

CERTIFICATE

(1) Type Examination

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

(3) Type Examination Certificate Number: **KEMA 05ATEX1033 X** Issue Number: **2**

(4) Equipment: **Temperature Sensor Assembly Thermo Electric Type XPS4**

(5) Manufacturer: **Doedijns 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., 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 no. NL/DEK/ExTR11.0008/xx.

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

EN 60079-0 : 2006

EN 60079-15 : 2005

(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 Type Examination Certificate relates only to the design, examination and tests of the specified equipment and not to the manufacturing process and supply of this equipment.

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



II 3 G

Ex nA II T6 to T1

This certificate is issued on 6 May 2011 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.

C.G. van Es
Certification Manager

(13) **SCHEDULE**

(14) **to Type Examination Certificate KEMA 05ATEX1033 X**

Issue No. 2

(15) **Description**

The Temperature Sensor Assembly Thermo Electric Type XPS4 for temperature measurement, in different versions, consists of one or more inserts, a junction box or a connection head provided with terminals 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

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 parameters of the sensor connection at the transmitters shall comply with the parameters of the sensing elements.

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.

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

(13) **SCHEDULE**

(14) **to Type Examination Certificate KEMA 05ATEX1033 X**

Issue No. 2

Tp [°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	-	Tp + 5

Installation instructions

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

(16) **Test Report**

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

(17) **Special conditions for safe use**

It shall be verified that the surface temperature of the connection head and the connection box does not exceed the specified maximum ambient temperature.

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 (9).

(19) **Test documentation**

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