User's Guide

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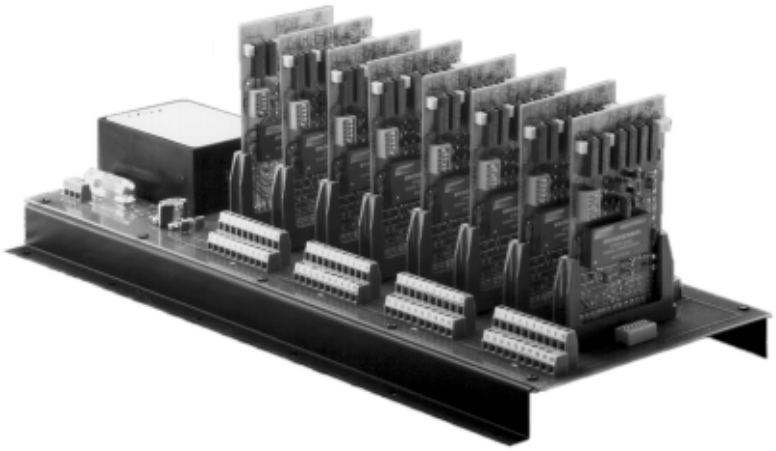

OM2-8608 Backplane

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It is the policy of OMEGA to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

WARNING: These products are not designed for use in, and should not be used for, patient-connected applications.

Features

- Eight Printed Circuit Card Edge Connectors
- 0.156" Pin Spacing
- AC or DC Operation
- Screw Clamp Terminal Blocks
- On Board Noise Filters

Description

The OMEGA OM2-8608 Backplane is a convenient mounting system for up to eight signal conditioners, alarms and/or controls. The backplane measures 7.5" x 16.5" and can be mounted into a variety of standard 19" relay rack enclosures. All connections are easily made with a screwdriver. The screw terminal blocks will accept AWG wire sizes 22 to 16.

The OM2-8608 board is available with either an AC line or a DC input power supply. The AC line model is available with either 100, 115, 220, 230 or 240 Volt 50/60 Hz input. The DC option is available for 10 to 36 Volts DC input or 24 to 72 Volts DC. For noise suppression, power supply input and output common mode choke filters are on the DC models and a common mode choke filter is on the output of the AC model.

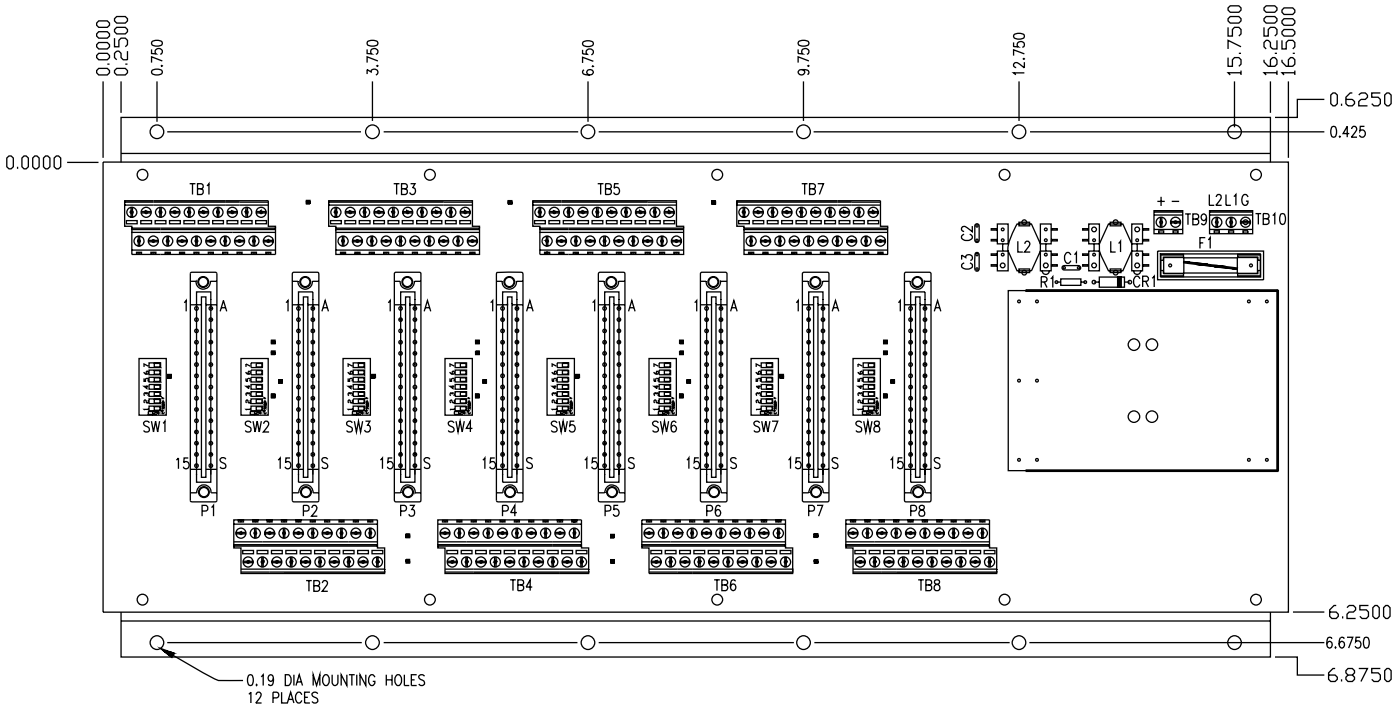


Figure 1.

Notes: Unless Otherwise Specified

1. This drawing is a dimensional reference document to be used as an aid for locating mounting holes.
2. Mounting Rail is 0.050 thick.

Specifications

Model	OM2-8608-24DC	OM2-8608-48DC	OM2-8608-115AC	OM2-8608-23AC
Input Range	10-38VDC	24-72VDC	115 VAC	230 VAC
Power Supply	24D15.400	48D15.400	2.15.350-115	2.15.350-230
Frequency			50/60 Hz	50/60 Hz
Temperature	Operating 0°C to +55°C			
Size	7.5" W x 16.5" L x 6.2" H			
Weight	1 lb. 6 oz.	1 lb. 6 oz.	3.018 lbs.	3.018 lbs.

Note: State the desired input voltage range when ordering.

DC Operation

The DC input models use a DC/DC converter to provide the ±15 Volt power for all eight channels. The input power supply negative lead is tied to the 8610 ±15 Volt common bus through a 1 megohm resistor and a 0.1µF/100V capacitor. Input and output common mode filters are provided on the board to limit high frequency noise. The positive input is fused with a slow blow fuse and has a series diode to prevent damage from reverse polarity.

Eight Model OM2-8608 each driving a 350 ohm bridge with 10 volts excitation will draw about 353 mA from the +15 Volt supply and 13 mA from the negative 15 Volt supply. This will load the DC/DC converter to about 46% of its 12 Watt rating and the input current for the 24 VDC will be approximately as follows:

Input Voltage	Current
10	0.75 Amp
12	0.60 Amp
18	0.40 Amp
24	0.30 Amp
36	0.20 Amp

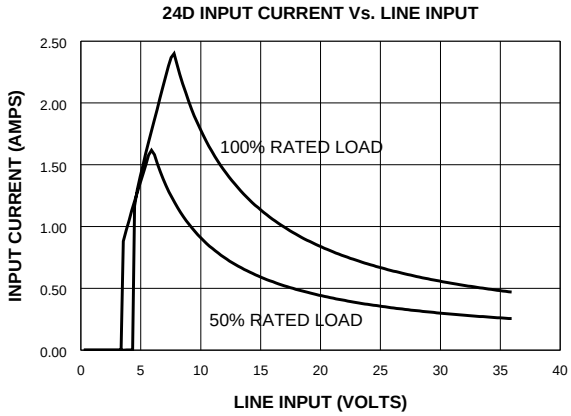
Below 10 Volts input, the converter will continue to operate and the input current will rise above 1 Amp before the current begins to decrease. See the 24D INPUT CURRENT Vs LINE INPUT (Figure 3). Note from the curves that it is possible for an under rated input power source to lock up at a voltage too low to operate the DC/DC converter. Also note that the series diode is rated for 1.5 Ampere and that a fully loaded 24D15.400 will draw close to 2.5 Amp as the input voltage drops below 10 Volts. Hence operation at full load and low line should be avoided.

The input power source can have 120 Hertz ripple up to 1 Volt peak to peak at 10 Volts and 2 Volts peak to peak above 12 Volts input.

The 8608 is also available with a 48 Volt converter which operates from 24 to 72 Volts input. The input currents will be proportionally less. See the 48D INPUT CURRENT Vs LINE INPUT (Figure 3).

OM2-8608 Backplane Pin Out for -15 VDC			
Model	**Switch 6**	**Switch 7**	**Pin**
OM2-160	off	ON	E
OM2-161	ON	off	C
OM2-165	off	ON	E

FIGURE 2.



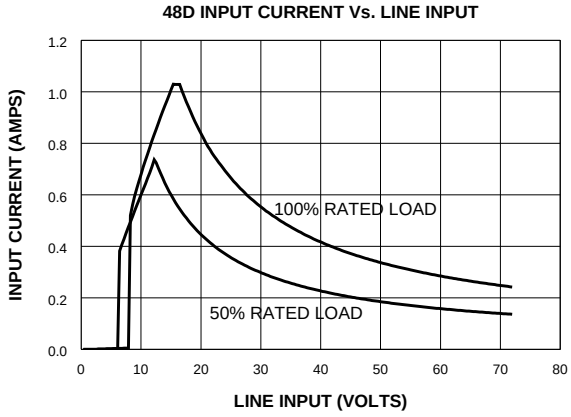


FIGURE 3.

Wiring Tips

Two terminals on each of the screw terminal blocks are tied to the common bus for connection to shields or other points that must be connected to signal common. The positive 15 Volt supply is tied to pin A on all eight card connectors.

The power supply common, which is also the signal common, is connected to pin B. The negative 15 Volt supply is brought out to each dip switch at switch 6 and 7. This allows the connection of the -15 Volts to either pin C or Pin E of the card edge connector, which is required for most Instrumentation Modules. See figure 2 for which pin and OMEGA Modules require -15 Volts.

Edge Connector & Dip Switch

Dip switches 1 - 5 either short or open connections between the edge connector to convert it from a 15 pin connector to a 30 pin connector, which the OM2-161 Bridgesensor requires. With switches 1 - 5 ON, the edge connector is configured as a 15 pin connector for all OMEGA Mounting Kits with the exception of the OM2-161 Bridgesensor (See figure 4). With switches 1 - 5 OFF, the edge connector is configured as a 30 pin connector for the OM2-161 Bridgesensor (See figure 5).

Pin Assignments (Dip Switches 1 - 5 ON)			
Terminal Block Pin	**Edge Connector Pin**	**Terminal Block Pin**	**Edge Connector Pin**
1	C	11	B = CMN
2	D	12	K
3	D	13	L
4	E	14	M
5	F	15	N
6	H	16	P
7	H	17	R
8	J	18	R
9	K	19	S
10	B = CMN	20	S

FIGURE 4.

Pin out Assignments for All OMEGA Modules except the OM2-161.

Pin Assignments (Dip Switches 1-5 OFF)		
Terminal Block Pin	**Edge Connector Pin**	**Jumper Wire Via Dip Switch**
1	C & 3	
2	D	Dip Switch 1 ON will short D & 4
3	4	
4	E & 5	
5	F & 6	
6	H	Dip Switch 2 ON will short H & 7
7	7	
8	J & 8	
9	K	Dip Switch 3 ON will short K & 9
10	B & 2 = CMN	
11	B & 2 = CMN	
12	9	Dip Switch 3 ON will short K & 9
13	L & 10	
14	M & 11	
15	N & 12	
16	P & 13	
17	R	Dip Switch 4 ON will short R & 4
18	14	
19	S	Dip Switch 5 ON will short S & 15
20	15	

FIGURE 5.

Pin out Assignments for OM2-161

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OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship 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 OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's 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. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been 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 are not warranted, including but not limited to contact points, fuses, and triacs.

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Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S 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.

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FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

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1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

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