

Discrete Output Modules

IC697MDL940

GFK-0384E

August 1997

Relay Output, 16 Point Module

Features

- 16 points - 8 isolated Form C
- 2 groups of 4 Form A
- 2 amp per point switching capacity
- RC snubber and fuse protection per point
- No user power required
- Removable field wiring terminal

Functions

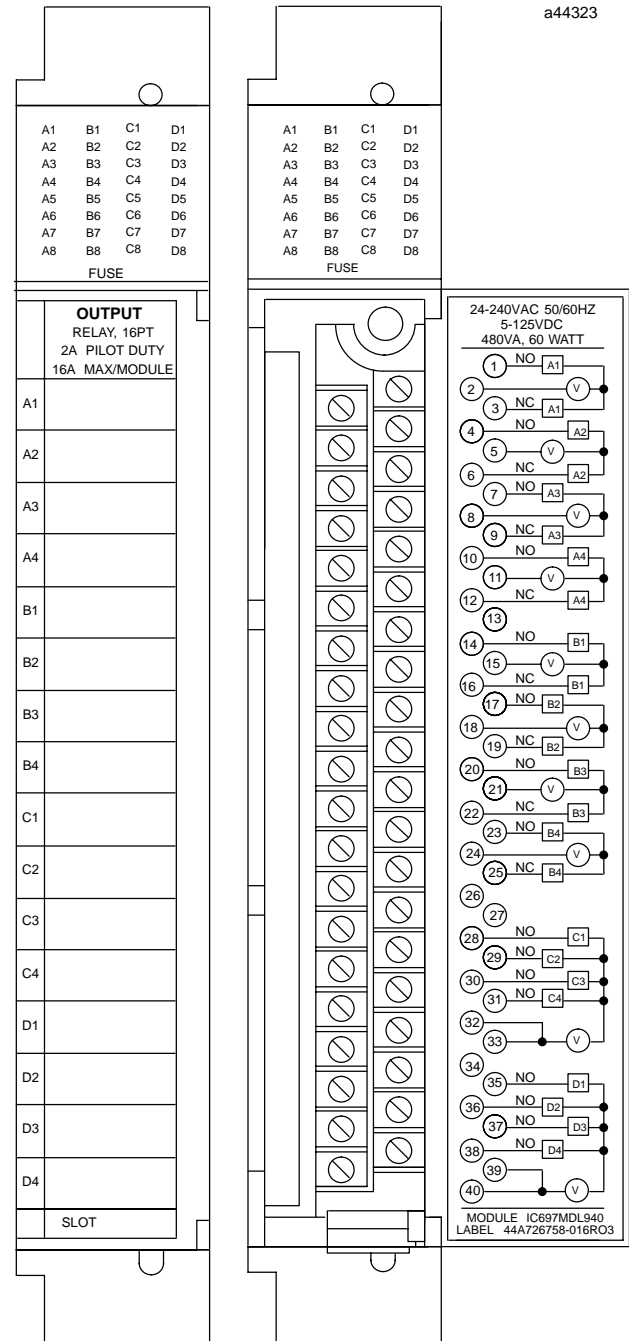
The 16 point Relay Output Module is **versatile, rugged, and easy to use**. It will switch a variety of low to medium power loads such as relays, contactors, and lamps.

The resistive rating of the module is 2 amps per point at 120/240 VAC or 24 VDC and 0.2 amps per point for 125 VDC. Power to energize the relay coils is supplied by the module and each output is individually fused and suppressed with an RC snubber.

LED indicators which display the ON - OFF status of each point on the logic (PLC) side of the circuit are located at the top of the module.

Field wiring is made to a removable terminal board and the module is mechanically keyed to ensure correct replacement with a similar module type in the field. I/O references are user configurable without the use of jumpers or DIP switches on the module.

Configuration is done using the configuration function of the MS-DOS® or Windows® programming software running on Windows® 95 or Windows NT® over Ethernet TCP/IP or through the SNP port. The Programming Software configuration function is installed on the programming device. The programming device can be an IBM® XT, AT/PS/2® or compatible Personal Computer.



® IBM and PS/2 are registered trademarks of International Business Machines Corporation.

® MS-DOS, Windows, Windows 95, and Windows NT are registered trademarks of Microsoft Corporation.

GFK-0384E
August 1997

Relay Output, 16 Point Module

Operation - Relay Output Module

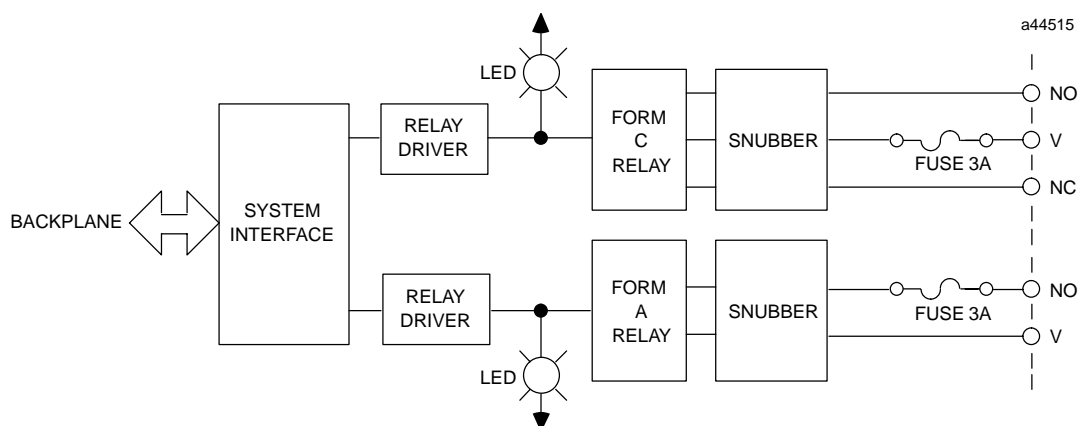


Figure 1. Block Diagram for IC697MDL940

Output Protection

For more detailed information on module configuration, refer to the *Programming Software User's Manual*.

Fusing

Each output is protected with a 3 amp fuse. Replace with either of the following types:

- 3AG - 3.0 amp, 250V, Fast Acting
- Metric 5 x 20 mm - 3.0 amp, 250V, Fast Acting

Suppression

Each output is suppressed with an RC snubber to reduce high frequency noise transients on the board. Proper suppression of the switched load is still recommended and will contribute to improved system reliability. *Suppression at the load will not only lengthen contact life, but will also reduce noise transients in the control wiring.*

Fault Mode Selection

This output module can be configured from the programmer so that output points assume one of two states in response to certain operating or default conditions. These states are:

- Maintain existing output state
- Turn outputs OFF

Module Mechanical Keying

This module includes a mechanical key that prevents inadvertent substitution of one module type for another in a given slot. The key fits a uniquely shaped area on the board below the connector. Each module has a key packaged with it.

When the module is first installed, the key latches onto the backplane center rail. When the module is extracted, the key remains in the center rail, configuring the slot to accept only identical module types.

If it is necessary to change the module location in the rack after the key has been latched onto the center rail of the rack, the key can be removed by pushing it upward to unhook the latch while pulling it off the rail. It may then be reinserted onto the module and the module inserted into the rack in the desired location.

Note that only a power supply can be placed in the leftmost rack position, and slot 1 (adjacent to the power supply) must always contain a CPU (in rack 0 - the CPU rack), or a Bus Receiver Module (in an expansion rack).

GFK-0384E
August 1997

Relay Output, 16 Point Module

Table 1. Electrical Specifications for IC697MDL940 †

Relay Type:	Fixed coil, moving armature
Outputs per Module:	16
Configuration	8 points - Form C (each point isolated) 8 points - Form A (2 groups with 4 points per group)
Isolation:	1500 volts - any output to backplane 500 volts between Form C circuits or Form A groups
Maximum Load Current (Resistive)	
Per Module	16 amps
Per Group (Form A)	4 amps
Output Switching Characteristics	
Nominal Voltage Rating	120/240 VAC or 5/24/125 VDC
Maximum Power	480 VA (AC loads) or 60 watts (DC loads)
Maximum Load Current (resistive)	2.0 amps from 5 to 265 VAC (maximum), 47-63 Hz 2.0 amps from 5 to 30 VDC (maximum) 0.2 amps from 31 to 125 VDC (maximum) 0.2 amps from 31 to 150 VDC (maximum, Form A only)
Minimum Load Current	10 mA
Maximum Output leakage	1 mA at 120 VAC
Response Time-On:	10 msec (maximum)
Response Time-Off:	10 msec (maximum)
Switching Frequency	20 cycles/minute (inductive load)
Contact Type	Silver alloy
Contact Resistance	0.2 ohm (maximum)
Contact Life	Mechanical: 20 x 10 ⁶ operations Electrical: 10 ⁵ operations at rated resistive load
Protection (each output)	3 amp fuse Snubber (R = 47 ohms, C = 0.015 µfd)
Current Required from 5 V Bus:	750 mA
VME	System designed to support the VME standard C.1

† Refer to GFK-0867B, or later for product standards and general specifications. For installations requiring compliance to more stringent requirements (for example, FCC or European Union Directives), refer to *Installation Requirements for Conformance to Standards*.