

# M - 6D

## Detector Card Rack



- High-density card rack designed to hold a power supply; up to four (4), four channel, single width (1.12" wide) detectors; and a half width BIU/2 or SP-300

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- Designed to allow multiple M-6D card racks to be linked together

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- Reno A&E Model MH wiring harnesses simplify installation



Reno A & E M-6D Detector Card Rack with a Q-4 Power Supply, four E/2-1200 Four Channel Detectors, and an SP-300 Detector Switch Panel

The M-6D detector card rack has been specially designed for NEMA TS 1 / TS 2 applications where shelf space is at a premium. This high-density rack is capable of housing a power supply; four, single width (1.12 inch), four channel detectors; and a half width BIU/2 bus interface unit or a Reno A&E Model SP-300 detector switch panel. The Model SP-300 detector switch panel allows the user to disconnect or simulate detector call outputs.

# M - 6D Specifications

This is a Performance Specification. It is not intended to be used as Operating Instructions.

**General Description:** The Model M-6D detector card rack is designed to hold a Reno A&E Model Q-4 power supply; up to four (4) Reno A&E Model E/2-1200 single width, four channel detectors; and a Reno A&E Model BIU/2 half width bus interface unit or a Reno A&E Model SP-300 detector switch panel. Reno A&E MH series wiring harnesses are available to simplify connections between the M-6D and other components in the cabinet. The modular design of the M-6D detector card rack allows up to four (4) racks to be joined together using one of several optional rear panels.

**Card Rack Connectors (Power Supply and Detectors):** PC board mounted 2 x 22 contact edge card connectors with 0.156 inch (0.396 cm.) contact centers. Connector pin assignments are per NEMA TS1 /TS2.

**Card Rack Connector (Detector Switch Panel or Bus Interface Unit):** PC board mounted 64-pin, female, DIN 41612 type B series. The connector is oriented with Pin 1 located on top. Connector pin assignments are per NEMA TS1 /TS2.

**Back Plane Connector (Power Supply Input):** 10 pin, dual row, female header, 0.165 inch (0.420 cm.) pitch with gold plated contacts. (Molex p/n 39-31-0108 or equivalent). Mates with Molex p/n 39-01-2105 or equivalent. (See Pin Assignments - Power Supply Inputs table.)

**Back Plane Connectors (Detector Inputs and Outputs):** 10 pin / 8 pin, dual row, female header, 0.165 inch (0.420 cm.) pitch with gold plated contacts (Molex p/n 39-31-0108 / 39-31-0088 or equivalent). Mates with Molex p/n 39-01-2105 / 39-01-2085 or equivalent. (See Pin Assignments - Detector Inputs and Outputs tables.)

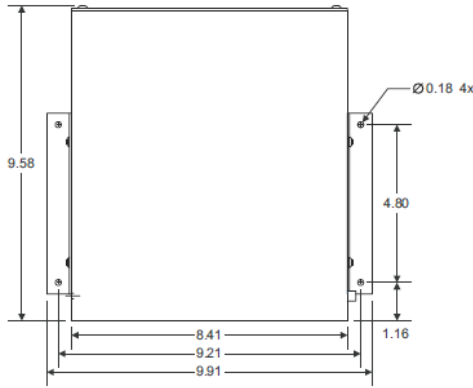
**Back Plane Connector (Detector Switch Panel / Bus Interface Unit Outputs):** 20 pin, dual row, shrouded male header, 0.100 inch (0.254 cm.) pitch with gold plated contacts (Amp p/n 102618-8 or equivalent). Mates with Amp p/n 1-87631-5 or equivalent. (See Pin Assignments - Detector Switch Panel / Bus Interface Unit Outputs table.)

**Ruggedized Construction:** The M-6D housing is fabricated from 0.062 inch thick aluminum. The printed circuit board is 0.062 inch thick FR4 material with 2 oz. copper on both sides and plated through holes. Circuit board components are conformal coated with polyurethane.

**Operating Temperature:** -40° F to +180° F (-40° C to +82° C).

**Weight:** 2.80 lb (1.270 kg).

**Size:** 6.27 inches (15.93 cm) high x 8.41 inches (21.36 cm) wide x 9.58 inches (24.33 cm) deep (excluding mounting flanges). Mounting flanges add 1.50 inches (3.81 cm.) to the width measurement.



TOP VIEW - CARD RACK HEIGHT IS 6.27 INCH

Detector Inputs & Outputs (Channel 1 and 2)			Detector Inputs & Outputs (Channel 3 and 4)		
PIN	Function	Edge Card Connector	PIN	Function	Edge Card Connector
1	Phase Green Input - Ch 2	Pin 2	1	Phase Green Input - Ch 4	Pin 10
2	Loop Input - Ch 1	Pins 5 & E	2	Loop Input - Ch 3	Pins 14 & R
3	Loop Input - Ch 2	Pins 9 & K	3	Loop Input - Ch 4	Pins 18 & V
4	Call Output - Ch 2	Pin W	4	Call Output - Ch 4	Pin Y
5	DC Common	Pin A	5	Phase Green Input - Ch 3	Pin 3
6	Phase Green Input - Ch 1	Pin 1	6	Loop Input - Ch 3	Pins 13 & P
7	Loop Input - Ch 1	Pins 4 & D	7	Loop Input - Ch 4	Pins 17 & U
8	Loop Input - Ch 2	Pins 8 & J	8	Call Output - Ch 3	Pin S
9	Call Output - Ch 1	Pin F			
10	Output Emit. Commons	Pins H, T, X, & Z			

Notes:  
 \* BIU Address Bit 3 is connected to Logic Ground so that the default BIU address is 8. Installing a jumper at J10 will add 1 to the address, installing a jumper at J9 will add 2 to the address, and installing a jumper at J8 will add 4 to the address. Installing one or more jumpers will assign an address value of 9 to 15 to the BIU address.  
 \*\* Jumpers J39 through J49 allow isolation of the DC Common and/or Output Commons on a per slot basis. Installing a BIU/2 or SP-300 in Slot 5 will tie the DC Common Bus to the Output Commons Bus.

Power Supply Inputs		
PIN	Function	Edge Card /DIN Connector Termination
1	Earth Ground	Pin L - Slots 0-4, Pin A31 - Slot 5
2	Line Frequency Ref	Pin B31 - Slot 5
3	DC + 3	Pin 17 & U - Slot 0
4	DC + 4	Pin 18 & V - Slot 0
5	DC Common	Pin A - Slots 0-4, Pins A32 & B 32 - Slot 5
6	AC Neutral	Pin M - Slot 0-4
7	AC Line	Pin N - Slot 0-4
8	DC + 1	Pin 2 & B - Slot 0
9	DC + 2	Pin 3 & C - Slot 0
10	DC +	Pin B - Slots 1-4, Pins A1 & B1 - Slot 5

Detector Switch Panel / Bus Interface Unit Outputs (SP-300 Installed in Slot 5 - J38)		
PIN	Function	DIN Connector Termination
1	Detector 1 - Ch 1	Pin A4 - Slot 5
2	Detector 1 - Ch 2	Pin B4 - Slot 5
3	Detector 1 - Ch 3	Pin A5 - Slot 5
4	Detector 1 - Ch 4	Pin B5 - Slot 5
5	Detector 2 - Ch 1	Pin A6 - Slot 5
6	Detector 2 - Ch 2	Pin B6 - Slot 5
7	Detector 2 - Ch 3	Pin A7 - Slot 5
8	Detector 2 - Ch 4	Pin B7 - Slot 5
9	Detector 3 - Ch 1	Pin A8 - Slot 5
10	Detector 3 - Ch 2	Pin B8 - Slot 5
11	Detector 3 - Ch 3	Pin A9 - Slot 5
12	Detector 3 - Ch 4	Pin B25 - Slot 5
13	Detector 4 - Ch 1	Pin A26 - Slot 5
14	Detector 4 - Ch 2	Pin B26 - Slot 5
15	Detector 4 - Ch 3	Pin A27 - Slot 5
16	Detector 4 - Ch 4	Pin B27 - Slot 5
17	Logic Ground/DC Common	Pins A, H, T, X, & Z - Slots 0 - 4 Pins A32 & B32 - Slot 5
18	Logic Ground/DC Common	Pins A, H, T, X, & Z - Slots 0 - 4 Pins A32 & B32 - Slot 5
19	Logic Ground/DC Common	Pins A, H, T, X, & Z - Slots 0 - 4 Pins A32 & B32 - Slot 5
20	Logic Ground/DC Common	Pins A, H, T, X, & Z - Slots 0 - 4 Pins A32 & B32 - Slot 5

Note: Pin Assignments with BUI/2 installed in Slot 5 are Pin 12 - OPTO Input 1, Pin 13 - OPTO Input 2, Pin 14 - OPTO Input 3, Pin 15 - OPTO Input 4, and Pin 16 - OPTO Input Common.

Jumpers	
Jumper	Function
J7	Power Supply Generated Line Frequency for BIU
J8*	BIU Address Bit 2 *
J9*	BIU Address Bit 1 *
J10*	BIU Address Bit 0 *
J16	Serial Communications Address Bit 1 - Slot 0
J17	Serial Communications Address Bit 1 - Slot 4
J18	Serial Communications Address Bit 1 - Slot 2
J19	Serial Communications Address Bit 2 - Slot 0
J20	Serial Communications Address Bit 3 - Slot 0
J21	External Reset Bus - Slot 0
J23	Serial Communications Address Bit 0 - Slot 0
J24	External Reset Bus - Slot 4
J25	External Reset Bus - Slot 3
J31	External Reset Bus - Slot 2
J32	External Reset Bus - Slot 1
J33	Installed with Power Supply in Slot 0 (Pin 2 to Pin B)
J34	Installed with Power Supply in Slot 0 (Pin 3 to Pin C)
J35	Detector Rx Bus to BIU
J36	Detector Tx Bus to BIU
J39**	Slot 0 Output Commons to Output Commons Bus **
J40**	Slot 1 Output Commons to Output Commons Bus **
J41**	Slot 2 Output Commons to Output Commons Bus **
J42**	Slot 3 Output Commons to Output Commons Bus **
J43**	Slot 0 DC Common to DC Common Bus **
J44**	Slot 1 DC Common to DC Common Bus **
J45**	Slot 2 DC Common to DC Common Bus **
J46**	Slot 3 DC Common to DC Common Bus **
J47**	Slot 4 DC Common to DC Common Bus **
J48**	DC Common Bus to Output Commons Bus **
J49**	Slot 4 Output Commons to Output Commons Bus **

