

## Screw-In Resistance Thermometer - with G ½ B screw-in thread - Type TP 12 -



### FEATURES

- „FR“- HOUSING IN IP 67
- WITH SINGLE- OR DOUBLE- PT100
- CIP-PROOFED INSTALLATION WITH METALLIC SEALING SYSTEM
- OPTIONAL DELIVERY WITH HEAD TRANSMITTER
- CONSTRUCTION WITH G1/2 B – SCREW-IN THREAD WITH REPLACEABLE MEASUREMENT DEVICES

### DESCRIPTION

The screw-in resistance thermometers **Type TP 12** with G ½ B – screw-in threads designed with or without transmitter are high-performance, robust and all-purpose devices for general applications without special hygienic requirements.

The temperature sensor is a PT100 Platinum resistor, standardly designed in accuracy class A according EN 60751. Accuracy classes B 1/2, 1/3, 1/10 DIN or class B are available optionally. The measurement inserts consist of replaceable single- or double-PT100 resistors. The application of the measurement inserts has to be adjusted to the needs for temperature, length, flexibility, vibration-proofness and measuring accuracy. E.g. for control processes and on request devices with tapered tips and extra short half-life-times are available.

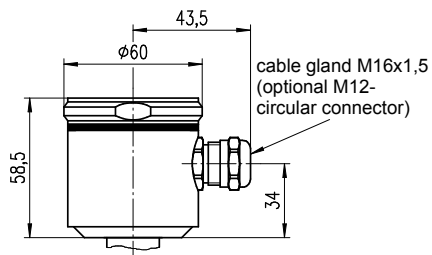
Safety and profitability aspects advise constructions with protective tubes in case of a possibly necessary change of the probes, so that replacements can be carried out quickly and comfortably, without decommissioning the plant or draining the tanks. Furthermore the protective tube guarantees the resistiveness against mechanical stress and chemical attacks. Also variants of protective tubes to be screwed-in or welded can be designed for a quick response time.

The construction in protection class IP67 guarantees reliability for closeness and long durability even under extreme operating conditions. On longer transmission paths analog or programmable transmitter can be used optionally.

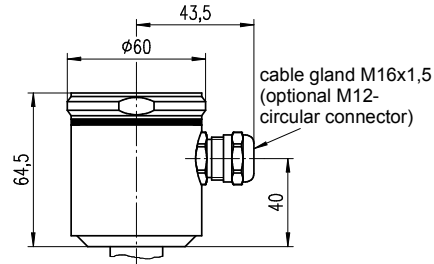


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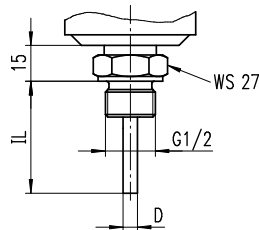
## DIMENSIONAL DRAWINGS



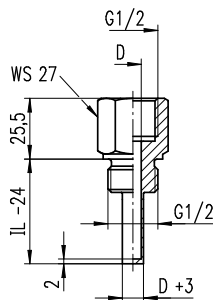
field-housing (stainless steel, IP67 EN 60529)  
housing head H



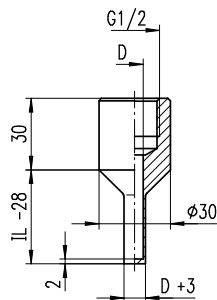
field-housing (stainless steel, IP67 EN 60529)  
housing head P (for Profibus)



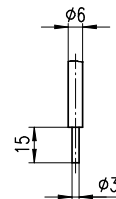
TP12 / TW39 ... T039  
external thread G1/2B



zeh / TP12  
screw protection sleeve  
for IL 30 ... 100mm



zeh / T327  
welded protection sleeve  
for IL 25 ... 100mm



option:  
tapered tip Ø3mm

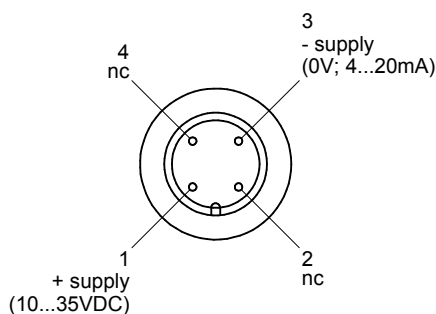
note:  
probe-Ø (D) = 6 mm (standard)  
insertion length (IL) = 100 mm (standard)

See field housing label

## ELECTRICAL CONNECTION

(execution example: M12 – circular connector)

connection with transmitter \*



\* connection without transmitter see field housing label

### Response time for RTD (PT100 resistors)

The response time is not only determined by the dimensions of the protective tube, but extensively by the heat transmission:

- medium, flow velocity, etc.
- heat capacity

Higher flow velocities and heat capacities reduce the response time significantly. The response time defines the period the measurement reaches 50% or 90% of the its final range value.

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## ORDER INFORMATION

Sensor Type, Tolerance Class, Connection	
A	1 x PT 100, class A, 2-wire
B	1 x PT 100, class A, 3-wire
C	1 x PT 100, class A, 4-wire
D	2 x PT 100, class A, 2-wire
E	2 x PT 100, class A, 3-wire

Connection Head	
H	field housing, 1.4301, M16 x 1,5
P	Profibus housing (enlarged field housing)
K	Form BUKH, polyamide PA (for double-transmitter)
3	bayonet housing NG 63, 1.4301, M16 x 1,5
1	Form B, aluminum-diecast
9	other

Insertion Length / Nominal Length	
05	50 mm
10	100 mm
20	160 mm
30	200 mm
50	250 mm
70	300 mm
80	400 mm
90	other lengths

Output type / Measurement Range			
K0	00		RTD (Pt100) output
L0			transmitter 4-20 mA, 2-wire connection
	30		0 - 50° C
	40		0 - 100° C
	50		0 - 150° C
	60		0 - 200° C
	70		0 - 300° C
	80		0 - 400° C
	99		other measurement ranges

TP12/TW39	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	T039 (d = 6 mm)
TP12/TW36	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	T039 (d = 9 mm)

Accessories / Options (to be specified in plaintext)	
Transmitter (programmable), not galvanically isolated	TE 4200
Transmitter (programmable), galvanically isolated	TE 4101
Transmitter (programmable), galvanically isolated EX	TE 4111 EX
Transmitter HART	TE 52
Transmitter Profibus PA	TE 82
Configuration-Set incl. adapter and software for TE 41/42,	TZ 41/42
Tapered sensor tip, D = 3 mm or 4 mm	
Accuracy class 1/3 DIN B (per PT 100)	
Accuracy class 1/5 DIN B (per PT 100)	
Accuracy class 1/10 DIN B (per PT 100)	
Sheathed cable (shakeproof type)	
Calibration certificate DKD (approval by certified DKD-laboratory)	
Measurement insert replaceable, d = 3 mm	
Neck tube L = 75 mm, d = 12 mm (other lengths to be specified)	
M12 x 1- connector, 4-pins	

Accessories / Fittings (for ordering please specify)	
<b>zem / T327</b>	
Welded protection sleeve, d = 9mm, acc. drawing no. 062164, 1.4571, for fitting lengths 25 mm...100 mm (lengths > 100 mm on request)	
<b>zem / TP12</b>	
screw-in protection sleeve, d = 9 mm or 11 mm, acc. drawing no. 05895, 1.4571, for fitting lengths 30 mm...100 mm (lengths > 100 mm on request)	
<b>WZ 31 (3.1B)</b>	
Inspection certificate, acc. to EN 10204 for welded protection sleeve - per order -	

Our products are constantly in further development, therefore subjects to modifications.