

CERTIFICATE

(1) Type Examination

(2) **Product intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) Type Examination Certificate Number: **KEMA 05ATEX1033 X** Issue Number: 4

(4) Product: **Temperature Sensor Assembly, Type XPS4**

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

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

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

(8) DEKRA Certification B.V., certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014.

The examination and test results are recorded in confidential test report no. NL/DEK/ExTR11.0008/04.

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

EN IEC 60079-0 : 2018

EN 60079-7 : 2015 + A1 : 2018

except in respect of those requirements listed at item 18 of the Schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This Type Examination Certificate relates only to the design and construction of the specified product and not to the manufacturing process and its monitoring.

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



II 3 G

Ex ec IIC T6 ... T1 Gc

Date of certification: 27 March 2023

DEKRA Certification B.V.

R. Schuller
Certification Manager

(13) **SCHEDULE**

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(15) **Description**

The Temperature Sensor Assembly, Type XPS4 for temperature measurement, in different versions, consists of one or more inserts, a junction box or a connection head provided with terminals or one or more temperature transmitters and optionally extension parts.

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

Thermocouple sensing element 5 Vdc, 10 mA

RTD sensing element 5 Vdc, 10 mA

Transmitter data

max. 45 Vdc, max 50 mA, max 2,25 W

The sensor input parameters of the transmitter shall not exceed 5 Vdc, 10 mA.

Thermal data

The maximum ambient temperature (T_{amax}) is +75 °C.

The ambient temperature range, the service temperature range of the transition, cables and the connection head and connection box depend on the material of the cable insulation as listed in the table below

Cable insulation	Service temperature range of the cables	Service temperature range of the transition part, the connection head and the connection box	Ambient temperature range
Silicon	-25 °C to 160 °C	-25 °C to 80 °C	-25 °C to T _{amax}
Teflon	-40 °C to 180 °C	-40 °C to 80 °C	-40 °C to T _{amax}

For versions with an integrally mounted 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 °C or the maximum ambient temperature as mentioned on the transmitter - 10 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.

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The temperature class and the maximum surface temperature of the assembly depend on T_p , as listed in the table below.

T_p [°C]	Temperature class of the assembly	Max. surface temperature of the assembly [°C]
80	T6	85
95	T5	100
130	T4	135
195	T3	200
295	T2	300
445	T1	450
> 445	-	$T_p + 5$

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

No. NL/DEK/ExTR11.0008/04.

(17) **Specific conditions of use**

When the process temperature range exceeds the service temperature range of the transition part, the connection head, the connection box and the cable as listed above, it shall be verified by on-site temperature measurements, taking the worst case conditions into account, that the service temperature of these parts does not exceed the range as listed above.

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

Inserts with a diameter smaller than 3 mm shall be protected against mechanical danger.

The sensor assembly with connection head and extension part shall have a degree of protection of at least IP54, provided by the user with a thermowell or equivalent component at the process side of the assembly.

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 item (9).

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(19) **Test documentation**

As listed in Report No. NL/DEK/ExTR11.0008/04.

(20) **Certificate history**

Issue 1 - 202924200	Initial certificate
Issue 2 - 211811900	Assessment to 60079 series standards, Name change of manufacturer.
Issue 3 - 216887400	Assessment to recent standard editions, Name change of manufacturer
Issue 4 - 226097600	Assessment to recent edition of the standards.