

Threaded temperature probe With plug connection Model TF35

WIKA data sheet TE 67.10



Applications

- Compressors and pumps
- Mobile working machines
- Refrigeration technology
- Heating, ventilation and air-conditioning
- Machine building

Special features

- Measuring ranges from $-50 \dots +200 \text{ }^{\circ}\text{C}$ [$-58 \dots +392 \text{ }^{\circ}\text{F}$]
- Very high vibration resistance
- Compact design
- Electrical connection via plug connection

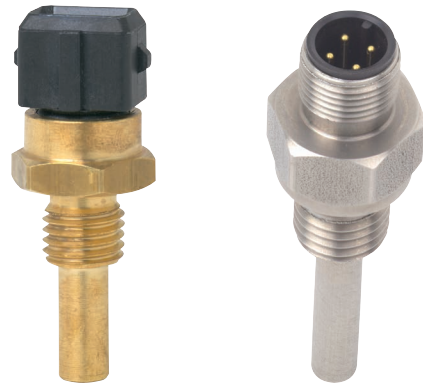


Fig. left: AMP Junior Power Timer connector
Fig. right: Circular connector M12 x 1



Fig. left: Deutsch instrument connector DT04-2P
Fig. right: Rectangular connector EN 175301-803

Description

The model TF35 threaded thermometer is used for temperature measurement of liquid and gaseous media in the range $-50 \dots +200 \text{ }^{\circ}\text{C}$ [$-58 \dots +392 \text{ }^{\circ}\text{F}$].

The integrated thermowell with threaded connection enables direct installation into the process. Depending on the requirements, the thermowell can be selected from brass or stainless steel. By default, the TF35 thermometer can be used for pressures up to 50 bar [725 psi]. The directly mounted coupler connector ensures simple commissioning of the thermometer.

Specifications

Measuring element	Version	Measuring range
Type of measuring element	Pt1000, class F 0.3 per IEC/EN 60751	-50 ... +200 °C [-58 ... +392 °F]
	Pt100, class F 0.3 per IEC/EN 60751	-50 ... +200 °C [-58 ... +392 °F]
	NTC 10 kΩ, B(25/85) = 3976	-30 ... +130 °C [-22 ... +266 °F]
	NTC 5 kΩ, B(25/85) = 3976	-30 ... +130 °C [-22 ... +266 °F]
	NTC 2.5 kΩ, B(20/85) = 3541	-30 ... +130 °C [-22 ... +266 °F]
	NTC 2.252 kΩ, B(25/85) = 3974	-30 ... +130 °C [-22 ... +266 °F]
	→ Other measuring elements on request	
Connection method	2-wire connection	

Accuracy specifications	
Influence of lead resistance	<p>With the 2-wire connection, the lead resistance of the connection lead affects the measured value and must be taken into consideration.</p> <p>0.162 Ω/m (guideline value for copper cable with cross-section 0.22 mm²) Example Pt100: 0.42 °C/m</p>
Reference conditions	
Ambient temperature	15 ... 25 °C [59 ... 77 °F]
Air pressure	860 ... 1,060 mbar [12.47 ... 15.37 psi]
Humidity	50 ... 70 % relative humidity
Condensation	Condensation permissible
Mounting position	As required

Process connection	
Thermowell / Protection tube	
Thermowell diameter	<ul style="list-style-type: none"> ■ 4 mm [0.16 in] ■ 6 mm [0.24 in] ■ 8 mm [0.31 in] → Other diameters on request
Mounting thread	<ul style="list-style-type: none"> ■ G ¼ B ■ G ⅜ B ■ G ½ B ■ M14 x 1.5 ■ ¼ NPT ■ ½ NPT ■ 7/16" - 20 UNF SAE, O-ring Boss FPM/FKM → Other threads on request
Insertion length	<ul style="list-style-type: none"> ■ 25 mm [0.98 in] ■ 30 mm [1.18 in] ■ 35 mm [1.38 in] ■ 40 mm [1.57 in] ■ 45 mm [1.77 in] ■ 50 mm [1.97 in] ■ 60 mm [2.36 in] → Other lengths on request
Material (wetted)	<ul style="list-style-type: none"> ■ Brass ■ Stainless steel

Output signal	
Dynamic behaviour per IEC/EN 60751	
Response time	The response time is essentially influenced by the thermowell used (dimensions, material), the heat transfer to the measuring element and the flow rate of the medium
	Due to the design of the model TF35, there is optimum heat transfer from the medium to the measuring element
	Thermowell made of brass (for Ø 6 mm [0.24 in])
	Thermowell made of stainless steel (for Ø 6 mm [0.24 in])
	t _{0.5} : 2.2 s
	t _{0.9} : 6 s
	t _{0.5} : 2.5 s
	t _{0.9} : 6.5 s

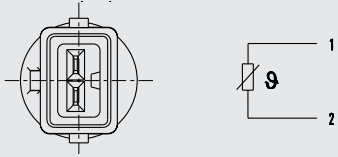
Electrical connection		
Connection type	IP code ¹⁾	Ambient temperature range
AMP Junior Power Timer connector	IP66, IP67	-40 ... +130 °C [-40 ... +266 °F]
FASTON blade terminal 6.3 x 0.8 mm	IP52	-40 ... +130 °C [-40 ... +266 °F]
Deutsch instrument connector DT04-2P	IP66, IP67, IP69K	-40 ... +130 °C [-40 ... +266 °F]
Circular connector M12 x 1	IP66, IP67	-40 ... +90 °C [-40 ... +194 °F]
Rectangular connector EN 175301-803	IP65	-40 ... +100 °C [-40 ... +212 °F]

1) The stated ingress protection only applies when plugged in using mating connectors that have the appropriate ingress protection.

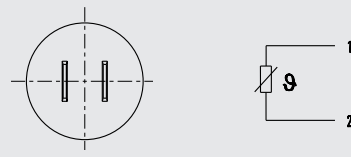
Mating connectors are not included in the delivery, but they are available as accessories.

Pin assignment

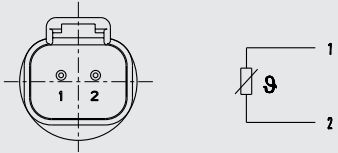
AMP Junior Power Timer connector



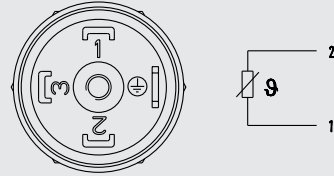
FASTON blade terminal



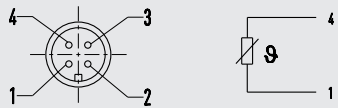
Deutsch instrument connector DT04-2P



Rectangular connector per DIN EN 175301-803




Circular connector M12 x 1



Operating conditions

Ambient temperature range	<p>Due to short installation length there is a risk that the temperature at the connector will rise up to an inadmissibly high value. This absolutely must be taken into account when designing the measuring location. The temperature at the connector must not exceed the mentioned temperature range.</p> <p>→ For ambient temperature ranges, see table “Electrical connection”</p>
Static operating pressure	Max. 50 bar [725 psi]
Vibration resistance per IEC 60068-2-6:2007	Depending on the design, mounting situation, medium and temperature To 30 g
Shock resistance per IEC 60068-2-27:2007	Depending on the design, mounting situation, medium and temperature To 500 g
Ingress protection (IP code) per IEC 60529	→ For ingress protection, see table “Electrical connection”

Approvals

Logo	Description	Country
	EU declaration of conformity RoHS directive	European Union

Optional approvals

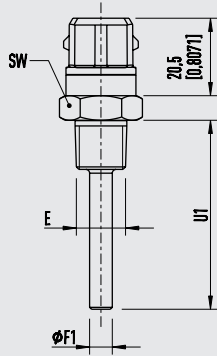
Logo	Description	Country
	UL ¹⁾ Component certification	USA and Canada

1) Only with Pt elements

→ For approvals and certificates, see website

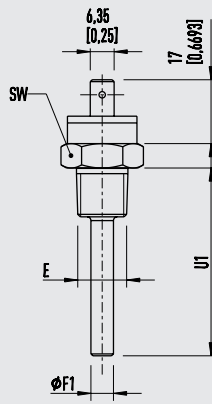
Dimensions in mm [in]

AMP Junior Power Timer connector



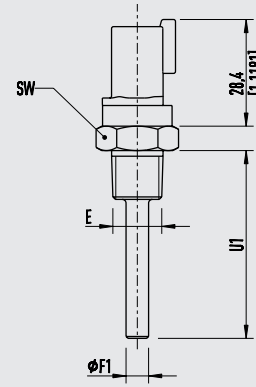
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FASTON blade terminal 6.3 x 0.8 mm



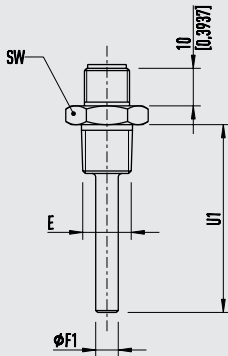
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Deutsch instrument connector DT04-2P



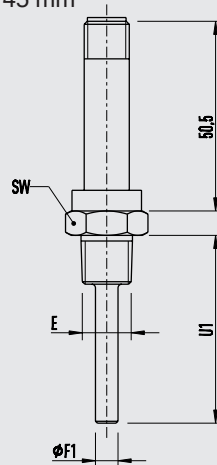
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Circular connector M12 x 1



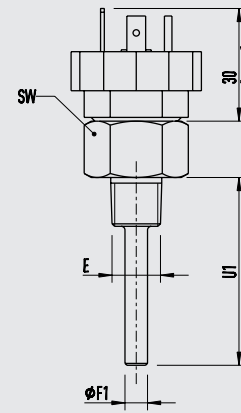
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Circular connector M12 x 1 with neck tube 45 mm



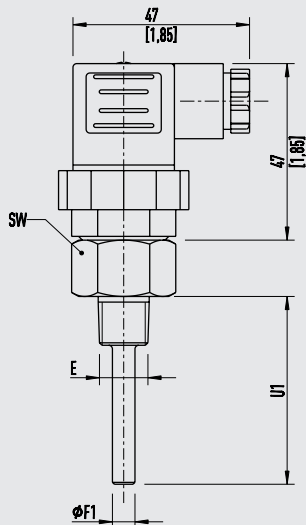
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Rectangular connector EN 175301-803, form A, connector without cable socket



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Rectangular connector EN 175301-803, form A, connector and cable socket



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Legend

- F₁ Thermowell diameter
- E Process connection
- U₁ Insertion lengths

Accessories

Description	Order number
Mating connector	
Angled socket DIN 175301-803 A	11427567
Circular connector M12 x 1, 4-pin, straight	2421262
Circular connector M12 x 1, 4-pin, angled	2421270
AMP Junior Power Timer connector	14039250
Deutsch instrument connector DT04-2P	14050063

Ordering information

Model / Measuring element / Thermowell material and diameter / Process connection / Insertion length / Electrical connection

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