

T-PI-160 Immersion Temperature Sensor



Description

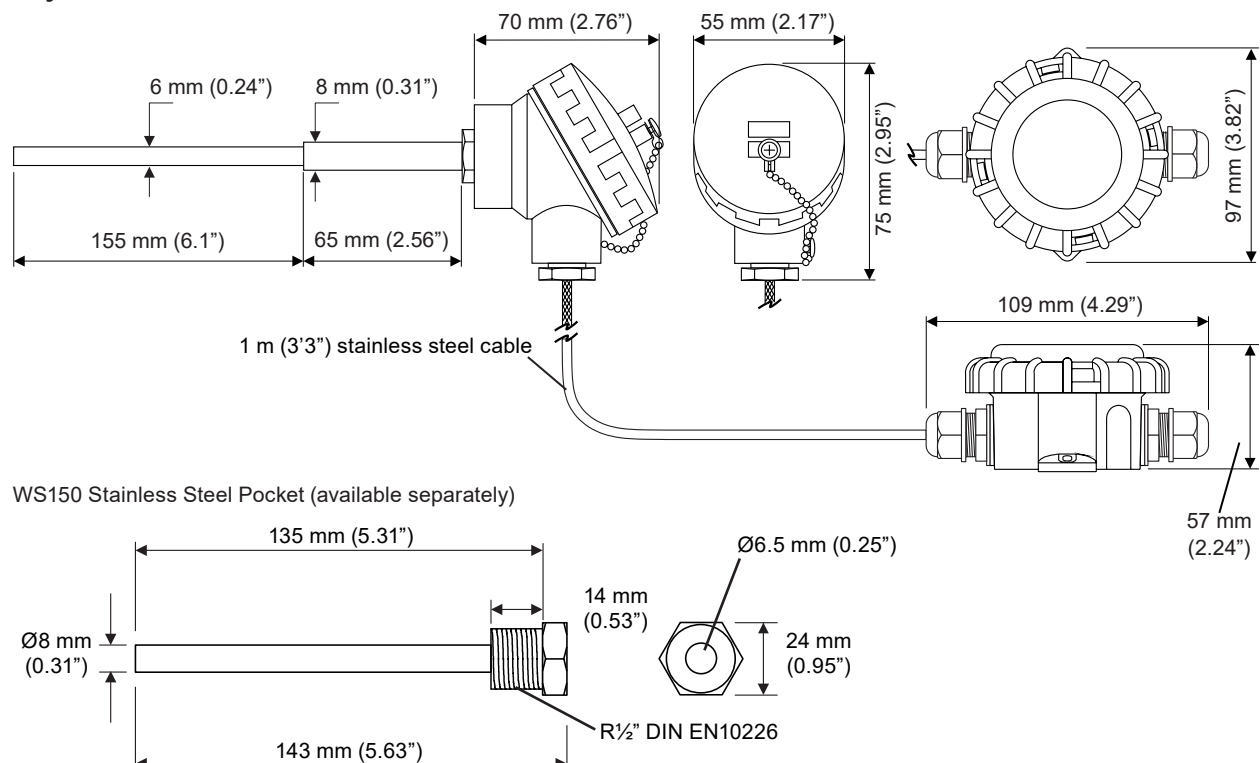
The T-PI-160 sensor is a highly accurate temperature sensor built around a Platinum RTD sensing element, and is designed for medium and high pressure hot water immersion applications.

It is fitted with an IP67 junction box which houses the transmitter electronics and field connections.

Features

- Class B Platinum RTD accuracy
- 4 to 20 mA output
- 20 to 28 Vdc supply range
- Simple 2-wire connection
- IP67 (NEMA 6) rating

Physical

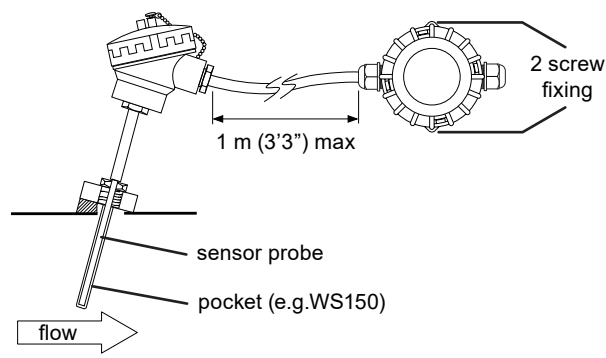


INSTALLATION

MECHANICAL

The T-PI-160 is an immersion sensor suitable for use in medium and high pressure hot water systems (MPHW/HPHW). The sensor probe is connected to the junction box via a stainless steel braided cable.

The sensor probe must be used in conjunction with a suitable pocket, e.g. the WS150 (stainless steel) pocket. This is designed for use with a R $\frac{1}{2}$ " DIN EN10226 threaded boss and has an integral spring compression to retain the sensor probe.



Note: The WS150 pocket is not suitable for use in a chlorine rich environment.

The pocket should be positioned in an accessible location where it will lie in the liquid to be measured. Ensure there is no stratification in the liquid flow being measured (e.g. by positioning downstream of mixing valves or junctions). If used for chilled water ensure that the pocket is sealed around the probe, or fill the pocket with thermally conducting oil, to avoid the build up of condensation in the bottom of the pocket.

The junction box can be mounted on a convenient flat surface using two No.6 screws (not supplied) up to 1 m (3' 3") away from the sensor probe. The box must not be mounted where it may encounter direct contact with steam.

Full installation instructions are included with the sensor – see T-PI-160 Immersion Sensor Installation Instructions (TG201421).

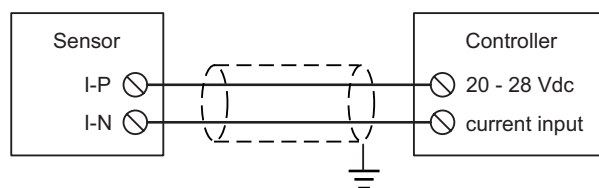
ELECTRICAL

The T-PI-160 has a tough ABS junction box which houses the transmitter electronics and connections. The quick-release lid gives access to a PCB featuring a 2-part 2-pole screw terminal block.

Cable entry is through an M20x1.5 cable entry gland. Alternatively the gland can be removed and the junction box connected directly to 20 mm rigid or flexible conduit using a suitable adapter (not supplied).

The sensor is compatible with controllers equipped with 4 to 20 mA, 2 wire inputs. It is suitable for use with IQ controllers or I/O modules and can be wired to universal inputs (configured for loop powered current operation).

Wiring example



Note: Where screened cable is used the screen must be earthed/grounded at the controller end only.

Sensor Scaling

Appropriate sensor type scaling must be applied (see the relevant sensor Installation Instructions for details).

FIELD MAINTENANCE

The T-PI-160 sensor requires virtually no routine maintenance. The unit should be cleaned with a cloth moistened with water in order to avoid buildup of dust or other contaminants. **Disconnect power before carrying out any cleaning.**

DISPOSAL

COSHH (Control of Substances Hazardous to Health - UK Government Regulations 2002) ASSESSMENT FOR DISPOSAL OF T-PI-160 sensor.

RECYCLING

All plastic and metal parts are recyclable. The printed circuit board may be sent to any PCB recovery contractor to recover some of the components for any metals such as gold and silver.



WEEE Directive:

At the end of their useful life the packaging, and product, and battery (if fitted) should be disposed of by a suitable recycling centre.

Do not dispose of with normal household waste.
Do not burn.

COMPATIBILITY

Controllers: All IQ controllers with current or universal inputs.

ORDER CODES

T-PI-160	Immersion temperature sensor (-10 to +160°C) with 155 mm probe.
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Accessories

WS150	6 mm stainless steel pocket (immersion use).
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SPECIFICATION

Electrical

Sensing Element	Platinum RTD, 100 Ω @ 0°C (32°F) (IEC 60751:2008, Class B)
Measurement Range	-10°C to +160°C (+14°F to +320°F)
Accuracy	
Sensing element	$dt = \pm(0.15 + 0.002 \cdot t)$ °C
Transmitter	$dt = \pm(0.15 + 0.016 \cdot t - 20)$ °C
Output Signal	4 to 20 mA, 2 wire
Supply Voltage	20 to 28 Vdc (24 Vdc nominal)

Mechanical

Dimensions	Refer to diagram on pages 1
Weight	0.392 kg
Cable Entry	M20 conduit with M20x1.5 cable gland fitted (suitable for cable $\varnothing$ 4 to 7mm).
Connections	2 part screw terminals
Cable Size	0.5 to 2.5 mm ² (20 to 14 AWG)
Material	
Junction box	Impact resistant ABS (grey)
Probe	316 stainless steel
Head	Cast aluminium
Cable	Braided stainless steel

WS150 Pocket

Probe Retention	Spring compression
Operating Pressure	25 bar maximum
Material	Stainless steel

Environmental

Ambient Limits	
Operating	
Junction box	-40°C to +50°C (-40°F to +122°F)
T-PI-160 probe	-10°C to +160°C (+14°F to +320°F)
Humidity	
Junction box	0 to 90 % RH non condensing
Protection	IP67, NEMA6

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