

TW89 Weld in Resistance Thermometer

TW89 # 8 9 # A 0 G #

**For Assignment in
Explosion-hazardous Areas**

Resistance thermometers TW89 are applied as intrinsically safe equipment to measure temperature in fluids and gases as well as dusts. These thermometers consist of a protective sleeve and a directly attached connection wire. All components in touch with process media are leak tested. Pt 100 temperature sensors acc. to DIN EN 60 751 in tolerance classes A or B in 2, 3 or 4-wire circuit are used inside the protective sleeve. Models with 2 measuring circuits are possible.

These resistance thermometers meet demands of equipment-group II, category 2G and 2D. They are suitable for usage in explosion-hazardous areas zone 1 (gas) and zone 21 (dust).

They are solely to be used with provided protective sleeve. See instruction manual for thermometer specific features.

These resistance thermometers with intrinsic safety Ex "i" are certified for electrical connection to intrinsically safe circuits category ia and ib (for usage in zone 1 and 2).

When connecting to intrinsically safe circuits the user needs to ensure by limiting of power output that heating of surface does not exceed max. permissible value acc. to temperature class minus safety margin!



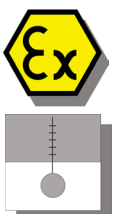
Conformity of Norms

These resistance thermometers meet demands of

- EN 50014 2002 +A1+A2 1999
- EN 50020 2002
- EN 50281-1-1 1998
- EN 50284 1999
- EN 1127-1 1997

Declaration TW89


II 2G EEx ia IIC T6
II 2D IP65 Tx °C



Specifications

Weld in Resistance Thermometer TW89

For medium pressure and flow forces

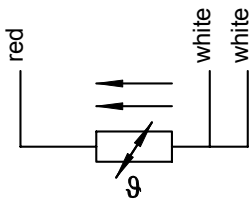
Measuring element:	Insertion tube stainless steel 1.4571 Resistance 1 or 2 Pt100 acc. to DIN EN60751
Protective sleeve:	Materials: stainless steel 1.4571 (X6CrNiMoTi17122) 1.0460 (C22.8) Mechanical force up to 25 bar
Perm. flow rate:	Air / gas, superheated steam 20m/s Water 2 m/s
Max. temperature, media:	400°C
Max. temperature, ambient (on wire):	250°C

Characteristics for certified
intrinsically safe circuit:

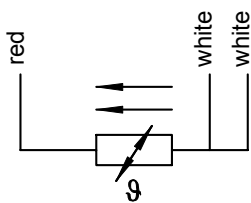
$P_i \leq 750\text{mW}$ $U_i \leq 30\text{V}$ $I_i \leq 400\text{mA}$ $C_i = 15\text{ nF}$ $L_i = 17\mu\text{H}$
(C and L in worst case: 10m wire 2 x Pt100 / 3-wire)
Protection sleeve constants $S_D = S_G = 131\text{ K/W}$

Electrical Connection

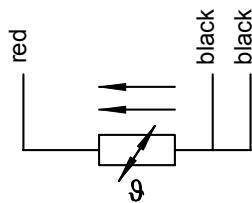
1 x 3-wire connection



2 x 3-wire connection

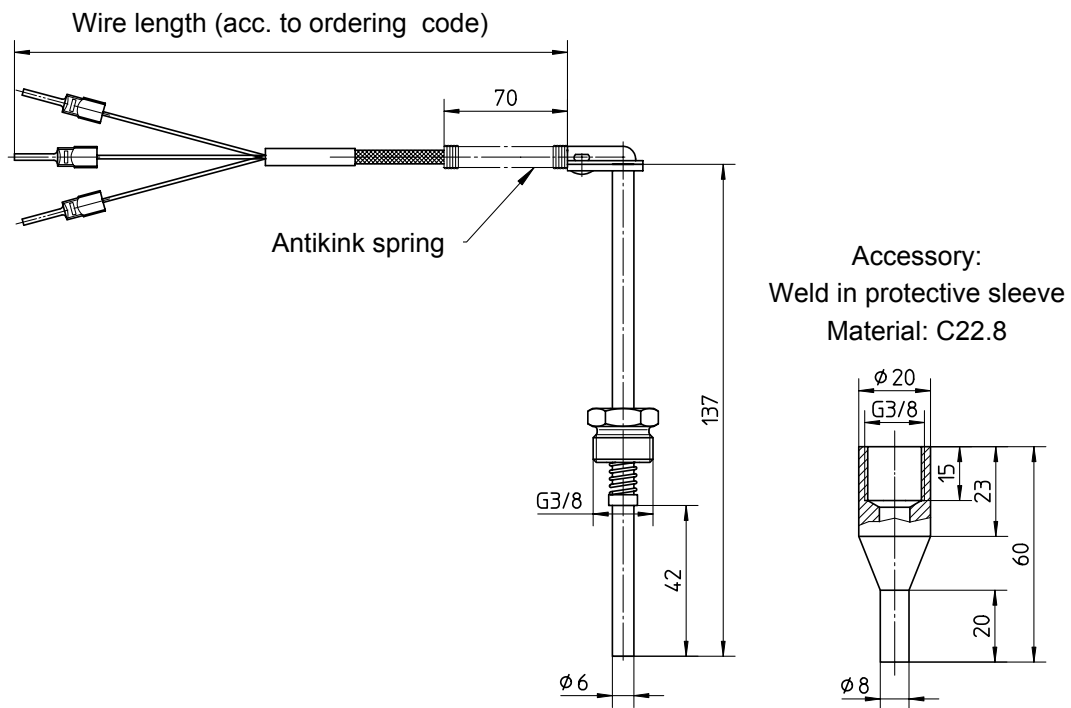


Wire end ferrule with
white plastic



Wire end ferrule with
red plastic

Dimensions (all units in mm unless stated otherwise)



Ordering Code

Weld in Resistance Thermometer		TW89		8	9		A	0	G	
Type										
Gauge slide with 1xPt100/3-wire.....>	B									
Gauge silde with 2xPt100/3-wire.....>	E									
Model										
With direct wire connection.....>	8									
Nominal Length										
Preset by protective sleeve.....>	9									
Materials										
Stainless steel 1.4571.....>	3									
1.0460 (C22.8).....>	4									
Output										
Resistance (free wire end).....>	A 0									
Wire Type										
Glass fibre wire with PTFE-isolated single conductors and stainless steel wire mesh	G									
Wire Length										
1.0m.....>	1									
2.0m.....>	2									
3.0m.....>	3									
5.0m.....>	4									
6.0m.....>	5									
10.0m.....>	6									
Other lengths on request (max.10m).....>	9									