

Dry Contact Sensor

Introduction

The Dry Contact sensor is a simple connection to burglar alarms, fire alarms or any application that requires monitoring by the unit. Dry contact sensors are user definable and can be used to detect many different inputs such as UPS status, security systems, air conditioning status.

These general purpose switches can be either input or output. When used as an output it can source up to 20 mAs. You can select the output voltage by setting the Output Level to a Low or a High. When set to Low, the pin will output 0 volts. When set as a High, the pin will output 5 volts.

When used as an input a switch will retain any error condition until it is read via SNMP. Therefore, if a switch encounters a critical condition at any time, it must report that condition before it can return to a normal state.

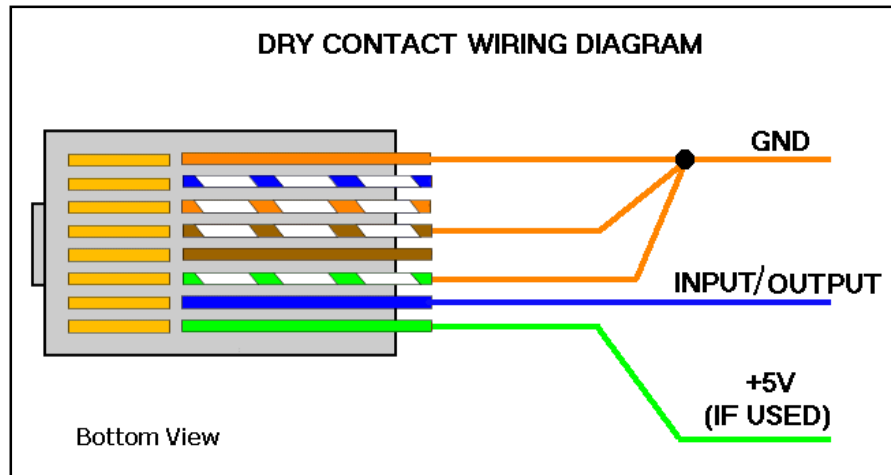
Input pins can be used to detect whether or not an input switch is open or closed. In combination with external sensors, input pins can detect whether a door or window is open or closed, if there is a water incursion and many other conditions.

The input pins work by sensing the presence of a voltage level on an input pin. When the switch is open, the voltage is different than when the switch is closed.

To test a dry contact input, wire ground to one side of the switch. Ground is always pin 8 on the connector. Wire the other side of the switch to the switch sensor. Set the Normal State field to Open. Set the Direction field to Input. When the switch closes, the input pin will be shorted to ground and the switch will change state from normal to critical

Specifications & Features:

- Measurement Indication - Alarm or Normal
- Communications cable - RJ-45 jack to sensor using UTP Cat 5 wire.
- Sensor type - open/closed contact switch
- Power source: powered by the unit. No additional power needed.
- The unit auto detects the presence of the Voltage Sensor
- Measurement rate - multiple readings every second
- Full Autosense including disconnect alarm



Configuring the Dry Contact Sensor

- a) Plug the sensor into one of the RJ45 ports on the rear panel of the unit.
- b) Now point your browser to the IP address of the unit (default, 192.168.0.100). Next you need to login as the administrator using your administrator password (default is "public"). You will then be taken to the summary page.
- c) From the summary page you need to select the sensors tab. The layout of the next page will vary depending on your unit so please refer to your units manual.
- d) You should now be able to setup the thresholds for your sensor. The low critical, low warnings, normal, high warnings, high critical values can be set from this page.

Now we will cover the settings that are specific to your sensor.

Direction: The Switch Direction can be either **Input** or **Output**. When set as an Input, the sensor will report its status as either **Normal** or **Critical**. The status is Normal if the Normal State field matches the current value applied to the sensor. For example, if the Normal State field is High and the input to the sensor is high then the status is Normal. The input voltage should be limited to 0 to 5 volts in order to protect the sensor.

If the Direction of the sensor is Output, the sensor can be used to drive external equipment.

Description of Status When Normal: This field is the custom description, which will be displayed in the Status field when the dry contact sensor is Normal. Examples for this field are: Door Open, Pump Turned On, Light Turned On, etc

Description of Status When Critical: This field is the custom description, which will be displayed in the Status field when the dry contact sensor is Critical. Examples for this field are: Door Closed, Pump Turned Off, Light Turned Off, etc

Output Level: The Switch Output Level field can be either **High/+5 Volts** or **Low/GND**. When set to a High, the output value of 5 volts will be applied to the switch. When set to a Low, the Output Level field will depend upon the value of Direction. If Direction is set to Output and the Output Level field is set to low, the Switch will source current in order to maintain 0 Volts. If Direction is set to Input and the Output Level field is set to low, the Switch will become tri-state.

The Output level of High will pull-up the switch even if the Direction is set to Input. However, when the Switch Direction is set to Input and Output level is set to high the Switch will output a weak pull-up current. This output can be overridden by shorting the pin to ground. In this way, an external switch can be determined to be open or closed.

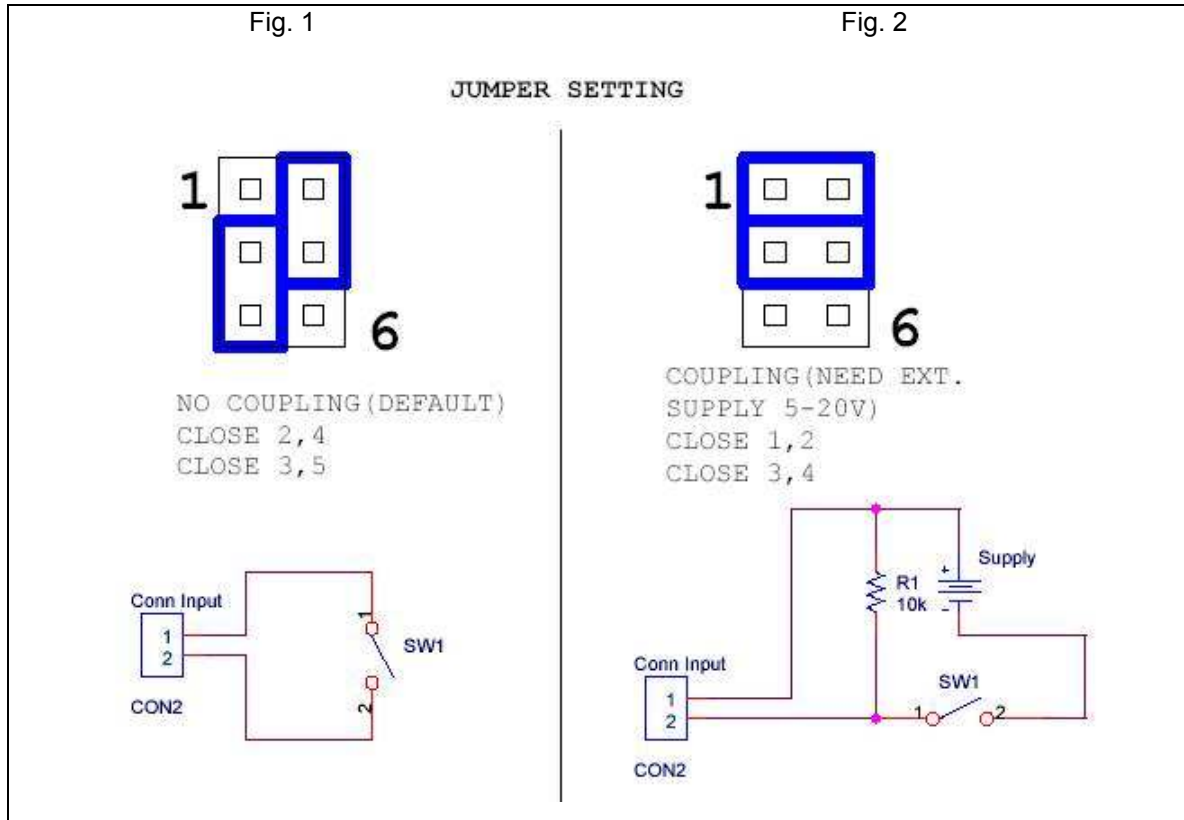
Normal State: The Switch Normal State field can be either **Open/+5 Volts** or **Closed/GND**. When set to a +5 Volts, the input value of 5 volts will cause the Status to be reported as normal. When set to +5 Volts, the input value of 0 volts will cause the Status to be reported as Critical Low. When the Switch Normal State is set to a Low, the input value of 5 volts will cause the Status to be reported as Critical High, and the input value of 0 volts will cause the Status to be reported as normal.



Information on Dry contact cables: The extension length of the dry contact twisted pairs is limited only by the amount of electromagnetic noise in the area. So the lengths can be quite long, but long cable lengths may create occasional false positives. These false positives can be eliminated with the advanced filtering of the dry contact sensor on the system. You can define how long a sensor must be in the error condition before changing state from Normal to Critical. You can also define how long the sensor must remain in the Normal state before changing from Critical to Normal.

Special Dry Contact settings for the X20 and X60 models of the securityProbe ports 9-68.

By default, securityProbe-X20 and securityProbe-X60 will have the jumpers set as in Fig. 1 for ports 9-68



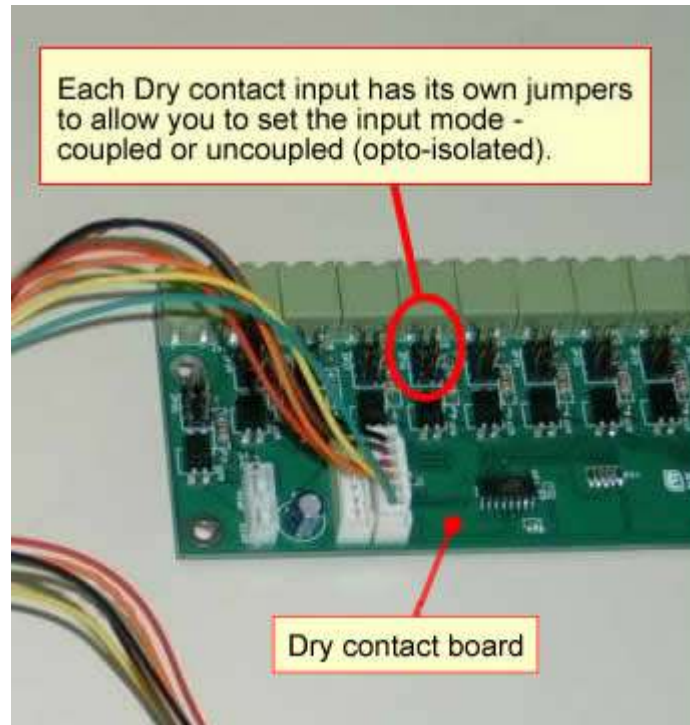
The simplest setup for Dry Contact inputs is as shipped. In this setup, power is provided by the securityProbe to the switches. With the securityProbe providing the power, the switch has +5 Volts applied to pin 1 and GND applied to pin 2. When the switch is open, the input senses +5. When the switch closes, the input senses GND. No additional external power is needed.

Fig. 2 shows the jumpers set up to provide opto-isolators support. Opto-isolators provide complete electrical separation between the securityProbe and the dry contact. The securityProbe is therefore protected against possible large voltage spikes caused by lightning for example.

The user can change the settings by opening the top cover of the securityProbe-X20/X60 and changing the jumper settings according to the Fig 2. This will set up the X20/X60 for opto-isolators inputs.

Note that the maximum voltage that can be applied to the dry contact inputs when they are configured to be opto-isolated is 30V.

Please see the picture below for the location of the jumpers.



Note: Dry contact ports - ports 9-68 on the X20 and X60 models of the securityProbe do not have the Autosense feature. The user has to manually place these ports online.