

**Limit Alarms (with DC output) AE-UNIT**

**DC ALARM**

**MODEL AEV**

**MODEL & SUFFIX CODE SELECTION**

MODEL \_\_\_\_\_  
 INPUT \_\_\_\_\_  
 AEV-□□□□□□□□

**Current Voltage**  
**A** : 4 – 20mA DC      **1** : 0 – 10mV DC  
**A1** : 4 – 20mA DC\*    **15** : 0 – 50mV DC  
**B** : 2 – 10mA DC      **16** : 0 – 60mV DC  
**C** : 1 – 5mA DC        **2** : 0 – 100mV DC  
**D** : 0 – 20mA DC      **3** : 0 – 1V DC  
**E** : 0 – 16mA DC      **4** : 0 – 10V DC  
**F** : 0 – 10mA DC      **5** : 0 – 5V DC  
**G** : 0 – 1mA DC        **6** : 1 – 5V DC  
**H** : 10 – 50mA DC    **4W** : -10 – +10V DC  
**J** : 0 – 10µA DC      **5W** : -5 – +5V DC  
**K** : 0 – 100µA DC    **0** : Specify voltage  
**GW** : -1 – +1mA DC  
**FW** : -10 – +10mA DC  
**Z** : Specify current  
 \*50Ω input resistance for Code A1

**DC OUTPUT** \_\_\_\_\_  
**N** : None  
**Current Voltage**  
**A** : 4 – 20mA DC      **1** : 0 – 10mV DC  
**B** : 2 – 10mA DC      **2** : 0 – 100mV DC  
**C** : 1 – 5mA DC        **3** : 0 – 1V DC  
**D** : 0 – 20mA DC      **4** : 0 – 10V DC  
**E** : 0 – 16mA DC      **5** : 0 – 5V DC  
**F** : 0 – 10mA DC      **6** : 1 – 5V DC  
**G** : 0 – 1mA DC        **4W** : -10 – +10V DC  
**Z** : Specify current    **5W** : -5 – +5V DC  
**0** : Specify voltage

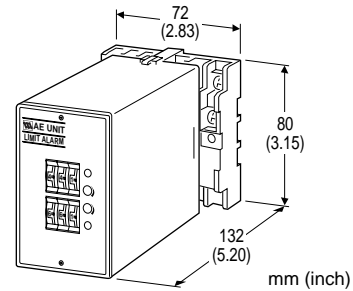
**SETPOINT 1 OUTPUT** \_\_\_\_\_  
**1** : Hi (coil energized at alarm)  
**2** : Hi (coil de-energized at alarm)  
**3** : Lo (coil energized at alarm)  
**4** : Lo (coil de-energized at alarm)

**SETPOINT 2 OUTPUT** \_\_\_\_\_  
 Same selections as Setpoint 1 Output

**ON DELAY TIME** \_\_\_\_\_  
**0** : 0.5 seconds      **3** : 3 seconds  
**1** : 1 second         **4** : 4 seconds  
**2** : 2 seconds

**POWER ON DELAY TIME** \_\_\_\_\_  
**1** : 1 second         **4** : 4 seconds  
**2** : 2 seconds         **5** : 5 seconds  
**3** : 3 seconds

**POWER INPUT** \_\_\_\_\_  
**AC Power DC Power**  
**B** : 100V AC    **G** : 200V AC    **S** : 12V DC  
**C** : 110V AC    **H** : 220V AC    **R** : 24V DC  
**D** : 115V AC    **J** : 240V AC    **V** : 48V DC  
**F** : 120V AC    **P** : 110V DC



**Functions & Features**

- Providing SPDT relay outputs at preset DC input levels
- Dual (Hi/Lo) trip
- Additional isolated DC output proportional to the input
- Energized or de-energized coil at a tripped condition selectable
- Thumbwheel switch adjustments
- Relays can be powered 110V DC

**ORDERING INFORMATION**

Specify code number and variables.

- **Code number** (e.g. AEV-6A1111-B)
- **Special DC input and output ranges**  
 (For codes Z & 0)

**GENERAL SPECIFICATIONS**

- Construction:** plug-in
- Connection:** M3.5 screw terminals
- Housing material:** flame-resistant resin (black)
- Isolation:** input to DC output to relay output to power
- Zero/span adjustments:** ±5% (front)
- Setpoint adjustments:** thumbwheel switches (front); 0 – 99% independently; 1% increments
- Hysteresis (deadband) adjustments:** thumbwheel switches (front); 0.5, 1 – 9% independently; 1% increments (SW position 0 = 0.5); [Lo SP + Hysteresis] ≤ 102
- Front LEDs:** red lights turn on when coils are energized.

**INPUT & OUTPUT**

**INPUT**

• **DC Current:** shunt resistor attached to input terminals (0.5W)

**Input resistance:** For resistance values other than listed below, specify when ordering.

Input	Input Resistance
4 – 20mA	: 250 (Ω) (50Ω for Code A1)
2 – 10mA	: 500
1 – 5mA	: 1000
0 – 20mA	: 50
0 – 16mA	: 62.5
0 – 10mA	: 100
0 – 1mA	: 1000
10 – 50mA	: 100
0 – 10μA	: 1000
0 – 100μA	: 1000
-1 – +1mA	: 1000
-10 – +10mA	: 100

• **DC Voltage:** -300 – +300V DC

**Minimum span:** 10mV

**Zero suppression/elevation:** max. 1.5 times span  
**Input resistance**

Input Span	Input Resistance
10 – 100mV	: 10k (Ω minimum)
0.1 – 1V	: 100k
≥1V	: 1M

**DC OUTPUT**

• **DC Current:** 0 – 20mA DC

**Minimum span:** 1mA

**Zero suppression/elevation:** max. 1.5 times span

**Load resistance:** output drive 7V maximum

Output	Load Resistance
4 – 20mA	: 350 (Ω maximum)
2 – 10mA	: 700
1 – 5mA	: 1400
0 – 20mA	: 350
0 – 16mA	: 430
0 – 10mA	: 700
0 – 1mA	: 7000

• **DC Voltage:** -10 – +12V DC

**Minimum span:** 5mV

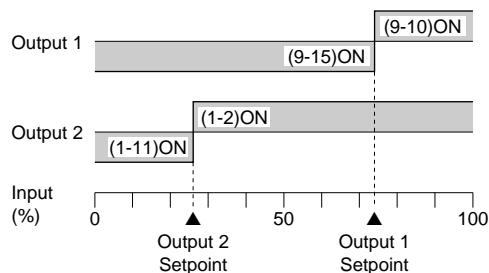
**Zero suppression/elevation:** max. 1.5 times span

**Load resistance:** output drive 1mA maximum; at ≥0.5V

Output	Load Resistance
0 – 10mV	: 10k (Ω minimum)
0 – 100mV	: 100k
0 – 1V	: 1000
0 – 10V	: 10k
0 – 5V	: 5000
1 – 5V	: 5000
-10 – +10V	: 10k
-5 – +5V	: 5000

**ALARM OUTPUT**

**Alarm Trip Operation** Terminal No. in parentheses



**Trip Operation in Power Failure**

- **Output Code: 1 & 4:** Terminals 1 – 11, 9 – 15 turn ON
- **Output Code: 2 & 3:** Terminals 1 – 2, 9 – 10 turn ON

- **Relay Contact:** 120V AC @1A (cosφ=1)  
240V AC @0.5A (cosφ=1)  
30V DC @1A (resistive load)  
electrical life 5 × 10<sup>5</sup> cycles (rate 30/min.)

**Maximum switching voltage:** 380V AC or 125V DC

**Maximum switching power:** 100VA or 30W

**Minimum load:** 5V DC @10mA

**Mechanical life:** 5 × 10<sup>7</sup> cycles

For maximum relay life with inductive loads, external protection is recommended.

**INSTALLATION**

**Power input**

**AC:** operational voltage range: rating ±10%, 50/60 ±2 Hz, approx. 3VA

**DC:** operational voltage range: rating ±10%, or 85 – 150V for 110V rating; ripple 10% p-p max.; approx. 2W (80mA at 24V)

**Operating temperature:** -5 to +55°C (23 to 131°F)

**Operating humidity:** 30 to 90% RH (non-condensing)

**Mounting:** surface or DIN rail

**Dimensions:** W72×H80×D132 mm (2.83"×3.15"×5.20")  
See General Spec. Sheet Figure A-1.

**Weight:** 450 g (0.99 lbs)

**Terminal assignment:** See General Spec. Sheet Figure B-2.

Specifications subject to change without notice.

## PERFORMANCE in percentage of span

### DC output

**Accuracy:**  $\pm 0.1\%$

**Response time:**  $\leq 0.5$  seconds (0 – 90%)

### Alarm output

**Setpoint accuracy:**  $\pm 0.5\%$

**Hysteresis setpoint accuracy:**  $\pm 0.3\%$

**ON delay time accuracy:** rating  $\pm 20\%$  or 0.3 sec.,  
whichever is greater.

**Power ON delay time accuracy:** rating  $\pm 30\%$

**Trip point repeatability:**  $\pm 0.05\%$

**Temp. coefficient:**  $\pm 0.015\%/^{\circ}\text{C}$  ( $\pm 0.008\%/^{\circ}\text{F}$ )

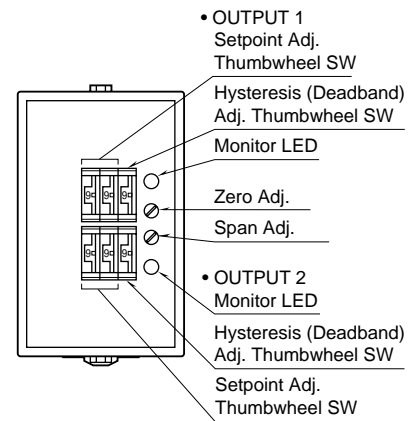
**Line voltage effect:**  $\pm 0.1\%$  over voltage range

**Insulation resistance:**  $\geq 100\text{M}\Omega$  with 500V DC

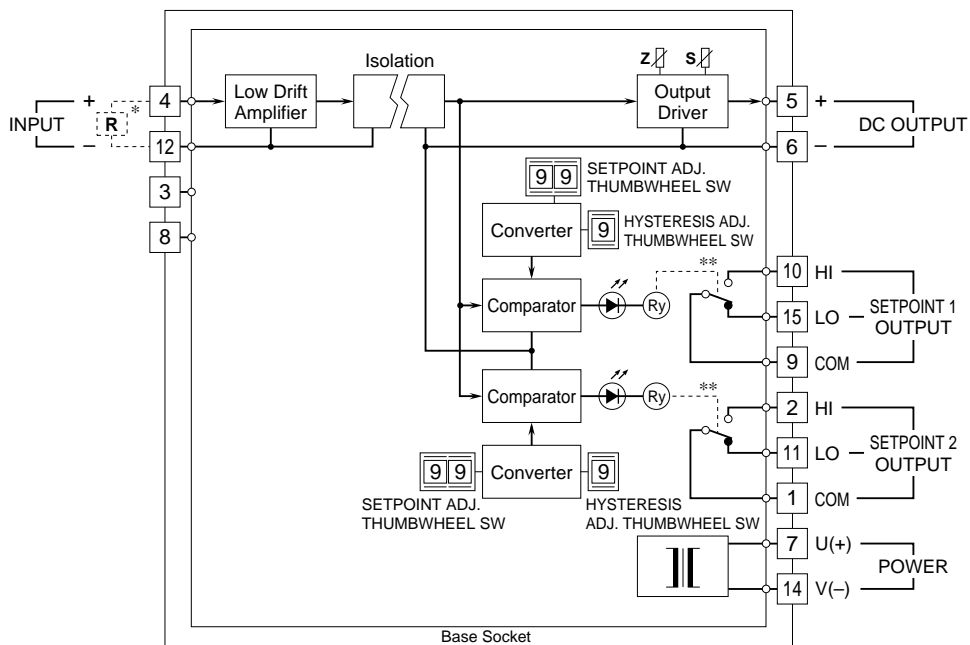
**Dielectric strength:** 2000V AC @1 minute

(input to DC output to alarm output 1 to  
alarm output 2 to power to ground)

## FRONT PANEL CONFIGURATION



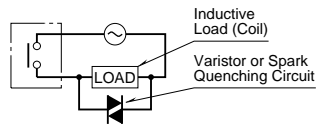
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



\* Input shunt resistor attached for current input.

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

### Relay Protection



### DC Powered

