

## Applications

- Measuring range: -200 .. +600°C
- Fine chemicals industry
- Light energy industry
- General industrial services
- Food industry

## Features

- Stainless Steel AISI321 / 1.4541 or AISI316L / 1.4404, AISI316Ti / 1.4571 upon request
- Temperature transmitter can be installed inside connection head of sensor
- Connection head with local LCD or LED display as an option (see model DANWdie-LED)

The sensor consists of fixed measuring insert and aluminum connection head where mounting a temperature transmitter with 4-20 mA/HART® or Profibus®PA output signal is possible.

Insertion length, diameter, connection head as well as type and number of sensors, accuracy and method of connection can be selected individually for the respective application.

### Temperature Transmitter (Option)

Transmitter is mounted inside the connection head of the sensor: directly on measuring inset or in the high cap of head.

The second method is advantageous as it allows changing standard measuring inset quickly without a need to disassemble the transmitter; it means reduction of time and costs of maintenance of the sensor and protecting wires against any damage possible.

Mounting of two transmitters inside the connection head available upon request.



Sensor with connection head DANW

Sensor with connection head NA

### ATEX and EAC Ex versions

Intrinsically safe and Flameproof designs are available for applications in hazardous areas. These models are provided with certificate for „intrinsically safe“ and „flameproof“ type of protection according to Directive 2014/34/UE (ATEX) and EAC Ex TR-CU 012/2011 (Eurasian Economic Union).

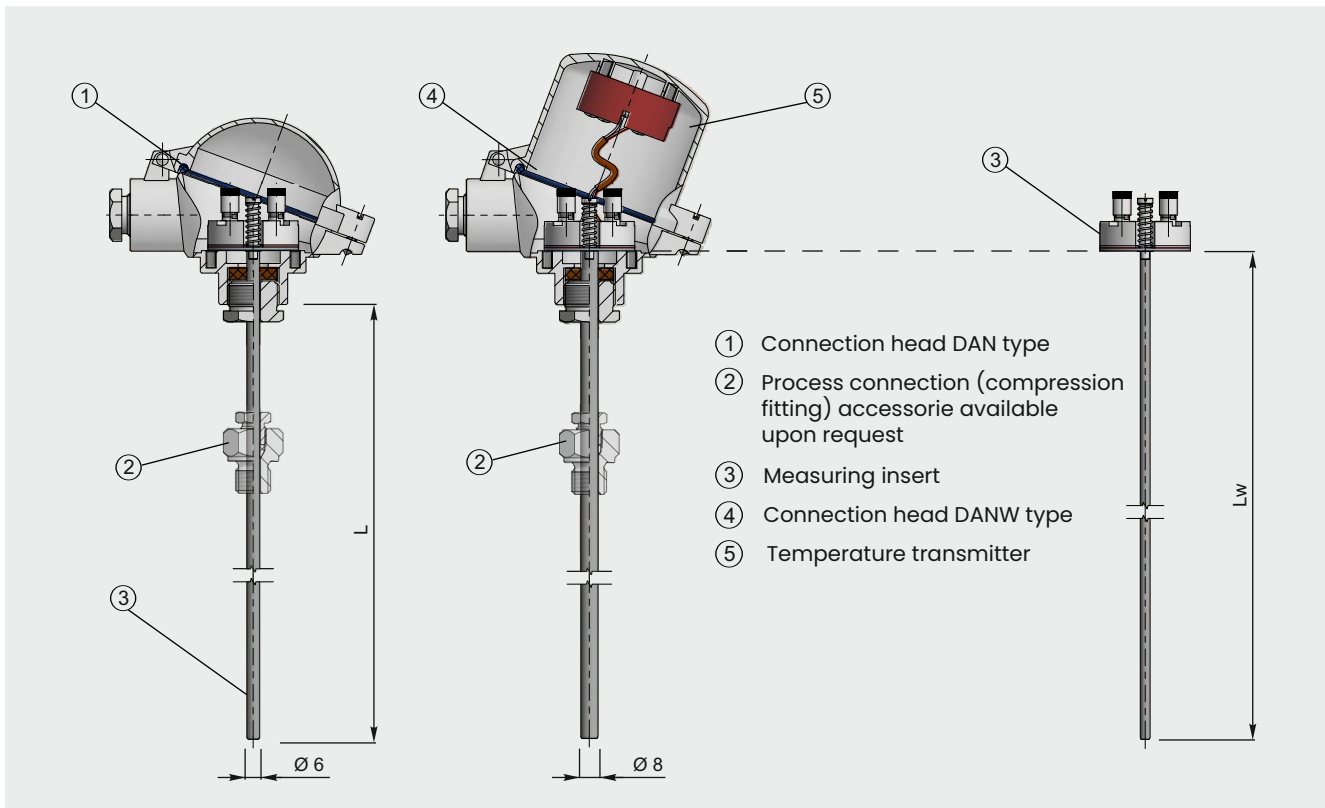
Intrinsically safe (Exi) data sheet XI-TOPI

Flameproof (Exd) data sheet XD-TOPI

### Other versions

This data sheet contains only small part of our supplies program of resistance thermometers with fixed measuring insert. Upon the customer's request, other versions can also be delivered.

## Designs



## Connection line

Measuring insert [ mm ]	Connection line					
	1 x Pt 100			2 x Pt 100		
	2-wire	3-wire	4-wire	2-wire	3-wire	4-wire
Ø 8	✓	✓	✓	✓	✓	✓
Ø 6	✓	✓	✓	✓	✓	✓

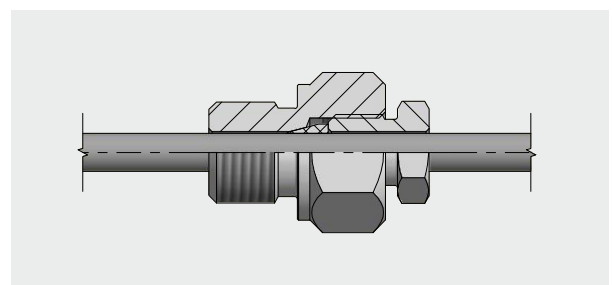
## Compression fittings

Allows simple adaptation to the required insertion length at the installation point.

Material: stainless steel  
Sealing ring material: stainless steel or PTFE

Sealing rings of stainless steel can be adjusted once, after unscrewing, sliding along the sheath is no longer possible. Max. temperature at process connection 500°C.

Sealing rings of PTFE can be adjusted several times, after unscrewing, repeated sliding along the sheath is still possible. Max. temperature at process connection 150°C



More detailed information are available in the „Compression fittings UG“ data sheet

## Response time

Insert dia. [ mm ]	in water 0.4 m/s		in air 3 m/s	
	t <sub>50</sub>	t <sub>90</sub>	t <sub>50</sub>	t <sub>90</sub>
Ø 6	4	10	40	105
Ø 8	9.5	15	96	160

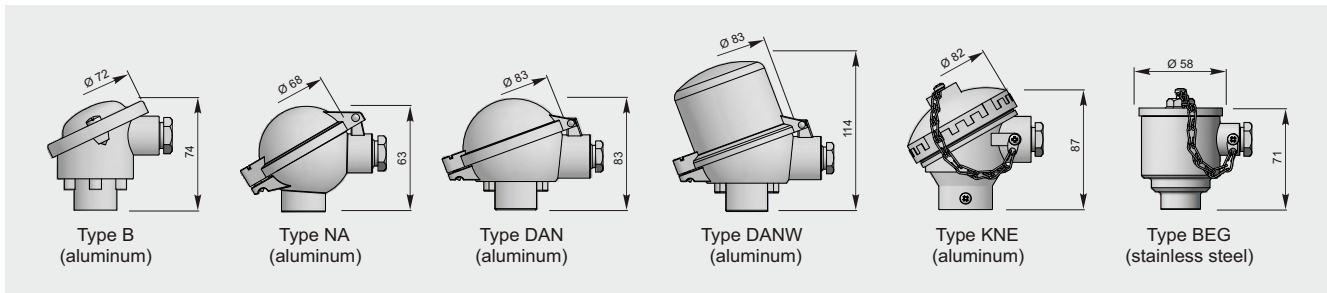
### Tolerances

Basic values and limiting errors for the platinum measurement resistances are laid down in PN-EN 60 751.

Class of Tolerance	Tolerance °C
A	$\pm 0.15 + (0.002 \times  t )$
B	$\pm 0.30 + (0.005 \times  t )$

### Connection heads

This sensor can be fitted with one of the following connection heads. For more information about the connection heads see section "Accessories".



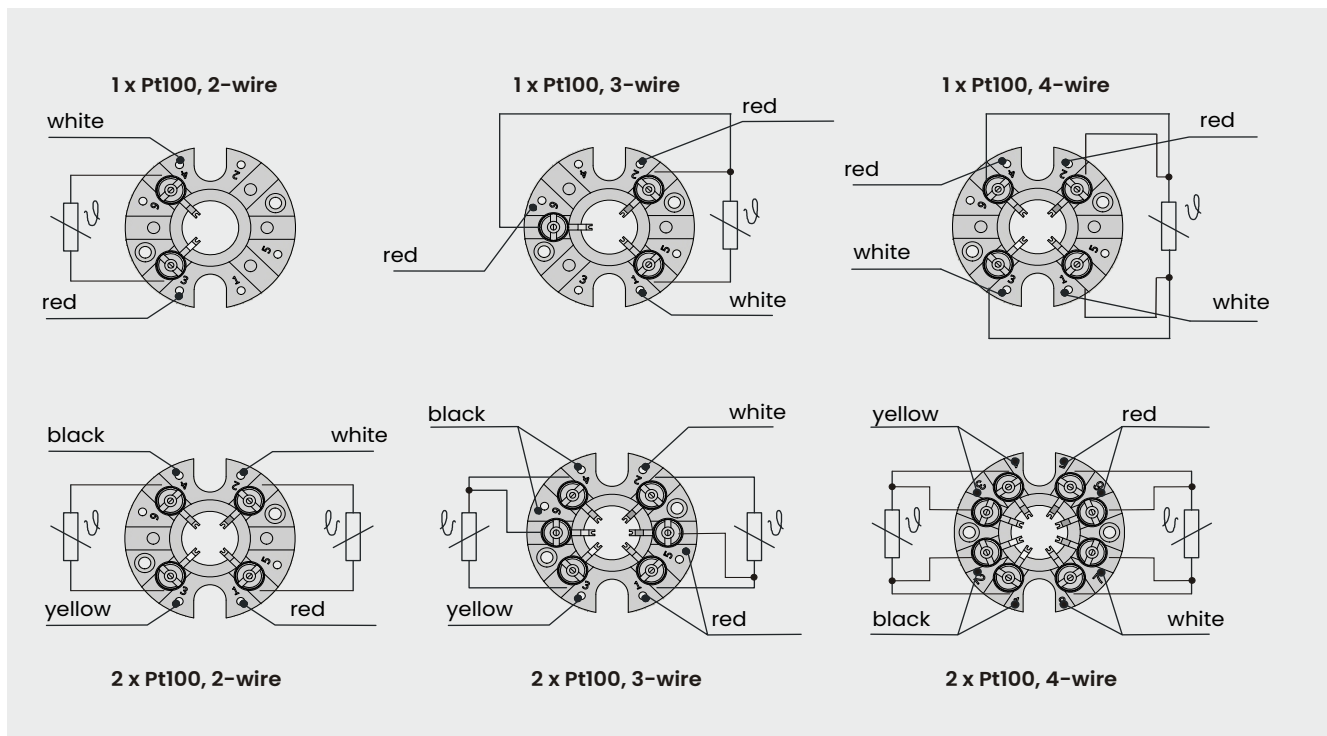
### Connection head DANWdie with local LED display

The display is mounted in connection head cover with glass window which allows preview of measuring temperature. 4 digits with a height of 9.5 millimeter ensure clear reading of values. Programming of measure range can be performed via three buttons placed on the back of display panel.

Mounted temperature transmitter 4..20mAon measuring insert is necessary for proper use. It also works with temperature transmitters with HART® protocol.



### Electrical connection on Ceramic Block



## Ordering code

1                      2                      3                      4                      5                      6                      7                      8                      9                      10  
 TOPI  -  -  -  -  -  -  -  -  -

1	<input type="text"/>	<b>Resistance element</b>			
			1 x Pt100		
		AP	1 x Pt100, with installed transmitter 4..20 mA		
		APW	1 x Pt100, with installed transmitter 4..20 mA and local LED display*		
2	<input type="text"/>	<b>Measuring insert diameter [mm]</b>			
		6	Ø 6 mm		
		xxx	other, please specify		
3	<input type="text"/>	<b>Closing method of connection head</b>			
		1	closing by screw		
4	<input type="text"/>	<b>Connection head</b>			
		NA	Typ NA	Aluminum	Cable gland: M20x1.5 IP65
		DAN	Typ DAN	Aluminum	Cable gland: M20x1.5 IP65
		DANW	Typ DANW	Aluminum	Cable gland: M20x1.5 IP65
		B	Typ B	Aluminum	Cable gland: M20x1.5 IP65
		BEG	Typ BEG	Stainless Steel	Cable gland: M20x1.5 IP65
5	<input type="text"/>	<b>Length L [mm]</b>			
		100	100 mm		
		200	200 mm		
		300	300 mm		
		400	400 mm		
		xxx	other, please specify		
6	<input type="text"/>	<b>Material of insert protection tube</b>			
			Stainless Steel 1H18N9T ( 1.4541, AISI321 )		
		1.4404	Stainless Steel 00H17N14M2 ( 1.4404, AISI316L )		
7	<input type="text"/>	<b>Tolerance</b>			
		A	Class A according to PN-EN 60751		
		B	Class B according to PN-EN 60751		
		1/3B	Class 1/3B DIN		
8	<input type="text"/>	<b>Connection line</b>			
		2	2-wire		
		4	4-wire		
9	<input type="text"/>	<b>Measuring range of temperature transmitter</b>			
		0..100	input signal for 4..20mA: 0..100°C		
10	<input type="text"/>	<b>Type of temperature transmitter</b>			
		PR5333A	Output 4..20 mA		
		PR5335A	Output 4..20 mA, with HART® communication protocol		
		PR5350A	Output Profibus® PA / Foundation Fieldbus		
	xxx	other, please specify			

## Example

Temperature sensor TOPI81-B-500-A-4  
 ( sensor 1xPt100, connection head B closing by screw, length L=500mm, mat. 1.4541, insert diameter Ø8mm, class A 4-wire ).

Temperature sensor APWTOPI61-DANWdie-400-1.4404-A-3-0..100°C-PR5335A  
 ( sensor 1xPt100 with transmitter 4..20mA, connection head DANWdie with local LED display, closing by screw, length L=400mm, mat. 1.4404, insert diameter Ø6mm, class A 3-wire, temperature transmitter PR5335A ).