

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GE 90-30 SERIES PLC

IC693MDL940H

16-POINT RELAY OUTPUT MODULE

Used with the applicable Series 90-30 discrete I/O configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: GE official manufacturer documentation

- **Analog combination** module has 4 input channels and 2 output channels.

I/O modules are retained in their baseplates by molded latches that easily snap onto the upper and lower retainer slots of the baseplates. This is described in detail in Chapter 2. The following figure shows a typical Series 90-30 I/O module.

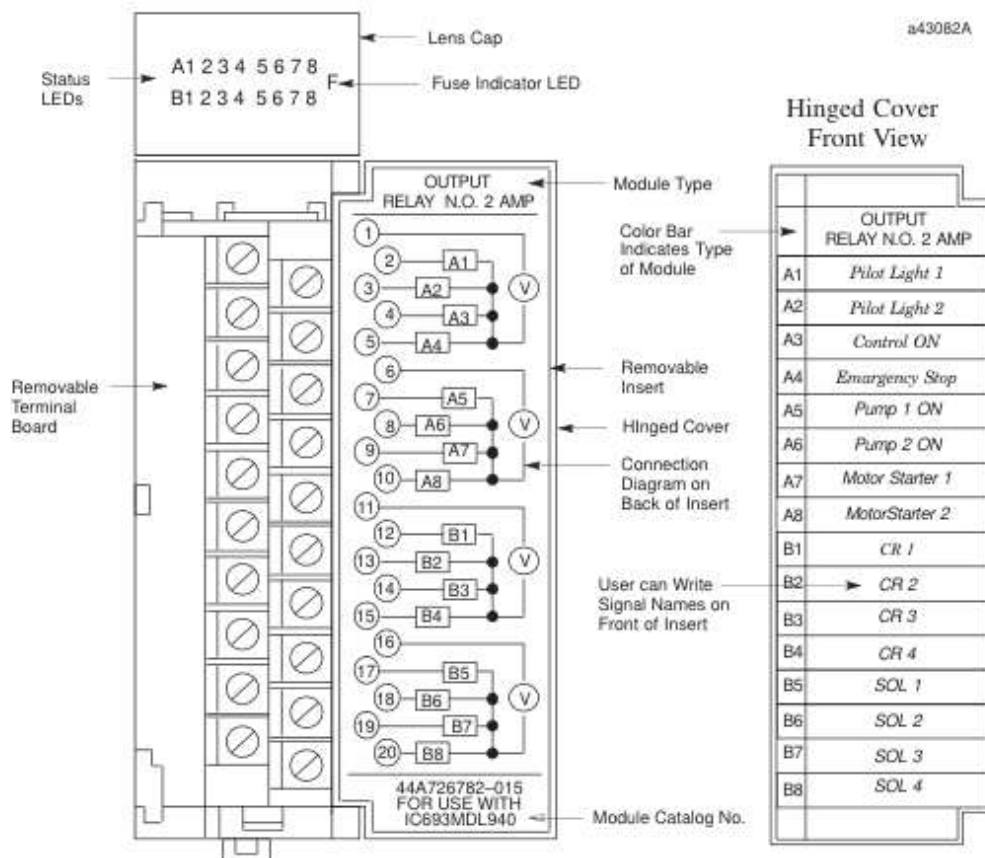


Figure 1-1. Example of a Series 90-30 I/O Module

LED Indicators

Circuit status of each I/O point on discrete modules is indicated by a green LED mounted at the top of the module and viewable through a clear plastic lens. There are two horizontal rows of LEDs with eight LEDs in each row. Each LED is identified by a letter and number identification which is illuminated when the applicable LED turns on. These letters and numbers clearly identify each LED to assist in program monitoring and trouble shooting. The top row is labeled A1 through 8 and the bottom row is labeled B1 through 8.

Additionally, a blown fuse status for fused or electronically protected output modules is provided by an LED labeled F on the LED cover (note that the F is labeled on all discrete I/O modules, although it is only relevant to fused or electronically protected output modules).

Front Door Insert

Each module has an insert that goes between the inside and outside surface of the hinged door. The surface towards the inside of the module (when the hinged door is closed) has circuit

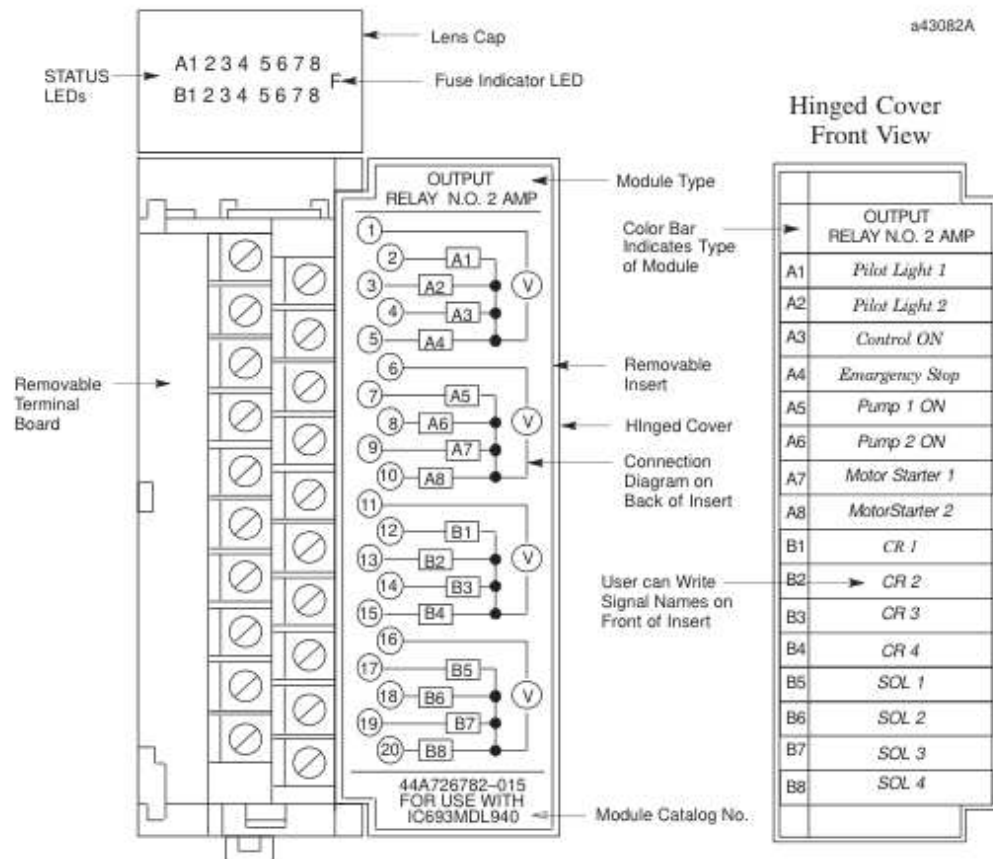


Figure 5-1. Example of Series 90-30 Standard Density Discrete Output Module

Relay Output, N.O., 2 Amp - 16 Point IC693MDL940

The **2 Amp Relay Output** module for the Series 90-30 Programmable Logic Controller provides 16 normally-open relay circuits for controlling output loads provided by the user. The output switching capacity of each output is 2 amps. The output points are arranged in four groups of four points each. Each group has a common power output terminal. The relay outputs can control a wide range of user-supplied 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. The user must supply the AC or DC power to operate field devices. There are no fuses on this module.

LED indicators which provide the ON/OFF status of each point are located at the top of the module. The LEDs are arranged in two horizontal rows with eight green LEDs in each row; the top row labeled A1 through 8 (points 1 through 8) and the bottom row labeled B1 through 8 (points 9 through 16). An insert goes between the inside and outside surface of the hinged door. The surface towards the inside of the module (when the hinged door is closed) has circuit wiring information, and circuit identification information can be recorded on the outside surface. The outside left edge of the insert is color-coded red to indicate a high-voltage module. This module can be installed in any I/O slot of a 5 or 10-slot baseplate in a Series 90-30 PLC system.

Table 7-19. Specifications for IC693MDL940

Rated Voltage	24 volts DC, 120/240 volts AC (nominal – see the following table for exceptions)
Operating Voltage	5 to 30 volts DC 5 to 250 volts AC, 50/60 Hz
Outputs per Module	16 (four groups of four outputs each)
Isolation	1500 volts between field side and logic side 500 volts between groups
Maximum Load	2 amps pilot duty maximum per output 4 amps maximum per common
Minimum Load	10 mA
Maximum Inrush	5 amps
On Response Time	15 ms maximum
Off Response Time	15 ms maximum
Int. Power Consumption	7 mA (all outputs on) from 5 volt bus on backplane 135 mA (all outputs on) from relay 24V bus on backplane

Refer to Appendix B for product standards and general specifications.

TBQC Components for 16-Point Modules

Installing a 16 point module typically takes 2 1/2 hours to wire from a PLC to a terminal blocks or strip. With the TBQC, you simply snap the terminal block onto a DIN rail, remove the I/O module's terminal assembly, snap in the I/O faceplate, and connect the cable. This reduces wiring time to about two minutes, reducing wiring costs and errors. TBQC components consist of terminal blocks, I/O Face Plates, and cables.

Terminal Blocks

Terminal blocks have three rows of terminals, arranged in three levels, as shown in Figure J-1. These terminal blocks feature an easy to use captive-screw, "rising cage" type connection system. Catalog numbers for the terminal blocks and the modules they can be used with are listed below.

Table C-1. TBQC Terminal Block Selection Table

Catalog Number	Use With These Modules	Module Description
IC693ACC329¹	IC693MDL240	Input, 120 VAC – 16 points
	IC693MDL645	Input, 24 VDC Pos./Neg Logic– 16 points
	IC693MDL646	Input, 24 VDC Pos./Neg, Logic, FAST – 16 points
IC693ACC330	IC693MDL740	Output, 12/24 VDC Pos Logic, 0.5A – 16 points
	IC693MDL742	Output, 12/24 VDC Pos Logic ESCP, 1A– 16 points
IC693ACC331	IC693MDL741	Output, 12/24 VDC Neg Logic, 0.5A– 16 points
IC693ACC332	IC693MDL940	Output, Relay, N.O. – 16 points
IC693ACC333	IC693MDL340	Output, 120 VAC, 0.5A – 16 points

- ¹ This Terminal Block may be used with most I/O modules that have up to 16 I/O points (can not be used with 32 point modules). Jumpers may have to be added; for details of required wiring connections, refer to module specifications in this manual.

Cable Current Rating

Each conductor in these 24-conductor cables has a current rating of 1.2 Amps. If using these cables with a 16-point Output module with a higher output current rating, you must use the lower value of 1.2 Amps for the maximum load current rating. If you have field devices that require more than 1.2 Amps, do not use a TBQC assembly – use the standard Terminal Board that comes with the module instead.

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