Mini temperature switch
AISI 316, Ex protection Ex-d, IP 66
Model TXA

Applications

- Temperature monitoring and direct switching of electrical loads
- Control and regulation of industrial processes
- Universally suitable for machine building, plant, vessel, apparatus construction and food industry, chemical industry, petrochemical industry
- For measuring points with limited space
- Ignition protection type: GAS Ex-d DUST Ex-tD Gr. II Cat. 2 GD

Special features

- Case from AISI 316 (1.4401)
- Ingress protection IP 66, NEMA 4
- Ambient temperature -40 ... +85 °C
- 1 switch point, SPDT, up to 5 A/AC 220 V
- Directly connected or via capillary (up to 10 m capillary)

Fig. left: Temperature switch model TXA
Fig. right: Temperature switch model TXA with Ex-d surface-mounted junction box

Description

These high-quality and robust mini temperature switches have been developed especially for safety-critical applications. High quality and product manufacturing ensures reliable monitoring of your plant. The manufacturer Cella is certified to ISO 9001. In production, the switches are traced by quality assurance software at every step and subsequently are 100 % tested.

All wetted materials are from stainless steel as a standard AISI 316. Each switch family is available in IP 66, Ex-ia or Ex-d versions.

In order to ensure as flexible operation as possible, the temperature switches are fitted with micro switches, which enable the switching of an electrical load of up to 5 A/ AC 220 V directly. For smaller contact ratings, such as for PLC applications, hermetically-sealed micro switches with gold-plated contacts can be selected as an option.

With its flexible AISI 316 spiral protective sleeve, the model TXA temperature switch is extremely robust and guarantees optimal operating characteristics for applications requiring particularly high corrosion protection.

Data sheets showing similar products:
Temperature switch, stainless steel version, IP 65; model TWG; see data sheet TV 31.60
Compact temperature switch, IP 65; model TCS; see data sheet TV 31.64
Mini temperature switch, AISI 316; model TXS; see data sheet TV 31.70

Standard version

Case
Stainless steel AISI 316 (1.4401)

Ingress protection
IP 66 per EN 60529 / IEC 529 (NEMA 4)

Permissible ambient temperature
-40 ... +85 °C

Connection to thermowell
Stainless steel, connection thread ½ NPT

Stem
AISI 316
Diameter: 9.5 mm
Length: see table “Sensor length X and immersion depth Y”

Measuring system
Gas-actuated temperature system
dependant on the temperature range, SAMA class II C or class II A

Capillary length

Length	Code
Direct assembly	B
2 m	C
5 m	Q [1]
10 m	R [1]

1) The maximum permissible height difference between sensor and housing is 2 m.

Immersion depth
The maximum immersion depth Y (see dimensional drawing) can be calculated as per the following equation:
Capillary length in metres x 145 mm

Example:
Capillary length 2 m
=> 2 x 145 mm = 290 mm = max. immersion depth

The length K is reduced accordingly.

Switch contacts

Code	Design	Electrical rating (resistive load)	
		AC	DC
E	**Silver contacts** hermetically sealed in air	5 A, 220 V	5 A, 24 V
J	**Gold contacts** hermetically sealed in air	0.5 A, 220 V	1 A, 24 V

Setting ranges, working range, max. test temperature, max. switch hysteresis

Setting range	Working range	Max. test temperature	Max. switch hysteresis	SAMA class
-15 ... +20 °C	-40 ... +50 °C	+70 °C	5 °C	II C
5 ... 70 °C	-40 ... +95 °C	+120 °C	6 °C	II C
55 ... 140 °C	-40 ... +160 °C	+190 °C	6 °C	II C
130 ... 190 °C	-40 ... +215 °C	+230 °C	12 °C	II A
180 ... 250 °C	-40 ... +300 °C	+330 °C	12 °C	II A

Switch points
After pushing up the housing cover ring, **switch point adjustment** can be made using the spring-loaded hold-down device. The switch point is settable within the entire measuring range with the **following rules**:

- Define the value A = 2 x repeatability accuracy + switch hysteresis
- If the temperature is rising, the switch point should be set between (min. + value A) and max. of the setting range
- If the temperature is falling, the switch point should be set between min. and (max. - value A) of the setting range

Example:
Setting range: 40 ... 100 °C with one switch contact
Repeatability: 1 % of 100 °C = 1 °C
Switch hysteresis = 1.5 °C (see table “setting ranges”)
Value A = 2 x 1 °C + 1.5 °C = 3.5 °C
If the temperature is rising, the switch point should be set between 43.5 °C and 100 °C.
If the temperature is falling, the switch point should be set between 40 °C and 96.5 °C (96.5 °C = 100 °C - 3.5 °C).
For optimal performance we suggest to set the switch point between 25 % and 75 % of the setting range.

Electrical connection
Male thread ½ NPT
Cable connection: multi-core cable, 1.5 m long, 0.5 mm²
Protective earth connection: Internal and external screw terminal (option)
Earth cable cross-section: max. 4 mm²

Temperature switch certified per:
Low voltage directive 73/23 EEC and 93/68 EEC

Dielectric strength
Safety class I (EN 61298-2: 1997-06)

Mounting
Direct assembly
Bracket for wall or 2" pipe mounting (option)

Weight

Direct assembly	approx. 0.8 kg
with 2 m capillary	approx. 1.0 kg
with 5 m capillary	approx. 1.4 kg
with 10 m capillary	approx. 2.1 kg

Options

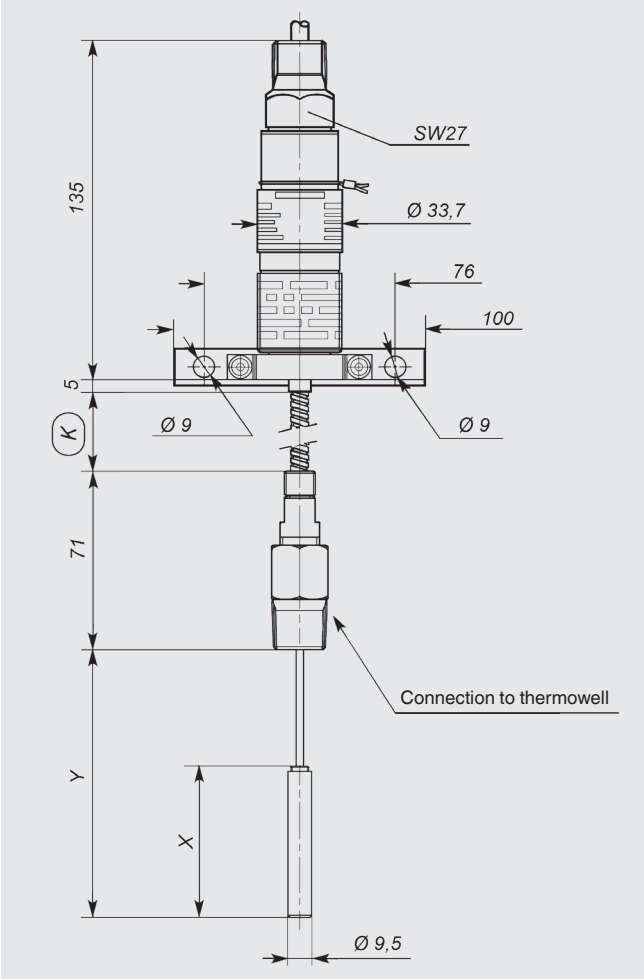
- Other process connection
- Electrical connection ½ NPT, ¾ NPT, M20 x 1.5 (female) or M20 x 1.5 (male)
- Switch point adjustment to customer specification
- 2" pipe mounting set
- Surface-mounted junction box, Ex-d, IP 66, -40 ... +60 °C
- Version for offshore, geothermal or tropicalised application
- Version for applications to NACE
- Version for ammonia applications
- Accessories
  Thermowells

Approvals and certificates

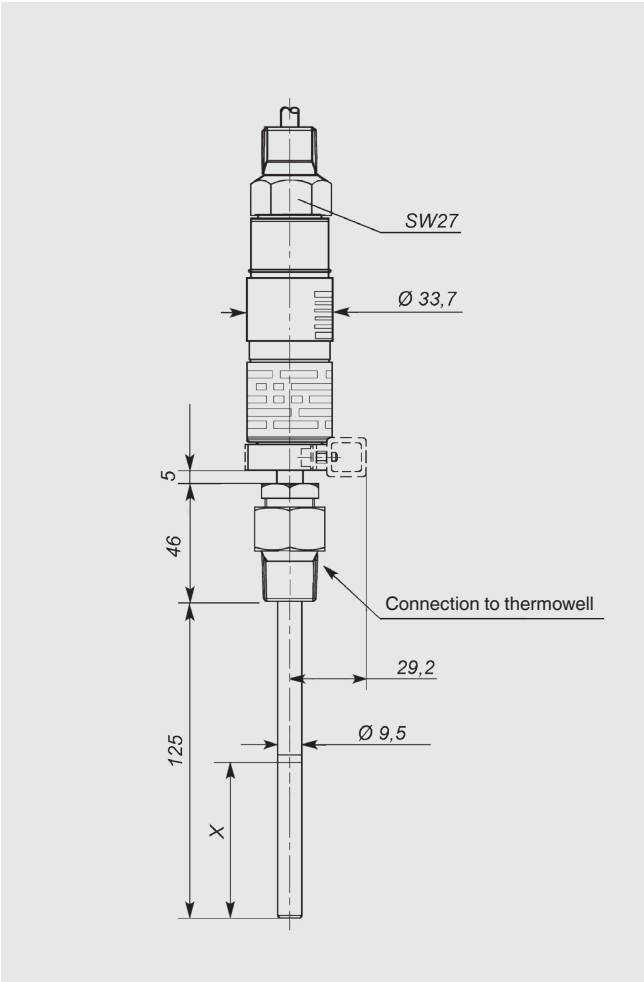
- GOST-R certificate
- Test certificate *CA* (confirmation of the switching accuracy)
- Test report *CP* (3-time listing of the switch point, requires switch point specification)
- Material certificate 3.1 per EN 10204

Dimensions in mm

Model TXA with capillary (code C, Q, R)



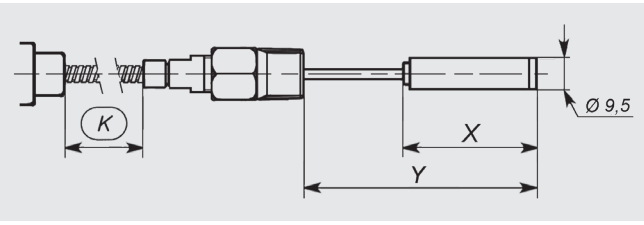
Model TXA for direct mounting (code B)



Sensor length X and immersion depth Y

Capillary length	Code	Dimensions in mm X	Y	Y_{max}	Weight in kg
Direct assembly	B	50	125	125	0.8
2 m	C	50	100	350	1.0
5 m	Q [2]	70	130	900	1.4
10 m	R [2]	100	170	1,800	2.1

2) The maximum permissible height difference between sensor and housing is 2 m.



Ordering information

Model / Switch contact / Capillary length / Setting range / Process connection / Electrical connection / Switch point(s) / Switching direction(s) / Options

Example: TXA4 - B - E - 5/70 °C - 1/2" NPT-M - 1/2" NPT-M

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel. (+49) 9372/132-0
Fax (+49) 9372/132-406
E-mail info@wika.de
www.wika.de

06/2012 GB