

T111 Module — RTD Input Conditioner

SPECIFICATION

Inputs: PT100/Ni20, Cu10 or 0-1k Ω sensors

(Ni20 & Cu10 RTDs are not yet supported by software)

A-to-D Converter: integrating type

A-to-D Resolution: >15 bit
(with integration period = 20ms)

Internal Ranges: 3

Converter Scan Rate: 8 per second

Integration Period: selectable for 50 or 60Hz rejection

Calibration Values: in T111 E² PROM

Break Detection Current: 740nA (nominal)

Maximum Break Detect Time:
Break detection is made within one scan cycle.

Up/Down Scale Break Protection generated in software.

Common Mode Rejection: 120dB
(50Hz to 5kHz)

Series Mode Rejection: 60dB @ 50Hz

Temperature Stability:
0.003% of input per °C

DESCRIPTION

The T111 RTD Input Conditioner may be used with a two, three, or four wire RTD. It is able to detect a break in the circuit very rapidly, before any bad readings are used.

Table 5 shows the types of thermometers supported by the T111, and its performance in each range. The Ni20 and Cu10 thermocouples are not yet directly supported by the software, although a user characterisation may be created for them.

Figure 10 shows the inside of the T111 module, and Figures 11, 12 and 13 show the connections for the two, three, or four wire RTDs.

Order Code. T111/TAG-----
(if the TAG is not specified it will be supplied blank).

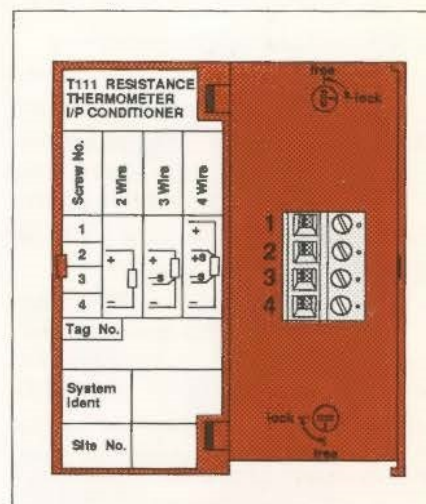


Figure 10 T111 RTD Input Conditioner

Sensor	Excitation Current mA	Maximum Lead* Ω /lead	Maximum Sensor Ω	Maximum Temperature °C	Accuracy
PT100/Ni20	0.4	25	420	-200 to 850**	±0.5°C
Cu10	1.67	20	60	-70 to +150	±0.7°C
0-1k Ω range	0.4	25	1k	—	0.5 Ω

*For correct 3 or 4 wire rejection

**This range may be increased from -220°C to +1050°C, but with reduced accuracy.

Table 5 Resistance Thermometers supported by T111 Analogue Input Module

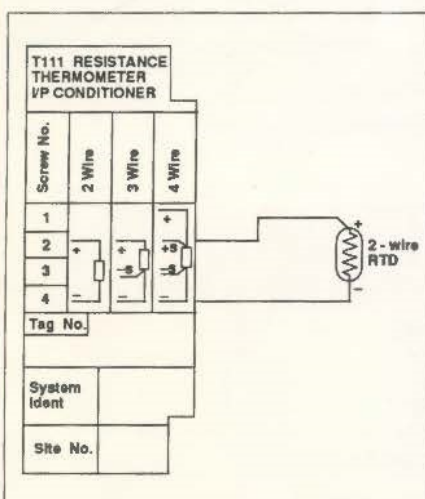


Figure 11 2-Wire RTD Connections

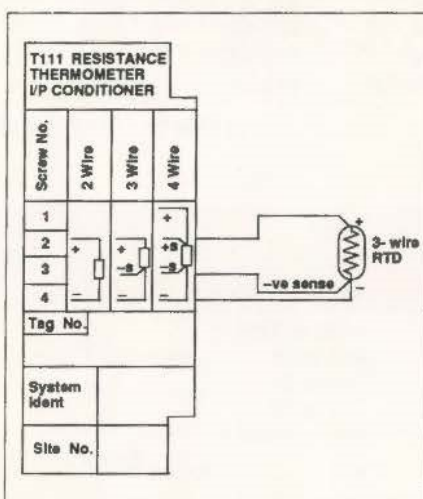


Figure 12 3-Wire RTD Connections

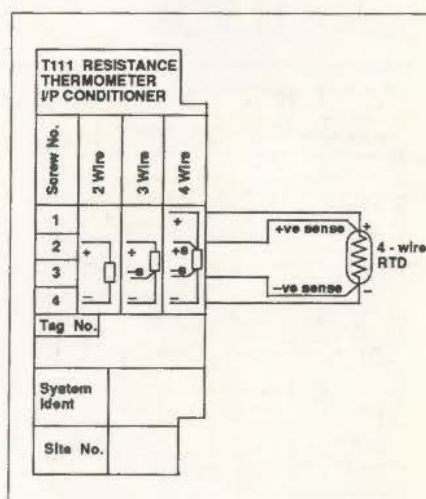


Figure 13 4-Wire RTD Connections