

SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 06 ATEX 2017 X**

(15) Description of equipment

The process pressure transducers, types IPT-10/11-*-*-*-*-*C-**, are used for level measurement in potentially explosive atmospheres requiring category-1 or category-1/2 or category-2 equipment. The enclosure may be optionally fitted with the control and display module "AB module:WIKA" for either parameterization or visualization.

The process pressure transducers consist of an electronics housing with the corresponding analyzing electronic system, the process connectors and the sensor.

Category-1 equipment

The process pressure transducers are installed in potentially explosive atmospheres requiring category-1 equipment.

Category-1/2 equipment

The electronics housing is installed in potentially explosive atmospheres requiring category-2 equipment. The process connectors are installed in the partition separating areas requiring category-2 or category-1 equipment. The sensor is installed in the potentially explosive atmosphere for category-1 equipment.

Category-2 equipment

The process pressure transducers are installed in potentially explosive atmospheres requiring category-2 equipment.

For the relationship between the temperature class and the maximum permissible temperature at the sensor and the maximum permissible ambient temperature for the electronic system, reference is made to the following table.

Category-1 equipment

process pressure transducers, types IPT-10/11-4/5-*-*-*-*-*C-**

temperature class	temperature at the sensor	ambient temperature for the electronic system
T5	-20 ... +43 °C	-20 ... +43 °C
T4, T3, T2, T1	-20 ... +60 °C	-20 ... +60 °C

process pressure transducers, types IPT-10/11-R-*-*-*-*-*C-**

temperature class	temperature at the sensor	ambient temperature for the electronic system
T6	-20 ... +39 °C	-20 ... +39 °C
T5	-20 ... +51 °C	-20 ... +51 °C
T4, T3, T2, T1	-20 ... +60 °C	-20 ... +60 °C

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For applications requiring category-1 equipment, the media process pressure has to be between 0.8 bar and 1.1 bar. The permissible ambient temperatures specified for the sensor are based on the 80 % rule in section 6.4.2 of EN 1127-1.

For the process conditions without explosive mixtures, reference shall be made to the specifications provided by the manufacturer.

Category-1/2 equipment

process pressure transducers, types IPT-10/11-4/5-***-**-*****C-**

temperature class	temperature at the sensor	ambient temperature for the electronic system
T6	-20 ... +57 °C	-40 ... +47 °C
T5	-20 ... +60 °C	-40 ... +62 °C
T4, T3, T2, T1	-20 ... +60 °C	-40 ... +90 °C

process pressure transducers, types IPT-10/11-R-***-**-*****C-**

temperature class	temperature at the sensor	ambient temperature for the electronic system
T6	-20 ... +57 °C	-40 ... +55 °C
T5	-20 ... +60 °C	-40 ... +70 °C
T4, T3, T2, T1	-20 ... +60 °C	-40 ... +90 °C

For applications requiring category-1/2 equipment, the media process pressure has to be between 0.8 bar and 1.1 bar. The permissible ambient temperatures specified for the sensor are based on the 80 % rule in section 6.4.2 of EN 1127-1.

If the process pressure transducers, types IPT-10/11-**-***-**-*****C-** are operated with higher temperatures than indicated in the table above, it shall be guaranteed by suitable measures, taking into account a temperature rise of the sensor of 7 K, that no ignition hazard is caused by such hot surfaces. In this case the temperature at the electronics housing shall not exceed the respective values of the table above.

For the process conditions without explosive mixtures, reference shall be made to the specifications provided by the manufacturer.

Category-2 equipment

process pressure transducers, types IPT-10/11-4/5-***-**-*****C-**

temperature class	temperature at the sensor	ambient temperature for the electronic system
T6	-40 ... +73 °C	-40 ... +47 °C
T5	-40 ... +88 °C	-40 ... +62 °C
T4	-40 ... +123 °C	-40 ... +90 °C
T3, T2, T1	-40 ... +188 °C	-40 ... +90 °C

process pressure transducers, types IPT-10/11-R-***-**-*****C-**

temperature class	temperature at the sensor	ambient temperature for the electronic system
T6	-40 ... +73 °C	-40 ... +55 °C
T5	-40 ... +88 °C	-40 ... +70 °C
T4	-40 ... +123 °C	-40 ... +90 °C
T3, T2, T1	-40 ... +188 °C	-40 ... +90 °C

If the process pressure transducers, types IPT-10/11-*.***-**-*****C-** are operated with higher temperatures than indicated in the table above, it shall be guaranteed by suitable measures, taking into account a temperature rise of the sensor of 7 K, that no ignition hazard is caused by such hot surfaces. In this case the temperature at the electronics housing shall not exceed the respective values of the table above.

For the permissible operating temperatures and pressures, reference shall be made to the specifications provided by the manufacturer.

Electrical data

Supply and signal circuit

(terminals 1[+], 2[-] in the electronics compartment, for the 2-cell enclosure version in the terminal compartment)

Process pressure transducers

types IPT-10/11-4/5-*-**-*****C-****

Category 1 respectively category 1/2

Type of protection Intrinsic Safety EEx ia IIC/IIB

Category 2

Type of protection Intrinsic Safety EEx ia IIC/IIB
resp. EEx ib IIC/IIB

For connection to a certified intrinsically safe circuit.

Maximum values:

$$U_i = 17.5 \text{ V}$$

$$I_i = 500 \text{ mA}$$

$$P_i = 5.5 \text{ W}$$

C_i negligibly low

$$L_i \leq 10 \mu\text{H}$$

The equipment is suitable for the connection to a field bus system according to FISCO (IEC 60079-27), e.g. PROFIBUS-PA or Foundation Fieldbus.

or

$$U_i = 24 \text{ V}$$

$$I_i = 250 \text{ mA}$$

$$P_i = 1.2 \text{ W}$$

C_i negligibly low

$$L_i \leq 10 \mu\text{H}$$

Process pressure transducers

types IPT-10/11-R-*_**_*****C-****

Category 1 respectively category 1/2 respectively Category 2

Type of protection Intrinsic Safety EEx ia IIC

For connection to a certified intrinsically safe circuit.

Maximum values:

$$U_i = 30 \text{ V}$$

$$I_i = 131 \text{ mA}$$

$$P_i = 983 \text{ mW}$$

C_i negligibly low

L_i negligibly low

Process pressure transducers

types IPT-10/11-*_*_**_*****C-****

Type of protection Intrinsic Safety EEx ia IIC

For connection to the intrinsically safe supply and signal circuit of the external display and programming module for IPT-10/11 (PTB 06 ATEX 2020 X).

Control and display circuit
(terminals No. 5,6,7,8 in the electronics compartment or plug connector for the 2-cell version)

The rules for interconnection of intrinsically safe circuits between the process pressure transducers and the external display and programming module for IPT-10/11 are complied with if the total inductance and capacitance of the connecting line between the process pressure transducers and the external display and programming module for IPT-10/11 ($L_{\text{cable}} = 100 \mu\text{H}$ and $C_{\text{cable}} = 2.8 \mu\text{F}$) is not exceeded.

A control and display module (AB module.WIKA) installed in the process pressure transducers has been considered.

Control and display module circuit
(spring contacts in the electronics compartment, additionally for the 2-cell housing version in the terminal compartment.)

type of protection Intrinsic Safety EEx ia IIC

Only for connection to the control and display module (AB module.WIKA).

With the 2-cell housing version, the control and terminal display module may be housed either in the electronics compartment or the terminal compartment.

The metal elements of the process pressure transducers are electrically connected to the earth terminals.

The intrinsically safe circuits are safely electrically isolated from elements that may be earthed.

(16) Test report PTB Ex 06-26091


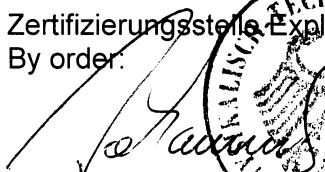
(17) Special conditions for safe use

1. The process pressure transducers, types IPT-10/11-*-*-*-*-*C-**, which include the material aluminium, shall be installed in such a way that sparking as a result of impact or friction between aluminium and steel (with the exception of stainless steel if the presence of rust particles can be excluded) is excluded.
2. When used as category-1 or category-1/2 equipment the process pressure transducers which include the material titanium shall be installed in such a way that sparking as a result of impact or friction between titanium and any other hard material is excluded.
3. The process pressure transducers with plastic enclosure and plastic sheathed sensor include surfaces that can become charged electrostatically (note warning label).

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionschutz
By order:



Dr.-Ing. U. Johannsmeyer
Direktor und Professor

Braunschweig, May 15, 2006