

Using the HART Communicator

The FRC can be programmed using a HART Communicator. If your communicator is not equipped with the Device Description for the FRC, you need to update it with the FRC DD. The FRC DD is available on the HART Foundation's Device Driver Library Release Jun 2002 and later.

This section contains the instructions for programming the FRC temperature transmitter using a HART Communicator that has been loaded with the FRC DD.

Fig 1 shows a tree view of the programming menus for the configuration process.

A. Online Menu

The Online Menu displays the current process value (PV), the actual output current (AO), the lower and upper range values (LRV, URV). Use the Device Setup to configure the FRC.

B. Configuring the Input Sensor

In the "Select Snsr" Menu, the type of input sensor (millivolt, TC, RTD, Ohm Resistance, Potentiometer) including the number of input wires can be configured.

C. Configuring the Input Properties

In the "Basic Setup" Menu, you can configure the Input Sensor Type, the sensor's upper and lower range values, the units and damping time. Damping smooths the input fluctuations and output the averaged values. The damping time can be set between 0 and 30 seconds.

In the "Signal Condition" Menu, you can configure the sensor's upper and lower range values, the units, and the damping time.

D. Configuring the Analog Output Properties

In the "Analog Output" Menu, you can perform the output D/A trimming, output loop test and set the burnout (Upscale, Downscale and None).

E. Configuring the HART Output

In the "HART Output" menu, you can configure a polling address between 0 and 15, turn burst mode ON/OFF, and change the burst option.

F. Configuring the Device Information

In the "Device Information" Menu, you can display the current device information and configure a tag, descriptor, date, a message and final assembly numbers for the transmitter.

G. Calibrating the Input Sensor

In the "Calibration" Menu, you can perform the zero and span calibrations for a non-calibrated sensor. "Snsr Zero Cal." adjusts the offset value at the zero point. "Snsr Span Cal." adjusts the gain value against the zero point. The Zero and Span calibration can be applied to any particular point within the measurable range. Conduct the calibration in order of Zero and Span.

In the "Reset Cal." menu, you can reset the transmitter to the factory settings. Once the reset calibration is complete, the input sensor calibrated values are erased. When the sensor type has been changed, the calibrated values applied to the previous sensor are erased, too.

H. Changing the Terminal Temperature Units and the CJ Compensation

In the "Term Temp Sensor" menu, you can change the units of the terminal temperature and turn the CJ (Cold Junction) Compensation ON/OFF. When you configured the input sensor to a TC, the CJ Compensation is always set to ON.

I. Changing Loop Current to a Fixed Value

In the "Loop Test" Menu, you can change the loop current to a fixed output. The FRC must be removed from automatic control in order to execute the loop test.

J. Performing the Diagnostics

In the "Test Device" Menu, you can perform the Master reset, the Self Test and display the additional device status.

K. Checking on the Transmitter's Settings

In the "Review" Menu, you can check on the transmitter's settings. In the menu, you cannot change the value of the transmitter's settings.

Figure 1. FRC HART Communicator Menu Tree

