




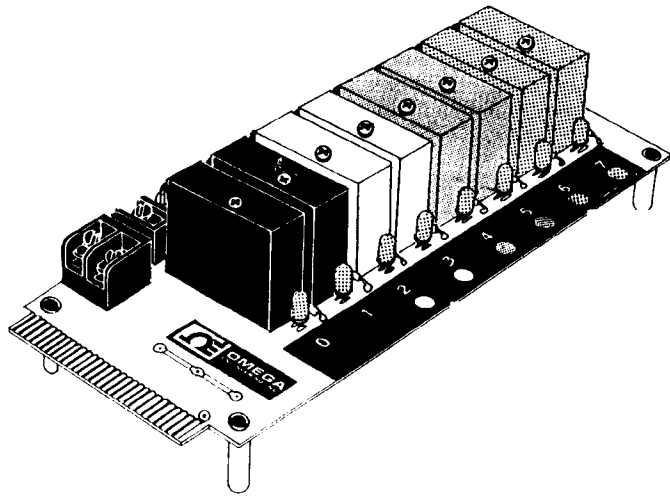


®  **ACO5-B, ACI5-B**
®  **DCO5-B, DCI5-B**
®  **Solid State Switch Modules**
—and—
®  **SSS-PC-B Series**
®  **Backplanes**



Operator's Manual
M0200/0693



WARRANTY

OMEGA warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of **13 months** from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that our customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. Our Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. However, this WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. These include contact points, fuses, and triacs.

We are glad to offer suggestions on the use of our various products. Nevertheless OMEGA only warrants that the parts manufactured by it will be as specified and free of defects.

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BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, YOU MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OUR CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence. Please have the following information available BEFORE contacting OMEGA:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems you are having with the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. That way our customers get the latest in technology and engineering.

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SOLID STATE SWITCHES INTERCHANGEABLE MODULES AC AND DC

INTRODUCTION

The OMEGA[®] Solid State Switches are available with four types of modules: 1) an ac output module (Model ACO5-B); 2) an ac input module (Model ACI5-B); 3) a dc output module (Model DCO5-B); and 4) a dc input module (Model DCI5-B).

The output modules switch low level signals (TTL) from the computer to high level ac or dc circuits; the input modules switch high level ac or dc signals to low level signals for communication to the computer.

FEATURES

- 4000 Volt isolation
- Logic levels switch high level ac and dc circuits
- High level ac and dc signals switch logic circuits

BACKPLANES

OMEGA offers a complete series of versatile backplanes to mount 4, 8, 16, or 24 Solid State Switches. The backplanes include LED indicators to indicate signal status, pull-up resistors to avoid undefined states, and power fuses for overload protection on each channel.

SSS-PC4-B: Four channel backplane with screw terminal connections. Logic power and ground are common on the signal side.

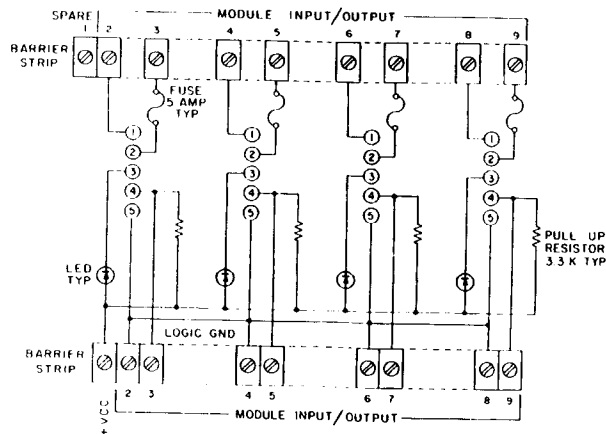
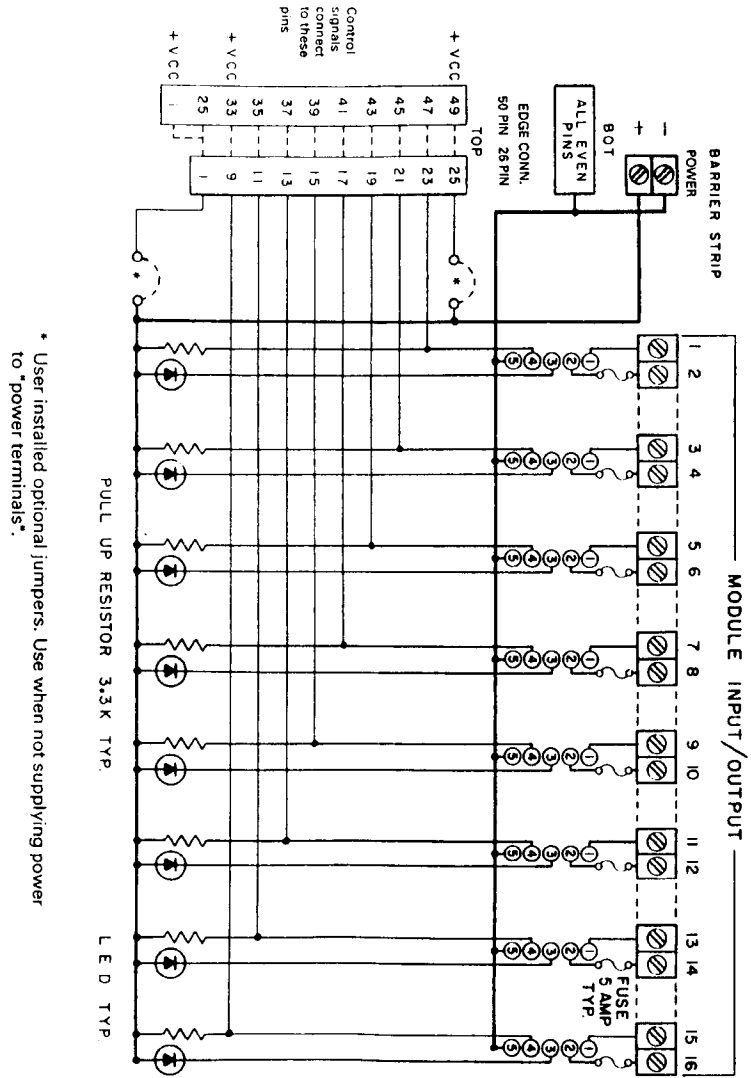


Figure 1. SSS-PC4-B Wiring Diagram

SSS-PC8-B: 8 channel backplane with channel signals, power and ground busses terminating in card edge fingers. Connection is made with either 26 or 50 pin connectors (0.10" centers).



* User installed optional jumpers. Use when not supplying power to "power terminals".

Figure 2. SSS-PC8-B Wiring Diagram

SSS-PC16-B; The 16 channel backplane is similar to the SSS-PC8-B, except that it is available with only 50 pin card edge connectors.

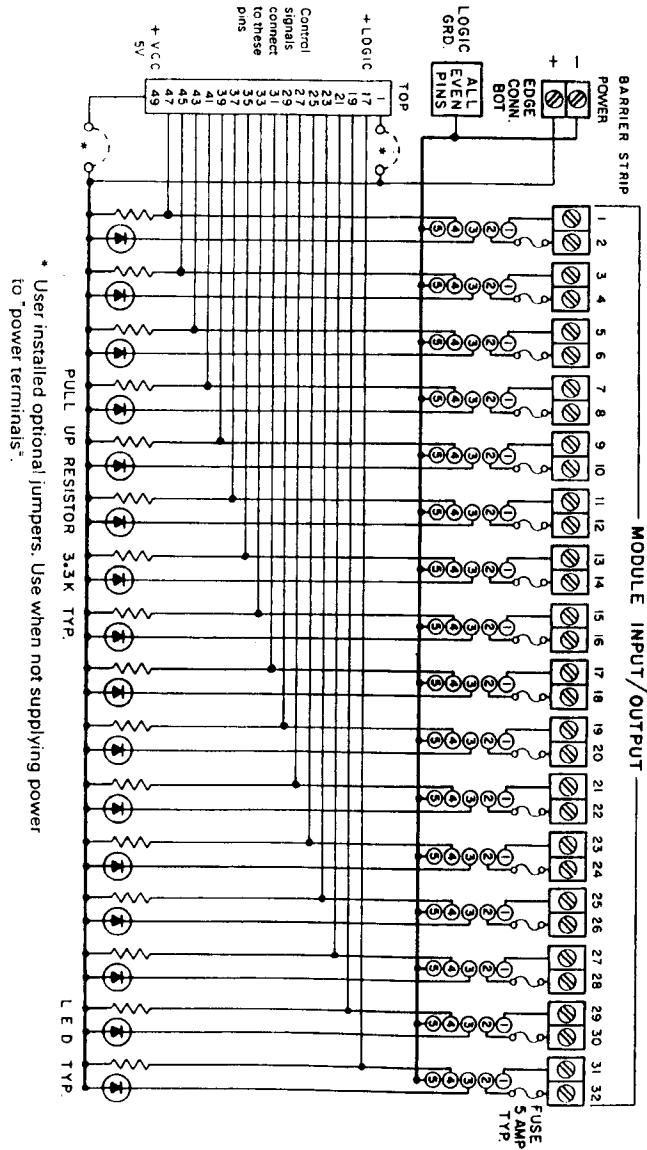
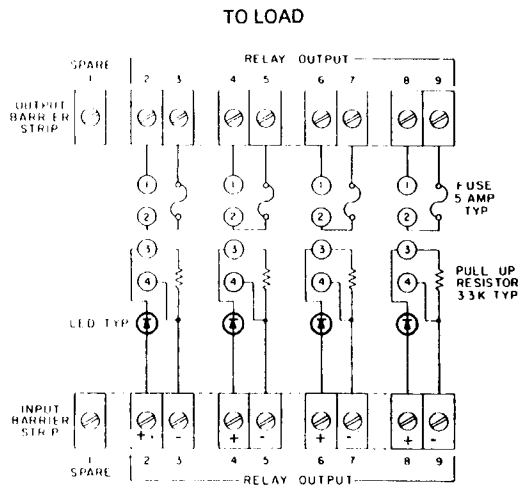


Figure 3. SSS-PC16-B Wiring Diagram

SSS-PC24-B: The 24 channel blackplane is similar to the SSS-PC8-B and the SSS-PC16-B. The SSS-PC24-B can be used for signal connections. All edge connections are gold plated over nickel plating for maximum corrosion resistance.

SSS-PC41-B: Same as SSS-PC4-B except that all channels are isolated from each other. Without the common signal ground, only output modules may be used.



NOTE
Connect your control voltage(2.5V to 5Vmax) to the "+" and "-" of the module inputs.

Figure 4. SSS-PC41-B: Module Input from Control Circuit

ACCESSORIES

PART NUMBER	DESCRIPTION
OMX-1804	Solder eye type 50 pin connector
SSS/CA2	2 ft ribbon cable with 50 pin connector
SSS-CA6	6 ft ribbon cable assembly
SSS-CA10	10 ft ribbon cable assembly
SSS-F1	1 amp optional logic power fuse
SSS-F5	5 amp spare channel power

AC OUTPUT MODULE – ACO5-B

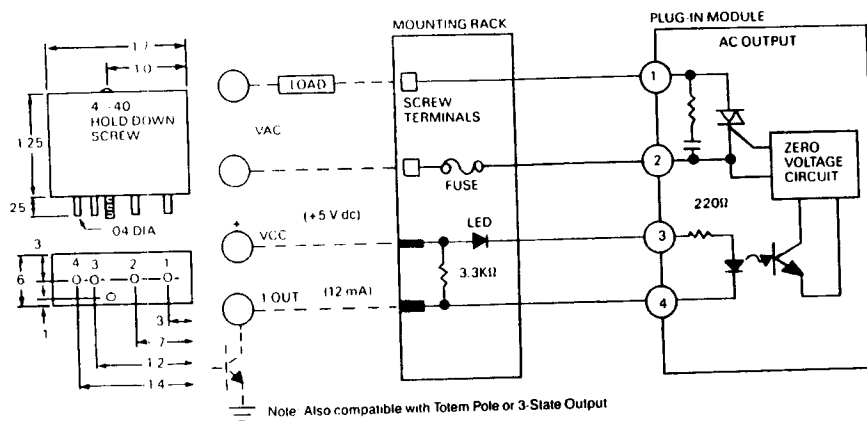


Figure 5. Wiring Diagram for the ACO5-B

SPECIFICATIONS – ACO5-B

LINE VOLTAGE:	24 to 240 Vac
CURRENT RATING:	3 amps (operating ambient -30° to $+70^{\circ}\text{C}$. 2 amps at 70°C)
ONE CYCLE SURGE:	80 amps peak
SIGNAL INPUT RESISTANCE:	250Ω
SIGNAL PICKUP VOLTS DC:	2.5 V, 8 V max.
SIGNAL DROPOUT VOLTS DC:	1 V
PEAK REPETITIVE VOLTAGE:	600V
MAXIMUM CONTACT DROP:	1.6 V
OFF STATE LEAKAGE:	6mA RMS
MINIMUM LOAD CURRENT:	20 mA
ISOLATION INPUT TO OUTPUT:	4000 V RMS
CAPACITANCE INPUT TO OUTPUT:	8 pf
STATIC DV/DT:	200 V/microsecond min.
COMMUTATING DV/DT:	0.5 power factor loads (built-in snubber)
OPERATING TEMPERATURE:	-30° to $+80^{\circ}\text{C}$
STORAGE TEMPERATURE:	-40° to $+100^{\circ}\text{C}$

AC INPUT MODULE -ACI5-B

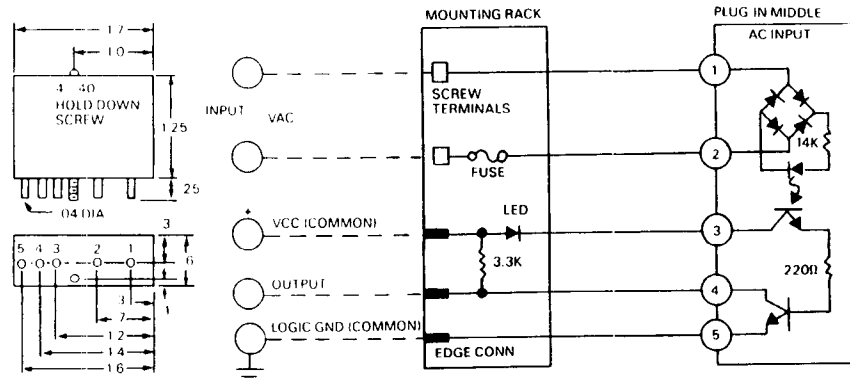


Figure 6. Wiring Diagram for the ACI5

SPECIFICATIONS -ACI5-B

AC INPUT LINE VOLTAGE:	90 to 140 V ac
INPUT CURRENT AT MAX. LINE:	10 mA
ISOLATION INPUT TO OUTPUT:	4000 V RMS
INPUT ALLOWED FOR NO OUTPUT:	40V(rms)
TURN ON TIME:	20 ms max.
TURN OFF TIME:	30 ms max.
OUTPUT TRANSISTOR:	30 V breakdown
OUTPUT CURRENT:	50 mA
OUTPUT LEAKAGE 30 V DC NO INPUT:	100 μ A max.
OUTPUT VOLTAGE DROP:	0.4 V at 50 mA load
LOGIC SUPPLY VOLTAGE DC:	4.5 to 6 V
LOGIC SUPPLY CURRENT:	16 mA
OPERATING AMBIENT:	-30° to +70°C
STORAGE TEMPERATURE:	-40° to +100°C

DC OUTPUT MODULE — DCO5-B

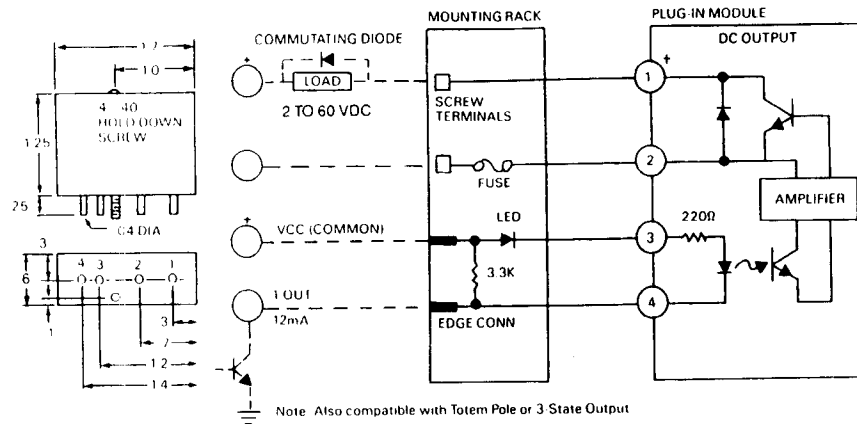


Figure 7. Wiring Diagram for the DCO5-B

SPECIFICATIONS — DCO5-B

LOAD VOLTAGE RATING:	60 V dc
OUTPUT CURRENT RATING:	3 amps (operating ambient -30° to $+70^{\circ}\text{C}$. 3 amps at 45°C , 2 amps at 70°C)
OFF STATE LEAKAGE:	1 mA max.
ISOLATION INPUT TO OUTPUT:	4000 V RMS
SIGNAL PICKUP VOLTAGE:	2.5 V; 8 V max.
SIGNAL DROPOUT VOLTAGE:	1 V
SIGNAL INPUT RESISTANCE:	$220\ \Omega$
ONE SECOND SURGE:	5 amps
TURN ON TIME:	$100\ \mu\text{s}$
TURN OFF TIME:	0.75 ms
MAXIMUM CONTACT DROP:	1.6 V
OPERATING TEMPERATURE:	-30° to $+70^{\circ}\text{C}$
STORAGE TEMPERATURE:	-40° to $+100^{\circ}\text{C}$

DC INPUT MODULE—DCI5-B

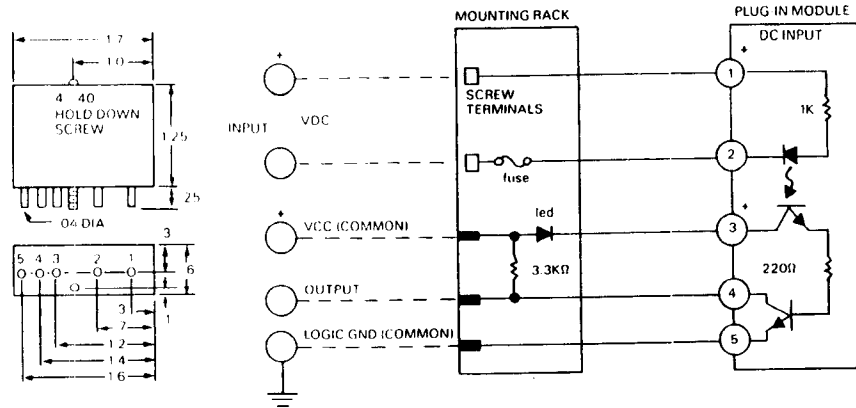


Figure 8. Wiring Diagram for the DCI5-B

SPECIFICATIONS—DCI5-B

INPUT LINE VOLTAGE:	10 to 32 V dc
INPUT CURRENT:	32 mA at 32 V
ISOLATION INPUT TO OUTPUT:	4000 V RMS
CAPACITANCE INPUT TO OUTPUT:	8 pf
INPUT ALLOWED FOR NO OUTPUT:	2 mA or 3 V
TURN ON TIME:	5 ms max.
TURN OFF TIME:	5 ms max.
OUTPUT TRANSISTOR:	30 V breakdown
OUTPUT CURRENT:	50 mA
OUTPUT LEAKAGE 30 V dc NO INPUT:	100 μ A max.
OUTPUT VOLTAGE DROP:	0.4 V at 50 mA
LOGIC SUPPLY VOLTAGE:	4.5 to 6 V; 12 to 18 V
LOGIC SUPPLY CURRENT:	12 mA; 15 mA
OPERATING AMBIENT:	-30° to +70°C

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