

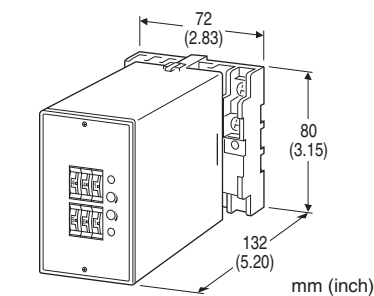
## Limit Alarms (with DC output) AE-UNIT

### DC ALARM

(2-input addition)

#### 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 110 V DC



### MODEL: AEAD-[1][2][3][4][5][6]-[7]

#### ORDERING INFORMATION

- Code number: AEAD-[1][2][3][4][5][6]-[7]  
Specify a code from below for each [1] through [7].  
(e.g. AEAD-6A2101-D)
- Special DC input and output ranges  
(For codes Z & 0)
- Parameters (e.g.  $K_1 = 0.10$ ,  $K_2 = 2.00$ )

#### [1] INPUT

##### Voltage

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

#### [2] DC OUTPUT

N: None

##### Current

- A: 4 - 20 mA DC (Load resistance 350  $\Omega$  max.)
- B: 2 - 10 mA DC (Load resistance 700  $\Omega$  max.)
- C: 1 - 5 mA DC (Load resistance 1400  $\Omega$  max.)
- D: 0 - 20 mA DC (Load resistance 350  $\Omega$  max.)
- E: 0 - 16 mA DC (Load resistance 430  $\Omega$  max.)
- F: 0 - 10 mA DC (Load resistance 700  $\Omega$  max.)
- G: 0 - 1 mA DC (Load resistance 7000  $\Omega$  max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

##### Voltage

- 1: 0 - 10 mV DC (Load resistance 10 k $\Omega$  min.)
- 2: 0 - 100 mV DC (Load resistance 100 k $\Omega$  min.)
- 3: 0 - 1 V DC (Load resistance 1000  $\Omega$  min.)
- 4: 0 - 10 V DC (Load resistance 10 k $\Omega$  min.)
- 5: 0 - 5 V DC (Load resistance 5000  $\Omega$  min.)
- 6: 1 - 5 V DC (Load resistance 5000  $\Omega$  min.)
- 4W: -10 - +10 V DC (Load resistance 10 k $\Omega$  min.)
- 5W: -5 - +5 V DC (Load resistance 5000  $\Omega$  min.)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)

#### [3] 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)

#### [4] 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)

#### [5] ON DELAY TIME

- 0: 0.5 seconds
- 1: 1 second
- 2: 2 seconds
- 3: 3 seconds
- 4: 4 seconds

#### [6] POWER ON DELAY TIME

- 1: 1 second
- 2: 2 seconds
- 3: 3 seconds
- 4: 4 seconds
- 5: 5 seconds



## [7] 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 1 or input 2 to DC output to alarm output 1 to alarm output 2 to power

**Zero adjustment:** -5 to +5 % (front)

**Span adjustment:** 95 to 105 % (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

**Equation:** 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.

**Front LEDs:** Red lights turn on when the coils are energized.

## INPUT SPECIFICATIONS

■ **DC Voltage:** -300 - +300 V DC

**Minimum span:** 10 mV

**Offset:** Max. 1.5 times span

**Input resistance**

Span 10 - 100 mV : ≥ 10 kΩ

Span 0.1 - 1 V : ≥ 100 kΩ

Span ≥ 1 V : ≥ 1 MΩ

## OUTPUT SPECIFICATIONS

■ **DC Output**

• **DC Current:** 0 - 20 mA DC

**Minimum span:** 1 mA

**Offset:** Max. 1.5 times span

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

• **DC Voltage:** -10 - +12 V DC

**Minimum span:** 5 mV

**Offset:** Max. 1.5 times span

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

■ **Alarm Output:** Relay contact

100 V AC @ 1 A (cos φ = 1)

120 V AC @ 1 A (cos φ = 1)

240 V AC @ 0.5 A (cos φ = 1)

30 V DC @ 1 A (resistive load)

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

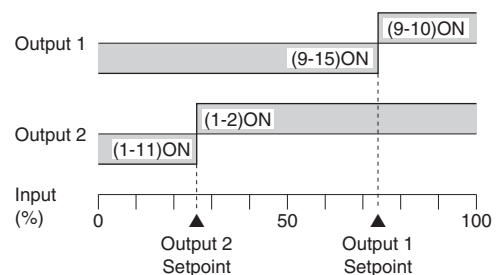
**Maximum switching power:** 120 VA or 30 W

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

**Mechanical life:** 5 × 10<sup>7</sup> 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 - 11, 9 - 15 turn ON
- **Output Code: 2 & 3:** Terminals 1 - 2, 9 - 10 turn ON

## INSTALLATION

**Power input**

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

• **DC:** Operational voltage range: rating ±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 +55°C (23 to 131°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

• **DC output**

**Accuracy:** ±0.2 % (±0.4 % with  $K_1, K_2 \geq 1$ )

**Response time:** ≤ 0.5 seconds (0 - 90 %)

• **Alarm output**

**Setpoint accuracy:** ±0.7 % (±0.9 % with  $K_1, K_2 \geq 1$ )

**Hysteresis (Deadband) setpoint accuracy:** ±0.3 %

**ON delay time accuracy:** Rating ±20 % or 0.3 sec., whichever is greater.

**Power ON delay time accuracy:** Rating ±30 %

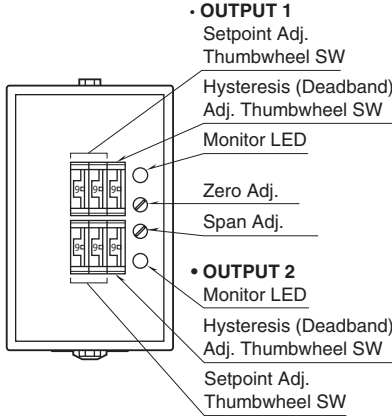
**Trip point repeatability:** ±0.05 %



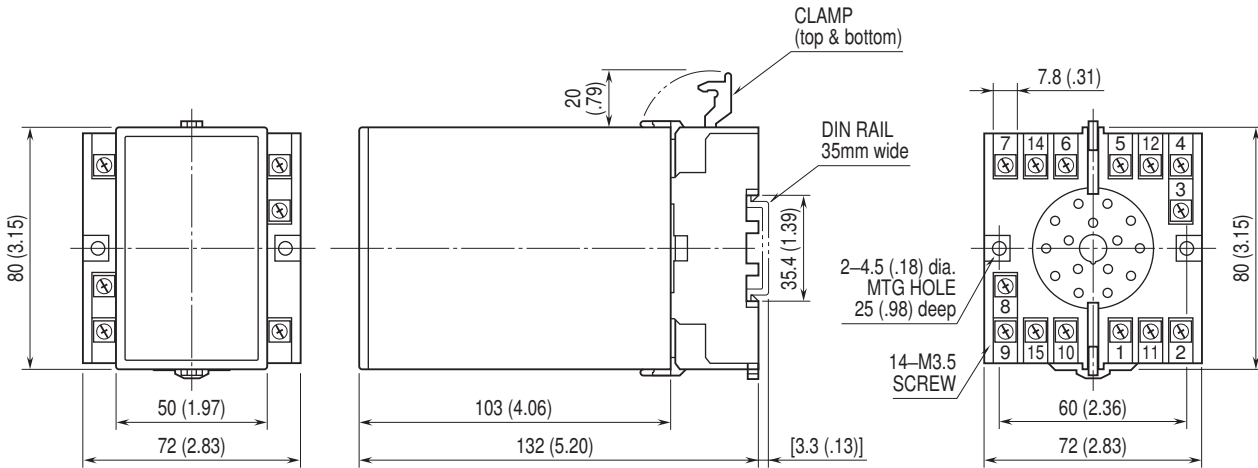
# MODEL: AEA

- 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 500 V DC
- Dielectric strength: 2000 V AC @ 1 minute (input 1 or input 2 to DC output to alarm output 1 to alarm output 2 to power to ground)

## EXTERNAL VIEW



## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

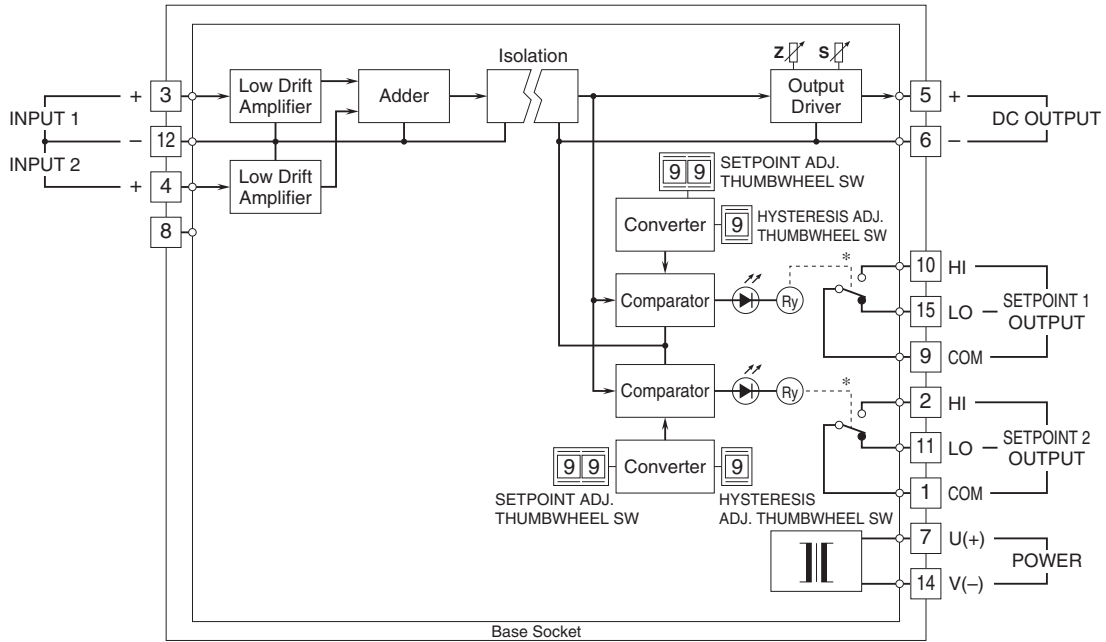


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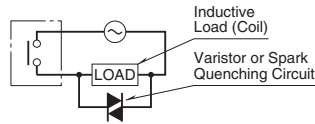
E-mail : info@xintop.com  
 Website : www.xintop.com

**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**

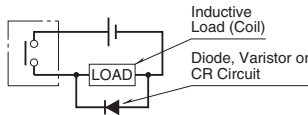


\*Relay status for output codes "1" & "4", at power OFF.

**■ Relay Protection**  
•AC Powered



•DC Powered



Specifications are subject to change without notice.

