



Service Bulletin

Bulletin No: SB-0013-19-213-FS Effective Date: 08-01-2019 Type: Installation

Subject: Adding sensors to the flexSCADA Q5 and flexSCADA Q5Pro

Scope

This service bulletin provides instructions for connecting and adding sensors to the analog input channels of the flexSCADA Q5 and flexSCADA Q5Pro (referred to here as the Q5 line or simply Q5).

Background

The analog input channels of the Q5 line are able to monitor multiple different parameters - analog, alarm contacts, frequency and pulse counters. Each parameter will require a specific set up through the webhost of the Q5 as described below for proper operation of the sensor.

Analog Sensor

Analog sensors are typically used with AC or DC power applications. The Q5 can accept a wide range of inputs through this selection. Each sensor can be categorized into one of three modes – Voltage Mode, Current Mode and Extra Low Voltage Mode.

Voltage Mode can be used to monitor a wide range of voltages ($\pm 60V$ AC/DC). The bridge position (located above the sensor terminal blocks) must be across the top set of contacts for the given channel in this mode. This is the most common selection for normal voltage monitoring.

In *Current Mode*, the Q5 can monitor current transformers and current based sensors, such as 4-20mA sensors. The bridge position for this selection is across the bottom row of contacts.

Extra Low Voltage Mode is used when high accuracy in a low voltage range is required. The maximum voltage range in this mode is $\pm 2.4V$ AC/DC. In this mode, there will be no bridge across either row of contacts for the selected channel.

Technician Note: It is crucial to verify that the bridge is in the proper position for the mode selected prior to applying power to the Q5. Failure to do so could result in damage and void the warranty.

Alarm Contact

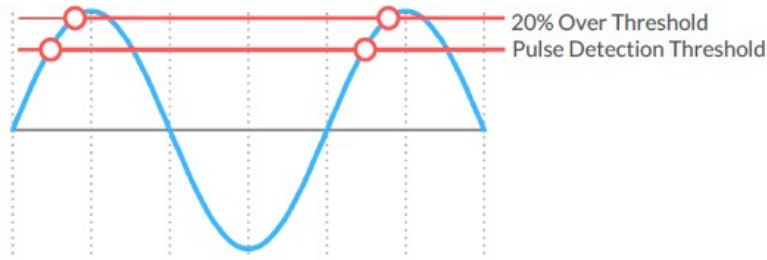
An alarm contact is set up to alert a client of potential interruption or intrusion. After setting a voltage alarm threshold, anytime the voltage drops below this threshold, an alarm state will be triggered. The Q5 will then show an alarm state and send all data stored on the device to the cloud. This can be useful in areas of shaky-grid.

This option can be used in areas prone to vandalism, by alerting the user of intrusion into a controlled area. Sensors can be placed on door hinges that, when separated, trigger the alarm

under threshold and send data to the cloud. This allows the owner to monitor sites in remote locations.

Frequency & Pulse Counter

Both frequency and pulse counter applications require a threshold to recognize when a valid signal has been detected. To avoid counting the same rising edge twice, the signal must exceed 20% of the pulse detection threshold in order to be considered a valid pulse. Frequency is the number of valid pulses per second or hertz (Hz). Pulse Counter is a total count of all pulses since the Q5 has booted.



Adding sensors

Configuring the Q5 to accept a new sensor requires connection to the device webhost interface. Select the type of parameter required, ensure the selected channel is not-used and verify or place the bridge as required (based on sensor needs).

Note: Bridge placement is only required for analog sensors. For any other options the bridge can remain in the upper position.

Place the bridge as required and restart the device if needed. After the device is back online, on the left-hand side of the webhost select the Analog Inputs option. This is a general term and does not impact functionality of other parameters.

From the Inputs page, find the desired channel for the sensor being added. Fill in the blocks accordingly based on the name, measurement type and description of the sensor. Each parameter will change the subsequent fill-in options beyond the first three mentioned, however the additional fill-in options are based on voltage thresholds or volts to sensor reading inputs.

Each of these options will adjust the input scaling automatically and do not require the user to alter the scaling. Selection of at least one of the option blocks below the scaling is important to make the sensor visible on the main webhost page. Additional selections will increase the visible information from the main webhost page.

After configuration and options are selected, the new information must be save-and-applied to the device. On the left-hand side, there will be an option titled Save & Apply Configuration. This option must be selected and given time to run. A green, save-successful block will appear after the configuration has been saved and uploaded to the Q5. The user can now return to the Overview page and the new sensor should be visible. Failure to click the Save & Apply Configuration will limit the visibility of the new sensor on the main page.

For additional information or assistance, please contact Mission Critical Energy at (716) 276-8465 or visit us at www.missioncriticalenergy.com.

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