

8RP Board Installation Sheet

Introduction

This installation sheet is designed to help experienced technicians install the 8RP Board quickly. For more detailed information, refer to the appropriate controller installation manual.

The number of 8RP Boards supported by different host software systems varies. Consult the manual that came with your software for this information.

Features include:

- Each 8RP Board is limited to only one type of reader technology: F/2F or supervised F/2F.
- External pull-up resistors are not required for the 8RP Board.
- No door DI (alarm) or exit DI points are available on the 8RP Board. Use of supervised readers is recommended since these points are available on the reader.
- If keypad readers are needed, use only GE supervised F/2F keypad readers or Wiegand Interface Units (WIU-2/WIU-4).
- Each reader, reader-based DI (input) point, and reader-based exit DI on the 8RP Board is addressed differently depending on the host system you are using.
- The 8RP Board provides one digital output (reader LED) per reader port, 12 VDC, 100 mA maximum per output point.

Verify contents

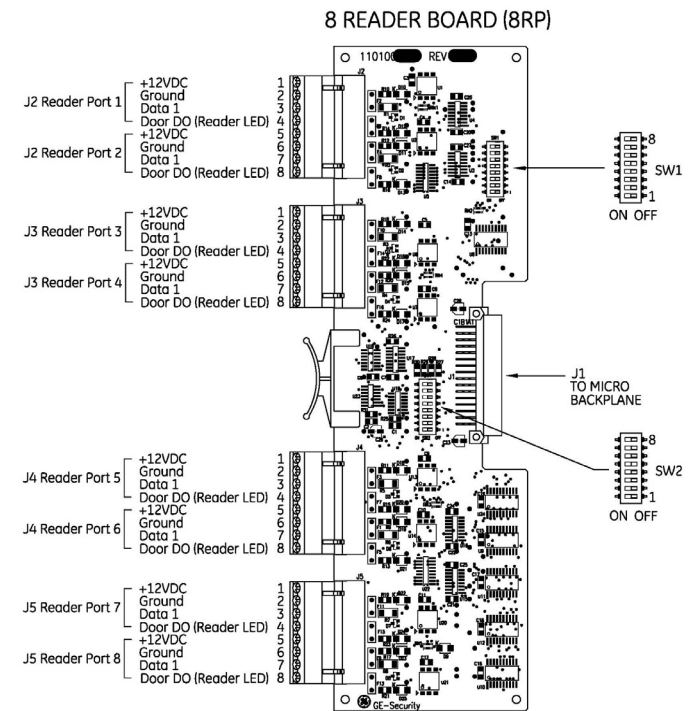
Caution: While the 8RP has been designed to resist electrostatic damage (ESD), it can be damaged by such discharges. Always observe proper ESD precautions when handling and storing the 8RP.

Inspect the package and contents for visible damage. If any components are damaged or missing, do not use the unit; contact the supplier immediately. If you need to return the unit, you must ship it in the original box.

The package should include the following contents:

- 8RP Reader Board
- 8RP Board Installation Sheet (this document)
- 1N4004A protection diodes
- MOV varistors
- 8-position, 45-degree connectors

Figure 1: 8RP Board layout



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Device addressing

Picture Perfect

Picture Perfect uses 2RP Board numbers to address readers, DIs, and DOs on the 8RP Board. See Table 1 and Table 2 for further information. Picture Perfect uses the following addressing:

- Reader ports 1 and 2 are configured as board number 1, reader address 0 and 1
- Reader ports 3 and 4 are configured as board number 2, reader address 0 and 1
- Reader ports 5 and 6 are configured as board number 3, reader address 0 and 1
- Reader ports 7 and 8 are configured as board number 4, reader address 0 and 1

Table 1: 8RP device addressing - Picture Perfect Board 1

	Board type: Board 1 [1]			
	Reader 1 and 2	Reader 3 and 4	Reader 5 and 6	Reader 7 and 8
Picture Perfect board number	1	2	3	4
Readers	0 and 1	0 and 1	0 and 1	0 and 1
Door DIs	0 and 1	0 and 1	0 and 1	0 and 1
Exit DIs	8 and 9	8 and 9	8 and 9	8 and 9
Door DOs	0 and 1	0 and 1	0 and 1	0 and 1

[1] The first 8 readers out of 16. See Table 5 for board type settings.

Table 2: 8RP device addressing - Picture Perfect Board 2

	Board type: Board 2 [1]			
	Reader 9 and 10	Reader 11 and 12	Reader 13 and 14	Reader 15 and 16
Picture Perfect board number	5	6	7	8
Readers	0 and 1	0 and 1	0 and 1	0 and 1
Door DIs	0 and 1	0 and 1	0 and 1	0 and 1
Exit DIs	8 and 9	8 and 9	8 and 9	8 and 9
Door DOs	0 and 1	0 and 1	0 and 1	0 and 1

[1] The second 8 readers out of 16. See Table 5 for board type settings.

Facility Commander Wnx and Secure Perfect

The Facility Commander Wnx and Secure Perfect systems create the device addresses shown in Table 3. (Table 3 is included for your reference only.)

The device address is in the format mmmm-b-pp where mmmm represents the controller number, b represents the board number, and pp represents the point or device number.

Table 3: 8RP device addressing - FCWnx and Secure Perfect

	Standard/Board 1	Board 2
Readers/Door DO	mmmm-1-01 through mmmm-1-08	mmmm-2-01 through mmmm-2-08
Door DIs	mmmm-1-01 through mmmm-1-08	mmmm-2-01 through mmmm-2-08
Exit DIs	mmmm-1-01 through mmmm-1-08	mmmm-2-01 through mmmm-2-08

Setting the DIP switches

Set the DIP switches as described in the tables below before installing and wiring the 8RP Board.

Table 4: DIP switch settings for reader technology and format

Reader technology and format	SW 1-1	SW 1-2	SW 1-3	SW 1-4
Magstripe - GE supervised F/2F	ON	OFF	ON	OFF
Magstripe - F/2F	ON	ON	ON	OFF

Table 5: 8RP Board address settings

Board type	SW 1-				SW 2-							
	5	6	7	8	1	2	3	4	5	6	7	8
Board 1 [1]	N/A	N/A	OFF	ON	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Board 2 [2]	N/A	N/A	OFF	ON	ON	ON	OFF	OFF	OFF	ON	OFF	ON

[1] The first 8 readers out of 16.

[2] The second 8 readers out of 16.

Wiring

It is recommended that 20 AWG shielded cable be used for wiring reader DOs and DIs. Use plenum-rated cable for applications where cable is to be run above the false (suspended) ceiling in the air circulation space.

Allow some slack wire for servicing the cables and for plugging the cable into an adjacent slot for troubleshooting.

Wiring the readers

1. Install the reader in accordance with the manufacturer's instructions.
2. Run the appropriate cable from the reader to the controller. Bring each reader cable through the appropriate knockout hole in the controller cabinet.
3. Remove eight inches of insulating material from the cable. Unwrap shielding and tie all shields together. Connect the communications cable shield to the ground nut adjacent to the cable entrance knockout of the cabinet enclosure. For more details, see Figure 2.

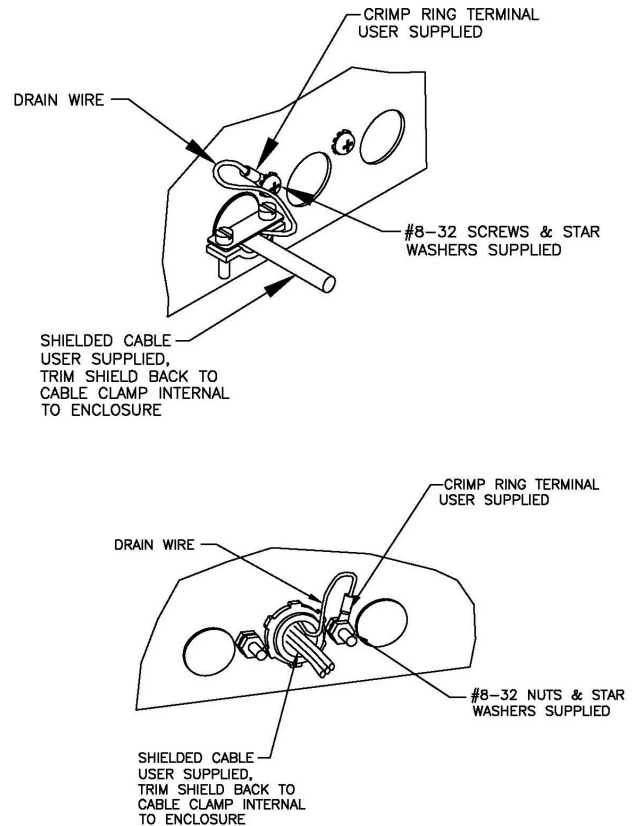
Caution: The 8RP Board has built-in pull-up resistors. Do not install the external pull-up resistors supplied with the GE Proximity Readers.

4. Depending on your configuration, attach the appropriate wires to the appropriate screw terminal on the 8RP Board as shown in Figure 3, Figure 4, and Figure 5. Refer to Table 6 for connector pinouts.

Pairing of cables is very important. Refer to the examples in Table 6.

5. To ensure proper function when using two 8RP Boards in the M5 and M3000 controllers, the second 8RP Board should be wired directly to the Power Communication Board, as shown in Figure 4
6. Label each cable end with the controller address number and the device or reader number.

Figure 2: Typical installation using shielded cable/drain wire inside and outside of the enclosure



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Table 6: J2/J3/J4/J5 reader connector pinouts and typical pairing

Reader port	Pin	Signal name	Typical wire color
1/3/5/7	1	+12 VDC	Red
	2	Ground	Black
	3	Reader data 1	Green
	4	Door DO (reader LED)	White
2/4/6/8	5	+12 VDC	Red
	6	Ground	Black
	7	Reader data 1	Green
	8	Door DO (reader LED)	White

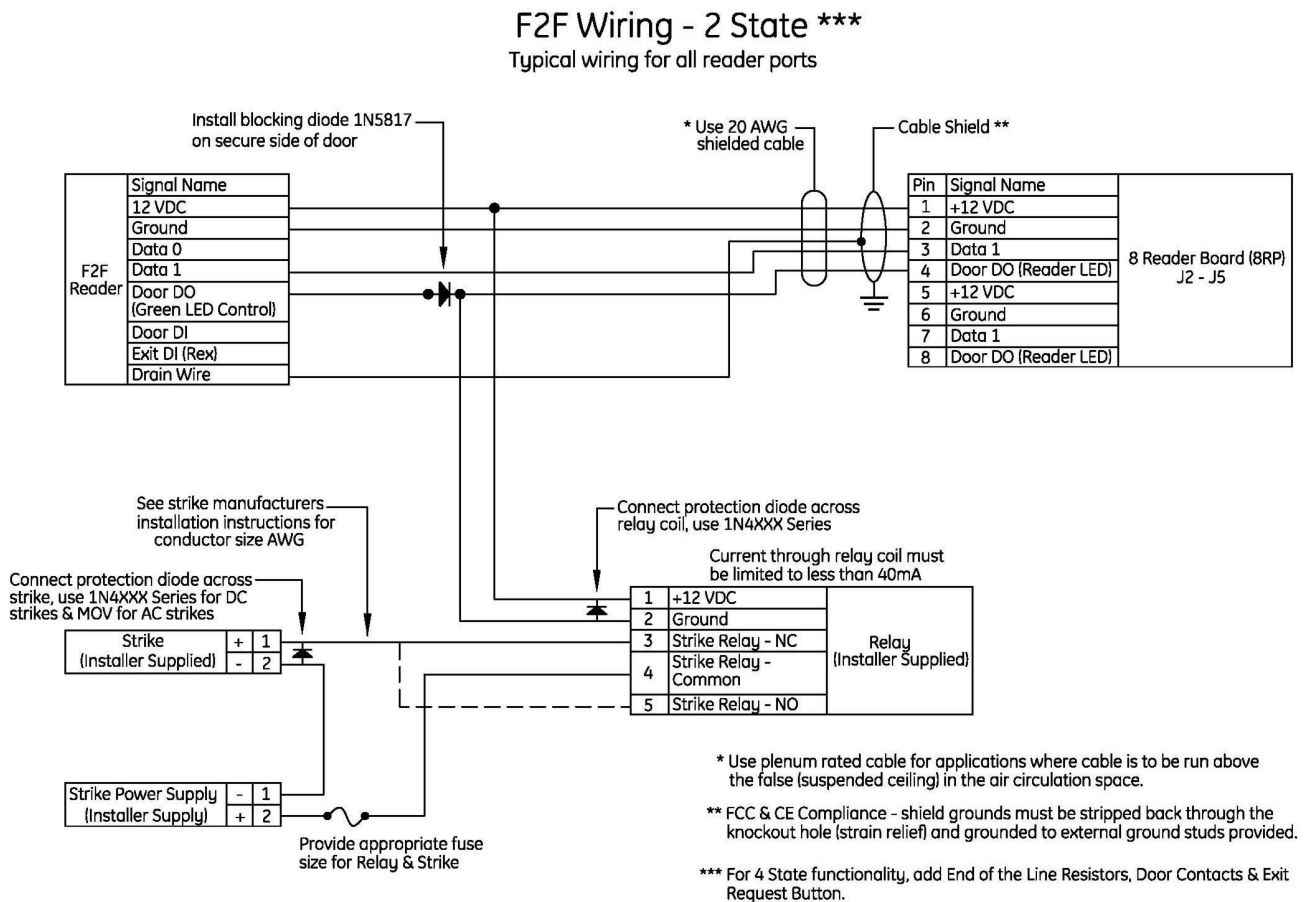
Wiring the door strike

One reader LED (door DO) is dedicated to each reader. The reader LED (door DO) is used for the reader LED or for an external door strike relay.

1. Install the door strike as required.
2. Wire the door strike to the external door strike relay. The door strike relay is connected to +12 VDC (pin 1 and/or pin 5) and door DO (pin 4 and/or pin 8).

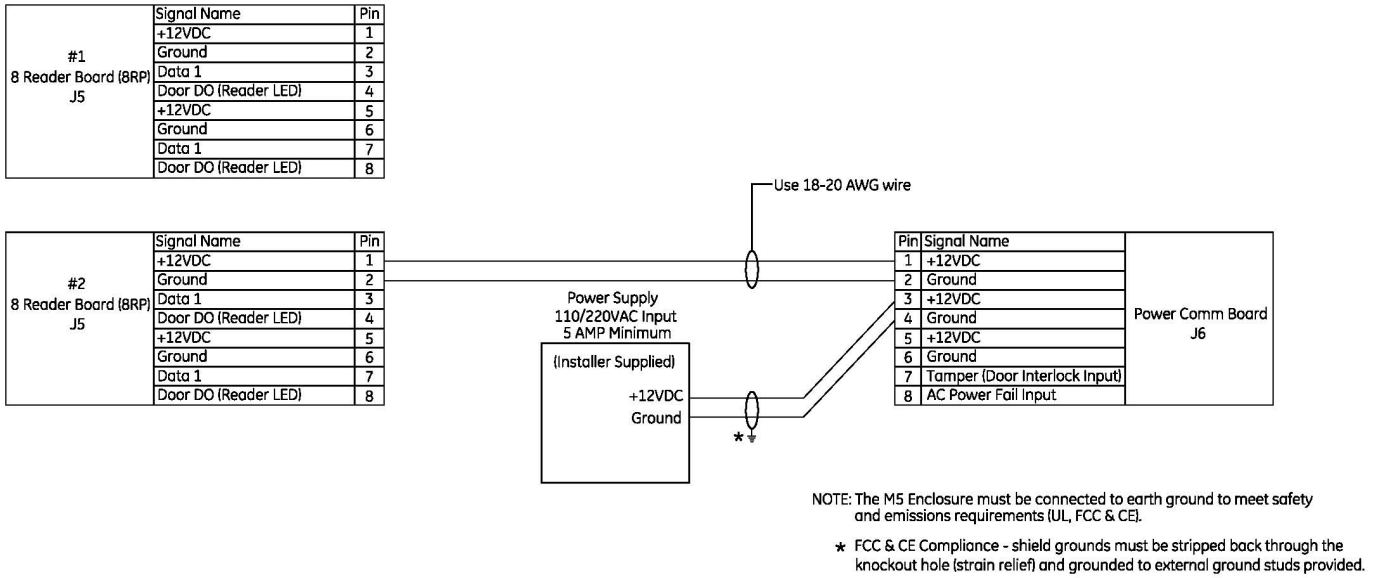
3. Install a protection diode across the relay and the door strike. Use 1N4002, 1N4003, 1N4004 or equivalent diodes for DC door strikes and Metal Oxide Varistors (MOV) for AC door strikes. See Figure 3.
4. Protection diode or MOV and blocking diode are required at all electronic door locks.
5. Install a blocking diode on the door DO (Reader LED) line between the reader and the door strike relay. Use 1N5817 diode, which is included with the reader. The diode must be installed on the secure side of the door in order to be UL compliant. See Figure 3.

Figure 3: Wiring 8RP to F/2F or supervised F/2F readers (2 state)



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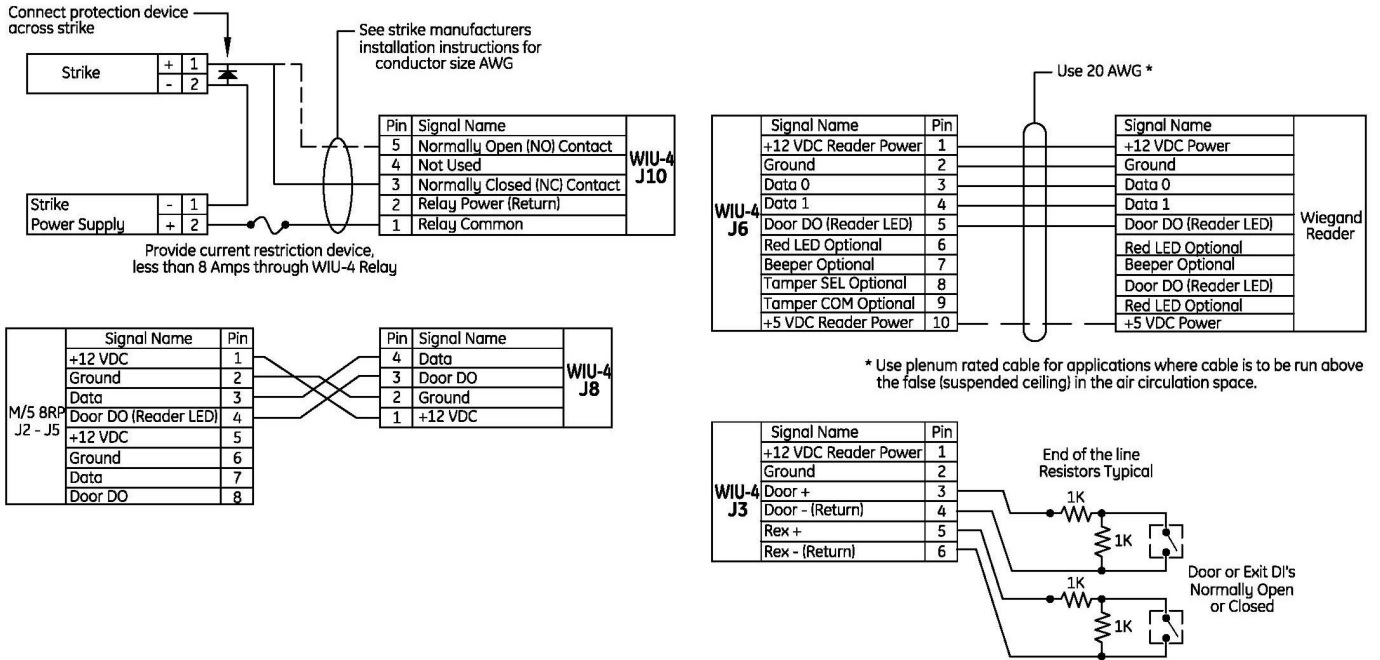
Figure 4: Powering two 8RP Boards



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Figure 5: Wiring 8RP to WIU-4/Wiegand readers

WIU-4 Wiring



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Specifications

Reader power	12 VDC
Output	One digital output (reader LED) per reader port, 12 VDC, 100 mA maximum per output point.
Cabling	Multi-conductor, 20 AWG shielded pairs
Operating environment	
Temperature	35 to 122°F (2 to 50°C)
Humidity	5% to 95% RH, noncondensing at 90°F (32°C)

Contacting customer support

You can reach customer support by phone from 8 a.m. to 7 p.m. EST, Monday through Friday.

GE Security

United States: 1-888-GE SECURITY (1-888-437-3287)

Asia: 852-2907-8108

Australia: 61-3-9259-4700

Europe: 48-58-326-22-40

Latin America: 305-593-4301