Using the HART Communicator

The B3HU can be programmed using a HART Communicator.

If your communicator is not equipped with the Device Description for the B3HU, you need to update it with the B3HU DD. The B3HU DD is available on the HART Foundation's Device Driver Library Release June 2003 and later. This section contains the instructions for programming the B3HU temperature transmitter using a HART Communicator that has been loaded with the B3HU 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 B3HU.

B. Configuring the Input Sensor

In the "Select Snsr" Menu, the type of input sensor (millivolt, TC, RTD, Resistance, Potentiometer) including the number of input wires can be configured. The B3HU supports the user-defined customer TC (TC Spec) and customer RTD (RTD Spec). For using the TC Spec or the RTD Spec, you must predefine and configure the data for the customer TC or RTD by using the "B3HU PC Configurator Software (model: B3HUCFG)."

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, the damping time and the Xfer Function. The B3HU supports the user defined special curve for the Xfer Functions. For using the special curve, you must predefine and configure the data by using the "B3HU PC Configurator Software (model: B3HUCFG)."

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 for the following items: Tag, Descriptor, Date, Message, PV Sensor Serial Number and Final Assembly Number.

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.

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.

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. B3HU HART Communicator Menu Tree