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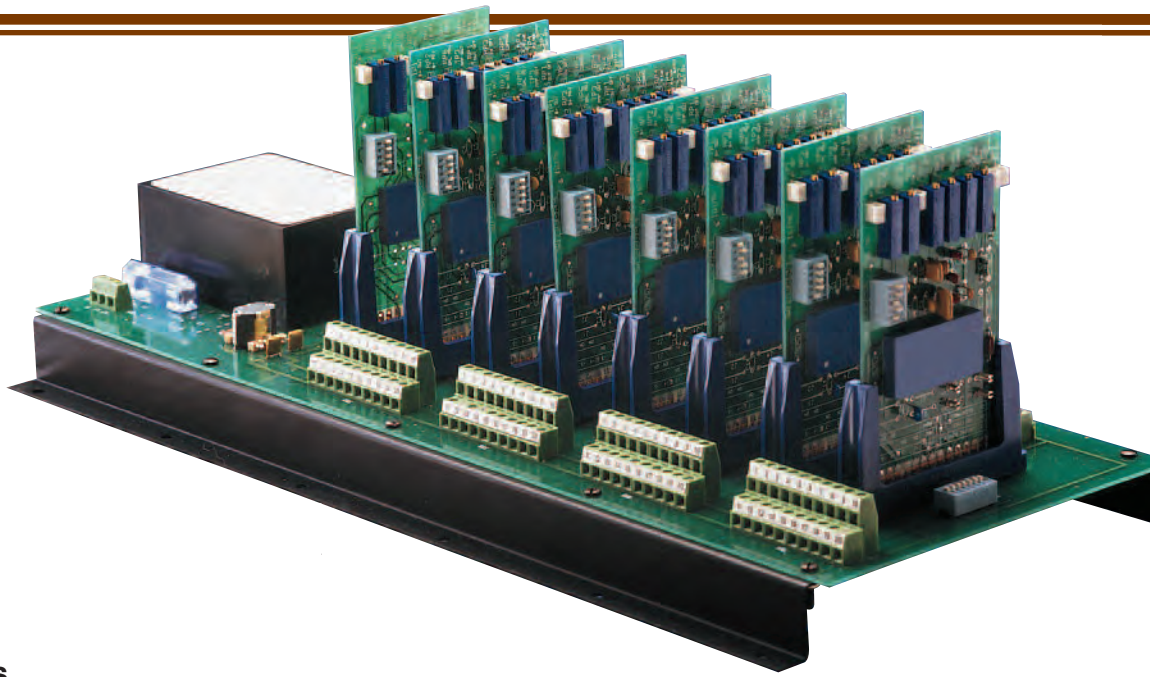
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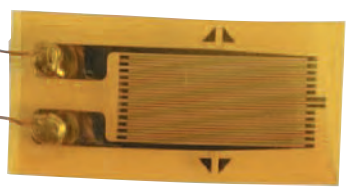
MODULAR SIGNAL CONDITIONING SYSTEM
FOR STRAIN GAGE BRIDGES, mV, AND OTHER SENSOR SIGNALS

OM2 Series

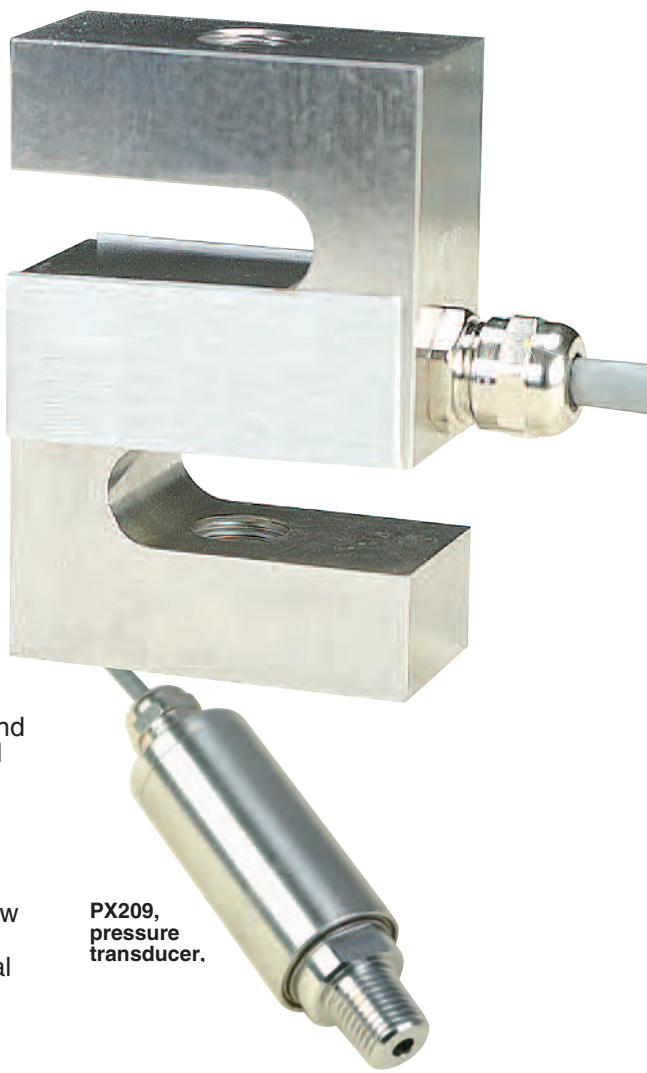


MADE IN USA — 5 YEAR WARRANTY

- Compact, Light, and Convenient to Use
- Easy Access to All Trimpots
- Integral Bridge Completion Resistors
- Adjustable Bridge Sensor Excitation
- Adjustable Filter Frequency— AC or DC Operation
- Screw-Clamp Terminal Blocks



SGD Series strain gage, shown larger than actual size, see page E-12 for details.



PX209, pressure transducer.

The OMEGA® OM2 modular signal conditioning system provides a low-cost, versatile method of interconnecting a variety of analog signals to measurement and control systems. OM2 modules interface directly with sensors and analog signal devices such as strain gages and mV output sensors. The module conditions the input signal to an amplified voltage output of ±10 Vdc, allowing longer signal transmission and interfacing with data acquisition products such as analog/digital cards, data loggers, PLCs, and chart recorders. The backplane includes a power supply (to power the modules) and rails for convenient mounting. All connections are easily made with a screwdriver.

The backplane is available with a 115 Vac, 230 Vac, or 10 to 36 Vdc power supply.The backplane and signal conditioner assembly afford a convenient, lightweight, and accurate method of multiple signal conditioning in instrumentation environments. The signal conditioning modules can also be used by themselves as single amplifier devices. An optional interface mounting block with screw terminations permits easy power and output signal hookup. A typical system includes 6 modules and 1 backplane/power supply assembly.

STRAIN GAGE BRIDGE AMPLIFIER MODULES
WITH INTEGRAL BRIDGE COMPLETION CIRCUITRY

MADE IN USA — 5 YEAR WARRANTY



- Half- or Full-Bridge Inputs
- Integral Zero and Span Adjustments
- Gain of 2 to 5000
- Adjustable Filtering
- Remote Sensing
- Eliminates Lead Resistance Effects
- 0.002% Linearity
- DIP Switch Frequency Cutoff Adjustment
- On-Board Bridge Balance

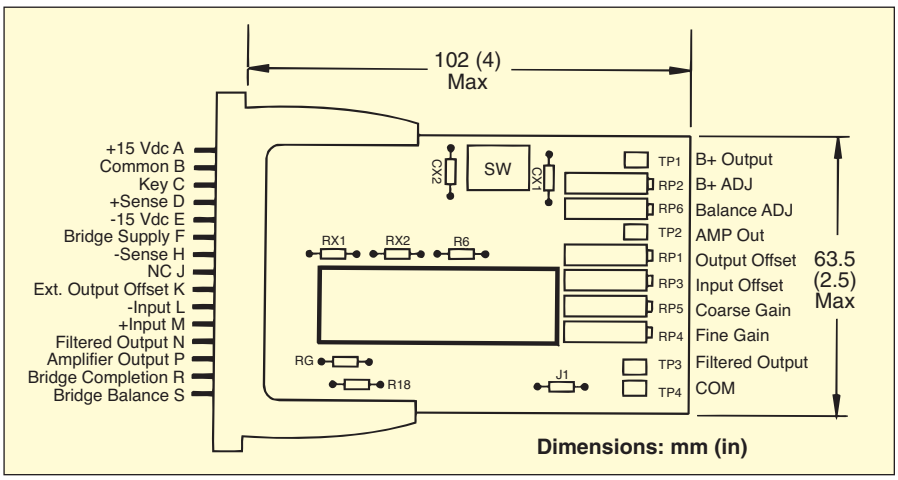
The OM2-162 is a complete signal conditioning system on a card designed expressly for either half- or full-bridge transducers. It consists of a high-performance instrumentation amplifier, a user-adjustable active filter, a high-stability bridge supply, and all the required circuitry, trimpots, etc. To get a complete system up and running, the only required point-to-point wiring is for inputs, outputs, and power.

The unit provides coarse and fine gain-adjustment trimpots, along with input and output offset adjustments, DIP switches for setting the bridge supply output, and active low-pass filter cutoff frequency. There are also provisions for mounting a quarter-bridge completion resistor and a calibration resistor, which can be wired to an external CAL switch. Two close-tracking half-bridge completion resistors are included.

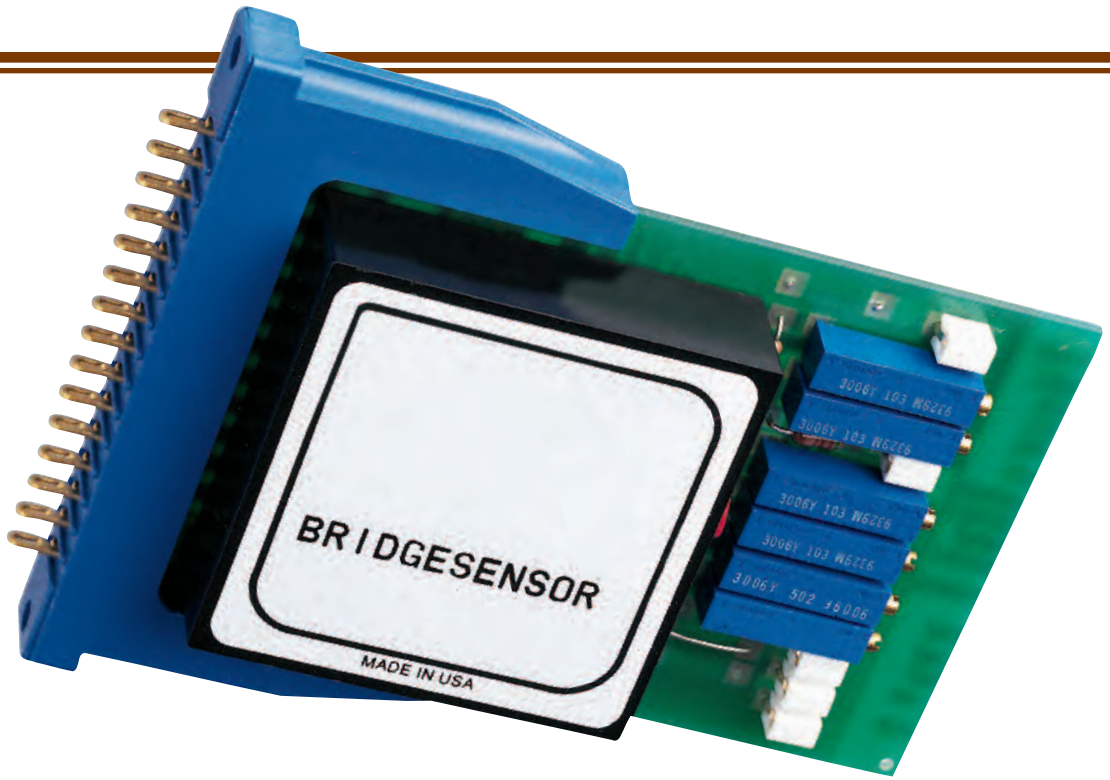
SPECIFICATIONS

Gain Range: 100 to 500
(2 to 5000 with external resistor)
External Resistor Calculation:
R = 100,000/(gain-2)
Max Output Voltage: ±10 Vdc
Linearity: 0.002%
Output Offset Range: ±0 Vdc
Input Power:
±15 Vdc @ 12 mA
Bridge Supply: 4 to 10 Vdc @ 130 mA
Line and Load Regulation: 0.05%
Output Noise: 200 pV p-p
Dynamic Response: 10 kHz @ gain 100; adjustable filter 10, 100, 1000 Hz unfiltered bandwidth 25 kHz
Gain Change with Temperature:
75 ppm/°C
Input Impedance: 4 GΩ
Common-Mode Input Voltage:
±15 Vdc maximum
Input Noise Voltage: 0.1 to 10 Hz, 0.3 µV p-p; 10 to 100 Hz, 1.0 µV p-p

Half-Bridge Completion:
Nominal Resistance Value: 10 kΩ
Initial Accuracy: ±0.1%
Temperature Tracking: 5 ppm/°C
Balance Adjustment Range: 350 Ω
Bridge: ±15 mV
Operating Temperature:
-25 to 55°C (-13 to 131°F)
Storage Temperature:
-40 to 80°C (-40 to 176°F)



STRAIN GAGE BRIDGE AMPLIFIER MODULE
WITH OPEN-COLLECTOR OUTPUT



MADE IN USA 5 YEAR WARRANTY

- ¼, ½, and Full-Bridge Inputs
- Gain of 2 to 5000
- Remote Sensing Eliminates Lead Resistance Effects
- On-Board Bridge Balance Trimpot
- DIP Switch Cutoff Frequency Adjustment
- Bridge Supply from 4 to 10 Vdc
- ½ Bridge Completion Resistors On-Board
- ¼ Bridge Completion Resistor—User Supplied

The OM2-163 is a complete signal conditioning system on a card designed expressly for single half- or full-bridge transducers. It consists of a high-performance instrumentation amplifier, a user-adjustable active filter, a high-stability bridge supply, and all the required circuitry, trimpots, etc. To get a complete system up and running, the only required point-to-point wiring is inputs, outputs, and power.

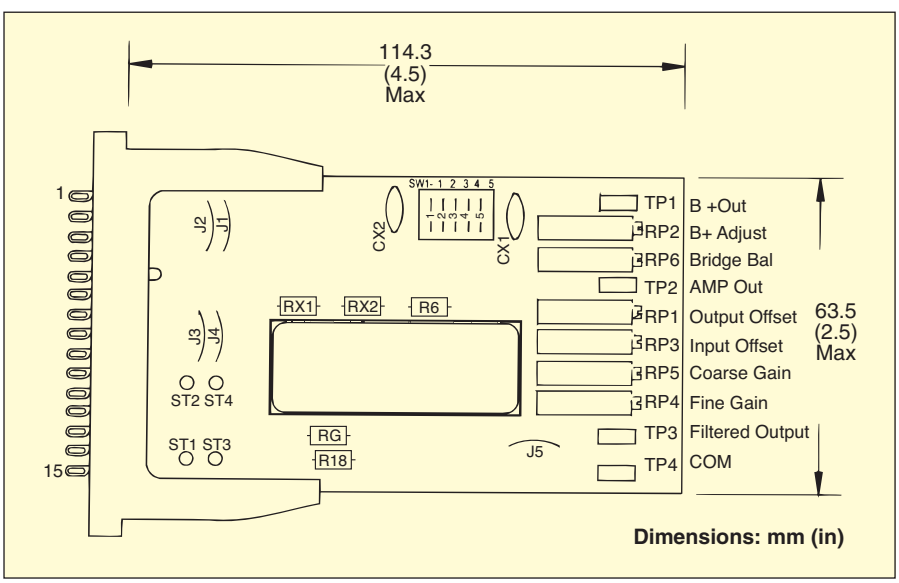
The unit provides coarse and fine gain adjustments, along with input and output offset adjustments, DIP switches for setting the bridge supply output, and active low-pass filter cutoff frequency.

SPECIFICATIONS

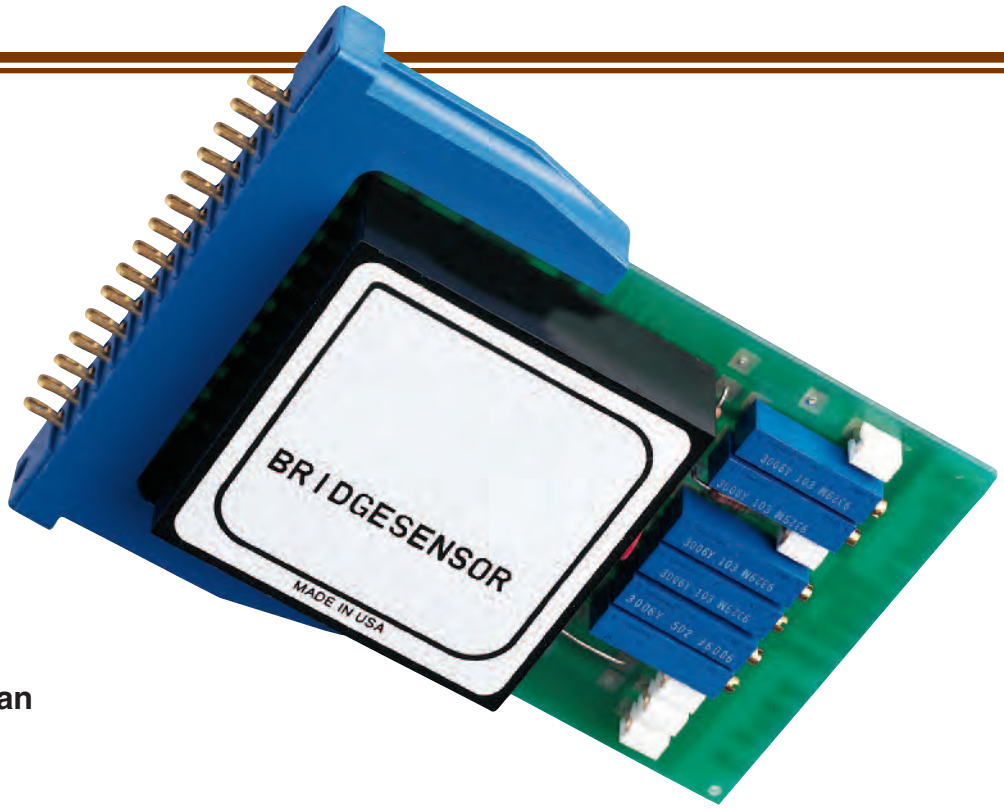
Gain Range: 100 to 500 card only, 2 to 5000 with external resistor
External Gain Resistor Calculation: R = 100,000/(gain – 2)

Output Max: ±10 Vdc
Linearity: 0.002%
Input Offset Voltage (Adjustable): ±2 mV
Input Power: ±15 Vdc @ 45 mA
Bridge Supply: 4 to 10 Vdc @ 120 mA
Load Regulation: 0.02% max
Noise Voltage: 1 mVrms max
Dynamic Response @ Gain 100: 10 kHz
Gain Temp Coefficient: ±75 ppm/°C using trimpots; 25 ppm/°C alone

Input Resistance: Differential 10 MΩ
Common Mode: 500 MΩ
Common-Mode Voltage: -7 to 7V
Minimum Load Resistance: 2 kΩ
Hysteresis: 8 mV max
Leakage Current: 10 µA
Response Time: 70 µs
Operating Temperature Range: -25 to 55°C (-13 to 131°F)



STRAIN GAGE BRIDGE AMPLIFIER MODULE
WITH OPEN COLLECTOR OUTPUT



MADE IN USA 5 YEAR WARRANTY

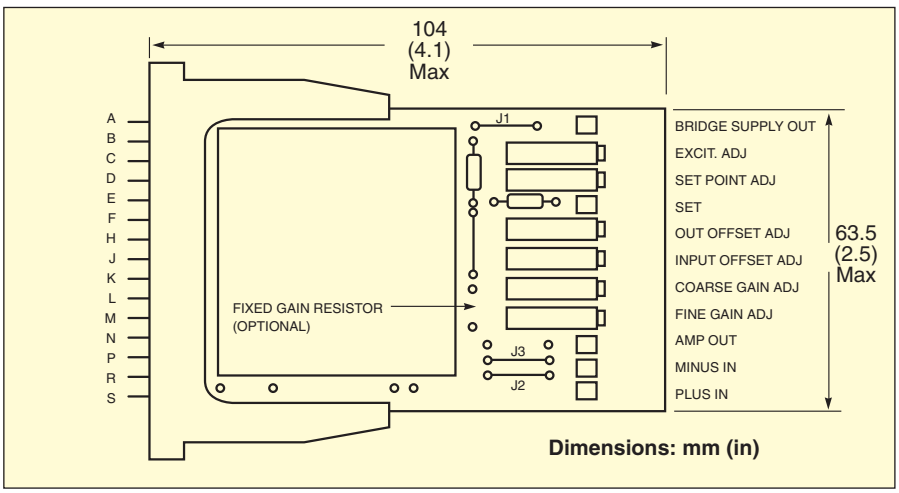
- **Solid State Open-Collector Output (100 mA max)**
- **Integral Zero and Span Adjustments**
- **Gain of 10 to 1000**
- **Remote Sensing Eliminates Lead Resistance Effects**

The OM2-165 module is a complete signal conditioning system designed for use with strain gage–based transducers. It provides 4 to 10 Vdc to excite a strain gage or other type of bridge signal. A sensitive comparator that can be connected to monitor the amplifier output is included. The comparator drives a solid state switch that can be used to operate a relay, light, or audible alarm. The solid state switch has non-latching and latching capability. It is packaged in a state-of-the-art hybrid circuit, which is mounted on a PC board mounting kit containing all required external circuitry and trim potentiometers.

The card has trimpots for coarse and fine gain adjustments, input adjustments, and offset adjustments. DIP switches set the bridge supply output. A complete instrumentation or control system can be set up using the OM2-165, a power source, and a strain gage type transducer. The OM2-165 module has a user-selectable gain between 10 and 1000.

SPECIFICATIONS

Gain Range: 10 to 1000
Output Max: ±10 Vdc
Linearity: 0.01%
Input Offset Voltage (Adjustable): ±2 mV
Input Power: ±15 Vdc @ 45 mA
Bridge Supply: 4 to 10 Vdc @ 100 mA
Load Regulation: 0.01% max
Noise Voltage: 1 mV rms max
Dynamic Response @ Gain 100: 10 kHz
Gain Temp Coefficient: ±50 ppm/°C
Input Resistance: Differential 10 MΩ
Common Mode: 500 MΩ
Common-Mode Voltage: -7 to 7V
Minimum Load Resistance: 2 kΩ
Open Collector Output: 16 Vdc @ 100 mA
Hysteresis: 8 mV max
Leakage Current: 10 µA
Response Time: 70 µs
Operating Temperature Range: 0 to 70°C (32 to 158°F)



MODULAR SIGNAL CONDITIONING SYSTEM
¼, ½, FULL BRIDGE, 1 TO 8 CHANNELS

AVAILABLE FOR FAST DELIVERY!

To Order *(Specify Model Number)*

MODEL NO.	PRICE	GAIN RANGE*	DESCRIPTION
OM2-162		2 to 5000	Signal conditioning module for ½ and full-strain bridge circuits
OM2-163		10 to 1000	Signal conditioning module for ¼, ½ or full-strain bridge circuits or transducers with open-collector output
OM2-165*		10 to 1000	Signal conditioning module for full-strain bridge circuits or transducers with open-collector output

** 10V maximum.*

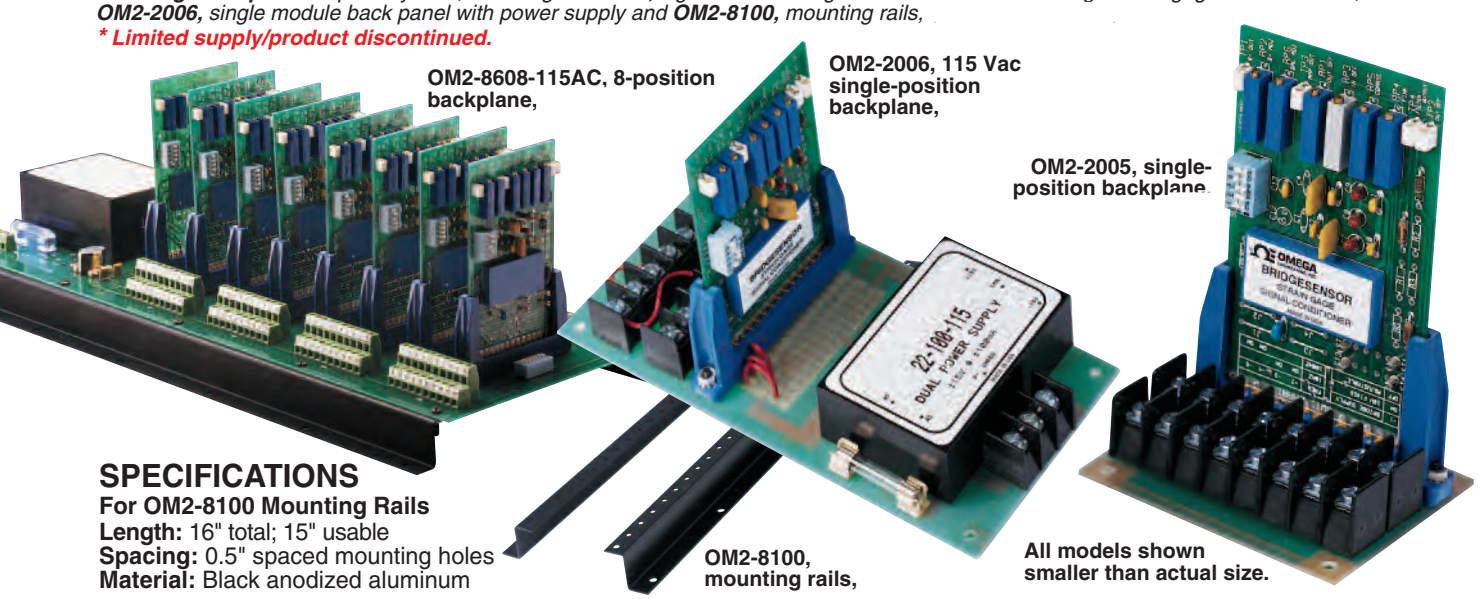
ACCESSORIES

MODEL NO.	PRICE	DESCRIPTION
OM2-8608-115AC		115 Vac powered backplane for 8 OM2 signal conditioning modules with power supply and mounting rails included
OM2-8608-230AC		230 Vac powered backplane for 8 OM2 signal conditioning modules with power supply and mounting rails included
OM2-8608-24DC		DC-powered backplane for 8 OM2 signal conditioning modules with power supply and mounting rails included; 10 to 36 Vdc power
OM2-8608-48DC		DC-powered backplane for 8 OM2 signal conditioning modules with power supply and mounting rails included; 24 to 72 Vdc power
OM2-2006		115 Vac powered backplane for one OM2 signal conditioning module with power supply (mounting rails not included; not compatible with OM2-163)
OM2-2005		Backplane for one OM2 signal conditioning module (screw terminals only; not compatible with OM2-163)
OM2-8100		Two 16" mounting rails (2 rails already included with OM2-8608)

Comes complete with operator's manual.

Ordering Example: *Complete system, including* ***OM2-162,*** *signal conditioning module for ½ and full-bridge strain gage measurement,* ***OM2-2006,*** *single module back panel with power supply and* ***OM2-8100,*** *mounting rails,*

**** Limited supply/product discontinued.***



SPECIFICATIONS

For OM2-8100 Mounting Rails
Length: 16" total; 15" usable
Spacing: 0.5" spaced mounting holes
Material: Black anodized aluminum

SPECIFICATIONS
FOR OM2 SERIES BACKPLANES

MODEL	OM2-8608-115AC	OM2-8608-230AC	OM2-8608-24DC	OM2-8608-48DC	OM2-2006	OM2-2005
Input Range	115 Vac ±10V	230 Vac ±10V	10 to 36 Vdc	24 to 72 Vdc	115 Vac ±10 V	N/A
Frequency	50/60 Hz	50/60 Hz	N/A	N/A	50/60 Hz	N/A
Temperature	0 to 55°C 32 to 131°F	0 to 55°C 32 to 131°F	0 to 55°C 32 to 131°F	0 to 55°C 32 to 131°F	0 to 55°C 32 to 131°F	0 to 55°C 32 to 131°F
Size	159 x 419 mm (6.25 x 16.5")	159 x 419 mm (6.25 x 16.5")	159 x 419 mm (6.25 x 16.5")	159 x 419 mm (6.25 x 16.5")	89 x 175 mm (3.5 x 6.9")	70 x 83 mm (2.75 x 3.25")
Weight	1.43 kg (3 lb, 3 oz)	1.43 kg (3 lb, 3 oz)	0.62 kg (1 lb, 6 oz)	0.62 kg (1 lb, 6 oz)	425 g (15 oz)	113 g (4 oz)

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