



RRM

Rack Relay Module
USER'S MANUAL

June 1990

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48^{HR.} DELIVERY



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Introduction

Moore Industries' Rack Relay Module (RRM) is a multiple contact-closure package that contains four double-pole, double-throw relays in a eurocard-style configuration.

This manual contains a physical and functional description of the RRM, as well as user information regarding installation and maintenance of this highly reliable device.

Description

The RRM is a eurocard-style relay module equipped with four double-pole/double-throw (DPDT) relays, providing a total of eight contact closures. The entire package accepts up to four inputs in the range of 20 to 28 Vdc and provides four double-pole outputs. The relay contacts are rated for 117-Vac, 5-A operation. Each relay functions independently from the others, and any combinations of relays, or all of them, may be used simultaneously.

The front panel of the RRM is equipped with four light emitting diodes (LEDs), numbered 1 through 4. These LEDs illuminate when the corresponding relay is energized. When the LEDs extinguishes, the corresponding relay is de-energized.

The eurocard-style configuration of the RRM conforms to standard size dimensions commonly used in DIN-style racking systems. The RRM is equipped with a 32-pin male connector (DIN 41612) that utilizes contact rows "d" and "z". (Refer to the Installation Section for pin assignments and outline dimensions.).

Table 1 contains the equipment specifications for the RRM.

Table 1. RRM Specifications

Characteristic	Specification
Input	20-28 Vdc
Output	Two DPDT relay contacts per relay, rated at 117 Vac, 5 A (non-inductive); or 28 Vdc
Operating Temperature	-18 to +65 °C (0 to 150 °F)

Serial Number

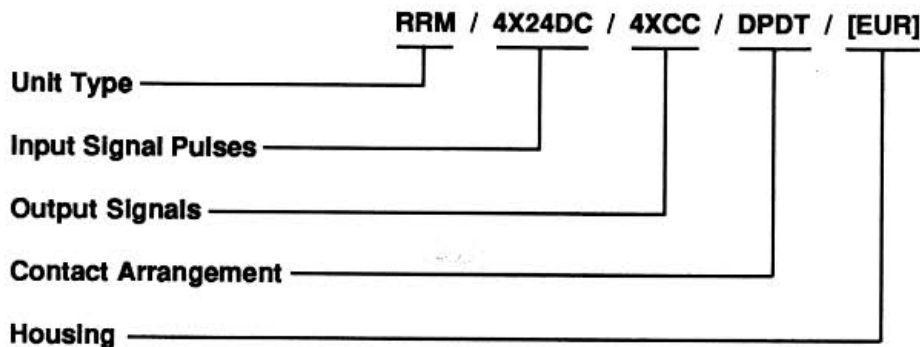
A complete history of each product sold and serviced by Moore Industries is maintained at the factory. This information is keyed to the serial number of each product. If historical information is desired about an RRM, the factory must be provided the serial number of the unit. The serial number is etched or printed on the solder side of the PC board.

Model Number

Moore Industries model numbers describe the instrument type, functional characteristics, operating parameters, and any options ordered. If the documentation for an RRM is missing, the model number can be used to obtain this type information. The model number is located on the PC connector.

The following example identifies the significance of the entries in the RRM model number.

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Installation

This section contains the mounting dimensions and electrical connections for the RRM.

The RRM is designed to operate in a free air environment at high ambient temperatures. Special ventilation is not required.

Mounting

The RRM mounts in standard eurocard-style racks, such as Moore Industries' EU-Rack.

The RRM slides on guides inside the EU-Rack and mates with its DIN 41612 connector (male) to the female connector in the rack. Two capstan screws on the front panel of the RRM are used to secure the unit in the rack. A small slotted screwdriver is required to turn the capstan screws 90 degrees in either direction to secure the unit.

Figure 1 shows the outline dimensions of the RRM. Figure 2 shows the mounting dimensions of the EU-Rack.

Electrical Connections

Moore Industries' EU-Rack has 16-way or 32-way screw connectors fitted in the positions defined by the user. The EU-Rack is also available with solder tag

or wire wrap connections, which are electrically common to all connectors.

Electrical connections to the RRM are made to the terminals on the female connector located at the rear of the rack. Table 2 contains the terminal designations for the male connector at the rear of the rack. Terminal connections should be made using 16- to 22-AWG stranded wire (7 strand/0.2 mm).

Table 2. Connector Terminal Designations

Pin	Row "d"	Row "z"
2	NC K1/1	-IN Channel A
4	NO K1/1	+IN Channel A
6	COM K1/1	COM K1/2
8	NC K1/2	-IN Channel B
10	NO K1/2	+IN Channel B
12	NC K2/1	COM K2/2
14	NO K2/1	NC K2/2
16	COM K2/1	NO K2/2
18	NC K3/1	+IN Channel C
20	NO K3/1	-IN Channel C
22	COM K3/1	COM K3/2
24	NC K4/1	NC K3/2
26	NO K4/1	NO K3/2
28	COM K4/1	-IN Channel D
30	COM K4/2	+IN Channel D
32	NC K4/2	NO K4/2

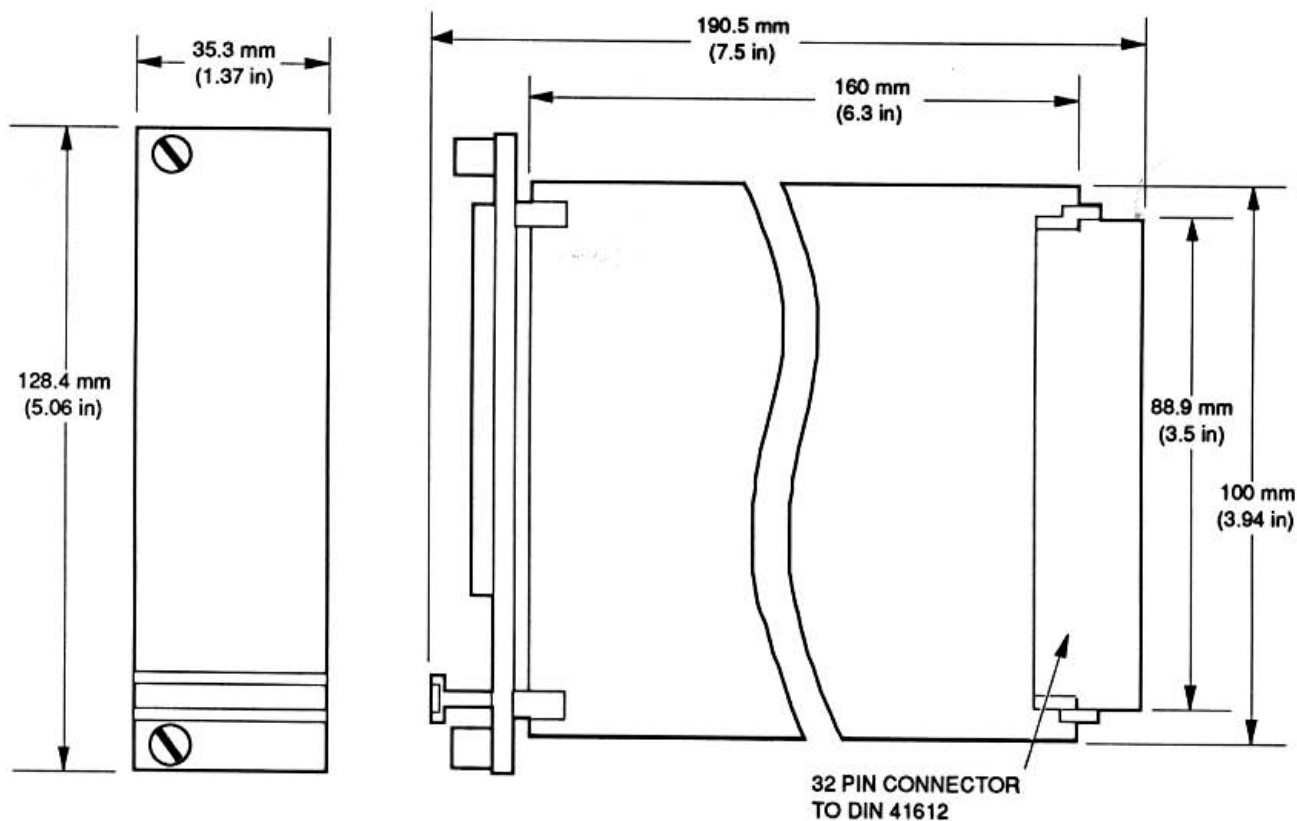


Figure 1. RRM Outline Dimensions

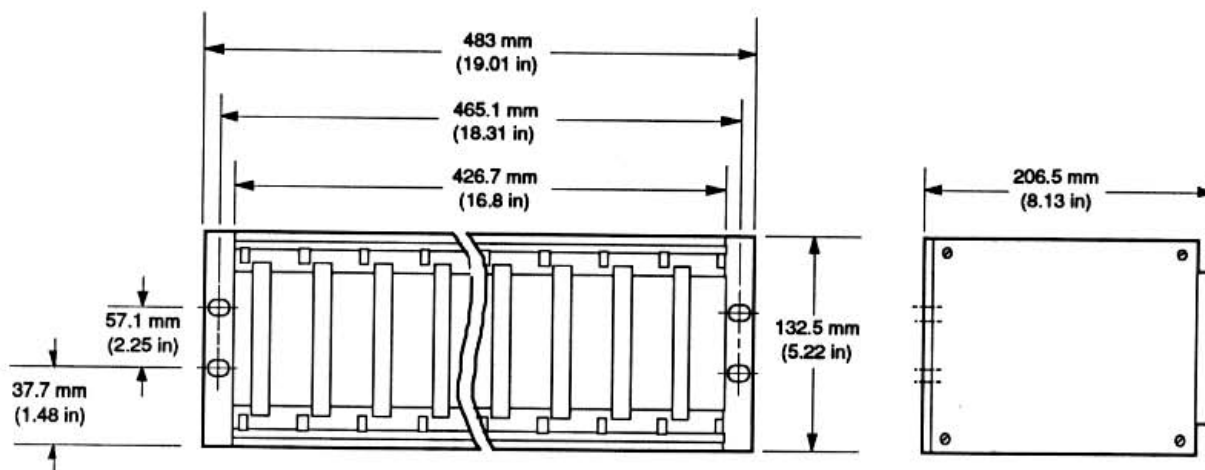


Figure 2. EU-Rack Mounting Dimensions

RRM

Operation

Once installed, the RRM requires no operator intervention. The LEDs on the front of the unit illuminate and extinguish as the corresponding relays energize and de-energize. These LEDs are the only visual indication that the user has, or should need, to identify the RRM is operating properly.

Maintenance

The RRM is a reliable device designed to operate trouble-free for extended periods of time. Maintenance for the RRM is limited to ensuring that the contacts and terminals are clean and free of oxidation. Periodic checks should be conducted to ensure that all electrical connections are tight and connecting wires are in good condition.

If a problem is detected with the RRM, the user should contact Moore Industries' Customer Service Department for assistance.

RETURN PROCEDURES

To return equipment to Moore Industries for repair, follow these four steps:

1. Call Moore Industries and request a Returned Material Authorization (RMA) number.

Warranty Repair –

If you are unsure if your unit is still under warranty, we can use the unit's serial number to verify the warranty status for you over the phone. Be sure to include the RMA number on all documentation.

Non-Warranty Repair –

If your unit is out of warranty, be prepared to give us a Purchase Order number when you call. In most cases, we will be able to quote you the repair costs at that time. The repair price you are quoted will be a "Not To Exceed" price, which means that the actual repair costs may be less than the quote. Be sure to include the RMA number on all documentation.

2. Provide us with the following documentation:
 - a) A note listing the symptoms that indicate the unit needs repair
 - b) Complete shipping information for return of the equipment after repair
 - c) The name and phone number of the person to contact if questions arise at the factory
3. Use sufficient packing material and carefully pack the equipment in a sturdy shipping container.
4. Ship the equipment to the Moore Industries location nearest you.

The returned equipment will be inspected and tested at the factory. A Moore Industries representative will contact the person designated on your documentation if more information is needed. The repaired equipment, or its replacement, will be returned to you in accordance with the shipping instructions furnished in your documentation.

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