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IC670MDL930

Relay 2A 8 Pt., 6 form A/2 Form C Isolated.

Provides the wiring diagrams and installation guidelines for this GE Field Control module.

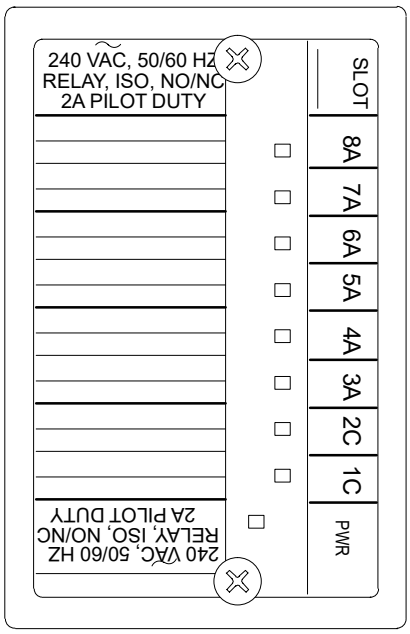
Discrete Output Module

IC670MDL930

GFK-1092E
June 1997

Relay Isolated, NO/NC Output Module

The Isolated, NONC Relay Output Module (IC670MDL930) provides eight isolated outputs. The outputs consist of six normally-open (Form A) contacts and two normally-open or normally-closed (Form C) contacts. Six form 'A' relays provide the NO outputs while two form 'C' relays provide the NO/NC points.



Power Sources

The power that runs the module itself comes from the power supply in the Bus Interface Unit.

An external source of AC and/or DC power must be provided for the loads driven by the contacts.

LEDs

Individual LEDs (logic side), visible through the transparent portion of the module top, indicate the on/off status of each output. The PWR LED is on when backplane power is present.

Host Interface

Intelligent processing for this module is performed by the Bus Interface Unit or elsewhere in the system. This includes configuring features such as output default and fault reporting. The module has 8 bits (one byte) of discrete output data. A Bus Interface Unit is required to obtain this output data from the host and/or local processor.

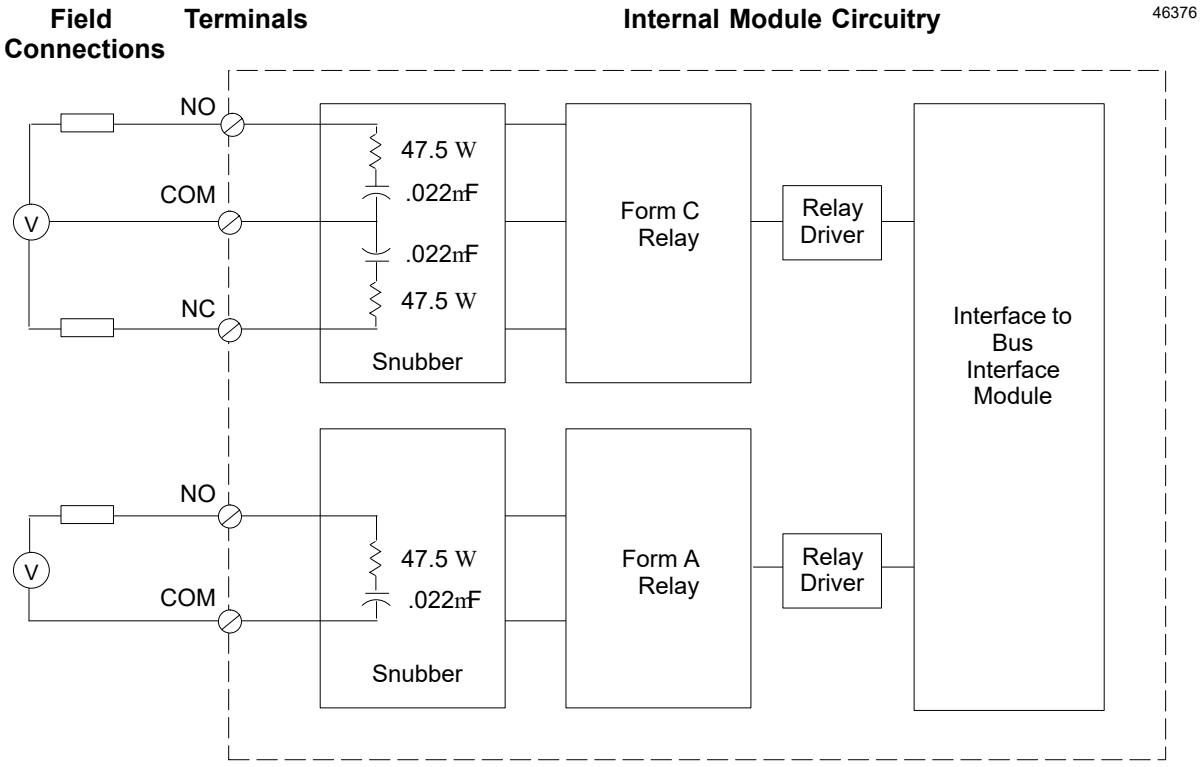
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Module Operation

After checking the Board ID and verifying that the module is receiving appropriate logic power from the Bus Interface Unit (as reflected by the state of the module's Power LED), the Bus Interface Unit then sends output data to the module in serial format. During transmission, the module automatically loops this data back to the Bus Interface Unit for verification.

Serial to parallel converters convert this data into the parallel format needed by the module. Opto-isolators isolate the module's logic components from field outputs. Power from the external power supply is used to power the loads connected to the contacts.



Maximum Load Rating

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. An RC snubber is used across the contacts.

Suppression

Each output is suppressed with an RC snubber to reduce high frequency noise transients. 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.*

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Module Specifications

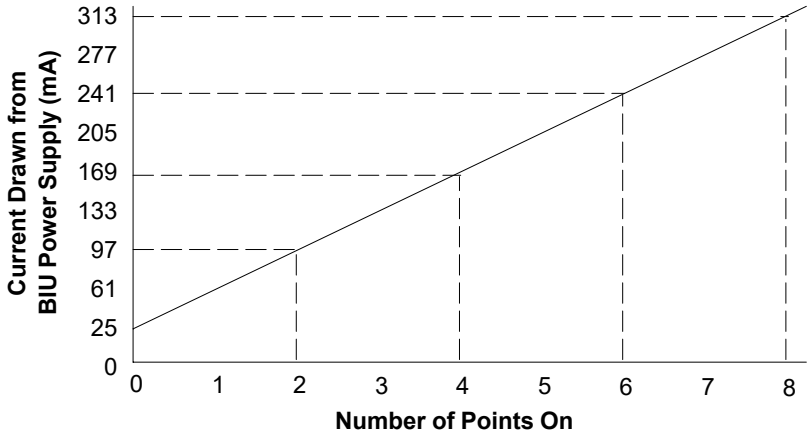
Module Characteristics	
Configuration	6 points - Form A (each point isolated) 2 points - Form C (each point isolated)
Rated Voltage	5/24/125VDC,120/240VAC
Voltage Range	0–130 VDC, 0–265 VAC (47–63 Hz)
Maximum Load Current (resistive)	16 amps per module
Indicators	Individual logic side LEDs indicate the status of each output. The PWR LED indicates the presence of backplane power.
Isolation: User input to logic, user input to frame ground, group to group	250 VAC continuous, 1500 VAC for 1 minute. No isolation between individual points in a group.
Relay Type	Fixed coil, moving armature
Current Drawn from BIU Power Supply	313 mA maximum (see chart on the next page)
Output Characteristics	
Maximum Load Current (resistive)	2.0 Amps from 5 to 265VAC 2.0 Amps from 5 to 30VDC 0.2 Amps from 31 to 125VDC
Maximum Inrush	5 Amps for 20mS
Minimum Load Current	10 mA per point
Output Leakage	2 mA at 120 VAC maximum
Response Time-On	10 ms (max)
Response Time-Off	10 ms (max)
Switching Frequency	20cycles/minute(inductiveload)
Contact Type	SilverAlloy
Contact Resistance	0.2 (initial) at 1 A, 6 VDC
Contact Life	Mechanical: 20 x 10^6 operations Electrical: 10^5 operations at rated resistive load
Protection (each output)	Snubber (R=47.5 ohms, C=0.022 ufd). No fuse
Vibration (this module)	IEC68-2-6: 10 to 57 Hz 0.012in displacement (peak to peak) 57 to 500 Hz at 1.5 G

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BIU Power Drain per Point

The Relay Output Module's BIU power requirement increases as the number of points that are simultaneously on increases. The chart below shows the relationship between the power required and the number of points that are on.



Typical Contact Life versus Load Conditions

Operating Voltage	Maximum Current for Load Type		Typical Contact Life (number of operations)
	Resistive	Inductive *	
24 – 120 VAC	2.0 Amp	1.0 Amp	300,000
24 – 120 VAC	–	2.0 Amp	150,000
24 – 120 VAC	1.0 Amp	0.5 Amp	500,000
24 – 120 VAC	0.1 Amp	0.05 Amp	1,000,000
240 VAC	2.0 Amp	1.0 Amp	150,000
240 VAC	–	2.0 Amp	50,000
240 VAC	1.0 Amp	0.5 Amp	200,000
240 VAC	0.1 Amp	0.05 Amp	500,000
24 VDC	2.0 Amp	1.0 Amp	300,000
24 VDC	–	2.0 Amp	100,000
24 VDC	1.0 Amp	0.5 Amp	500,000
24 VDC	0.1 Amp	0.05 Amp	1,000,000

* Power Factor = 0.4 minimum for AC inductive loads
Time Constant – 7mS for DC inductive loads

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Keying Locations

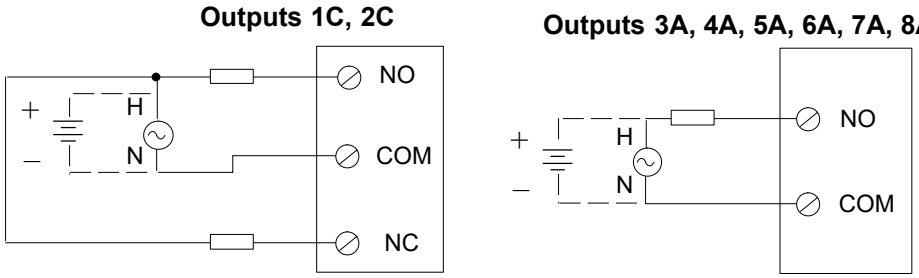
Optional keying locations for the Isolated, NONC, Relay Output Module are shown below:

KeyingLocations									
A	B	C	D	E	F	G	H	J	K
		✓	✓	✓	✓	✓	✓		

Field Wiring

The diagram below shows input and power connections for the module's two normally-open or normally-closed (Form C) contacts (labelled 1C and 2C on the module) and six normally-open (Form A) contacts (labelled 3A, 4A, 5A, 6A, 7A, and 8A).

46377

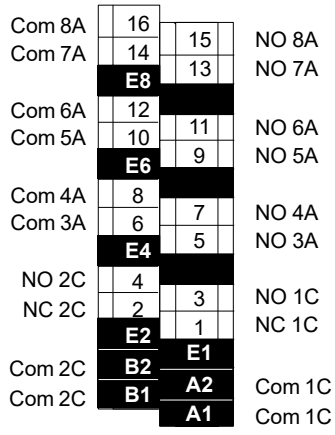


I/OTerminal Block wiring assignments for this module are shown below.

Note: COM 1 through COM 8 may be connected together if a single supply is required. However, the maximum current through any one terminal may not exceed 10 Amps.

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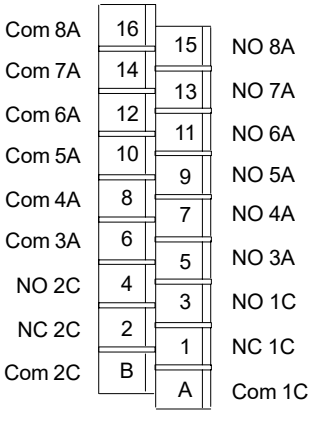
I/O Terminal Block with Box Terminals (IC670CHS002 and 102)



Terminals E1, E2, E4, E6, and E8 are electrically connected together, A1 and A2 are electrically connected together, B1 and B2 are electrically connected together.

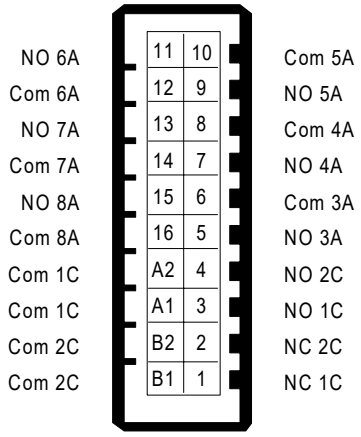
46452

I/O Terminal Block with Barrier Terminals (IC670CHS001 and 101)



46528

I/O Terminal Block with Wire to Board Connectors (IC670CHS003 and 101)



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