



8RP Board Installation Instructions

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Introduction

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

- The 8RP board has been redesigned to work with 12V readers only. This new version of the 8RP board can be identified by the assembly number of 110100001 with a revision of C or higher.
- 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 DI (alarm points) or exit DIs are available on the 8RP board. Therefore, the use of supervised readers is recommended since these points are available on the reader.
- In Supervised F/2F mode, the DI (alarm input) is available at the reader on GE Supervised F/2F readers except for the Model 440 and Model 445.
- 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 1 digital output (reader LED) per reader port, 0.10 amps @ 12VDC maximum per output point.

Note: 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. Therefore, in Picture Perfect:

- Reader ports 1 and 2 are configured as Board no. 1, reader address 0 and 1;
- Reader ports 3 and 4 are configured as Board no. 2, reader address 0 and 1;
- Reader ports 5 and 6 are configured as Board no. 3, reader address 0 and 1;
- Reader ports 7 and 8 are configured as Board no. 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
Auxiliary/Shunt DOs	Reserved	Reserved	Reserved	Reserved

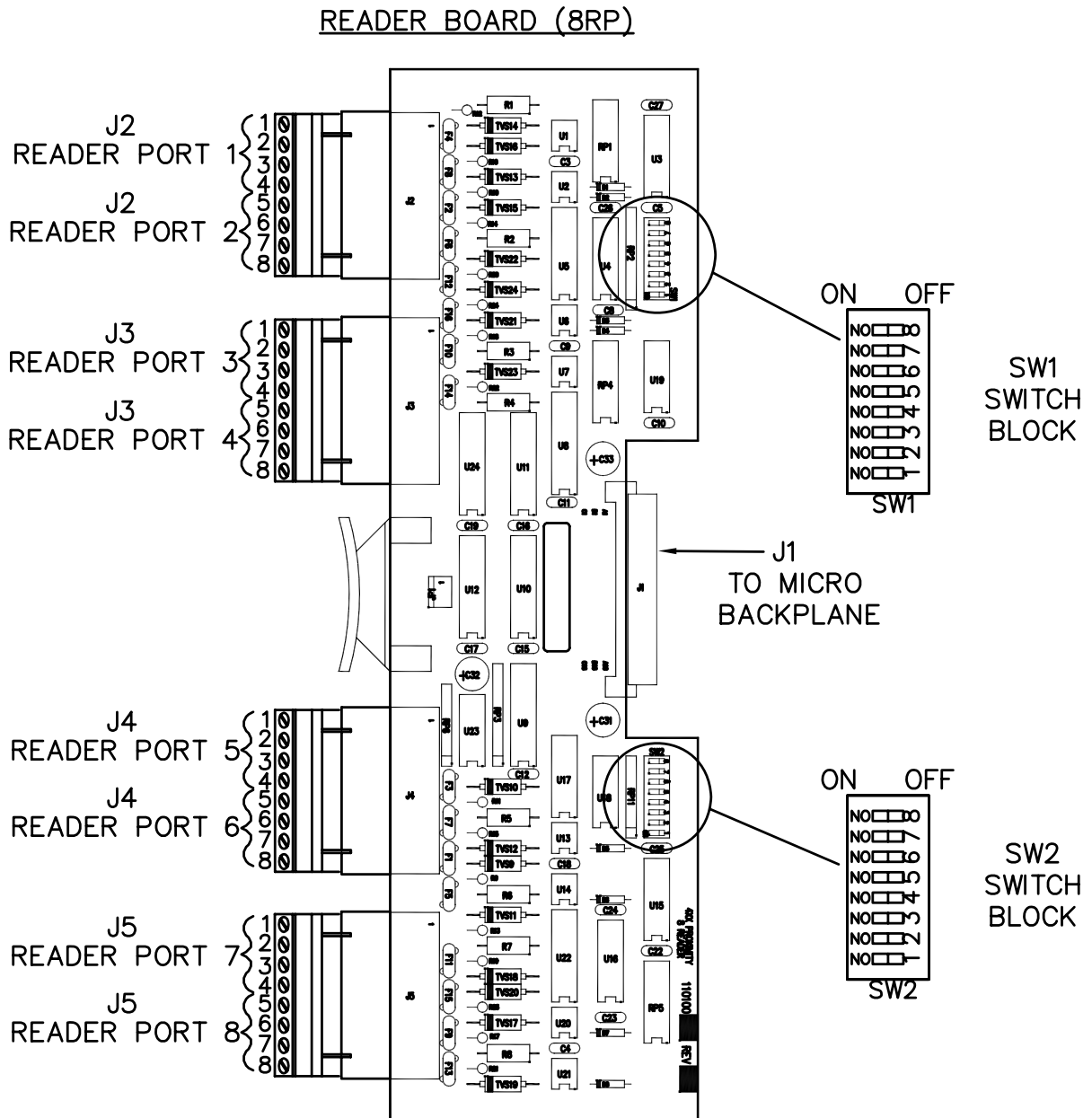
1. The first 8 readers out of 16. See Tables 4 for board type settings.

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
Auxiliary/Shunt DOs	Reserved	Reserved	Reserved	Reserved

1. The second 8 readers out of 16. See Tables 4 for board type settings.

Figure 1. Layout of the 8RP reader board



Setting the DIP switches

Set the DIP switches as described in the table below before installing and wiring the 8RP board.

Table 3. 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 4. Picture Perfect reader board (8RP) address settings

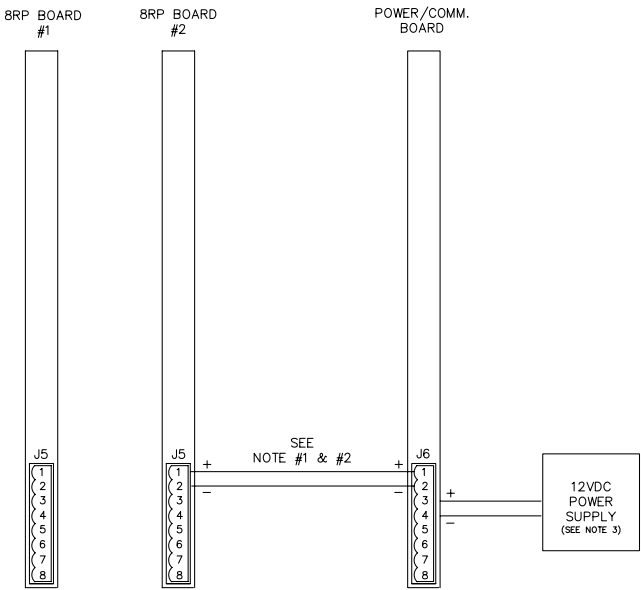
Board type	SW 1-				SW 2-							
	5	6	7	8	1	2	3	4	5	6	7	8
Board 1 ¹	Does not apply		OFF	ON	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Board 2 ²			OFF	ON	ON	ON	OFF	OFF	OFF	ON	OFF	ON

- 1. The first 8 readers out of 16
- 2. The second 8 readers out of 16

Wiring two 8RP boards

Refer to the figure below for details in wiring two 8RP boards:

Figure 2. Wiring Two 8RP Boards



- NOTES:
- 1. CONNECT 18- OR 20-GAUGE WIRE FROM POWER/COMM BOARD J6 PIN 1 (+12VDC) TO 8RP BOARD J5 PIN 1 (+12VDC)
 - 2. CONNECT 18- OR 20-GAUGE WIRE FROM POWER/COMM BOARD J6 PIN 2 (GND) TO 8RP BOARD J5 PIN 2 (GND)
 - 3. 5-AMP POWER SUPPLY OR HIGHER REQUIRED

Wiring the readers

Follow the steps below to wire the readers.

1. Mount the reader. Refer to the manual that came with your reader for specific mounting instructions.
2. Run cable from the reader to the microcontroller. Bring each reader cable through the appropriate knockout hole in the microcontroller cabinet. Allow some slack wire for servicing the cables and for plugging cable into an adjacent slot for troubleshooting.
3. Remove 8 inches of insulating material from the cable. Unwrap shielding and tie all shields together. Connect the shield wire to the ground stud at the bottom lower left of the microcontroller cabinet.
4. Place the appropriate wires to the appropriate screw terminal on the 8RP reader board. Refer to the reader wiring diagrams in this section. Pairing of cables is very important.



The 8RP board has built-in pull-up resistors. Do not install the external pull-up resistors supplied with the GE Proximity readers.

5. Label each cable end with the micro address # and the device or reader #.

Table 5. Recommended pairing of reader wires - Typical reader cable

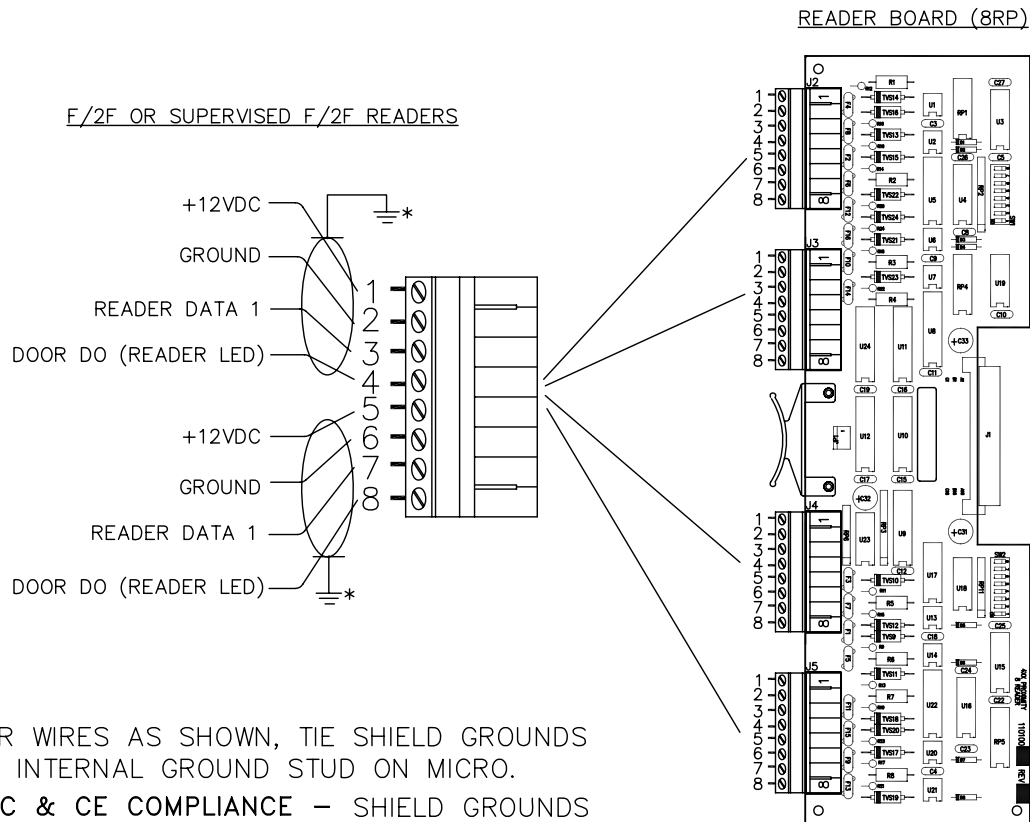
Pin	Signal name	Typical wire color
1	+12V DC Reader Power	Red
4	Door DO (Reader LED)	Black
2	Ground (-)	Green
3	Reader Data 1	White
5	+12V DC Reader Power	White/Red
8	Door DO (Reader LED)	White/Black
6	Ground (-)	White/Green
7	Reader Data 1	White/Yellow

Note: Use Belden 8723 or 8725 twisted shielded pair or equivalent.

Table 6. J2/J3/J4/J5 Reader connector pinouts

Reader port	PIN	Signal name
1/3/5/7	1	+12VDC
	2	Ground
	3	Reader Data 1
	4	Door DO (Reader LED)
2/4/6/8	5	+12V DC
	6	Ground
	7	Reader Data 1
	8	Door DO (Reader LED)

Figure 3. Wiring 8RP to F/2F or Supervised F/2F readers



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Wiring the door strike

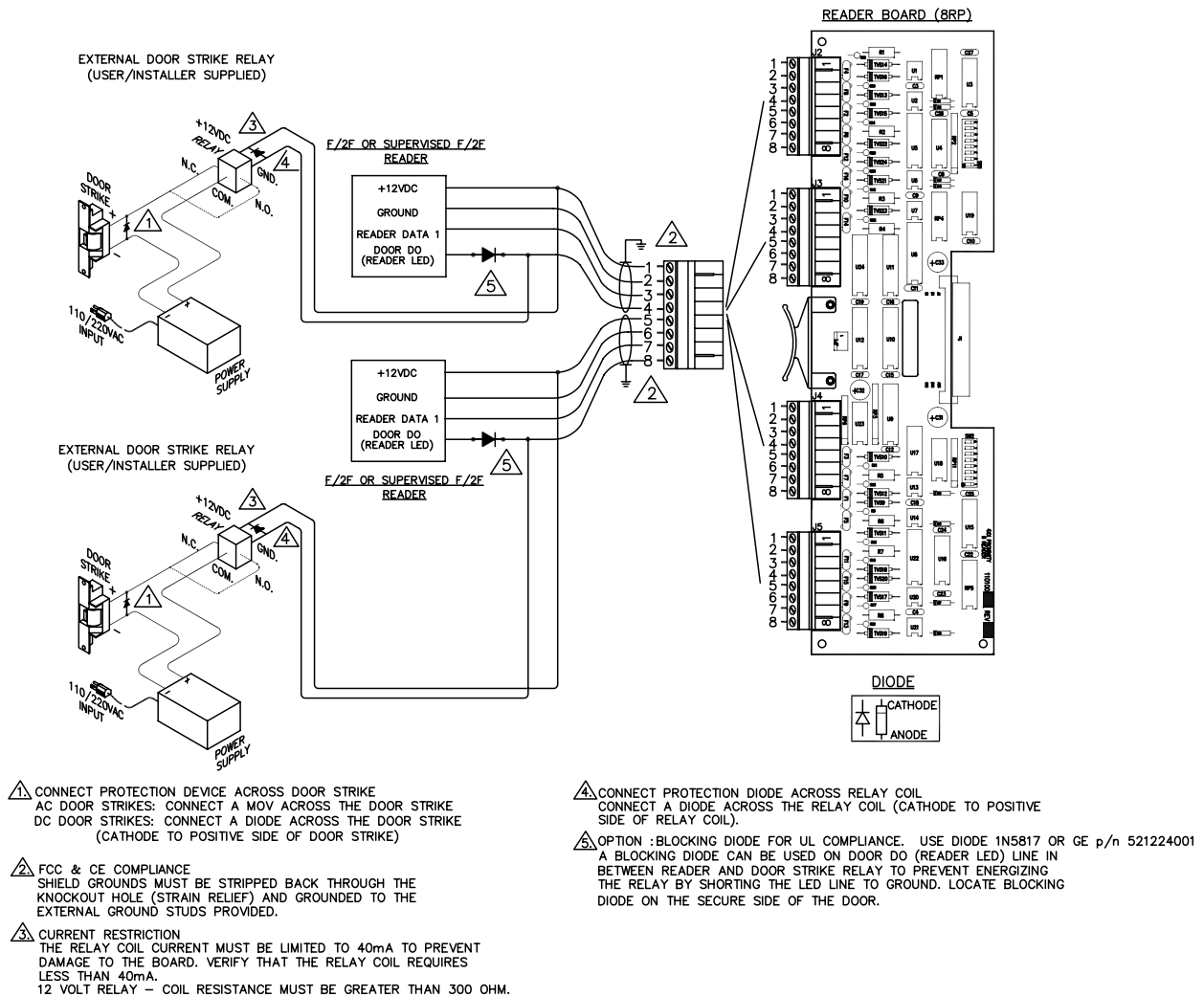
One reader LED (door DO) is dedicated to each reader. The reader LED (door DO) is used for the reader LED and/or for an external door strike relay. Perform the following steps to wire the door strike:

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 +12VDC (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 Notes 1 and 4 in *Figure 4*.

Note: A protection diode or MOV is required at all electronic door locks.

4. Install a **blocking diode** on the door DO (Reader LED) line in between the reader and the door strike relay. Use 1N5817 or GE part number 521224001 (included with reader). The diode must be installed on the secure side of the door in order to be UL compliant. See Note 5 in *Figure 4*.

Figure 4. Wiring 8RP Door Strike - External Relay



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Technical support

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Outside the toll-free area: Contact your local dealer.

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