Foundation Fieldbus Communications for the XMT868

Network Connection and Factory Reset

Fieldbus network connections are made at J8, pins 1 and 2 (see Figure 1 below). Optionally, a shield can be connected to J8 pin 3, depending on the network wiring.

No connections are made to J9 under normal operation. If it is desired to reset the network board to factory defaults:

1. Connect a jumper between J9 pin 2 and J9 pin 3.

2. Power cycle the instrument.

3. Ten seconds after the power has been restored to the unit, remove the jumper to return the network board to normal operation.
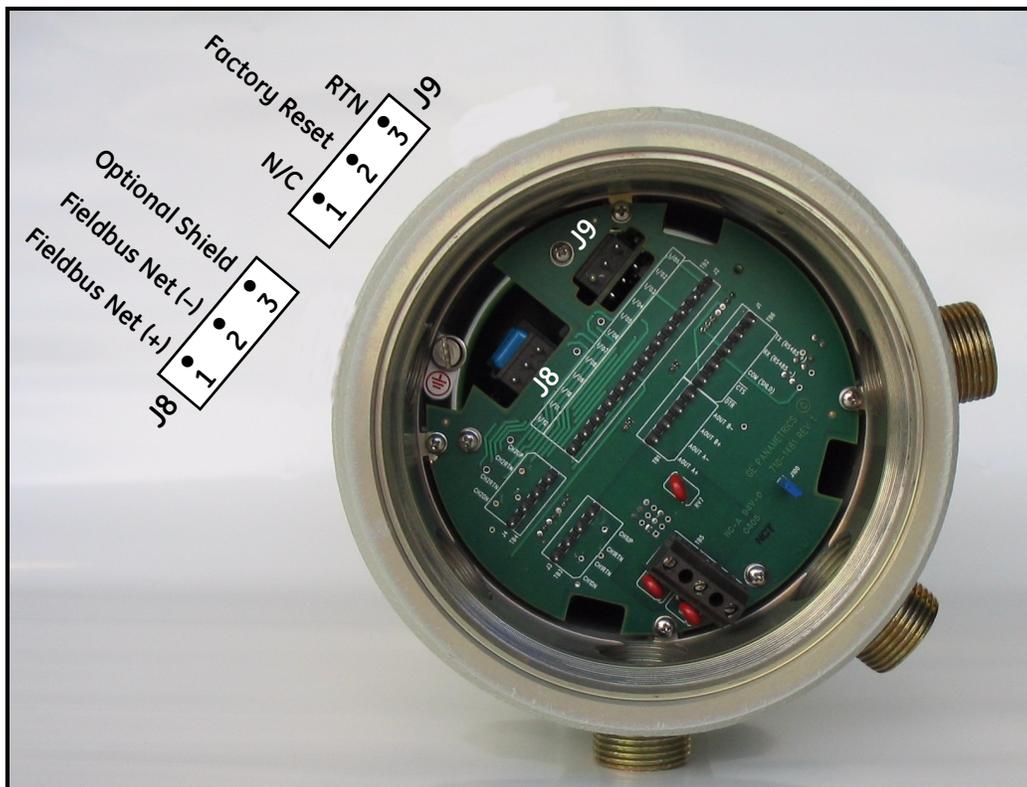

Figure 1: Model XMT868 Rear View - Network Connection and Factory Reset

Foundation Fieldbus Communications

Foundation Fieldbus provides a means of communicating with the XMT flowmeter. The patent numbers which apply are 5,909,363 and 6,424,872.

This Foundation Fieldbus device supports 2 Analog Input (AI) blocks, which can be configured to supply the following measurements on the network.

Table 1: Available Measurements

Description	Units	Description	Units	Description	Units
Ch1 Velocity	ft/s or m/s*	Ch2 Totalizer Time	seconds	Ch1 Power	POWER_U
Ch1 Volumetric	VOL_U	Ch2 Error Value	none	Ch1 +Energy	ENERGY_U
Ch1 +Totals	TOT_U	Ch2 SSUP	none	Ch1 –Energy	ENERGY_U
Ch1 -Totals	TOT_U	Ch2 SSDN	none	Ch1 TempS	Deg F or C*
Ch1 Tot Digits**	none	Ch2 SNDSP	ft/s or m/s*	Ch1 TempR	Deg F or C*
Ch1 Totalizer Time	seconds	Avg Velocity	ft/s or m/s*	Ch1 TS-TR	Deg F or C*
Ch1 Error Value	none	Avg Volumetric	VOL_U	Ch1 DELTH	Btu/lb J/gm
Ch1 SSUP	none	Avg +Totals	TOT_U	Ch2 Power	POWER_U
Ch1 SSDN	none	Avg -Totals	TOT_U	Ch2 +Energy	ENERGY_U
Ch1 SNDSP	ft/s or m/s*	Avg Tot Digits**	none	Ch2 –Energy	ENERGY_U
Ch2 Velocity	ft/s or m/s*	Avg Totalizer Time	seconds	Ch2 TempS	Deg F or C*
Ch2 Volumetric	VOL_U	Avg Error Value	none	Ch2 TempR	Deg F or C*
Ch2 +Totals	TOT_U	Avg SSUP	none	Ch2 TS-TR	Deg F or C*
Ch2 –Totals	TOT_U	Avg SSDN	none	Ch2 DELTH	Btu/lb J/gm
Ch 2 Tot Digits**	none	Avg SNDSP	ft/s or m/s*		

*Metric or English units are determined by the setup of the **XMT868** flow meter.

**Totalizer digits are available for informational purposes only. Respective totals are automatically scaled by the Tot Digits value selected in the XMT flow meter setup.

VOL_U, TOT_U, POWER_U and ENERGY_U are determined by the units chosen for these measurements in the setup for the **XMT868** flow meter. See the instrument User's Manual for the setup of these parameters.

Configuration Utility Setup

The following is an example setup using National Instruments Configuration Utility v3.1.

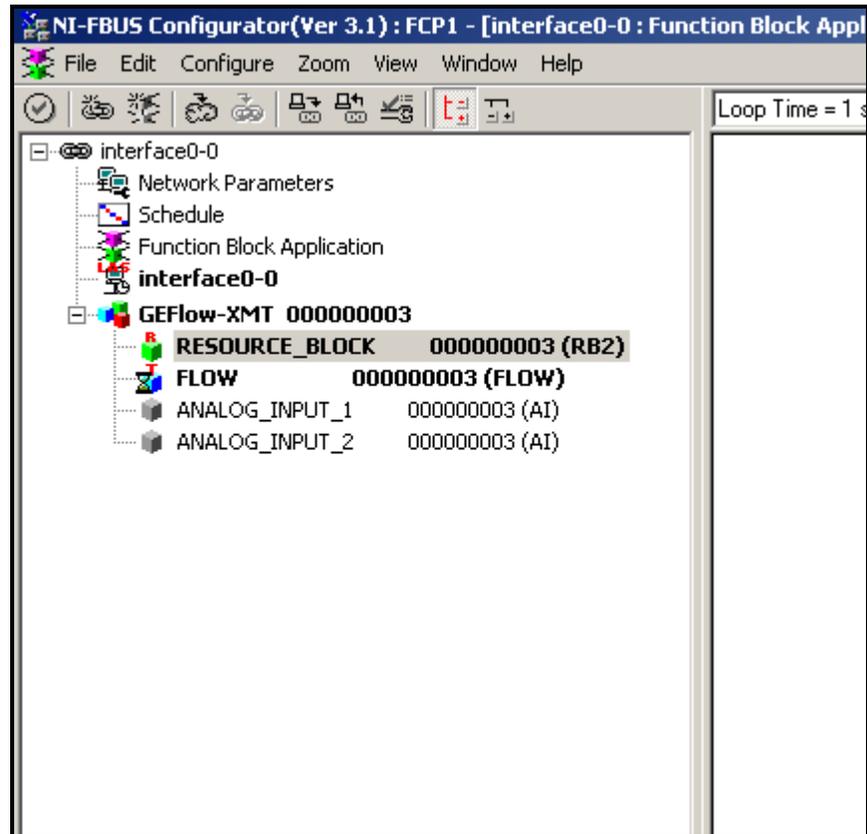Figure 2 below shows the Configuration Utility with an **XMT868** flow meter on the network (GE Flow-XMT).

Figure 2: Configuration Utility Setup Example

Note: *The following procedures assume that the device has been placed in the OOS (out-of-service) mode before executing.*

Selecting the Desired Measurements

To set the measurement unit for each AI:

1. Double click on the FLOW Transducer Block (in the tree under GEFlow-XMT).

2. Select the **Others** tab and open the drop down list for the PRIMARY_SELECTOR and SECONDARY_SELECTOR (see Figure 3 on page 4).

3. Choose the unit from the list (see Figure 3 on page 4).

This unit will correspond to the unit that is available in the AI block for network connection. The PRIMARY_SELECTOR unit will correspond to ANALOG_INPUT_1 and the SECONDARY_SELECTOR will correspond to ANALOG_INPUT_2.

Selecting the Desired Measurements (cont.)

4. After the desired measurements have been selected for the PRIMARY and SECONDARY SELECTOR, choose the unit system (UNIT_SELECTOR above the PRIMARY_SELECTOR) that has been programmed in the **XMT868** (English or SI).
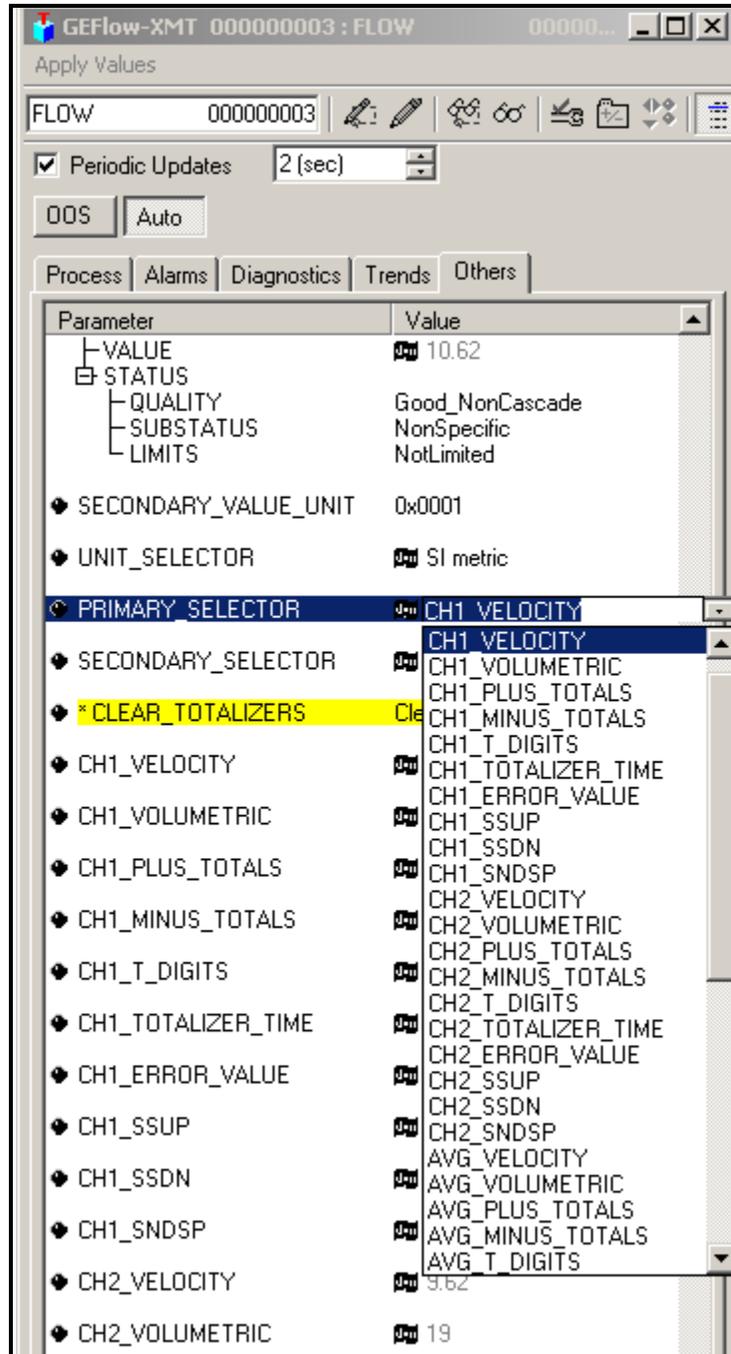

Figure 3: Primary Selector Drop Down List

Selecting Units for AI Blocks

To select the units for the individual AI blocks:

1. Double click on the AI block for which you wish to set the units (ANALOG_INPUT_1 or ANALOG_INPUT_2 in the tree under GEFlow-XMT; see Figure 2 on page 3).

2. Select the **Scaling** tab and set the unit for the measurement based on the **XMT868** flow meter settings.

For example, if the **XMT868** was set to use the metric unit system and the PRIMARY_SELECTOR was set to use VELOCITY you would choose **m/s** for the unit as shown in Figure 4 below.
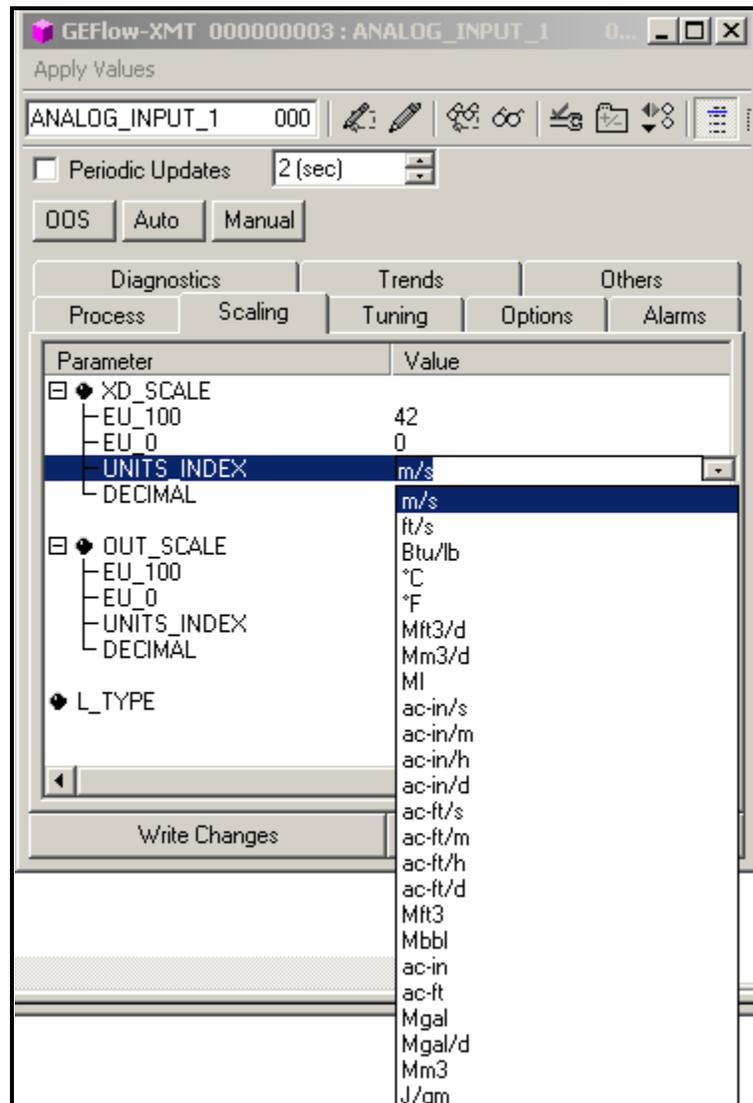

Figure 4: Units Index Drop Down List

Resetting Instrument Totalizers

To reset the instrument totalizers:

1. Double click on the FLOW transducer block (in the tree under GEFlow-XMT; see Figure 2 on page 3).

2. Select the **Others** tab and scroll down to the CLEAR_TOTALIZERS listing.

3. Select **Clear** from the drop down list box (see Figure 5 below).

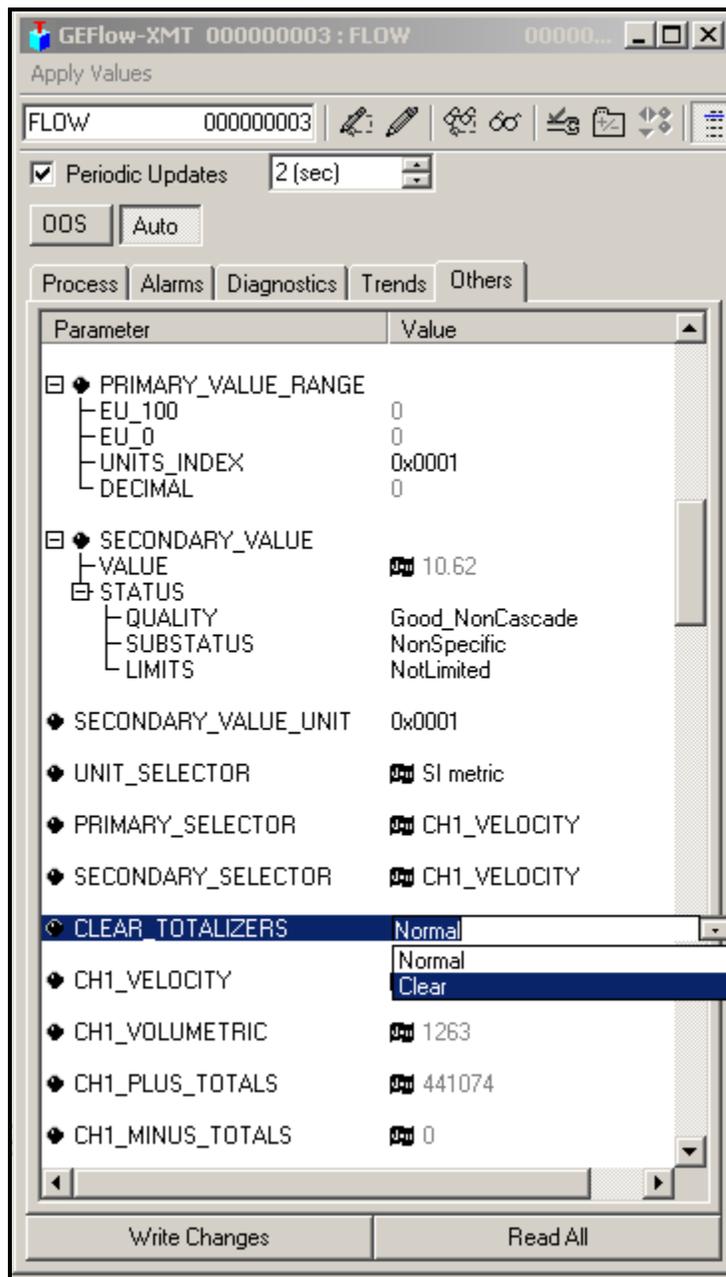4. After the totals have been reset, select **Normal** from the drop down list box to resume total accumulation.

Figure 5: Clear Totalizers Drop Down List

Function Block Application

Figure 6 below is an example setup using the Function Block Application editor. The **XMT868** AI blocks, along with the AO and PID of another device on the network, are displayed. We have connected the AI_1 OUT of the **XMT868** to the CAS IN of the AO block. We have also connected the AI_2 OUT of the **XMT868** to the CAS IN of the PID block.
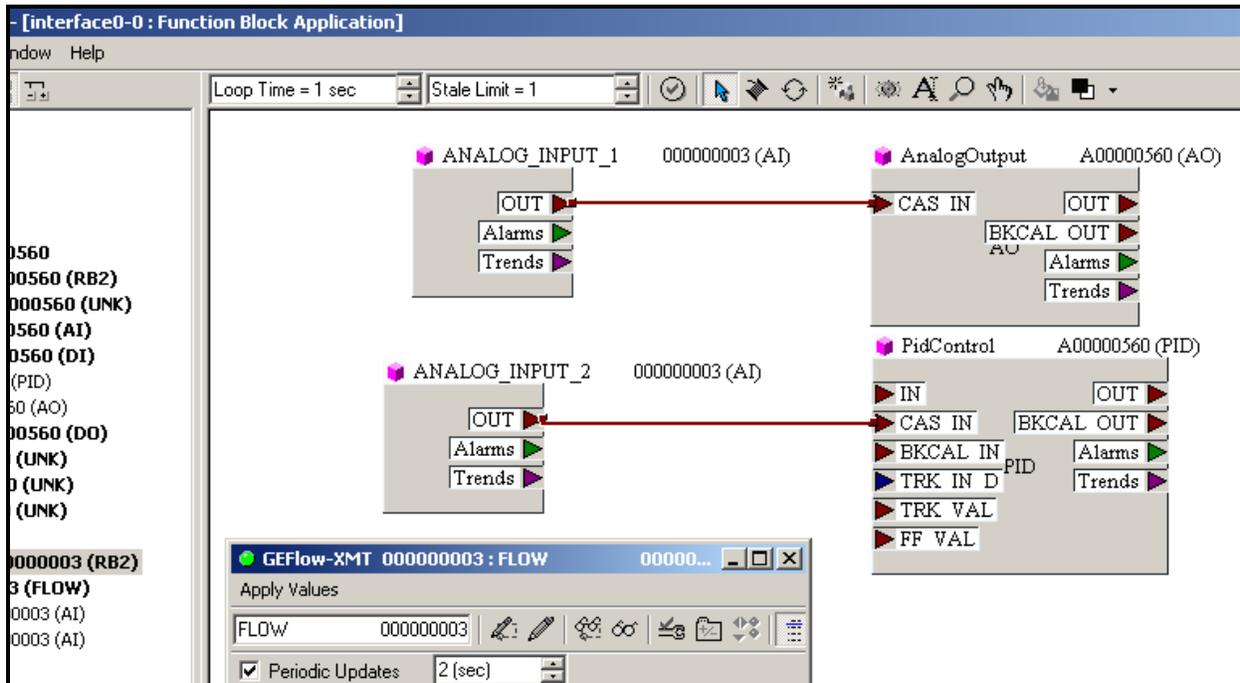

Figure 6: Function Block Application