Accessories for 8B Analog Modules

Features

- 2-, 4-, 8-, 16-Position Backpanels
- 19-Inch Mounting Rack For Backpanels
- Interface Cables
- Cable-to-Screw-Terminal Interface Board
- Power Supplies

8BP02, 8BP04, 8BP08, 8BP16

2-, 4-, 8-, and 16-Position Analog I/O Backpanels

Description

The 8BP02, 04, 08, and 16 backpanels can accept any of the 8B analog I/O modules in any mixture and can be mounted on the SCMXRK-002 19-inch metal rack. Analog I/O signal channels provide each module with its own analog bus. All module outputs are simultaneously accessible to high-speed data acquisition (ADC) boards. A temperature sensor is mounted on each channel to provide cold junction compensation for thermocouple input modules (see Figure 5 for schematic). Field connections are terminated with four screw terminals at each module site. Use system interface cable SCMXCA006-XX for connection to the host system.

Specifications

Operating Temperature	–40°C to +85°C
Relative Humidity	95% non-condensing
Interface Connector:	
Field	high density screw clamp, 16 AWG max
System	high density screw clamp, 16 AWG max

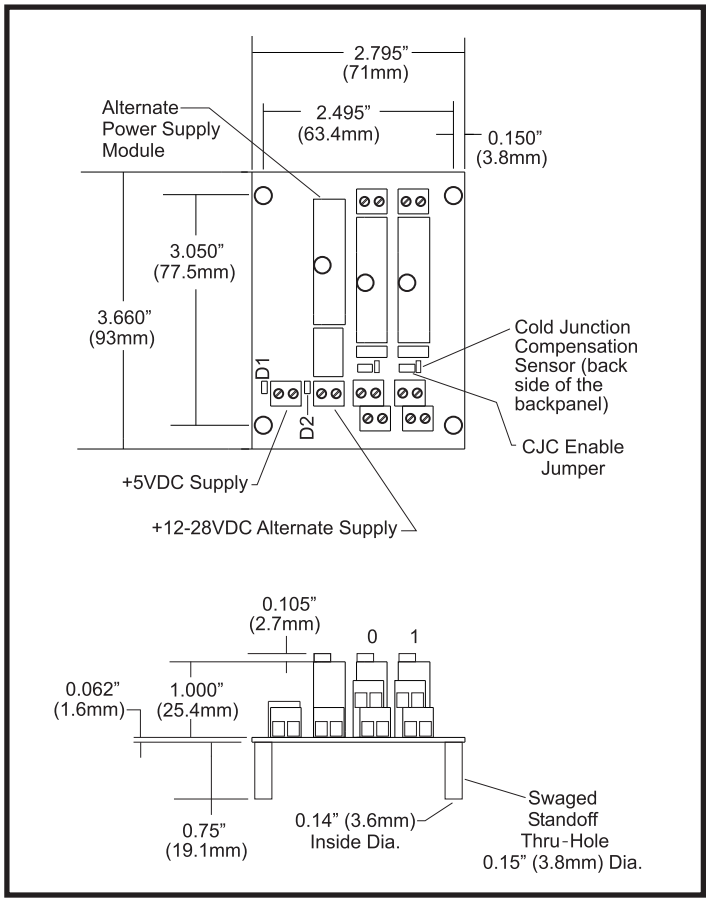


Figure 1: 8BP02 Analog I/O Backpanel

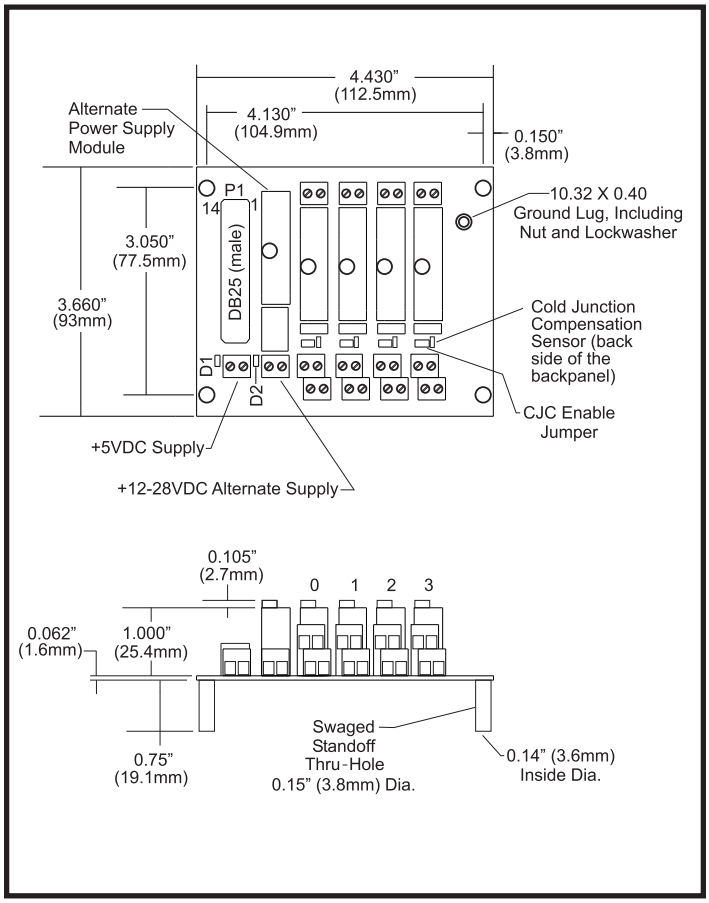


Figure 2: 8BP04 Analog I/O Backpanel

Electrical

Power

The 8B backpanels have two power supply options. A +5VDC ±5% supply can be connected to the '+5V Supply' terminal block, or alternatively, a wide ranging 12-28VDC supply can be connected to the 'Alternate Supply' terminal block. In the latter case, the 8BPWR-2 module must be installed on the backpanel. The backpanel contains circuitry which automatically switches between the supplies such that only one at a time provides power to the modules. When power connections are made to both terminal blocks simultaneously, the 12-28VDC supply takes precedence over the +5VDC supply.

Fusing

Backpanel power is fuse-protected through F1 and F2. Zener diodes D3 and D4 provide extra protection from overvoltage and supply reversal.

Grounding

For full protection against large electrical disturbances on the field-side of the 8B modules, a #10-32 ground stud is provided on the backpanel. An electrical connection between this ground stud and the system ground should be provided with a large gage wire of the shortest possible length.

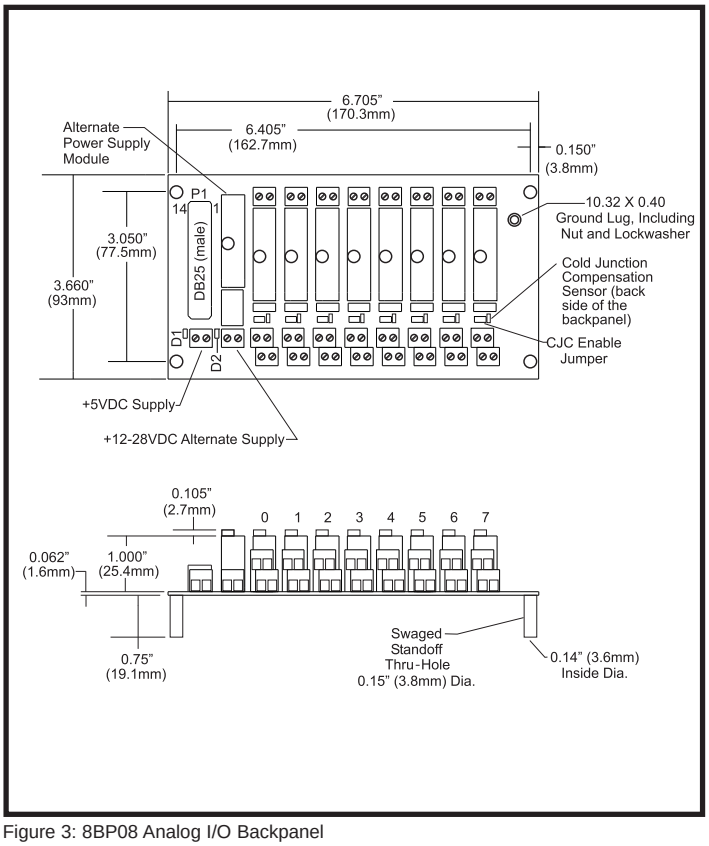


Figure 3: 8BP08 Analog I/O Backpanel

Ordering Information

Part Number	Description
8BP02	Standard 2-channel backpanel with standoffs for mounting.
8BP02-1	8BP02 without cold junction compensation sensor. Use when cost savings are desired and thermocouple input modules 8B37 and 8B47 will not be used.
8BP02-2	8BP02 with DIN rail mounting option. The backpanel is captured by DIN rail mounting elements and is shipped fully assembled.
8BP02-3	8BP02-1 with DIN rail mounting option.
8BP04	Standard 4-channel backpanel with standoffs for mounting.
8BP04-1	8BP04 without cold junction compensation sensor. Use when cost savings are desired and thermocouple input modules 8B37 and 8B47 will not be used.
8BP04-2	8BP04 with DIN rail mounting option. The backpanel is captured by DIN rail mounting elements and is shipped fully assembled.
8BP04-3	8BP04-1 with DIN rail mounting option.
8BP08	Standard 8-channel backpanel with standoffs for mounting.
8BP08-1	8BP08 without cold junction compensation sensor. Use when cost savings are desired and thermocouple input modules 8B37 and 8B47 will not be used.
8BP08-2	8BP08 with DIN rail mounting option. The backpanel is captured by DIN rail mounting elements and is shipped fully assembled.
8BP08-3	8BP08-1 with DIN rail mounting option.
8BP16	Standard 16-channel backpanel with standoffs for mounting.
8BP16-1	8BP16 without cold junction compensation sensor. Use when cost savings are desired and thermocouple input modules 8B37 and 8B47 will not be used.
8BP16-2	8BP16 with DIN rail mounting option. The backpanel is captured by DIN rail mounting elements and is shipped fully assembled.
8BP16-3	8BP16-1 with DIN rail mounting option.

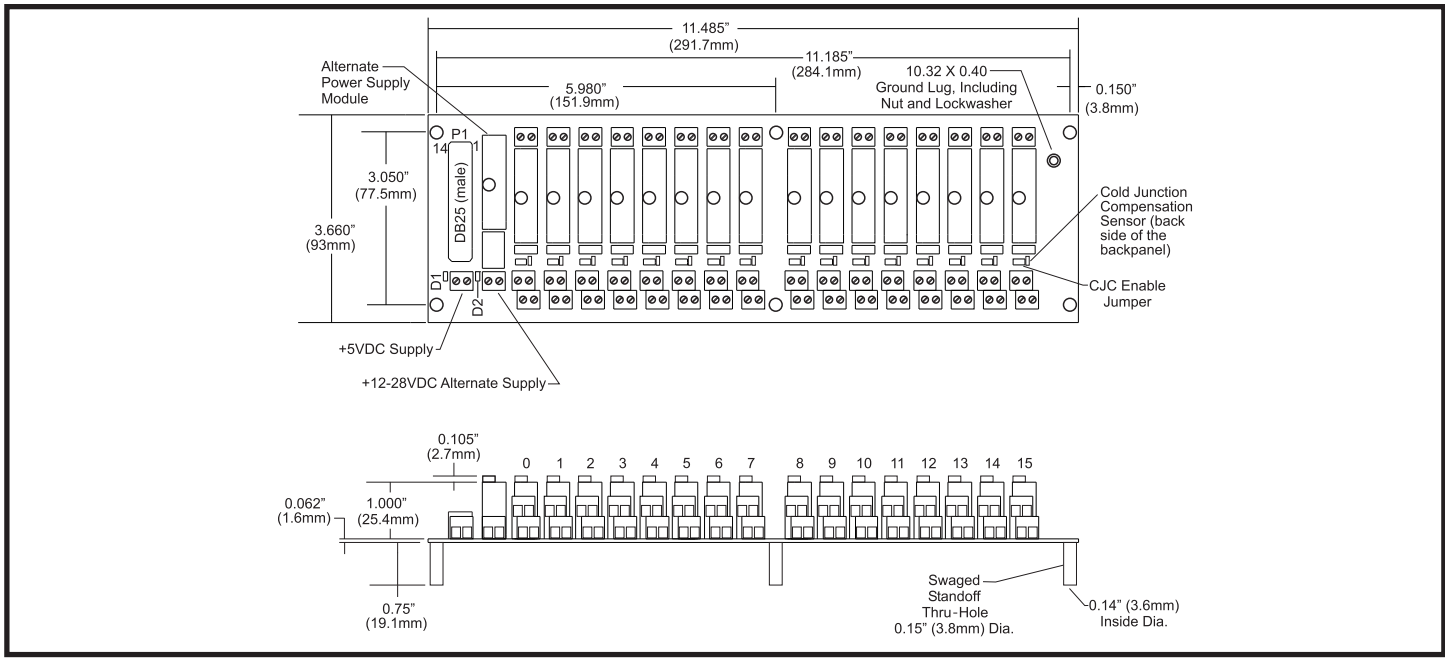


Figure 4: 8BP16 Analog I/O Backpanel

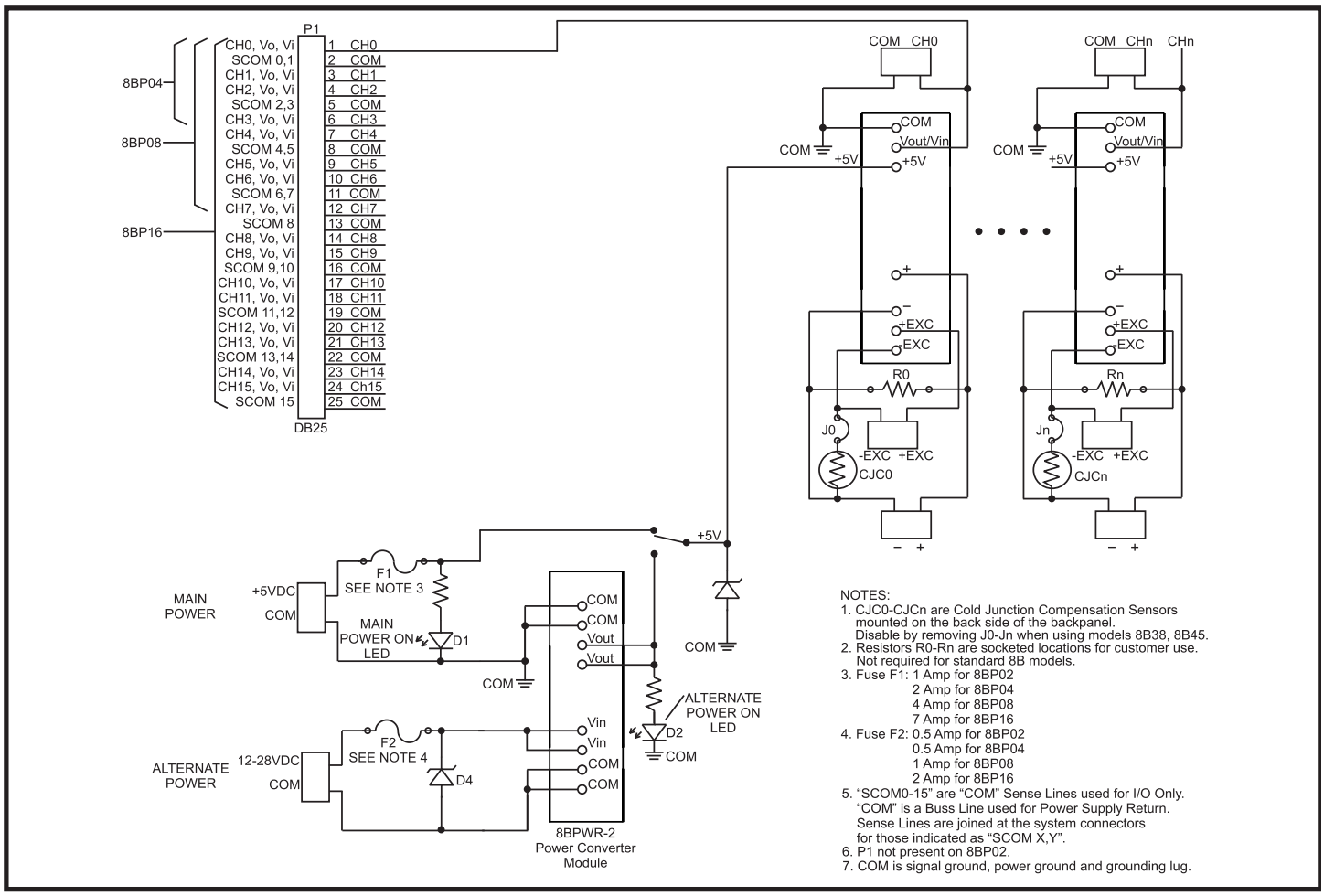


Figure 5: 8BP02/8BP04/8BP08/8BP16 Schematic

8BPWR-2

Power Supply Module

Description

The 8BPWR-2 encapsulated power supply has a wide ranging 7-34VDC input voltage range and provides 5VDC output suitable for all 8B modules. It is designed to mount on the 8B backpanels. The compact size and low weight are ideal for high-density applications (see Figure 6).

Specifications

Typical at T_A=+25°C and +24V power

Module	8BPWR-2
Input Voltage Range Overvoltage Protection Reverse Voltage Protection	7 to 34VDC None (provided on backpanel) None (provided on backpanel)
Output Voltage Output Voltage Temp. Coeff. Output Current Output Current Limit Line Regulation Load Regulation Efficiency	5VDC ±1% ±200ppm/°C 2A (–40°C to +75°C) 1.7A (+85°C) 3A, Auto Recovery ±0.20% ±0.30% 85%
Output Ripple	50mVp-p
Mechanical Dimensions (h)(w)(d)	1.11" x 1.65" x 0.40" (28.1mm x 41.9mm x 10.2mm)

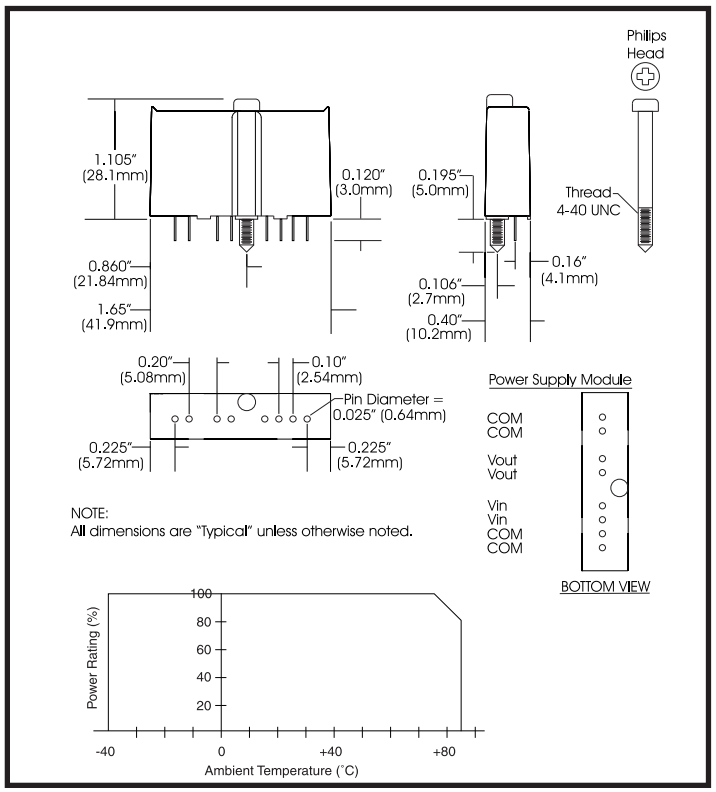


Figure 6: 8BPWR-2 Power Supply Module

SCMXPRT-001, SCMXPRE-001

Power Supplies

Description

The SCMXPRT-001 and SCMXPRE-001 encapsulated power supplies are available in 120VAC or 220VAC input voltage ranges and provide 5VDC outputs suitable for all 8B modules. They are designed to mount on the SCMXRK-002 metal rack (see Figure 12). The supplies are UL-recognized. Their compact size and low weight are ideal for high-density applications (see Figure 7).

Specifications

Module	SCMXPRT-001	SCMXPRE-001
Input Voltage Range, 47Hz to 420Hz	105 to 125VAC	210 to 250VAC
Output Voltage	5VDC	5VDC
Output Current, +50°C	1A	1A
Operating Temperature	–20°C to +71°C	–20°C to +71°C
Line Regulation	±0.05%	±0.05%
Load Regulation	±0.25%	±0.25%
Output Ripple, max	1mVrms	1mVrms
Weight	1.25 lbs (567g)	1.25 lbs (567g)

Supplies are UL recognized, File No. E45344.

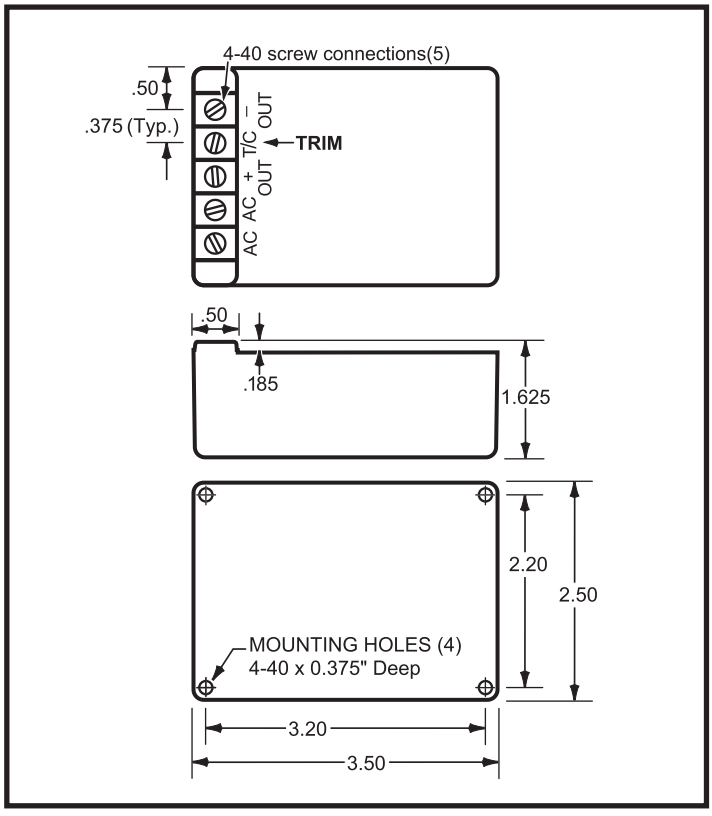


Figure 7: SCMXPRT-001/E-001 Physical Dimensions

SCMXPRT-003, SCMXPRE-003

Power Supplies

Description

The SCMXPRT/E-003 linear power supplies are available in 120VAC or 220VAC input. They have sufficient output current capacity to supply any combination of 8B modules. The SCMXRK-002 metal rack provides mounting capability for the SCMXPRT/E-003 power supplies (see Figure 12).

Specifications

Module	SCMXPRT-003	SCMXPRE-003
Input Voltage Range, 47Hz to 63Hz	104 to 132VAC	207 to 265VAC
Output Voltage	5VDC ±1%	5VDC ±1%
Output Current (at +70°C)	3A	3A
Output Current (at +50°C)	6A	6A
Operating Temp	0 to +70°C	0 to +70°C
Dielectric Withstand Voltage (input to ground)	3750VAC	3750VAC
Line Regulation (10% line change)	±0.05%	±0.05%
Load Regulation (50% load change)	±0.05%	±0.05%
Output Ripple (max)	5mVp-p	5mVp-p
Overvoltage Protection (factory set)	6.2V ±0.4V	6.2V ±0.4V

Both supplies are tested and certified by TUV to VDE 0806 and IEC 380. They are UL Recognized (File Number E55974), CSA Certified (CSA File Number LR38879), and CE Compliant.

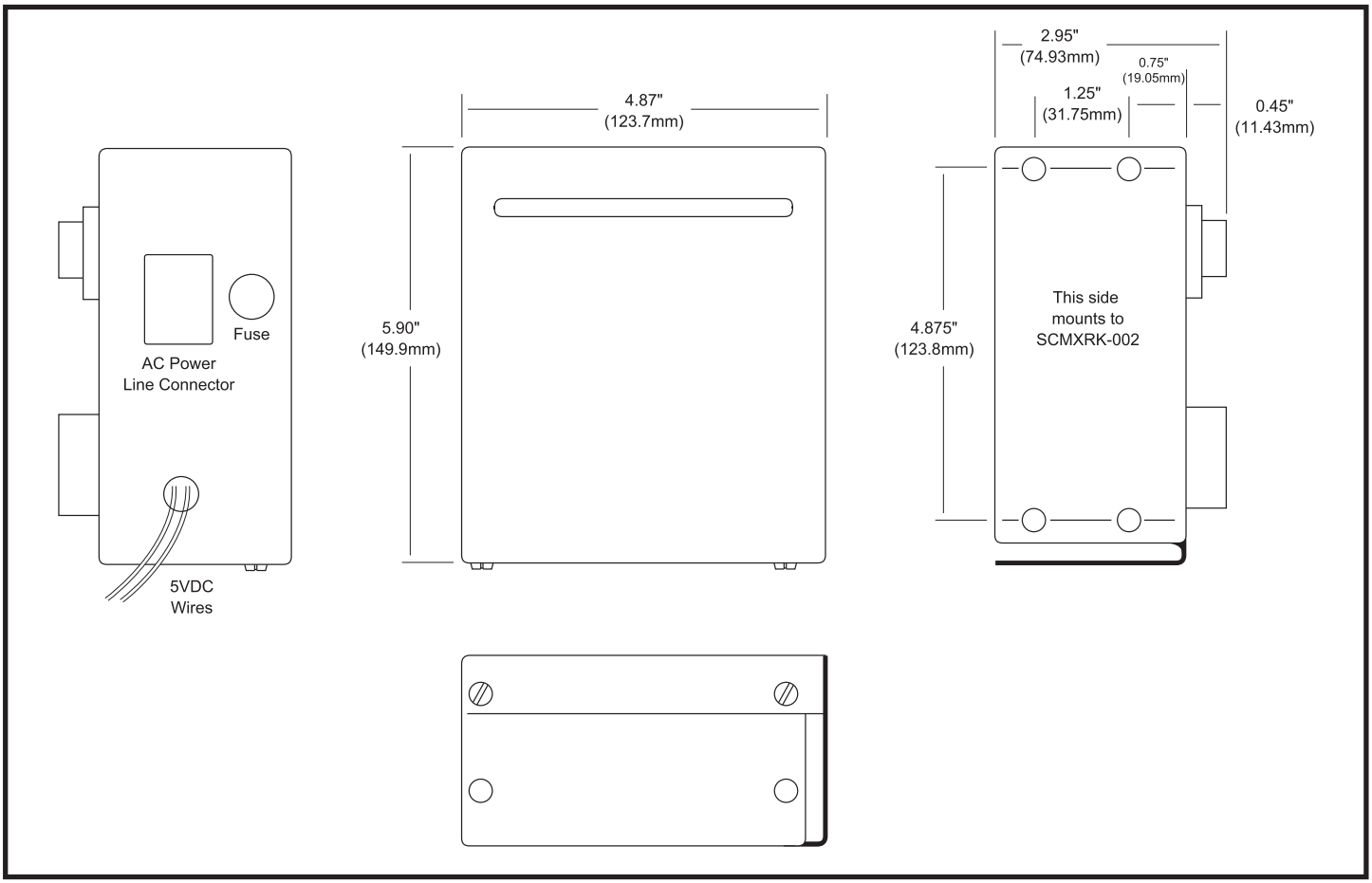


Figure 8: SCMXPRT-003/E-003 Physical Dimensions

PWR-4505

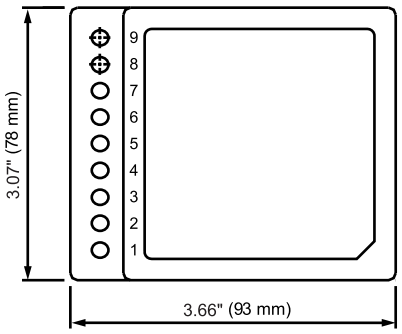
25W Single Output Industrial DIN Rail Switching Power Supply

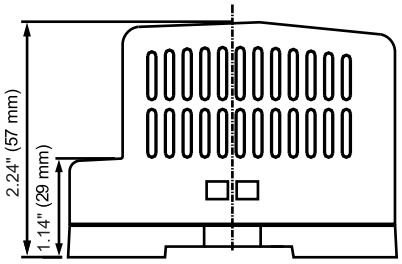
Specifications

Input Frequency Input Current Inrush Current Efficiency	85 to 264VAC, 120 to 370VDC 47 to 63Hz 1.5A/115VAC, 0.75A/230VAC Cold start 30A/115VAC, 60A/230VAC 72%
Output Voltage & Current Rating Temperature Coefficient Ripple Voltage	5V, 5A ±0.03%/°C 100mVp-p
Overload Protection Over Voltage Protection Over Temperature Protection	105 to 150% rated output power 5.75 to 6.75V 135°C detect on heatsink of power transistor
Dielectric Strength	Between input and output terminals: 3kV, 1 minute Between input and FG: 1.5kV, 1 minute Between output and FG: 0.5kV, 1 minute
Insulation Resistance	Between input and output terminals/input and FG/ output and FG: 100MΩ/500VDC
Operating Temperature Storage Temperature Relative Humidity	–10°C to +50°C –20°C to +85°C 10 to 95%
Mechanical Dimensions (l)(w)(h)	3.66" x 3.07" x 2.24" (93mm x 78mm x 57mm)
Terminal Screw	M3

▶ Features

- Universal AC Input (85 to 264VAC)
- DC Compatible Input (120 to 370VDC)
- Protections: Short Circuit, Overload, Over Voltage, Over Temperature
- Mounts on DIN Rail TS-35/7.5 & 15
- Approvals: UL, CUL, TUV, CB, CE
- CE Compliant, UL 508 Listed
- TUV EN60950-1 Approved
- Compliant with EMC Directive EN50082-2
- LED Indicator for Power On





Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	6,7	DC OUTPUT+V
2	AC/N	8	LED
3	FG ⏚	9	+V ADJ.
4,5	DC OUTPUT -V		

Figure 9: PWR-4505 Physical Dimensions

SCMXCA006-01, -02, -07

Interface Cables

Description

SCMXCA006-XX

System interface cable for the 8BP04/08/16 backpanels. This is a DB25 Male/Female cable assembly. It can be ordered in lengths of 1m, 2m, and 7m (see Figure 10).

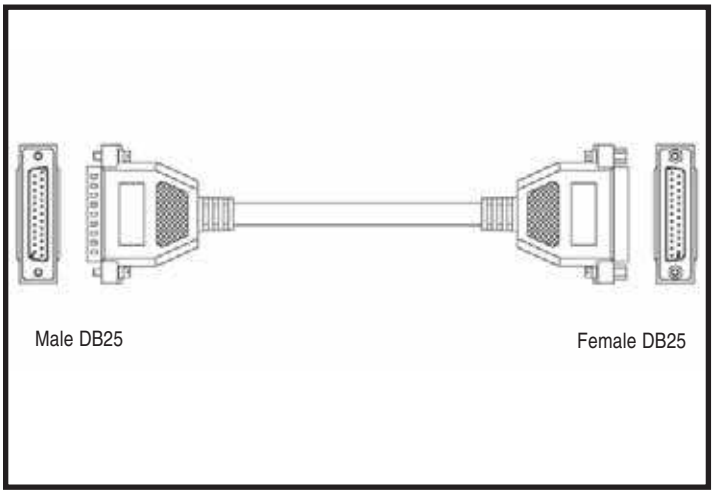


Figure 10: SCMXCA006-XX System Interface Cable

8BXIF (-DIN)

Universal Interface Board

Description

The SCMXIF is a universal interface board which converts a DB25 cable input to 25 screw terminals for discrete wire. It can be mounted on the back of the SCMXRK-002 mounting rack (8BXIF) or on a DIN rail (8BXIF-DIN). Required mounting hardware is included. Use SCMXCA006-XX cable (see Figure 11 for dimensions).

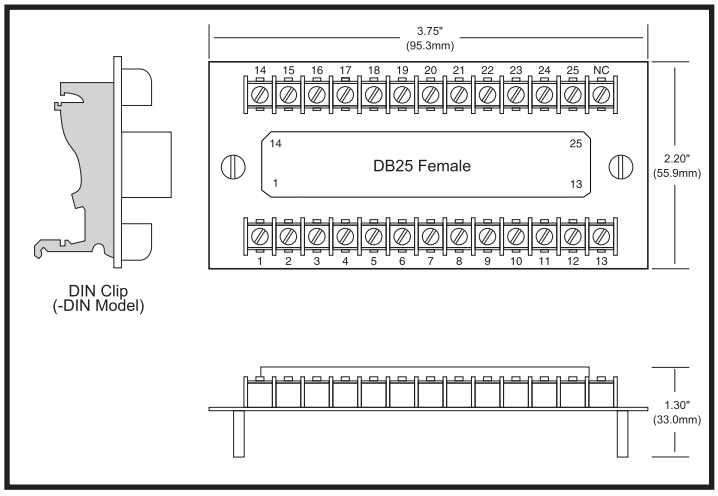


Figure 11: 8BXIF Universal Interface Board Dimensions

4001-111

Interface Cable

Description

The 4001-111 is a 5-foot cable for interfacing legacy data acquisition systems formerly using 3B or 5B modules to modern 8B or 7B backpanels.

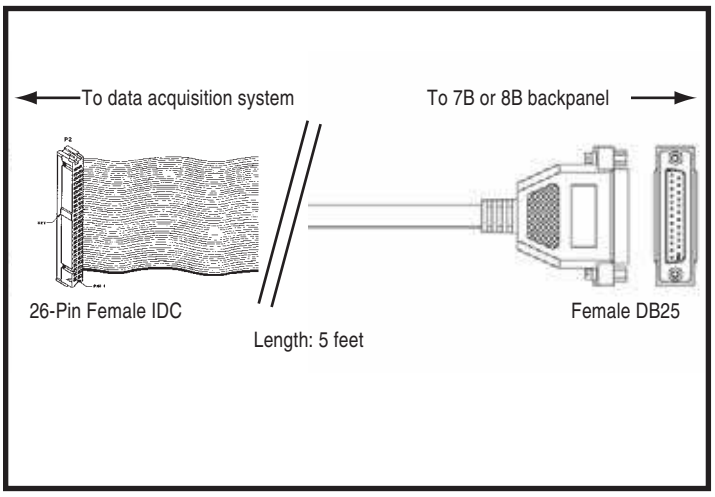


Figure 12: 4001-111 Interface Cable, 26-pin female IDC connector to DB25 Female

SCMXRK-002

19-Inch Metal Mounting Rack

Description

The SCMXRK-002 is a 19-inch metal rack for mounting the 8BP04/08/16 backpanels and the 8BXIF interface board (see Figure 12 for dimensions).

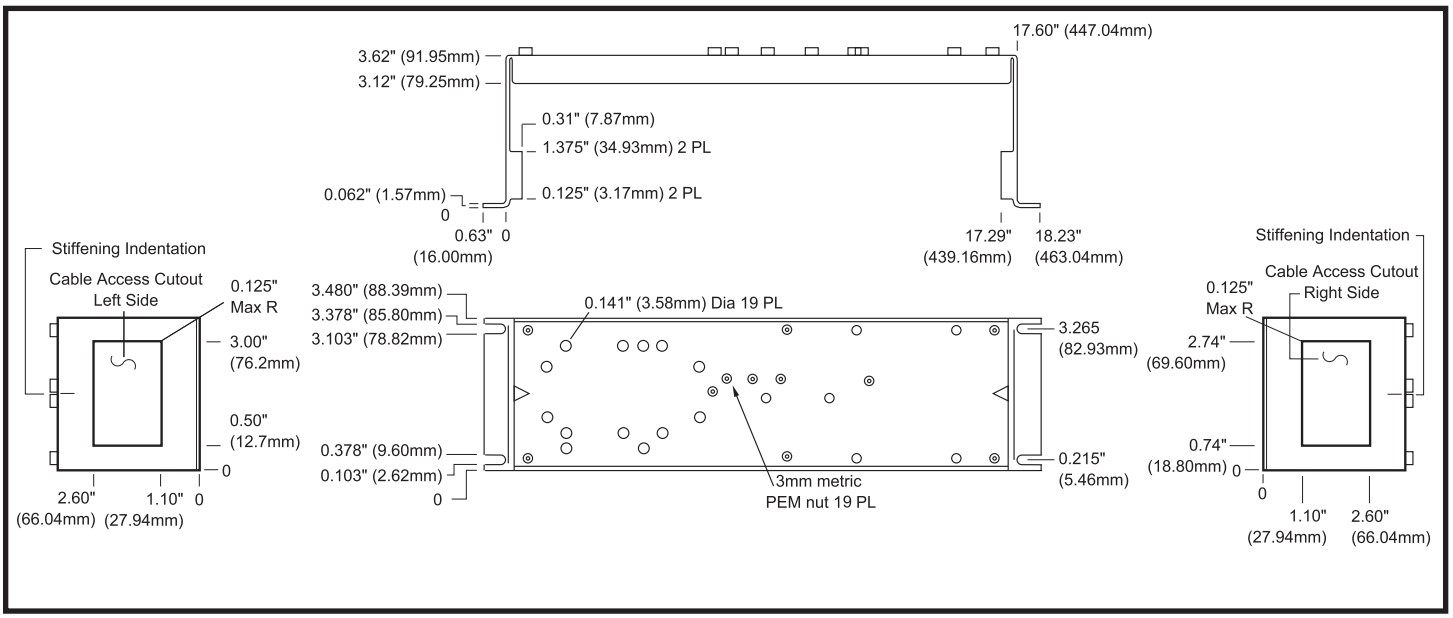


Figure 13: SCMXRK-002 Analog Rack Dimensions

SCMXRAIL1-XX, SCMXRAIL2-XX, SCMXRAIL3-XX

DIN Rail

Description

Three styles of DIN rail are available. Specify length (-xx) in meters when ordering, -01 for 1 meter or -02 for 2 meter.

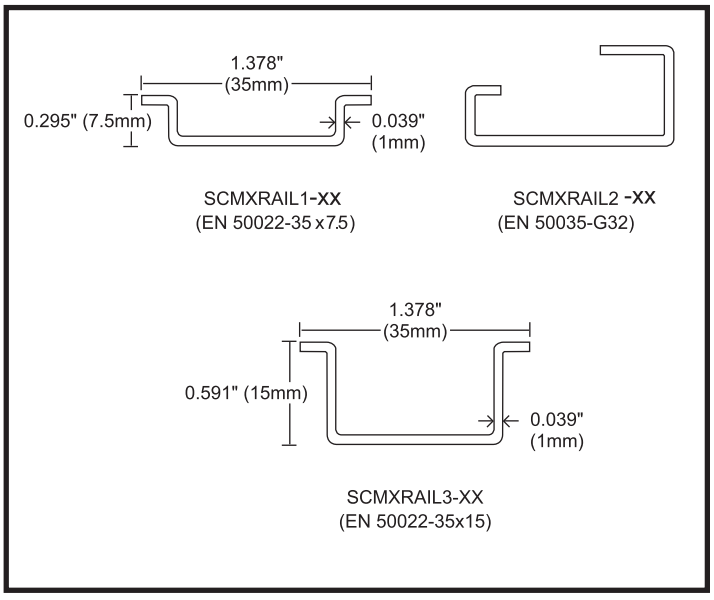


Figure 14: DIN Rail Styles

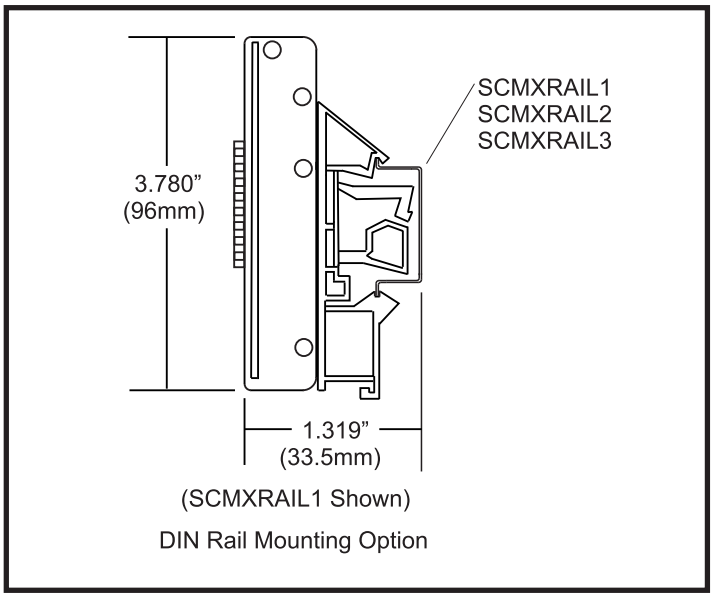
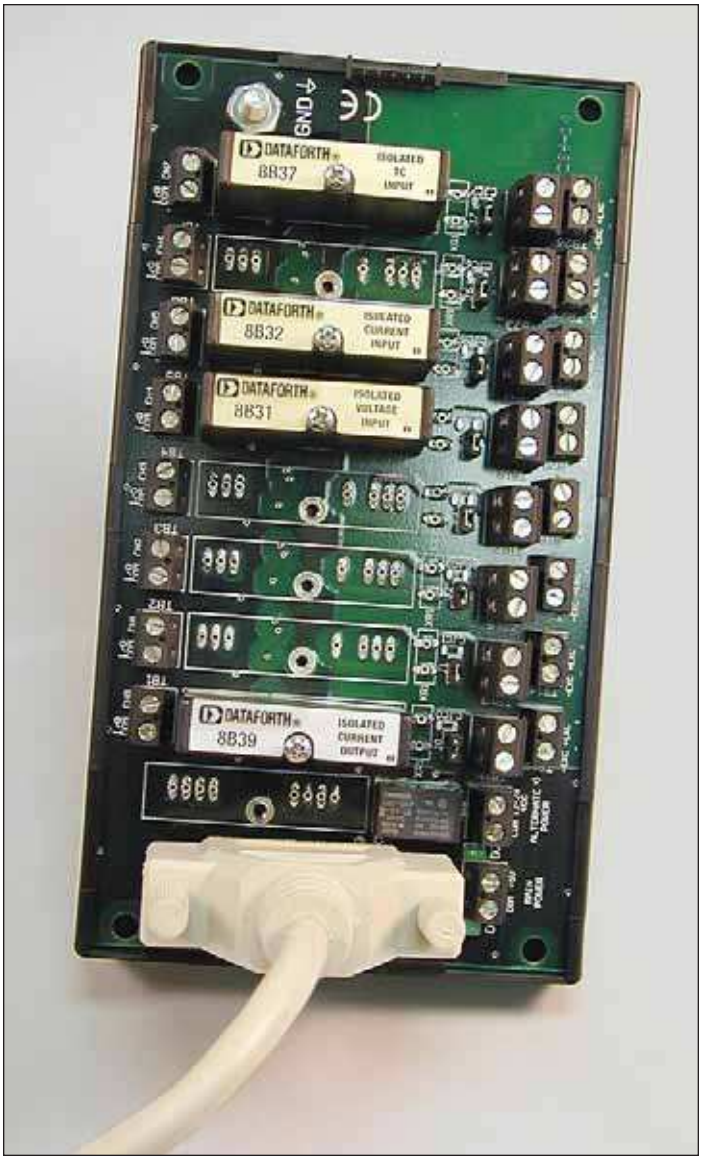


Figure 15: 8BPxx-2, 8BPxx-3 Backpanel DIN Rail Mounting Option

Isolated Analog Signal Conditioners

8BPWR-2 Power Supply Module

Clockwise from left: 8-, 16-, 4- and 2-channel 8BP0x backpanels



8BP08 8-Channel Backpanel and SCMXCA006 System Interface Cable