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Customizing a Mapped Alarm State

The DX80 system allows users to map inputs to outputs using the User Configuration Tool (UCT). By default, some inputs create alarm conditions for special situations.

For example, when the SureCross temperature and humidity sensor is broken or disconnected from the input connection it creates an alarm condition. To indicate the alarm condition, the input value in the Modbus register is set to the maximum value (signed maximum is 32768; unsigned maximum is 65535). When this input is mapped to an output, the factory default for an alarm condition sets the output value to 0 mA or 0V.

When mapping similar types of inputs to outputs, such as 0 to 20mA, alarm conditions are not created when the Null and Span are zero. When using Null and Span to adjust the range of an input, out-of-range conditions will create alarm conditions.

CUSTOMIZING THE ALARM CONDITION

For current and voltage outputs, use the Misc parameter field (parameter 0x17) to customize an output state when an alarm condition is present. Using parameter 0x17 allows users to force output values other than the default value when an alarm condition is present.

- For current outputs, the Misc field is written in 0.1 mA increments. For example, 200 represents 20.0 mA and 150 represents 15.0 mA.
- For voltage outputs, the Misc field is written in 50 mV increments. For example, 120 represents 6V and 60 represents 3V.

Misc Parameter Values (Parameter 0x17)	Description
0	Factory default; 0mA or 0V on alarm condition
255	Disables the special conditions for alarms. When the alarm is disabled, the mapping function just maps the input value to the output.
1 through 210	Set a current output to a defined value between 0 mA and 21 mA
1 through 210	Set a voltage output to a defined value between 0V and 10.5V

EXAMPLE

The SureCross wireless device setup, I/O mapping, and sensor connections are not part of this technical note. To set the parameters shown in this example, the wireless network must be operational.

The FlexPower Node's temperature input is mapped to the 4–20 mA output on the Gateway.

FlexPower Node with temperature and humidity input

Gateway with the FlexPower Node's temperature input mapped to the Gateway's output

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If the temperature and humidity sensor is disconnected, the FlexPower Node's temperature input will go to the maximum value (32768). By default, this alarm value is mapped to the Gateway's output as a zero. To drive the Gateway's output to 20 mA instead of zero, set the Gateway's output parameter 0x17 to 200.

Setting Parameter 0x17 Using the UCT

To set parameter 0x17 using the UCT, follow these steps:

1. Connect your Gateway to the USB to RS485 adapter cable (Model BWA-HW-006) and connect the cable to a USB port on your computer.
2. Launch the User Configuration Tool software.
3. Go to the Device Config tab and select the Device Parameters sub-tab.
4. Select the Gateway from the dropdown list.
5. Select the output number that the temperature input is mapped to.
6. Select the Miscellaneous parameter from the dropdown list.
7. Set the value to 200 (integer).
8. Click on the Send button to send this change to the Gateway.

You may also set parameter 0x17 by sending a Modbus commands from a host system. For detailing instructions about how to send modbus commands, refer to the SureCross DX80 Wireless Product Manual (document 132607) or the Host Connection Guide (document 132114).