

ACTION PAK® AP4402 & AP4408

MODEL



Benefits

- Effective Way to Perform Math Functions
- Eliminates Need for Dedicated Computers
- DC Voltage or Current Input
- DC Voltage or Current Output
- Easy Plug-in Installation
- AC Line Powered (DC optional)
- Three Year Warranty



DC Input Math Modules

Provides a DC Output Proportional to the Sum or Difference of Two input Signals

DESCRIPTION

The Action Pak models AP4402 and AP4408 Math Function Modules provide a convenient and efficient method of performing the addition or subtraction of two analog signal inputs. These reliable, modular units are extremely easy to use and, with the correct base, can be mounted on a DIN rail or a conventional snap track.

APPLICATION

Model AP4402 provides a DC output signal that is proportional to the sum of the inputs. Model AP4408 provides an output that is proportional to the difference of the two input signals.

These modules are useful in calculating any process variable that can be described as the sum or difference of two analog DC input signals. Applications include totalizing functions such as adding several flowmeter inputs and tank filling control based on level difference.

CONFIGURATION

There are four standard voltage inputs and two standard current inputs that can be factory selected. Similarly, there are 4 standard voltage outputs or a 4-20 mA current output to choose from. See Tables 1 and 2 for more information.

Note: Non-Standard ranges are available within the limits shown in Tables 3 and 4.

CALIBRATION

Top accessed screwdriver adjustments provide +/- 15% typical zero and span adjustments for fine calibration in the field (factory settings are typically within 0.5% of span).

For both the AP4402 and AP4408, adjust zero for the specified minimum output with both inputs at minimum. Span adjustments for the two models are different. Adjust the span for the specified maximum output with both inputs at their maximum for the AP4402 and for the AP4408, input A at its maximum and input B



*Protecting the
Integrity of
Industrial
Process Signals*



at its minimum. There may some interactivity between zero and span so the adjustments should be repeated as necessary for best accuracy.

4402: % output = (%A + %B)/2

4408: % output = (%A - %B)

(A must be ≥ B)

OPTIONS

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

N Non-Standard range (see text).

FACTORY ASSISTANCE

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

800-767-5726

Table 1: AP4402, AP4408 Standard Inputs

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

Table 2: AP4402, AP4408 Standard Outputs

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

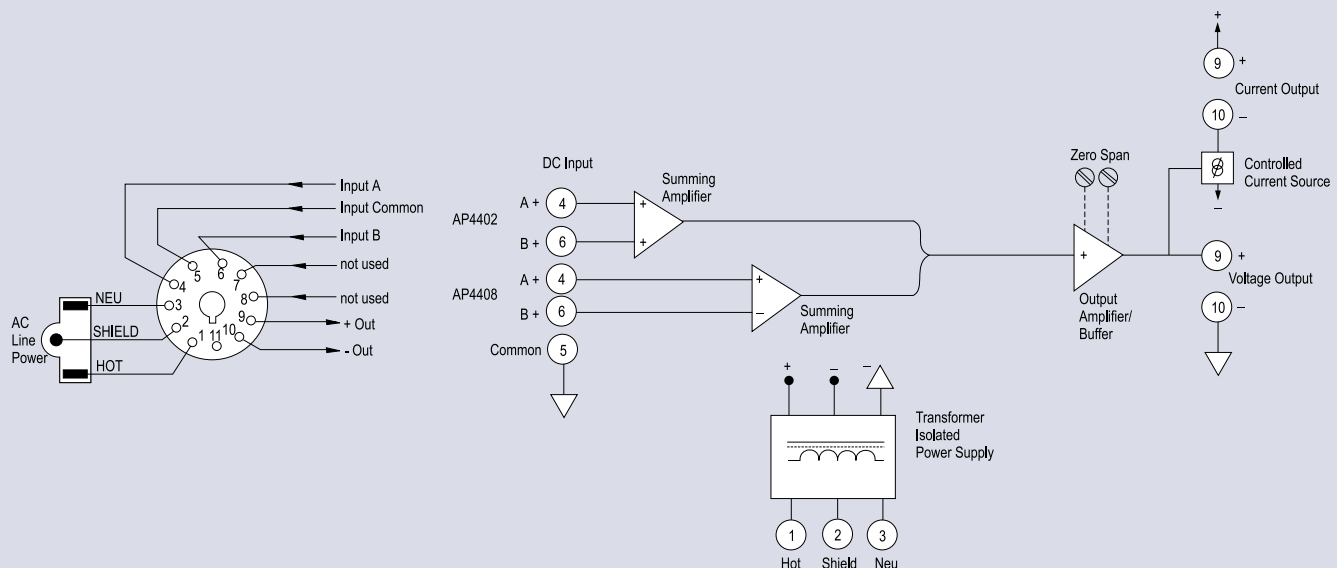
Table 3: AP4402, AP4408 Input Limits

	Minimum Span	Maximum Input
Voltage	100mV	100V
Current	1mA	1A

Table 4: AP4402, AP4408 Output Limits

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

FUNCTIONAL DIAGRAM/PIN CONNECTIONS

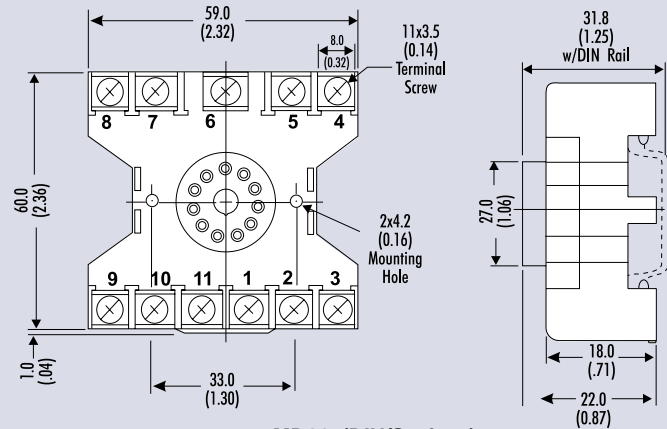
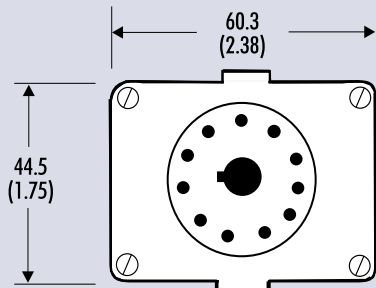
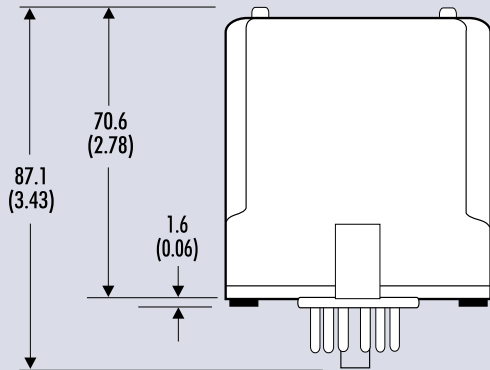


SPECIFICATIONS

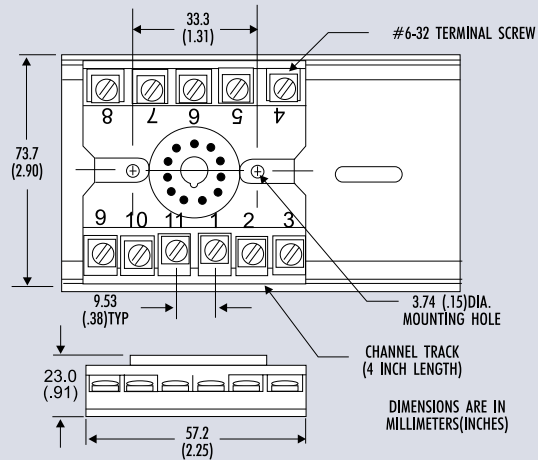
Input Impedance	Voltage Inputs: Greater than 100k Ω Current Inputs: 10 Ω typical	Line and Linear Input	Within 0.1% of span.
Output Impedance	Voltage Output: Less than 10 Ω Current Output: Greater than 100k Ω	Operating Temperature Range	(Ambient) Standard Industrial Environment: 0 to 60°C (32 to 140°F)
Output Drive	Voltage Output: 10mA, max Current Output: 15V compliance at 20mA	Common Mode Rejection	DC: 100dB 60Hz: 80dB
Stability	Within 0.05% of span per °C	Common Mode Voltage	600VDC or peak AC, max. 120VAC \pm 10%, 50 to 400Hz standard 3 Watts typical, 5 Watts max
Response Time	150 milliseconds, typical	Weight	AP4402 0.52lbs
Output Ripple	Less than 0.1% of span or 5mV peak-to-peak, whichever is greater		
Linearity (Best Straight)			

DIMENSIONS

Dimensions are in mm (inches)



MD11 (DIN/Surface)



M011 (Track/Surface)

MODELS & ACCESSORIES

Mounting

All Action Paks feature plug-in installation. Models AP4402 and AP4408 use an 11 pin base and either molded socket M011 or DIN socket MD11 for mounting.

Ordering Information

Specify:

1. Model: **AP4402, AP4408**
2. Option N,U, see text
3. Input Range: See standard list
4. Output Range: See standard list
5. Line Power (if other than 120VAC): 220VAC, 240VAC

All power supplies are transformer isolated from the internal circuitry

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