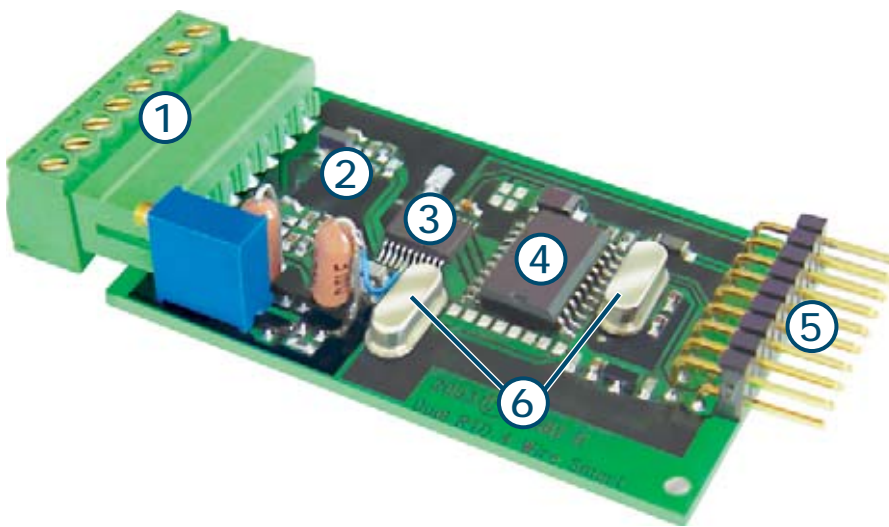


SMART

IST5 Analog Input Module

Dual RTD (precision 0.01, 4-wire)



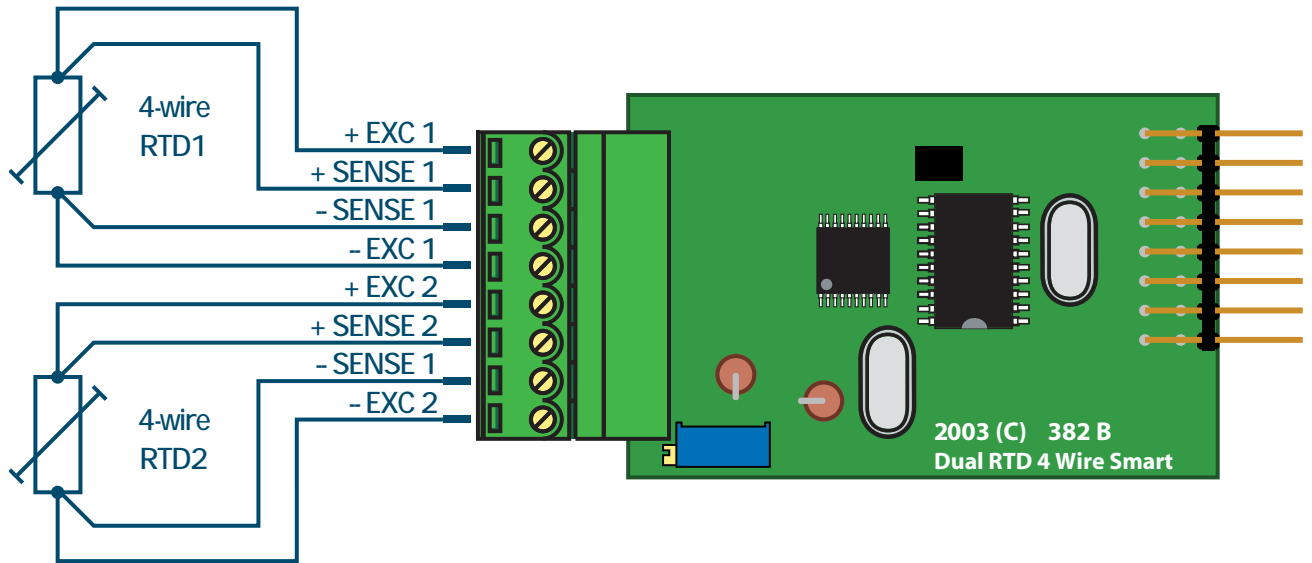
- 1- 8-pin input plug:
Dual 4-wire RTD
- 2- Electromagnetic
noise suppression
- 3- Low-noise 16-bit
A/D converter
- 4- On-board digital
signal processor
- 5- Interface to
Texmate controller
- 6- 50/60Hz noise
rejection

IST5 Specifications

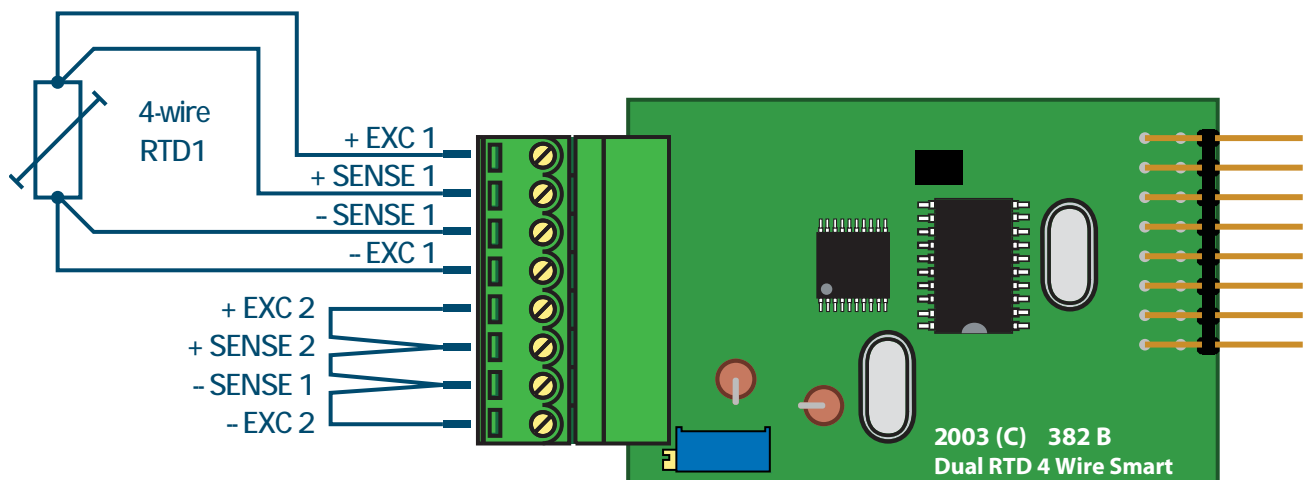
<i>Input channels</i>	4-wire RTD, (Pt385/Pt392) - 10Hz average output
<i>Signal processing rate</i>	10Hz
<i>A/D converter</i>	Dual channel 16-bit A/D convertor approaching 19-bit resolution (ratiometric)
<i>Noise rejection</i>	50/60Hz selectable noise rejection frequency
<i>Excitation current</i>	200µA constant current source. Current sense for open circuit RTD (ratiometric).
<i>Resolution</i>	0.01°F
<i>Span drift</i>	±20ppm/°C of full scale max
<i>Non-linearity</i>	0.05°C max
<i>Calibration</i>	Easy calibration with wide operating temperatures through Texmate Configuration Utility software.

IST5 Board Layout

Two 4-wire RTD sensors



Single 4-wire RTD sensor



The simplest way to configure your controller is to use the
Texmate Configuration Utility program.

Software + configuration macro available at
www.texmate.co.nz/downloads

If you have a display, front panel configuration can also be performed as
detailed on the following pages.

Programming Procedures

Below are instructions for the typical setup of an IST5 input module, where setup begins with factory defaults applied.

- ① Press the **P** and **▲** buttons at the same time to enter the main programming mode.
- ② Press the **P** button three times to enter Code 2. Use the **▲** and **▼** buttons to set Code 2 to 177.
- ③ Press the **P** button to enter smart register 1 code setup menu. Use the **▲** and **▼** buttons to set Smart 1 to XOX.

SMART 1 = XOX

First Digit	Second Digit	Third Digit
<i>Noise rejection</i>	0 (Not used)	<i>RTD type</i>
0 —		0 Pt385
1 60Hz rejection		1 Pt392
2 —		
3 50Hz rejection		

- ④ Press the **P** button to save your settings. The display returns to [Cod_2] [177]. Select the required settings for Channel 1 by using the **▲** and **▼** buttons to set Code 2 to X7X.

CODE 2 = X7X

First Digit	Second Digit	Third Digit
<i>Processing Rate</i>	7 (Smart input module)	<i>Output Register Map</i>
0 —		0 RTD1 Average output
1 10Hz		1 RTD2 Average output
2 —		
3 100Hz		

- ⑤ Press the **P** button to save your settings. The display shows [Cod_3] [000]. 000 is the typical setting for this code and *in most cases* does not need to be changed.

However, for 320 controllers Code 3 should be adjusted using the ▲ and ▼ buttons as follows:

CODE 3 = 00X

First Digit	Second Digit	Third Digit
0 (Direct display of input)	0 (No linearisation)	<i>Serial Mode</i>
		0 ASCII mode
		1 Modbus mode
		2 Master mode
		3 Print mode
		4 Ethernet mode
5 Devicenet mode		

- ⑥ Press the **P** button to save your settings and enter Code 4. Select the required settings for Channel 2 by using the ▲ and ▼ buttons to set Code 4 to 0X0.

CODE 4 = 0X0

First Digit	Second Digit	Third Digit
0 (Voltage, current)	<i>Output Register Map</i>	0 (No linearisation)
	4 RTD1 Averaged signal	
	5 RTD2 Averaged signal	

- ⑦ Press the **P** button to save your settings. The display shows [Cod_5] [077].

For special applications, input signals can be displayed on Channels 3 and 4 (Codes 5 and 6). Please contact Texmate if you require this.

- ⑧ Press the **P** and ▲ buttons at the same time to exit and return to the operational display.

Final Customer Configuration Settings

Smart 1		0	
Code 2		7	

Code 3	0	0	
Code 4	0		0

2-point Calibration Procedure

The RTDs can be calibrated in °C or °F. A calibration source is the easiest method to calibrate a zero and full scale setting. Otherwise, the known resistance values for the temperatures must be used:

RTD Pt385 0°C is equivalent to 100Ω
 100°C is equivalent to 138.5Ω

- ① Press the **[P]** and **[▲]** buttons at the same time to enter the main programming mode.
- ② *[1602 & 1602+K users - Skip this step.]* Press **[P]** to enter the calibration mode.
- ③ The display shows [CAL] [000]. Use the **[▲]** and **[▼]** buttons to set CAL to 11X. Press **[P]** to confirm. CAL = 11X

First Digit	Second Digit	Third Digit
1 (Calibration)	1 (2-point calibration)	<i>Channel To Calibrate</i>
		1 Channel 1 2 Channel 2

- ④ The display shows [ZERO]. Use the **[▲]** and **[▼]** buttons to adjust the display to the desired reading for zero input. Apply the low input signal for at least 5 seconds, and then press **[P]** to save the zero value.
- ⑤ The display shows [SPAN]. Use the **[▲]** and **[▼]** buttons to adjust the display to the desired reading for span input. Apply the high input signal for at least 5 seconds.
- ⑥ Press **[P]** to save the span value and apply the new calibration values.

*If calibration is unsuccessful, the display will show [ERR_1] for a few seconds before returning to [CAL] [11X]. Check your signal inputs and connections. Then press **[P]** and begin again from Step 4.*

