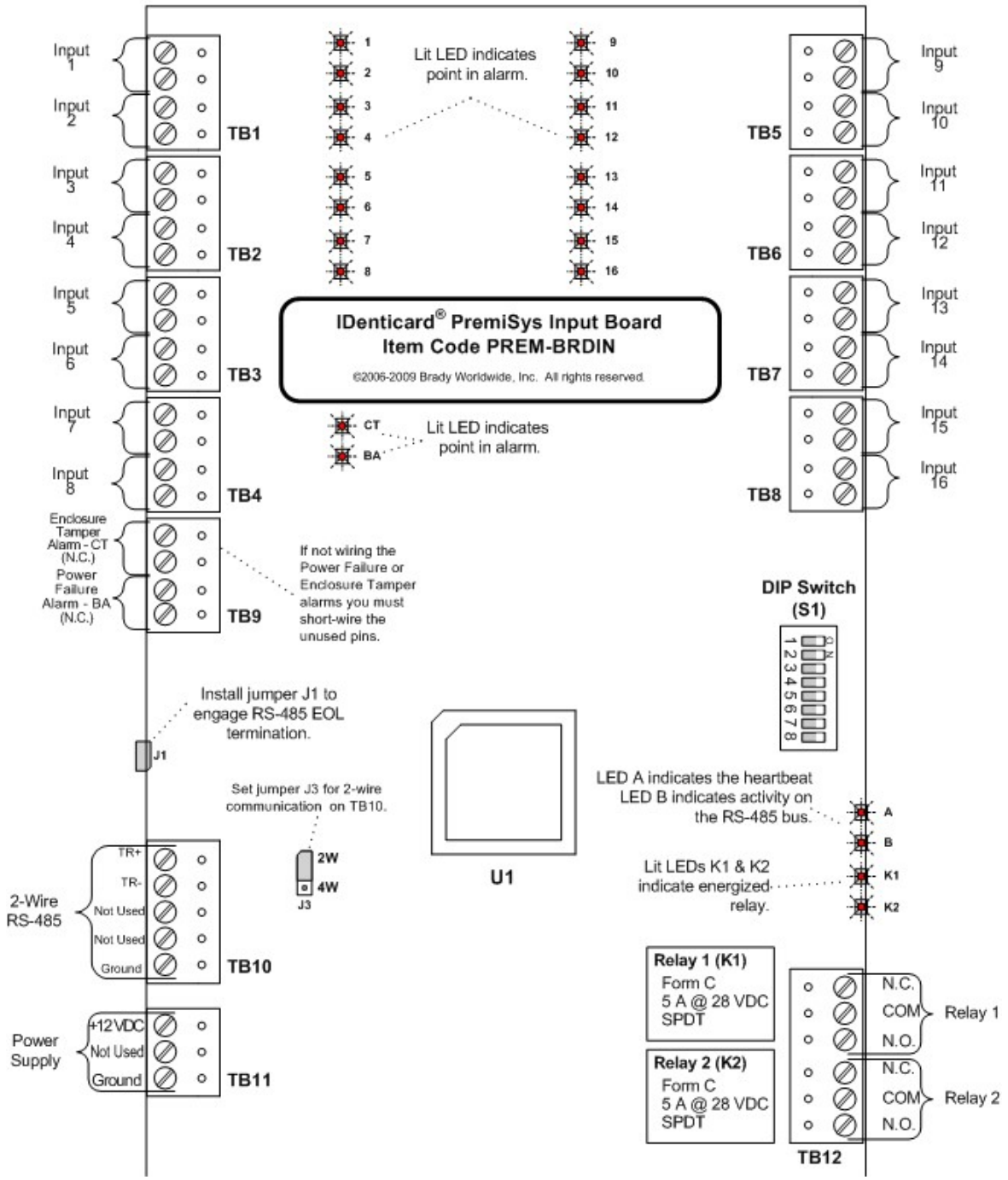
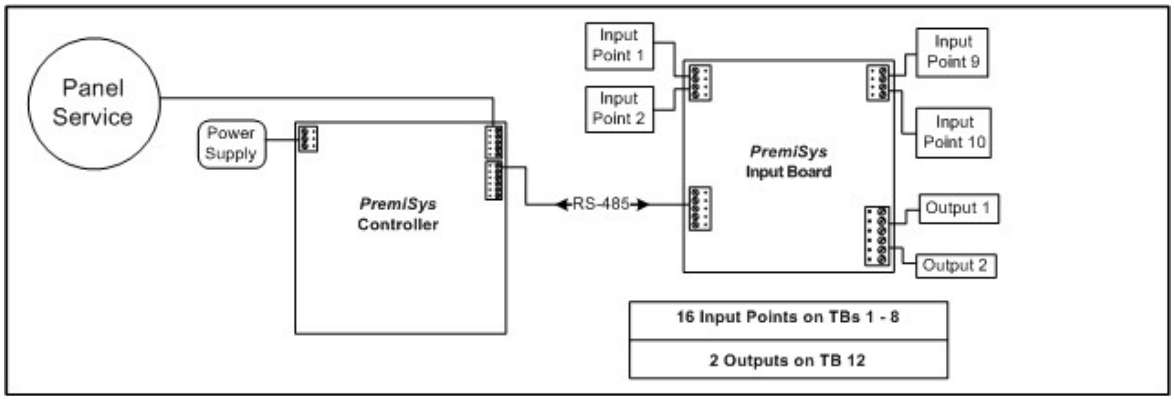
PremiSys Input Board



Sample General Configuration for a PremiSys Input Board Connected to a PremiSys Controller, a Reader and Auxiliary Equipment



Input Board Specifications

Certifications for the Input Board

UL: recognized to UL 294: Access Control System Units - component
CE: EN55022, EN50082-1, IEC801-2, IEC801-3 and IEC801-4

Dimensions and Weight of the Input Board

Board Width	8.0 inches (203 mm)
Board Height	6.0 inches (152 mm)
Board Depth	1.0 inch (25 mm)
Board Weight	9 ounces (290 g) (nominal)

Environmental Specifications for the Input Board

Temperature	32°F to 158°F (0°C to 70°C) operating -67°F to 185°F (-55°C to 85°C) storage
Relative Humidity	0 to 95% RH noncondensing

Power Specifications for the Input Board

CAUTION! The processor in this component is intended for use only in a Class 2, low-voltage circuit!

Input Voltage	12 VDC ± 10%, 350 mA, 300 mA nominal
Relay Ratings (each of two relays)	5 A at 28 VDC, noninductive load
Relay Contact Type	Form C
Relay Configuration	Single-pole double-throw (SPDT)

IMPORTANT! The Altronix® Power Supply Control panel contains 8 individual power outputs. Each output can supply up to 2.5 A @ 12 VDC. However, the total output amperage on all 8 ports cannot exceed 10 A. You must determine the load of each board in the loop to ensure that the current draw does not exceed 2.5 A per output port and that the total current draw on the power supply does not exceed 10 A.

Wiring Requirements for the Input Board

Power to Input Board	Twisted pair, 18 AWG (0.823 mm^2).
RS-485 Connection to PremiSys Controller	Twisted pairs, 22 AWG (0.325 mm2), with overall shield Maximum cable length: 4000 feet (1219 meters) of wire, total copper, including drops
Connection to Relay-Controlled Devices	Use wire and gauge as required by load.
Connection to Input-Point Devices	One twisted pair per input, 30 ohms maximum

Communications Specifications for the Input Board

To PremiSys Controller or MUX Board	Two-wire RS-485, via TB1, 2,400-38,400 bps.

Access-Control Specifications for the Input Board

Inputs – Assignable	16 supervised inputs with end-of-line (EOL) resistors, 1K / 2K ohm 1% ¼ watt standard
Input – Dedicated	Two unsupervised, dedicated inputs for enclosure tamper and power loss.

Indicators on the Input Board

Visible	22 red, single-color LEDs

Input Board DIP Switches - Chart

	Switches							
Selection	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Address 0	Off	Off	Off	Off	Off			
Address 1	**On**	Off	Off	Off	Off			
Address 2	Off	**On**	Off	Off	Off			
Address 3	**On**	**On**	Off	Off	Off			
Address 4	Off	Off	**On**	Off	Off			

Address 5	**On**	Off	**On**	Off	Off			
Address 6	Off	**On**	**On**	Off	Off			
Address 7	**On**	**On**	**On**	Off	Off			
Address 8	Off	Off	Off	**On**	Off			
Address 9	**On**	Off	Off	**On**	Off			
Address 10	Off	**On**	Off	**On**	Off			
Address 11	**On**	**On**	Off	**On**	Off			
Address 12	Off	Off	**On**	**On**	Off			
Address 13	**On**	Off	**On**	**On**	Off			
Address 14	Off	**On**	**On**	**On**	Off			
Address 15	**On**	**On**	**On**	**On**	Off			
Address 16	Off	Off	Off	Off	**On**			
Address 17	**On**	Off	Off	Off	**On**			
Address 18	Off	**On**	Off	Off	**On**			
Address 19	**On**	**On**	Off	Off	**On**			
Address 20	Off	Off	**On**	Off	**On**			
Address 21	**On**	Off	**On**	Off	**On**			
Address 22	Off	**On**	**On**	Off	**On**			
Address 23	**On**	**On**	**On**	Off	**On**			
Address 24	Off	Off	Off	**On**	**On**			
Address 25	**On**	Off	Off	**On**	**On**			
Address 26	Off	**On**	Off	**On**	**On**			
Address 27	**On**	**On**	Off	**On**	**On**			
Address 28	Off	Off	**On**	**On**	**On**			
Address 29	**On**	Off	**On**	**On**	**On**			
Address 30	Off	**On**	**On**	**On**	**On**			
Address 31	**On**	**On**	**On**	**On**	**On**			
2400 bps						Off	Off	
9600 bps						**On**	Off	
19,200 bps						Off	**On**	
38,400 bps						**On**	**On**	
Not used								Off

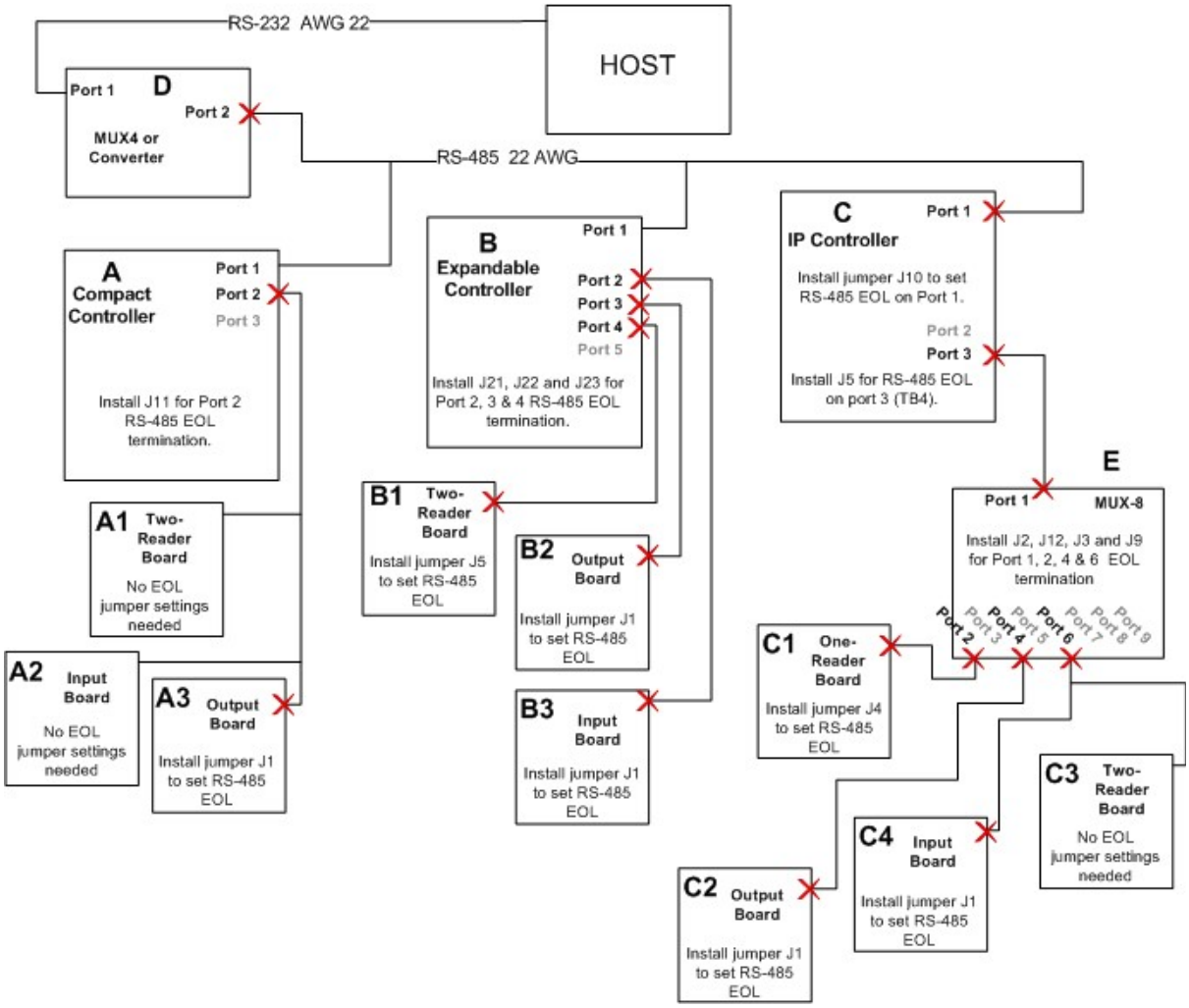
Wiring an Input Board Jumper Settings

Jumper	Setting	Selection
J1	Off	RS-485 EOL termination on TB10 is disabled.
	On	RS-485 EOL termination on TB10 is enabled.
J2	Off	RS-485 EOL termination on TB10 is disabled.
	On	RS-485 EOL termination on TB10 is enabled.
J3	2W	TB10 uses two-wire RS-485 communications
	4W	Not Used – Do not select

Setting End-of-Line (EOL) Resistance for the Input Board

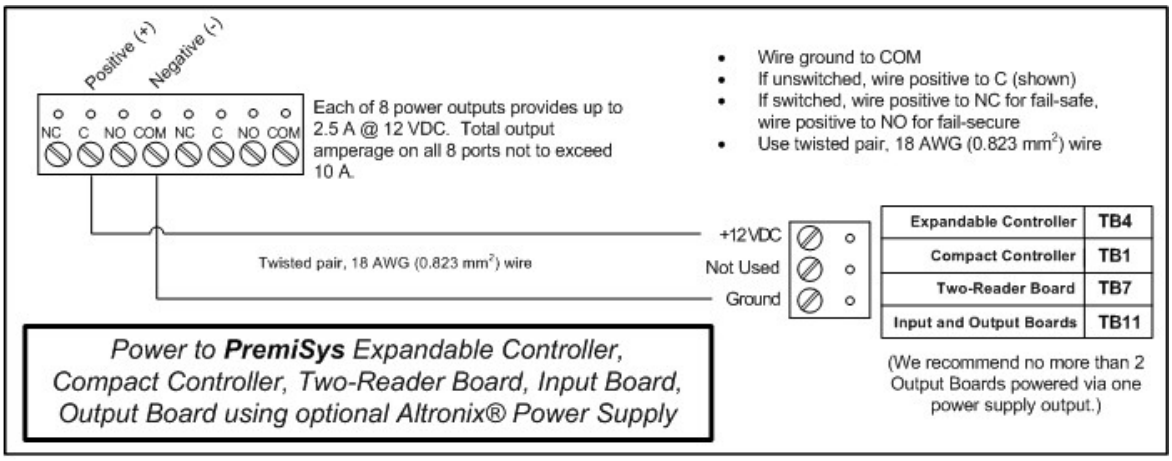
If the Input Board is the last board on a bus, install jumper J1 to set RS-485 EOL.

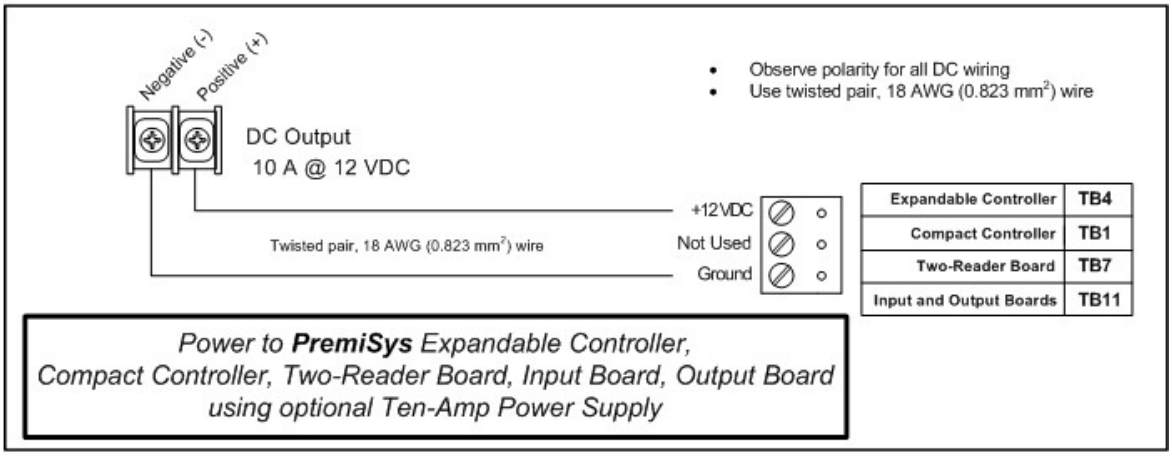
In the diagram below, boards A3, B1, B2, B3, C1, C2 and C3 should be set as end-of-line. The originating port on the associated controller should also be set for end-of-line.

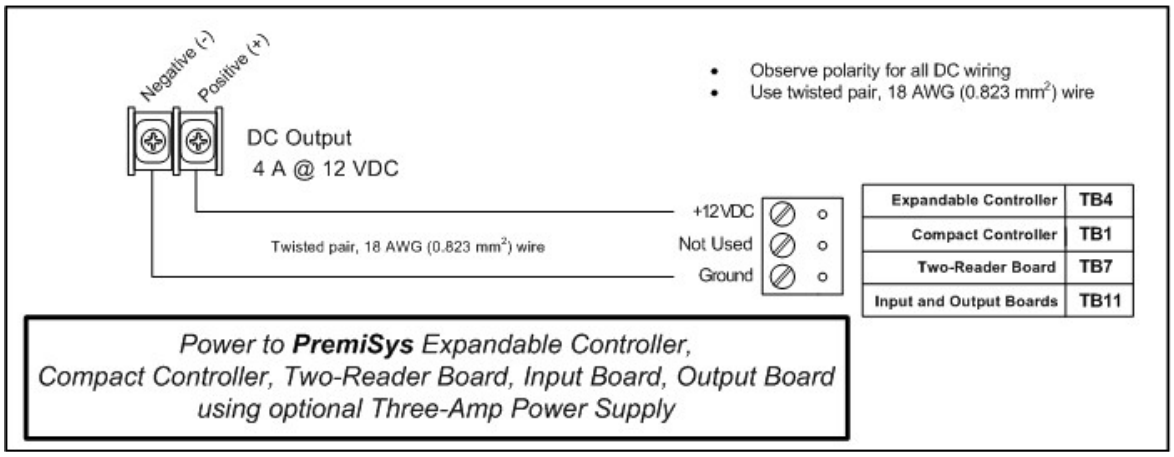


Wiring an Input Board to a Power Supply

IMPORTANT! The Altronix® Power Supply Control panel contains 8 individual power outputs. Each output can supply up to 2.5 A @ 12 VDC. However, the total output amperage on all 8 ports cannot exceed 10 A. You must determine the load of each board in the loop to ensure that the current draw does not exceed 2.5 A per output port and that the total current draw on the power supply does not exceed 10 A.



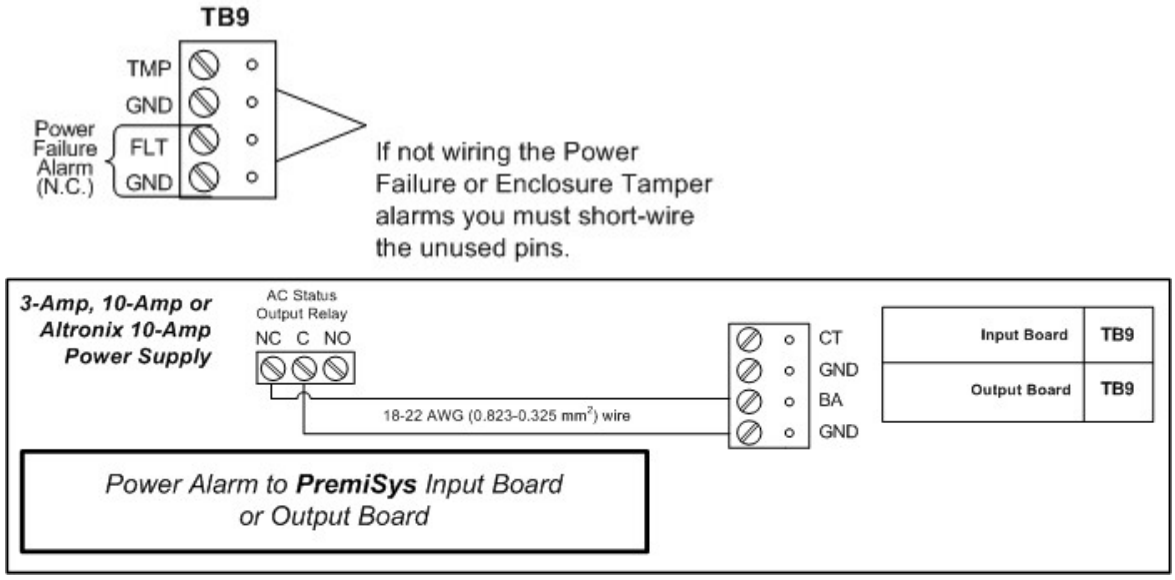




Wiring an Input Board to Monitor for UPS Power Loss

The PremiSys™ Input Board has dedicated inputs on terminal block 9 for use as Enclosure Tamper and Power Failure Alarms. If these dedicated inputs are not wired for their intended use, install a shorting wire on each of them.

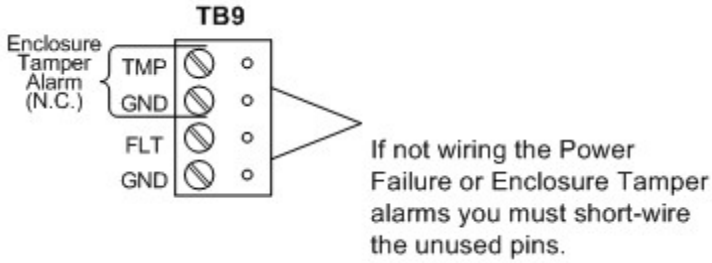
TB 9		
Power Failure	TB9-3	Input
	TB9-4	Return



Wiring an Input Board Enclosure Tamper

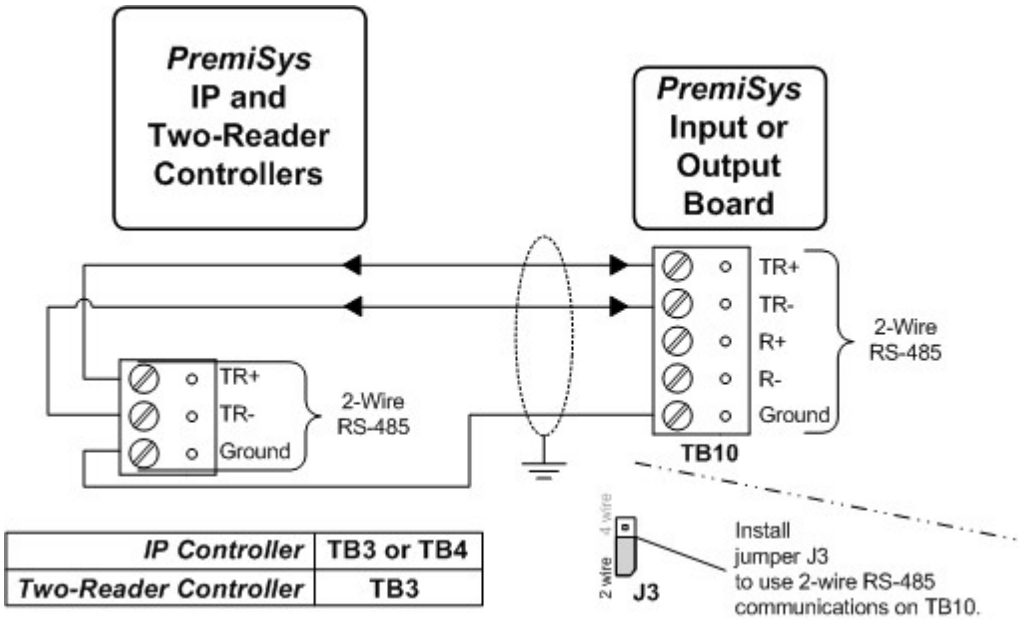
The PremiSys™ Input Board has dedicated inputs on terminal block 9 for use as Enclosure Tamper and Power Failure Alarms. If these dedicated inputs are not wired for their intended use, install a shorting wire on each of them.

TB 9		
Enclosure Tamper	TB9-1	Input
	TB9-2	Return



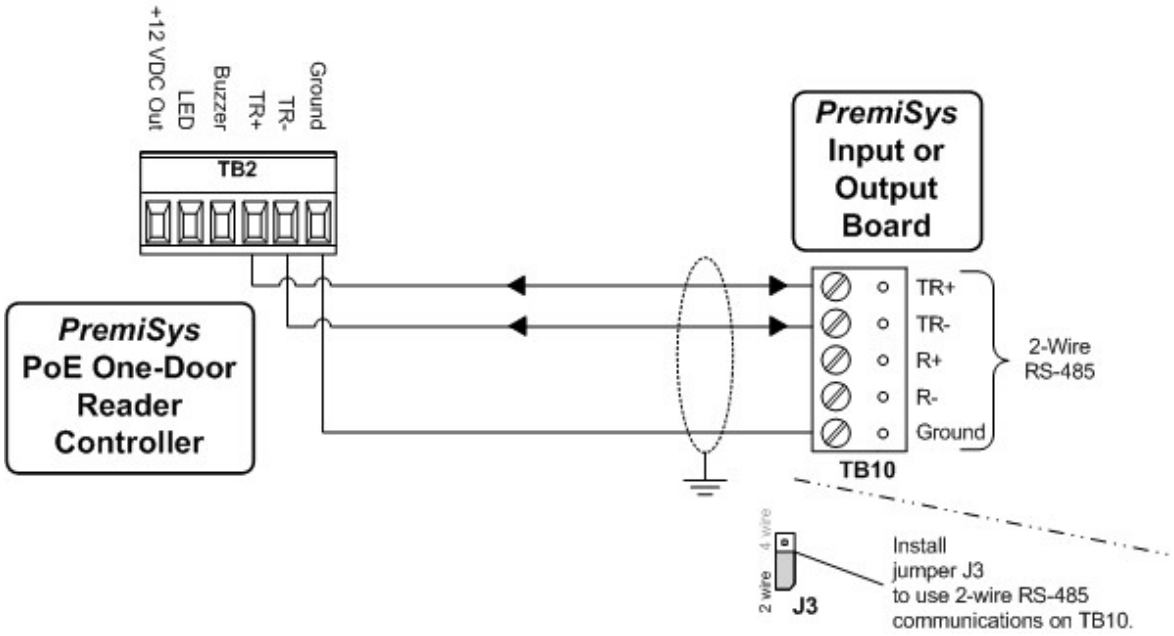
Wiring an Input Board to a Controller

Note: Listed below are the maximum numbers of Input Boards you can connect to each of the named controllers:
IP Controller - 64
Two-Reader Controller - 32
PoE One-Door Reader Controller - 8

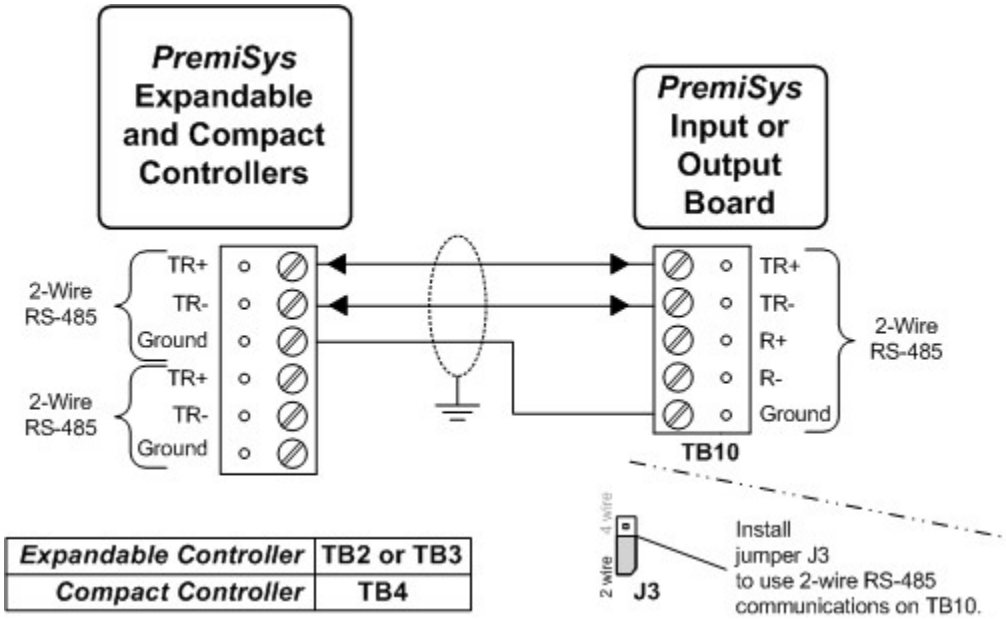


IP Controller	TB3 or TB4
Two-Reader Controller	TB3

IMPORTANT! Install Jumper J3 exactly as illustrated in the diagram above! Four-wire RS-485 cannot be used!



IMPORTANT! Install Jumper J3 exactly as illustrated in the diagram above! Four-wire RS-485 cannot be used!



Expandable Controller	TB2 or TB3
Compact Controller	TB4

IMPORTANT! Install Jumper J3 exactly as illustrated in the diagram above! Four-wire RS-485 cannot be used!

Connecting Input Points on an Input Board

Inputs may be wired with normally open or normally closed contact points. They may or may not incorporate two types of supervision. Specify the input configuration (normally open, normally closed, two supervision types) when setting up each input point in the software. See the PremiSys™ Online Help for details.

See the topic "Wiring Supervised Inputs on the PremiSys Input Board" 237 to see how to wire inputs that require supervision. See the topic "Wiring Unsupervised Inputs on the PremiSys Input Board 238" to see how to wire inputs that do not require supervision.

IMPORTANT! Inputs on a single board are normally processed in ascending numeric sequence when they change state simultaneously or nearly simultaneously. Consequently, if wiring a REX input point and a door-position input point in a pair on an Input Board, make sure that the door-position input point has a higher input number than the REX point paired with it.

TB1		**TB2**	
TB1-1	Input 1	TB2-1	Input 3
TB1-2	Input 1	TB2-2	Input 3
TB1-3	Input 2	TB2-3	Input 4
TB1-4	Input 2	TB2-4	Input 4

TB3		**TB4**	
TB3-1	Input 5	TB4-1	Input 7
TB3-2	Input 5	TB4-2	Input 7
TB3-3	Input 6	TB4-3	Input 8
TB3-4	Input 6	TB4-4	Input 8

TB5		TB6	
TB5-1	Input 9	TB6-1	Input 11
TB5-2	Input 9	TB6-2	Input 12
TB5-3	Input 10	TB6-3	Input 12
TB5-4	Input 10	TB6-4	Input 12

TB7		TB8	
TB7-1	Input 13	TB8-1	Input 15
TB7-2	Input 13	TB8-2	Input 15
TB7-3	Input 14	TB8-3	Input 16
TB7-4	Input 14	TB8-4	Input 16

Wiring Supervised Inputs on the Input Board

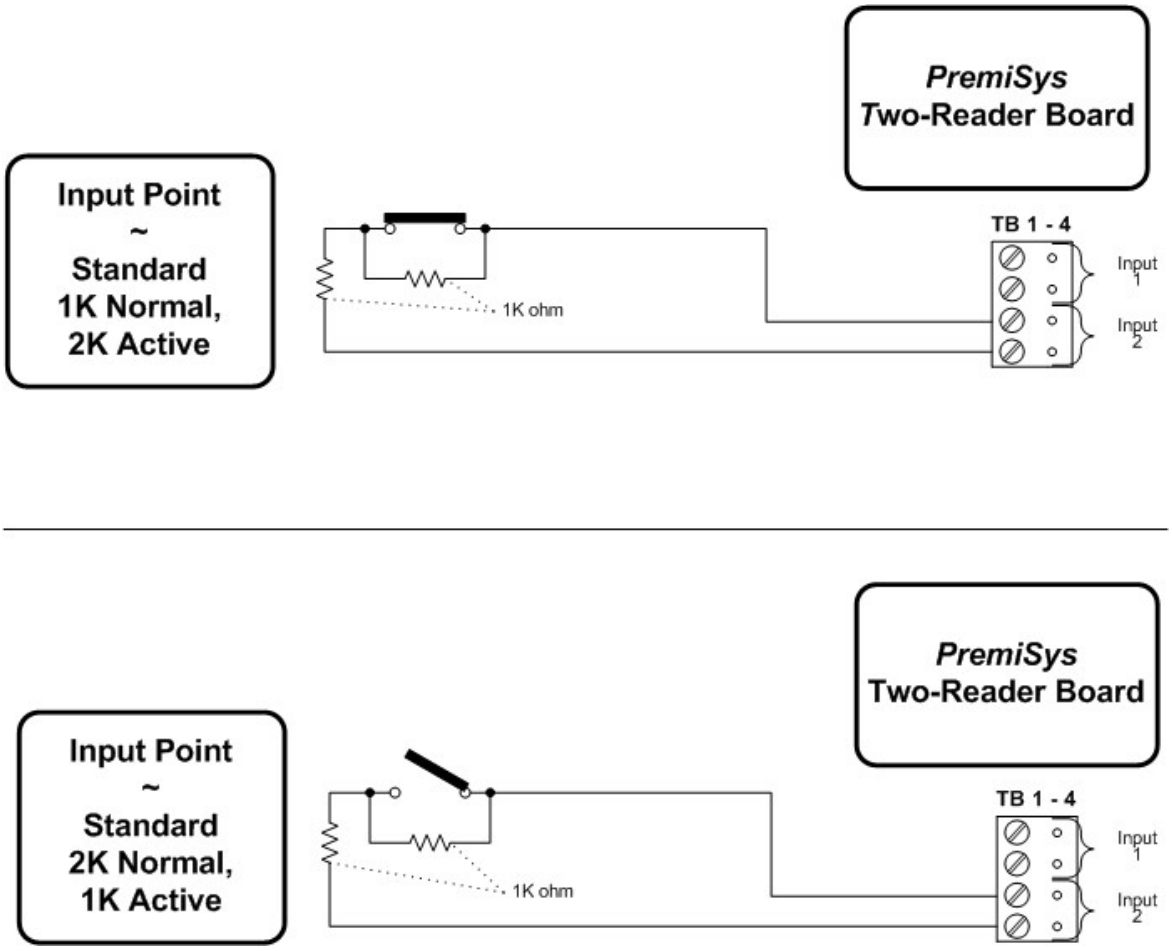
Supervised inputs such as these can be used for door-position input points or any other input that requires supervision. Inputs may be wired with normally open or normally closed contact points. They may incorporate two types of supervision. Specify the input configuration (normally open, normally closed, two supervision types) when setting up each input point in the software. See the PremiSys™ Online Help for details.

See the topic "Wiring Unsupervised Input Points on the PremiSys Input Board 238" to wire inputs that do not require supervision.

IMPORTANT! Inputs on a single board are normally processed in ascending numeric sequence when they change state simultaneously or nearly simultaneously. Consequently, if wiring a REX input point and a door-position input point in a pair on an Input Board, make sure that the door-position input point has a higher input number than the REX point paired with it.

Input circuits require one twisted pair per input and are rated at 30 ohms maximum.

IMPORTANT! PremiSys supports only the standard "1 K normal, 2 K active" and "2 K normal, 1 K active" supervision modes depicted here.



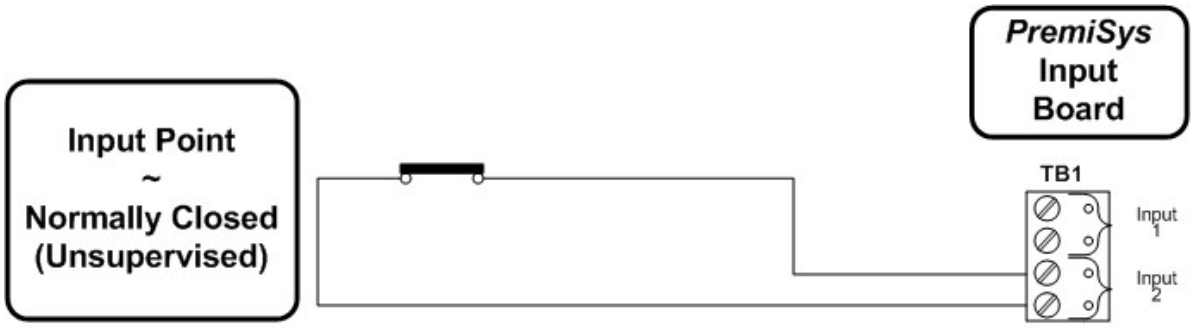
Wiring Unsupervised Inputs on the Input Board

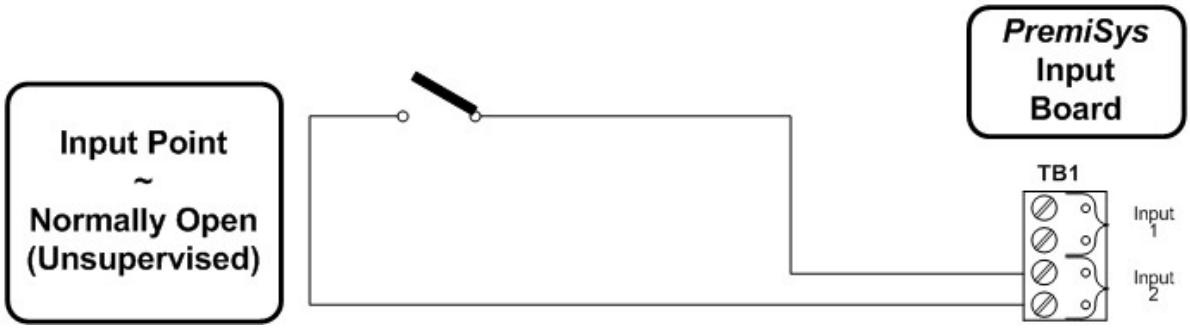
Unsupervised inputs such as these can be used for REXes, general-purpose input points or any other input that does not require supervision. Specify the input configuration (normally open, normally closed, two supervision types) when setting up each input point in the software. See the PremiSys™ Online Help for details.

See the section "Wiring Supervised Inputs on the PremiSys Input Board 237" to see how to wire inputs that require supervision.

IMPORTANT! Inputs on a single board are normally processed in ascending numeric sequence when they change state simultaneously

or nearly simultaneously. Consequently, if wiring a REX input point and a door-position input point in a pair on an Input Board, make sure that the door-position input point has a higher input number than the REX point paired with it.





Relays on an Input Board

TB12 (Relay = Output)	
TB12-1	Relay 2: Normally open
TB12-2	Relay 2: Common
TB12-3	Relay 2: Normally closed
TB12-4	Relay 1: Normally open
TB12-5	Relay 1: Common
TB12-6	Relay 1: Normally closed

Input Board LEDs

The PremiSys™ Input board has 22 LEDs.

- LEDs A and B indicate operation and communication of the board with the connected controller, as described below.
- LEDs K1 and K2 indicate the status of the board's relays, as described below.
- LEDs 1 through 16 indicate when the relevant input on the board goes into alarm, as described below.
- LEDs CT and BA indicate the status of the dedicated inputs for cabinet tamper (CT) and power fault (BA), as described below.

Communication Host LED		
A	Heartbeat and online status indicator:	
	80/20 Off	**80/20 On**
	Offline	Online
Communication I/O LED		
B	I/O communication activity on the bus, not necessarily on this board.	
Input LED	**Flash on every few seconds**	**Flash off every few seconds**
1	Normal	Alarm
2	Normal	Alarm
3	Normal	Alarm
4	Normal	Alarm
5	Normal	Alarm
6	Normal	Alarm
7	Normal	Alarm
8	Normal	Alarm
9	Normal	Alarm
10	Normal	Alarm

11	Normal	Alarm
12	Normal	Alarm
13	Normal	Alarm
14	Normal	Alarm
15	Normal	Alarm
16	Normal	Alarm
Enclosure and Power	**Flash on every few seconds**	**Flash off every few seconds**
CT	Enclosure secure	Enclosure tampered
BA	Power normal	Power lost
Relay LED	**Off**	**On**
K1	Relay 1 de-energized	Relay 1 energized
K2	Relay 2 de-energized	Relay 2 energized