

# ACTION PAK® AP4830 MODEL

## Benefits

- Adjustable Ramp Rate & Setpoint
- Built-in Reference Supply for External Programming
- TTL Setpoint Status
- Easy Plug-in Installation/ Low Mean-Time-to-Repair
- AC Line Powered



## DC Programmable Up/Down Ramp Generator

Provides an Output Ramp to Setpoint with Adjustable Ramp Rate

### DESCRIPTION

The AP4830 provides a DC output that can be programmed to ramp up or down to a setpoint by supplying 0-5VDC to the Setpoint Control (pin 6) and the Ramp Rate Control (pin 10) inputs.

Table 1: AP4830 Ramp/Setpoint Programming

Control	+5V (Pin 11)	Common (Pin 12)	Open
Setpoint (Pin 6)	100% Output	0% Output	Hold
Ramp Rate (Pin 10)	100 x Base Rate	Base Rate (Fastest)	

An external potentiometer, typically 10KΩ or greater, may be used to attenuate the built-in +5V reference and provide intermediate setpoint and rate values (see Figure 1). Use a rotary switch or relay to select multiple potentiometers for different setpoint and rate selections. To 'hold' the output ramp indefinitely, disconnect the Setpoint Control input (pin 6).

The AP4830 may require an external timing capacitor to set the ramp base rate. Use one of the supplied capacitors or any polarized electrolytic or tantalum capacitor. An external contact closure from pin (13) to pin (15) or a +5V level to pin (15) will immediately reset the output to minimum. The setpoint status is an open collector output (pin 5) which will sink up to 20mA when the ramp reaches the setpoint.



*Protecting the  
Integrity of  
Industrial  
Process Signals*



### APPLICATION

Model AP4830 is useful in controlling process equipment requiring voltage or current ramp control. Typical applications include temperature cycling, PID controller setpoint control, motor control and bumpless control transfer.

### OPTIONS

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

### CALIBRATION

Top-accessed screwdriver adjustments provide typical  $\pm 3\%$  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. Span is adjusted for the specified maximum output with the input at the desired maximum. Repeat adjustments for maximum accuracy.

### FACTORY ASSISTANCE

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

**703-669-1318**

### OUTPUT RANGES

**Table 2: AP4830 Standard Outputs**

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

**Table 3: AP4830 Output Limits**

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

**Table 4: AP4830 Capacitor Selection (Nominal Times)\***

Base Rate (fastest)	Capacitor (Pins 7, 9)
1 sec.	OPEN
15 sec.	10 $\mu$ F
100 sec.	47 $\mu$ F
180 sec.	100 $\mu$ F
245 sec.	470 $\mu$ F

\* Slowest ramp = 100 x Base Rate

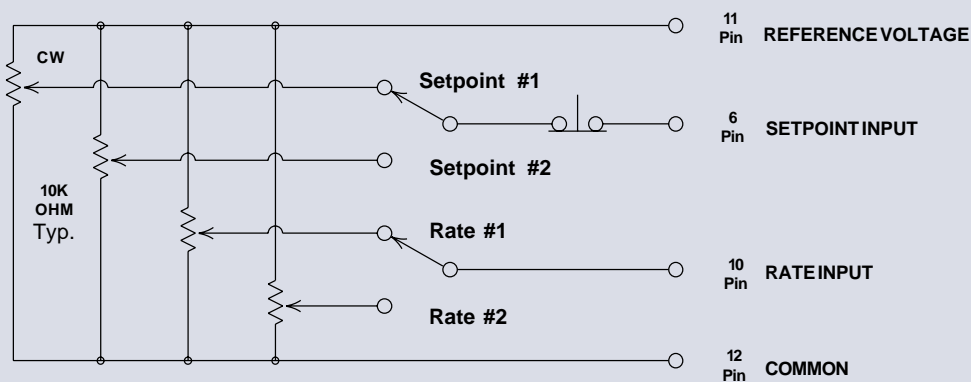


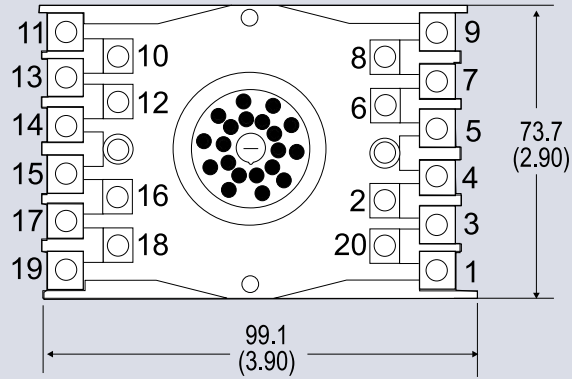
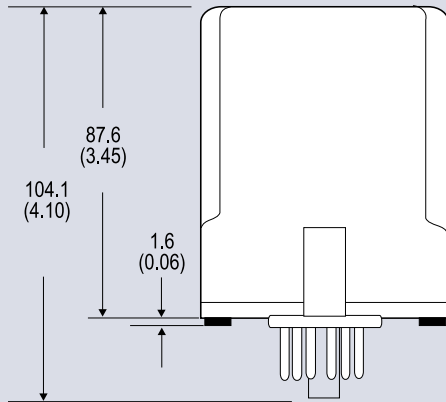
Figure 1: AP4830 Wiring Example

## SPECIFICATIONS

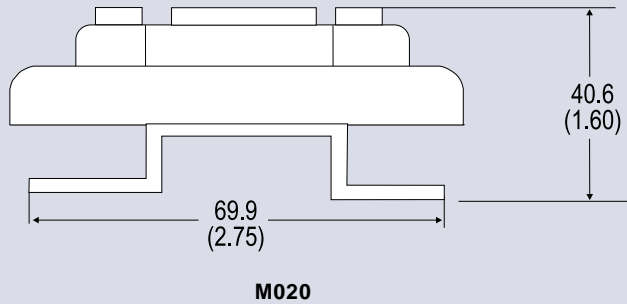
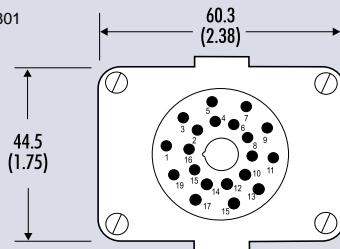
<b>Output Impedance</b>	Voltage Output: <math><10\Omega</math> Current Output: >100K $\Omega$	<b>Stability</b>	Stability: <math><0.003\%/^{\circ}\text{C}</math> Loading: 10mA, max.
<b>Output Drive</b>	Voltage Output: 10mA, max. (1K $\Omega$ , min. @ 10V) Current Output: 15V compliance @ 20mA (750 $\Omega$ , max)	<b>Setpoint Status</b>	Open-collector, referenced to common. TTL compatible, 20mA sink, max
<b>Stability (15-minute warm up)</b>	$\pm 0.05\%/^{\circ}\text{C}$ , typical	<b>Temperature Range</b>	Operating: 0 to 60 $^{\circ}\text{C}$ (32 to 140 $^{\circ}\text{F}$ ) Storage: -20 to 85 $^{\circ}\text{C}$ (-4 to 185 $^{\circ}\text{F}$ )
<b>Ramp Rate Range</b>	100:1, min.	<b>Power</b>	Consumption: 3W typical, 5W max Standard: 120VAC ( $\pm 10\%$ , 50-400Hz) Available: 240VAC ( $\pm 10\%$ , 50-400Hz)
<b>Repeatability</b>	Within 1% of previous ramp or setpoint setting	<b>Weight</b>	0.58lbs
<b>Reference Supply</b>	Supply: 5VDC $\pm 5\%$		

## DIMENSIONS

Dimensions are in mm (inches)



Retaining Spring  
Available: Model M801



### Mounting

All Action Paks feature plug-in installation. Model AP4830 uses a 20-pin base (M020).

### Ordering Information

#### Specify:

1. Model: **AP4830**
2. Output Range (see Tables 2, 3)
3. Option: U (see text)

### Pin Connections

- |                          |                         |
|--------------------------|-------------------------|
| 1 AC Power (Hot)         | 12 Reference Common (-) |
| 2 Shield (Gnd)           | 13 Reset (contact)      |
| 3 AC Power (Neu)         | 15 Reset (+5V/contact)  |
| 5 Setpoint Status (TTL)  | 17 Output (+)           |
| 6 SETPOINT Control (+)   | 19 Output (-)           |
| 7 Timing Capacitor (+)   |                         |
| 9 Timing Capacitor (-)   |                         |
| 10 Ramp Rate Control (+) |                         |
| 11 +5V Reference         |                         |

*Note: To reset, momentarily short pins 13 and 15 or apply +5V to pin 15. Pins 4,8,14,16,18,20 are "No Connection" and may be used for spare termination.*

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