

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GENERAL ELECTRIC

IC694MDL940

NORMALLY OPEN RELAY OUTPUT MODULE

Used with the applicable PACSystems RX3i configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: GE Intelligent Platforms GFK-2704B, MDL940 relay output module

PACSystems* RX3i and Series 90-30

IC693MDL940 / IC694MDL940

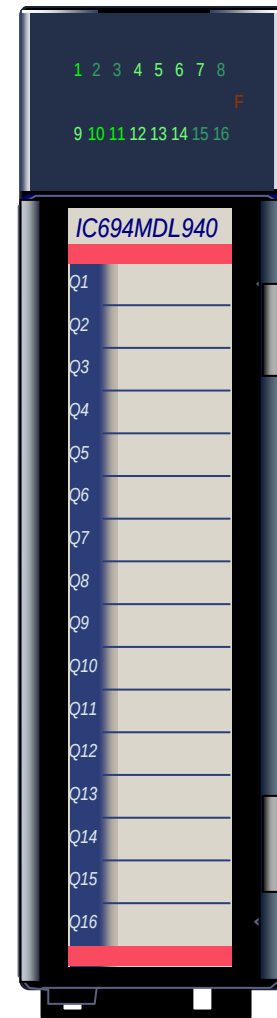
GFK-2704B
May 2015

Output Module, Relay, NO, 2 Amp, 16 Point

The Series 90*-30 and PACSystems* MDL940 **2 Amp Relay Output** module provides 16 normally-open relay circuits for controlling output loads. The output switching capacity of each output is 2 Amps. The output points are in four groups of four points each. Each group has a common power output terminal. The relay outputs can control a wide range of load devices, such as: motor starters, solenoids, and indicators. Power for the internal relay circuits is provided by the +24 volt DC bus on the backplane. Individual numbered LEDs show the ON/OFF status of each output point. There are no fuses on this module. The red bands on the label show that MDL940 is a high-voltage module.

This module can be installed in any I/O slot in a Series 90-30 or RX3i system.

The user must supply the AC or DC power to operate field devices connected to this module.



Caution

This module is not compatible with hot swap operations in any backplane. Hot removing or inserting this module into a backplane can cause damage to the module or other system components.

Related Documents

For product standards, general operating specifications and installation requirements refer to:

- RX3i: *PACSystems RX3i System Manual (GFK-2314)*
- Series 90-30: *Series 90-30 PLC Installation and Hardware Manual (GFK-0356)*
Installation Requirements for Conformance to Standards (GFK1179)

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Specifications

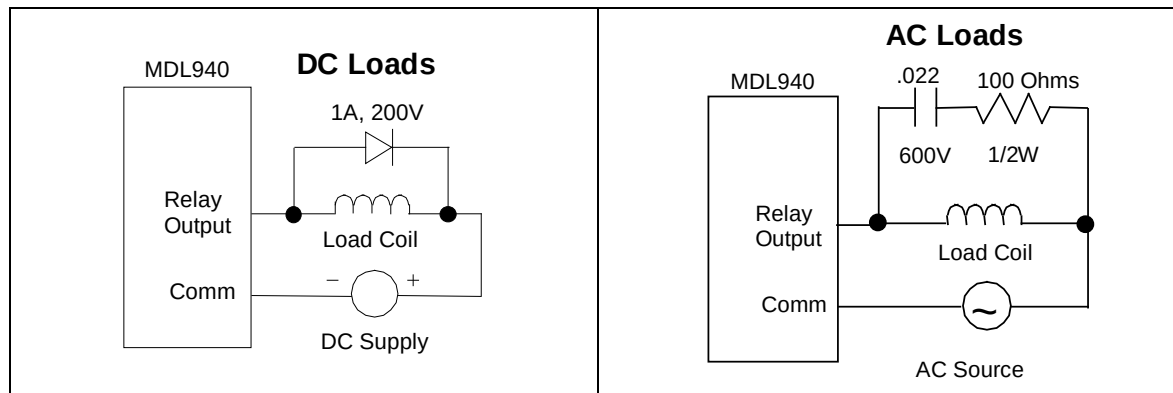
Rated Voltage	24 volts DC, 120/240 VAC (nominal - see the following table for exceptions)
Operating Voltage	5 to 30 volts DC 5 to 250 VAC, 50/60 Hz
Outputs per Module	16 (four groups of four outputs each)
Isolation:	
Field to Backplane and to Frame Ground	250 VAC continuous; 1500 VAC for 1 minute
Point to Point	250 VAC continuous; 1500 VAC for 1 minute
Maximum Load	2 Amps pilot duty maximum per output 4 Amps maximum per common 16 amps maximum per module
Minimum Load	10mA
Maximum Inrush	5 Amps
On Response Time	15ms maximum ¹
Off Response Time	15ms maximum ¹
Power Consumption, all outputs on	7mA from 5 volt bus on backplane 135mA from relay 24V bus on backplane
¹ When this module is used with DC power supply IC695PSD040 or PSD140, special precautions should be taken because dropouts in the source voltage will be seen by this module and may cause relay dropouts.	

Load Current Limitations: MDL940

Operating Voltage	Maximum Current for Load Type		Typical Contact Life (Number of Operations)
	Resistive	Lamp or Solenoid ²	
24 to 120 VAC	2 Amps	1 Amp	300,000
24 to 120 VAC	1 Amp	0.5 Amp	500,000
24 to 120 VAC	0.1 Amp	0.05 Amp	1,000,000
240 VAC	2 Amps	1 Amp	150,000
240 VAC	1 Amp	0.5 Amp	200,000
240 VAC	0.1 Amp	0.05 Amp	500,000
24 VDC	—	2 Amps	100,000
24 VDC	2 Amps	1 Amp	300,000
24 VDC	1 Amp	0.5 Amp	500,000
24 VDC	0.1 Amp	0.05 Amp	1,000,000
125 VDC	0.2 Amp	0.1 Amp	300,000
² Assumes a 7 ms time constant			

Relay contact life, when switching inductive loads, will approach resistive load contact life if suppression circuits are used. The following figures are examples of typical suppression circuits for AC and DC loads. The 1A, 200V diode shown in the DC load suppression circuit is an industry standard 1N4935. The resistor and capacitor shown for AC load suppression are standard components, available from most electronics distributors.

Load Suppression Examples for Output Module IC694MDL940



General Installation Requirements

This product is intended for use with a Series 90-30 or RX3i system. Its components are considered open equipment [having live electrical parts that may be accessible to users] and must be installed in an ultimate enclosure that is manufactured to provide safety. As a minimum, the enclosure shall provide a degree of protection against solid objects up to 12mm (e.g. fingers). This equates to a NEMA/UL Type 1 enclosure or an IP20 rating (IEC60529) providing at least a pollution degree 2 environment.

Installation in Hazardous Areas

The system containing the MDL940 module must be mounted within an ultimate enclosure that can be accessed only by the use of a tool.

The following information is for products bearing the UL marking for Hazardous Locations or ATEX marking for explosive atmospheres:

- EQUIPMENT LABELED WITH REFERENCE TO CLASS I, GROUPS A, B, C & D, DIV. 2 HAZARDOUS AREAS IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, D OR NON-HAZARDOUS AREAS ONLY
- ⚠️ ▪ WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2;
- ⚠️ ▪ WARNING - EXPLOSION HAZARD - WHEN IN HAZARDOUS AREAS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES; AND
- ⚠️ ▪ WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.