

Threaded thermometer With connection lead Model TF37

WIKA data sheet TE 67.12



for further approvals,
see page 5

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 thermometer, 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

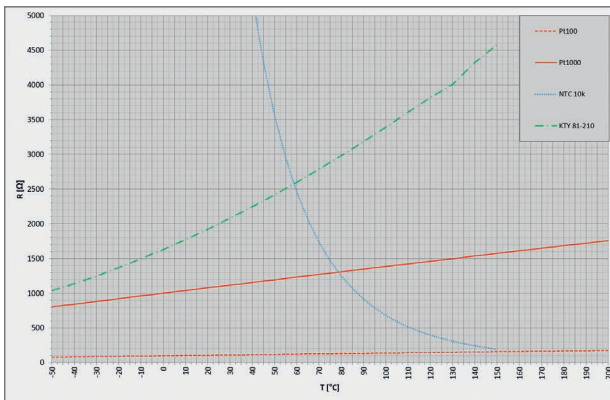
Fig. right: Model TF37 mit stainless steel thermowell

Specifications

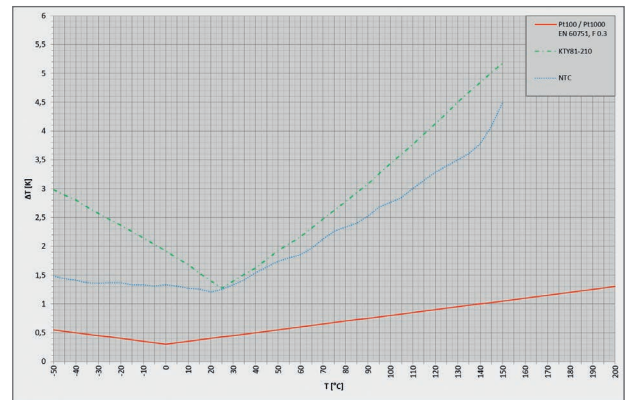
Measuring element	Version	Measuring range
Type of measuring element	Pt1000, class F 0.3 per IEC/EN 60751	-50 ... +260 °C [-58 ... +500 °F]
	Pt100, class F 0.3 per IEC/EN 60751	-50 ... +260 °C [-58 ... +500 °F]
	NTC 10 kΩ, B(25/85) = 3976	-30 ... +130 °C [-22 ... +266 °F]
	NTC 5 kΩ, B(25/85) = 3976	-30 ... +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]
	KTY81-210	-50 ... +150 °C [-58 ... +302 °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]	

Characteristic curves

■ Typical characteristic curves



■ Typical tolerance curves



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

Reference conditions

Ambient temperature	15 ... 25 °C [59 ... 77 °F]
Air pressure	860 ... 1,060 mbar [12.47 ... 15.37 psi]
Air humidity	50 ... 70 % r. h.
Mounting position	As required

Process connection	
Thermowell	
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 TF37, there is optimum heat transfer from the medium to the measuring element	
	Thermowell made of brass (for Ø 6 mm [0.24 in])	t _{0.5} : 2.2 s
		t _{0.9} : 6 s
Thermowell made of stainless steel (for Ø 6 mm [0.24 in])	t _{0.5} : 2.5 s	
	t _{0.9} : 6.5 s	

Electrical connection	
Connection type	<ul style="list-style-type: none"> ■ Stripped wires ■ End splices ■ Customer-specific connectors on request
Insulation material of the connection lead	<ul style="list-style-type: none"> ■ PVC ■ Silicone ■ PTFE
Ingress protection of the transition between thermowell and connection lead (IP code)	
Insulation material PVC	IP65
Insulation material silicone	IP66/IP67
Insulation material PTFE	IP65

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	
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	Region
	EU declaration of conformity RoHS directive	European Union

Optional approvals

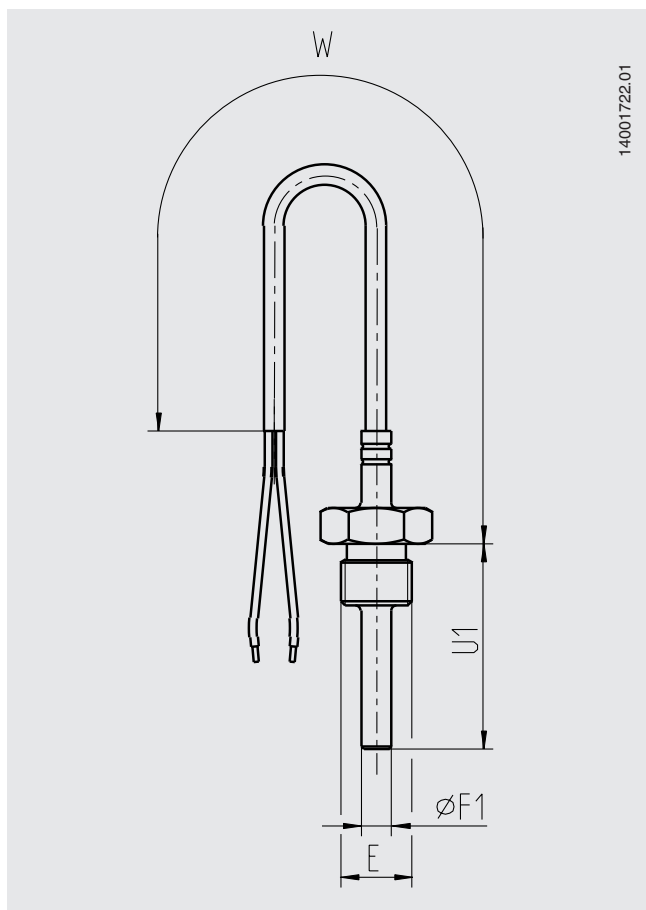
Logo	Description	Region
	PAC Uzbekistan Metrology, measurement technology	Uzbekistan

Manufacturer's information and certificates

Logo	Description
-	China RoHS directive

→ For approvals and certificates, see website

Dimensions in mm [in]



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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