Input Modules

A5B34 Units

RTD Input

A5B34 modules plug into a backpanel to provide a single channel of analog input which is filtered, isolated, amplified, linearized, and converted to a proportional DC voltage output signal.

RTD excitation is provided from the module by two matched current sources. When using a three-wire RTD, this method allows an equal current to flow in each RTD lead, which cancels the effects of lead resistances. The excitation currents are very small which minimizes self-heating on the RTD.

Signal filtering is accomplished with a six-pole filter. Two poles of this filter are on the field side of the isolation barrier and the other four are in the output stage. Isolation is provided by transformer coupling, again using a proprietary technique to suppress transmission of common mode spikes or surges.

Ordering Information

Model	Input	Output
A5B34-01 Pt RTD input	-100 to 100°C	0 to 5V DC
A5B34-02 Pt RTD input	0 to 100°C	0 to 5V DC
A5B34-03 Pt RTD input	0 to 200°C	0 to 5V DC
A5B34-04 Pt RTD input	0 to 600°C	0 to 5V DC
A5B34C-01 Cu RTD input 10 ohms @ 0°C	0 to 120°C	0 to 5V DC
A5B34C-02 Cu RTD input 10 ohms @ 25°C	0 to 120°C	0 to 5V DC
A5B34N-01 Ni RTD input	0 to 300°C	0 to 5V DC

Performance

Input Range
-200 to 850°C (100 ohm Pt)

Input Resistance
Normal: 50M ohms
Power Off: 40K ohms
Overload: 40K ohms

Sensor Excitation Current
100 ohm Pt, 120 ohm Ni: 0.25mA
10 ohm Cu: ±1.0mA

Input Protection
Continuous: 240V_{RMS} max
Transient: ANSI/IEEE C37.90.1-1989

CMV, Input to Output
Continuous: 1500VRMS max
Transient: ANSI/IEEE C37.90.1-1989

CMR (50 or 60Hz)
160dB

NMR
95dB @ 60Hz, 90dB @ 50Hz

Accuracy
A5B34-01: ±0.43°C
A5B34-02: ±0.44°C
A5B34-03: ±0.50°C
A5B34-04: ±0.72°C
A5B34C-01: ±0.82°C
A5B34C-02: ±0.84°C
A5B34N-01: ±0.30°C

Conformity Error
±0.05% span

Stability
Input Offset: ±0.02°C/°C (±0.04°C/°C max)
Output Offset: ±20µV/°C (±30µV/°C max)
Gain: ±50ppm of reading/°C max)

Noise
Input, 0.1 to 10Hz: 0.2µVRMS (0.6µVRMS max)
Output, 100KHz: 200µVRMS (400µVRMS, 800µVP-P max)

Bandwidth, -3dB
4Hz

Response Time, 90% span
200mS

Output Range
0 to +5V

Output Resistance
50 ohms

Output Protection
Continuous short to ground

Output Selection Time, (to ±1mV of VOUT)
2.5µS @ 200pF, 3.5µS @ 500pF,
4.0µS @ 1000pF, 6.0µS @ 2000pF

Output Enable Control
Max Logic "0": +0.8V
Min Logic "1": +2.4V
Max Logic "1": +36V
Input Current, "0, 1": 0.5µA

Power Supply Voltage
+5V DC ±5%

Power Supply Current
30mA (33mA max)

Power Supply Sensitivity
100 ohm Pt, 120 ohm Ni: 0.05°C/V
10 ohm Cu: 0.5°C/V

Environmental
Operating Temperature Range: -40 to +85°C
Storage Temperature Range: -40 to +85°C
Relative Humidity: 0 to 95% noncondensing
RFI Susceptibility: ±0.5% span error @ 400MHz, 5W, 3 ft

Approvals (CSA, FM)
Class I; Division 2; Groups A, B, C, D.

NOTES
* Use ±0.025Ω when using Cu RTDs. R_Z is the value of the RTD resistance at the lowest point of measurement range. RTI is Referred To Input.

Ordering Information

Backpanels and Accessories

User's Manual

8500-299
A5B User's Manual. Acromag provides (1) manual with first purchase order at NO CHARGE. Additional manuals must be purchased. The first manual must be specified on the purchase order to ensure delivery.

Backpanels

APB01
16-channel, non-multiplexed backpanel. Non-addressable analog I/O signal channels provide each module with its own analog bus. The module output switch is continuously "on" when using this backpanel. A temperature sensor is mounted on each channel to provide cold junction compensation for thermocouple modules. Field connections are terminated with four screw terminals at each module site.

APB02
16-channel, multiplexed backpanel. Has two analog buses; one for input, one for output. Two-bus configuration takes advantage of the switch-controlled outputs on the input modules and the track-and-hold inputs on the output modules. Up to four APBO2 backpanels can be daisy-chained. Includes temperature sensor and four screw terminals at each module site.

APB03
Single channel, non-multiplexed backpanel. See tables below for additional parts required.

APB04
Dual channel, non-multiplexed backpanel. See tables below for additional parts required.

The following parts are required for DIN rail mounting of one APB03 or APB04 backpanel:

Quantity	Part No.	Description
1	UM-BEFE35	Base element with snap foot
2	UM-SE	Side element

The following parts are required to DIN rail mount two or more APB03 or APB04 backpanels:

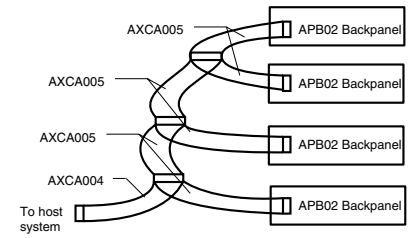
Quantity	Part No.	Description
2	UM-BEFE35	Base element with snap foot
2	UM-SE	Side element
Note 1	UM-BE35	Base element w/o snap foot
Note 2	UM-VS	Connection pin

Note 1: Quantity = # of panels - 2
Note 2: Quantity = 4 x (# of panels - 2)

Cables

AXCA004-xx
Interface cable for host system connection. General-purpose 26 conductor ribbon cable for use with APB01/02 backpanels. Specify length, -xx, in feet when ordering.

AXCA005
Daisy-chain cable, interconnects up to four APB02 backpanels.



Power Supplies

AXPRT-003
Power supply, 120V AC input (104 to 132V range).

AXPRE-003
Power supply, 220V AC input (207 to 265V range).

Interface Accessories

AXEV
Evaluation board (single channel) with a test socket. See table below for additional parts required.

The following parts are required for DIN rail mounting of one AXEV evaluation board:

Quantity	Part No.	Description
2	UM-BEFE35	Base element with snap foot
2	UM-SE	Side element
4	UM-VS	Connection pin

AXIF
Universal interface board. Converts a 26-pin ribbon cable to 26 screw terminals for discrete wire. Mounts on AXRK-002 rack (standoffs, mounting hardware included). Use AXCA004 cable.

AVMEIF
VMEbus interface board, 32 inputs. Interfaces APB01 backpanel with a 26-pin ribbon cable to Acromag VME A/D boards.

Mounting Accessories

AXRK-002
19-inch metal rack for mounting the backpanels, power supplies, and universal interface board.

UM-BEFE 35
Base element with snap foot (for DIN rail mounting).

UM-BE 35
Base element without snap foot (for DIN rail mounting).

UM-SE
Side element (for DIN rail mounting).

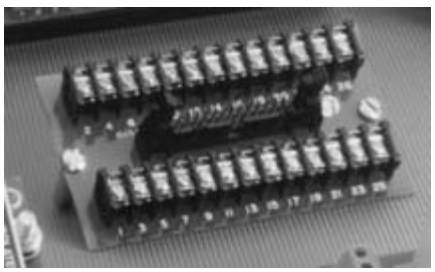
UM-VS
Connection pin (for DIN rail mounting).

Miscellaneous Accessories

AXFS-003
Fuses for backpanel, 4 amp, package of 10.

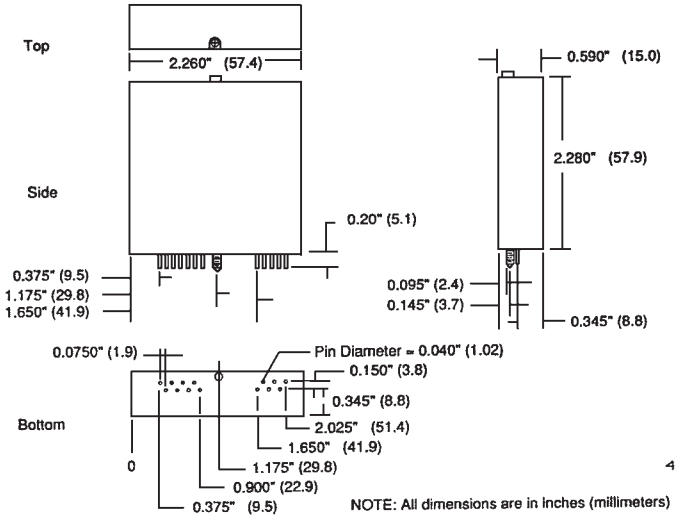
AXJP-003
Jumper strap, package of 10 jumpers. Connects I/O modules to direct the output of any input module to the adjacent output module on the APB01 backpanel. The jumpers can also be used to configure I/O addresses on APB02 backpanel.

AXR1
Current conversion resistor (precision 20 ohm 0.1%) for A5B32 current input module. Sockets are provided on APB01/02.

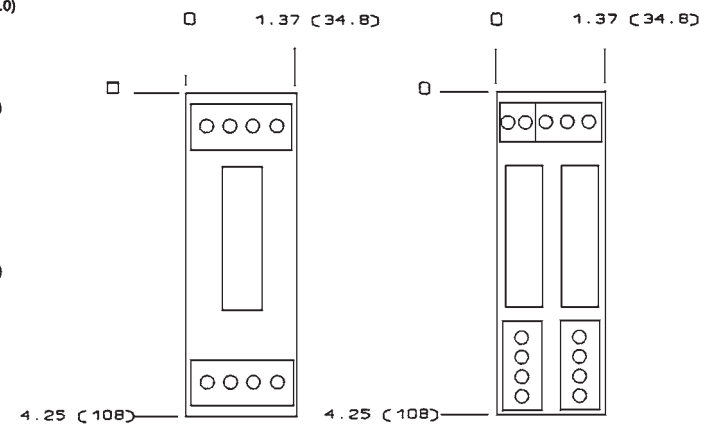


AXIF interface board

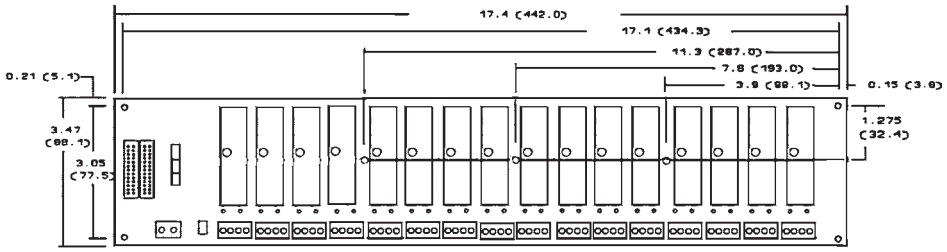
Dimensions

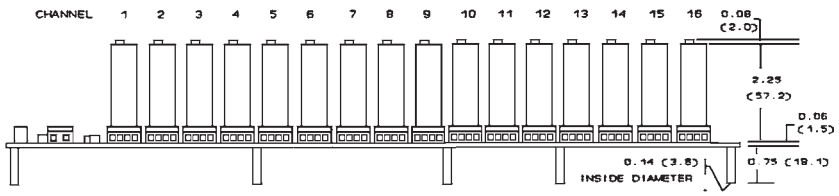


Backpanels APB03 and APB04

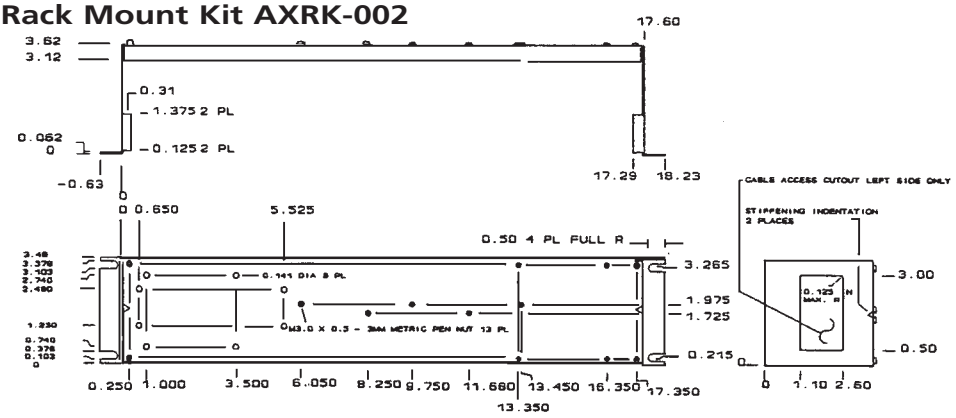


Backpanel APB01, APB02



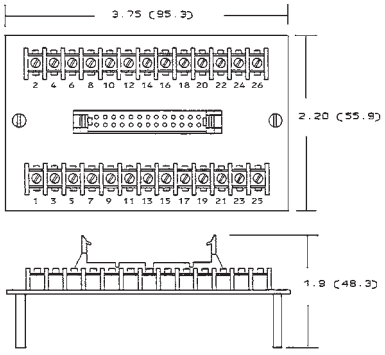


Rack Mount Kit AXRK-002

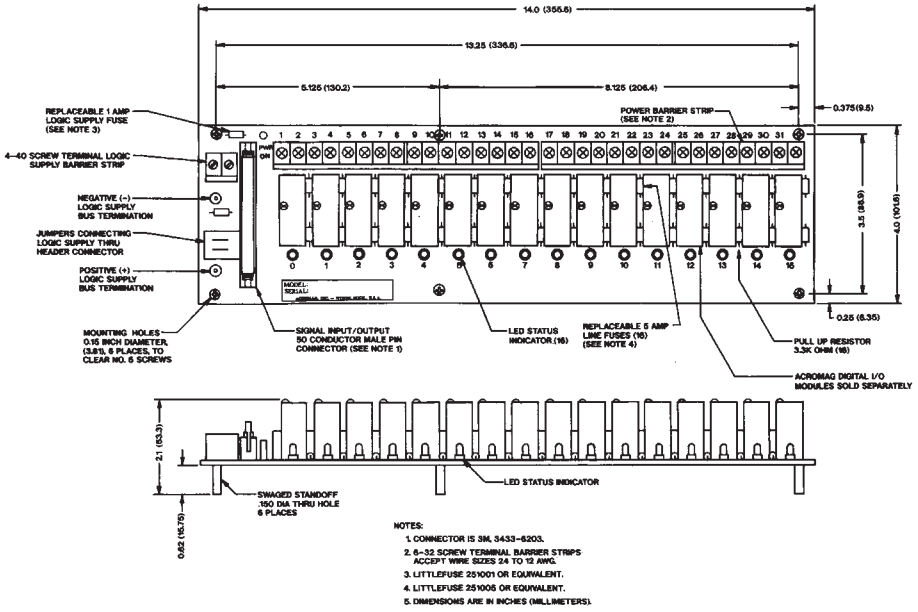


Dimensions

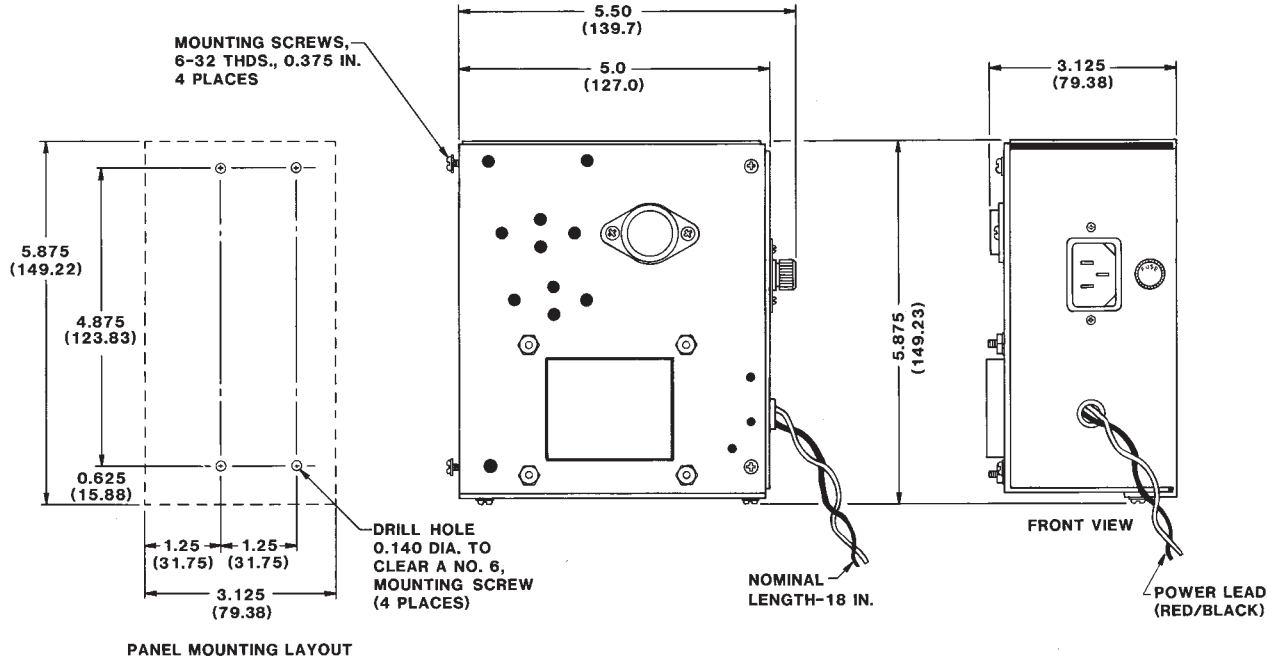
AXIF Outline Drawing



Digital I/O Panel APB16H-SSR



Power Supplies AXPRT-003 (115V) and AXPRE-003 (230V)



Dimensions are in inches (millimeters).