Electrical
Temperature
Measurement

TR40 Industrial RTD Sensor

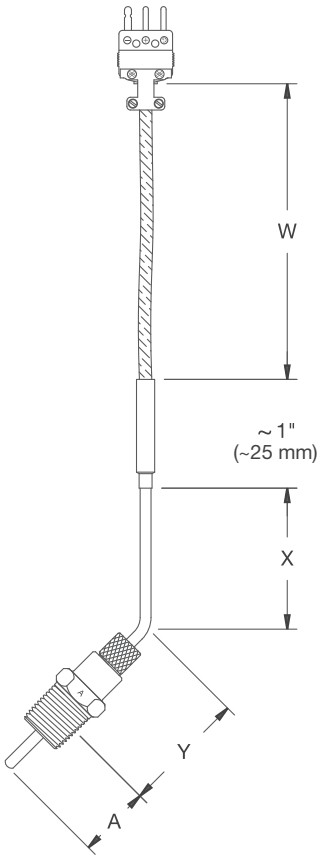


WIKA

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TR40 Industrial RTD Sensor

TR40 series resistance temperature detectors (RTDs) are custom industrial sensors designed to suit applications that require accurate, precise and repeatable temperature measurement. An extensive range of elements, terminations, and process connections can be individually selected for the appropriate application. Fast-responding sensors are also available for situations requiring immediate process temperature measurement.



Applications:

TR40 series sensors are suitable for all industrial and commercial applications including:

- Air-conditioning and refrigeration systems
- Automotive industries
- Chemical and petrochemical industries
- Electronics and semiconductor industries
- Engine cylinder heads and oil sumps
- Energy and power plant technology
- Machinery, plant and tank measurement
- Plastics and rubber industries
- Power and utilities
- Pulp and paper
- Turbines
- Water and wastewater treatment

TR40 - Industrial RTD Sensor	
Sensor Element:	Pt100, Pt1000, Pt10, Cu10, or Ni120
Measuring range:	-200 °C to +1000 °C (depending upon element)
Wiring configuration:	2, 3, and 4 wire (single or dual)
Classification tolerance:	■ Class B to DIN EN 60751 ■ Class A to DIN EN 60751 ■ 1/3 of DIN Class B ■ 1/10 of DIN Class B ■ Less than class B
Electrical approvals:	ATEX/IEC, NAMUR
Options:	■ Lengths and diameters standard or customer specific ■ Calibration - single point, multiple points, and to Callendar-Van Dusen coefficients ■ Material traceability of the conductors, metal sheath and mineral insulation ■ Selectable accuracy tolerance ■ Special designs and materials ■ Intrinsically safe version: ATEX, NAMUR (EEx-i) ■ Non-sparking version: ATEX (EEx-n) ■ Inline transition ■ Retractable cord ■ Strain relief spring

Features:

- The sensor can be mounted into a process with the use of a fixed fitting, compression fitting, union nut, swivel nut or a spring-loaded bushing.
- The sensor has electrical approvals for intrinsic safety, ingress protection and general purpose areas.
- Electrical authorities that have registered these approvals include ATEX/IEC and NAMUR.
- Sheath materials available include stainless steels, corrosion resistant and high temperature oxidation resistant alloys. For temperatures greater than 600°C it is advisable to utilize an Inconel 600 sheath in place of stainless steel.
- RTD diameters range from 0.125 inch to 0.250 inch and 2 mm to 8 mm.
- RTD temperature ranges are dependent on the RTD element sheath material, element accuracy and the tip construction:
  - ☐ General purpose, the temperature range is -200°C to 1000°C
  - ☐ Fast response copper tip, the temperature range is -200°C to 250°C
  - ☐ Tip sensitive thin film, the temperature range is -50°C to 1000°C
  - ☐ Fast response/tip sensitive copper tip, including the vibration proof construction the temperature range is -50°C to 250°C
- Terminations include stripped leads, 3-pin plugs, Tegam/Keithley plugs, spade lugs, or Lemosa plugs.
- Termination accessories include cord grip, braze adapter, cable or wire clamps, hex crimp adapters, or compression adapters.
- If required the metal sheath can be formed during manufacture or by the installer.
- Extension cable is available in a variety of insulation and jacket materials. These include interlocking flexible armour, braided stainless steel, fibreglass, PTFE (Teflon®), PVC and Silicon

TR40

Create your product part number by selecting the appropriate assembly items from each of the categories below. Enter the item code into the applicable box to generate the part number.

1	2	3	4	5	6	7	8	9	10	11	12

Part Number	TR40-XXXXXXXXX-XXX-XXXX-XXXXXXXXXXXXXXXXXX-XX

1 Unit of measure

Code	
I	Imperial
M	Metric

2 Electrical approval

A	EEx-i (ATEX) gas, acc. to directive 94/9/EC
B	EEx-i (ATEX) gas/dust, acc. to directive 94/9/EC
H	EEx-n (ATEX) acc. to directive 94/9/EC
D	EEx-i, confirmation NAMUR NE24
Z	Without

3 Sensor design

0	Straight
4	45 degree bend
9	90 degree bend

4 Fitting style

A	Fixed fitting, threaded hex bushing
B	Compression fitting with stainless steel ferrule
C	Compression fitting with Teflon® ferrule
D	Compression fitting, spring loaded, with stainless steel ferrule
I	Fixed fitting, double threaded hex bushing
L	Spring loaded bushing without oil seal
K	Spring loaded bushing with oil seal
G	Union nut
H	Swivel nut
Z	Without

5 Thread size

K	1/2 NPT
J	3/4 NPT
N	1/4 NPT
X	3/8 NPT
W	1/8 NPT
F	G 1/2 B
C	G 3/4 B
R	G 1/4 B
D	G 1/8 B
P	M14 x 1.5
O	M18 x 1.5
Z	Without

6 Fitting material

A	Stainless steel 316 (1.4401)
B	Stainless steel 316 Ti (1.4571)
Z	Without

7 Sensor diameter

1	1/4 inch / 0.250 inch (6.35 mm)
4	3/16 inch / 0.188 inch (4.75 mm)
2	1/8 inch / 0.125 inch (3.17 mm)
J	1/4 inch / 0.250 inch (6.35 mm) reduced to 1/8 inch / 0.125 inch (3.17 mm)
3	0.215 inch (5.46 mm)
A	2.0 mm
B	3.0 mm
D	6.0 mm
E	8.0 mm

8 Sheath material

P	Stainless steel 316 / 316 L (1.4401 / 1.4435)
O	Stainless steel 310 (1.4841)
J	Inconel® 600 (2.4816)
Q	Stainless steel 316 Ti (1.4571)

9 Tip construction

C	General purpose
G	Tip sensitive (thin-film)
T	Fast response tip sensitive (copper tip)
F	Fast response (copper tip)
V	Vibration proof tip (max. 10 g force)

10 Element

D	Pt100, class B
C	Pt100, class A
F	Pt100, 1/10 DIN of class B at 0°C
E	Pt10, class A
A	Cu10, class B
B	Ni120, class B
K	Pt1000, class B
J	Pt1000, class A
L	Pt100, accuracy less than class B
I	Pt100, 1/3 DIN of class B at 0 °C

11 Wiring configuration

A	Single 2-wire
B	Single 3-wire
C	Single 4-wire
D	Single 4B-wire
E	Dual 2-wire
F	Dual 3-wire
G	Dual 4-wire
H	Dual 4B-wire

12 Temperature range

K	-50...+250 °C
S	-50...+450 °C
M	-200...+250 °C
T	-200...+450 °C
H	-200...+600 °C
L	0...+850 °C
5	0...+1000 °C

Note: Some configurations are unavailable.
Your WIKA sales person will notify you if you have made an incorrect selection



13 Lead wire insulation

N	PVC jacket
O	PVC jacket, shielded
D	PVC armour over Teflon®
J	Silicon jacket
M	Silicon jacket, shielded
T	Teflon® jacket
L	Teflon® jacket, shielded
S	Stainless steel braid over Teflon®
G	Teflon® armour over Teflon®
F	Individual Teflon® leads
B	Armoured Teflon®
H	Fibreglass jacket
E	Teflon® armour over fibreglass
K	Stainless steel braid over fibreglass
C	Individual fibreglass leads
A	Armoured fibreglass
P	MI-cable conductor wire

14 Termination

1	Stripped leads
2	Spade lugs
D	3-pin-plug
K	3-pin-plug DIN Barnant (male)
S	3-pin DIN Tegam/Keithley
T	4-pin DIN Tegam/Keithley
M	Miniature 3-pin-plug (male)
F	Lemosa plug size 1 S (male)
G	Lemosa plug size 2 S (male)
I	Lemosa plug size 1 S (female)
J	Lemosa plug size 2 S (female)
L	Screw-in-plug (male)

15 Termination accessories

F	Cord grip
A	Braze adapter
C	Cable clamp
D	Cable clamp and weatherproof boot
E	Dual compression adapter
G	Hex crimp adapter
H	Hex crimp adapter and weatherproof boot
I	Compression adapter
J	Compression adapter and weatherproof boot
K	Wire clamp
L	Wire clamp and weatherproof boot
M	Mini wire clamp
Z	Without

16 Miscellaneous options

S	Strain relief spring
R	Retractable cord
I	Inline transition
Z	Without

17 W-Dimension (W)

*****	Please specify (e.g. 84 mm = 00084) (e.g. 9.5 inch = 00095)
ZZZZZ	Without

18 X-Dimension (X)

****	Please specify (e.g. 84 mm = 0084) (e.g. 9.5 inch = 0950)
ZZZZ	Without

19 Y-Dimension (Y)

****	Please specify (e.g. 84 mm = 0084) (e.g. 9.5 inch = 0095)
ZZZZ	Without

20 A-Dimension (A)

*****	Please specify (e.g. 84 mm = 00084) (e.g. 9.5 inch = 00950)

21 Certificates

1	Quality certificates
Z	Without

22 Additional order details

T	Additional text
Z	Without

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