ia".

The "215TE\_\_/Exia" series of devices:



15.2 Description / Details of Change

General product information:

The 215TE\_\_/Exia series temperature probes are intrinsic safety devices that include a thermoelement (RTD or TC temperature probe) with a stem protected by a thermowell if necessary and, when available, by a brass connection head with threaded cover, o-ring seal (SILICONE - continuous operating temperature > 155°C) and metal (brass) cable gland with retaining rubber (SILICONE), or with a stainless steel terminal head and 3-piece coupling element and nipple, with optional thermowell.

Alternatively, IP66/67 cable glands with silicone seal rubber or equivalent can be used (Operating temperature ≥ 155°C).

Connection of the thermoelement to the external circuits can be direct via the brass, stainless steel connection head, or by connection cable, incorporated within the thermoelement, with a maximum length of 30m. The ceramic base is sealed with dual-component epoxy resin with a catalyser with an IT >155°C or resin and catalyzer with an IT >250°C, whilst the thermoelement (with extractable insert if

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necessary) is protected by an aluminum or stainless steel head connection, a nipple, a 3-piece coupling element and a thermowell where required. The insert consists of a base and an AISI 303, 304, 316 or equivalent metal stem that protects the probe.

### Technical Data

Intrinsic safety parameters without transmitter  
 (Group IIC/III, class T6/T85°C, Tamb. = 70°C):

U<sub>i</sub> = 30 V - C<sub>i</sub> = 5 nF (considering 30 m of cable)  
 I<sub>i</sub> = 100 mA - L<sub>i</sub> = 30 μH (considering 30 m of cable)  
 P<sub>i</sub> = 135 mW

When there are 2 Exi (dual probe) circuits in the same probe and the separation distance through the solid insulation is < 0.5 mm and/or < 0.7 mm through the compound/resin (see. 6.3.5 of EN/IEC 60079-11), the parameters for each Exi circuit (i.e. for each probe) are (Group IIC/III, class T6/T85°C, Tamb = +70°C).

U<sub>i</sub> = 20 V – C<sub>i</sub> = 5 nF (considering 30 m of cable)  
 I<sub>i</sub> = 50 mA – L<sub>i</sub> = 30 μH (considering 30 m of cable)  
 P<sub>i</sub> = 67 mW

Further details as per tables below:

Group	U <sub>i</sub> (V)	I <sub>i</sub> (mA)	C <sub>i</sub> (nF)	L <sub>i</sub> (μH)
IIC or III	30	100	5 *	30 *
IIB or III	30	250	5 *	30 *
IIA	30	340	5 *	30 *

\* maximum 30m of cable is considered.

Maximum Power input (P<sub>i</sub>) with Class of Temperature and Ambient Temperature:

For Class of Temperature T4 (T135 °C)

Maximum ambient temperature °C	Maximum Power Input (P <sub>i</sub> ) W
40	1.216
50	1.081
60	0.945
70	0.810
85	0.608
120	0.135

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For Class of Temperature T5 (T100 °C)

Maximum ambient temperature °C	Maximum Power Input (Pi) W
40	0.743
50	0.608
60	0.472
70	0.337
85	0.135

For Class of Temperature T6 (T85 °C)

Maximum ambient temperature °C	Maximum Power Input (Pi) W
40	0.540
50	0.405
60	0.270
70	0.135

For Dual probe, maximum input characteristics (for each probe).

Maximum input per Group :

Group	Ui (V)	Ii (mA)	Ci (nF)	Li (µH)
IIC or III	20	50	5 *	30 *
IIB or III	20	130	5 *	30 *
IIA	20	190	5 *	30 *
IIA	30	340	5 *	30 *

\* maximum 30m of cable is considered.

Maximum Power input (Pi) with Class of Temperature and Ambient Temperature:

For Class of Temperature T4 (T135 °C)

Maximum ambient temperature °C	Maximum Power Input (Pi) W
40	0.608
50	0.540
60	0.472
70	0.405
85	0.304
120	0.067

For Class of Temperature T5 (T100 °C)

Maximum ambient temperature °C	Maximum Power Input (Pi) W
40	0.371
50	0.304
60	0.236
70	0.168
85	0.067

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For Class of Temperature T6 (T85 °C)

Maximum ambient temperature °C	Maximum Power Input (Pi) W
40	0.270
50	0.202
60	0.135
70	0.067

Note:

For double probe used as a single probe. In Ex ia equipment with two elements (double RTD or double TC), end user can connect one alone element applying the one probe characteristics and parameters. In this case, end user must assures (condemn) the not connected probe, this second probe (Ex ia circuit) has not and never to be used. Moreover, end user needs to apply a procedure to forbids the connection of the second probe (i.e. cut of wires).

Environmental data:

-50°C ≤ Tamb ≤ +70°C - for the temperature class T6/T85°C

-50°C ≤ Tamb ≤ +85°C - for the temperature class T5/T100°C

-50°C ≤ Tamb ≤ +120°C - for the temperature class T4/T135°C

or

(\*) -60°C ≤ Tamb ≤ +70°C - for the temperature class T6/T85°C

(\*) -60°C ≤ Tamb ≤ +85°C - for the temperature class T5/T100°C

(\*) -60°C ≤ Tamb ≤ +120°C - for the temperature class T4/T135°C

(\*) Only with stainless steel connection heads and using the resin EPO-TEK 301-2.

Routine tests:

According to EN 60079-11: 2012 Clause 6.3.13 - Dielectric strength 1500V r.m.s. for 1 minute.

(16) Test-Report No. IT/Ex 8603.00/20

(17) Special Conditions for safe use

1. The alternative type 215TE06/Exia must be only settled inside an Ex protective metallic enclosure (stator of engine for example).
2. Each equipment shall be subjected to the routine test according to EN 60079-11: 2012 Clause 6.3.13 - Dielectric strength 1500V r.m.s. for 1 minute.

The other conditions of use are stipulated in the instructions.

(18) Basic Safety and Health Requirements

Covered by afore mentioned standard

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz

Cologne, 2023-04-15



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