CYPRESS
INTEGRATION SOLUTIONS

SPX-7400 Series

EXP-2000

Suprex_FiberOptic_MAN_170502

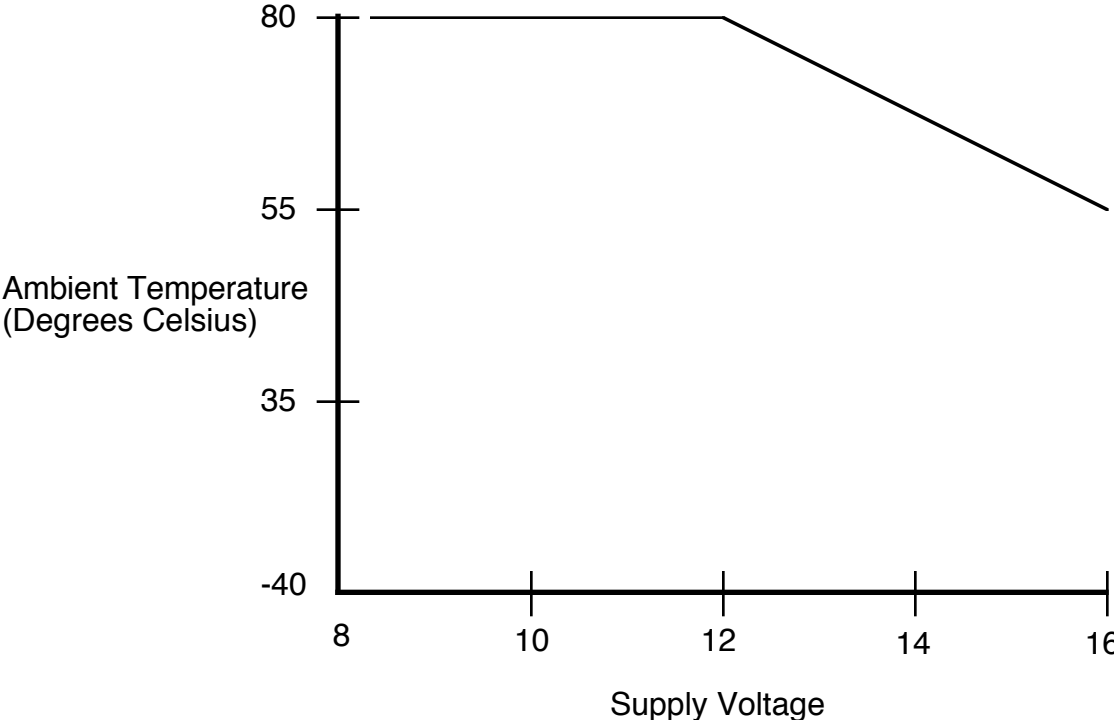# Benefits of the Suprex® Fiber Optic Reader-Extender

The Suprex® Fiber Optic SPX-7400 and SPX-7410 series makes it possible to install card readers farther from the access control panel, by providing a long-range Fiber Optic connection between the door or gate readers, and most manufacturers' panels. The Suprex® includes both a Remote (door/gate) unit and a Central (AC Panel) unit. The SPX-7400 & SPX-7410 series devices are compatible with the EXP-2000 expansion modules.

Specifications			
Physical	Housing	Durable aluminum (not rated for outdoor use)	
	Dimensions	4.5 x 3.08 x 2.02 inches (each unit)	
Environmental	Temperature Range (Storage)	-40 to 100 degrees C	
	Temperature Range (Operating)	-30 to 60 degrees C	
	Humidity	95 percent (non-condensing)	
Electrical	Input	Unreg Input 8 to 16 Vdc @ 300mA max	
	Ouput	+5Vdc @100mA	
Data I/O	Interface	Wiegand, Strobed (Clock & Data), F/2F Unsupervised - LED - 0 - 30V	
	Wiegand	Maximum 248 bits - pass through	
Connectors	Standard ST Fiber Optic connections		
Relays	Max Switching	(220Vdc 30W [resistive] 1A)	
		(250Vac 37.5VA 1A)	
	Running Spec with Load	(30Vdc 1A [resistive]), 1×10^5 operations at 20° C	
		125Vac .3A [resistive]), 1×10^5 operations at 20° C	
Ordering Information	SPX-7400	Use with Multi-Mode Fiber Optic Cable	Interface: Wiegand or Clock & Data	UPC 816684003127
	SPX-7410	Use with Single-Mode Fiber Optic Cable	Interface: Wiegand or Clock & Data	UPC 816684003103
	EXP-2000	Use to add additional readers (use 1 EXP Expansion Module Set per additional reader)	Interface: Wiegand or Clock & Data	UPC 816684003233
Additional Features	Provides complete solution with remote (reader/gate/door) and central (panel) interface		
	Service mode for setup and configuration		
	Field-configurable reader formats		
	Auxiliary I/O connections available for Door/Gate/Panel status signaling		
	Economical expansion capabilities using EXP-2000 units		
	Unit relays control doors/gates		

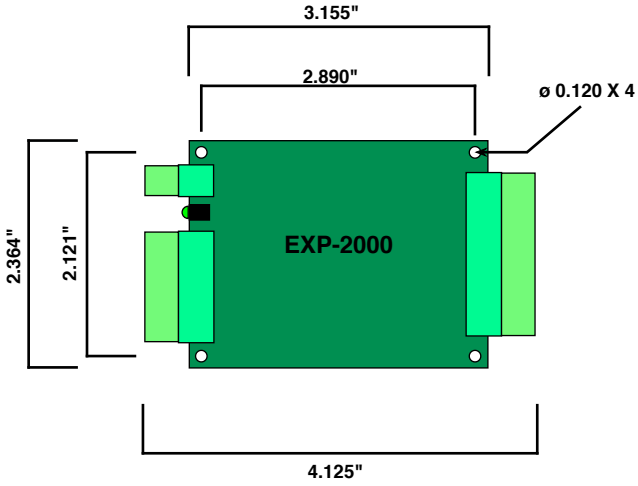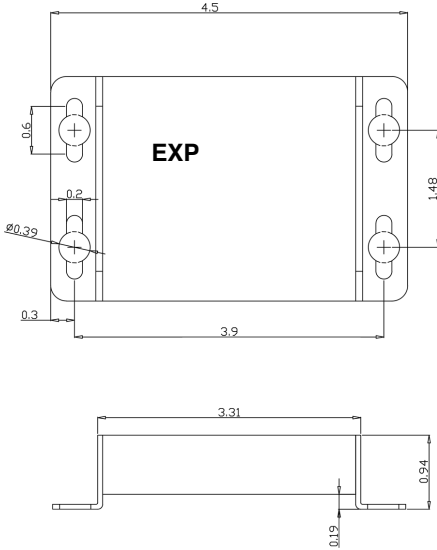| Table of Contents	
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Temperature and Voltage Notes

Ambient Temperature (Degrees Celsius)

Graph axis — vertical: 80, 55, 35, -40
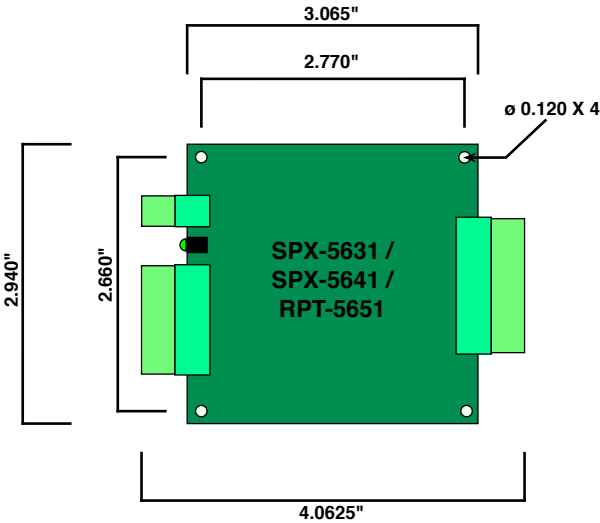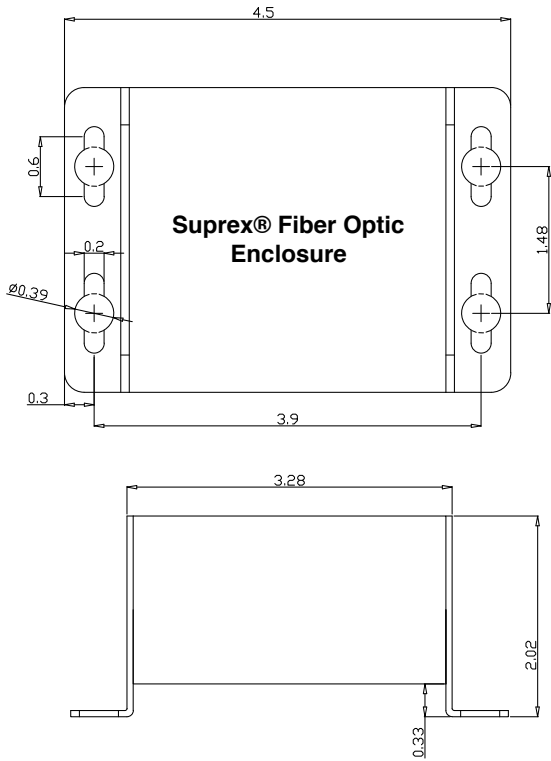
Horizontal (Supply Voltage): 8, 10, 12, 14, 16

Supply Voltage

Temperature/Voltage de-rating curve

The Suprex® units can be operated with an unregulated 12 Volt nominal dc supply.
Any voltage between 8 and 16 volts can be utilized by following the temperature / voltage derating curve.
Voltage should not exceed 16 Vdc under any conditions.

Physical Dimensions and Mounting Holes

Suprex® Fiber Optic Enclosure

4.5

0.6

0.2

Ø0.39

0.3

3.9

1.48

3.28

2.02

0.33

EXP

4.5

0.6

0.2

Ø0.39

0.3

3.9

1.48

3.31

0.94

0.19

SPX-5631 / SPX-5641 / RPT-5651

3.065"

2.770"

ø 0.120 X 4

2.940"

2.660"

4.0625"

EXP-2000

3.155"

2.890"

ø 0.120 X 4

2.364"

2.121"

4.125"

All dimensions are listed in inches.

SPX-7400 / SPX-7410 Central and Remote Pin Layout

SPX-7400 / SPX-7410 Central

8-16VDC Input
Ground

EXP(+)
EXP(-)
+5VDC Output
Prog Res 2
Prog Res 1
LED Input
D1 / Data Out
D0 / Clock Out

Relay 4 N.O.
Relay 4 COM
Relay 4 N.C.
Relay 3 N.O.
Relay 3 COM
Relay 3 N.C.
Ground
Aux Output
Relay 2 Input
Relay 1 Input

SPX-7400 / SPX-7410 Remote

8-16VDC Input
Ground

EXP(+)
EXP(-)
+5VDC Output
Relay 4 Input
Relay 3 Input
LED Output
D1 / Data Output
D0 / Clock Input

Relay 2 N.O.
Relay 2 COM
Relay 2 N.C.
Relay 1 N.O.
Relay 1 COM
Relay 1 N.C.
Ground
Aux Input
Not Used
Not Used

Typical SPX-7400 Series Central and Remote Connections

SPX-7400 / SPX-7410
Central

DC Power Supply
Power
Ground

+8 to +16 VDC
Ground

Access Control Panel

Ground
LED Out
Data1
Data 0
N.O.
COM

LED In
Data 1
Data 0

Ground

R1 IN

SPX-7400 / SPX-7410
Remote

DC Power Supply
Power
Ground

+8 to +16 VDC
Ground

Card Reader

Power
Ground
LED IN
Data 1
Data 0

LED OUT
Data 1
Data 0

R1 N.O.
R1 COM
R1 N.C.

Door Strike Output
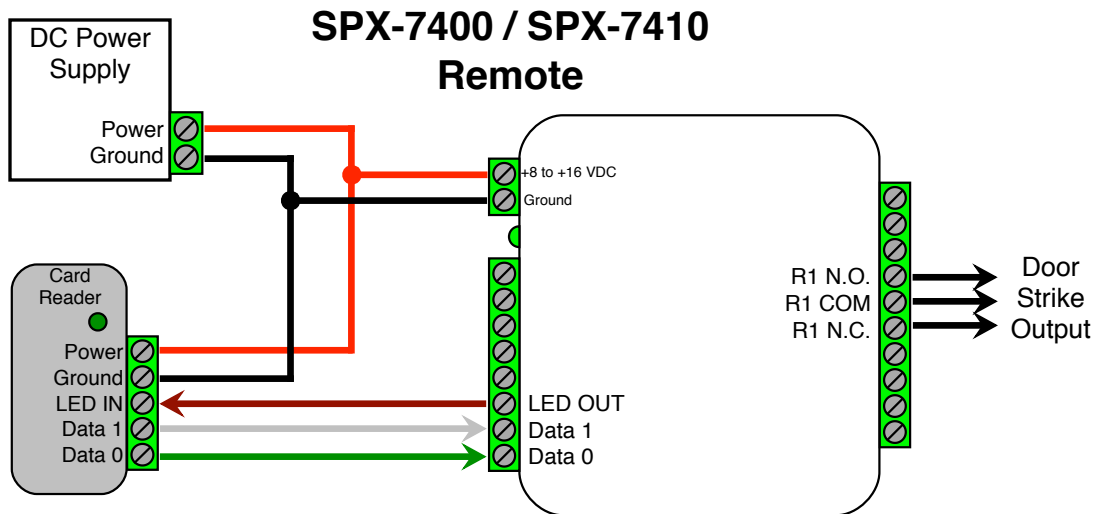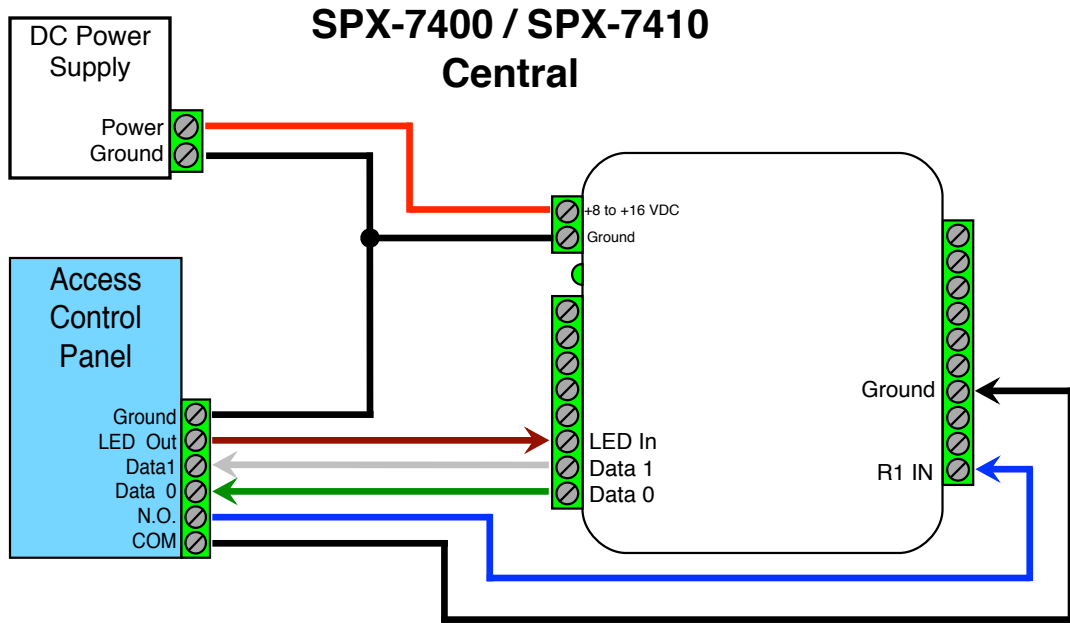
Wiring Example - Door Strike follows dry contact
See page 12 for other strike control options

Cypress Suprex® Fiber Optic Series - Setup and Pre-installation

Unpacking:
• Remove packaging from units and check interior for any shipping damage.
• Inventory any included parts (depending on model) such as connectors, quick start guide, and warranty.

Bench Testing:
• Before installing the units in the field they should be set up and tested at a convenient benchtop location. This will make it easier to verify / change settings and check operation when both units are visible at the same time.
• It is also a chance to become familiar with the system if this is the first time using the Suprex system. It is much more difficult to set up and test the units when they are several thousand feet apart.
• Both units will need to have a suitable power supply connected. For testing purposes, the units can share the same power supply.

Basic Bench Test:
During initial setup, refer to the Run / Configuration mode settings (pgs 8-10).
1. Connect a suitable power supply to both units. Each unit should be provided with 8 - 16 Volts dc and approx 300mA.
2. Apply power. After about a 1-2 second delay both units Diagnostic LED should be flashing green. The supervision relay (Relay 3) activates when the units are communicating. Note: Supervision relay is disabled by default (see pgs. 8-10).
3. Touch a jumper wire from the Ground connection to the Relay 1 input on the Central unit. Relay 1 on the Remote unit should activate with an audible click.
4. Units are shipped from the factory set for the Wiegand data format. If a different format is required, set the DIP switch to the required reader and panel format (see pgs. 8-10)
5. If a reader & panel are accessible, connect the reader to the Remote unit & the Central unit to the panel to verify card reads are accepted by the access control system. If troubleshooting is necessary, it is easier with units in close proximity.
6. Once these steps are completed, the units are ready for installation at their permanent locations.

Final Field Installation Checklist:
• The Central unit and access control panel should have a common ground.
• The Remote unit and card reader should have a common ground.
• Ensure the Fiber Optic ST connectors are properly seated and properly crossed (Tx to Rx and Rx to Tx).

Cypress Suprex® Fiber Optic Series - Indicators and Operating Modes

LED DIAGNOSTIC INDICATOR

The LED Diagnostic indicator provides information on the operational status of the unit.

If the units are not communicating, viewing the diagnostic indicator LEDs may help to determine the nature of the problem. *See also Troubleshooting, page 11.*

- **If Central or Remote diagnostic LED is not illuminated:**
  If the LED(s) are not illuminated on the unit(s), the unit is not powered or there is an electrical problem. When power is properly applied, the Diagnostic LEDs will be illuminated to show a status below:

- **If the Central and Remote unit LEDs are flashing green:**
  When power is properly applied, and there is communication between the Central and the Remote, the Central and Remote unit LEDs will flash green after every polling cycle. The speed will depend on how many expansion units are connected (about 1 flash per second with 7 EXPs).

- **If the Central or Remote unit LED alternates between green/red:**
  There is no communication with the partner unit.

- **If the Central or Remote unit LEDs are solid green:**
  If the unit is in Configuration Mode, the settings have been successfully applied, it is safe to power cycle the unit and switch back to Run Mode. If the unit is in Run Mode, one of the EXPs is not communicating properly. Check that all connected EXPs are powered and properly connected. *(For details on setting Configuration Mode, see pgs. 8-10.)*

OPERATING MODES

Fiber Optic Suprex products have 3 operating modes: Run Mode, Configuration Mode, and Test Mode.

- **Run Mode:** The units are factory-shipped in Run Mode. Run Mode is used during field operation of units. Run Mode allows changing of common settings without the need to power-cycle the units. Factory-set defaults can be changed. Default settings:
  - Units are set to operate as 1 Remote and 1 Central unit
  - Supervision relay is disabled
  - Pullup resistors are disabled
  - Number of EXP Expansion Modules is set to 0
  - Note: Run Mode DIP switch 2 (allows the user to select digital relay inputs over analog relay inputs on the Remote unit), is active only on the Central unit and has no functionality on the Remote unit

- **Configuration Mode:** Switch to Configuration Mode to change the link type and interface type. Default settings:
  - Default interface type is Wiegand
  - Link type is pre-set based on the Suprex model

- **Test Mode:** Test Mode is used for troubleshooting the reader/panel connection to the Remote/Central unit. In Test Mode, DIP Switches 3-8 operate as if in Run Mode. Either a single unit or both units can be set to Test Mode; the Remote and Central units retain all their normal functionality in addition to the following functions:
  - In Test Mode, the Central unit outputs a test card read in the selected interface type every few seconds
  - In Test Mode, the Remote unit briefly triggers Relay 2 when detecting data of the selected interface type

Common Configuration and Run Mode Settings

Configuration Mode settings

Standard Wiegand interface is the default setting. To use with non-Wiegand interface:

a) Power off both Suprex units.

b) Turn on DIP switch 1 on both units.

c) Set DIP switches as described below for appropriate interface:

Default: Standard Wiegand	Turn on DIP switch 8 on both units
Keypad (Wiegand/No Filter)	Turn on DIP switch 7 on both units
F/2F (Unsupervised)	Turn on DIP switches 6, 7, 8 on both units
Strobed Rising Edge (MR-5)	Turn on DIP switches 7 and 8 on both units
Strobed Rising Edge (Dorado 644)	Turn on DIP switch 6 on both units
Strobed Rising (MagTek)	Turn on DIP switches 6 and 8 on both units
Strobed Falling Edge	Turn on DIP switches 6 and 7 on both units

d) Power on both Suprex units. Status LED should be solid green.

e) Power off both Suprex units; return DIP switch 1 to **off** position on both units to select Run Mode settings. ***When switching to Run Mode, always reselect Run Mode settings.***

Run Mode settings

Select Run Mode settings as described below, then power on both Suprex units to begin operating in Run Mode.

Central / Remote Select	Turn DIP switch 3 **on** for Central Mode / turn **off** for Remote Mode
Remote Digital/Analog Relay Select	Turn Remote Unit's DIP switch 2 **on** for digital input / **off** for analog input
Supervision Relay (Relay 3, Central Unit)	Turn Central Unit's DIP switch 4 on for supervision relay / off for normal relay
Supervision Relay (Relay 1, Remote Unit)	Turn Remote Unit's DIP switch 4 **on** for supervision relay / **off** for normal relay
Pullup Resistor Select	Turn **on** DIP switch 5 to enable pullup resistors / **off** to disable [applicable units)
EXP Select (for **no** EXP)	Turn **off** DIP switches, 6, 7, and 8 on both units
EXP Select (for **1** EXP)	Turn **on** DIP switch 8 on both units
EXP Select (for **2** EXPs)	Turn **on** DIP switch 7 on both units
EXP Select (for **3-7** EXPs)	See pg. 12

Test Mode setting

See page 8 to troubleshoot using Test Mode.

Test Mode Select	Turn DIP switch 2 **on** for Remote &/or Central

SPX DIP Switch Map

Run Mode

1	2	3	4	5	6	7	8
Configuration Mode Select	Remote Relay Mode Select	Central / Remote Select	Supervision Relay Select	Pullup Resistor Select	# of EXP-2000s		

Configuration Mode

1	2	3	4	5	6	7	8
Configuration Mode Select	Not Used	Link Type Select			Interface Type Select		

Test Mode

1	2	3	4	5	6	7	8
Test Mode Select		Central / Remote Select	Supervision Relay Select	Pullup Resistor Select	Interface Type Select		

Configuration Mode Select - ON = Configuration Mode - OFF = Run Mode

Remote Relay Mode Select - ON = Digital Input - OFF = Analog Input

Central / Remote Select - ON = Central - OFF = Remote

Supervision Relay Select - ON = Enable Supervision Relay - OFF = Disable Supervision Relay

Pullup Resistor Select - ON = Enable Pullup Resistor - OFF = Disable Pullup Resistor

Test Mode Select - DIP Switches 1 & 2 ON = Test Mode

of EXP-2000 Pairs

6	7	8	- (Run Mode)
0	0	0	- None
0	0	1	- 1 Pair
0	1	0	- 2 Pairs
0	1	1	- 3 Pairs
1	0	0	- 4 Pairs
1	0	1	- 5 Pairs
1	1	0	- 6 Pairs
1	1	1	- 7 Pairs

Link Type Select

3	4	5	- (Config Mode)
0	0	0	- No Change
0	1	0	- Fiber Optic

NOTE - 0 = OFF - 1 = ON

Interface Type Select

6	7	8	- (Config and Test Mode)
0	0	0	- No Change
0	0	1	- Wiegand
0	1	0	- Wiegand No Filter
0	1	1	- Strobed Rising (MR5)
1	0	0	- Strobed Rising (Dorado 644)
1	0	1	- Strobed Rising (Mag-Tek)
1	1	0	- Strobed Falling
1	1	1	- Unsupervised F/2F

- The DIP Switch selections in Run Mode and Test Mode are ACTIVE, meaning that they can be changed on the fly without power cycling the unit.

- The DIP Switch selections in Configuration Mode are NOT ACTIVE. This means to set Configuration Mode setting the unit will need to be powered off, turn DIP 1 on and other Configuration DIP Switches as needed, power the unit on and the Status LED will be solid green. The solid green LED means the settings have been set. Power the unit off and return the DIP Switches to the Run Mode positions.

- When using the Remote unit with digital relay inputs the relays are controlled by the "not used" pins on the 10 pin header. Connect the outside "not used" pin to "Ground" to trigger Relay 3. Connect the inside "not used" pin to "Ground" to trigger Relay 4.

- When using the Remote unit with analog relay inputs the relays are controlled by the "Relay 3 in" and "Relay 4 in" pins. Connect "Relay 3 in" to "Ground" to trigger Relay 3. Connect "Relay 4 in" to "Ground" to trigger Relay4.

-The Remote Relay Mode Select (Dip Switch 2 in Run Mode) is only used on the Central unit, and has no functionality on the Remote unit.

Troubleshooting

No Communication

If units are not communicating, the Central unit displays a flashing red/green diagnostic LED and the Remote unit displays a solid red diagnostic LED. To troubleshoot communication issues, check the following:
- **Power:**
  - Both units must be powered
  - Ensure proper power requirements are met: Unregulated Input 8 to 16Vdc @ 300mA max
- **Installation:**
  - Ensure ST connectors are fully seated
  - Ensure Fiber Lines are crossed (Tx to Rx and Rx to Tx)
- **Configuration:**
  - Ensure both Suprex units are set to the correct link type (see Configuration Mode, pgs. 8-10)

No Data / Invalid Data

If the access control panel is not receiving valid data, check the following:
- **Basic Equipment Check:**
  - Ensure the reader and the access control panel data port are functional by directly connecting the reader to the data port and passing card reads
  - Check Suprex circuit boards for any signs of visual damage, such as burnt traces, burnt components, or browning of the PCB; these usually indicate misapplied power
- **Wiring:**
  - Ensure there is a common ground between the Remote unit and the card reader
  - Ensure there is a common ground between the Central unit and the access control panel
  - Ensure data wires are correctly connected; most commonly these are accidentally crossed over
- **Configuration:**
  - Ensure both Suprex units are set to the correct interface type (see Configuration Mode, pgs. 8-10)
  - Ensure the access control panel is properly configured for the selected data format
  - When using the unsupervised F/2F interface type, if data is not getting to the access control panel it may be necessary to enable the pullup resistors on the Remote unit. To do this, turn on DIP switch 5 on the Remote unit while it is in Run Mode (see DIP switch map, pg. 10)
  - If unsupervised F/2F data is still not getting to the access control panel, it may be necessary to enable the pullup resistors on the Central unit
- **Data Voltage:** For a Wiegand connection, ensure Data 0 and Data 1 pins on Central and Remote units are at 5V relative to ground. The data pins can be as low as 4.4V before failing. If any Wiegand data pin is less than 4.4V, it is necessary to identify which device is pulling down the voltage.
  - Disconnect the Suprex from the reader/panel
  - Maintain power on the Suprex and the reader/panel
  - Independently measure the voltages of the Wiegand data pins of the Suprex, and of the reader/panel. If one or both devices have 4.3V or less, try enabling the pullup resistors on the Suprex by turning on DIP switch 5.
  - If internal pullup resistors do not work, try external pullup resistors (through-hole resistor 500ohms - 2Kohms). To install external pullup resistors, place one end of the through-hole resistor into the +5Vdc pin on the Suprex unit; place the other end in the low-voltage Wiegand data pin (see pg. 5)
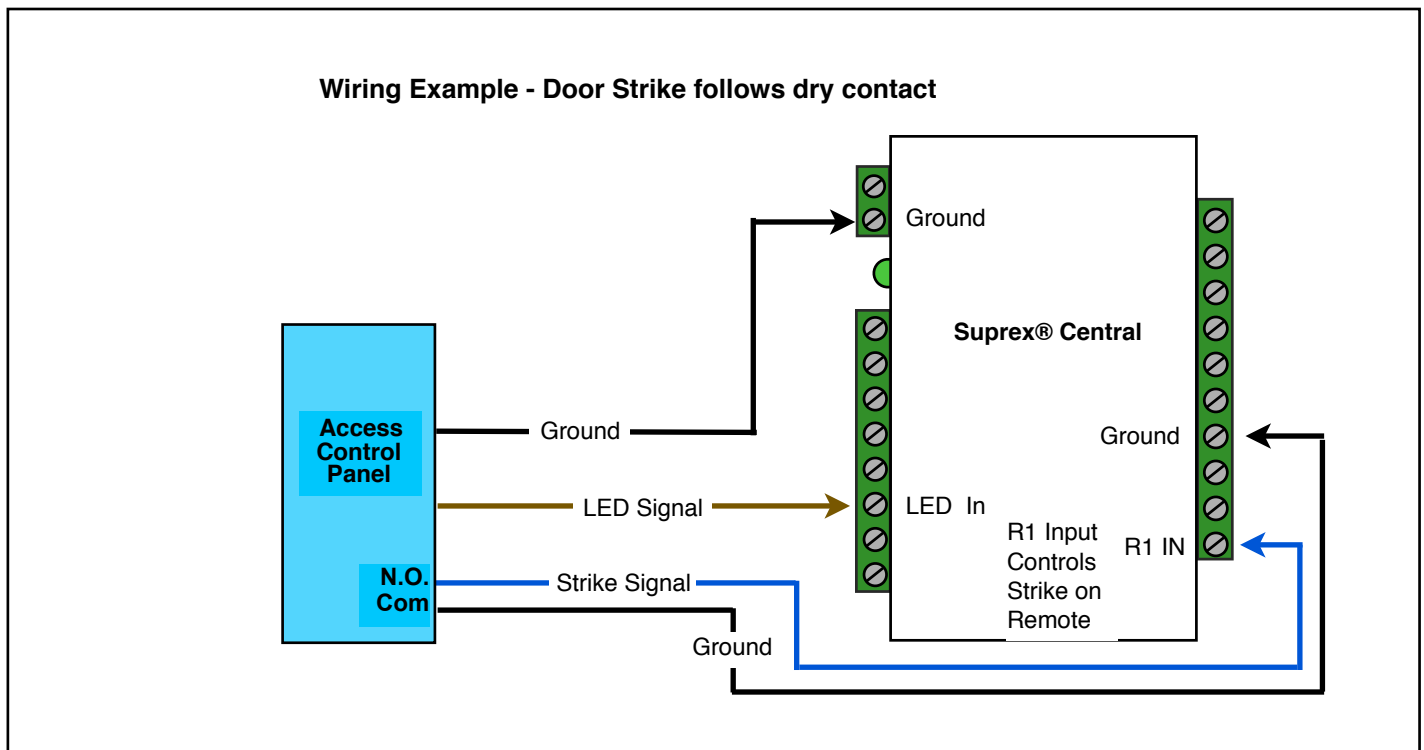
Cypress Suprex® Fiber Optic Series - Door Strike and LED I/O

To activate the relay on the Remote unit, connect as shown below. These connections can be used to allow the Remote relay to operate a DOOR STRIKE, GATE, or other locking hardware. Refer to following pages in this document for details of each I/O operation and connection.

There are two relays available for accessory outputs at the Remote end. Either relay can be used to provide the Door Strike or Gate activation function. This example uses Relay 1.

Wiring Example - Door Strike Follows LED

Ground

Suprex® Central

Access Control Panel

Ground

LED Signal

LED In

R1 Input Controls Strike on Remote

R1 IN
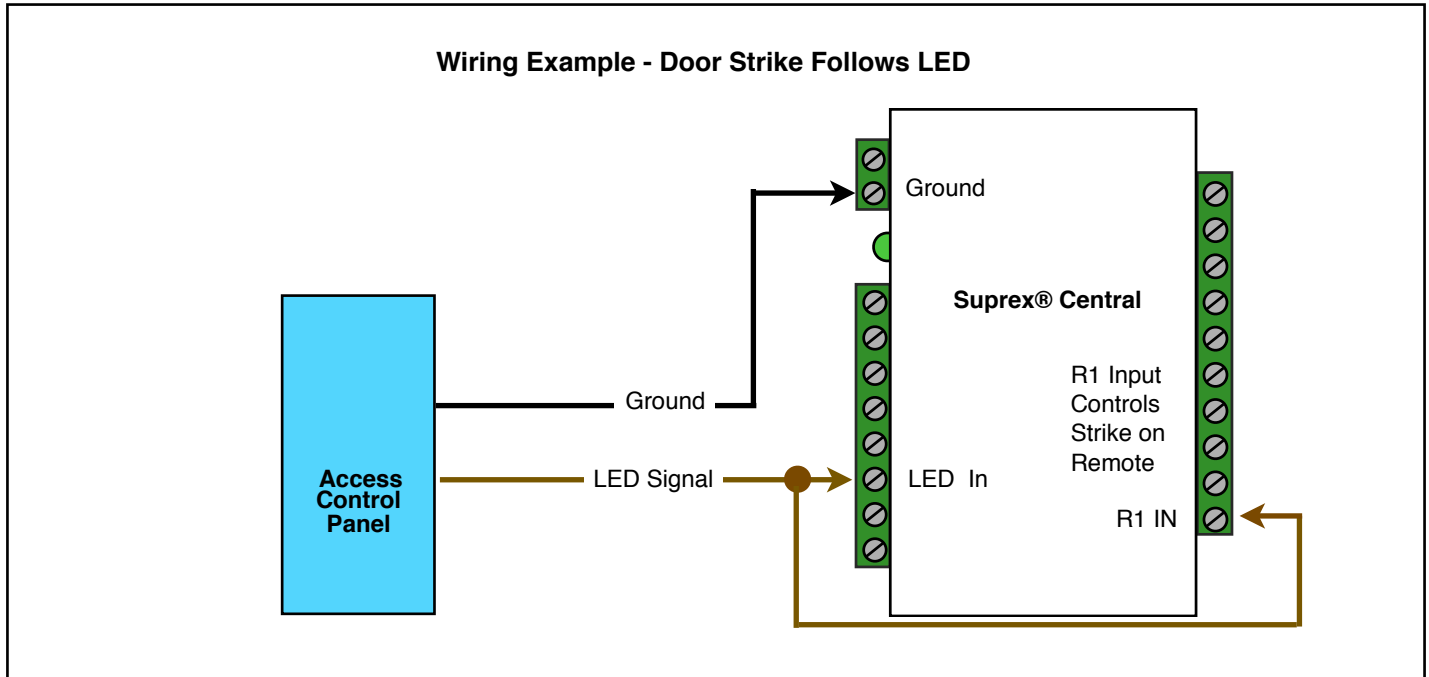
Only Relay and LED Connections are shown for clarity, refer to previous diagrams for Power and Data connections.

Wiring Example - Door Strike follows dry contact

Ground

Suprex® Central

Access Control Panel

Ground

LED Signal

LED In

N.O. Com

Strike Signal

Ground

Ground

R1 Input Controls Strike on Remote

R1 IN

Cypress Suprex® Fiber Optic Series - Door Strike and LED I/O

The Cypress SPX-7400 or SPX-7410 provides additional data channels to support access control hardware such as door strikes, tamper alarms, request to exit status, etc. These signals are sent to and from the Remote and Central units without the need to run additional wiring.

The accessory control I/O use active low inputs. When the inputs are floating (nothing connected) the associated output will be set to a high level. When the input is set to 0Volts (Ground) the input will activate its associated output. All Accessory outputs are Open Collector type and will switch to Ground when activated.

Each input will have an associated output. See the following pages for a diagram of each I/O pair.Inputs can be tested by making a jumper connection to ground and monitoring the associated output.

Suprex® Fiber Optic Central

Ground

Jumper to ground to test

Input

LED In

Red arrow denotes direction
of command signal

Suprex® Fiber Optic Remote

LED Out

Output

Cypress Suprex® Fiber Optic Series - Relay Controls

Red arrow denotes direction of command signal
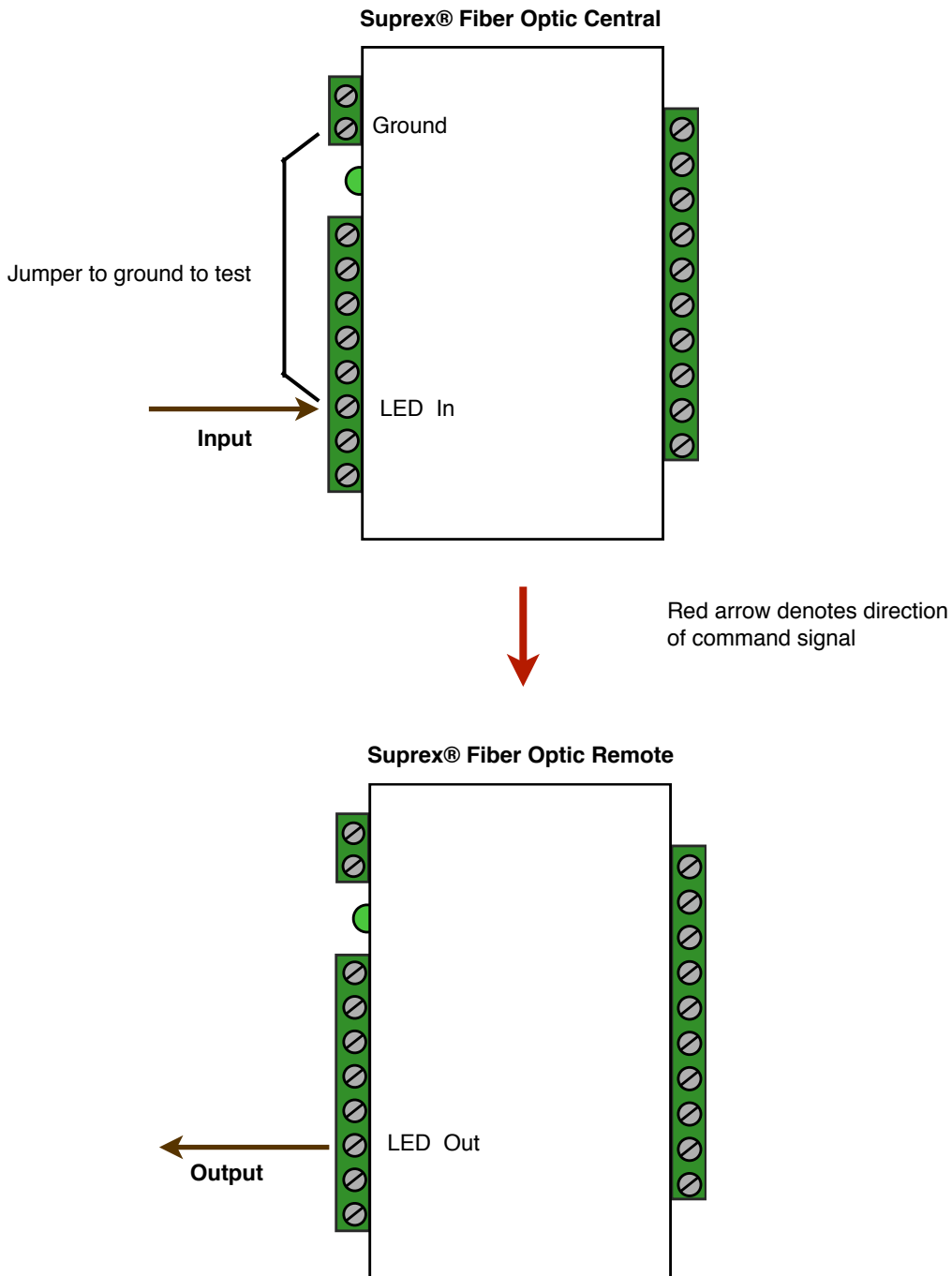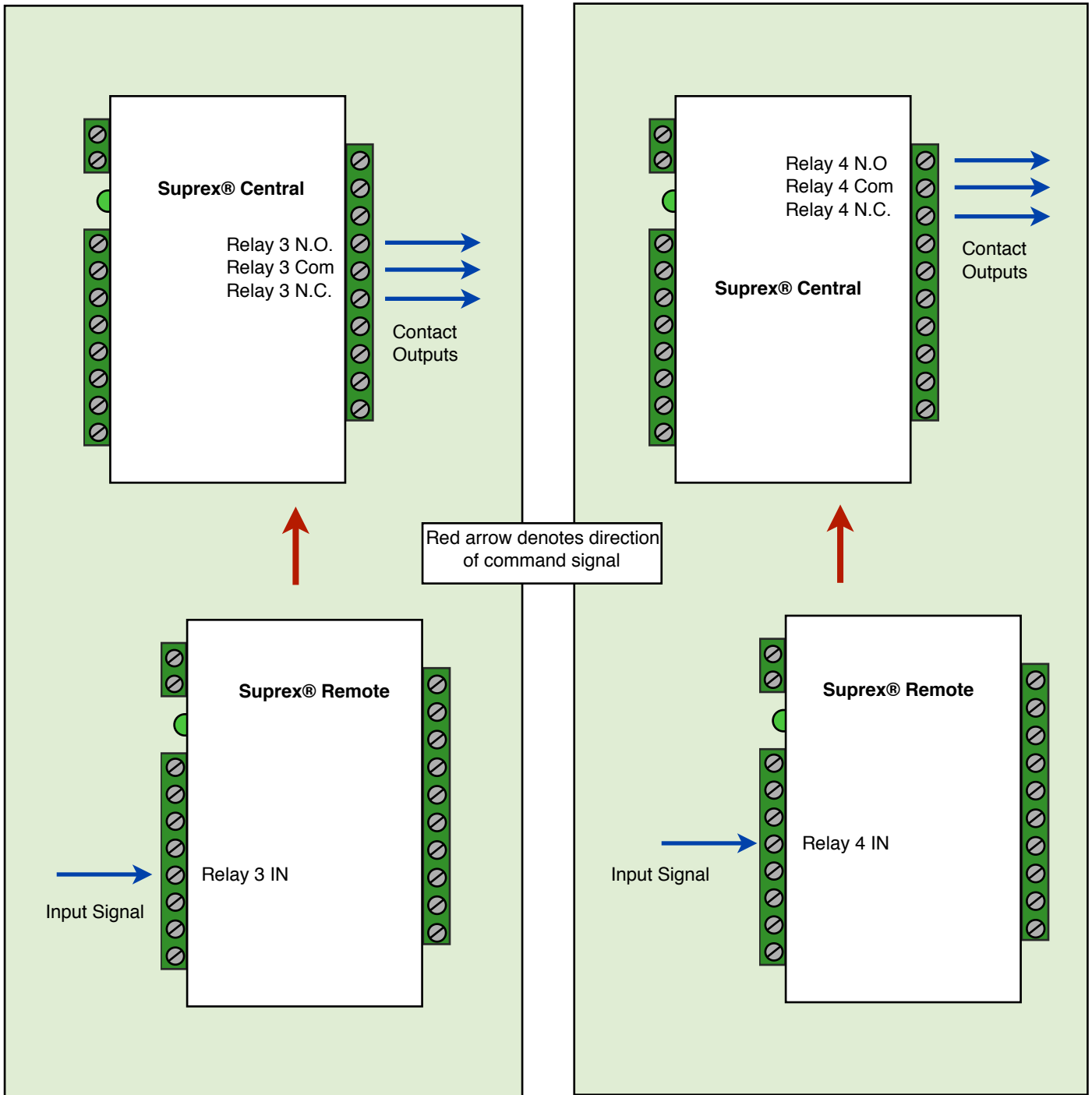
Relay 3 functions as an Supervision relay when DIP switch 4 is turned on in Run Mode; a Supervision relay monitors the condition of the communication link between the Central and Remote units. Relay 3 is activated when power is applied and the communication link between the Central and Remote is functioning. Relay 3 will become deactivated (Alarm condition) when either the Relay 3 input on the remote is active OR the Remote unit is unable to communicate with the Central unit. See APPLICATION NOTE FOR DETAILS.

Cypress Suprex® Fiber Optic Series - Relay Controls

Suprex® Central

Relay 1 IN ← Input Signal

Red arrow denotes direction of command signal

Suprex® Central

Relay 2 IN ← Input Signal

Suprex® Remote

Relay 1 N.O. →
Relay 1 Com →
Relay 1 N.C. →

Contact Outputs

Suprex® Remote

Relay 2 N.O. →
Relay 2 Com →
Relay 2 N.C. →
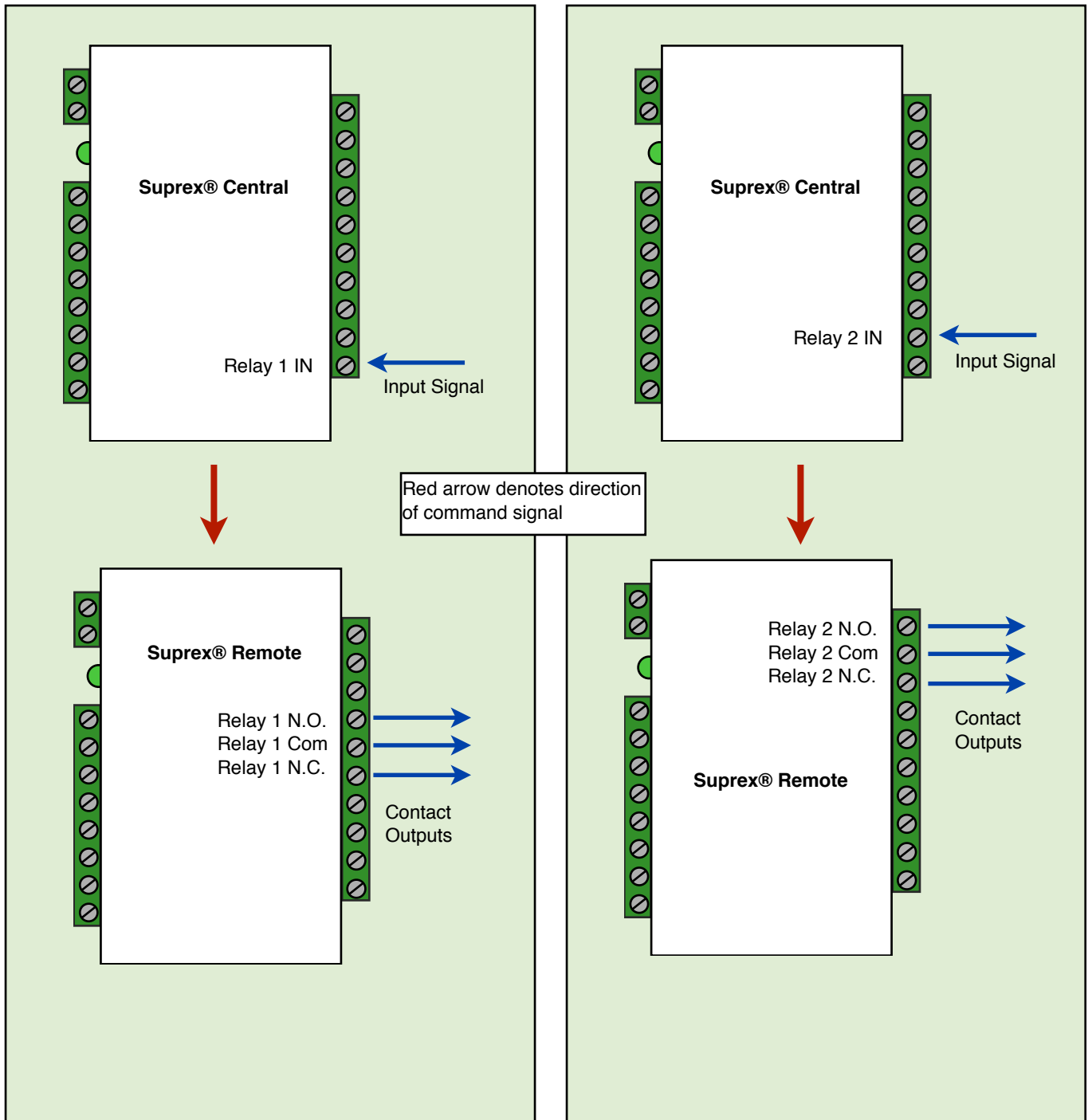
Contact Outputs

Relay locations
Relay 1 & 2 Outputs: Located on the Remote Unit / Triggered from the Central Unit
Relay 3 & 4 Outputs: Located on the Central Unit / Triggered from the Remote Unit

Application Note on using Supervised contacts
with the Suprex® Fiber Optic Series

The following applies to these products: SPX-7400 and SPX-7410.

This application note describes the connections necessary to convey supervised contact status over a Suprex®. The configurations described in this application note should apply to most panels which utilize supervised contacts. When connected as described, the Suprex® provides a supervised signal to the panel interface by reading the supervised status of the contacts connected to the Suprex® Remote unit.

Theory of operation: The access control panel is looking for a certain value of resistance connected to the supervised contact terminals. The Suprex® Central unit will provide these resistance values locally at the panel so that the correct supervised status is maintained. At the same time, the Remote unit must maintain supervision of the wires connected to the relays and switches connected to the remote access point. The contact supervision is provided by the Remote unit. The Suprex® system does this by comparing the value of programming resistor at the Central unit with the resistance seen at the Remote interface terminals. When there is a difference in the two values, the Relay on the Central unit is activated.

There are two different examples. One example is monitoring a normally closed contact at the Remote unit, and the other example is monitoring a normally open contact at the Remote unit. In the examples given, a normally closed contact will require a programming resistor of 1K and a normally open contact will require a programming resistor of 2K. Other resistor values can be used, but 1K resistors are the most common. Other resistance values will require different value(s) for the programming resistor(s).
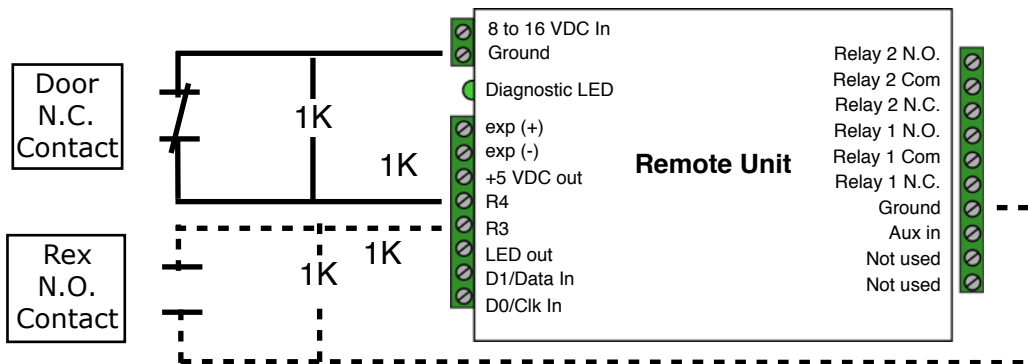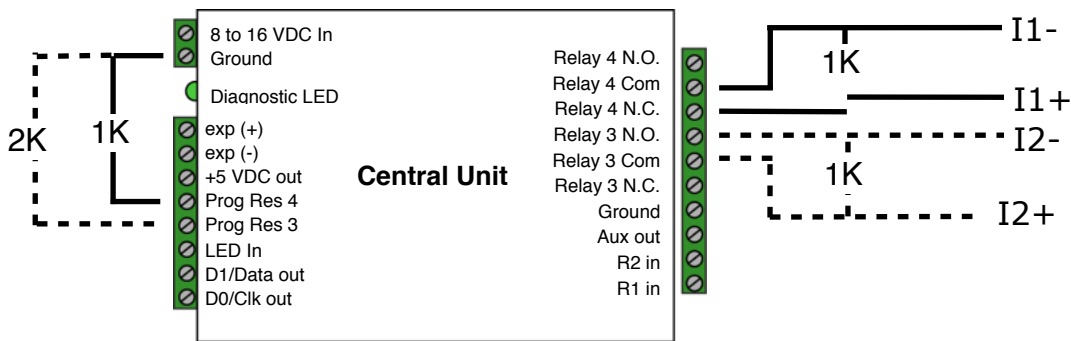
Using EXP-2000 Expansion Module Sets to Add Additional Readers

EXP-2000 Expansion Modules allow additional readers to connect to the access control panel using a single Suprex® Fiber Optic link. This is useful at door/gate locations with more than one card reader, such as in/out door readers or high/low gate readers. The Fiber Optic Suprex® can accommodate a maximum of 8 readers with the use of 7 EXP-2000 Expansion Modules. Each reader requires its own reader port on the access control panel.

Before using EXP-2000 Expansion modules with the Suprex® system, it will be necessary to perform a short configuration process. This process determines how many expansion modules will be used with the Suprex® system. Each Suprex® link can support up to 7 expansion modules.

Operation Overview:

The EXP-2000 pair is connected to the Suprex® pair via an RS-485 connection. The EXP Central units will be daisy-chained off the Suprex® Central RS-485 port (labeled **EXP+** and **EXP-**). The EXP Remote units will be daisy-chained off the Suprex® Remote unit RS-485 port (also labeled **EXP+** and **EXP-**). The only link between the reader/gate location and the panel will be the Suprex® link; in this case, the Fiber Optic link.

The Suprex® and EXP-2000 Expansion Modules operate on an addressing scheme. The Suprex® pair is always address 0. The first EXP pair will be address 1, the second EXP pair will be address 2, etc. (see pgs. 8-10). When configuring the Suprex® pair to work with the EXPs, the Central and Remote units must be told how many EXP pairs they will be working with. The Central and Remote units of each EXP pair must be configured with their address numbers.
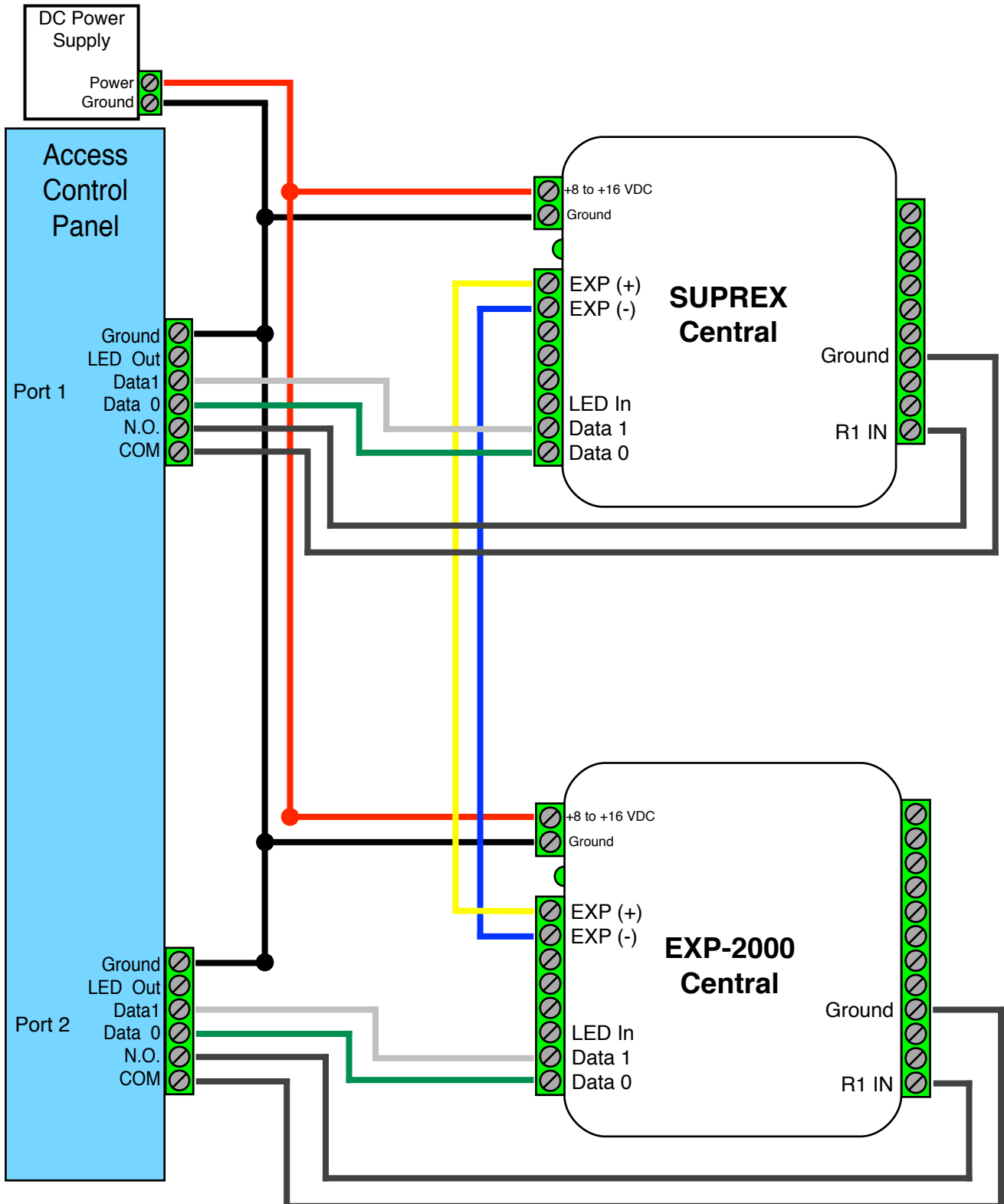
Setup Process: By default, Suprex® units are not configured to accommodate EXP-2000 expansion modules. To reconfigure the Suprex® units, follow this process for both the Central and Remote units.

- The Suprex® Central and Remote units must be configured with the total number of EXP pairs being used.
    - This is configured in the Run Mode settings and is controlled by DIP switches 6, 7, and 8.
    - Change settings on both the Suprex® Central and Remote units, as shown on pgs. 8-10.

- The EXP-2000 Expansion Module pairs need to be properly addressed with their address number.
    - The EXP address is configured by using DIP switches 6, 7, and 8 on the EXP-2000 Central and Remote units.
    - The first EXP pair will be address 1, the second EXP pair will be address 2, etc. (see pgs. 8-10).
    - Set DIP Switch 8 on the EXP Central and Remote units to set to address 1.
    - Set DIP Switch 7 on the EXP Central and Remote units to set to address 2.

- Connect the EXP Expansion Modules into the system as indicated in the wiring diagrams on pages 18 and 19.
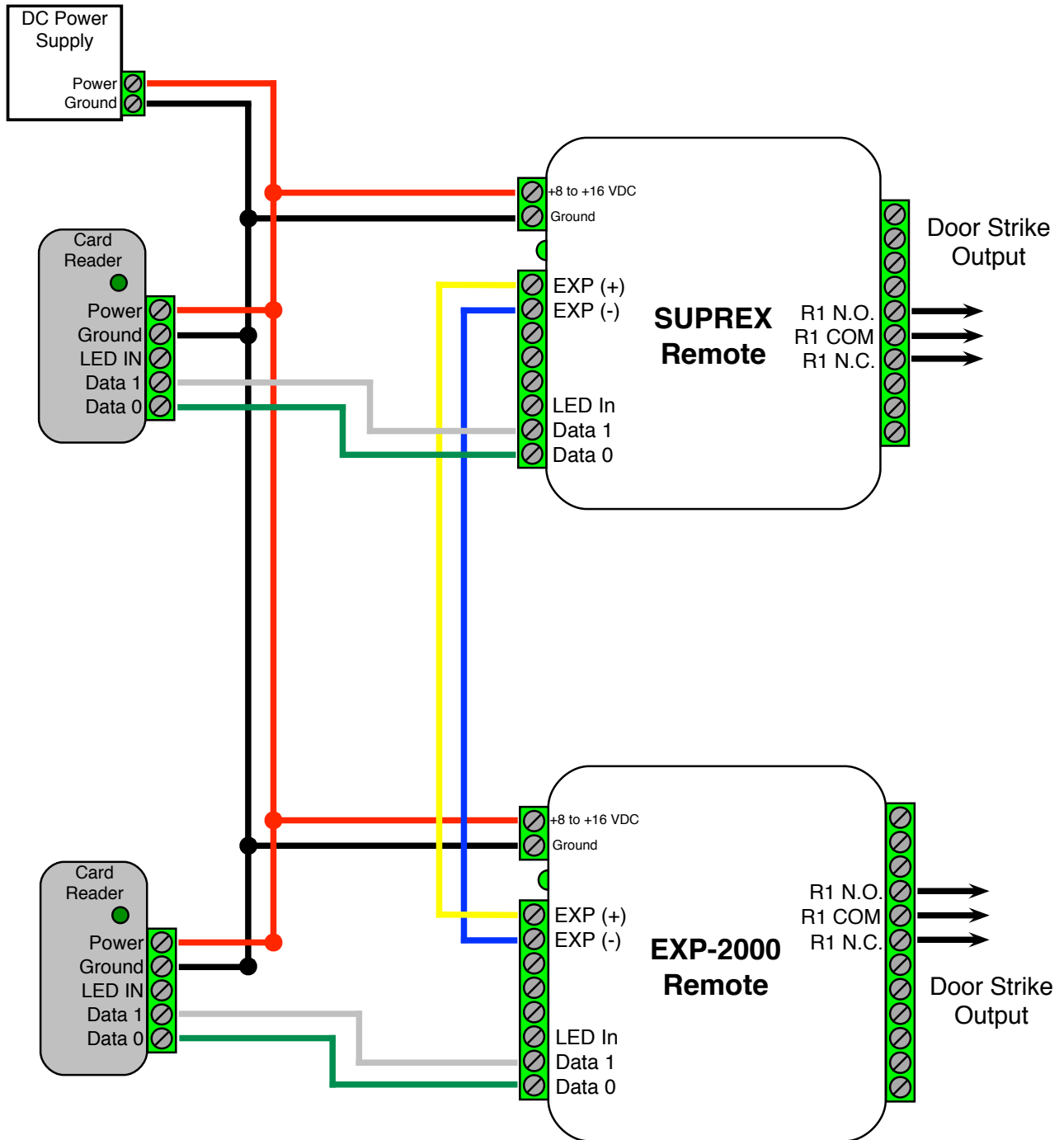
Suprex® Operation with Expansion Modules: Using EXP Expansion Modules does not change the normal function of the Suprex®, with these exceptions:

- EXP Expansion Modules are compatible only with the Wiegand interface type (does not apply to Wiegand No Filter)

- If the Suprex® Supervision relay is enabled, the Supervision relay will deactivate (indicate alarm state) if the communication link fails between the Suprex® pair or ANY of the the EXP pairs. *(To enable Supervision relay, see Run Mode settings, pgs. 8-10.)*

- LED Indicators with Suprex® Pair:
    - Suprex® Central or Remote status LED is solid green in Run Mode: one or more of the connected EXP units is not communicating properly. Ensure all EXP units are powered and correctlyt wired.
    - EXP status LED is solid red: EXP unit is not properly communicatiing with the Suprex® unit. Ensure the Suprex® unit is powered and wired correctly.
    - EXP status LED is flashing green: EXP unit is properly communicating with the Suprex®.

- The EXP-2000 Central and Remote pair will be functionally similar to the standard Cypress SPX-1300 Suprex® system. For more details, see the EXP-2000 manual.

SPX-7400 / SPX-7410 Central Wiring Diagram
with EXP-2000 Central

SPX-7400 / SPX-7410 Remote Wiring
Diagram with EXP-2000 Remote

DC Power
Supply

Power
Ground

+8 to +16 VDC
Ground

Door Strike
Output

Card
Reader

Power
Ground
LED IN
Data 1
Data 0

EXP (+)
EXP (-)

**SUPREX
Remote**

R1 N.O.
R1 COM
R1 N.C.

LED In
Data 1
Data 0

+8 to +16 VDC
Ground

R1 N.O.
R1 COM
R1 N.C.

Card
Reader

Power
Ground
LED IN
Data 1
Data 0

EXP (+)
EXP (-)

**EXP-2000
Remote**

Door Strike
Output

LED In
Data 1
Data 0

Wiring Diagram showing Suprex® working with 3 EXP-2000 Expansion Modules