Accessories for 8B Analog Modules

8BP01

Single-channel, DIN-rail Mount Carrier

DESCRIPTION

The 8BP01 provides simple mounting and I/O connections for any of the 8B signal conditioners. 8BP01-205 and 8BP01-305 models accept 5V power and provide it to the module. 8BP01-224 and 8BP01-324 models accept wide range 7-34VDC power and provide 5V power to the module through an on-board power converter. The 8B carrier can be mounted on any standard DIN-rail (EN 50022-35 and EN 50035-G32). The 8BP01 measures only 2.32" x 3.54" x 0.65" (59mm x 90mm x 16.5mm), making it ideal for use in high-density installations (see Figure). It has a flammability rating of UL94 V-0.

Specifications

Typical* at T_A = +25°C and +5VDC power
Typical* at T_A = +25°C and +24VDC power

Module	8BP01-205, -305	8BP01-224, -324
Input Voltage Range	4.85 to 5.2VDC	7 to 34VDC
Over-Voltage Protection	6V TVS, 1A Fuse, OV Detection	36V TVS, 1A Fuse, OV Detection
Over-Voltage Shutdown Voltage	5.6V (max)	35.5V (max)
Under-Voltage Turn-on	–	6.5V (min)
Reverse Voltage Protection	1A Fuse	1A Fuse
Output Voltage Regulation	–	5VDC ±1%
Power Indicator	Green LED	Green LED
Output Voltage Temp. Coeff.	±200ppm/°C	±200ppm/°C
Output Current	250mA (max) (–40°C to +85°C)	250mA (max) (–40°C to +85°C)
Output Current Limit	–	0.8A, Auto Recovery
Line Regulation	–	±0.25%
Load Regulation	–	±0.5%
Efficiency	–	75%
Output Ripple	–	<50mVpk-pk
Mechanical Dimensions (h)x(w)x(d)	2.32" x 3.54" x 0.65" 59mm x 90mm x 16.5mm	2.32" x 3.54" x 0.65" 59mm x 90mm x 16.5mm

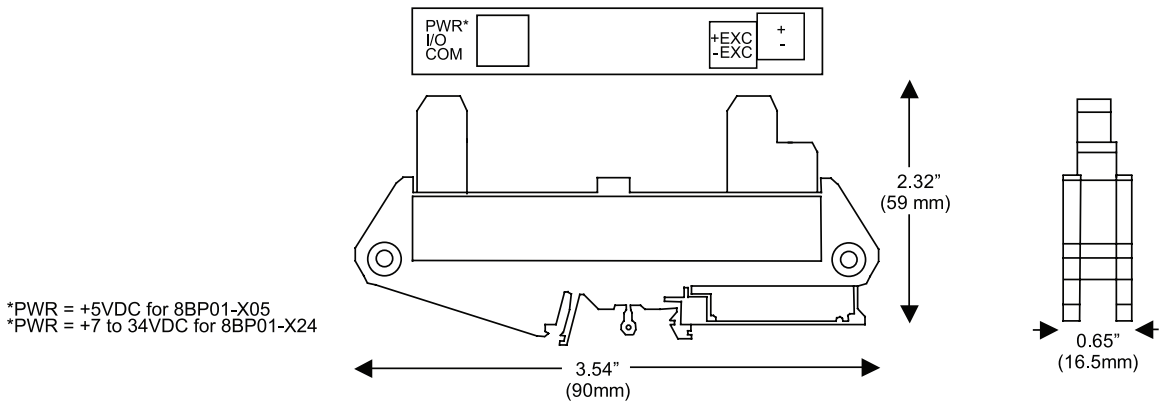
NOTES: *Contact factory or your local Dataforth sales office for maximum values.

Ordering Information

Part Number	Description
8BP01-205	5V Power, No CJC
8BP01-305	5V Power, CJC
8BP01-224	24V Power, No CJC
8BP01-324	24V Power, CJC

Installation Notes

1) This Equipment is Suitable for Use in Class I, Division 2, Groups A, B,C, D, or Non-hazardous Locations Only.
2) WARNING - Explosion Hazard - Substitution of Any Components May Impair Suitability for Class I, Division 2.
3) WARNING - Explosion Hazard - Do Not Disconnect Equipment Unless Power Has Been Switched Off or the Area is Known to be Non-hazardous.



*PWR = +5VDC for 8BP01-X05
*PWR = +7 to 34VDC for 8BP01-X24

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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 1. 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 Relative Humidity	–40°C to +85°C 95% Noncondensing
Interface Connector: Field System	 High-density Screw Clamp, 16 AWG (max) High-density Screw Clamp, 16 AWG (max)
Isolation: Input-to-Output Channel-to-channel	 1500Vrms Continuous (max) 1500Vrms Continuous (max)

FEATURES

- 2-, 4-, 8-, 16-position Analog I/O Backpanels
- 19-inch Mounting Rack for Backpanels
- DIN-rail Mounting Option
- Mix and Match 8B Modules on Same Backpanel
- Interface Cables
- Module Evaluation Board
- Cable-to-screw-terminal Interface Board

BENEFITS

- Easy Installation
- All Channels Provide Module with Its Own Analog Bus
- All Outputs Simultaneously Accessible to High-speed Data Acquisition (ADC) boards
- Optional Temperature Sensor Provided for Each Channel
- 2 Power Supply Options:
  - +5VDC ±5%
  - Wide Range 7-34VDC

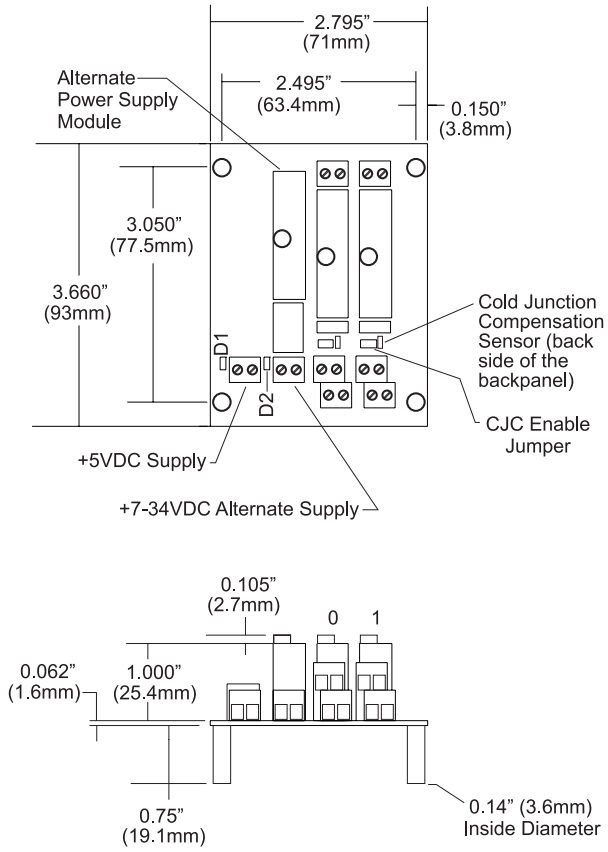


Figure 1: 8BP02 Analog I/O Backpanel

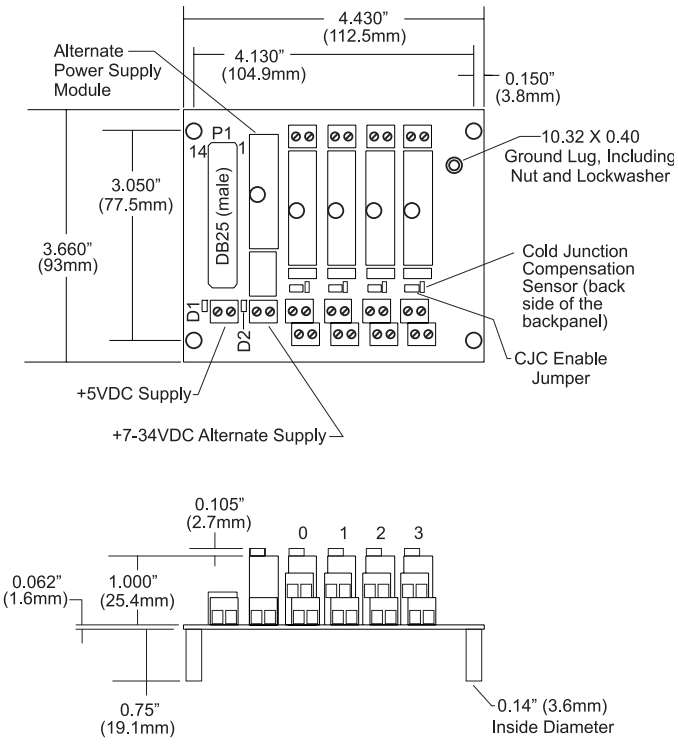


Figure 2: 8BP04 Analog I/O Backpanel

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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 7-34VDC 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 7-34VDC 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-gauge wire of the shortest possible length.

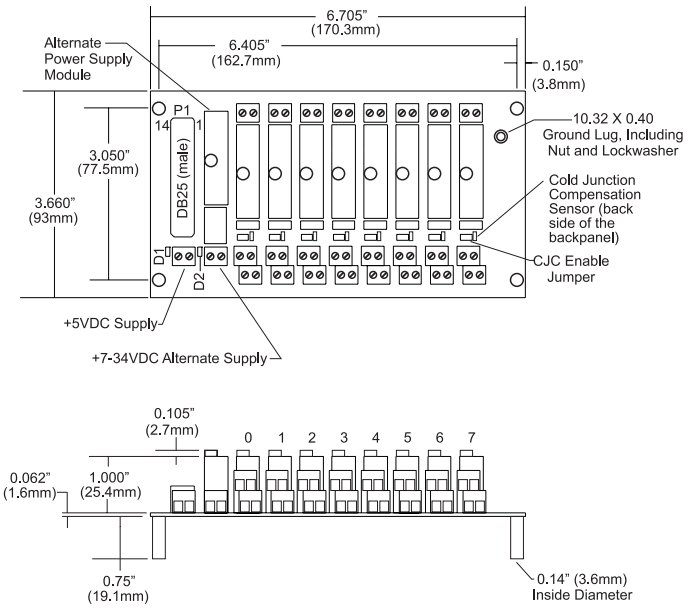


Figure 4: 8BP08 Analog I/O Backpanel

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.

Installation Notes

1) This Equipment is Suitable for Use in Class I, Division 2, Groups A, B,C, D, or Non-hazardous Locations Only.

2) WARNING - Explosion Hazard - Substitution of Any Components May Impair Suitability for Class I, Division 2.

3) WARNING - Explosion Hazard - Do Not Disconnect Equipment Unless Power Has Been Switched Off or the Area is Known to be Non-hazardous.

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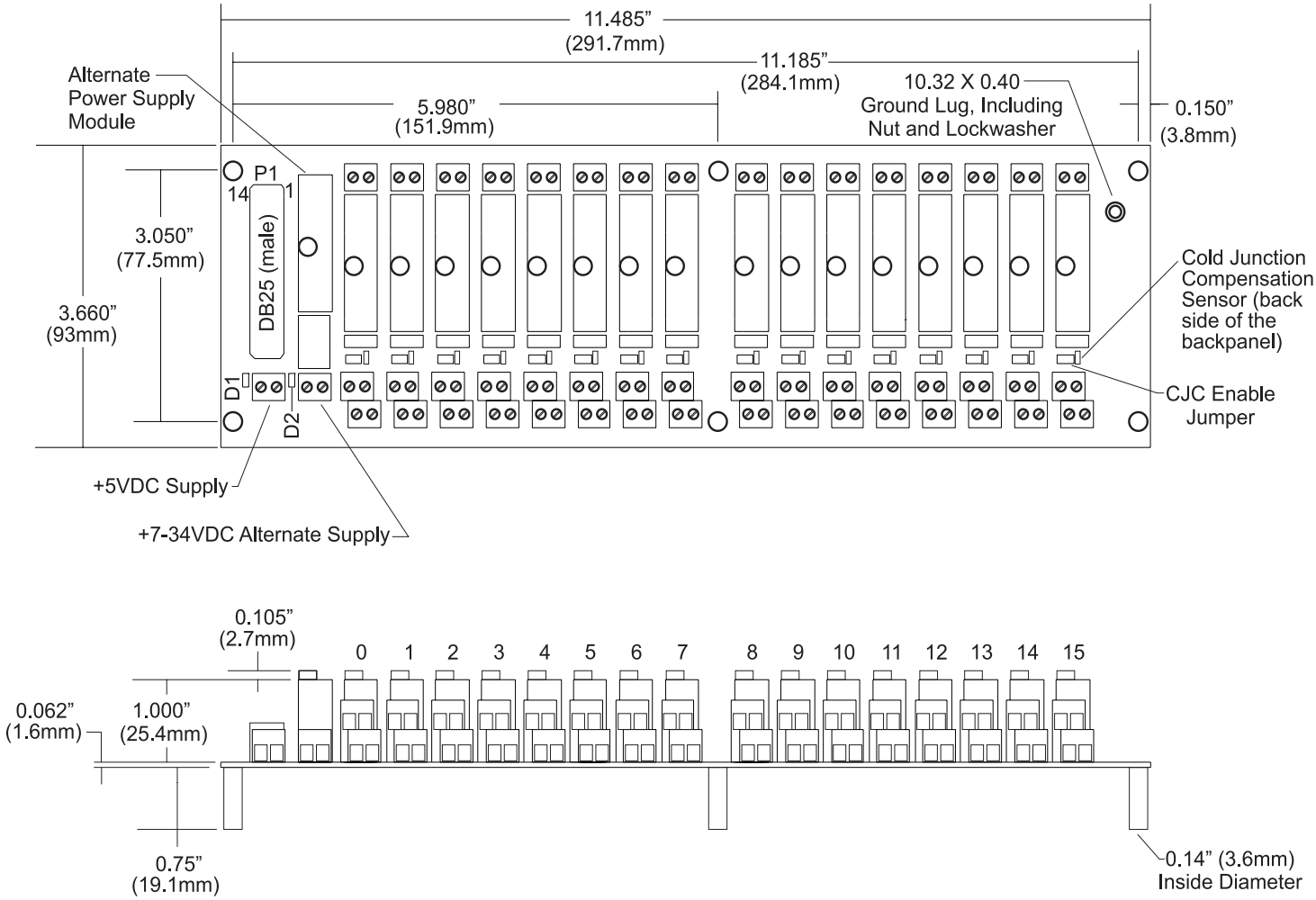
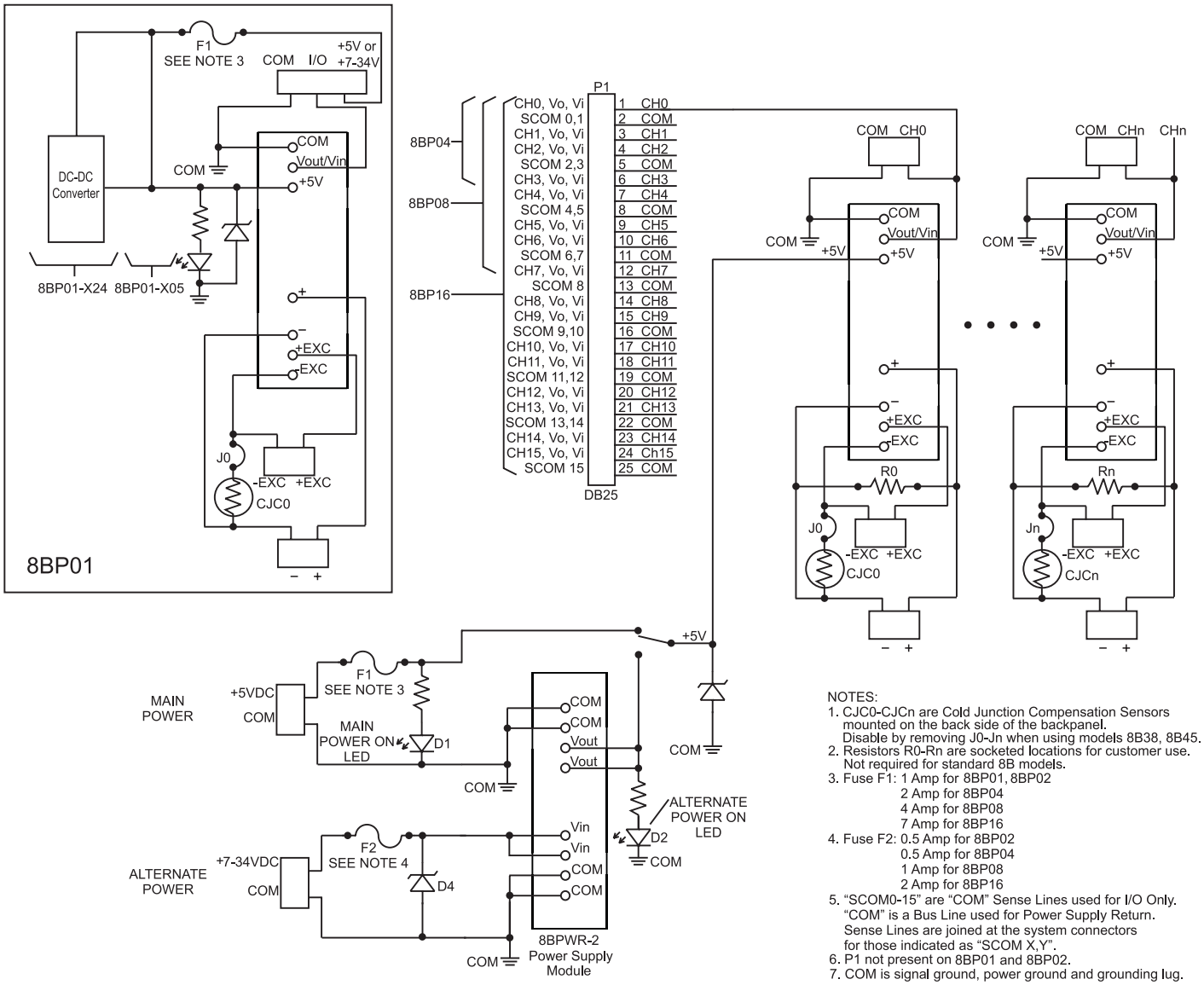


Figure 4: 8BP16 Analog I/O Backpanel

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NOTES:
1. CJC0-CJCn are Cold Junction Compensation Sensors mounted on the back side of the backpanel. Disable by removing J0-Jn when using models 8B38, 8B45.
2. Resistors R0-Rn are socketed locations for customer use. Not required for standard 8B models.
3. Fuse F1: 1 Amp for 8BP01, 8BP02
   2 Amp for 8BP04
   4 Amp for 8BP08
   7 Amp for 8BP16
4. Fuse F2: 0.5 Amp for 8BP02
   0.5 Amp for 8BP04
   1 Amp for 8BP08
   2 Amp for 8BP16
5. "SCOM0-15" are "COM" Sense Lines used for I/O Only. "COM" is a Bus Line used for Power Supply Return. Sense Lines are joined at the system connectors for those indicated as "SCOM X,Y".
6. P1 not present on 8BP01 and 8BP02.
7. COM is signal ground, power ground and grounding lug.

Figure 5: 8BP01/8BP02/8BP04/8BP08/8BP16 Schematic

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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 1).

Specifications Typical* at T_A = +25°C and +24VDC power

Module	8BPWR-2
Input Voltage Range	7-34VDC
Overvoltage Protection	None (Provided On Backpanel)
Reverse Voltage Protection	None (Provided On Backpanel)
Output Voltage	5VDC ±1%
Output Voltage Temp. Coeff.	±200ppm/°C
Output Current	3A (–40°C to +65°C) 2A (85°C)
Output Current Limit	4A, Auto Recovery
Line Regulation	±0.20%
Load Regulation	±0.30%
Efficiency	85%
Output Ripple	50mVp-p
Mechanical Dimensions (h)x(w)x(d)	1.11" x 1.65" x 0.40" (28.1mm x 41.9mm x 10.2mm)

NOTES: *Contact factory or your local Dataforth sales office for maximum values.

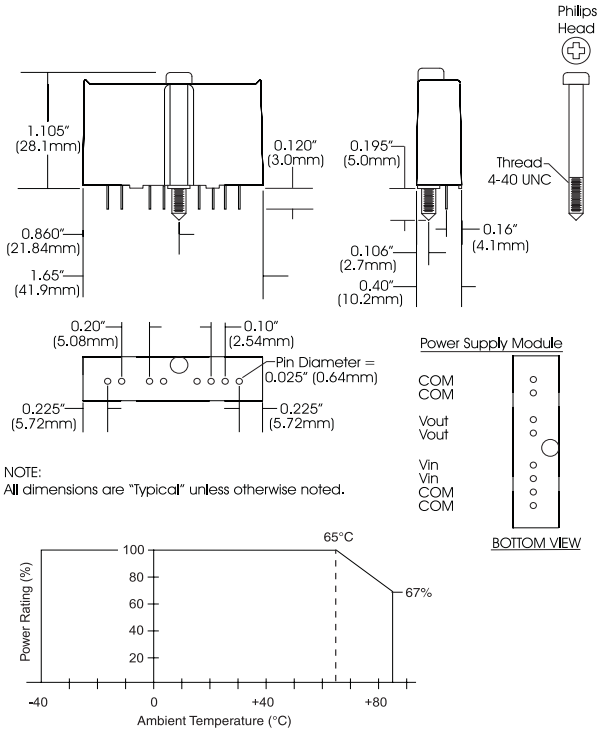


Figure 1: 8BPWR-2 Power Supply Module

SCMXPRT-001/D, SCMXPRE-001/D

Power Supplies

DESCRIPTION

The SCMXPRT-001/D and SCMXPRE-001/D 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 1) or DIN-rail EN 50022-35x7.5 (D versions). The supplies are UL-recognized. Their compact size and low weight are ideal for high-density applications (see Figure 2).

Specifications Typical* at T_A = +25°C

Module	SCMXPRT-001/D	SCMXPRE-001/D
Input Voltage Range, 47Hz to 420Hz	105-125VAC	210-250VAC
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)

NOTES:
*Contact factory or your local Dataforth sales office for maximum values.
Supplies are UL recognized, File No. E45344.

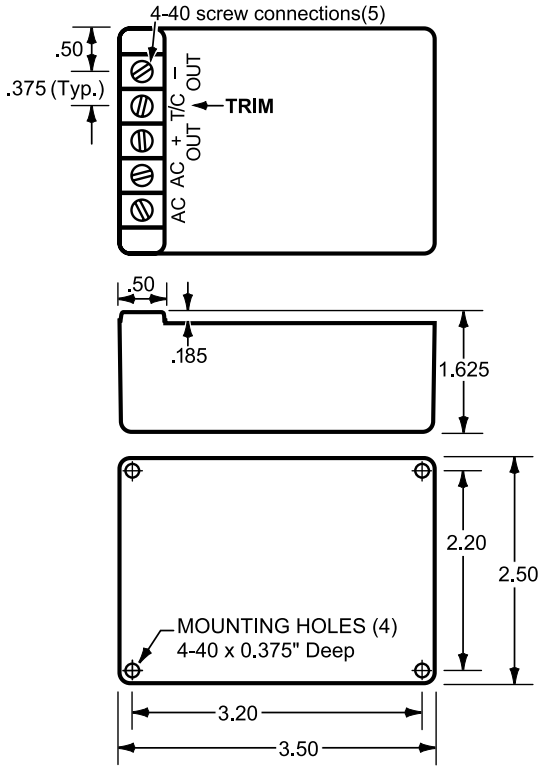


Figure 2: SCMXPRT-001/D and SCMXPRE-001/D Physical Dimensions

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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 3).

Specifications Typical* at T_A = +25°C

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°C to +70°C	0°C 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

NOTES:
*Contact factory or your local Dataforth sales office for maximum values.
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.

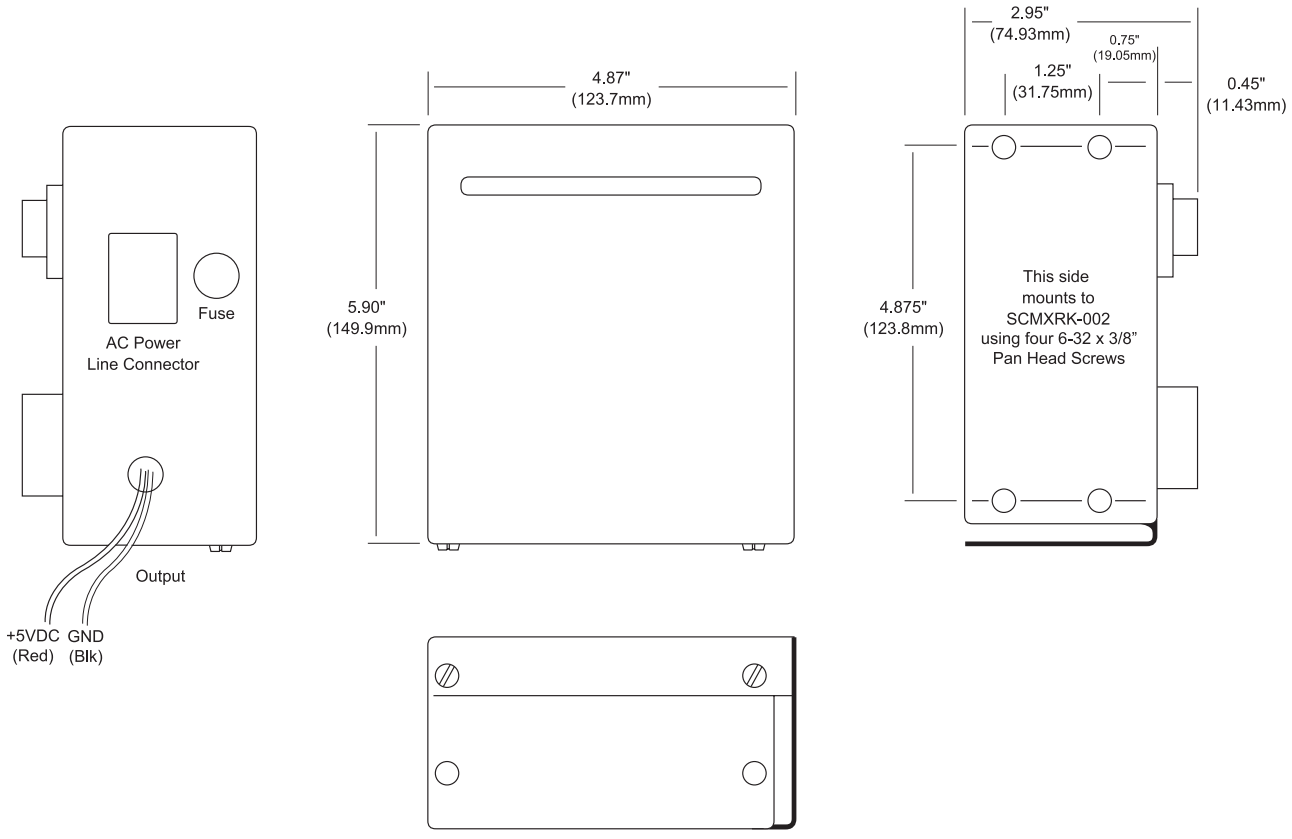


Figure 3: SCMXPRT-003/E-003 Physical Dimensions

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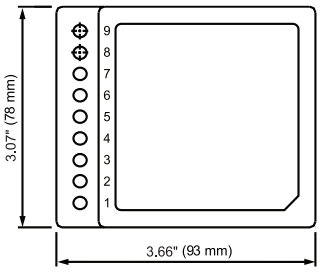
PWR-4505

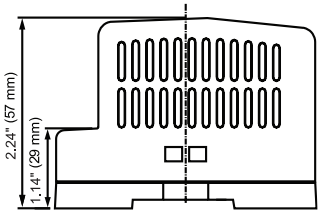
25W, Single-output, Industrial, DIN-rail, Switching Power Supply

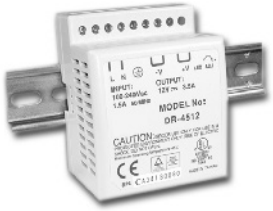
Specifications Typical* at T_A = +25°C

Module	PWR-4505
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 10-95%
Mechanical Dimensions (l)x(w)x(h)	3.66" x 3.07" x 2.24" (93mm x 78mm x 57mm)
Terminal Screw	M3

NOTES:
*Contact factory or your local Dataforth sales office for maximum values.







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	+VADJ.
4,5	DC OUTPUT-V		

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

BENEFITS

- Small and Lightweight
- Performance Matching Dataforth Signal Conditioning Module Requirements
- Wide Input Voltage Range
- More Efficient Than A Linear Power Supply
- Convenient System Expansion and Repair

APPLICATIONS

- Designed for Embedded Applications
  - PC/104 Embedded Solutions
  - Compact PCI Systems
  - VMEbus Systems
  - PXI Systems
- Designed for Industrial Plant Environments
- High-vibration Environments
- Dataforth Signal Conditioning Modules

Figure 4: PWR-4505 Physical Dimensions

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SCMXCA006-01, -02, -07

Interface Cables

DESCRIPTION

The SCMXCA006-xx is a system interface cable for the 8BP04/08/16 backpanels. This interface cable is a DB25 Male/Female cable assembly. It can be ordered in lengths of 1m, 2m, and 7m (see Figure 5).

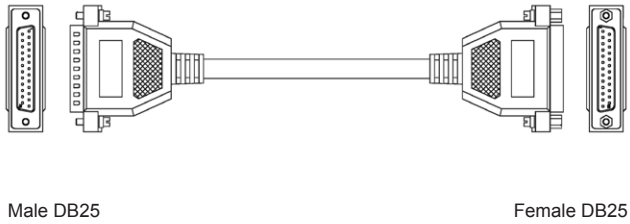


Figure 5: SCMXCA006-XX System Interface Cable

8BXIF (-DIN)

Universal Interface Board

DESCRIPTION

The 8BXIF 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 6 for dimensions).

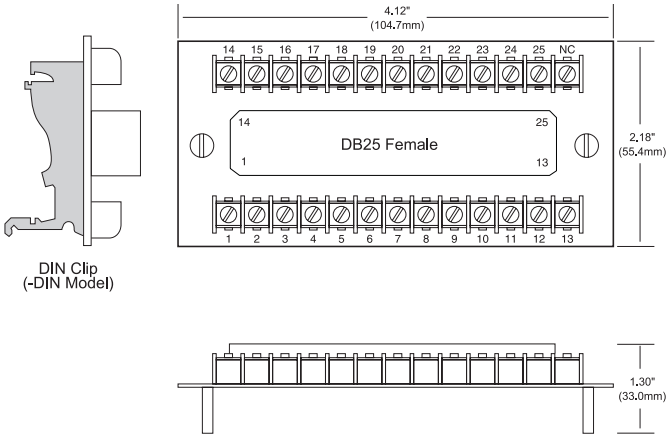


Figure 6: 8BXIF Universal Interface Board Dimensions

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 7 for dimensions).

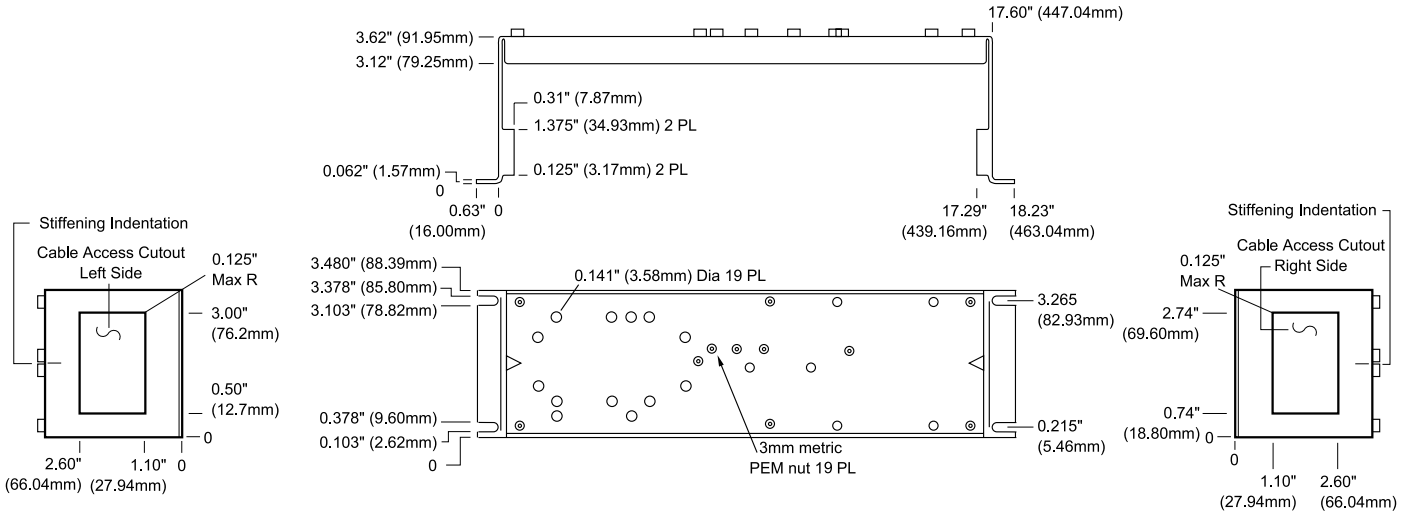


Figure 7: SCMXRK-002 Metal Rack Dimensions

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SCMXRAIL1-XX, SCMXRAIL2-XX, SCMXRAIL3-XX

DIN-rail

RoHS III COMPLIANT 2015/863 CE

DESCRIPTION

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

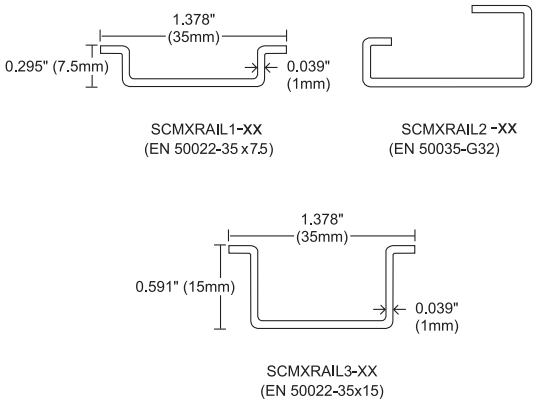


Figure 8: DIN-rail Styles

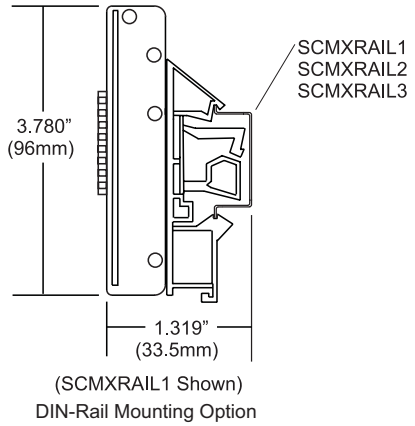


Figure 9: 8BPxx-2, 8BPxx-3 Backpanel DIN-rail Mounting Option

Ordering Information

Part Number	Description
SCMXRAIL1-XX	DIN EN 50022-35x7.5 (slotted steel)
SCMXRAIL2-XX	DIN EN 50035-G32 (slotted steel)
SCMXRAIL3-XX	DIN EN 50022-35x15 (slotted steel)

8B-PROTO

Breadboard Kit

RoHS III COMPLIANT 2015/863 CE

DESCRIPTION

The 8B-PROTO breadboard kit was designed to allow users to incorporate their own module functions using an 8B format. The kit includes a PC board with pins designed for breadboard circuits, a module case, header and mounting screw. Contact the factory for additional information.

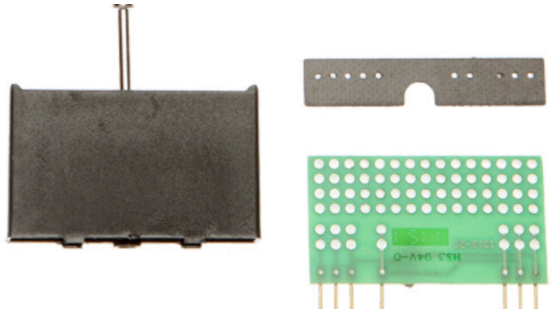


Figure 10: 8B-PROTO Breadboard Kit

8BXCJC

Cold Junction Compensation Sensor

RoHS III COMPLIANT 2015/863 CE

DESCRIPTION

Packaged for use in customer-designed mounting boards. This part has an initial tolerance of ±0.25% and comes in a standard 1206 resistor format.

8BPT

Pass thru Module

RoHS III COMPLIANT 2015/863 CE

DESCRIPTION

The 8BPT is a pass-through module used to establish a direct connection between an input signal and the 8B series backplane analog bus. It has unity gain and no isolation. It accepts up to ±10V input and provides up to ±10V output.

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