

Modicon
140 DDM 690 00
125 VDC Input/High Power
Output Module Specifications



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The **125 VDC Input/High Power Output** module provides four isolated outputs and four grouped inputs. The outputs switch 24 to 125 Vdc powered loads and are for use with sink and source devices. The outputs also have short circuit sense, indication, and shutdown circuitry. The inputs accept 125 Vdc inputs and are for use with source output devices. The inputs have software selectable response times to provide additional input filtering.

Specifications

Topology	
Number of Input Points	4 in 1 group
Number of Output Points	4 isolated
LEDs	Active F (red) - A fault has been detected 1 ... 4 (Green - left column) - Indicated output point is turned ON 1 ... 4 (Red - middle column) - Indicated output point has a fault 1 ... 4 (Green - right column) - Indicated input point is turned ON

Input Specifications

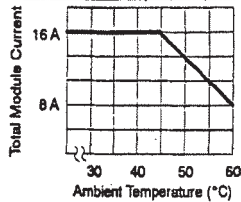
Operating Voltages and Currents (input)	
ON (voltage)	+88 ... +156.2 Vdc
OFF (voltage)	0 ... +36 Vdc
ON (current)	2.0 mA min
OFF (current)	1.2 mA max
Absolute Maximum Input	
Continuous	156.2 Vdc (includes ripple)
Input Response (OFF-ON, ON-OFF)	Default Filter: 0.5 ms Non-default Filter: 1.5 ms
Internal Resistance (Input)	24 k (nominal)



Output Specifications

Voltage (Output)	
Operating (max)	19.2 ... 156.2 Vdc (includes ripple)
ON State Drop / Point	0.75 Vdc @ 4 A
Maximum Load Current	
Each Point	4 A continuous
Per Module	16 A continuous (see the derating curve below)
Off State Leakage / Point	1.2 mA @ 150 Vdc
Output Response (OFF-ON, ON-OFF)	0.2 ms, max (resistive load output)

140 DDM 690 00
Derating Curve



Surge Current Maximum	
Each Point	30 A @ 500 ms duration
Load Inductance Maximum (Output)	For switching intervals ≥ 15 seconds per ANSI/IEEE C37.90-1978/1989: $L \leq \frac{9}{f^2}$
	For repetitive switching: $L \leq \frac{0.7}{f^2}$ where: L = Load Inductance (Henry) I = Load Current (A) F = Switching Frequency (Hz)
Load Capacitance Maximum	0.1 μ f @ 150 Vdc 0.6 μ f @ 24 Vdc

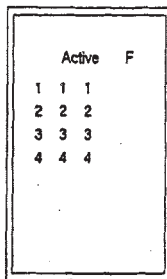
Common Specifications

Module Protection	
Input Protection	Resistor limited
Output Protection	Transient voltage suppression (internal)
Isolation (Input and Output)	
Group to Group	1780 Vac rms for 1 minute
Group to Bus	2500 Vac rms for 1 minute
Fault Detection	
Input	None
Output	Over current - each point
Bus Current Required (Module)	350 mA
Power Dissipation	0.4 W x (1.0) x number of input points ON + (0.75) x total module output current
External Power (Module)	Not required for this module

Common Specifications (cont'd)

Fusing	
Input	Internal - None External - User discretion
Output	Each output is protected by an electronic shutdown: For current output surges between 4 A and 30 A, the input point will shutdown after 0.5 s. For current surges greater than 30 A, the output will shutdown immediately.

140 DDM 690 00 LED Indicators and Descriptions

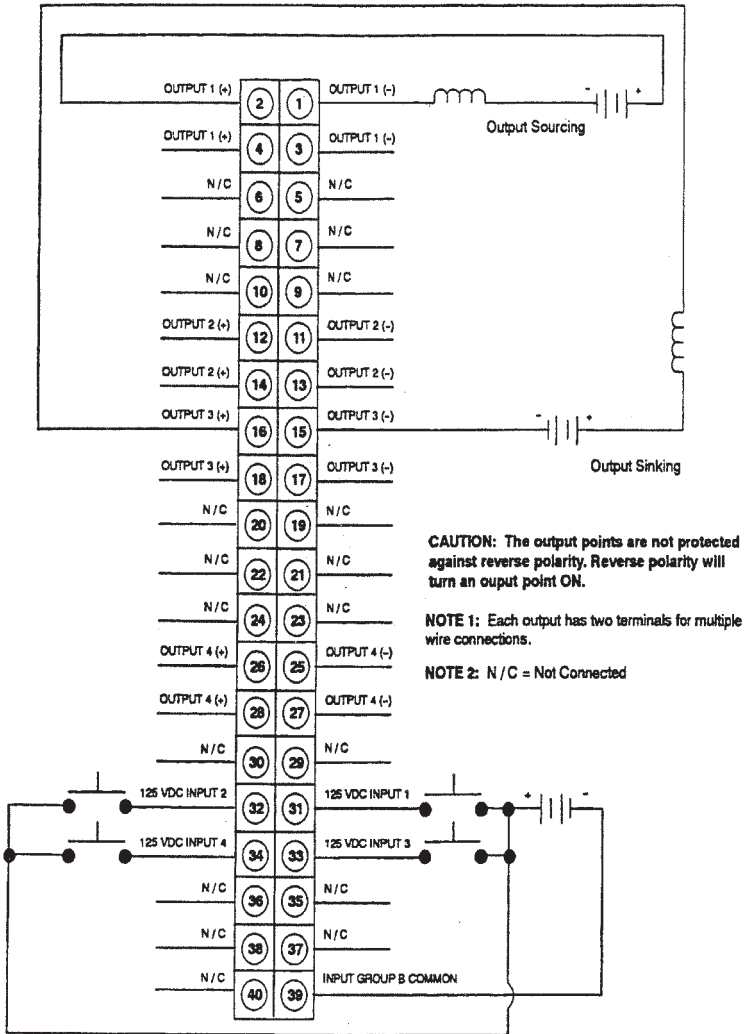


LEDs	Color	Indication when On
Active	Green	Bus communication is present.
F	Red	A fault has been detected.
1 ... 4 (left column)	Green	The indicated output point is turned ON.
1 ... 4 (middle column)	Red	There is a fault on the indicated output point.
1 ... 4 (right column)	Green	The indicated input point is turned ON.

Note: To clear a fault condition, the point must be commanded OFF as follows:

- If the point is not in fast trip mode, this is done by setting the output command bit to "point OFF".
- If the point is in fast trip mode, the fast trip must be disabled and then the point commanded off by setting the output command bit to "point OFF".

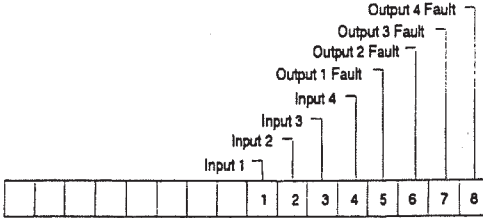
140 DDM 690 00 Wiring Diagram



140 DDM 690 00 Configuration

I/O Map Register Assignments (Inputs)

The 140 DDM 690 00 module can be configured as either 8 contiguous 1x references or as one 3x register:



I/O Map Status Byte (Inputs)

There is no input I/O map status byte associated with the inputs.

Module Zoom Selections (Inputs)

Push <Enter> to display and select the Dual Mode and Filter Select options:

Dual Mode:

Disabled
Enabled

In Dual Mode

1. Output 1 is turned ON when Input 1 and Input 2 are ON and when both "Fast Trip 1 Enable" and "Fast Trip 2 Enable" (via Modsoft) are enabled; or by directly turning ON the Output 1 bit (via Modsoft).
2. Output 2 is controlled by the Output 2 bit.
3. Output 3 is turned ON when Input 3 and Input 4 are ON and when both "Fast Trip 3 Enable" and "Fast Trip 4 Enable" (via Modsoft) are enabled; or by directly turning ON the Output 1 bit (via Modsoft).
4. Output 4 is controlled by the Command 4 bit.

Filter Select:

.5 msec
1.5 msec

Filter Select

This entry selects which filter response time to use for the input circuits.

