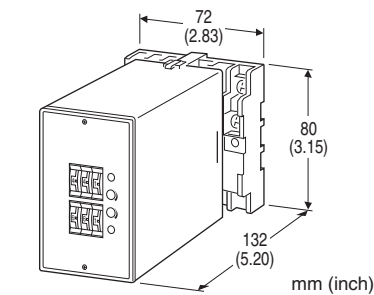


Limit Alarms (with DC output) AE-UNIT

DC ALARM

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 deenergized coil at a tripped condition selectable
- Thumbwheel switch adjustments
- Relays can be powered 110 V DC



MODEL: AEV-[1][2][3][4][5][6]-[7][8]

ORDERING INFORMATION

- Code number: AEV-[1][2][3][4][5][6]-[7][8]
- Specify a code from below for each of [1] through [8].
(e.g. AEV-6A1111-D/Q)
- Special DC input and output ranges (For codes Z & 0)
- Specify the specification for option code /Q
(e.g. /C01/S01)

[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] DC OUTPUT

N: None

Current

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

Voltage

- 1:** 0 - 10 mV DC (Load resistance 10 kΩ min.)
- 2:** 0 - 100 mV DC (Load resistance 100 kΩ min.)
- 3:** 0 - 1 V DC (Load resistance 1000 Ω min.)
- 4:** 0 - 10 V DC (Load resistance 10 kΩ min.)
- 5:** 0 - 5 V DC (Load resistance 5000 Ω min.)
- 6:** 1 - 5 V DC (Load resistance 5000 Ω min.)
- 4W:** -10 - +10 V DC (Load resistance 10 kΩ min.)
- 5W:** -5 - +5 V DC (Load resistance 5000 Ω 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

[8] OPTIONS

- blank: none
- /Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to our web site.)

- /C01: Silicone coating
- /C02: Polyurethane coating
- /C03: Rubber coating
- TERMINAL SCREW MATERIAL
- /S01: Stainless steel

GENERAL SPECIFICATIONS

- Construction:** Plug-in
- Connection:** M3.5 screw terminals
- Screw terminal:** Chromated steel (standard) or stainless steel
- Housing material:** Flame-resistant resin (black)
- Isolation:** Input to DC output to alarm output 1 to alarm output 2 to power
- Overrange output:** Approx. -10 to +120 % at 1 - 5 V
- 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] \leq 102
- Front LEDs:** Red LED turns on when the coil is energized.

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 k Ω
Span 0.1 - 1 V : \geq 100 k Ω
Span \geq 1 V : \geq 1 M Ω

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 ($\cos \phi = 1$)

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: 5×10^7 cycles

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

PERFORMANCE in percentage of span

•DC output

Accuracy: ± 0.1 %

Response time: ≤ 0.5 sec. (0 – 90 %)

•Alarm output

Setpoint accuracy: ± 0.5 %

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 %

Temp. coefficient: ± 0.015 %/°C (± 0.008 %/°F)

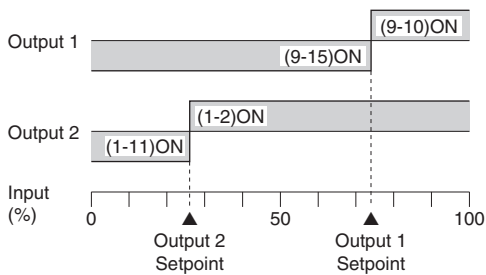
Line voltage effect: ± 0.1 % over voltage range

Insulation resistance: ≥ 100 M Ω with 500 V DC

Dielectric strength: 2000 V AC @ 1 minute

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

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)

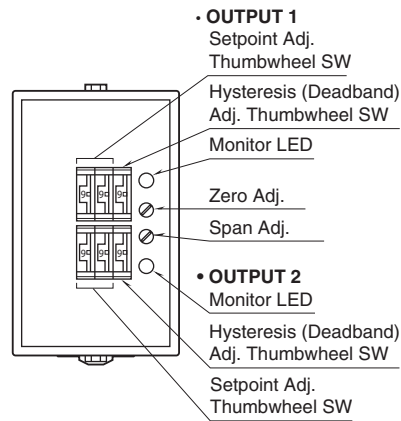
Operating temperature: -5 to +55°C (23 to 131°F)

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

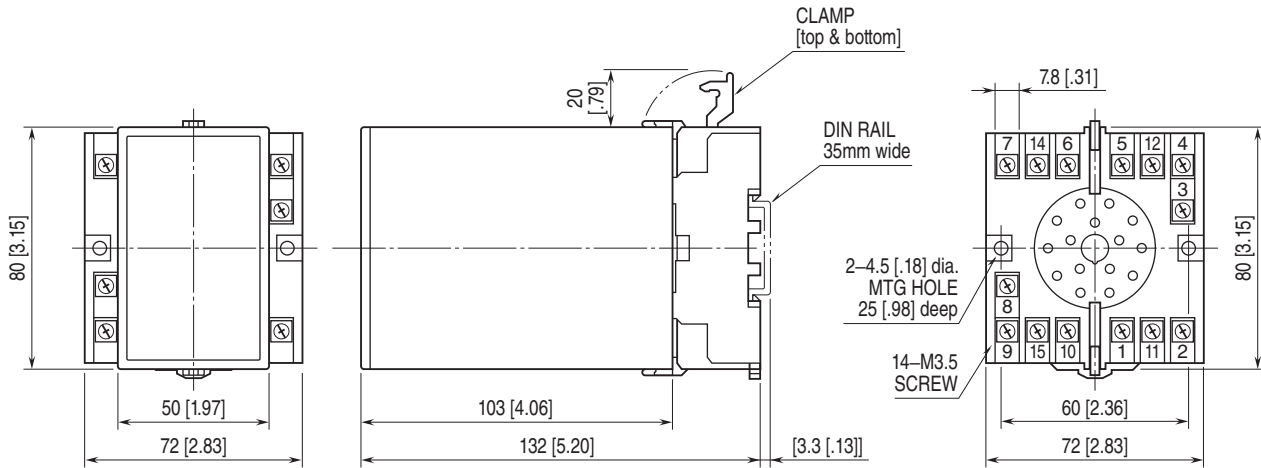
Mounting: Surface or DIN rail

Weight: 450 g (0.99 lb)

EXTERNAL VIEW

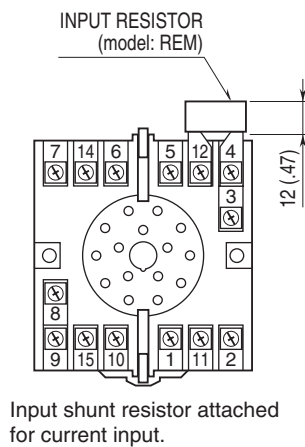


EXTERNAL DIMENSIONS unit: mm [inch]

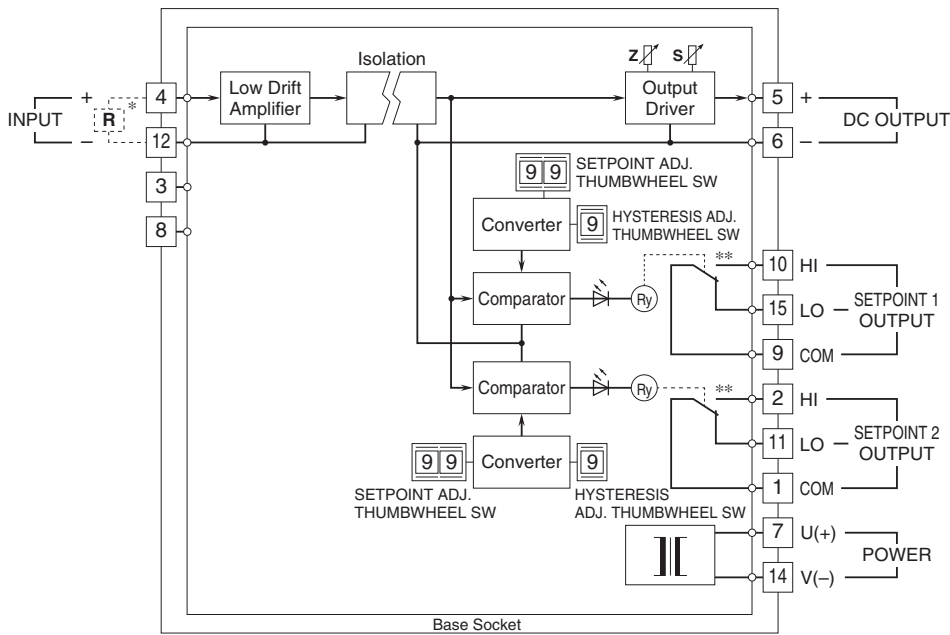


• When mounting, no extra space is needed between units.

TERMINAL ASSIGNMENTS unit: mm [inch]

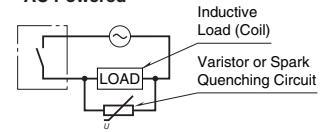


SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

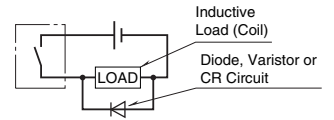


* Input shunt resistor attached for current input.
 **Relay status for output codes "1" & "4", at power OFF.

■ Relay Protection •AC Powered



•DC Powered



Specifications are subject to change without notice.