

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

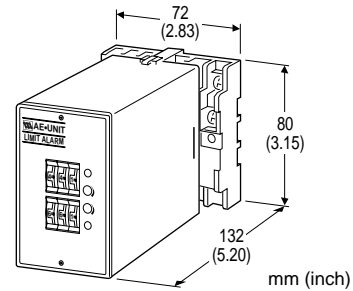
**DC ALARM  
(2-input addition)**

MODEL **AEAD**

**MODEL & SUFFIX CODE SELECTION**

AEAD-□□□□□□□□

- MODEL \_\_\_\_\_  
 INPUT \_\_\_\_\_  
 1 : 0 – 10mV DC  
 15: 0 – 50mV DC  
 16: 0 – 60mV DC  
 2 : 0 – 100mV DC  
 3 : 0 – 1V DC  
 4 : 0 – 10V DC  
 5 : 0 – 5V DC  
 6 : 1 – 5V DC  
 4W : -10 – +10V DC  
 5W : -5 – +5V DC  
 0 : Specify voltage  
 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 input levels
- Dual (Hi/Lo) trip
- Additional isolated DC output proportional to the addition of the two inputs
- 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. AEAD-6A2101-B)
  - **Special DC input and output ranges**  
(For codes Z & 0)
  - **Parameters** (e.g.  $K_1 = 0.10$ ,  $K_2 = 2.00$ )

**GENERAL SPECIFICATIONS**

- Construction:** plug-in  
**Connection:** M3.5 screw terminals  
**Housing material:** flame-resistant resin (black)  
**Isolation:** input 1 or input 2 to DC output to relay output to power  
**Zero/span adjustments:**  $\pm 5\%$  (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);  $[\text{Lo SP} + \text{Hysteresis}] \leq 102$   
**Front LEDs:** red lights turn on when coils are energized.  
**Equation:**  $\text{Output} = K_1 \times \text{Input 1} + K_2 \times \text{Input 2}$   
 $K_1, K_2: 0.10 - 2.00$  (parameters)  
 Output, Input 1, Input 2: 0 – 100%  
 $K_1, K_2$  are ex-factory specified.

**INPUT & OUTPUT**

■INPUT (two): -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

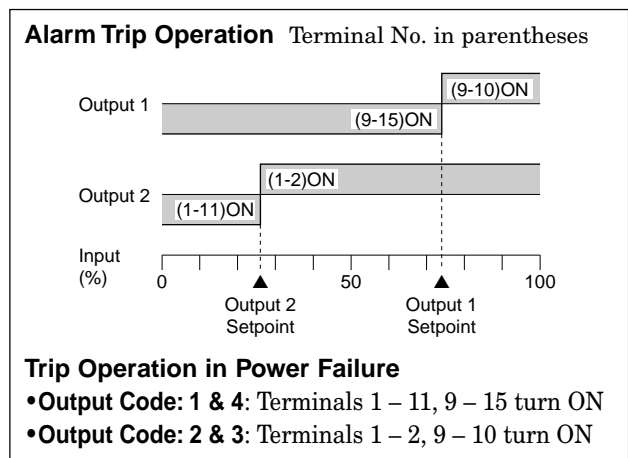
Minimum span: 5mV

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



- 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**

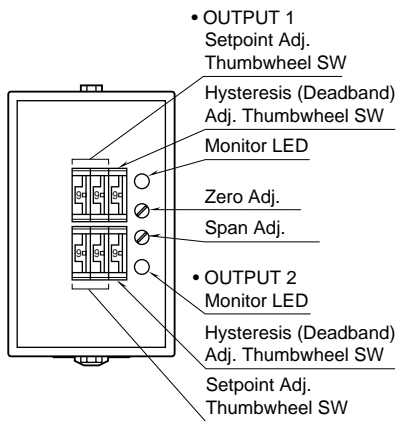
- Power input**
- AC: operational voltage range: rating ±10%, 50/60 ±2 Hz, approx. 3VA
  - DC: operational voltage range: rating ±10%, or 85 – 150V for 110V rating; ripple 10% p-p max.; approx. 2W (80mA at 24V)
- Operating temperature: -5 to +55°C (23 to 131°F)  
 Operating humidity: 30 to 90% RH (non-condensing)  
 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-1.

**PERFORMANCE in percentage of span**

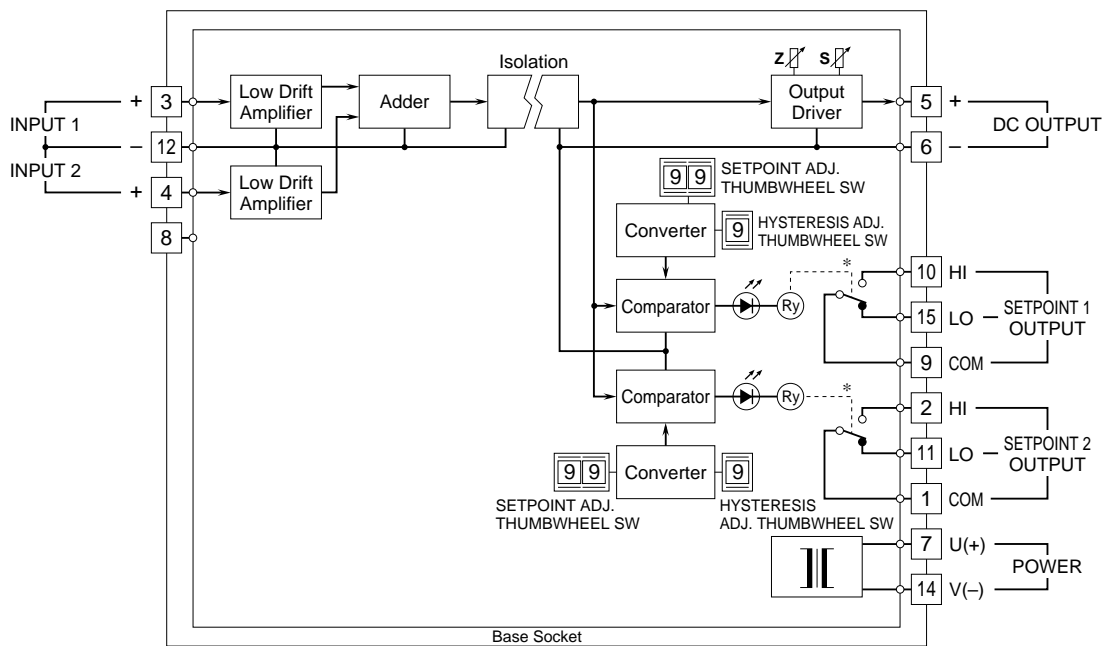
- DC output**
- Accuracy: ±0.2% (±0.4% with K<sub>1</sub>, K<sub>2</sub> ≥1)
  - Response time: ≤0.5 seconds (0 – 90%)
- Alarm output**
- Setpoint accuracy: ±0.7% (±0.9% with K<sub>1</sub>, K<sub>2</sub> ≥1)
  - Hysteresis setpoint accuracy: ±0.3%
  - ON delay time accuracy: rating ±20% or 0.3 sec., whichever is greater.
  - Power ON delay time accuracy: rating ±30%
  - Trip point repeatability: ±0.05%
  - Temp. coefficient: ±0.015%/°C (±0.008%/°F)
  - Line voltage effect: ±0.1% over voltage range
  - Insulation resistance: ≥100MΩ with 500V DC
  - Dielectric strength: 2000V AC @1 minute (input 1 or input 2 to DC output to alarm output 1 to alarm output 2 to power to ground)

Specifications subject to change without notice.

# FRONT PANEL CONFIGURATION



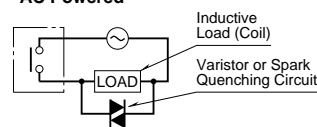
# SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



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

### ■Relay Protection

#### •AC Powered



#### •DC Powered

