

## Applications

- Measuring range: -200 .. +600°C
- Exchangeable measuring insert of Resistance Thermometers

## Features

- Spring-loaded measuring insert provides ideal contact with the protective tube
- Temperature transducer can be installed directly on the insert
- Made of sheathed cable, insulated inside with magnesium oxide (MgO)
- The metal sheath is made of stainless steel
- Vibration resistant
- Easy to replace during operation

The measuring inserts for resistance thermometers described here are designed for installation in a protection assembly. Operation without thermowell is only recommended in certain applications. These measuring inserts are made from flexible, mineral insulated sheathed cable. The sensor is fitted in a rigid tube on the end of the measuring insert. Apart from being flexible this model has outstanding resistance to vibration.

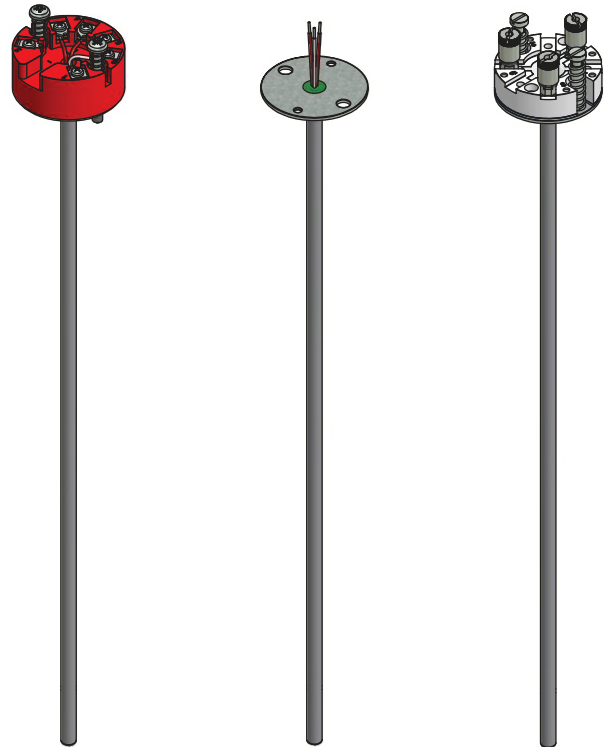
Screwed-in nut placed on ceramic block provides comfortable connection with connecting cable.

This model is spring loaded to ensure that the measuring insert is firmly pressed down on the thermowell bottom, which provides:

- Quick response time
- Length compensation ( +/- 10 mm)
- Decrease of vibrations inside the thermowell

## Temperature Transmitter (Option)

Transmitter with 4-20 mA/HART® or Profibus®PA output signal can be mounted instead of terminal block.



Measuring insert  
with temperature transmitter

Measuring insert  
without ceramic block

Measuring insert  
with ceramic block

## 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).

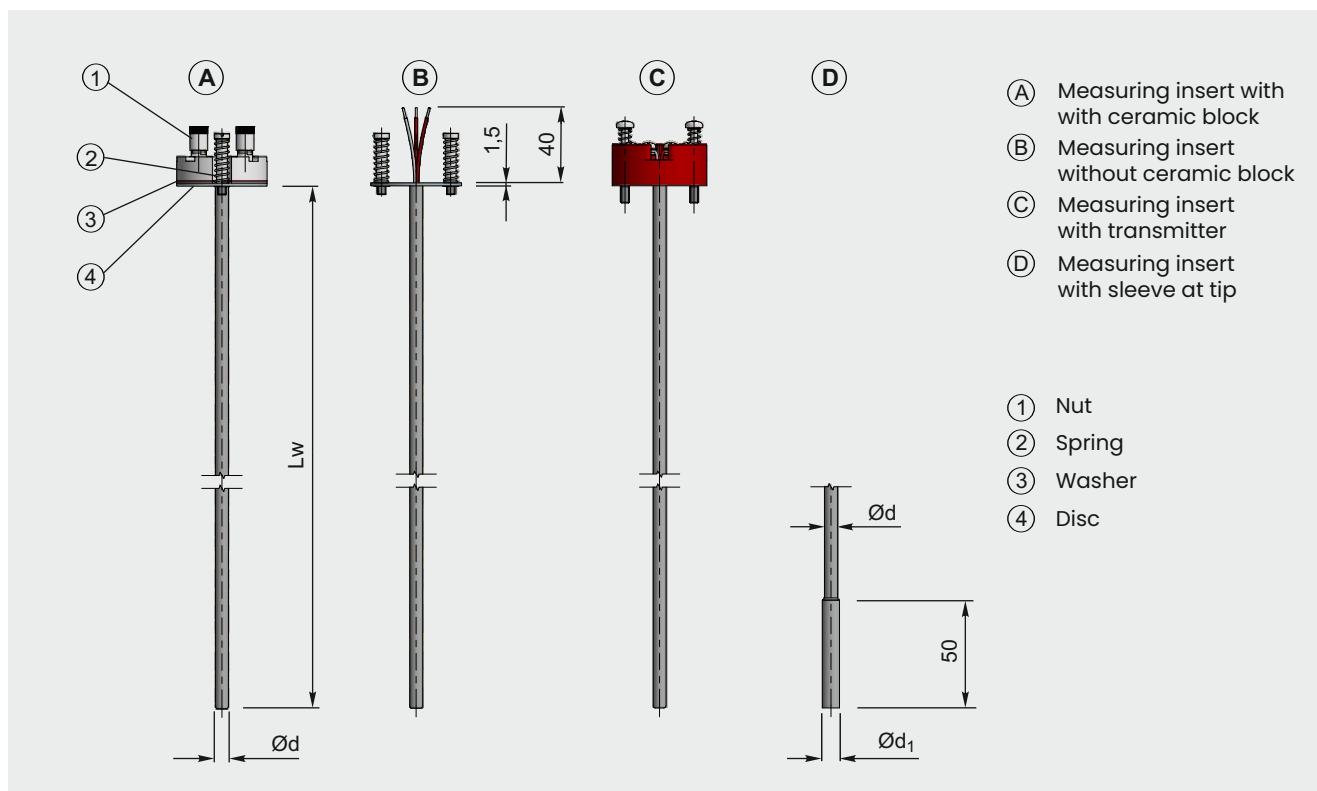
Intrinsically safe (Exi) data sheet XI-W2

Flameproof (Exd) data sheet XD-W2L

## Other versions

This data sheet contains only small part of our supplies program of measuring inserts for resistance thermometers. 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 3	✓	✓	✓	✓	✓	✗
Ø 4.5	✓	✓	✓	✓	✓	✓
Ø 6	✓	✓	✓	✓	✓	✓
Ø 8	✓	✓	✓	✓	✓	✓

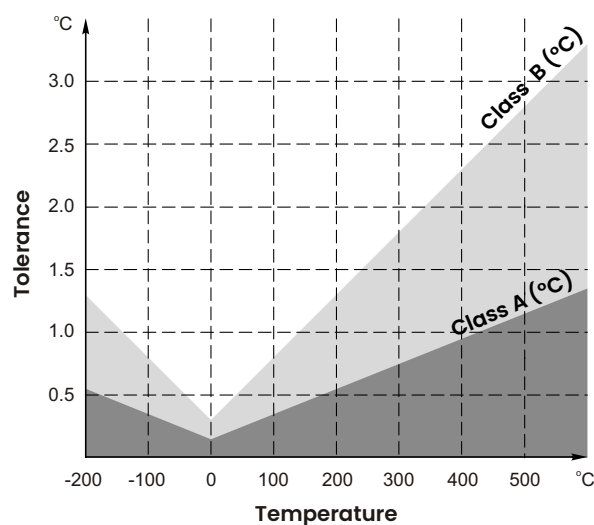
## Tolerances

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	$\pm 0.30 + (0.005 \times  t )$

## Response time

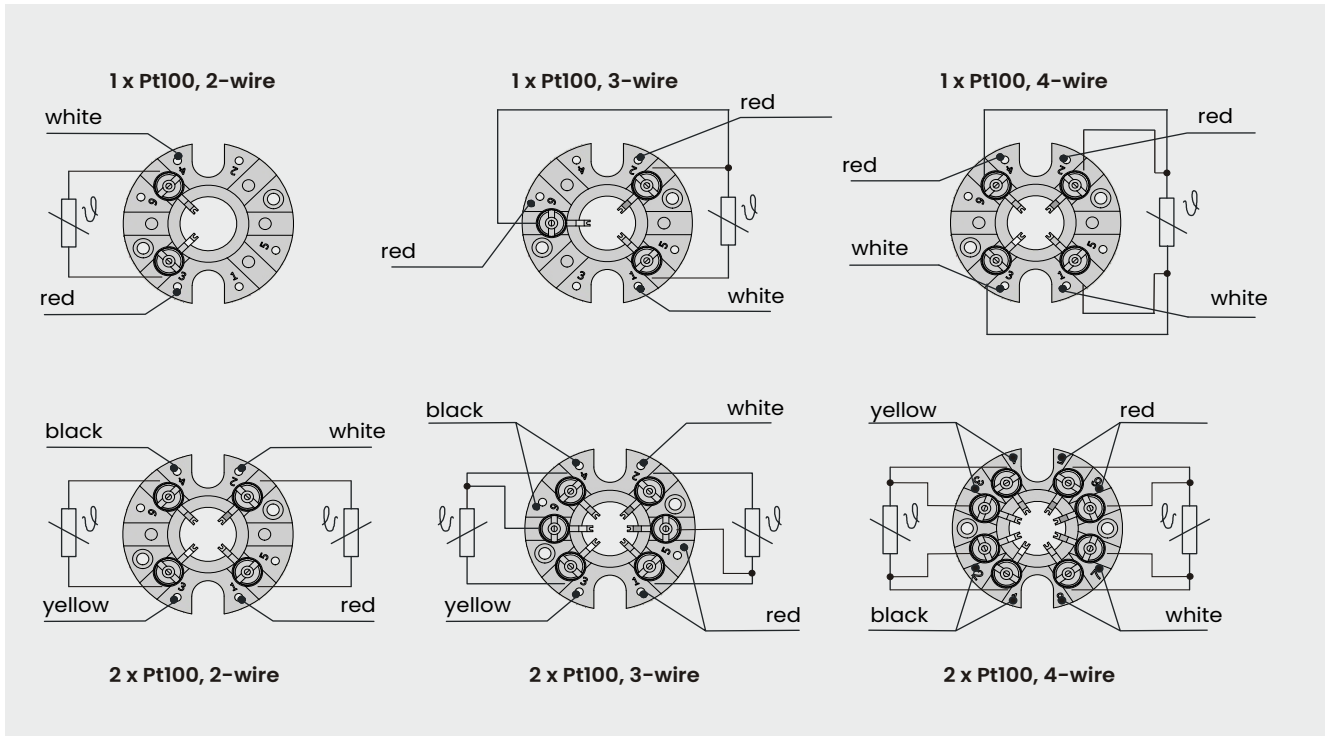
Sheath dia. [ mm ]	in water 0.4 m/s		in air 3 m/s	
	$t_{50}$	$t_{90}$	$t_{50}$	$t_{90}$
Ø 6	4	10	40	105
Ø 3	1.5	4.5	15	50



**Thermometric characteristics of Pt100 resistors, acc. to PN-EN 60751/IEC 751**

Temperature	°C	0	100	200	300	400	500	600	
	Nominal value	Ω	100.00	138.51	175.86	212.05	247.09	280.98	313.71
Tolerance	Class A	°C	±0.15	±0.35	±0.55	±0.75	±0.95	±1.15	±1.35
	Class B	°C	±0.30	±0.80	±1.30	±1.80	±2.30	±2.80	±3.30

**Electrical connection on Ceramic Block**



## Ordering code

1                      2                      3                      4                      5                      6                      7  
    **WIP**     -  -  -  -  -  -

1	<input type="text"/>	<b>Resistance element and type of insert</b>	
		1	1 x Pt100, with ceramic block
		2	2 x Pt100, with ceramic block
		BK	1 x Pt100, without ceramic block
		2BK	2 x Pt100, without ceramic block
	AP	1 x Pt100, with temperature transmitter	
2	<input type="text"/>	<b>Diameter d/d1</b>	
		3	Ø 3.0 mm
		4.5	Ø 4.5 mm
		6	Ø 6.0 mm
		6/8	Ø 6.0 mm with sleeve Ø8.0 x 50 mm
		8	Ø 8.0 mm
	xxx	other, please specify	
3	<input type="text"/>	<b>Length Lw [mm]</b>	
		100	100 mm
		160	140 mm
		200	200 mm
		250	260 mm
		400	400 mm
	xxx	other, please specify	
4	<input type="text"/>	<b>Tolerance</b>	
		A	Class A acc. to PN-EN 60751
		B	Class B acc. to PN-EN 60751
		1/3B	Class 1/3B acc. to DIN
		xxx	other, please specify
5	<input type="text"/>	<b>Connection line</b>	
		2	2-wire
		3	3-wire
		4	4-wire
6	<input type="text"/>	<b>Measuring range of temperature transmitter</b>	
		0..100	input signal for 4..20mA: 0..100°C
		xxx	other, please specify
7	<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

Measuring insert WIP-3-555-A-4  
 ( sensor 1xPt100, diameter Ø3.0 mm, length Lw=555 mm, class A 4-wire ).

Measuring insert APWIP-6-435-A-3-0..400°C-PR5333A  
 ( sensor 1xPt100 with 4..20mA temperature transmitter, diameter Ø6.0 mm, length L=435 mm, class A 3-wire, input signal 0=400°C, transmitter PR5333A ).