



Micro/Reader Junction Box Installation Instructions

Introduction

The Micro/Reader Junction Box is designed to facilitate the wiring interface between the Micro/PX-2000, Micro/PXN-2000, or Micro/5 micro boards and the door strikes, readers, and door/request-to-exit (REX) switches. The steel cabinet standardizes and protects wiring, bringing all connections to one point.

NOTE



The Micro/Reader Junction Box supports Model 94x/97x Proximity Perfect™ and Model 950/960 Proximity Perfect readers only.

Product Features

The Micro/Reader Junction Box provides the following features:

- Removable Phoenix-type connectors for ease of wiring.
- Built-in strike relay with surge-protecting diodes.
- Option of Supervised or Unsupervised door/REX DIs.
- Four built-in LEDs to help with installation troubleshooting.

Connecting the Micro/Reader Junction Box

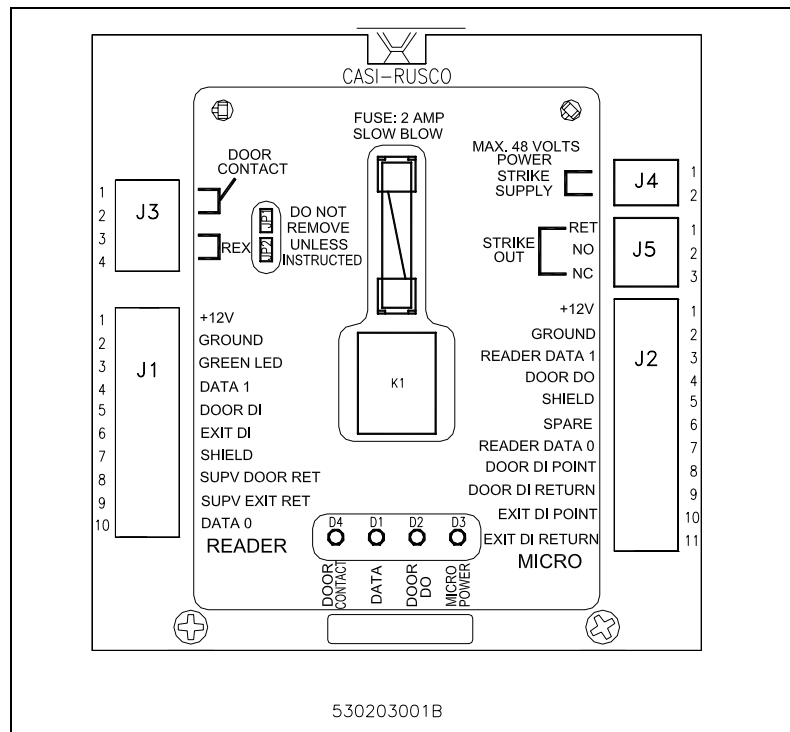


Figure 1. Micro/Reader Junction Box Connectors and Overlay

The following tables show position numbers and corresponding signals for connecting the Micro/Reader Junction Box to the readers, micro, DIs, strike supply, and strike relay output.

Table 1: J1 Connector: Reader Interface

Terminal Pin Position	Signal
1	+12V: The +12V from J2-1 to power the reader.
2	GROUND: The ground signal from J2-2.
3	GREEN LED: The door control signal from J2-4.
4	DATA 1: The F/2F DATA 1 output from the reader to J2-3.
5	DOOR DI: The door switch input to the reader from J3-1. This signal is also routed to J2-8 for connection to the micro if four-state supervision is desired, or if the reader to which the Junction Box is being interfaced does not include DI inputs.
6	EXIT DI: The REX input to the reader from J3-3. This signal is also routed to J2-10 for connection to the micro if four-state supervision is desired, or if the reader to which the Junction Box is being interfaced does not include DI inputs.
7	SHIELD: If shielded wire is used, tie shield to this pin (connects to J2-5).
8	SUPERVISED DOOR RETURN: The door switch return signal from J3-2. This signal is tied to ground by the JP1 jumper for use as Unsupervised DI input to the reader. This signal is also routed to J2-9 for connection to the micro if four-state supervision is desired, or if the reader does not have a DI input. In that case, the JP1 jumper should be lifted.
9	SUPERVISED EXIT RETURN: The REX return signal from J3-4. This signal is tied to ground by the JP2 jumper for use as Unsupervised DI input to the reader. This signal is also routed to J2-11 for connection to the micro if four-state supervision is desired, or if the reader does not have a DI input. In that case, the JP2 jumper should be lifted.
10	DATA 0:

Table 2: J2 Connector: Micro Interface

Terminal Pin Position	Signal
1	+12V: The +12V (or +5V) to power the reader. Connects to J1-1.
2	GROUND: The power return to the reader. Connects to J1-2.
3	READER DATA 1: The F/2F DATA 1 from the reader.
4	DOOR DO: Door Control Signal.
5	SHIELD: If shielded wire is used, tie shield to this pin. ¹
6	SPARE: Can be used for a tamper switch connection point.
7	READER DATA 0:
8	DOOR DI POINT: The door switch input to the reader from J3-1. This signal is also routed to J2-8 for connection to the micro if four-state supervision is desired, or if the reader to which the Junction Box is being interfaced does not include DI inputs.
9	DOOR DI RETURN: SUPERVISED DOOR RETURN: The door switch return signal from J3-2. This signal is tied to ground by the JP1 jumper for use as Unsupervised DI input to the reader. This signal is also routed to J2-9 for connection to the micro if four-state supervision is desired, or if the reader does not have a DI input. In that case, the JP1 jumper should be lifted.
10	EXIT DI POINT: The REX input to the reader from J3-3. This signal is also routed to J2-10 for connection to the micro if four-state supervision is desired, or if the reader to which the Junction Box is being interfaced does not include DI inputs.
11	EXIT DI RETURN: The REX return signal from J3-4. This signal is tied to ground by the JP2 jumper for use as Unsupervised DI input to the reader. This signal is also routed to J2-11 for connection to the micro if four-state supervision is desired, or if the reader does not have a DI input. In that case, the JP2 jumper should be lifted.

1. Shield should be grounded to micro cabinet.

Table 3: J3 Connector: DI Interface

Terminal Pin Position	Signal
1	DOOR DI: The door switch input to the reader from J3-1. This signal is also routed to J2-8 for connection to the micro if four-state supervision is desired, or if the reader to which the Junction Box is being interfaced does not include DI inputs.
2	DOOR DI RETURN: The door switch return signal from J3-2. This signal is tied to ground by the JP1 jumper for use as Unsupervised DI input to the reader. This signal is also routed to J2-9 for connection to the micro if four-state supervision is desired, or if the reader does not have a DI input. In that case, the JP1 jumper should be lifted.
3	EXIT DI: The door switch return signal from J3-2. This signal is tied to ground by the JP1 jumper for use as Unsupervised DI input to the reader. This signal is also routed to J2-9 for connection to the micro if four-state supervision is desired, or if the reader does not have a DI input. In that case, the JP1 jumper should be lifted.
4	EXIT DI RETURN: The REX return signal from J3-4. This signal is tied to ground by the JP2 jumper for use as Unsupervised DI input to the reader. This signal is also routed to J2-11 for connection to the micro if four-state supervision is desired, or if the reader does not have a DI input. In that case, the JP2 jumper should be lifted.

Table 4: J4 Connector: Strike Supply Interface

Terminal Pin Position	Signal
1	STRIKE HI: Connected through 2A fuse to the strike relay wiper.
2	STRIKE RET: Connected to J5-1.

Table 5: J5 Connector: Strike Output Interface

Terminal Pin Position	Signal
1	STRIKE RET: Connected to J4-2.
2	STRIKE NO: Normally open contacts of the door relay.
3	STRIKE NC: Normally closed contacts of the door relay.

Wiring Diagrams

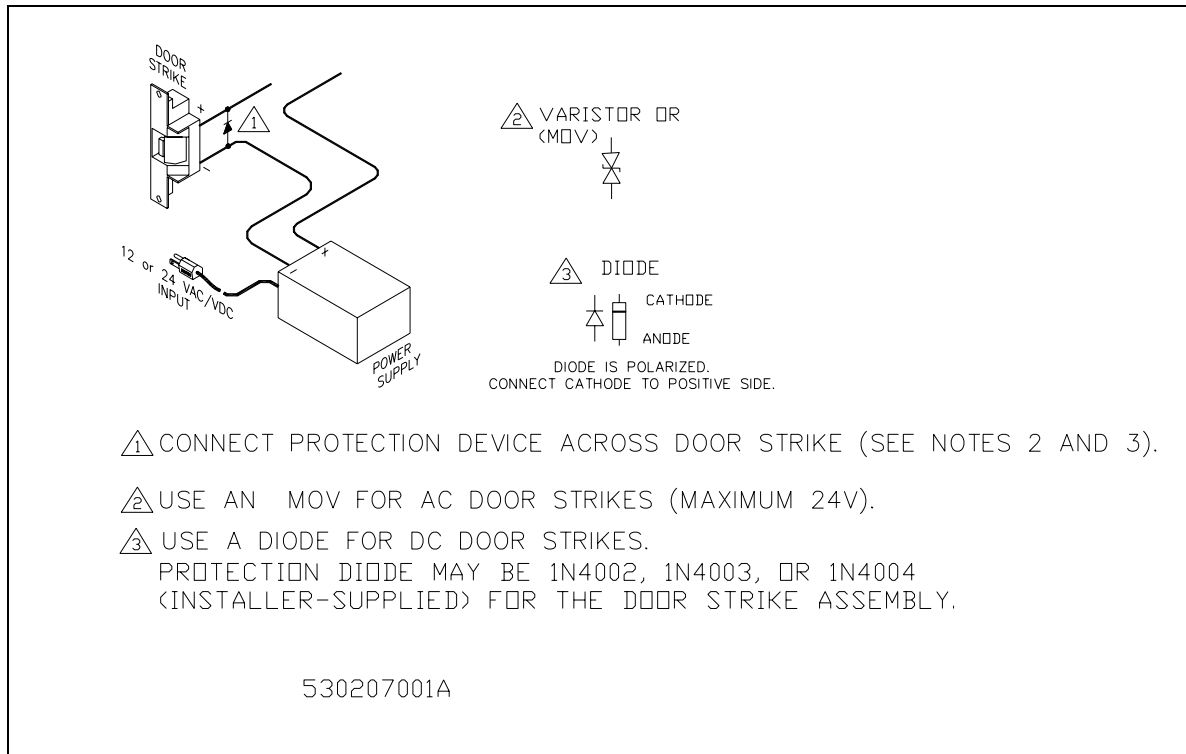


Figure 2. Relay Contact (Installer-Provided) Varistor/Diode Orientation

Refer to the following wiring diagrams for use of Micro/Reader Junction Box J2, J4, and J5 connectors to various micro types:

- Figure 3. Junction Box to Micro/PX-2000 or Micro/PXN-2000 Microcontroller
- Figure 4. Junction Box to Micro/PX-2000 or Micro/PXN-2000 Microcontroller - Relay Contact Only
- Figure 5. Junction Box to Micro/5 8RP Microcontroller
- Figure 6. Junction Box to Micro/5 8RP Microcontroller - Relay Contact Only
- Figure 7. Micro/Reader Junction Box to Micro/5 2RP or 2SRP Microcontroller
- Figure 8. Junction Box to Micro/5 2RP or 2SRP Microcontroller - Relay Contact Only

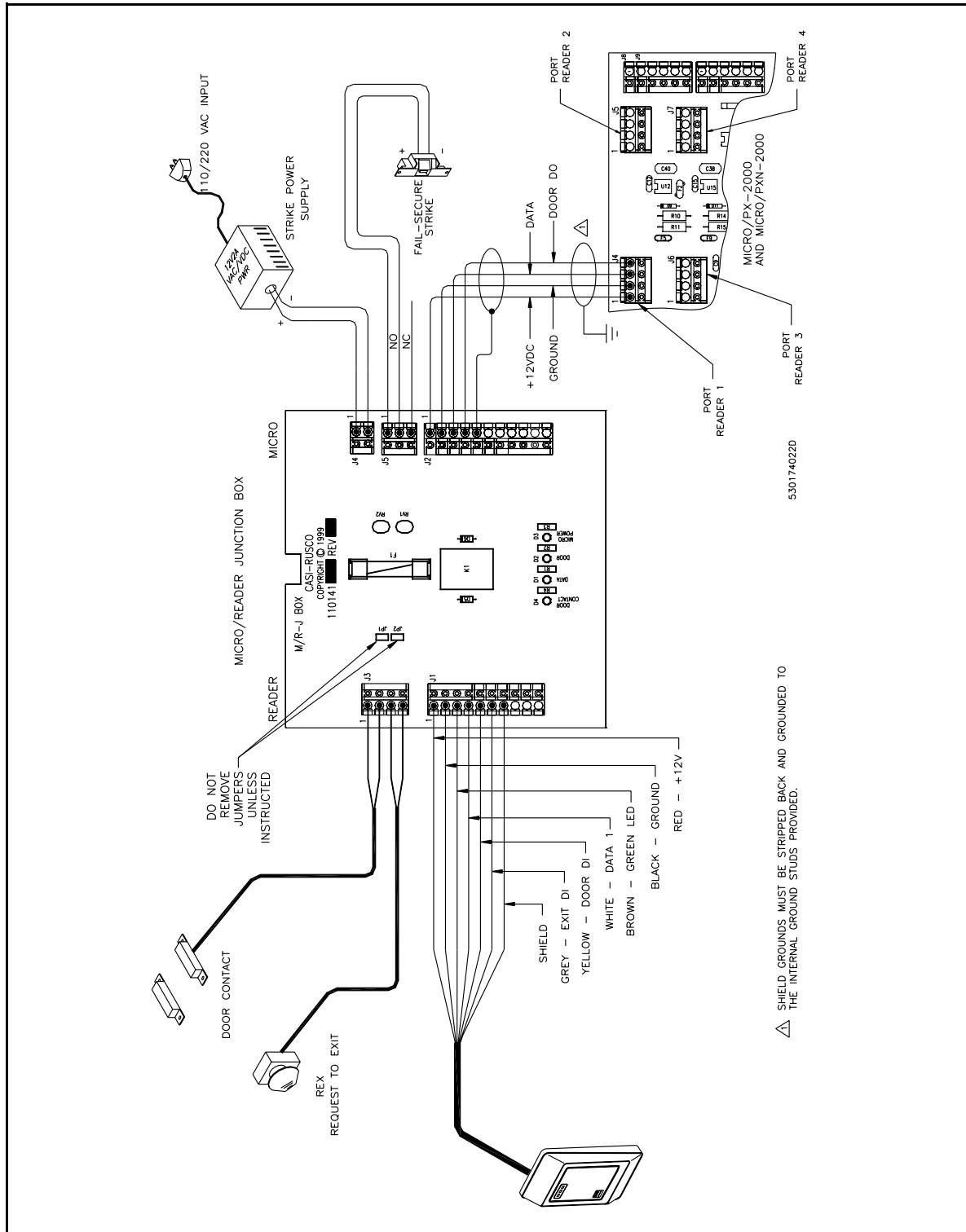


Figure 3. Junction Box to Micro/PX-2000 or Micro/PXN-2000 Microcontroller

**Figure 4. Junction Box to Micro/PX-2000 or Micro/PXN-2000 Microcontroller
- Relay Contact Only**

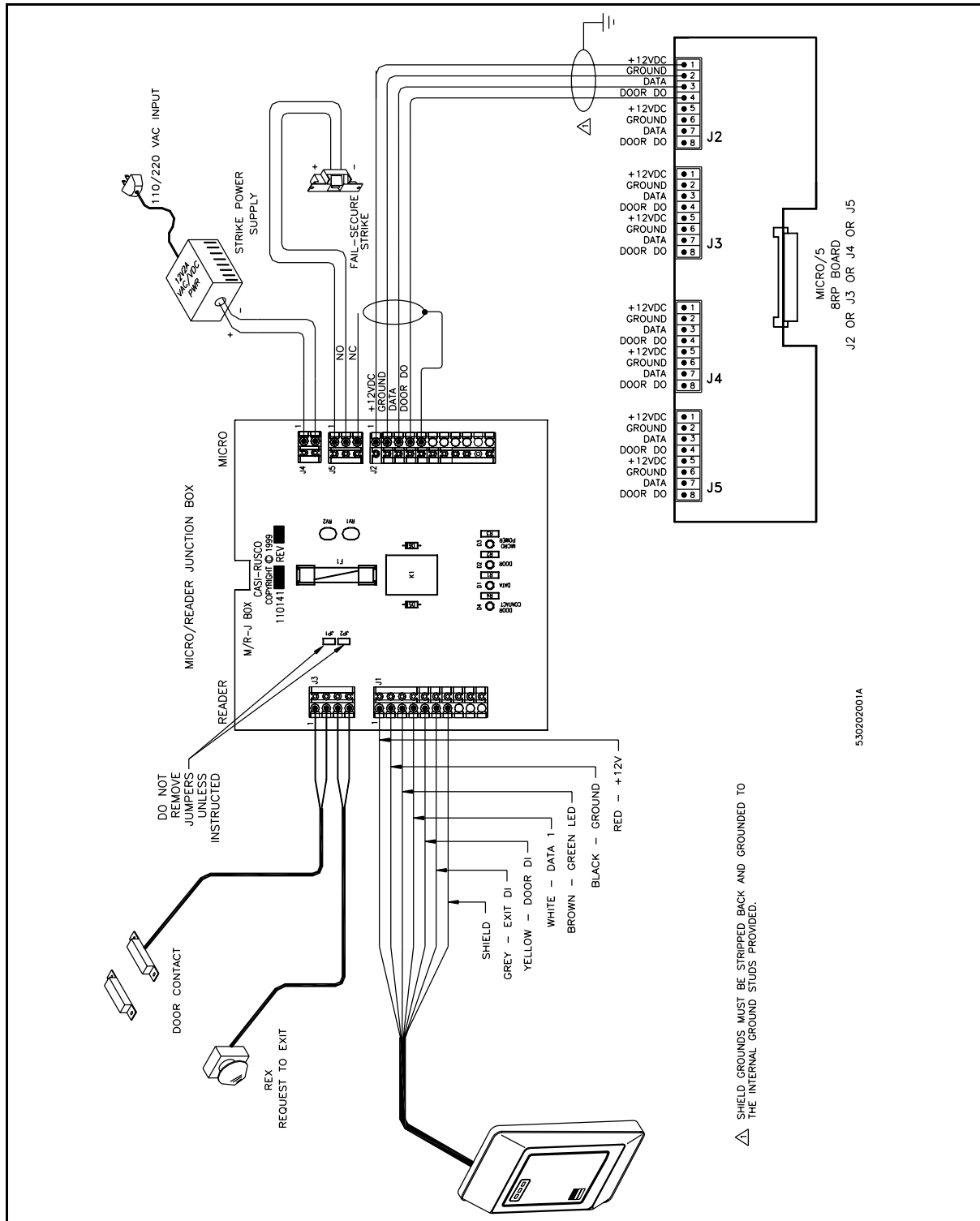


Figure 5. Junction Box to Micro/5 8RP Microcontroller

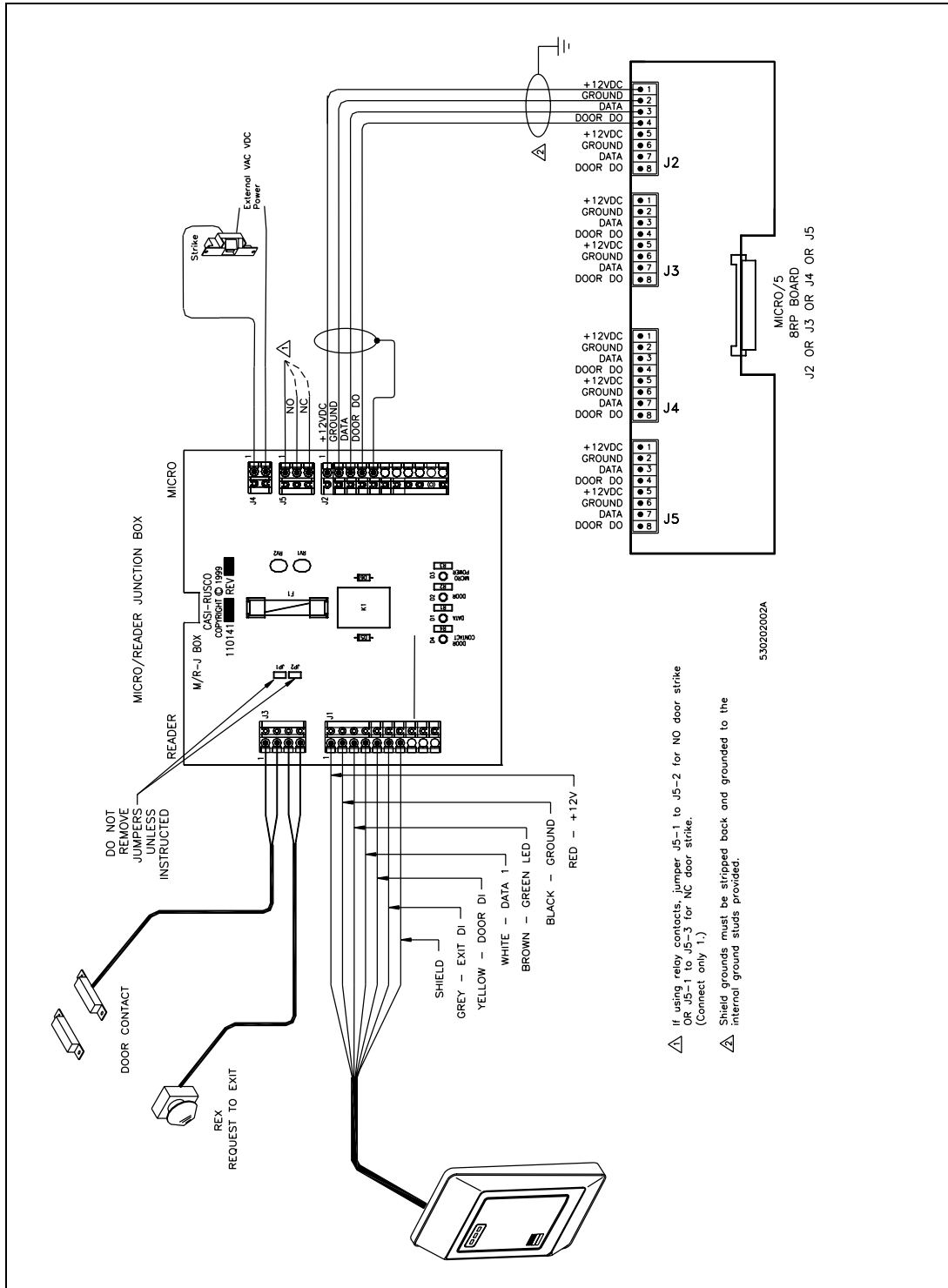


Figure 6. Junction Box to Micro/5 8RP Microcontroller - Relay Contact Only

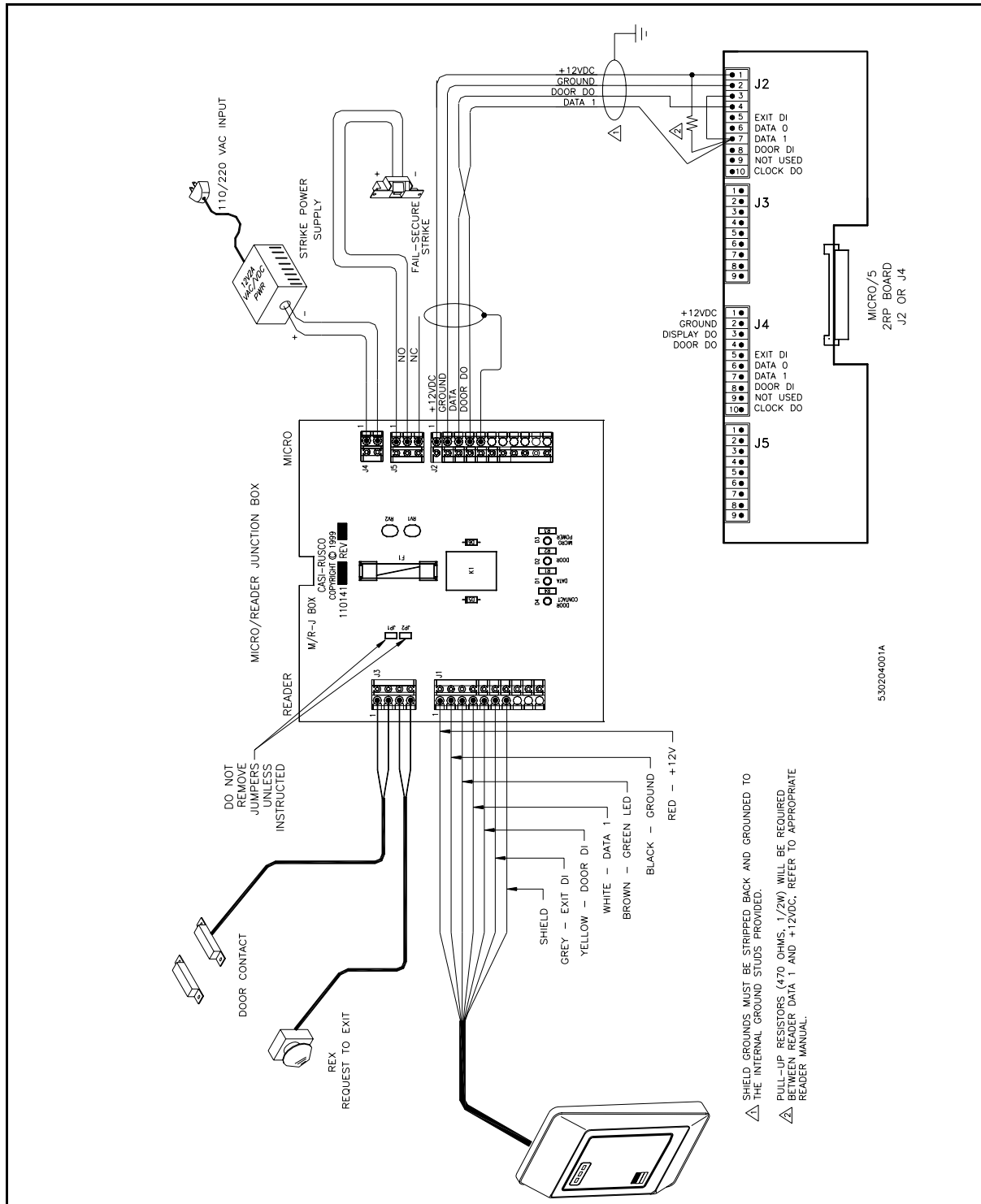
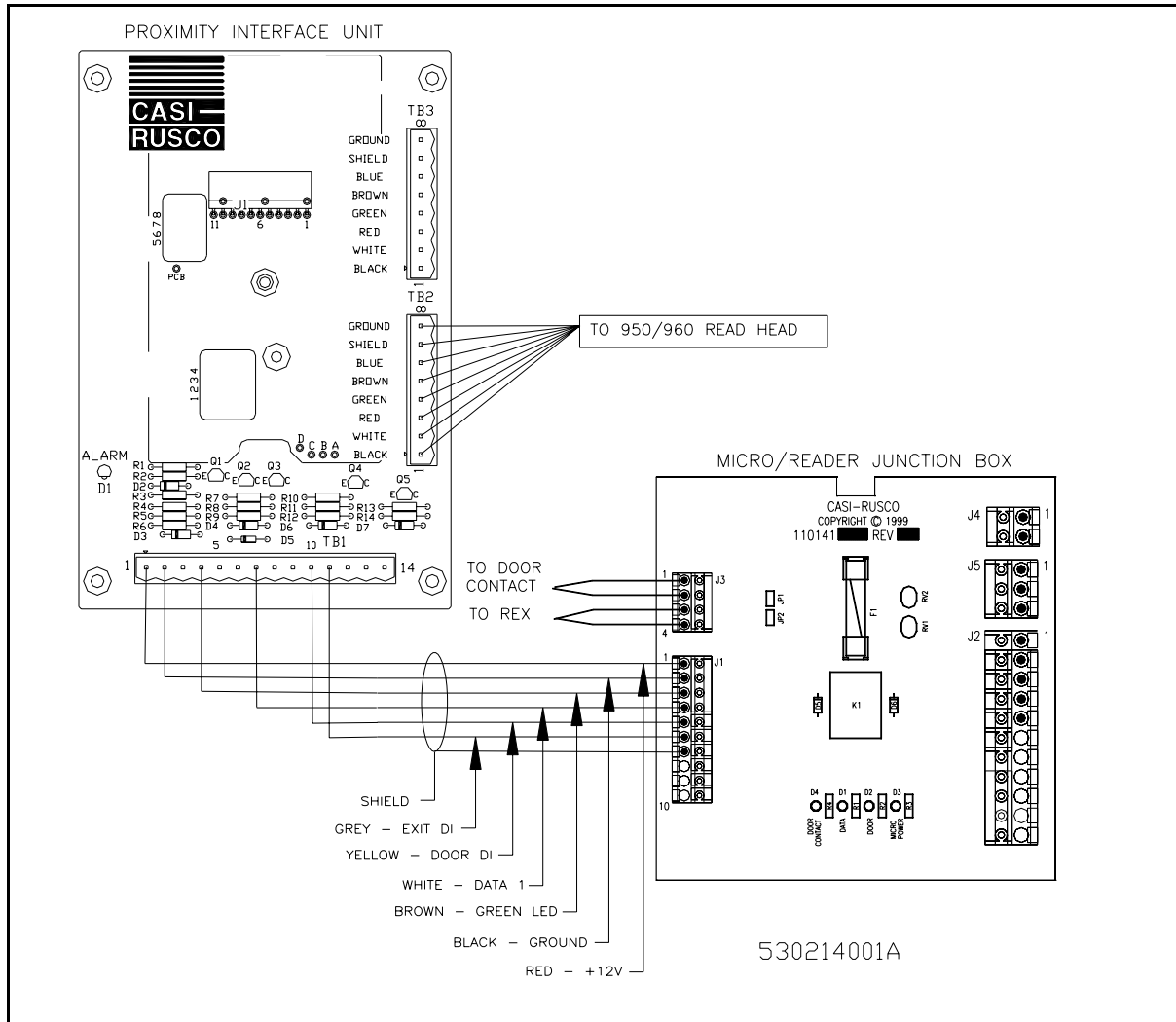


Figure 7. Micro/Reader Junction Box to Micro/5 2RP or 2SRP Microcontroller





Troubleshooting

Four LEDs incorporated into the board indicate status.

Table 6: LED Status Indicators

Position	LED	Status
D4	Door Contact	If the door switch is wired between Door DI and Door Return, this LED will be: <ul style="list-style-type: none">• ON <i>full brilliance</i> when these pins are shorted.• ON <i>dimly</i> when open.
D1	Data	If the reader interface is Supervised F/2F, this LED will flicker: <ul style="list-style-type: none">• At one-second intervals.• When a badge is read.• When a status change occurs in the REX or door switches.
D2	Door DO	<ul style="list-style-type: none">• Remains ON for as long as the micro is commanding the door to be open.• Goes OFF and remains OFF when the micro so commands.
D3	Micro Power	Stays ON as long as the micro +12V and ground remain ON and connected to the J2 connector.

Technical Specifications

Regulatory Requirements:

- Underwriters Laboratories Listing, UL 294
- FCC Certification Part 15 Class A
- CE Mark

Operating Temperature Range: 0°C to 49°C (32°F to 151°F)

Operating Humidity Range: 5 to 95% noncondensing

Physical Dimensions: 10.25 in (H) x 8.25in (W) x 2.875in (D)
26. cm H, 23.7 cm W, 7.4 cm D

Weight: 3.75 lbs. (1.7 kg)

Index of Protection: 20

Reader Power Supply: (J1-1) Nominal 12VDC, 50 mA plus reader power

Strike Power: Input on J4-1 has 2A fuse in series with relay wiper

Strike Relay: NO and NC contacts are overvoltage protected to a maximum of 48V. Maximum contact rating 5A; maximum contact voltage: 40VAC or 48VDC.

UL Compatibility

To adhere to the requirements of UL 294, Paragraph 7.2.1, the +12V power from the micro (J2 - Pin 1) needs to be routed through the tamper switch mounted on the enclosure. This disrupts power to the reader when the door is open, preventing the reader from sending data to the micro. This results in a communications failure registered on the host. The spare terminal (J2 - Pin 6) can be used as a connection point for one pole of the switch and the +12V power from the micro.

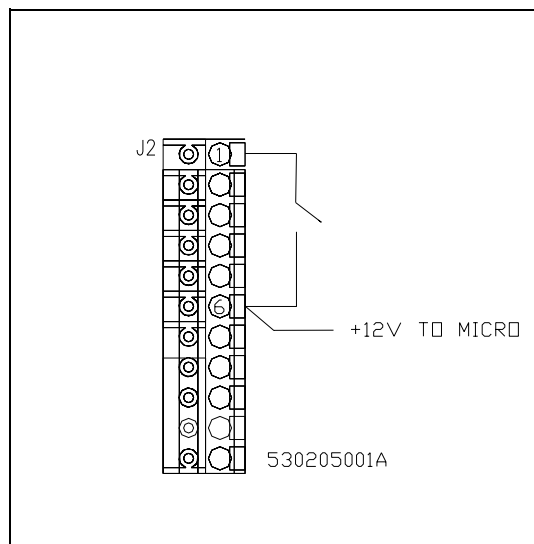


Figure 10. J2 Tamper Switch Connection

NOTE



When the Host registers the communication failure message, investigate the Micro/Reader Junction Box connections, then proceed to the reader.

Communication failure is recognized only if the reader is supervised.

NOTES

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