Mapping One Input to Another Using the Extended Logic I/O Type

Using the Extended Logic I/O Type

The Extended Logic I/O type allows an I/O point to take the value from another input and process it according to its own parameters. Users can:

- Create multiple functions from one input such as multiple thresholds for a single input or create a counter based on another input changing
- Create multiple report and sample rates
- Disable the change of state on thresholds
- Link to multiple outputs

For example, Input 1 is defined as a M-GAGE sensor with threshold and hysteresis parameters. Input 5 is defined using the Extended Logic I/O type. When the M-GAGE input samples, the result passes to input 5 for processing. Input 5 can be set up as a synchronous counter, have different threshold rules, or different sample criteria.

Configure the following fields:

Parameter	Parameter Address (hex)	Description
I/O Type	0x02	Defines what the input will do. In this case, the Extended Input Logic type creates a special function to copy another input's signal value and process it. Set the I/O Type to 181, which is the Extended I/O Type.
I/O Config	0x14	Enter a number from 1 to 6 to indicate which input on the selected Node to get the input value from.
Serial Address	0x19	Bit field for setting options. Enter the value in decimal. Bit 0 Customer threshold enable: Uses different threshold, hysteresis, delta, sample high or sample low setting from the original input. Set the threshold, hysteresis, delta, sample high or sample low on this same extended I/O parameters screen. Bit 1 Disable discrete logic, bit 0: Disables the least significant bit of the input value from indicating threshold on/off (turns off reporting on change of state). Bit 2 Custom report enable: Uses different reporting rate from the original input. Set the new reporting rate on this same extended I/O parameters screen. Bit 3 Custom sample enable: Uses different sample rate from the original input. Set the new sample rate on this same extended I/O parameters screen.

Configure the Extended Input Logic I/O Type

Access these special fields using the User Configuration Tool (UCT).

1. Go to the **Configuration** > **Device Configuration** screen.
2. Select the Node and click the arrow to the left of the Node to expand the parameters view.
   In our example, we are using Node 1.
3. Select the input to configure as the Extended Input Logic input and click the arrow to view its parameters.
   For this example, we are using input 5.
4. Enable the input and select Extended Input Logic from the drop-down list.
5. Under the Serial Options section, set **I/O Config** to 1 and **Serial address** to 1.
   The I/O Config parameter sets the data source as input 1. Setting Serial address to 1 indicates custom threshold and hysteresis settings will be used.
6. Set the custom threshold and hysteresis values.
7. Set the sample and report rates to match your data source.
   For this example, we are using 16 seconds.
8. Click **SEND**.

Input 5 is now configured to act as a synchronous counter. When input 1 goes above the limit defined by input 5's threshold, it increments the counter. The count is stored in inputs 5's register.