

AP6380

MODEL



Benefits

- Eliminates Ground Loops with 1500V DC Input-To-Output Isolation
- Easy Field Configurable Input Ranges: 50mV to 200V AC, 5mA to 100mA AC
- Four Field Configurable Output Ranges: 0-5V, 0-10V, 0-1mA, 4-20mA
- Easy Plug-In Installation/ Low Mean-Time-to-Repair
- Selectable 120/240V AC Power
- Lifetime Warranty



Action Pak® Input, Isolated, Field Configurable Isolator

Provides a Fully Isolated DC Output in Proportion to an AC Input

DESCRIPTION

The field configurable AP6380 signal conditioner offers wide ranging input capability for scaling, converting or isolating AC inputs ranging from 5mA AC to 100mA AC or 50mV AC to 200V AC. The DC output of the AP6380 is proportional to the average of the fully-rectified AC input signal, and is calibrated for sine waves from DC to 1KHz.

For current inputs above 100mA AC, it is recommended that an input shunt resistor be used and the AP6380 be configured for the proper input voltage range. For example, for a 5A AC current transformer output, use the Action model C006 resistor (0.1 Ω , 5W, 1%) and set the input for 0-500mV AC.

APPLICATION

The Action Pak AP6380 is useful in applications requiring a conditioned DC output from an AC source. Typical applications include energy management, load shedding, motor current/load monitoring, locked rotor detection, isolation and data acquisition. The output of the AP6380 can drive a digital meter for direct display or can interface with alarming or control devices including PLCs and computers.

DIAGNOSTIC LED

Input power and signal status are indicated with a dual-function LED on the AP6380. The green LED will illuminate when line power is applied, and will pulse quickly (8 Hz) if the input rises 10% above the set input full scale range. If this continues to occur, you may wish to change your full scale input range setting.

CONFIGURATION

The AP6380 can be set for a wide variety of full scale input ranges. The factory pre-sets the AP6380 with an input range of 0-500mV AC (SW1 & W2) and an output range of 4-20mA DC (SW2) as shown in Figure 1. For other I/O ranges, remove the four base screws to access the I/O range configuration selectors.



The line power is preset at the factory for 120V AC. This may be reconfigured by referring to figure 2.

WARNING: Do not attempt to change any switch settings with power applied. Severe damage may occur!

CALIBRATION

1. Before applying power to the Action Pak, set the DIP switches inside the Action Pak for your full scale input and full scale output ranges. Refer to Tables 1, 2 & 3 showing switch configuration settings.
2. Connect the AC input terminals (5 & 6) to a calibrated AC voltage or AC current source. Connect a meter to measure the output (terminals 7 & 8).
3. Connect power to terminals (1 & 3) on the Action Pak and turn on the power.
4. Wait approximately 1 hour to ensure thermal stability before calibrating.
5. Set the calibrator to the desired minimum AC input on the Action Pak. Adjust the "Zero" potentiometer until the DC output coincides with the desired minimum output.
6. Set the calibrator input to the desired full scale AC input. Adjust the "Span" potentiometer until the DC output coincides with the desired full scale output.
7. Repeat steps 5 and 6, as necessary, for best accuracy.

Table 1: Input Range Selector-Switch Settings

Voltage Span*	Current Span*	Input Range Selector (SW1 & W2)
100mV - 50mV	10mA - 5mA	SW1 W2
200mV - 100mV	20mA - 10mA	SW1 W2
500mV - 250mV	50mA - 25mA	SW1 W2
1V - 0.5V	100mA - 50mA	SW1 W2
2V - 1V		SW1 W2
5V - 2.5V		SW1 W2
10V - 5V		SW1 W2
20V - 10V		SW1 W2
50V - 25V		SW1 W2
100V - 50V		SW1 W2
200V - 100V		SW1 W2

* Input span adjustments within the range setting are a function of the zero and span potentiometers. The span potentiometer allows 50% "Turn-Down" of the maximum range value (as shown in table 1). The zero potentiometer allows 50% "Turn-Up" or offset within the maximum range setting.

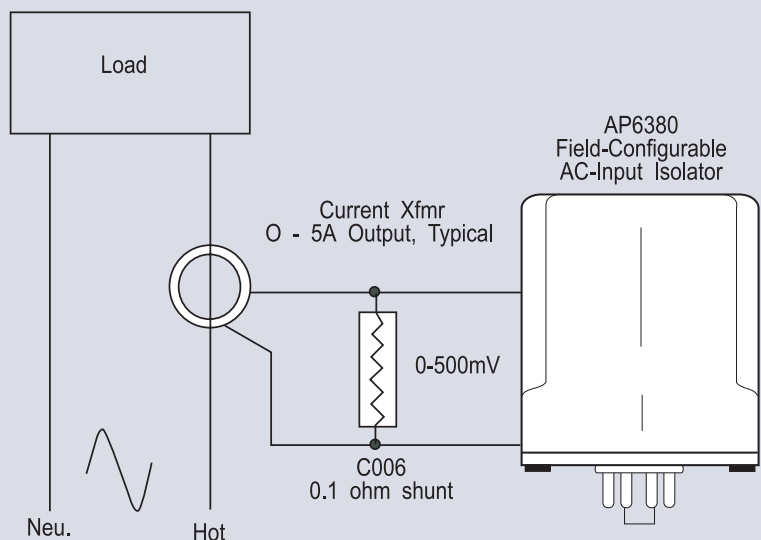
Table 2: Output Range Selector-Switch Settings

Range	Output Range Selector (SW2)
0 to 10V	
0 to 5V	
0 to 1mA	
4 to 20mA	

Table 3: AP6380 Input Jumper Settings

Input	Input Jumper Selector (W1)
Voltage	
Current	

TYPICAL APPLICATION



Load monitoring using a current transformer and the AP6380

SPECIFICATIONS

Input Ranges (selectable)	Voltage: 50mV AC to 200V AC Current: 5mA AC to 100mA AC	Accuracy (including hysteresis and linearity)	±0.1% of span, typical ±0.5% of span, maximum
Input Frequency	DC-1KHz, factory calibrated at 60Hz	Response Time	250mSec, typical
Input Impedance	Voltage: >100KΩ Current: 20Ω typical	Stability	±0.025% of full scale per °C, typical
Input Overload (without damage)	Voltage: 300V AC Current: 200mA AC, 60V peak	Common Mode Rejection	120dB, DC to 60Hz
Common Mode Voltage	1500V DC, input to ground	Isolation (input to output to power)	1500V DC or peak AC
Output Ranges (selectable)	Voltage: 0-5V DC, 0-10V DC Current: 4-20mA DC, 0-1mA DC	Temperature Range	Operating: 0 to 60°C (32 to 140°F) Storage: -15 to 70°C (5 to 158°F)
Output Source Impedance	Voltage: <10Ω Current: >100KΩ	Humidity (Non-Condensing)	10 to 95% RH, at 45°C
Output Drive	Voltage: 10mA, maximum (1KΩ min. @ 10V) Current: 20V DC compliance (1KΩ max @ 20mA)	Power	Consumption: 3W typical, 5W max Standard: Selectable 120/240V AC (±10%, 50-60Hz) Optional: 9-30VDC
Span Turn Down	50% of full scale range	Weight	0.60lbs
Zero Turn Up	50% of full scale range	Agency Approvals	CSA certified per standard C22.2, No. M1982 (File No. LR42272-38). UL recognized per standard UL508 (File No. E150323).
LED Indication	8Hz flash when input is 10% above full scale configuration		

I/O CARD CONFIGURATION

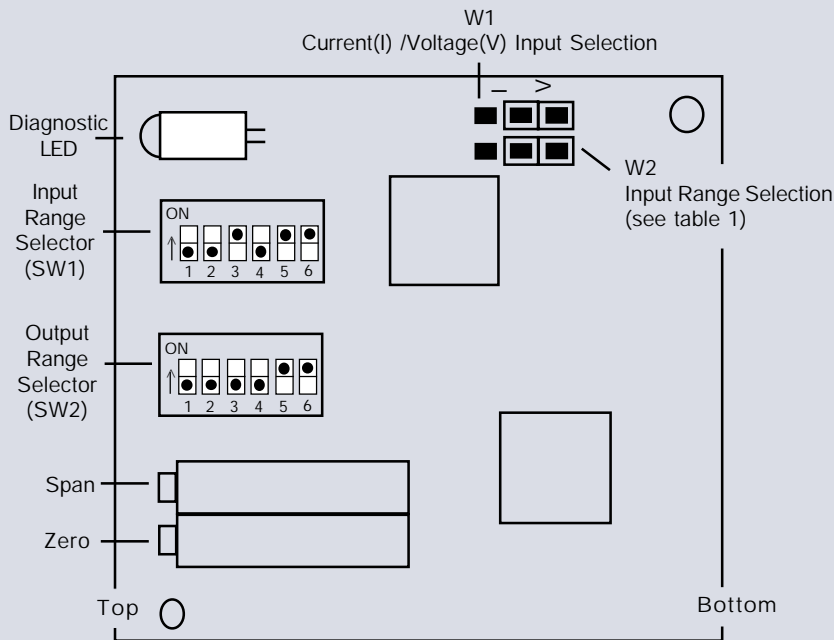


Figure 1: I/O card factory settings shown: 0-500mV AC input, 4-20mA output (shown sideways to view switches)

WARNING: Do not attempt to change any switch settings with power applied. Severe damage may occur!

TOP VIEW DIAGRAM

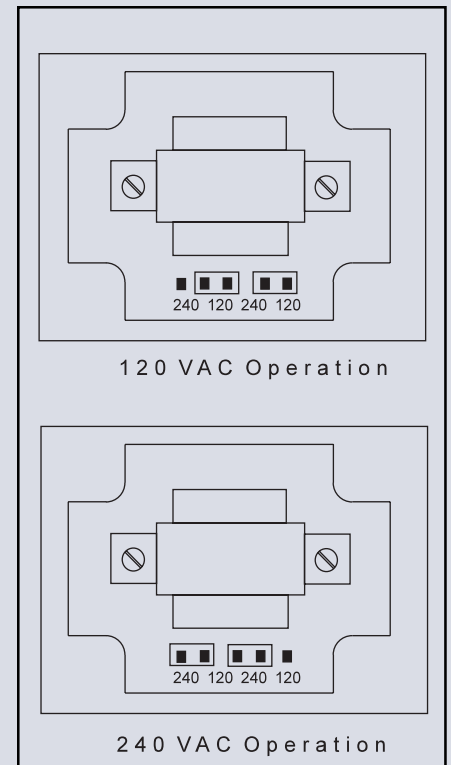
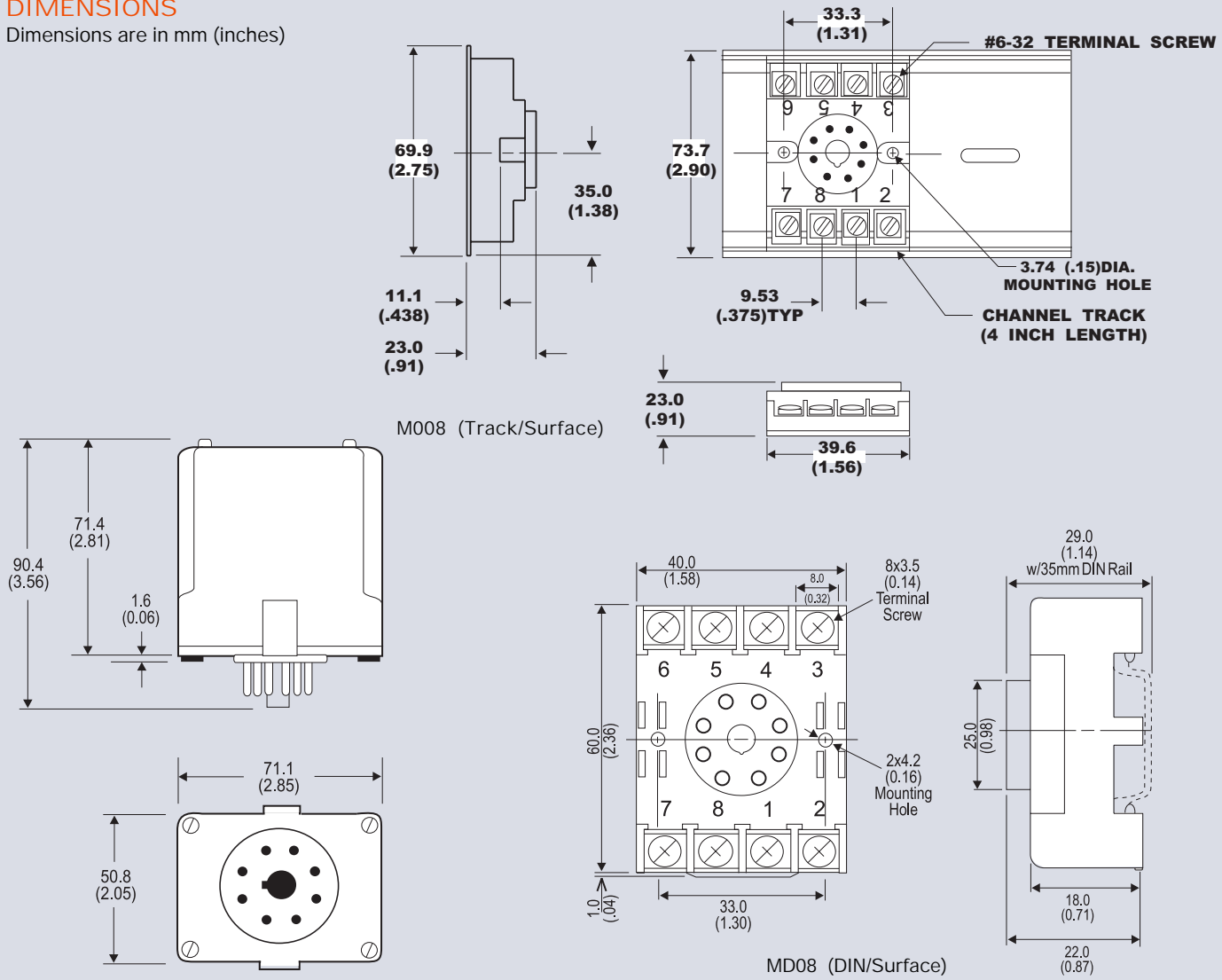


Figure 2: 120/240 VAC Selection

WARNING: Do not attempt to change any jumper settings with power applied. Severe damage will occur!

DIMENSIONS

Dimensions are in mm (inches)



MODELS & ACCESSORIES

Mounting

All Action Paks feature plug-in installation. Model AP6380 uses an 8-pin base and either molded socket M008 or DIN rail MD08 mounting sockets.

Ordering Information

Specify:

1. Model: AP6380-0000
2. Option: U (see text)
3. Line Power (see specs)
4. Optional Factory Calibration (C620): specify input range, output range and power.
5. C006 (0.1W shunt for 1 to 5 Amp current inputs)

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

Pin Connections

- 1 AC Power (Hot)
- 2 Shield (Gnd)
- 3 AC Power (Neu)
- 4 Spare Termination
- 5 Input
- 6 Input
- 7 Output (+)
- 8 Output (-)

FACTORY ASSISTANCE

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

800-767-5726

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