



# The SH8RP Board

## Introduction

- The SoftwareHouse 8RP (SH8RP) board supports devices that employ half duplex RS-485.
- The SH8RP board will accommodate cable lengths to a maximum distance of 1,000 feet.
- Host software restrictions:
  - **Picture Perfect**<sup>TM</sup> Version 1.50 using the Micro/5-PX or the Micro/5-PXN CPU board supports the SH8RP board.
  - **Secure Perfect**<sup>®</sup> Version 2.1 or later using the Micro/5-PX CPU board supports the SH8RP board.
  - **Entry Perfect**<sup>TM</sup> does not support the SH8RP board.
- The SH8RP board is not UL certified.

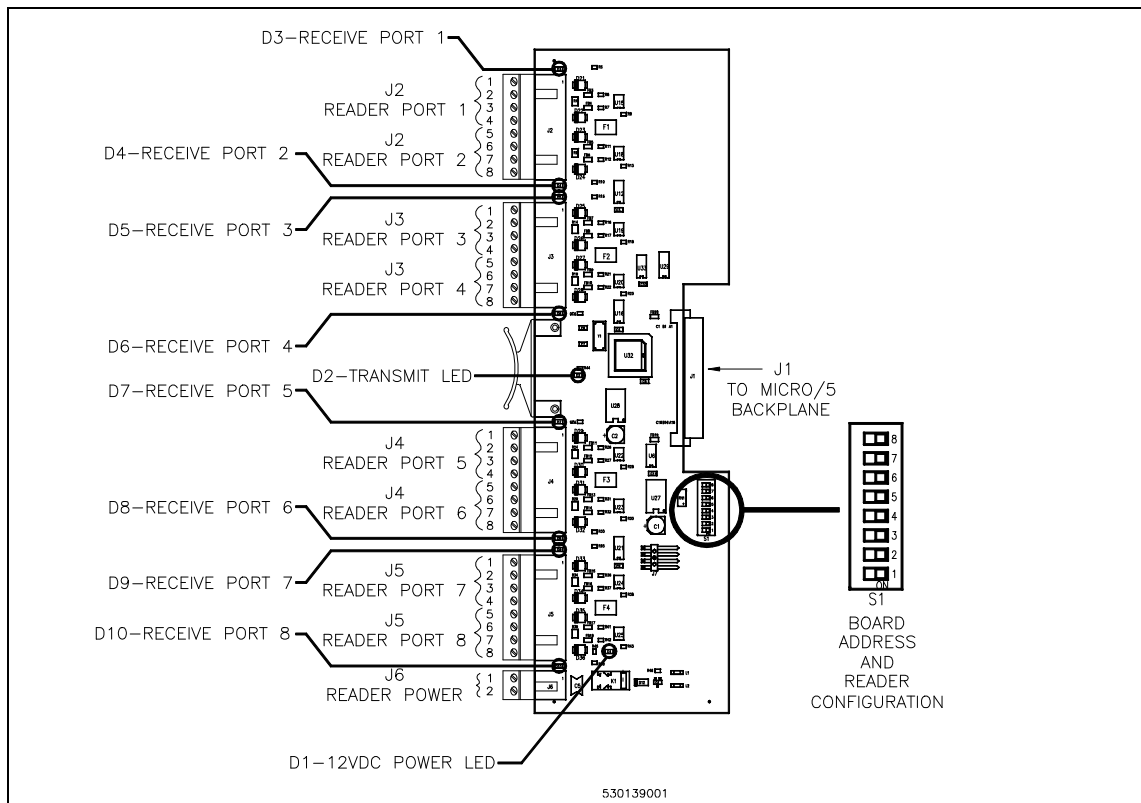


Figure 1: SH8RP Reader Board Layout

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# Device Addressing

## Reader, Door DI and Exit Request

Table 1: SH8RP Board 1 Device Addressing - Secure Perfect 2.1 or Later:  
Micro/5-PX Only

SH8RP - Board 1			
RM/MRM Address	Reader Address	Door DI Address	Exit Request
1	<i>mm-1-01 Reader</i>	<i>mm-1-01 Reader</i>	<i>Not Available</i>
2	<i>mm-1-02 Reader</i>	<i>mm-1-02 Reader</i>	<i>Not Available</i>
3	<i>mm-1-03 Reader</i>	<i>mm-1-03 Reader</i>	<i>Not Available</i>
4	<i>mm-1-04 Reader</i>	<i>mm-1-04 Reader</i>	<i>Not Available</i>
5	<i>mm-1-05 Reader</i>	<i>mm-1-05 Reader</i>	<i>Not Available</i>
6	<i>mm-1-06 Reader</i>	<i>mm-1-06 Reader</i>	<i>Not Available</i>
7	<i>mm-1-07 Reader</i>	<i>mm-1-07 Reader</i>	<i>Not Available</i>
8	<i>mm-1-08 Reader</i>	<i>mm-1-08 Reader</i>	<i>Not Available</i>

**NOTE:** As of Secure Perfect 2.1, the addressing scheme changed. The default description is now in the format: **mm-b-pp** where **mm** represents the micro number, **b** represents the board number, and **pp** represents the point or device number.

**Table 2: SH8RP Board 2 Device Addressing - Secure Perfect 2.1 or Later:  
Micro/5-PX Only**

SH8RP - Board 2			
RM/MRM Address	Reader Address	Door DI Address	Exit Request
1	<i>mm-2-01 Reader</i>	<i>mm-2-01 Reader</i>	<i>Not Available</i>
2	<i>mm-2-02 Reader</i>	<i>mm-2-02 Reader</i>	<i>Not Available</i>
3	<i>mm-2-03 Reader</i>	<i>mm-2-03 Reader</i>	<i>Not Available</i>
4	<i>mm-2-04 Reader</i>	<i>mm-2-04 Reader</i>	<i>Not Available</i>
5	<i>mm-2-05 Reader</i>	<i>mm-2-05 Reader</i>	<i>Not Available</i>
6	<i>mm-2-06 Reader</i>	<i>mm-2-06 Reader</i>	<i>Not Available</i>
7	<i>mm-2-07 Reader</i>	<i>mm-2-07 Reader</i>	<i>Not Available</i>
8	<i>mm-2-08 Reader</i>	<i>mm-2-08 Reader</i>	<i>Not Available</i>

**NOTE:** As of Secure Perfect 2.1, the addressing scheme changed. The default description is now in the format: **mm-b-pp** where **mm** represents the micro number, **b** represents the board number, and **pp** represents the point or device number.

**Table 3: SH8RP Board 1 Device Addressing - Picture Perfect 1.50 or Higher:  
Micro/5-PX or Micro/5-PXN Only**

SH8RP - Board 1						
RM/MRM Address	Reader		Door DI		Exit Request	
	Board	Address	Board	Address	Board	Address
1	1	0	1	0	1	8
2	1	1	1	1	1	9
3	2	0	2	0	2	8
4	2	1	2	1	2	9
5	3	0	3	0	3	8
6	3	1	3	1	3	9
7	4	0	4	0	4	8
8	4	1	4	1	4	9

**Table 4: SH8RP Board 2 Device Addressing - Picture Perfect 1.50 or Higher:  
Micro/5-PX or Micro/5-PXN Only**

SH8RP- Board 2						
RM/MRM Address	Reader		Door DI		Exit Request	
	Board	Address	Board	Address	Board	Address
1	5	0	5	0	5	8
2	5	1	5	1	5	9
3	6	0	6	0	6	8
4	6	1	6	1	6	9
5	7	0	7	0	7	8
6	7	1	7	1	7	9
7	8	0	8	0	8	8
8	8	1	8	1	8	9

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## Tamper Switch on the RM/MRM

Tamper switches on the RM/MRM units are mapped to report the tamper condition on the alarm points listed in the table below.

### NOTES:

1. This micro configuration does not allow using 20DI board number 4.
2. As of Secure Perfect 2.1, the addressing scheme changed. The default description is now in the format: `mm-b-pp` where `mm` represents the micro number, `b` represents the board number, and `pp` represents the point or device number.

**Table 5: SH8RP Board 1 Tamper Switch Mapping - Secure Perfect 2.1 or Later (Micro/5-PX Only)**

SH8RP - Board 1	
RM/MRM Address	Board Address
1	mm-4-01 DI
2	mm-4-02 DI
3	mm-4-03 DI
4	mm-4-04 DI
5	mm-4-05 DI
6	mm-4-06 DI
7	mm-4-07 DI
8	mm-4-08 DI

**Table 6: SH8RP Board 2 Tamper Switch Mapping -  
Secure Perfect 2.1 or Later (Micro/5-PX Only)**

SH8RP - Board 2	
RM/MRM Address	Board Address
1	mm-4-09 DI
2	mm-4-10 DI
3	mm-4-11 DI
4	mm-4-12 DI
5	mm-4-13 DI
6	mm-4-14 DI
7	mm-4-15 DI
8	mm-4-16 DI

**Table 7: SH8RP Board 1 Tamper Switch Mapping -  
Picture Perfect 1.50 or Later (Micro/5-PX or Micro/5-PXN Only)**

SH8RP - Board 1		
RM/MRM Address	Board	Address
1	4	16
2	4	17
3	4	18
4	4	19
5	4	20
6	4	21
7	4	22
8	4	23

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**Table 8: SH8RP Board 2 Tamper Switch Mapping -  
Picture Perfect 1.50 or Later (Micro/5-PX or Micro/5-PXN Only)**

SH8RP - Board 2		
RM/MRM Address	Board	Address
1	4	24
2	4	25
3	4	26
4	4	27
5	4	28
6	4	29
7	4	30
8	4	31

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## Function of the LEDs

The SH8RP board has 10 LEDs which allow for a quick analysis of board operation. Table 9 describes LED function.

**Table 9: Function of the LEDs on the SH8RP Board**

LED	State	Description
D1	ON	12VDC Power: Power is on.
D2	Flashing	Transmit: A data character is being sent.
D3	Flashing	Receive Port 1: Data is being received from a device on port 1.
D4	Flashing	Receive Port 2: Data is being received from a device on port 2.
D5	Flashing	Receive Port 3: Data is being received from a device on port 3.
D6	Flashing	Receive Port 4: Data is being received from a device on port 4.
D7	Flashing	Receive Port 5: Data is being received from a device on port 5.
D8	Flashing	Receive Port 6: Data is being received from a device on port 6.
D9	Flashing	Receive Port 7: Data is being received from a device on port 7.
D10	Flashing	Receive Port 8: Data is being received from a device on port 8.

During normal operation, the Transmit LED will blink at a very fast rate and the Receive LEDs will blink at a slower rate.



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## Setting the DIP Switches

Set DIP switches as described in Table 9 before installing and wiring SH8RP board.

**Table 10: Reader Board (SH8RP) Address Settings**

SH8RP Board	S1-	
	1	2
Board 1	ON	OFF
Board 2	OFF	ON

**Table 11: Picture Perfect Reader Technology and Format**

Reader Technology and Format	S1-3	S1-4	S1-5
Wiegand 3701, 3702	OFF	OFF	OFF
Wiegand 3201	ON	OFF	OFF
Wiegand 3202, 4401	OFF	ON	OFF
Wiegand 2802, 2804, 3600	ON	ON	OFF
Wiegand 2801	OFF	OFF	ON
Wiegand 2800	ON	OFF	ON
Wiegand 26 bit	OFF	ON	ON
Wiegand 2500, 3400, 3703	ON	ON	ON

**NOTE:** Mag Stripe readers do not need a specific switch setting.

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**Table 12: Reader Type Selection**

<b>Reader Type of Readers 1, 2 and 3</b>	<b>S1-6</b>
CASI-RUSCO Wiegand readers	ON
OEM Wiegand readers	OFF

<b>Reader Type of Readers 4, 5 and 6</b>	<b>S1-7</b>
CASI-RUSCO Wiegand readers	ON
OEM Wiegand readers	OFF

<b>Reader Type of Readers 7 and 8</b>	<b>S1-8</b>
CASI-RUSCO Wiegand readers	ON
OEM Wiegand readers	OFF

## Wiring to the Modules

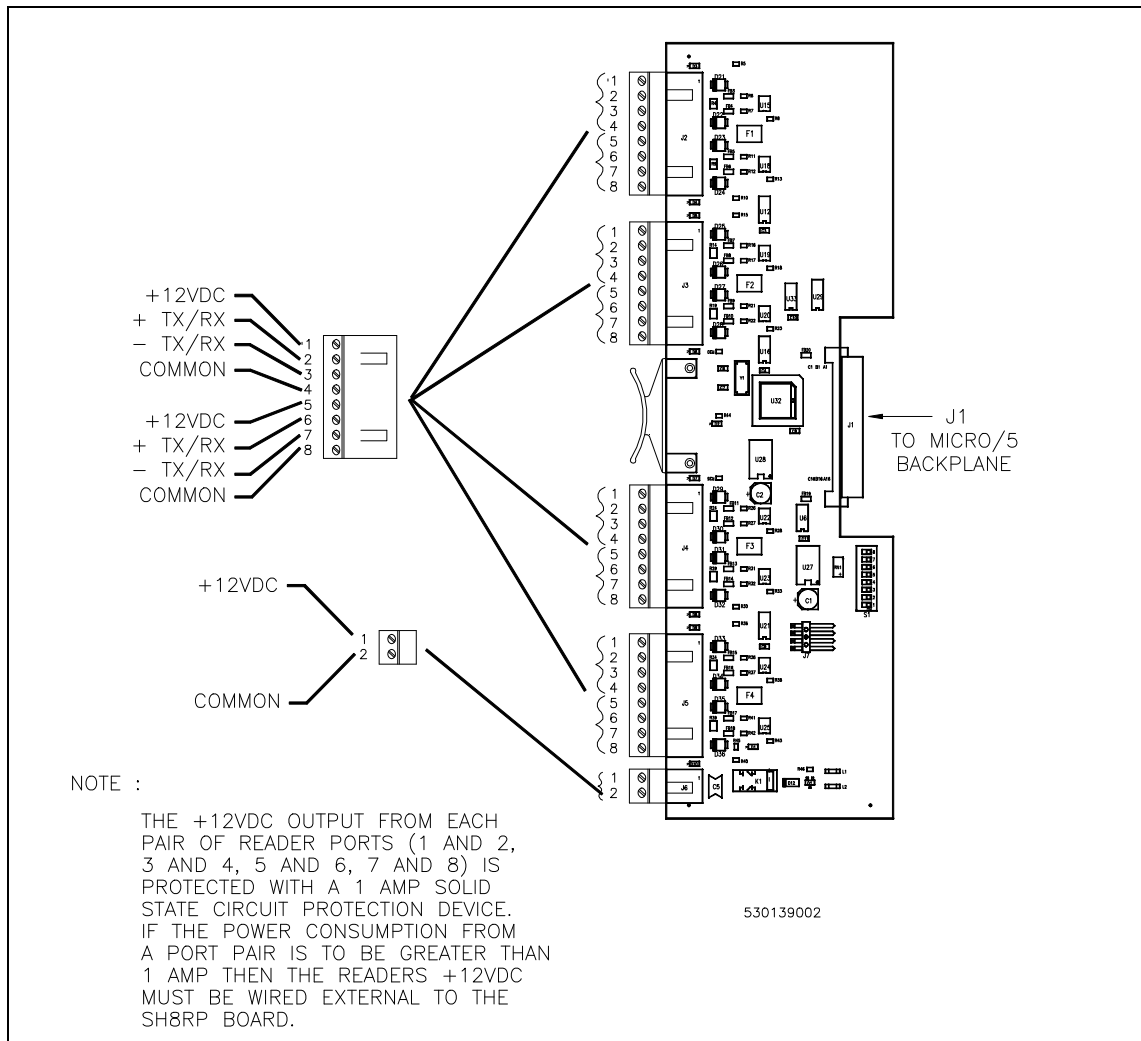


Figure 2: Wiring SH8RP to RM or MRM Modules

## Software House<sup>®</sup> RM and MRM Support

The following revision levels are supported: MRM 1.9 and RM 2.07.

## Reader Switch Settings

For the micro to properly control the reader's alarm shunt time and door held open time, set the reader's switches to the minimal value. Refer to the reader's manual for switch locations and settings.

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## Wiring the Door Strike

Refer to the reader's manual for wiring instructions.

## Troubleshooting the SH8RP Board

Consult the documentation you received with the RM/MRM modules for potential problems which are not related to the Micro/5.

**If the RM/MRM module does not power up, do the following:**

1. Check LED D1 (located just above relay K1). If this LED is not ON, measure the voltage between pins 1 and 2 of J6 to insure that +12 volts is available.
2. The +12VDC, available on pins 1 and 5 of the 8-pin connectors, employs a solid state circuit protector. A maximum of 3 RM/MRM modules can be connected and POWERED from these pins. Measure between pins 1 and 4, and 5 and 8 on each eight pin connector. If the voltage is less than 11VDC, then check for shorts in the wiring to the RM/MRM modules.
3. Try switching the cables attaching the RM/MRM modules to the 8-pin connectors.

**If communication between the SH8RP board and the RM/MRM modules is problematic, do the following:**

1. Check the LED above and below the suspect 8-pin connector. The LED above the connector indicates that data is being received on pins 2 and 3, and the LED below the connector indicates that data is being received on pins 6 and 7. If the LEDs are not flashing, then the attached RM/MRM modules are not communicating with the SH8RP board.
2. Check the wires on pins 2 and 3, and on pins 6 and 7. They are polarity sensitive. If the wires going to these pin pairs are crossed, the attached RM/MRM module will not communicate. (This is the most likely problem on a new install.)
3. Check the wiring between the SH8RP board and the RM/MRM modules. Refer to page 11.
4. Be sure the connector is firmly seated in the SH8RP board.

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**If the RM/MRM modules are operating erratically when badges are read, do the following:**

1. Check the address of each RM/MRM module. Each one **MUST** be set to a different address (1 to 8).
2. Be sure that the switch settings on the SH8RP board for board address and reader technology/format are correct. See “Setting the DIP Switches” on page 9.

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## **NOTES**

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