

Threaded temperature probe With connection lead Model TF37

WIKA data sheet TE 67.12

Applications

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

Special features

- Measuring ranges from -50 ... +260 °C [-58 ... +500 °F]
- Customer-specific versions
- Very high vibration resistance
- Connection lead made of PVC, silicone, PTFE

Description

The model TF37 threaded temperature probe, which is highly vibration-resistant, is used in applications with strong vibrations and where, due to high medium temperature, a decoupling of the electrical connection point and the measuring location is necessary.

A thermowell made of brass or stainless steel prevents the measuring element from coming into contact with the medium, thus enabling direct installation of the instrument in the process. The fixed mounting thread guarantees quick and easy installation in the process.

The transition point from the thermowell to the connection lead is dust-tight and waterproof (IP65 or IP66/IP67).



Fig. left: Model TF37 with brass thermowell

Fig. right: Model TF37 with stainless steel thermowell

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Specifications

Measuring element	
Measuring range	
Pt1000, class F 0.3 per IEC/EN 60751	-50 ... +260 °C [-58 ... +500 °F]
Pt100, class F 0.3 per IEC/EN 60751	-50 ... +260 °C [-58 ... +500 °F]
NTC 10 kΩ, B (25/85) = 3,976	-30 ... +130 °C [-22 ... +266 °F]
NTC 5 kΩ, B (25/85) = 3,976	-30 ... +130 °C [-22 ... +266 °F]
NTC 2.5 kΩ, B (20/85) = 3,541	-30 ... +130 °C [-22 ... +266 °F]
NTC 2.252 kΩ, B (25/85) = 3,974	-30 ... +130 °C [-22 ... +266 °F]
	→ Other measuring elements on request
Connection method	2-wire connection
Possible restrictions	Depending on the choice of insulation material of the connection lead, there may be restrictions in the permissible measuring range
PVC	-20 ... +105 °C [-4 ... +221 °F]
Silicone	-50 ... +200 °C [-58 ... +392 °F]
PTFE	-50 ... +260 °C [-58 ... +500 °F]

Accuracy specifications	
Influence of lead resistance	With the 2-wire connection, the lead resistance of the connection lead affects the measured value and must be taken into consideration. 0.162 Ω/m (guideline value for copper cable with cross-section 0.22 mm²) Example Pt100: 0.42 °C/m, Pt1000: 0.042 °C/m
Reference conditions	
Ambient temperature	15 ... 25 °C [59 ... 77 °F]
Atmospheric 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	
Thermowell diameter	■ 4 mm [0.16 in] ■ 6 mm [0.24 in] ■ 8 mm [0.31 in] → Further diameters on request
Mounting thread	■ 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	■ 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, max. insertion length 250 mm [9.84 in]

Process connection	
Material (wetted)	■ 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 TF37, there is optimum heat transfer from the medium to the measuring element
	Thermowell made of brass (for Ø 6 mm [0.24 in])
	t0.5: 2.2 s
	t0.9: 6 s
	Thermowell made of stainless steel (for Ø 6 mm [0.24 in])
	t0.5: 2.5 s
	t0.9: 6.5 s

Electrical connection	
Connection type	■ Stripped wires ■ End splices ■ Customer-specific connectors are available on request
Insulation material of the connection lead	■ PVC ■ Silicone ■ PTFE
Ingress protection of the transition between thermowell and connection lead (IP code)	
PVC insulation material	IP65
Silicone insulation material	IP66/IP67
PTFE insulation material	IP65
Connection lead	500 ... 10,000 mm [19.7 ... 393.7 in], in 500 mm [19.7 in] increments
	→ Other lengths on request

Further details on: electrical connection				
Insulation material		PVC	Silicone	PTFE
Highest working temperature		105 °C [221 °F]	200 °C [392 °F]	260 °C [500 °F]
Flammability		Self-extinguishing	Self-extinguishing	Not flammable
Water absorption		Low	Low	None
Suitability for steam		Good	Limited	Very good
Chemical resistance against	Dilute bases	Yes	Yes	Yes
	Dilute acids	Yes	Yes	Yes
	Alcohol	Yes	Yes	Yes
	Petrol	Yes	No	Yes
	Benzene	No	No	Yes
	Mineral oil	Yes	Yes	Yes

The values given in the table are only given as guide values, and are not to be used as the minimum requirements in specifications.

Operating conditions	
Storage temperature range	-40 ... +85 °C [-40 ... +185 °F]
Ambient temperature range	The max. allowable ambient temperature range depends upon the insulation material of the connection lead and on the connector fitted, as required.
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 30g
Shock resistance per IEC 60068-2-27:2007	Depending on the design, mounting situation, medium and temperature To 500g
Ingress protection (IP code) per IEC 60529	→ For ingress protection, see table „Electrical connection“

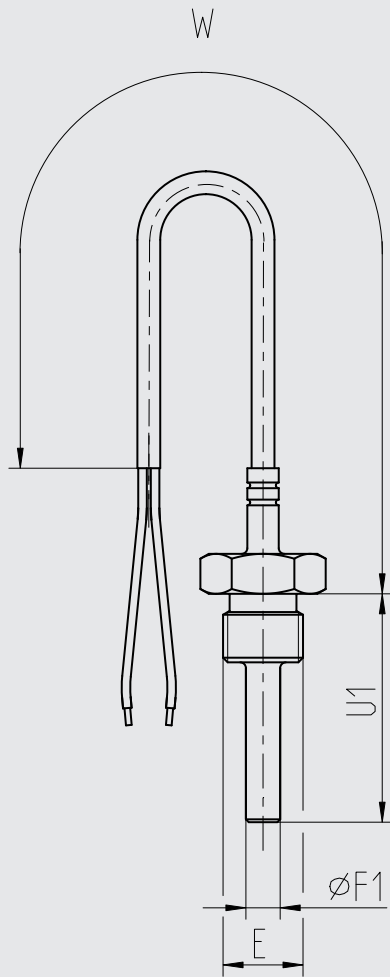
Approvals

Logo	Description	Region
	EU declaration of conformity RoHS directive	European Union

→ For approvals and certificates, see website

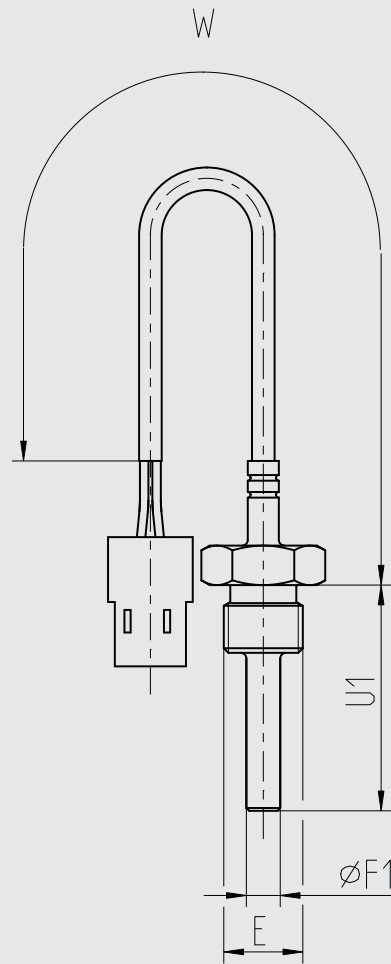
Dimensions in mm [in]

Model TF37 with stripped stranded wires, with end splices



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Model TF37 with plug connection



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Legend:

- Ø F₁ Thermowell diameter
- U₁ Insertion length
- W Cable length
- E Thread

Ordering information

Model / Measuring element / Connection method / Tolerance / Thermowell material and diameter F₁ / Process connection E / Insertion length U₁ / Connection lead / Cable length W / Electrical connection

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