

**Limit Alarms (potentiometer adj.) A-UNIT**

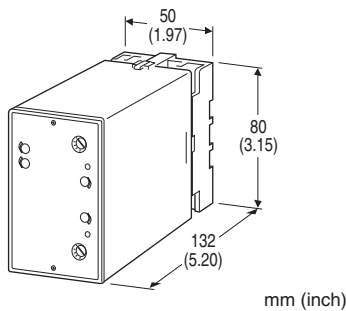
**DC ALARM**

**Functions & Features**

- Providing SPDT relay outputs at preset DC input levels
- Dual (Hi/Lo) trip
- Energized or de-energized coil at a tripped condition selectable
- Hysteresis (deadband) adjustable
- Enclosed relays
- Relays can be powered 110 V DC
- Isolation up to 2000 V AC
- High-density mounting

**Typical Applications**

- Annunciator
- Various alarm applications



**MODEL: ACV-[1]1[2][3]-[4]**

**ORDERING INFORMATION**

- Code number: ACV-[1]1[2][3]-[4]  
Specify a code from below for each [1] through [4].  
(e.g. ACV-A113-B)
- Special input range (For codes Z & 0)

**[1] INPUT**

**Current**

- A: 4 - 20 mA DC (Input resistance 250 Ω)
- A1: 4 - 20 mA DC (Input resistance 50 Ω)
- B: 2 - 10 mA DC (Input resistance 500 Ω)
- C: 1 - 5 mA DC (Input resistance 1000 Ω)
- D: 0 - 20 mA DC (Input resistance 50 Ω)
- E: 0 - 16 mA DC (Input resistance 62.5 Ω)
- F: 0 - 10 mA DC (Input resistance 100 Ω)
- G: 0 - 1 mA DC (Input resistance 1000 Ω)
- H: 10 - 50 mA DC (Input resistance 100 Ω)
- J: 0 - 10 μA DC (Input resistance 1000 Ω)
- K: 0 - 100 μA DC (Input resistance 1000 Ω)

GW: -1 - +1 mA DC (Input resistance 1000 Ω)

FW: -10 - +10 mA DC (Input resistance 100 Ω)

Z: Specify current (See INPUT SPECIFICATIONS)

**Voltage**

- 1: 0 - 10 mV DC (Input resistance 10 kΩ min.)
- 15: 0 - 50 mV DC (Input resistance 10 kΩ min.)
- 16: 0 - 60 mV DC (Input resistance 10 kΩ min.)
- 2: 0 - 100 mV DC (Input resistance 100 kΩ min.)
- 3: 0 - 1 V DC (Input resistance 1 MΩ min.)
- 4: 0 - 10 V DC (Input resistance 1 MΩ min.)
- 5: 0 - 5 V DC (Input resistance 1 MΩ min.)
- 6: 1 - 5 V DC (Input resistance 1 MΩ min.)
- 4W: -10 - +10 V DC (Input resistance 1 MΩ min.)
- 5W: -5 - +5 V DC (Input resistance 1 MΩ min.)
- 0: Specify voltage (See INPUT SPECIFICATIONS)

**[2] SETPOINT 1 OUTPUT**

- 1: Hi (coil energized at alarm)
- 2: Hi (coil de-energized at alarm)
- 3: Lo (coil energized at alarm)
- 4: Lo (coil de-energized at alarm)

**[3] SETPOINT 2 OUTPUT**

- 1: Hi (coil energized at alarm)
- 2: Hi (coil de-energized at alarm)
- 3: Lo (coil energized at alarm)
- 4: Lo (coil de-energized at alarm)

**[4] POWER INPUT**

**AC Power**

- B: 100 V AC
- C: 110 V AC
- D: 115 V AC
- F: 120 V AC
- G: 200 V AC
- H: 220 V AC
- J: 240 V AC

**DC Power**

- S: 12 V DC
- R: 24 V DC
- V: 48 V DC
- P: 110 V DC



## GENERAL SPECIFICATIONS

**Construction:** Plug-in  
**Connection:** M3.5 screw terminals  
**Housing material:** Flame-resistant resin (black)  
**Isolation:** Input to output 1 to output 2 to power  
**Zero adjustment:** -5 to +5 % (front)  
**Span adjustment:** 95 to 105 % (front)  
**Setpoint adjustments:** 270°-turn screwdriver adjustments (front); 0 - 100 % independently  
**Hysteresis (deadband) adjustments:** 1 - 100 % (front)  
**Front LEDs:** Lights turn on at a tripped condition; red for output 1, green for output 2  
**Power ON timer:** Relays de-energized for approx. 2 seconds after power is turned on.

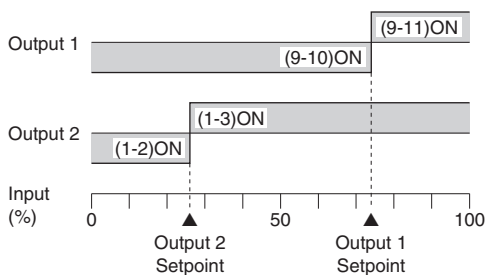
## INPUT SPECIFICATIONS

■ **DC Current:**  
 Shunt resistor attached to the input terminals (0.5 W)  
 Specify input resistance value for code Z.  
 ■ **DC Voltage:** -300 - +300 V DC  
**Minimum span:** 10 mV  
**Offset:** Max. 1.5 times span  
**Input resistance**  
 Span 10 - 100 mV :  $\geq 10 \text{ k}\Omega$   
 Span 0.1 - 1 V :  $\geq 100 \text{ k}\Omega$   
 Span  $\geq 1 \text{ V}$  :  $\geq 1 \text{ M}\Omega$

## OUTPUT SPECIFICATIONS

■ **Relay Contact:** 100 V AC @ 1 A ( $\cos \phi = 1$ )  
 120 V AC @ 1 A ( $\cos \phi = 1$ )  
 240 V AC @ 0.5 A ( $\cos \phi = 1$ )  
 30 V DC @ 1 A (resistive load)  
**Maximum switching voltage:** 380 V AC or 125 V DC  
**Maximum switching power:** 120 VA or 30 W  
**Minimum load:** 5 V DC @ 10 mA  
**Mechanical life:**  $5 \times 10^7$  cycles  
 For maximum relay life with inductive loads, external protection is recommended.

### Alarm Trip Operation Terminal No. in parentheses



### Trip Operation in Power Failure

- **Output Code: 1 & 4:** Terminals 1 - 2, 9 - 10 turn ON
- **Output Code: 2 & 3:** Terminals 1 - 3, 9 - 11 turn ON

## INSTALLATION

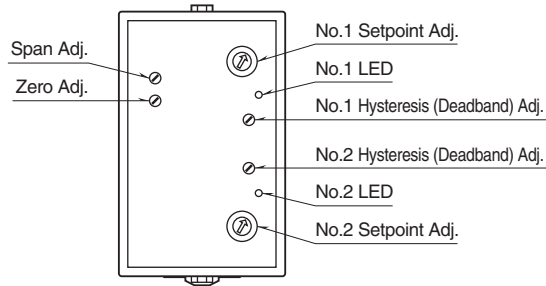
**Power input**  
 • **AC:** Operational voltage range: rating  $\pm 10 \%$ , 50/60  $\pm 2$  Hz, approx. 2 VA  
 • **DC:** Operational voltage range: rating  $\pm 10 \%$ , or 85 - 150 V for 110 V rating (ripple 10 % p-p max.)  
 Approx. 2 W (80 mA at 24 V)  
**Operating temperature:** -5 to +60°C (23 to 140°F)  
**Operating humidity:** 30 to 90 %RH (non-condensing)  
**Mounting:** Surface or DIN rail  
**Weight:** 450 g (0.99 lbs)

## PERFORMANCE in percentage of span

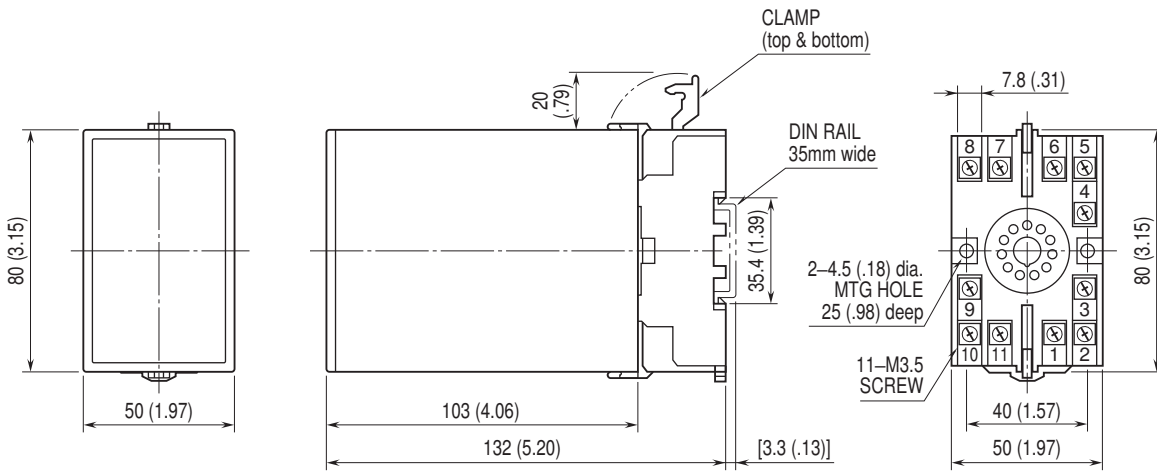
**Trip point repeatability:**  $\pm 0.5 \%$   
**Temp. coefficient:**  $\pm 0.05 \%/^{\circ}\text{C}$  ( $\pm 0.03 \%/^{\circ}\text{F}$ )  
**Response time:**  $\leq 0.5$  sec. (0 - 100 % at 90 % setpoint)  
**Line voltage effect:**  $\pm 0.1 \%$  over voltage range  
**Insulation resistance:**  $\geq 100 \text{ M}\Omega$  with 500 V DC  
**Dielectric strength:** 2000 V AC @1 minute (input to output 1 to output 2 to power to ground)



## EXTERNAL VIEW

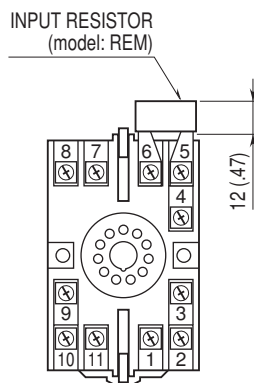


## DIMENSIONS unit: mm (inch)



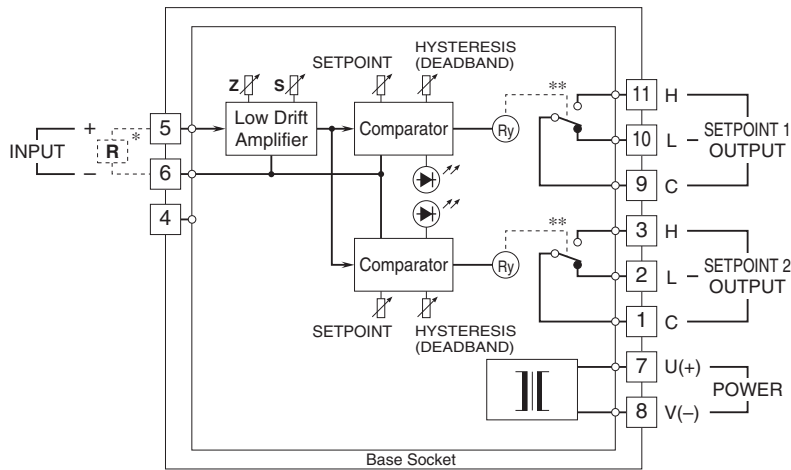
• When mounting, no extra space is needed between units.

## TERMINAL ASSIGNMENTS unit: mm (inch)



Input shunt resistor attached for current input.

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

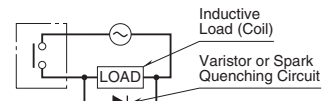


\* Input shunt resistor attached for current input.

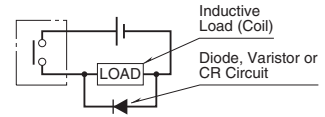
\*\*Relay status for output codes "1" & "4", at power OFF.

### ■ Relay Protection

#### •AC Powered



#### •DC Powered



Specifications are subject to change without notice.