

T/FG Flue Gas Temperature Sensor



Description

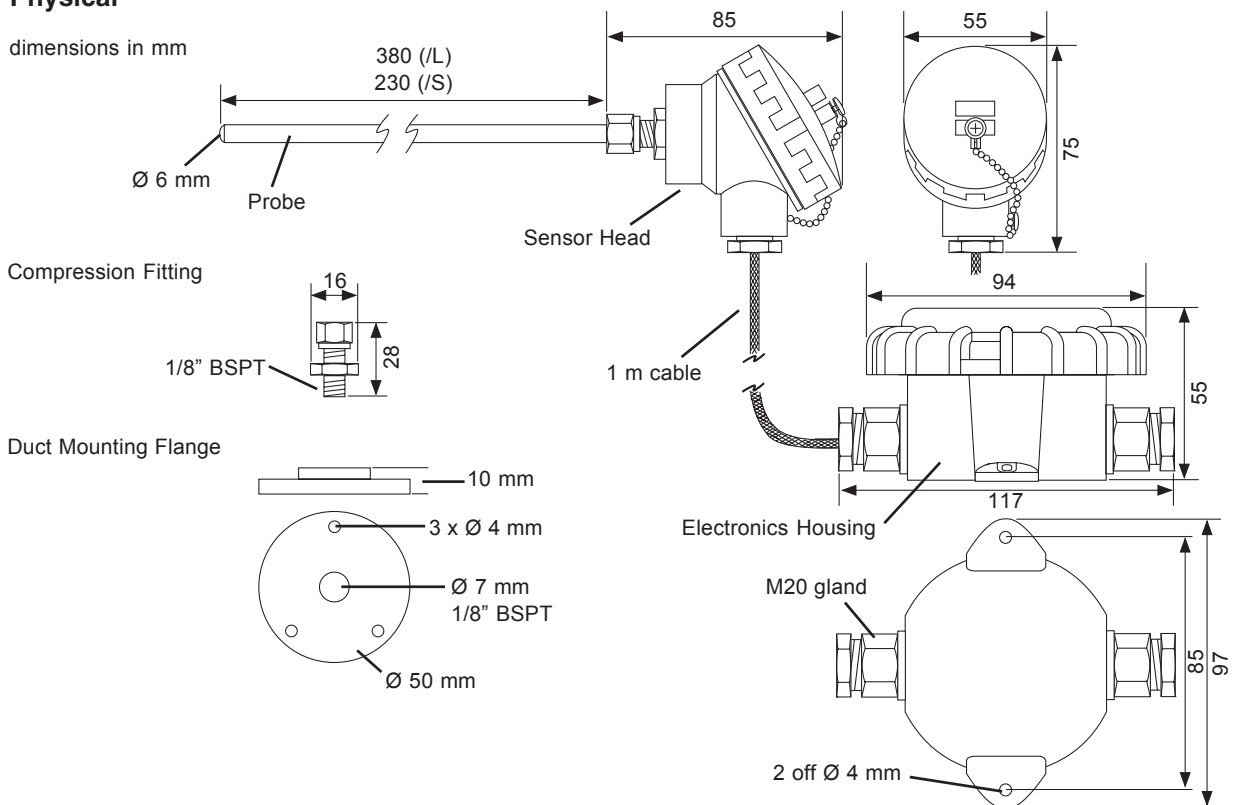
Duct mounted PRT sensor for high temperature monitoring applications up to 400 °C. Electronics housed in a separate box produce a 4 to 20 mA output signal. 1/8" BSPT compression fitting allows probe depth to be varied. Supplied complete with brass mounting flange for thin wall duct applications.

Feature

- 2 probe lengths available
- Probe depth adjustable
- 1/8" BSPT or flange mounting
- PRT accuracy
- Separate electronics for reliability
- Sensor head pre-wired for convenience with 1 m of fibreglass insulated stainless steel braided cable

Physical

dimensions in mm



FUNCTIONALITY

The T/FG Flue Gas sensor consists of a stainless steel PRT sensor probe (either short or long probe) attached to the die cast sensor head which is connected to the electronics housing by a pre-wired fibre glass insulated braided cable. The electronics housing contains the transmitter which converts the temperature dependent resistance value to a 4 to 20 mA signal. This is supplied complete with a brass compression fitting, and duct mounting flange. If the material is thick enough (> 6 mm), the sensor may be mounted on the duct by tapping a 1/8" BSPT hole in the material and screwing the compression fitting into the hole. For thinner material, a 6.5 mm hole should be drilled in the duct and the duct mounting flange fixed over this via three self tapping screws; the compression fitting can then be screwed into the flange. The compression fitting enables the sensor length into the duct to be varied, although it is recommended to allow 50 mm minimum between the duct and the sensor head to keep the sensor head cool.

INSTALLATION

The installation process involves:

Choose location - check maximum temperatures

Either tap 1/8" BSPT hole and fix compression fitting

Or drill hole and fix duct flange via 3 self tapping screws

Mount sensor into compression fitting and adjust depth

Mount electronics housing using 2 screws

Connect electronics housing to controller, observing polarity

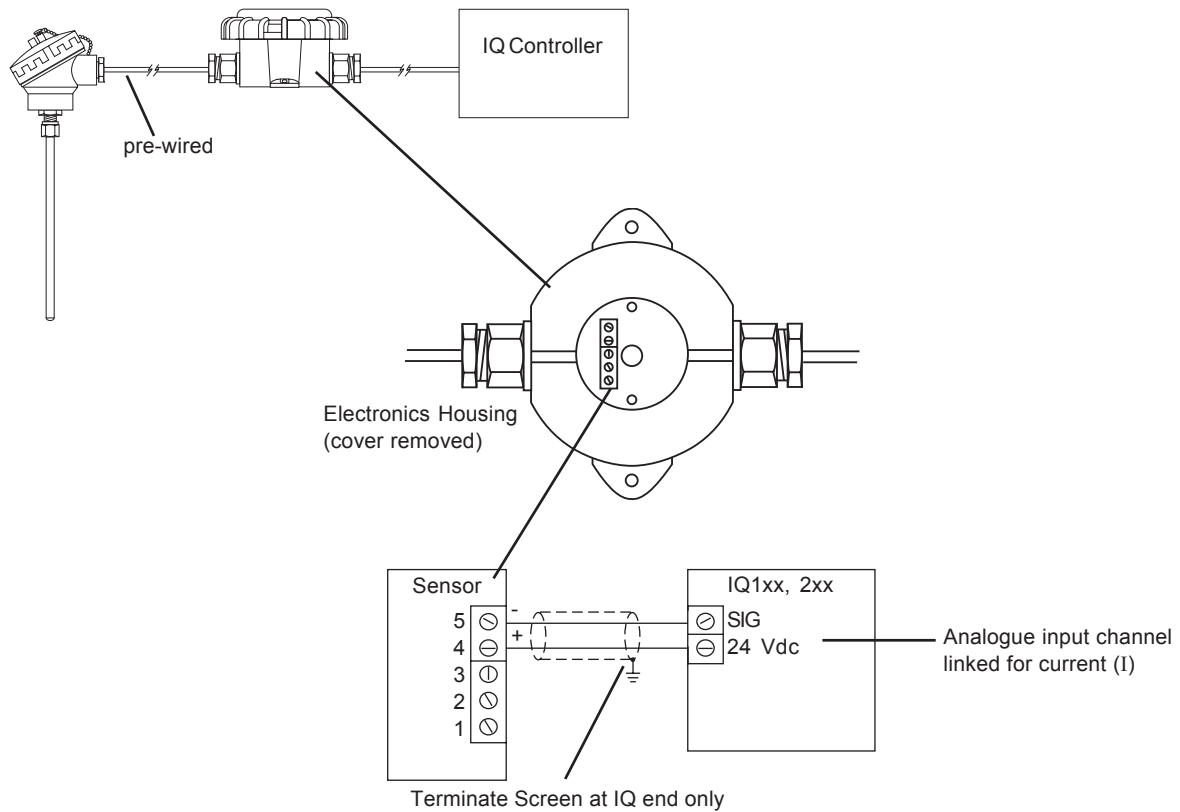
Configure IQ analogue input channel for current (I)

Configure strategy

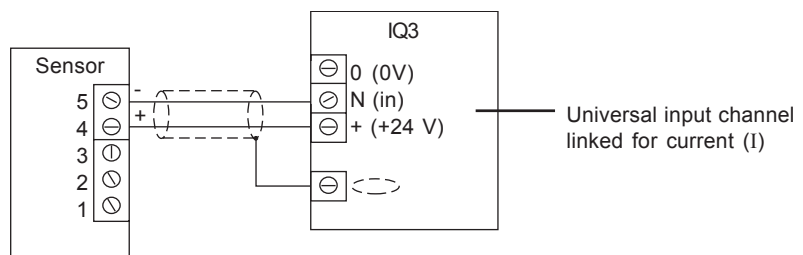
Test

For full installation details see T/FG Installation Instructions TG100245A

CONNECTIONS



Note that if connecting to an IQ2x controller (including /ADL or /OC), do not connect to C (+24V), instead connect to AUX+ (+24V).



ORDER CODE

T/FG-S :Flue Gas Temperature sensor with 230 mm probe complete with compression fitting and duct mounting flange

T/FG-L :Flue Gas Temperature sensor with 380 mm probe complete with compression fitting and duct mounting flange

SPECIFICATIONS

General

Measuring range	:0 to 400 °C
Output signal	:4 to 20 mA
	Reverse and over voltage supply protection
Sensor element	:Platinum resistance thermometer, 100 Ω ±0.1 % at 0 °C, BS1904 class B 1980
Accuracy	:± 0.1% of span, typical
Supply voltage	:24 Vdc ±15 %
Connections	: Screw terminals for 0.5 to 1.5 mm ² cross section area cable

Ambient Limits

Temperature	
Sensor head	:0 to +100 °C
Probe	:0 to +400 °C
Electronics housing	:-40 to +70 °C
Humidity	:0 to 95 %RH
Protection	:IP67 throughout

Dimensions

Probes	:Projection into duct adjustable using compression fitting
Short	:230 mm x 6 mm diameter
Long	:380 mm x 6 mm diameter
Sensor head	:irregular 75 x 85 x 55 mm maximum
Cable	:1 m length
Electronics housing	:117 x 97 x 55 mm maximum
Duct mounting flange	:50 mm diameter x 31 mm
Compression fitting	:28 mm x 16 mm
Weight	
Short	:508 gms
Long	:532 gms

Materials

Probe	:Stainless steel
Sensor head	:Die cast aluminium and brass, cable gland - brass, nickel plated
Cable	:Fibre glass insulated stainless steel braided cable
Electronics housing	:Impact resistant ABS
Duct mounting flange	:Brass
Compression fitting	:Brass

Input channel and sensor scaling

The input channel should be linked for loop powered current, I.

The sensor type module must be set up with the correct scaling. The recommended method of setting the sensor type scaling is to use SET. For all IQ2 series controllers with firmware version 2.1 or greater, or IQ3 series controllers, the SET Unique Sensor Reference given below should be used

PRT I 0+400


Alternatively enter scaling manually using sensor type scaling mode 5, characterise, with input type set to 2 (current) and table below.

Y	E	U	L	P	I ₁	I ₂	O ₁	O ₂
2 (current)	4	400	0	2	4	20	0	400

System Accuracy (including controller):±2 °C (0 to 400 °C)

For all other IQ controllers see the Sensor Scaling Reference Card, TB100521A, for scaling settings.

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