Using the DX99 Radar Boost Model's Switch Power

DX99 Radar-Boost Special Programming (19V Boost Voltage Model)

The DX99NxX1S1N0M3X0D5 model features two 4–20mA inputs, one discrete NPN input, one 3-wire RTD input, and a switch power connection. The switch power control uses a unique algorithm to optimize the functionality and power use of the DX99, allowing the DX99 to efficiently power external sensors.

For typical switch power outputs, a user can define the warm-up time and sample rate for an external sensor (voltage is fixed for DX99). The new algorithm defines a sensor threshold, sample delay, and maximum warm-up to indicate when the sensor is ready to sample. This optimizes the switch power required by knowing exactly when to sample the sensor. This feature also allows for a variation in different sensors.

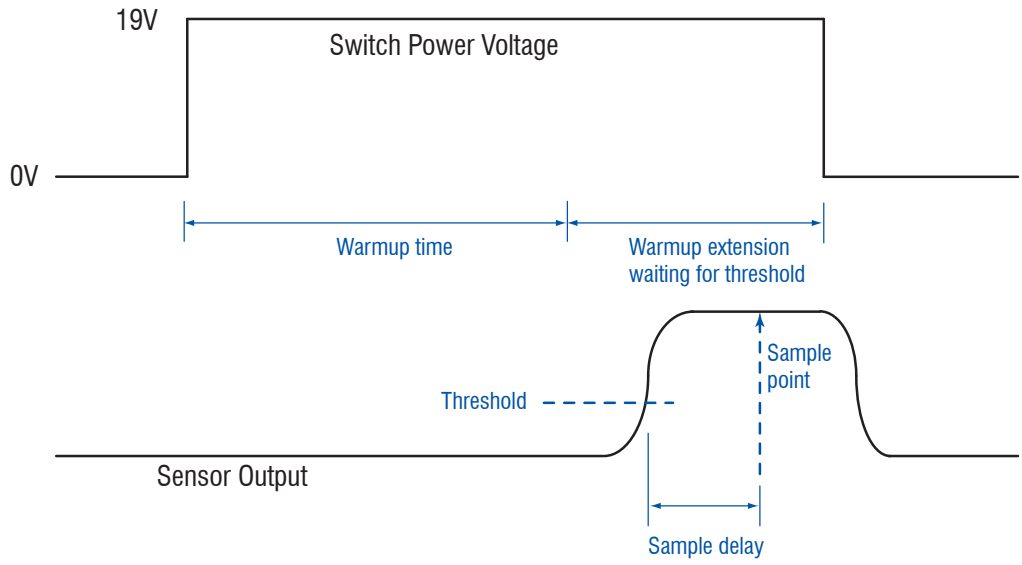
Switch Power Parameter Settings

Sensor Threshold is stored in the Default Value field (0x16, 0x17). The sensor threshold defines the minimum analog value required before the input takes a valid sample. A zero in this field disables this feature. Allowable values are 1 (representing 0 mA) through 65535 (representing 20 mA).

Sample Delay is stored in the Misc. field (0x1B). This parameter defines the delay time after the input goes above the sensor threshold before the sample is taken. Allowable values are 1 through 65535, which represents the number of 62.5 millisecond units.

Maximum Warm-up is stored in the Serial Address field (0x1D). This parameter defines the maximum time to wait, after the warm-up time is expired, for the input to go above the threshold setting. Allowable values are 1 through 65535, which represents the number of 250 millisecond units.

Switch Power for the DX99 Radar-Boost Models



The switch power output is activated for the time defined by the warm-up time parameter. The device looks at the input to see if it is above the threshold setting.

- If the input is not above the threshold, the device looks again in another 62.5 milliseconds.
- If the input is above the threshold, the device waits for the sample delay period, then samples the input.

Some example parameters include setting:

- Voltage to 19V, sample rate to 15 minutes, and warm-up time to 20 seconds;
- Sensor Threshold to 13107, to represent approximately 4 mA;
- Maximum Warm-up to 40 to represent 10 seconds; and
- Sample Delay to 32 to represent 2 seconds.