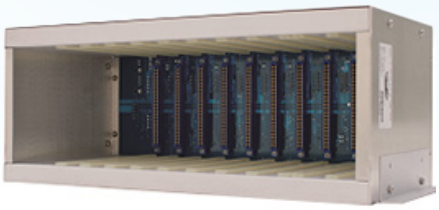
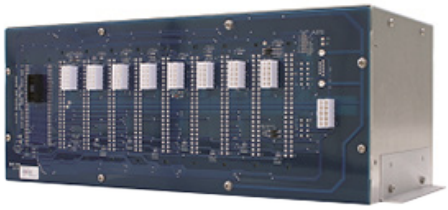
M - 12D

Detector Card Rack





- **Card rack designed to hold a power supply; four (4), four channel, double width (2.00” wide) detectors or eight (8), two channel, single width (1.12” wide) detectors; and a BIU or a half width BIU/2 and an SP-300**
- **Reno A&E Model MH wiring harnesses simplify installation**

Reno A&E M-12D Detector Card Rack with a Q-4 Power Supply, Eight C-1200 Two Channel Detectors, an SP-300 Detector Switch Panel, and a BIU/2 Bus Interface Unit

Reno A&E M-12D Detector Card Rack with a Q-4 Power Supply, Four E-1200 Four Channel Detectors, an SP-300 Detector Switch Panel, and a BIU/2 Bus Interface Unit

The M-12D detector card rack has been designed for NEMA TS 1 / TS 2 applications where a shelf mounted detector rack is needed. This rack is capable of housing a power supply; four, double width (2.00 inch), four channel detectors or eight, single width (1.12 inch) two channel detectors; and a BIU bus interface unit, or a half width BIU/2 bus interface unit and 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 - 12D Specifications

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

General Description: The Model M-12D detector card rack is designed to hold a Reno A&E Model Q-4 power supply; four (4) Reno A&E double width, four channel detectors or eight (8) Reno A&E single width, two channel detectors; and a BIU or a Reno A&E Model BIU/2 half width bus interface unit and 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-12D and other components in the cabinet.

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, 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 - Detector Inputs and Outputs table.)

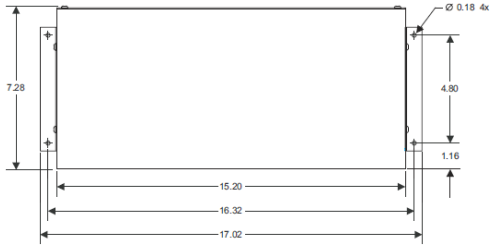
Back Plane Connector (Detector Switch Panel / Bus Interface Unit Outputs): 20 pin, dual row, shrouded male header, 0.100 inch (0.254 cm.) pitch with gold plated contacts (Amp p/n 102618-8 or equivalent). Mates with Amp p/n 1-87631-5 or equivalent. (See Pin Assignments - Detector Switch Panel / Bus Interface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

Ruggedized Construction: The M-12D 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: 4.38 lb (1.987 kg).

Size: 6.27 inches (15.93 cm) high x 15.20 inches (38.61 cm) wide x 7.58 inches (19.25 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

Power Supply Inputs		
PIN	**Function**	**Edge Card Connector Termination**
1	Earth Ground	Pin L - Slots 0 - 8 Pin A31 - Slots 9 & 10
2	Line Frequency Reference	Pin B31 - Slot 9 & 10
3	DC + 3	Pins 17 & U - Slot 0
4	DC + 4	Pins 18 & V - Slot 0
5	DC Common	Pin A - Slots 0 - 8 Pins A32 & B32 - Slots 9 & 10
6	AC Neutral	Pin M - Slots 0 - 8
7	AC Line	Pin N - Slots 1 - 12
8	DC + 1	Pins 2 & B - Slot 0
9	DC + 2	Pins 3 & C - Slot 0
10	DC +	Pin B - Slots 1 - 8

Detector Inputs and Outputs		
PIN	**Function**	**Edge Card Connector Termination**
1	Phase Green Input - Ch 2	Pin 2
2	Loop Input - Ch 1	Pin 5 & E
3	Loop Input - Ch 2	Pin 9 & K
4	Call Output -Ch 2	Pin W
5	DC Common	Pin A
6	Phase Green Input - Ch 1	Pin 1
7	Loop Input - Ch 1	Pin 4 & D
8	Loop Input - Ch 2	Pin 8 & J
9	Call Output - Ch 1	Pin F
10	Output Emitter Commons	Pin H, T, X, & Z

Note: The Model M-12D card rack is cross wired to accept two or four channel detectors. For proper operation, four channel detectors can only be inserted into the even numbered card slots. If a double width, four channel detector is inserted into an even numbered card slot, connections to the Channel 3 and Channel 4 loop inputs and outputs must be made via the Channel 1 and Channel 2 input / output pins on the odd numbered card slot to the immediate left of the card slot containing the four channel detector.

Detector Switch Panel / Bus Interface Unit Outputs (SP-300 Installed in Slot 0 - J51)		
Pin	**Function**	**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 a BIU or BIU/2 installed in Slot 9 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**
J1	Power Supply Generated Line Frequency for BIU
J2	External Reset Bus - Slot 0
J3	External Reset Bus - Slots 1 & 2
J4	External Reset Bus - Slots 3 & 4
J5	External Reset Bus - Slots 5 & 6
J6	External Reset Bus - Slots 7 & 8
J7	Serial Communications Address Bit 0 - Slot 0
J8	Serial Communications Address Bit 1 - Slot 0
J9	Serial Communications Address Bit 2 - Slot 0
J10	Serial Communications Address Bit 3 - Slot 0
J11	Serial Communications Address Bit 1 - Slot 4
J12	Serial Communications Address Bit 1 - Slot 8
J13**	Slot 0 DC Common to DC Common Bus **
J14**	Slot 1 DC Common to DC Common Bus **
J15**	Slot 2 DC Common to DC Common Bus **
J16**	Slot 3 DC Common to DC Common Bus **
J17**	Slot 4 DC Common to DC Common Bus **
J18**	Slot 5 DC Common to DC Common Bus **
J19**	Slot 6 DC Common to DC Common Bus **
J20**	Slot 7 DC Common to DC Common Bus **
J21**	Slot 8 DC Common to DC Common Bus **
J22	Installed with Power Supply in Slot 0 (Pin 2 to Pin B)
J23	Installed with Power Supply in Slot 0 (Pin 3 to Pin C)
J24	+24 VDC of Slots 9 & 10 to +24 VDC of Slots 0 - 8
J25**	Slot 0 Output Commons to Output Commons Bus **
J26**	Slot 1 Output Commons to Output Commons Bus **
J27**	Slot 2 Output Commons to Output Commons Bus **
J28**	Slot 3 Output Commons to Output Commons Bus **
J29**	Slot 4 Output Commons to Output Commons Bus **
J30**	Slot 5 Output Commons to Output Commons Bus **
J31**	Slot 6 Output Commons to Output Commons Bus **
J32**	Slot 7 Output Commons to Output Commons Bus **
J33**	Slot 8 Output Commons to Output Commons Bus **
J34**	DC Common Bus to Output Commons Bus **
J35	Detector Tx Bus to BIU
J36	Detector Rx Bus to BIU
J37*	BIU Address Bit 0 *
J38*	BIU Address Bit 1 *
J39*	BIU Address Bit 2 *

Notes: * BIU Address Bit 3 is connected to Logic Ground so that the default BIU address is 8. Installing a jumper at J37 will add 1 to the address, installing a jumper at J38 will add 2 to the address, and installing a jumper at J39 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 J13 through J21 and J25 through J34 allow isolation of the DC Common and/or Output Commons on a per slot basis. Installing a BIU, BIU/2, or SP-300 in Slot 9 will tie the DC Common Bus to the Output Commons Bus.

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