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Series Six™ PLC
Programmable Controllers

GEK-83521B

July, 1989

DC Output Modules

General Description

The discrete (OFF/ON), 8-point DC Output module can be utilized in an I/O rack, or in any of the I/O slots in a Model 60 Central Processor Unit (CPU), to provide an optically isolated interface between the backplane I/O bus and user output devices. The first four outputs are grouped to share a common power source, as are the second four outputs. The module for each output-voltage range is available in either a source or a sink version. The DC Output modules' features and benefits are summarized in Table 1.

When using a sink module, current must flow through the load into the output terminal of the module. When using a source module, current is provided by the module and the current flows out of the module to the load.

Each of the eight output drivers uses a Darlington amplifier as a switching device. The circuit board also contains comparator circuitry that determines if the module is being addressed and a buffer where the output data is stored and presented to the output drivers.

Provision is made to automatically disable the entire group of output drivers in the event of an I/O-chain, or CPU, failure. Light-Emitting Diode (LED) indicators display the state (ON/OFF) of each output, and the condition of the individual output-circuit fuses.

Refer to Table 2 for DC Output module specifications.

Table 1. Features and Benefits

Features	Benefits
Three switching ranges available: **20** Vdc. 40 Vdc. 55 Vdc. Each available in Source or Sink configuration.	Useful in a variety of applications. Provides output capability with existing user power supplies and devices.
Eight Output points per module.	Efficient use of I/O rack space.
Optically-coupled Output drivers.	Provides electrical isolation between user field devices and the Series Six Controller.
Applications	
- High-speed switching: - Solenoid valves. - Battery-powered I/O systems.	Annunciators. Indicators. Relays.

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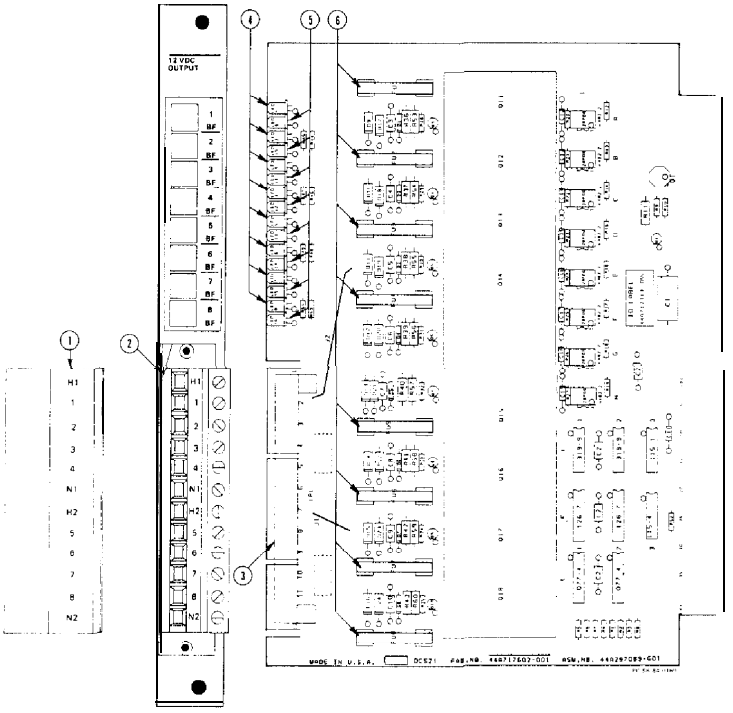


Figure 1, User Items

1. Terminal Cover

2. User Terminal Block:
   Accepts connections from user output devices and the DC power source(s). (Refer to Figure 2, Typical User Connections.)

3. Circuit-Board Terminal Block:
   Mates with the user terminal block.

4. Output LED 1 → 8
   On: Corresponding output is in the ON state.
   Off: Corresponding output is in the OFF state.

5. BF (Blown Fuse) LED 1 + 8
   On: The fuse for corresponding output is open (blown) .
   Off: The fuse for corresponding output is OK.

6, Output-Circuit Fuses: 3 A, normal blow (AGC 3)

Installation

The DC Output module can be installed in an I/O rack or in a model 60 CPU rack. Before installing the module, set the Dual-In-Line-Package (DIP) switches directly behind the card slot on the rack backplane to establish the proper correspondence between the output terminals on this module and a group of eight consecutive output numbers in the program. To determine the proper switch settings, refer to the table in the Installation section of the Series Six Installation and Maintenance Manual, GEK-25361.

We recommend that he extraction/insertion tool furnished with the CPU be used to remove or install the circuit board. With the board in place in the rack, the faceplate should be slipped over the circuit board so that the terminals near the bottom of each are mated. The faceplate can then be secured to the rack using the thumbscrews at top and bottom.

Refer to Figure 2 for typical user connections to the DC Output module. One side of each load controlled by this module should be connected to the appropriate output terminal (1 through 8). The other side of each load connected to terminals 1 through 4 should be returned to a common line connected to the Neutral No.1 (N1) terminal for a source module, or to the High No.1 (Hl) terminal for a sink module. The other side of each load connected to terminals 5

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through 8 should be returned to a common line connected to the Neutral No.2 (N2) terminal for a source module, or to the High No.2 (H2) terminal for a sink module. A user DC power source must be connected between the Hl (+) and the Nl (-) terminals; a power source must also be connected between the H2 (+) and the N2 (-) terminals. Each terminal can accommodate one No.12 AWG wire or two No.14 AWG wires. The terminal cover should be installed by guiding both of its edges onto the top of the terminal block and sliding it downward over the terminals.

Note that a markable area is provided on the plastic lens beside each pair of indicators for noting the function or destination of each output. The faceplates are color coded (blue) to allow you to easily distinguish the DC Output modules from other types of I/O modules.

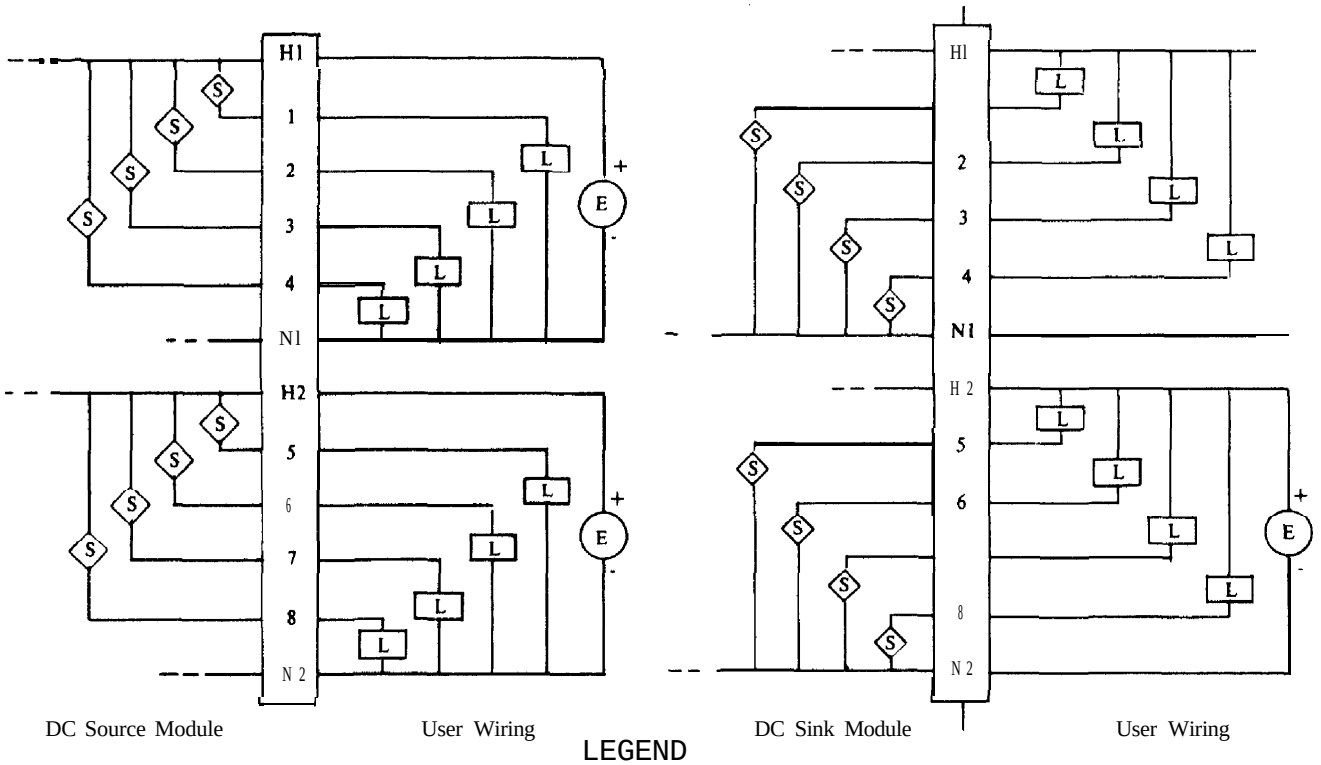


Figure 2. Typical User Connections

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Table 2. Specifications

- Dimensions:	Circuit Board: 8.15 x 11.0 x 1.20 (inches) 208 x 280 x 31 (mm) Faceplate: 12.46 x 1.175 (inches) 317 x 30 (mm)
- Power Requirements:	5 Vdc, 400 mA (maximum) Supplied by I/O-rack power supply. Module — User-Supplied Voltage 12 Vdc — 9 + 20 Vdc 24 Vdc — 19 + 40 Vdc 48 Vdc — 38 → 55 Vdc
- Number of Outputs:	Eight (8), in two groups of 4 outputs with common high and neutral connections.
- Leakage (OFF):	5 mA @ 60°C (maximum)
- Steady State Current:	2 A (maximum)
- Inrush Current:	7 A (maximum)
- Total ON-State Current per Module:	Maximum: 16 A @ 0-4OC, 8 A @ 60°C Minimum: 0 A
- ON-State Voltage Drop:	2.25 V (maximum)
- Response Time:	1 ms (maximum)
- Operating Temperature:	0 - 60°C (at the outside of the rack) -20 to +8OC
- Humidity:	5 - 95% (non-condensing)

Table 3, Ordering Information

Module	Circuit Board & Faceplate	Circuit Board	Faceplate
12 Vdc Output (Source)	IC600BF907B	IC600YB907B	IC600FP907B
24 **Vdc** Output (Source)	IC600BF908B	IC600YB908B	IC600FP908B
48 Vdc Output (Source)	IC600BF909B	IC600YB909B	IC600FP909B
12 Vdc Output (Sink)	IC600BF906B	IC600YB906B	lC600FP906B
24 Vdc Output (Sink)	IC600BF902B	IC600YB9202B	IC600FP902B
48 Vdc Output (Sink)	IC600BF903B	IC600YB903B	IC600FP903B

Catalog Number Revision Suffix

The equipment listed above having the catalog numbers shown and the same equipment having a higher alpha suffix is designed for listing by UL for use as auxiliary control devices. The equipment is a direct replacement for equipment having the same catalog number but a lower alpha suffix.

The UL symbol on the nameplate means the product is listed by Underwriters Laboratories Inc. (UL Standard No. 508, Industrial Control Equipment, subsection Electronic Power Conversion Equipment.)

For further information, contact your local GE Fanuc sales office.

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