

# TR15

## Modular RTD thermometer

Robust temperature measurement technology especially for gas and steam applications



More information and current pricing:

[www.ie.endress.com/TR15](http://www.ie.endress.com/TR15)

### Benefits:

- High degree of flexibility thanks to modular design with standard terminal heads as per DIN EN 50446 and customer-specific immersion lengths
- High degree of insert compatibility and design as per DIN 43772
- Extension neck to protect the head transmitter from overheating
- Fast response time with reduced/tapered tip form
- Types of protection for use in hazardous locations: Intrinsic safety (Ex i.a.), non-sparking (Ex nA)
- Head transmitter with easy selection: Analog output 4 to 20 mA, HART®, PROFIBUS® PA or FOUNDATION Fieldbus™

### Specs at a glance

- **Accuracy** class A acc. to IEC 60751 class AA acc. to IEC 60751
- **Response time** depending on configuration
- **Max. process pressure (static)** at 20 °C: 400 bar (5.802 psi)
- **Operating temperature range** PT100 TF StrongSens: -50 °C ...500 °C (-58 °F ...932 °F) PT100 WW: -200 °C ...600 °C (-328 °F ...1.112 °F) PT100 TF: -50 °C ...400 °C (-58 °F ...752 °F)
- **Max. immersion length on request** up to 30.000,00 mm (1.181,10")

**Field of application:** The robust thermometer is designed for use in demanding applications like gas or steam applications e.g. in the Chemical, Oil & Gas and Energy industry. Highest pressures as well as high temperature can be handled by the use of robust protection tubes and special process connections. An optional head transmitter with all common communication protocols makes the device ready to use with

enhanced measurement accuracy and reliability compared to directly wired sensors.

## Features and specifications

### Thermometer

#### Measuring principle

Resistance Temperature Detector

#### Characteristic / Application

metric style  
modular temperature assembly  
universal range of application  
suitable for hazardous areas  
suitable for high process pressures  
flanged process connection or weld in  
with neck  
incl. thermowell (metal)  
usable with insert StrongSens

#### Thermowell / protection tube

bar stock (drilled)  
without thermowell

#### Insert / probe

mineral insulated (MI), flexible

#### Outer diameter protection tube / Insert

18,0 mm (0,71")  
24,0 mm (0,94")  
26,0 mm (1,02")

#### Max. immersion length on request

up to 30.000,00 mm (1.181,10")

## Thermometer

**Material protection tube/ thermowell**

1.0460 (A105)  
1.4571 (316Ti)  
1.7335 (13CrMo4-5; F-11)  
Alloy C276 (2.4819)  
Duplex SAF 2205 (1.4462)  
Titan Gr2 (3.7035 )  
16Mo3 (1.5415)

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**Optional coating**

Not defined

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**Process connection**

weld in version  
flange:  
DN25 PN40 B1 (EN1092)  
DN40 PN40 B1(EN1092)  
DN50 PN40 B1 (EN1092)  
ASME 1" 150 RF (B16.5)  
ASME 1" 300 RF (B16.5)

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**Tip shape**

tapered

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**Surface roughness Ra**

0,8 µm (31,5 µin.)  
1,6 µm (63,0 µin.)

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**Operating temperature range**

PT100 TF StrongSens:  
-50 °C ...500 °C  
(-58 °F ...932 °F)  
PT100 WW:  
-200 °C ...600 °C  
(-328 °F ...1.112 °F)  
PT100 TF:  
-50 °C ...400 °C  
(-58 °F ...752 °F)

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## Thermometer

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### Max. process pressure (static)

at 20 °C: 400 bar (5.802 psi)

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### Accuracy

class A acc. to IEC 60751

class AA acc. to IEC 60751

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### Response time

depending on configuration

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### Integration head transmitter

yes (4 ... 20 mA; HART; PROFIBUS PA; FOUNDATION  
FIELDBUS)

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### Ex - approvals

ATEX II1D Ex ia IIIC, II1G Ex ia IIC T6

ATEX II1/2D Ex ia IIIC, II1G Ex ia IIC T6

ATEX II1G Ex ia IIC T6

ATEX II 3 G Ex nA IIC T6, II3D

NEPSI Ex ia IIC T6, Ex iaD 20 T85-T450

IECEX Ex ia IIC T6 Ga/Gb

UK II1D Ex ia IIIC Da, II1G Ex ia IIC T6 Ga

UK II1/2D Ex ia IIIC Da/Db, II1G Ex ia IIC T6 Ga

UK II1G Ex ia IIC T6 Ga

UK II 3 G Ex nA IIC T6 Gc, II3D Ex tc IIIC Dc

EAC Ex ia IIC T6 Ga + DIP

NEPSI Ex nA IIC T6

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### Certification

Gost Metrology

SIL (transmitter only)

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