

# Ex-Resistance Temperature Detector WR14 measuring insert R149

for gas explosion hazardous areas and areas with combustible dust

In general



The temperature sensors manufactured by Reckmann GmbH (R58®) are solely intended for the measurement of process temperatures in solid, liquid and gaseous media. The measuring insert with free ends (fig. 1) is prepared for mounting an Ex i approved transmitter instead of the connection socket (Ex i proof required!).

## Application area:

**Use in potentially explosive atmospheres is only permissible with the installation in a suitable protection fitting type WR15 or in type B type WR14-J.**

Depended on electrical and thermal parameters for operating with the following types of protection:

II 2G Ex ia IIC T1...T6 Gb or  
II 2D Ex ia IIIC T135 °C Db.

**For installation please see our operating instructions**

**Ex- Stock-number-code: WR14-X-Q.**

## Technical datas

- **Measuring insert** with 50 mm bare ends (fig. 1) according or similar to DIN 43735
- **Sensor** depending on use:  
thin film or ceramic according to IEC / EN 60751,  
in 1 x 3-, 1 x 4-, 2 x 3 or 2 x 4 wire circuit.  
Recommended operating temperature on the measuring tip depended on accuracy class according to IEC / EN 60751  
- 40°C up to + 500°C by thin film sensors,  
- 40°C up to + 600°C by ceramic sensors.
- **Notice:** Process temperatures above 450 °C are only possible with appropriate process decoupling. A customer order to install an Exi approved transmitter will require proof of intrinsic safety. Double Sensors with Exi-Transmitter only on request.
- **Sheath material** (fig.1/3) according to IEC / EN 61515. Standard material 1.4404, Standard diameter 3 or 6 mm.  
Sensors with  $\varnothing$  3 mm and more than 4 inner conductors,  $\varnothing$  < 3 mm,  $\varnothing$  > 3 mm and more than 6 inner conductors are considered to be non-insulated or grounded in accordance with IEC / EN 60079-11 (dielectric strength) and must be connected to equipotential bonding of the system throughout the intrinsically safe circuit for safety reasons, taking into account the special conditions according to IEC / EN 60079-14.
- **Optional materials for gas and dust explosion protection:**  
please see operating instructions chapter 4 X - conditions.

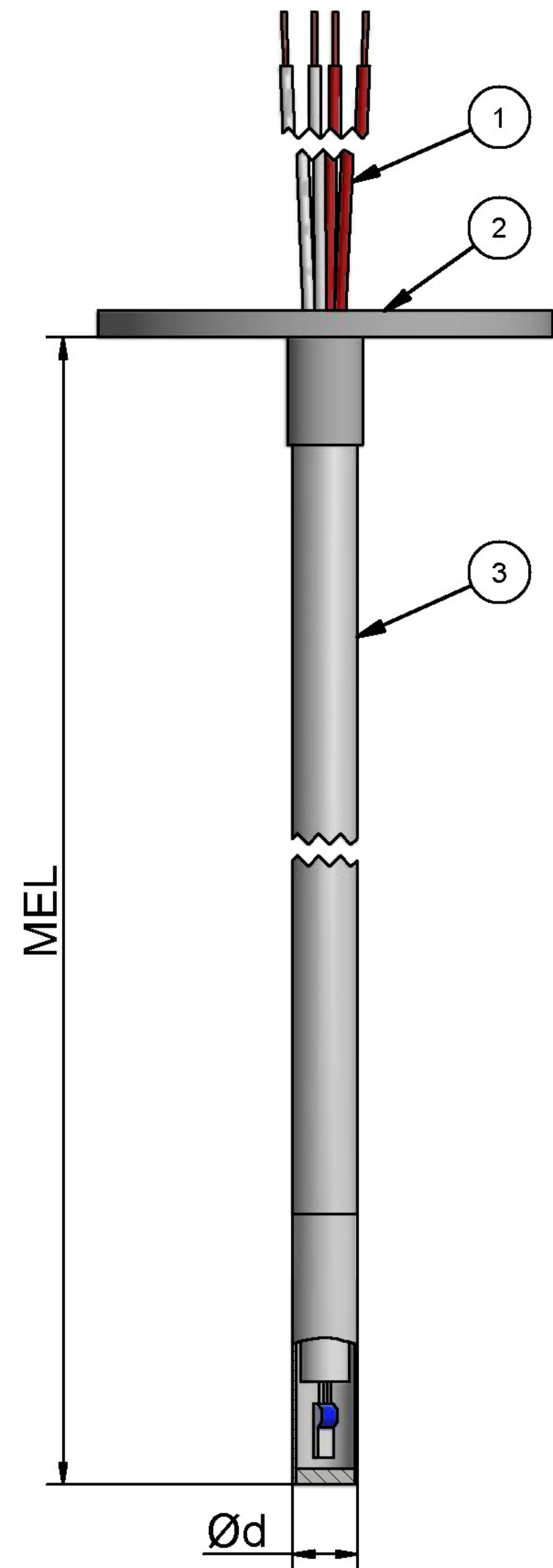


fig. 1

## Deviations according to the sensor type

### Resistance temperature detector with PT 100 sensor

table 1

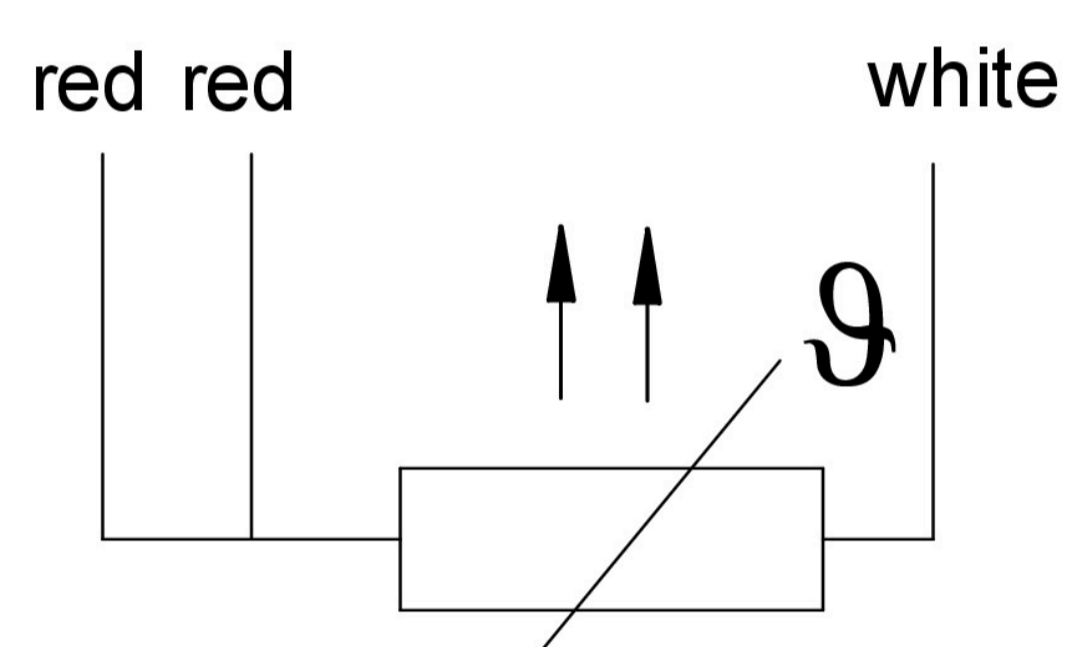
class	accuracy in °C		Deviations in °C
	ceramic	thin film	
<b>AA</b> <sup>1)</sup>	-50 bis +250	0 bis +150	$\pm (0,1 + 0,0017 \times  t )$ <sup>2)</sup>
<b>A</b>	-100 bis +450	-30 bis 300	$\pm (0,15 + 0,002 \times  t )$ <sup>2)</sup>
<b>B</b>	-196 bis +600	-50 bis +500	$\pm (0,3 + 0,005 \times  t )$ <sup>2)</sup>
<b>C</b>	-196 bis +600	-50 bis +600	$\pm (0,6 + 0,01 \times  t )$ <sup>2)</sup>

<sup>1)</sup> out of date marking 1/3 DIN, <sup>2)</sup> t = unsigned amount of the measured temperature in °C

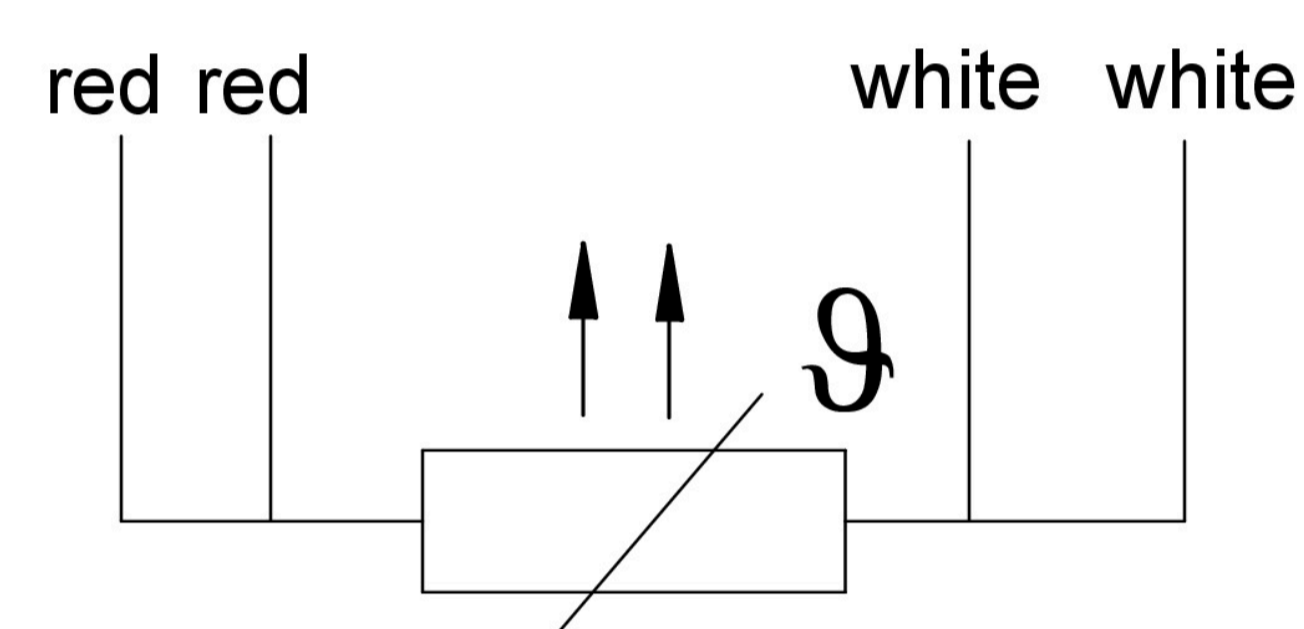
Source: Technical dates from IEC / EN 60751:2009-05 chapter 5.1.3

## electrical circuit diagram

color code according to IEC / EN 60751.



1 x PT100  
3 - wire



1 x PT100  
4 - wire