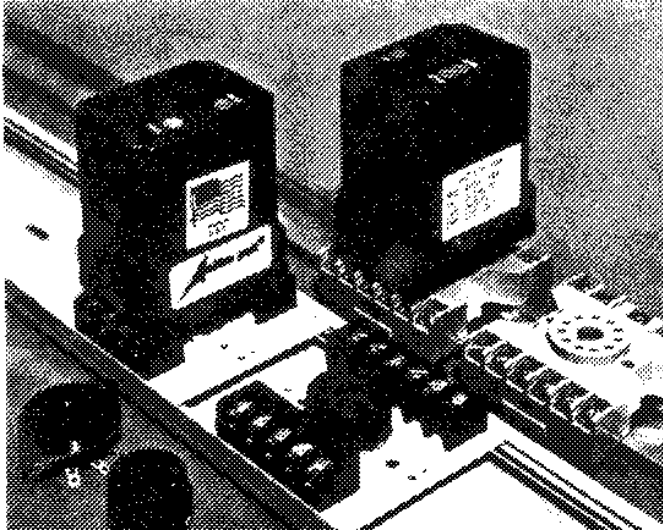


Action Pak[®]

Frequency Input Signal Conditioner

Model AP7010



Provides a DC Output in Proportion to a Frequency Input

- Adjustable Sensitivity Improves Signal Quality
- 50mV to 50V RMS Inputs
- Direct Magnetic Pickup Input
- Flow Monitoring/Control Applications
- Easy Plug-in Installation/Low Mean-Time-to-Repair
- AC Line Powered (DC Optional)
- Three Year Warranty

APPLICATION

Model AP7010 is useful in any application requiring an analog DC output from a pulse output transducer, such as a magnetic pickup or a turbine flowmeter. The input amplitude may be as high as 50V rms, or as low as 50mV rms. This wide sensitivity range is compatible with magnetic pickup devices which typically exhibit an increasing output amplitude as the sensed frequency increases.

For wide ranging frequency input isolating signal conditioners offering field configurable input, output, ranges and functions refer to Action Instruments model AP7380.

OPERATION

The input wave form is fed to a threshold detector which converts it to a clean pulse train. The pulses then trigger a monostable multivibrator (one-shot). The

average DC output of the one-shot is then directly proportional to the input frequency. The integrator derives this DC value and provides amplification and filtering. The output buffer stage allows zero and span adjustments. In units having a current output (e.g. 4-20mA), the output is a current source controlled by the output buffer. With voltage output units (e.g. 0-10V), the output is taken directly from the discrete driver transistor of the buffer stage.

OPTIONS

- CS** Canadian Standards Association Certification.
- U** Urethane coating of internal circuitry for protection from corrosive atmospheres.

CALIBRATION

Top-accessed screwdriver adjustments provide typical $\pm 10\%$ zero and span adjustability. Calibration is referred to input in that adjust-

ments are to correct for input/sensor variations. Zero is adjusted for the specified minimum output with the input at its minimum frequency. Span is adjusted for the specified maximum output with the input at its maximum. Repeat adjustments for maximum accuracy.

Sensitivity: The sensitivity adjustment is also accessible through the top cover and allows the minimum sensitivity to be adjusted from 50mV rms (fully CW) to 1V rms (fully CCW) for optimum noise rejection.

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

800-767-5726

Table 2: AP7010 Standard Outputs

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

Table 1: AP7010 Standard Inputs

0-10Hz	0-200Hz	0-1500Hz	0-10KHz
0-20Hz	0-300Hz	0-2000Hz	
0-50Hz	0-500Hz	0-2500Hz	
0-100Hz	0-1000Hz	0-5000Hz	

Table 3: AP7010 Input Limits

Minimum Span*	Maximum Input
10Hz	10 KHz

*For offsets greater than 50% of the fullscale input, consult factory.

Table 4: AP7010 Output Limits

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

SPECIFICATIONS

Input Impedance

10K ohms (internally limited for up to 50V rms inputs)

Linearity (Best Straight Line)

0.1% of span typical

Response Time (to 63%)

500mSec, or 100 times the period of the full scale frequency, whichever is greater

Stability

0.05% of span/°C, max.

Output Impedance

Voltage Output: < 10 ohms
Current Output: > 100K ohms

Output Drive

Voltage Output: 10mA, max.
Current Output: 15V compliance @ 20mA

Maximum Output

Voltage Output: 10V swing
Current Output: 50mA
Open Circuit Voltage: 30V, max.

Common Mode Rejection

60 Hz: >80dB
DC: >100dB

Common Mode Voltage

500V DC or peak AC, max.

Temperature Range

Operating: 0 to 60°C (32 to 140F)
Storage: -20 to 85°C (-4 to 185F)

Power

Consumption: 3W typical, 5W max.
Standard: 120VAC ±10%, 50-400Hz
Available: 100, 220, 240VAC (±10%, 50 to 400Hz)
Optional: 24VDC (±8V, inverter-isolated, input frequencies ≥ 500 Hz only)

Output Ripple

At fullscale frequencies of:
500Hz to 10kHz
less than 0.1% of span
10Hz to 499Hz
less than 0.25% of span

PIN CONNECTIONS

AP7010

- 1 AC Power (Hot)
 - 2 Shield (Gnd)
 - 3 AC Power (Neu)
 - 4 No Connection
 - 5 Input
 - 6 Input
 - 7 Output (+)
 - 8 Output (-)
- DC Power: pin1= (+); pin3=(-)
Note: Input and output do not have an internal common. Do not ground both.

MOUNTING

All Action Paks feature plug-in installation using either molded socket (M008) or DIN rail (MD08) mounting sockets. Model AP7010 uses an 8-pin base.

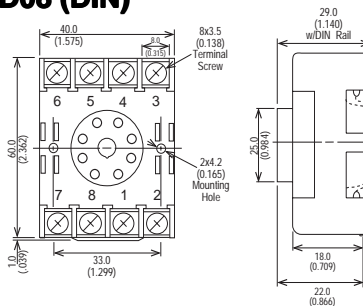
ORDERING INFORMATION

Specify:

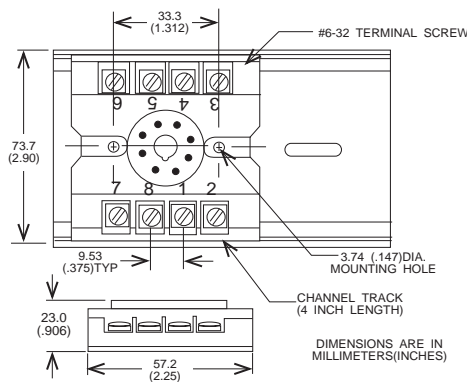


1. Model: AP7010
 2. Input Range (see tables 1,3)
 3. Output Range (see tables 2,4)
 4. Options: CS, U (see text)
 5. Line Power (see specs)
- (All power supplies are transformer-isolated from the internal circuitry.)

MD08 (DIN)

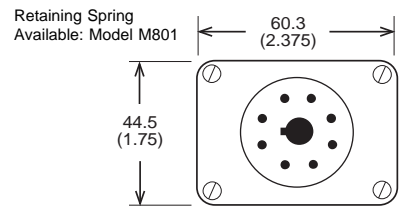
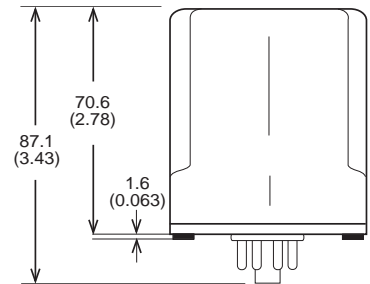


M008 (Track/Surface)



DIMENSIONS

Dimensions are in Millimeters (Inches)



All Prices and Specifications subject to change without notice

For order entry, applications or customer service assistance, call toll-free 800-767-5726

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