



Input Modules



A5B37 Units Thermocouple Input

A5B37 modules plug into a backpanel to provide a single channel of analog input which is filtered, isolated, amplified, and converted to a proportional DC voltage output signal.

Each module is cold junction compensated to correct for parasitic thermocouples formed by the thermocouple wire and the screw terminals on the mounting backpanel. Upscale open thermocouple detect is provided by an internal pull-up resistor.

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. After the initial field-side filtering, the input signal is chopped by a proprietary chopper circuit. 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
A5B37J Type J input	-100 to 760°C	0 to 5V DC
A5B37K Type K input	-100 to 1350°C	0 to 5V DC
A5B37T Type T input	-100 to 400°C	0 to 5V DC
A5B37E Type E input	0 to 900°C	0 to 5V DC
A5B37R Type R input	0 to 1750°C	0 to 5V DC
A5B37S Type S input	0 to 1750°C	0 to 5V DC
A5B37B Type B input	0 to 1800°C	0 to 5V DC

Performance

Input Range
±5mV to ±0.5V

Input Bias Current
-25nA

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

Input Protection
Continuous: 240VRMS 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
±0.05% Span (0.08% max) ±10μV

Nonlinearity
±0.02% span (±0.035% Max)

Stability
Input Offset: ±1μV/°C (±2μV/°C max)
Output Offset: ±20μV/°C (±30μV/°C max)
Gain: ±25ppm/°C (±50ppm/°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

Open Input Response
Upscale

Open Input Detection Time
1S

Cold Junction Compensation
Accuracy, 25°C: ±0.25°C
Accuracy, 5 to 45°C: ±0.5°C
Accuracy, -25 to 85°C: ±1.0°C, typ., ±1.5°C max.

Power Supply Voltage
+5V DC ±5%

Power Supply Current
30mA Max

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.



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 APB02 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)

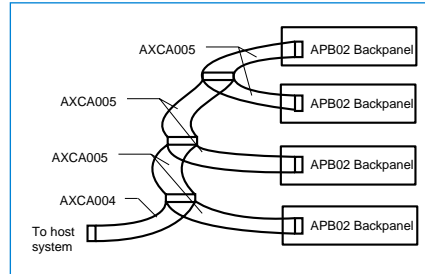
Cables

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

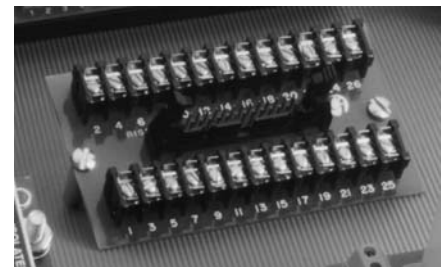
Fuses for backpanel, 4 amp, package of 10.

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

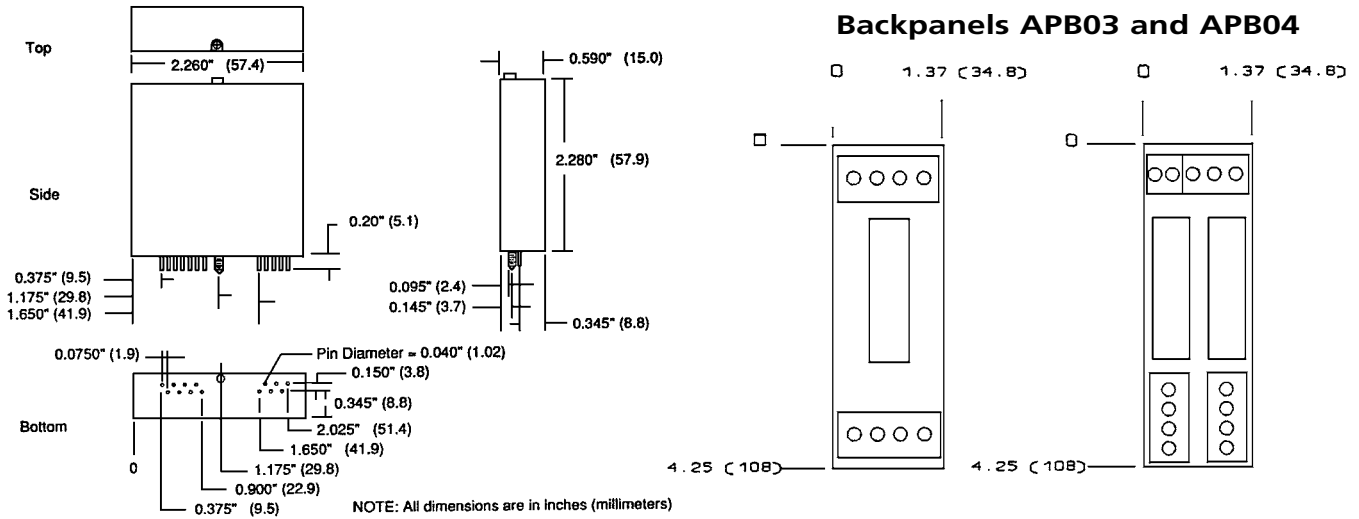
Current conversion resistor (precision 20 ohm 0.1%) for A5B32 current input module. Sockets are provided on APB01/02.



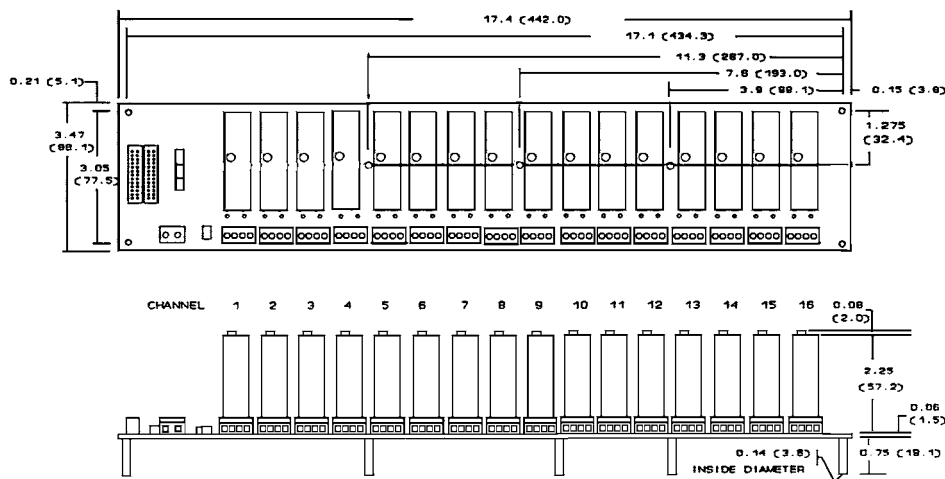
AXIF interface board



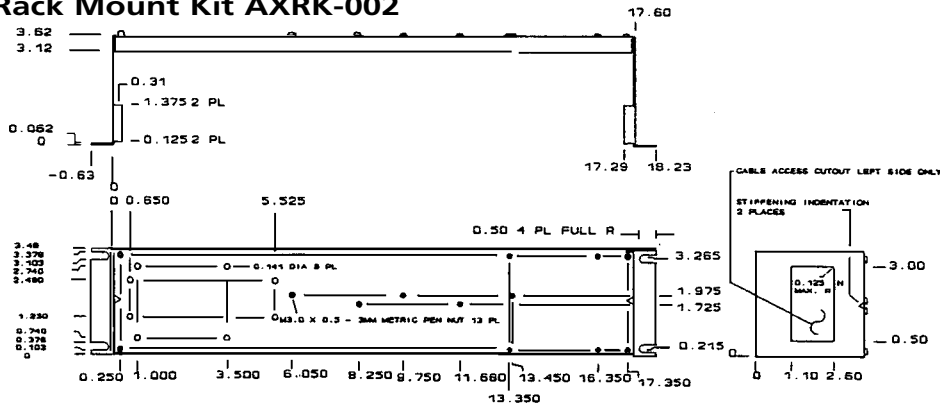
Dimensions



Backpanel APB01, APB02



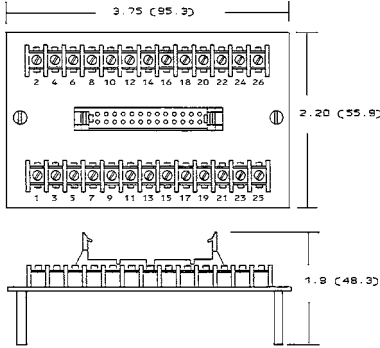
Rack Mount Kit AXRK-002



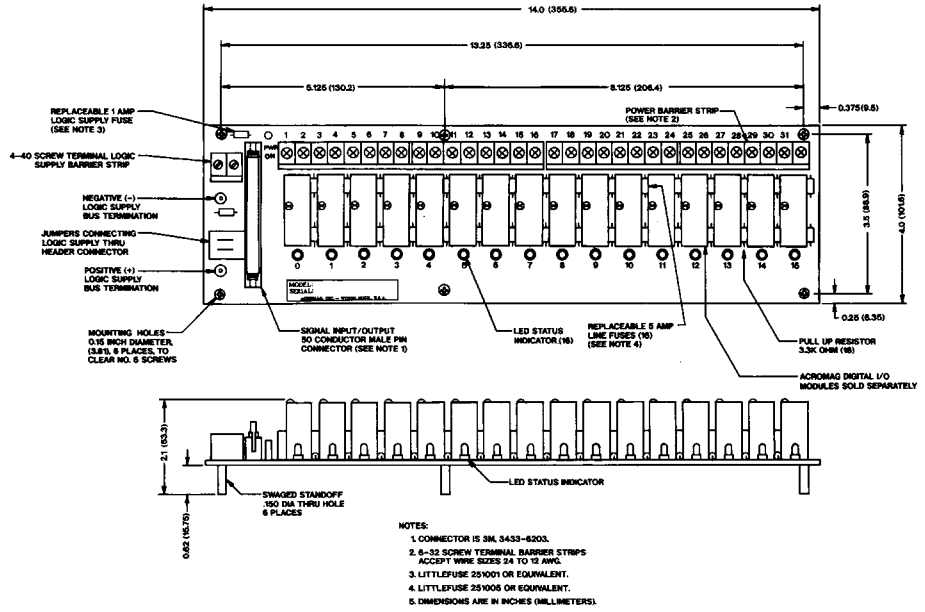


Dimensions

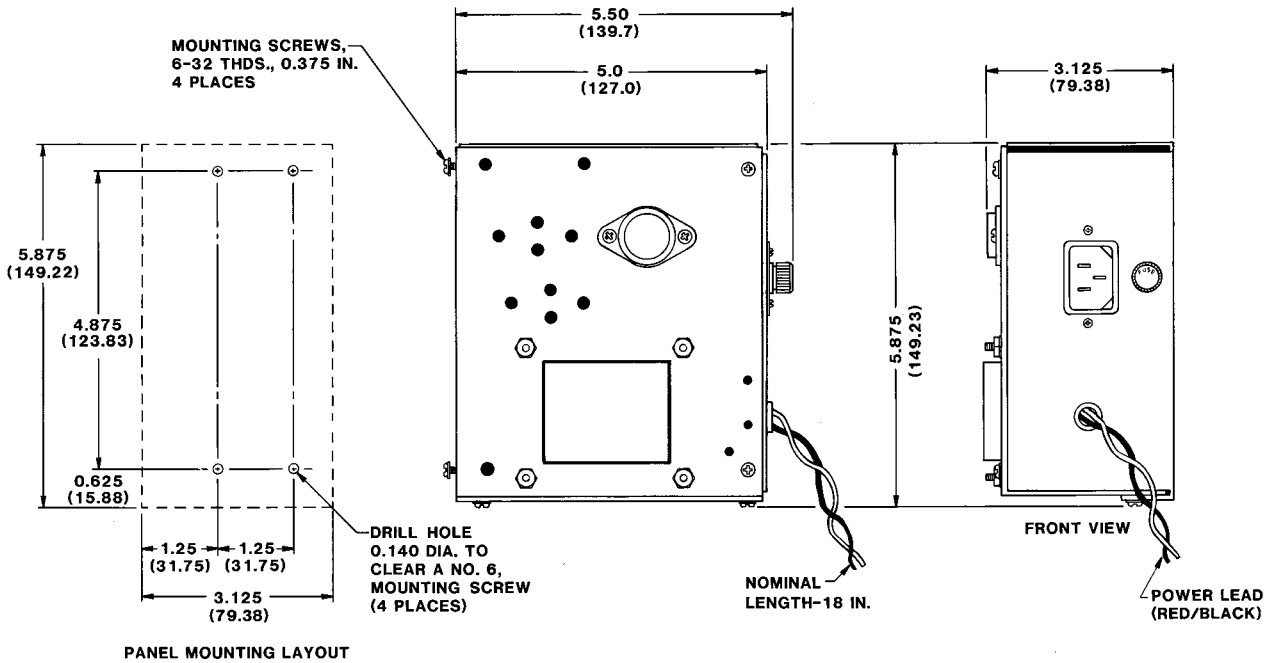
AXIF Outline Drawing



Digital I/O Panel APB16H-SSR



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



Dimensions are in inches (millimeters).