



Series 651A Temperature Transmitter

Specifications - Installation and Operating Instructions



The device is a low cost temperature transmitter designed to accept a standard platinum resistance sensor (Pt100 2 or 3 wire) to BS1904 or DIN 43760 and convert the temperature to an industrial 4-20mA current. It is housed in a DIN standard connecting block.

The transmitters are available in 3 standard factory calibrated ranges. The enclosure provides trim potentiometer access, allowing fine re-calibration adjustments to be made at both ends of the scale.

Fig 1 shows the method of connection to provide a 4-20 mA current loop output. the Pt100 sensor shown would normally take the form of a probe assembly with a three wire output. The output loop shows a 24V dc power supply, used to provide loop excitation, the transmitter, and a load all connected in series. the load symbol represents other equipment in the loop, normally indicators, loggers etc. Sometimes these instruments come with the 24V supply built in as standard, this simplifies wiring and reduces cost. Care must be taken when designing the 4-20mA circuit to ensure that the total burden of the loop, that is the total voltage requirements of all the equipment in the loop added together, does not exceed the power supply voltage. If a number of instruments are connected in the loop, ensure that only one instrument is tied to ground. Grounding the loop at two points will result in shorting out part of the loop and therefore any instruments in that part of the loop will not operate.

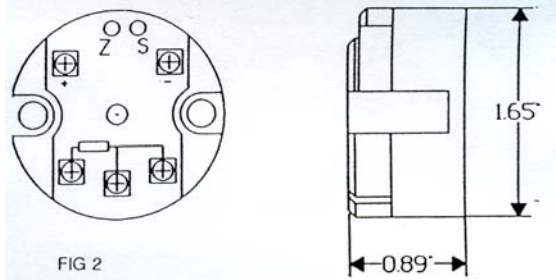
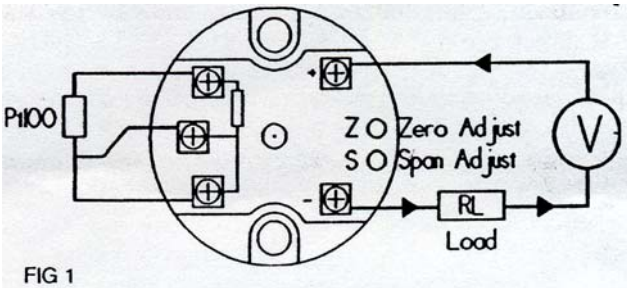


FIG 2
Mounting holes : 2 hole 0.22. 1.3 centers
Center-hole sensor wire entry : 0.16 diameter

SPECIFICATION @ 20 deg C, (68 deg F)

Input	Pt100 sensor to BS1904 or DIN43760 100 R @ 0 deg C (32 deg F) FI=38.5 R, 2 or 3 wire.
Output	4-20 mA Loop powered , Max 30 mA
Loop Supply	10 to 32 V d.c.
Loop Resistance	700R @ 24 V
Loop Protection	Reverse connection protected
Loop Sensitivity	10 uA/volt
Accuracy	+/- 0.2 deg C, (0.36 deg F) plus +/-0.25% of reading
Temp Stability	Zero Drift Typ 0.05%/ deg C (0.09 deg F) Span Typ 0.002%/deg C (0.0036 deg F)
Ambient Temp	0 / 50 deg C (32 / 122 deg F) Operating -40 / 70 deg C (-40/158 deg F) Storage
Ambient Humidity	0 / 95% (Non Condensing)
Connection	Screw Terminal
Cable Size	Recommended max wire 2.5mm (0.1")sq

INSTALLATION

The transmitter is mounted using two 5.5mm , (0.22") diameter holes, on standard 33mm, (1.3") centers. this transmitter has been specifically designed to be mounted inside a DIN standard probe head enclosure, which should provide adequate protection from moisture, corrosive atmosphere etc. All cable entries should be sealed using the correct size cable gland. Care must be taken when locating the transmitter to ensure the ambient temperature will remain inside the specified range of 0 to 50 deg C, (32 to 122 deg F). Figs 2&3 show the mechanical layout and a typical application of the transmitter mounted inside a probe head enclosure, with sensor wires entering through the transmitter body.