5. Enter the temperature value in the text box *"For a temperature of…"*, in the *"1 Point Calibration"* section.

6. Adjust, with the (+) and (−) buttons, until the output of the MIST corresponds to the reading shown in the text box *"Output should be at…"*

9.2 Two points calibration

To perform a two points calibration you will need two known reference points in the operation range of the MIST. The first point must always be smaller than the second one.

1. Connect the MIST (See section 7).

2. Launch the MIST software.

3. Click on the *"PROGRAM"* button to access the programming window.

4. Enter in the text box *"First Point"*, located in the *"2 Point Calibration"* section, the value of the first calibration point.

5. Set the MIST to this temperature value and click on the *"READ"* button located just beside the *"First Point"* text box.

6. Enter, in the text box *"Second Point"*, the value of the second calibration point.

7. Set the MIST to this temperature value and click on the *"READ"* button located just beside the *"Second Point"* text box.

8. Click on the *"Process"* button to update the MIST with the new calibration parameters.

mmist, rev2.0/020608

10. Specifications

Electrical Properties

Input :	RTD, type Pt100
Sensor Temperature Ranges :	See Box1 code for standard ranges. Field re-scalable between -200 °C to 600 °C or -50 °C to 200 °C, depending on model.
Output :	4-20 mA loop powered, linear to temperature
Power Supply :	9-36 VDC, polarity protected
Supply Effect :	0.001 % / V
Accuracy :	±(.25 °C + 0.40 % of span) with one-point calibration[1]. ±(.10 °C + 0.10 % of calibrated span) with two-point calibration[2].
Maximum Loop Resistance :	[(Vsupply – 7) * 40] ohms
Sensor Open Circuit :	Upscale 24 mA or Downscale 2.5 mA
Warmup :	30 seconds
RFI Effect :	1 % or less typical
Isolation :	500 VDC Input / Output
Temp. Effects :	±0.001 % of Span /oC
Long Term Drift :	≤0.1 % FS / Year

Mechanical Properties

Probe and Housing Material :	316 Stainless Steel, welded to probe
Cable Material :	PVC, Teflon or Stainless Steel armored over Teflon
Protection :	NEMA 6P (IP67), hermetically sealed
Storage Temp. Range :	-40 °C to 80 °C
Operating Temp. Range :	-40 °C to 80 °C (housing only)
Maximum Operating Pressure :	1500 PSIG Max (probe only). 500 PSIG (Tri-clamp)
Standard Surface Finish :	Polished to #4 finish per 3-A standard 74-02, 32 micro-inches max.
Pharmaceutical Surface Finish :	Polished to mirror finish and passivated, 10 micro-inches typical

[1.] Max. error on complete span. Error at calibration point ≤0.1 % of Span.
[2.] Max. error on complete calibrated span. Error at calibration points ≤0.1 % of Span

intempco
Manufacturer of Superior Quality Instrumentation

temperature

humidity

level

Disclaimer

Intempco guaranties that its products are free from defects in material and workmanship. This warranty is valid for a period of one year from the date of purchase, and covers these components of the products which are non-moving and not subject to normal wear. This warranty does not cover products which are modified or altered. Moreover, it does not cover electrical cables which are cut during installation.

The above stated warranty becomes null and void if anyone, other than service personnel authorized by Intempco, attempts to repair a defective product.

Intempco's only obligation under this warranty is to repair or replace, at Intempco's option, products that are found, upon Intempco's examination, to be defective. Intempco shall have no obligation for consequential damages to personal or real property, or for injury to any person.

1. Description

Based on Intempco's patented MIST™ technology, the MIST Temperature Sensors™ are designed for optimum accuracy and performance. The key feature that make these sensors so innovative is that they are the world's first ever temperature sensors with a built-in, fully programmable, microprocessor based transmitter.

2. Note

Prior to unpacking and installation, please read the operating instructions and follow them carefully. These units are to be installed, used and serviced only by individuals who are familiar with the operating instructions and the applicable regulations for operational safety and accident prevention.

The unit is constructed using the most up to date production equipment and complies with the safety requirements of the local guidelines. The manufacturer cannot be held responsible for damage caused by misuse or incorrect installation. The installation conditions and connection values indicated in the operating instructions must be followed.

3. Control of Units

The units are calibrated and checked before shipment and shipped in good conditions. If you detect a visible defect on the unit, we recommend that you carefully check the packing material. In the event of a defect, please immediately notify the mail service/freight forwarder, as they are responsible for shipping damage.

4. MIST PKIT-1

Kit includes :

- MIST™ calibration software CD ROM
- Communication module with RS-232
- 110 VAC Wall adapter

5. Software installation

Minimum system requirements :

- Windows TM 95, 98, NT 4.0, Millenium, 2000 or XP
- Pentium 1 - 300 MHZ or better
- 5 MB of free disk space
- 16 MB of RAM
- 1 serial Port

IMPORTANT

IF YOU ALREADY HAVE AN OLD VERSION OF THE MIST™ SOFTWARE INSTALLED ON YOUR COMPUTER YOU MUST FIRST UNINSTALL IT. TO DO THIS, USE THE WINDOWS ADD/REMOVE PROGRAM, IN THE CONTROL PANEL.

STEP 1 : Copy all files from respective directory on CD-ROM to a temporary directory on your hard disk.

STEP 2 : Run the *SETUP.EXE* (Win95 & Win98) program or the *MIST.MSI* (WinXP) program from your hard disk. The Intempco-MIST Setup program will automatically start.

STEP 3 : By default, the MIST software will be installed in the *"Program Files\MIST"* directory. You can change the installation directory by clicking on the *"Change Directory"* button during the setup procedure. When the installation directory is set, click on the graphical button (showing a computer) to complete the installation.
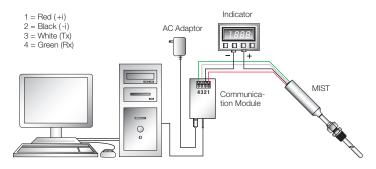
6. Connecting the MIST Temperature Sensors™.

It is important to follow these steps in order :

1. Connect the MIST Temperature Sensor™ to the communication module via the 4 positions screw terminal.
2. Connect the communication module to the serial port of the computer via the DB-9 cable.
3. Plug the AC adaptor to a wall outlet.
4. Connect output cable of AC adaptor to communication module. If you want to use an indicator or calibrator, plug it in series on the BLACK wire (-i) or RED wire (+i).

7. Electrical connections

1 = Red (+i)
2 = Black (-i)
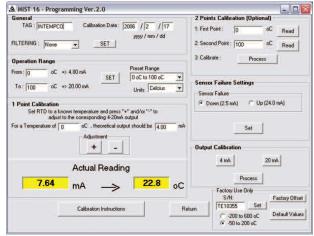3 = White (Tx)
4 = Green (Rx)

The MIST Temperature Sensor™ connected to a PC via the MIST PKIT-1

8. Re-scaling the MIST Temperature Sensors™

1. Connect the MIST (See the procedure above).
2. Launch the MIST software. If the software found the MIST, you will see, in the *"Message"* text box on the main screen : *"MIST CONNECTED"*. If the MIST is not powered or not connected in the appropriate communication port, the *"Message"* text box on the main screen will display *"MIST NOT FOUND!"*. If this is the case, check to be sure that the MIST is well connected and powered.

   By default, the communication port is set to COM1. If the MIST is not connected to COM1, select the appropriate COM port in the *"Configuration"* section of the main window. Once you have checked the connections and the COM port, click on the *"READ"* button to initiate the communication.
3. Click on the *"PROGRAM"* button to access the programming window.
4. To re-scale the MIST, you can either select a *"Preset Range"* in the scrolling menu located in the *"Operation Range"* section of the window, or enter manually the range in the *"From"* and *"To"* text boxes. Once the range is selected, click on the *"SET"* button to apply. The MIST will automatically be re-scaled to the new range.

MIST PKIT-1 Calibration Interface Software

9. Re-calibrate the MIST Temperature Sensors™

The MIST is already calibrated by INTEMPCO for a range of $-200\,^\circ C$ to $600\,^\circ C$ or to the customer range, if specified. If you want to re-calibrate the MIST, two types of calibration are available, one point calibration and a two point calibration.

9.1 One point calibration

To perform a one point calibration you will need one known reference point, ideally located around the middle of the operating range.

1. Connect the MIST (See section 7).
2. Launch the MIST software.
3. Click on the *"PROGRAM"* button to access the programming window.
4. Set the MIST to a known temperature, ideally around the mid-range.