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Series Six™ PLC
Programmable Controllers

GER-83516D

July, 1989

Standard & High-Capacity Rack
Input/Output Rack

General Description

The Series Six Input/Output (I/O) rack provides the regulated DC power, backplane and enclosure for the Series Six I/O modules; and is available in two versions: Standard and High-Capacity. The Standard I/O rack satisfies most applications of the Series Six Programmable Controller. The High Capacity I/O rack provides adequate current for applications utilizing I/O modules that demand collectively more than 6.1 amps. The I/O rack features and benefits are summarized in Table 1.

Up to ten I/O modules can be installed in an I/O rack in addition to an I/O receiver module (Local I/O receiver or Remote I/O receiver). On the backplane adjacent to each of the ten I/O module card slots (inside the rack enclosure) are Dual-In-line-Package (DIP) switches which allow the user to set the addresses for the corresponding I/O modules.

The Standard I/O Rack provides +5 Vdc to its backplane and operates from 115 Vac or 230 Vac sources (at 47 to 63 Hz). The input voltage is jumper-selectable by the user.

The High-Capacity I/O rack provides +5, +12, and -12 Vdc to its backplane. Input voltage is 95 to 260 Vac (no jumper selection required) at 47 to 63 Hz.

The Standard I/O rack may be upgraded to a High-Capacity I/O rack by replacing the power supply with a High-Capacity power supply.

A Light-Emitting Diode (LED) on the faceplate of the I/O rack power supply indicates that the DC power supplied by tie rack. is within tolerance.

Refer to Table 4 for I/O Rack specifications.

Table 1. Features and Benefits

Features	Benefits
Available with Interchangeable Standard or High-Capacity Power Supply module: 115 Vac or 230 Vac Operation 47Hz to 63Hz Operation	Can accommodate numerous types of 1/O modules.
Compatible with all Series Six CPUs. Used in all I/O locations.	Reduced spare-parts inventory cost.
Equipped with dual-purpose mounting brackets.	Can be rack-mounted or panel-mounted
Removeable power supply module.	Reduced downtime and inventory cost.
Addressing switches on backplane.	Easy installation of I/O modules,

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Ref. 81-PC-52

Figure 1. User Items

(Standard I/O Rack shown)

1. 41 -Pin Backplane Connector
   Mates with the connector on a plug-in module.
2. Power-Supply Front-Panel Terminal Block
   See the "Installation" section and Figure 4 of this Data Sheet.
3. Logic-Power Switch
4. DIP Switches to Set I/O module address
5. POWER Light
   On: The DC voltage output of the power supply is within tolerance.
   Off: DC voltage is out of tolerance.

Installation

The following procedures summarize the proper installation of the I/O rack. Further details on each step can be found in the Series Six Installation & Maintenance Manual, GEK-25361.

1. The I/O rack can be rack-mounted or panel-mounted. The location and orientation of the mounting brackets depends on the mount. Refer to Figure 2.

WARNING

Extreme care should be taken when making connections to the terminal block - - - 115 Vac or 230 Vac may be present.

2. Refer to Figure 3. Connect a power cord capable of carrying the current drawn by the power supply to the terminal block on the front panel. The ground terminal on the terminal block must be connected to an adequate earth ground. Ensure that the input voltage jumper is positioned correctly and secured (Standard I/O rack only). After the connections have been made, mount the protective cover over the terminalblock with the screws provided; make sure that the wires are routed through the opening in the cover.
3. Install in the card slot at the extreme left in the rack an I/O Receiver module (or Remote I/O Receiver if this is the first rack in a Remote station).

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4. Any combination of Input, Output, I/O Transmitter and/or Remote I/O Driver modules can be installed in the other ten card slots in the rack, after the DIP switches (Figure 4) for each have been set to the appropriate address as indicated in Table 2. Note that an optional wiring trough is available to facilitate field-wiring to the various modules.

NOTE

If the POWER LED does not light at power-up, or intermittent errors occur in the course of operation, the current-rating of the I/O rack could be exceeded. Refer to Table 3, I/O Current Units to determine the total current requirements within a rack.

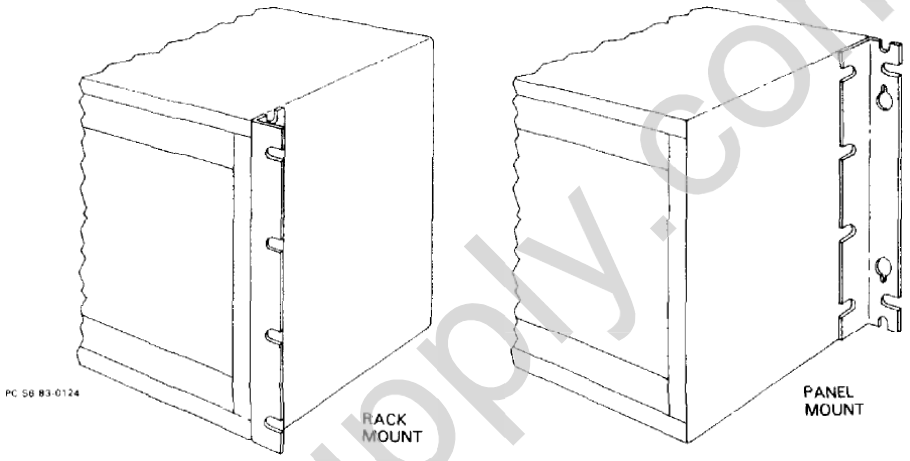


Figure 2, Use **of Mounting Brackets**

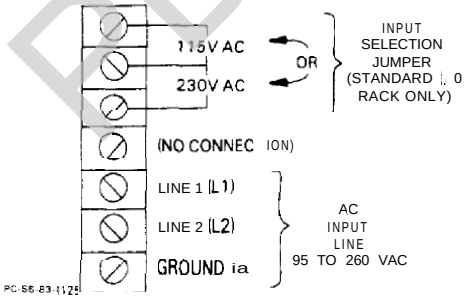


Figure 3. I/O Rack Front-Panel Terminal Block

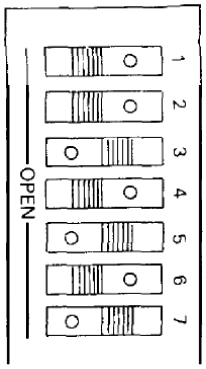


Figure 4. Dip Switch

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Table 2. Dip Switch Settings for I/O Point Selection for Eight-Circuit Modules

I/O Point	Dip Switch Position						
	7	6	5	4	3	2	1
1- 8							
9- 16							X
17- 24						X	
25- 32						X	X
33- 40					X		
41- 48					X		X
49- 56					X	X	
57- 64					X	X	X
65- 72				X			
73- 80				X			X
81- 88				X		X	
89- 96				X		X	X
97-104				X	X		
105-112				X	X		X
113-120				X	X	X	
121-128				X	X	X	X
129-136			X				
137-144			X				X
145-152			X			X	
153-160			X			X	X
161-168			X		X		
169-176			X		X		X
177-184			X		X	X	
185-192			X		X	X	X
193-200			X	X			
201-208			X	X			X
209-216			X	X		X	
217-224			X	X		X	X
225-232			X	X	X		
233-240			X	X	X		X
241-248			X	X	X	X	
249-256			X	X	X	X	X
257-264		X					
265-272		X					X
273-280		X				X	
281-288		X				X	X
289-296		X			X		
297-304		X			X		X
305-312		X			X	X	
313-320		X			X	X	X
321-328		X		X			
329-336		X		X			X

I/O Point	Dip Switch Position						
	7	6	5	4	3	2	1
337-344		X		X		X	
345-352		X		X		X	X
353-360		X		X	X		
361-368		X		X	X		X
369-376		X		X	X	X	
377-384		X		X	X	X	X
385-392		X	X				
393-400		X	X				X
401-408		X	X			X	
409-416		X	X			X	X
417-424		X	X		X		
425-432		X	X		X		X
433-440		X	X		X	X	
441-448		X	X		X	X	X
449-456		X	X	X			
457-464		X	X	X			X
465-472		X	X	X		X	
473-480		X	X	X		X	X
481-488		X	X	X	X		
489-496		X	X	X	X		X
497-504		X	X	X	X	X	
505-512		X	X	X	X	X	X
513-520	X						
521-528	X						X
529-536	X					X	
537-544	X					X	X
545-552	X				X		
553-560	X				X		X
561-568	X				X	X	
569-576	X				X	X	X
577-584	X			X			
585-592	X			X			X
593-600	X			X		X	
601-608	X			X		X	X
609-616	X			X	X		
617-624	X			X	X		X
625-632	X			X	X	X	
633-640	X			X	X	X	X
641-648	X		X				
649-656	X		X				X
657-664	X		X			X	
665-672	X		X			X	X

I/O Point	Dip Switch Position						
	7	6	5	4	3	2	1
673-680	X		X		X		
681-688	X		X		X		X
689-696	X		X		X	X	
697-704	X		X		X	X	X
705-712	X		X	X			
713-720	X		X	X			X
721-728	X		X	X		X	
729-736	X		X	X		X	X
737-744	X		X	X	X		
745-752	X		X	X	X		X
753-760	X		X	X	X	X	
761-768	X		X	X	X	X	X
769-776	X	X					
777-784	X	X					X
785-792	X	X				X	
793-800	X	X				X	X
801-808	X	X			X		
809-816	X	X			X		X
817-824	X	X			X	X	
825-832	X	X			X	X	X
833-840	X	X		X			
841-848	X	X		X			X
849-856	X	X		X		X	
857-864	X	X		X		X	X
865-872	X	X		X	X		
873-880	X	X		X	X		X
881-888	X	X		X	X	X	
889-896	X	X		X	X	X	X
897-904	X	X	X				
905-912	X	X	X				X
913-920	X	X	X			X	
921-928	X	X	X			X	X
929-936	X	X	X		X		
937-944	X	X	X		X		X
945-952	X	X	X		X	X	
953-960	X	X	X		X	X	X
961-968	X	X	X	X			
969-976	X	X	X	X			X
977-984	X	X	X	X		X	
985-992	X	X	X	X		X	X
993-1000	X	X	X	X	X		

X = Switch in OPEN Position (Depressed to the Left).

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Table 3. Summary of Units of Load for I/0 Modules

Catalog Number	Module Description	Units of Load (1)		
		+5 v	+12 v	-12 v
IC600BF800	I/O Receiver	9		s
IC600BF80 1	Remote I/O Receiver	42	10	10(2)
IC600BF802	24 to 48 V dc Input	2		
1C600BF804	115 V ac/dc Input	2	*	
IC600BF805	230 V ac/dc Input	2		
IC600BF806	12 V ac/dc Input	2		
IC600BF808	Interrupt Input	3		
[C600BF810	115 V ac/dc Isolated Input	2		I
IC600BF813	Type J **Thermocouple** Input	29	*	-
IC600BF814	Type K+ Thermocouple Input	29		
IC600BF815	Type S Thermocouple Input	29		
EC6OOBF816	Type T Thermocouple Input	29		-
IC600BF817	Type B Thermocouple Input	29		-
IC60OBF818	Type E Thermocouple Input	29		
IC600BF819	Type R Thermocouple Input	29		
IC600BF827	High Speed Counter	19	-	
IC600BF830	Advanced I/O Receiver	12		
IC600BF83 1	High Density Input	4		
IC600BF84 1	0 to 10 V dc Analog Input	29	-	
IC600BF842	10 V dc Analog Input	29	-	
IC600BF843	4 to 20 mA Analog Input	29	-	-
IC600BF900	I/O Transmitter	34		
IC600BF901	Remote I/O Driver	38	10	10(2)
IC600BF902	24 V dc Sink Output	7	b	
IC600BF903	48 V dc Sink Output	7	-	
IC600BF904	115 V ac Output	9		
IC600BF905	230 V ac Output	9		
IC600BF906	12 V dc Sink Output	7		
IC600BF907	12 V dc Source Output	7	-	
IC600BF908	24 V dc Source Output	7		
IC600BF909	48 V dc Source Output	7		
IC600BF910	115 V ac Isolated Output	8	-	
IC600BF912	230 V ac Isolated Output	8		
IC600BF914	Reed **relay** output	13		
IC6OOBF915	Axis Positioning Module, Type 1	23	7	3
IC6OOBF917	Axis Positioning Module, Type 2	21	11	6
IC600BF921	5 v TTL output	3	-	
IC600BF923	10 to 50 V dc Sink Output	3		
IC600BF924	120 **V dc** Output	5		
IC600BF929	10 to 50 V dc Source output	3		
IC600BF930	115 **V** ac Protected Output	8	-	
IC600BF941	0 to 10 V dc Analog Output	29		

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Table 3. Summary of Units of Load for I/O Modules - Continued

Catalog Number	Module Description	Units of Load (1)		
		+5 v	+12 v	-12 v
IC6OOBF942	10 V dc Analog Output	29		-
IC6OOBF943	4 to 20 mA Analog Output	29		-
IC6OOBF944	ASCII/BASIC Module (12K)	20	12	-
IC6OOBF949	ASCII/BASIC Module (28K)	20	12	-
IC6OOBF946	Loop Management Module	20	12	-
IC6OOBF947	I/O Link Local	20	12	-
IC6OOBF948	I/O CCM	20	12	-
IC6OOBF950	I/O CCM4	20	12	-
IC66OCBB900	Genius Bus Controller	20	2	
IC66OCB902	Genius Bus Controller w/Diag.	20	2	
IC660CBB901	Genius Bus Controller	20	2	
IC66OCB903	Genius Bus Controll wo/Diag.	20	2	

(I) For +5 V dc, 1 unit of load equals 60 mA (300 mw of power). For +12 and -12 V dc, 1 unit of load equals 25 mA (300 mw of power).

(2) +12 V and -12 V current is less than 1 unit of load if RS-232 mode is not used.

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Table 4, Specifications

- Dimensions:	Rack-Mount: 19.0 x 14.0 x 10.3 (inches) 483 x 356 x 261 (mm) Panel-Mount: 20.0 x 14.0 x10.3 (inches) 508 x 356 x 261 (mm)
- Weight (Empty):	30 pounds (15Kg)
- Power Supply Input @ 47Hz-63Hz:	High Capacity: 95 to 260 **Vac, 250 VA** (max.)
	Standard: 95-130 Vac 190-260 Vac 80 VA (maximum)
- Noise Immunity:	Meets requirements of NEMA ICS 2-230 and ANSI C37,90A.
- Power Supply Output:	High Capacity: +5 Vdc, 16.5 A max +12 Vdc, 1.5 A max. -12 Vdc, 1.0 A max. Total power is limited to 3 90 watts.
	Standard: +5 **Vdc, 6.1** A max.
- Allowable Power Interruptions:	33 ms minimum at 115 Vac line.
- Module Capacity:	Ten Addressable card slots, plus one non-addressable slot for an I/O Receiver module.
- Operating Temperature:	0 -60° C (outside of the rack)
- Storage Temperature:	-20C - +80C
- Humidity:	5%-95 % (non-condensing)

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Table 5. Ordering Information

Standard I/O Rack	High-Capacity I/O Rack
IC600YR501B	IC600YR511A

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.)

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