

# CERTIFICATE

## (1) EC-Type Examination

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 03ATEX1245 X** Issue Number: **3**

(4) Equipment: **Temperature Sensor Assembly, Type XPS2**

(5) Manufacturer: **Thermo Electric Instrumentation B.V.**

(6) Address: **Coenecoop 71-73, 2741PH Waddinxveen, The Netherlands**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 atmospheres given in Annex II to the directive.

The examination and test results are recorded in confidential test report number NL/DEK/ExTR11.0008/xx.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with

**EN 60079-0 : 2012**

**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 EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:



**II 2 G Ex ia IIC T6 ... T1 Gb or Ex ib IIC T6 ... T1 Gb**

This certificate is issued on 8 July 2014 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

DEKRA Certification B.V.

R. Schuller  
Certification Manager

Page 1/3



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(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 03ATEX1245 X**

Issue No. 3

(15) **Description**

The Temperature Sensor Assembly, Type XPS2 for temperature measurement, in different versions, consists of one or more inserts, optional extension parts, a junction box or a connection head provided with terminals or one or more temperature transmitters. for connection to an external intrinsically safe circuit.

The insert consists of a metal sheathed mineral insulated cable available in various diameters and lengths, provided with one or two thermocouple or RTD temperature sensing elements.

The tip of the mineral insulated cable is closed by welding.

The other side of the mineral insulated cable is either

- provided with a potted transition part and a cable, available with various insulating materials, with or without braiding or
- provided with a potted end, lead wires and optionally a terminal block.

**Electrical data**

Insert data

Output circuits: in type of protection intrinsic safety Ex ia IIC, only to be connected to a certified intrinsically safe circuit, with the following maximum values for each insert:

$U_i = 14 \text{ V}$ ,  $I_i = 60 \text{ mA}$ ,  $P_i = 140 \text{ mW}$ ,  $C_i = 60 \text{ nF}$ ,  $L_i = 0 \text{ mH}$

Transmitter data:

Transmitter data:  $U_i = 45 \text{ Vdc max.}$ ,  $I_i = 50 \text{ mA max.}$ ,  $P_i = 2,25 \text{ W max.}$

In type of protection intrinsic safety Ex ia IIC or Ex ib IIC, only to be connected to a certified intrinsically safe circuit, with the maximum values according to the data listed in the certificate of the transmitter.

The sensor input parameters of the transmitter shall comply with the parameters of the inserts.

**Thermal data**

Ambient temperature range without transmitter:  $-40 \text{ }^\circ\text{C}$  to  $+75 \text{ }^\circ\text{C}$ .

For versions with an integrally mounted certified intrinsically safe transmitter the ambient temperature range may also depend on the transmitter specifications.:

- The highest minimum ambient temperature as mentioned above and as mentioned on the transmitter, is decisive.
- The maximum ambient temperature of the assembly is  $+75 \text{ }^\circ\text{C}$  or the maximum ambient temperature as mentioned on the transmitter -  $10 \text{ K}$ , whichever is the smaller.

The maximum surface temperature due to process conditions ( $T_p$ ) is the maximum surface temperature of any part of the assembly in contact with the explosive atmosphere.

The temperature class and the maximum surface temperature of the assembly depend on  $T_p$  and, when mounted, on the temperature class of the integrally mounted transmitter, as listed in the table below.

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 03ATEX1245 X**

Issue No. 3

Tp [°C]	Temperature class transmitter	Temperature class of the assembly	Max. surface temperature of the assembly [°C]
≤ 75	T6	T6	85
≤ 90	T6 or T5	T5	100
≤ 125	T6 to T4	T4	135
≤ 190	T6 to T3	T3	200
≤ 290	T6 to T2	T2	300
≤ 440	T6 to T1	T1	450
> 440	T6 to T1	-	Tp + 10

(16) **Test Report**

No. NL/DEK/ExTR11.0008/xx.

(17) **Specific conditions of use**

When the process temperature range exceeds the specified ambient temperature range, it shall be verified by on-site temperature measurements, taking the worst case conditions into account, that the service temperature of the connection head and the connection box does not exceed the ambient temperature range.

The measurement report with the conclusions shall be filed together with the certificate to prove that this condition is met.

From a safety point of view,

- the thermocouple inserts with a nominal tip diameter less than 3,0 mm,
- all inserts with a grounded thermocouple and
- the RTD inserts with a nominal tip diameter less than 4,8 mm

shall be considered to be connected to ground.

The electrical parameters and ambient temperature range are as listed at description (15).

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. NL/DEK/ExTR11.0008/xx.