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## MODEL M-12D

### NEMA TS 1 / TS 2 DETECTOR CARD RACK

#### INSTALLATION AND OPERATING INSTRUCTIONS

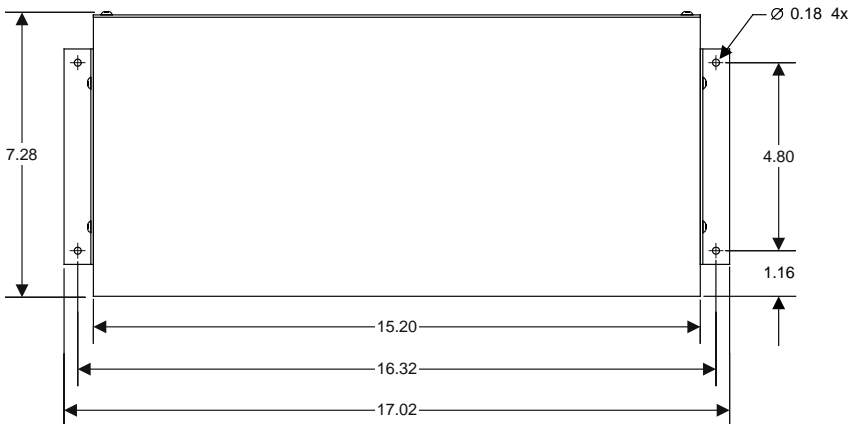
##### I General

The Model M-12D Detector Card Rack has been designed for NEMA TS 1 and TS 2 applications. This card rack is capable of housing an integral power supply; four (4), double width, four channel detectors or eight (8), single width, two channel detectors; and a Bus Interface Unit (BIU).

The Model M-12D may also be configured to accept, in place of the standard BIU, a single width Reno A&E Model BIU/2 and a Reno A&E Model SP-300 detector switch panel. The Model SP-300 allows the user to disconnect or simulate detector call outputs.

##### II Installation Instructions

The drawing below should be used as a reference for mounting dimensions. All dimensions shown are without components installed in the card rack. Fasten the card rack to a solid surface using four (4) #6 screws.



TOP VIEW - CARD RACK HEIGHT IS 6.27 INCH

### III Connector Pin Assignments

The Model M-12D has a set of backplane connectors that are used in conjunction with Reno A&E MH series wiring harnesses to provide a simple and effective way to connect the Model M-12D to the controller.

#### i Power Supply Inputs Slot 0 - J50

Pin	Function	Edge Card / DIN Connector Termination	Wire Color (Typical) *
1	Earth Ground	Pin L - Slots 0 - 8 Pin A31 - Slots 9 & 10	Green
2	Line Frequency Reference	Pin B31 - Slots 9 & 10	Blue
3	DC + 3	Pins 17 & U - Slot 0	Red
4	DC + 4	Pins 18 & V - Slot 0	Red
5	DC Common	Pin A - Slots 0 - 8 Pins A32 & B32 - Slots 9 & 10	Gray
6	AC Neutral	Pin M - Slots 0 - 8	White
7	AC Line	Pin N - Slots 0 - 8	Black
8	DC + 1	Pins 2 & B - Slot 0	Red
9	DC + 2	Pins 3 & C - Slot 0	Red
10	DC +	Pin B - Slots 1 - 8	Red

NOTE: \* Wire color references are for Reno A&E MH series wiring harnesses.

#### ii Detector Inputs and Outputs Slot 0 - J40 (Optional), Slot 1 - J42, Slot 2 - J43, Slot 3 - J44, Slot 4 - J45, Slot 5 - J46, Slot 6 - J47, Slot 7 - J48, Slot 8 - J49

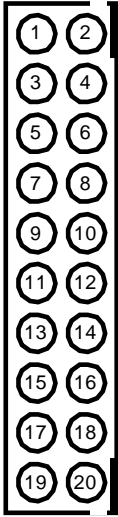
Pin	Function	Edge Card Connector Termination	Wire Color (Typical) *
1	Phase Green Input - Channel 2	Pin 2	Gray / Green
2	Loop Input - Channel 1	Pins 5 & E	Blue
3	Loop Input - Channel 2	Pins 9 & K	Blue
4	Call Output - Channel 2	Pin W	Blue
5	DC Common	Pin A	Gray
6	Phase Green Input - Channel 1	Pin I	Gray / Green
7	Loop Input - Channel 1	Pins 4 & D	Brown
8	Loop Input - Channel 2	Pins 8 & J	Red
9	Call Output - Channel 1	Pin F	Blue
10	Output Emitter Commons	Pins H, T, X, & Z	Gray

NOTES: \* Wire color references are for Reno A&E MH series wiring harnesses.

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 immediate left of the card slot containing the four channel detector.

iii **Detector Switch Panel Outputs**  
**Slot 9 - J51 (SP-300 Installed in Slot 9)**



Pin	Function	DIN Connector Termination	Wire Color (Typical) *
1	Detector 1 - Channel 1	Pin A4 - Slot 9	Blue
2	Detector 1 - Channel 2	Pin B4 - Slot 9	Blue
3	Detector 1 - Channel 3	Pin A5 - Slot 9	Blue
4	Detector 1 - Channel 4	Pin B5 - Slot 9	Blue
5	Detector 2 - Channel 1	Pin A6 - Slot 9	Blue
6	Detector 2 - Channel 2	Pin B6 - Slot 9	Blue
7	Detector 2 - Channel 3	Pin A7 - Slot 9	Blue
8	Detector 2 - Channel 4	Pin B7 - Slot 9	Blue
9	Detector 3 - Channel 1	Pin A8 - Slot 9	Blue
10	Detector 3 - Channel 2	Pin B8 - Slot 9	Blue
11	Detector 3 - Channel 3	Pin A9 - Slot 9	Blue
12 *	Detector 3 - Channel 4 *	Pin B25 - Slot 9	Blue
13 *	Detector 4 - Channel 1 *	Pin A26 - Slot 9	Blue
14 *	Detector 4 - Channel 2 *	Pin B26 - Slot 9	Blue
15 *	Detector 4 - Channel 3 *	Pin A27 - Slot 9	Blue
16 *	Detector 4 - Channel 4 *	Pin B27 - Slot 9	Blue
17	Logic Ground / DC -	Pins A, H, T, X, & Z - Slots 0 - 8 Pins A32 & B32 - Slot 9	Gray
18	Logic Ground / DC -	Pins A, H, T, X, & Z - Slots 0 - 8 Pins A32 & B32 - Slot 9	Gray
19	Logic Ground / DC -	Pins A, H, T, X, & Z - Slots 0 - 8 Pins A32 & B32 - Slot 9	Gray
20	Logic Ground / DC -	Pins A, H, T, X, & Z - Slots 0 - 8 Pins A32 & B32 - Slot 9	Gray

NOTES: \* Wire color references are for Reno A&E MH series wiring harnesses

\*\* 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.

## IV Jumpers

Jumper	Function
J1	Power Supply Generated 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	+24V of Slots 9-10 to +24V 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 Common 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.