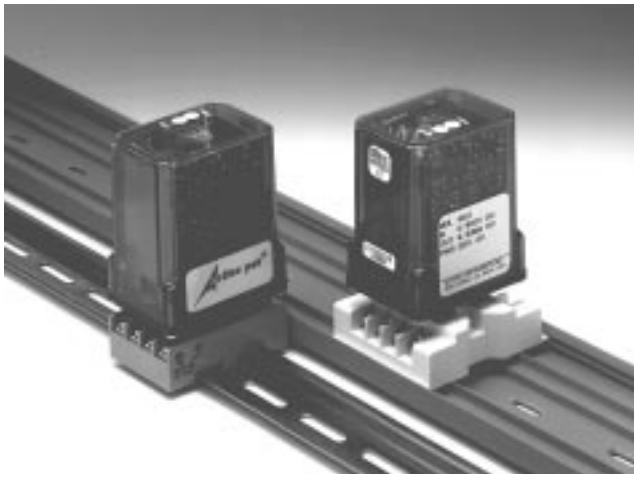
Action Pak®

Bridge Input Signal Conditioner

Models AP4251



Supplies Excitation and Amplifies the Output of a Strain Gauge Transducer

- **Adjustable Excitation**
- **Load Cell Conditioning/Process Weighing**
- **Pressure Control/Monitoring Applications**
- **Easy Plug-in Installation/Low Mean-Time-to-Repair**
- **AC Line Powered**
- **Three Year Warranty**

APPLICATION

Model AP4251 is used with strain gauges (load cells, force, and pressure transducers) to provide the necessary bridge excitation and to condition the low level bridge output to a usable DC level. The output of the AP4251 can be used to drive a digital meter for direct display of weight, force, or pressure, or to drive a limit alarm for weighing and batching control or overweight/overpressure alarm. The AP4251 is a high-accuracy module with drift and linearity specifications tuned for inputs down to 0.5 mV/V.

For a wide ranging, bridge input, isolating signal conditioner offering field configurable input, output, ranges and functions, refer to Action Instruments' AP4081 model.

OPERATION

The AP4251 consists of a bridge excitation power supply and a signal conditioner. The power supply is adjustable, precisely regulated, and electrically isolated from the signal conditioner. The signal conditioner is in two stages: a fixed gain, graded amplifier with optimum noise filtering and an output buffer stage with top accessed zero and span adjustments for precise in-field calibration. The internal power supplies for the bridge supply and the signal conditioner circuitry are isolated from each other and from line power and ground.

OPTIONS

CS Canadian Standards Association Certification.

U Urethane coating of internal circuitry for protection from corrosive atmospheres

CALIBRATION

Top accessed screwdriver adjustments provide typical ±10% zero and span adjustability. Calibration is referred to input in that adjustments are to correct for input/sensor variations. Zero is adjusted for the specified minimum output with the input at the desired minimum. The zero adjustment may also be used as a fine “tare” adjustment to eliminate an unwanted offset. Span is adjusted for the specified maximum output with the input at the desired maximum. Excitation is factory set at either 5V or 10V, as specified. The excitation adjustment allows the excitation to be set at any voltage from 4 to 12V to match a particular transducer.

FACTORY ASSISTANCE:

For additional information on calibration, operation and installation please contact Action’s Technical Services Group. Call toll-free:

800-767-5726

ACTION INSTRUMENTS
...the Industrial I/O Company

Input/Output Ranges

Table 1: AP4251 Standard Inputs

0.5mV/V	2mV/V	5mV/V	20mV/V
1mV/V	3mV/V	10mV/V	

Table 2: AP4251 Standard Outputs

0-1V	1-5V	10-50mA
0-5V	0-10V	4-20mA

Table 3: AP4251 Input Limits

Model	Minimum Span	Maximum Span
AP4251	0.5mV/V@10V Exc. 1mV/V@5V Exc.	250mV/V

Table 4: AP4251 Output Limits

Minimum Span		Maximum Output	
Voltage 100mV	Current 1mA	Voltage 10V	Current 50mA

SPECIFICATIONS

Linearity (Best Straight Line)
±0.01% of span, typical

Response Time
100 mSec., typical

Stability
±0.01% of span/°C typical

Output Ripple
0.2% of span, or 5mV, whichever is greater

Output Drive
Voltage Output: 10mA, max.(1KΩ, min.)
Current Output: 15V compliance @ 20mA (750V, max.)

Excitation
Adjustability: 4 to 12V
Maximum Output:
Current limited to 50mA

Common Mode Rejection
60 Hz: >80dB

Common Mode Voltage
500V DC or peak AC, max.

Temperature Range
Operating: 0 to 60°C (32 to140°F)
Storage: -20 to 85°C (-4 to 185°F)

Power
Consumption: 3W typical, 5W max.
Standard: 120VAC (±10%, 50-400Hz)
Available: 240VAC, (±10%, 50-400Hz)

Weight
AP4251 0.54lbs

MOUNTING

All Action Paks feature plug-in installation. Model AP4251 uses an 11-pin base and either molded socket M011, or DIN socket MD11.

ORDERING INFORMATION

Specify:
1. Model AP4251
2. Input Range (see Tables 1,3)
3. Output Range (see Tables 2,4)
4. Options: CS, U (see text)
5. Line Power (see specs)

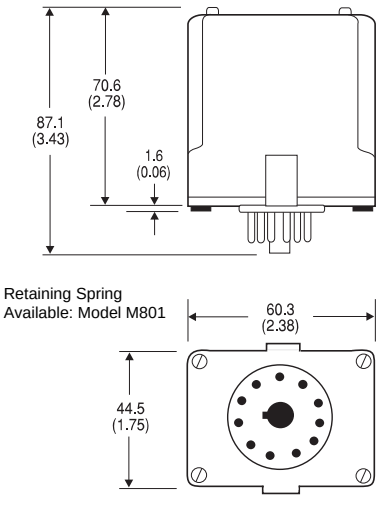
(All power supplies are transformer-isolated from the internal circuitry.)

Pin Connections

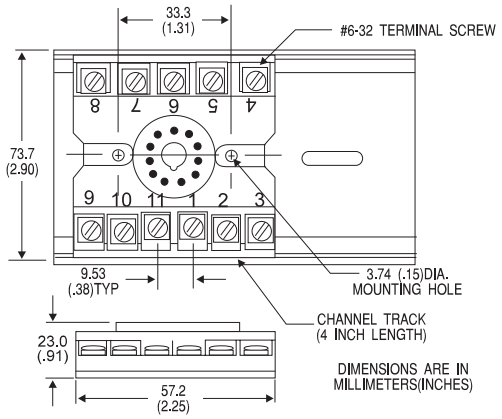
1 AC Power (Hot)
2 Shield (Gnd)
3 AC Power (Neu)
4 Bridge (+)
5 Bridge (-)
6 No Connection
7 Exc (+)
8 Exc (-)
9 Output (+)
10 Output (-)
11 No Connection

DIMENSIONS

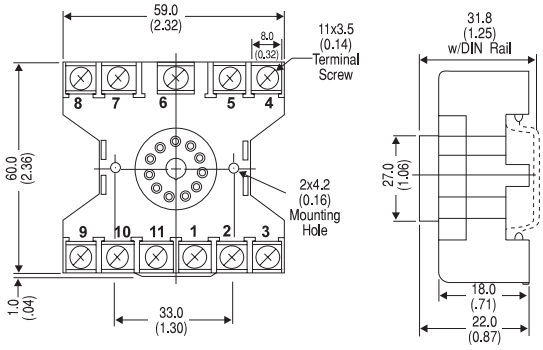
Dimensions are in Millimeters (Inches)



Mark I (Standard)



M011 (Track/Surface)



MD11 (DIN/Surface)

All Prices and Specifications subject to change without notice