Application Note

Configuring a Sentinel Analog with a NAMUR Vibrating Level Switch

OVERVIEW

The User Association of Automation Technology in Process Industries in Germany, otherwise known as NAMUR, is an international organization that recommends standards for industrial environments, primarily in European markets. They give recommendations based on empirical data found through experiments they publish on their website.

Alongside 4-20mA current loops (partially developed by NAMUR), the organization has a low-power standard that runs from under 1mA-2.2mA. Sensors that operate on this standard can still work with the Sentinel Analog in 4-20mA mode.

PROCEDURE

Set the jumpers on the Sentinel Analog for 4-20mA mode and power cycle. Connect to the Sentinel with the SignalFire ToolKit. Under **Settings**, click **Configure for NAMUR**. This will set the output voltage low (12.5V) and enable an alarm register.
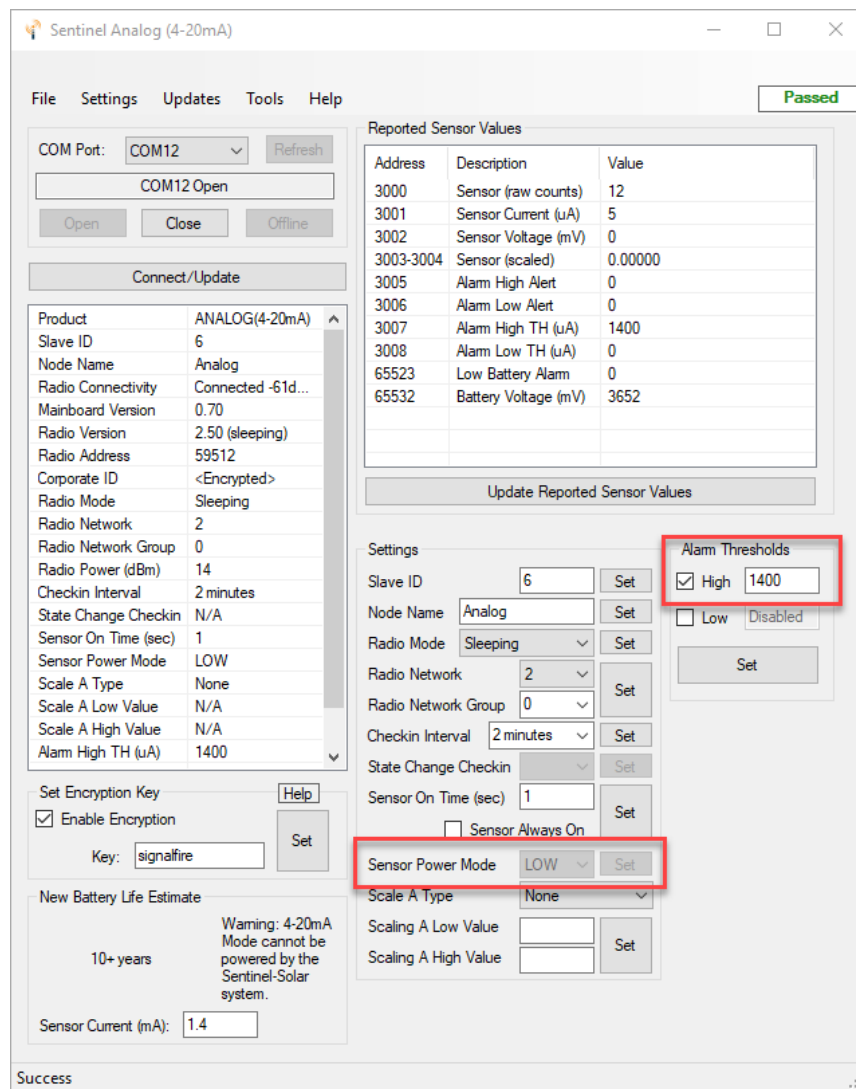
On a typical NAMUR switch, the current will be ≤1000µA/≥2200µA when covered/uncovered depending on whether the mode switch is set to Min. or Max. This will be reflected in register 3001, Sensor Current.

To turn this analog signal into a digital one, NAMUR mode uses the Sentinel Analog's alarm functionality. By default, the **High** alarm will be enabled under **Alarm Thresholds** with a threshold of 1400µA. Thus, the **Alarm High Alert** register 3005 will signal 0/1 when uncovered/covered based on mode. To get greater battery life, set the mode depending on what the normally expected state is. For example, if normally expected to be uncovered, set the mode switch to Min.

To switch out of NAMUR mode and back to regular 4-20mA operation, go back under Settings and click **Set Sensor Power Mode HIGH**. Note that this only changes the output voltage, it **does not disable the alarm**.

The battery life for a new battery is as follows, assuming the sensor is set to Min. mode.

Checkin Interval	Years battery life
5-seconds (uncovered)	2.5
15-seconds (uncovered)	6.5
1-minute+ (uncovered)	10+
5-seconds (covered)	2
15-seconds (covered)	4.9
1-minute+ (covered)	10+