

# ACTION PAK® AP6050 MODEL



## LVDT-Input Signal Conditioner

Provides a DC Output in Proportion to an LVDT (Linear Variable Differential Transformer) Input

### Benefits

- Displacement and Position-Sensing Applications
- Provides LVDT Excitation Adjustable from 6-10V p-p
- Easy Plug-In Installation/ Low Mean-Time-to-Repair
- AC Line Powered
- Three Year Warranty

### DESCRIPTION

The AP6050 LVDT Conditioning Module provides synchronous demodulation and conditioning for Linear Variable Differential Transformer (LVDT) transducers used in the control, display, and recording of motion.

The AP6050 LVDT Transmitter provides the AC sine wave excitation (adjustable from 6-10V p-p nominally 4kHz) for LVDT operation. The module transmits a DC voltage or current output proportional to the motion applied to the input transducer.

### ZERO AND SPAN ADJUSTMENTS

Zero and span are factory set, but may be field adjusted (the LVDT is assumed to be previously calibrated). Zero is adjusted for a zero output with the LVDT at its mechanical null, or zero displacement position. Span is adjusted for a full scale output with the LVDT at its appropriate mechanical extreme, or full displacement position. Zero and span are each screwdriver adjustable and accessible through the top cover of the module.

### EXCITATION ADJUSTMENT

If zero and span adjustments cannot calibrate the output span appropriate to the LVDT travel input signal, roughly center zero and span adjustments and set EXC as needed to boost or decrease the LVDT's full travel signal for zero and span calibration.

### OPTION

- U Urethane coating of internal circuitry for protection from corrosive atmospheres

### FACTORY ASSISTANCE

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

**703-669-1318**



*Protecting the  
Integrity of  
Industrial  
Process Signals*



## SPECIFICATIONS

|                          |  |
|--------------------------|--|
| Input (AC p-p)           | 20mV/V to 1V/V   |
| Input Impedance=         | >100K $\Omega$   |
| Excitation               | Adjustable 6-10V p-p (4KHz)<br>Drives 250 $\Omega$ @8V p-p   |
| Output Ripple            | <0.2% of span p-p  |
| Output Impedance         | Voltage: <10 $\Omega$<br>Current: >100K $\Omega$   |
| Output Drive             | Voltage Output: 10mA, max (1K $\Omega$ , max)<br>Voltage Output (bipolar): 2mA, max<br>Current Output: 12V compliance @ 20mA (600 $\Omega$ , max)  |
| Adjustments (Zero, Span) | Factory-set at zero and full scale, to within 0.5% of span, typical (adjustment range to 10 % of span to either side of factory-setting, typical). |

|                                   |  |
|-----------------------------------|--|
| Linearity<br>(Best Straight Line) | 0.25% of span, typical   |
| Response Time                     | 150mSec, typical   |
| Stability                         | Within 0.05% of span/ $^{\circ}$ C   |
| Common Mode Rejection             | 60Hz: >80dB<br>DC: >100dB  |
| Common Mode Voltage               | 500V DC or peak AC, max  |
| Temperature Range                 | Operating: 0 to 60 $^{\circ}$ C (32 to 140 $^{\circ}$ F)<br>Storage: -20 to 85 $^{\circ}$ C (-4 to 185 $^{\circ}$ F)         |
| Power                             | Consumption: 3W typical, 5W max<br>Standard: 120 VAC ( $\pm$ 10%, 50 - 400Hz)<br>Available: 240 VAC ( $\pm$ 10%, 50 - 400Hz) |
| Weight                            | 0.60lbs  |

Table 1: Standard Inputs

|          |               |                |               |
|----------|---------------|----------------|---------------|
| 0-20mV/V | 0-100mV/V     | $\pm$ 420mV/V  | $\pm$ 800mV/V |
| 0-50mV/V | $\pm$ 400mV/V | $\pm$ 500 mV/V |               |

Table 2: Input Limits

| Minimum Span | Maximum Input |
|--------------|---------------|
| 20mV/V       | 1V/V          |

Table 3: Standard Outputs

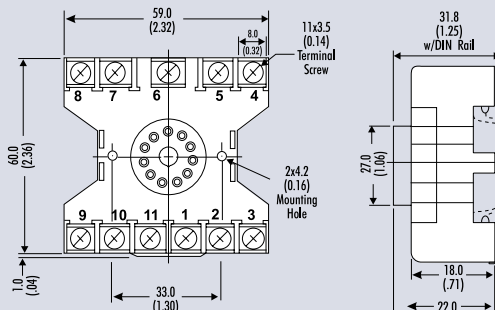
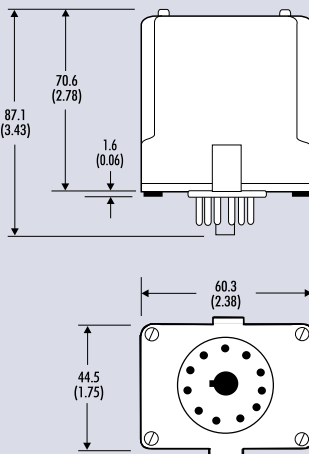
|   |            |
|---|------------|
| 0 to 1V<br>0 to 5V<br>1 to 5V<br>0 to 10V<br>$\pm$ 5V | 4 to 20 mA |
|---|------------|

Table 4: Output Limits

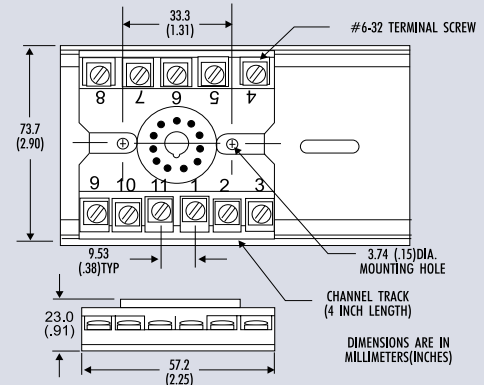
|         | Minimum Span | Maximum Output |
|---------|--------------|----------------|
| Voltage | 100mV        | 10V            |
| Current | 1mA          | 50mA           |

## DIMENSIONS

Dimensions are in mm (inches)



MD11 (DIN/Surface)



M011 (Track/Surface)

## MODELS & ACCESSORIES

### Mounting

All Action Paks feature plug-in installation. Model AP6050 uses an 11-pin base using either molded socket M011 or DIN rail MD11, mounting sockets.

### Ordering Information

1. Model: **AP6050**
  2. Input Range (see Table 1, 2)
  3. Output Range (see Table 3, 4)
  4. Option: 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. Input (+)
5. Input (-)
6. Not used
7. Excitation (+)
8. Excitation (-)
9. Output (+)
10. Output (-)
11. Not used

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