Translation

(1) # EC-Type-Examination Certificate

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

(3)	**Certificate Number**	**TÜV 15 ATEX 164143 X**
(4)	for the equipment:	Analog pH-sensor type SE 557X/*-*VP*[-***]
(5)	of the manufacturer:	Knick Elektronische Messgeräte GmbH &Co. KG
(6)	Address:	Beuckestr. 22, D-14163 Berlin
	Order number:	8000 449709
	Date of issue:	2015-11-16

(7) The design of this equipment or protective system and any acceptable variation thereto are specified in the schedule to this EC-Type-Examination Certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH, notified body No. 0044 in accordance with Article 9 of the Council Directive of the EC of March 23, 1994 (94/9/EC), certifies that this equipment or protective system 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 the confidential report No. 15 203 164143.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2012 +A11:2013 **EN 60079-11:2012**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system 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 in accordance 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 or protective system must include the following:

Ex **II 1G Ex ia IIC T4/T6 Ga**

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the notified body

Meyer

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(13) **S C H E D U L E**

(14) **EC-Type-Examination Certificate No. TÜV 15 ATEX 164143 X**

(15) Description of equipment:
Intrinsically safe glass analog pH-sensor type SE 557X/*-*VP*[-***] equipped with an integrated Pt 1000 temperature probe (IST AG MiniSens type P1k0.161) is used for measurement of pH-values and temperatures for different media.
The connection of the intrinsically safe circuit is possible via plug.

Type code:
SE5 57 X /* -*VP * [-***]

N: Normal highly alkali-resistant glass by a process temperature range of -20°C...100°C
H: High temperature glass by a process temperature range of 0°C...135°C

The other asterisks have no relevance for safety.

Parameters:
Electrical parameters:
The electrical parameters of the intrinsically safe analog pH-sensor type SE 557X/*-*VP*[-***] depend on the temperature class:

Sensor circuit in type of protection Intrinsic Safety Ex ia IIC

Temperature class	Maximum input voltage U_i	Maximum input current I_i	Maximum input power P_i
T6	12V	100mA	40mW
T4	18V	170mA	200mW

Internal effective capacitance C_i negligible small
Internal effective inductance L_i negligible small

Thermal parameters:
Ambient temperature range of the connection head resp. permissible process temperatures depending on the maximum input power P_i and the temperature class are given in the following table:

For the pH-sensor type SE 557X/*-*VPN [-***]:

Temperature class	Maximum input power P_i	Ambient temperature range of the connection head	Permissible process temperature
T6	40 mW	-20 °C up to +55 °C	55 °C
T4	200 mW	-20 °C up to +100 °C	100 °C

For the pH-sensor type SE 557X/*-*VPH [-***]:

Temperature class	Maximum input power P_i	Ambient temperature range of the connection head in °C	Permissible process temperature
T6	40 mW	0 °C up to +55 °C	55 °C
T4	200 mW	0 °C up to +135 °C	135 °C

(16) The test documents are listed in the test report No. 15 203 164143.

(17) Special conditions for safe use

17.1 Permissible ambient temperature range / process temperature see specifications.
17.2 The temperature classification depends on the ambient temperature and the input power, the user manual has to be observed.
17.3 Metallic process connection parts have to be included in the local potential equalization.
17.4 The intrinsically safe circuit is connected to earth, along the intrinsically safe circuit potential equalization must exist.

(18) Essential Health and Safety Requirements
No additional ones