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Wireless Discrete Sensor PST-D01

Description

The *iTech Sensor PST-disc Discrete Sensor* is a cost-effective way to monitor the open or closed count and status of industrial dry contact switches including limit, pressure, temperature, flow, level, totalizer and rate.

The contact status data is transmitted wirelessly and stored in a database; then viewed with *iStatus Reporting* software. The count is increased each time the contact is closed. iStatus software Sensor1 will indicate the status, Sensor2 will indicate the count and Sensor3 will indicate the frequency if it is between 1 and 400 Hz. It is capable of sensing up to 4 kHz, but a switch debounce has been added. The debounce can be removed per your request. Please indicate this to your sales representative when you order.



Sensor

Ambient Temperature Range	-40°C to 80°C (-40°F to 176°F)
Environmental Classification	NEMA4X
Sensor Transmission Rate	12 seconds (5/minute)
Maximum Sensing Frequency	400 Hz*
FCC ID -X85-PST-TX01	
Batteries	2 "AA" 1.5 volt cells
Frequency	902 to 928 digitally modulated spread spectrum radio

Parts List

Quantity	Part
1	PST-Disc Discrete Sensor

Mounting

The transmitter should be mounted as high above ground and as far away from obstacles as possible. A clear line of sight to the receiver is ideal, but it is understood that an industrial environment is far from ideal and this might not be possible. Any obstacles between the transmitter and receiver have the potential to reduce the range of the transmitter. The received signal strength can be seen in the iStatus software and should be used to optimize transmitter and receiver placement.



Wiring

The iTech Sensor PST-disc Discrete Sensor comes with two stripped 22 AWG wire leads. Simply connect the sensor's leads to the dry contact terminals. Install the batteries in the transmitter. When the batteries are installed a green LED will light continuously for 30seconds and then go out. There will be a very short blink every time it transmits.

Software configuration

All of the setup for the sensor is done in software. Go to the Add Sensor tab to add the sensor to the list of approved devices and enter the serial number from the side of the case. Consult the iStatus software user guide for information on how to setup alarm thresholds and email groups.

Scaling in iStatus Software

Inputs from the PST-D01 are easily scaled to indicate the desired units in software using the Sensor Setup tab.

The Math:

$$\text{ScaledOutput} = (\text{RawInputFromSensor}(mA) + \text{ZeroValueinSensorSetup}) * \text{SpanValueinSensorSetup}$$

Example 1:

A flow meter will open and close contacts once for every 10 gallons that flow through it. Indicate the flow rate and the total flow though the sensor since reset.

Sensor 1 setup (Contact Status)

Indicates the status of the contacts (Open or Closed). Leave this alone because this information is not useful for this example.

Sensor 2 setup (Count)

In this example we can use the counter to indicate total gallons since reset.

The meter will increment the counter once per ten gallons therefore the Span2 value is 10.

Set Units2 to Gallons.

Sensor 3 setup (Frequency)

The frequency is set up to indicate how many times the contacts cycle per second. To set this flow meter up to read in gallons per minute (gpm), set the Span3 parameter to 10 gal * 60 sec/min or 600. Change the Units3 value to gpm and select the save changes button. It can take up to a minute for the changes in scaling to take effect.

Alarm threshold settings

Sensor1 value can only be a 1 or a 0. Set LowCritical1 to -2, Low1 to -1 leave Hi1 and HiCritical1 set to their default values. Sensor2 is a totalizer and thresholds can be set according to the needs of the application. A low alarms doesn't make sense here so set the lows to a negative number to get them out of the way so they don't trigger unwanted alerts. Sensor3 is the flow rate. It may make sense to use a low flow alarm, so set these values up according to the needs of the application.



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1) This device may not cause harmful interference, and
- 2) This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

The Multi-Point Transmitter (MPT) is a low powered low bandwidth device that is designed for the monitoring of equipment and process parameters that change slowly over time. The factory default data update rate is 5 times per minute. This slow update rate allows this transmitter to enjoy a long battery life while maintaining a continuous watch on your equipment's health. The data rate is not suitable for control purposes and Predictive Sensor Technology does not recommend that it be used to control equipment.