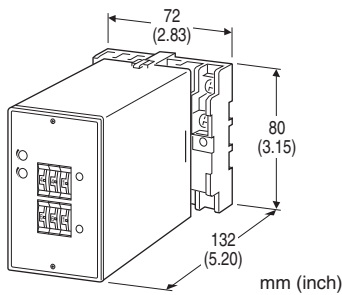


Limit Alarms (with DC output) AE-UNIT

POTENTIOMETER ALARM

Functions & Features

- Providing SPDT relay outputs at preset potentiometer or slidewire positions
- Zero/span adjustable to 50 %
- Dual (Hi/Lo) trip
- Additional isolated DC output proportional to the temperature
- Energized or de-energized coil at a tripped condition selectable
- Thumbwheel switch adjustments
- Relays can be powered 110 V DC



MODEL: AEM-[1][2][3][4][5]-[6]

ORDERING INFORMATION

- Code number: AEM-[1][2][3][4][5]-[6]
Specify a code from below for each [1] through [6].
(e.g. AEM-A2101-D)
- Special DC output range (For codes Z & 0)

INPUT POTENTIOMETER

Total resistance 100 Ω - 10 kΩ

[1] 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)

[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] ON DELAY TIME

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

[5] POWER ON DELAY TIME

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

[6] 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 DC output to alarm output 1 to alarm output 2 to power
Zero adjustment: 0 - 50 % of total resistance (front)
Span adjustment: 50 - 100 % of total resistance (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 the coils are energized.

INPUT SPECIFICATIONS

Minimum span: 50 % of total resistance
Excitation: 0.5 V DC

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)

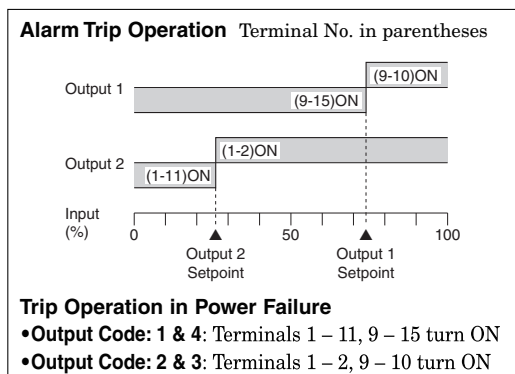
Maximum switching voltage: 380 V AC or 125 V DC

Maximum switching power: 120 VA or 30 W

Minimum load: 5 V DC @ 10 mA

Mechanical life: 5 x 10⁷ 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. 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: ±0.1 %
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

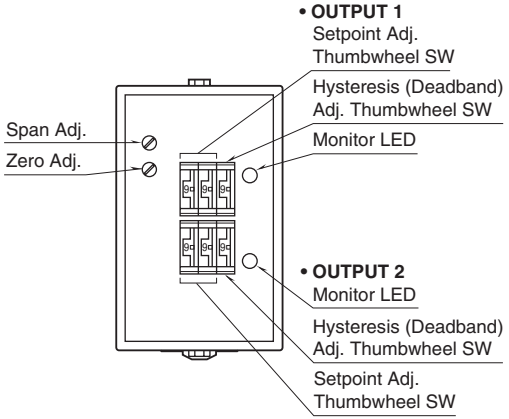
Insulation resistance: ≥ 100 MΩ with 500 V DC

Dielectric strength: 2000 V AC @ 1 minute

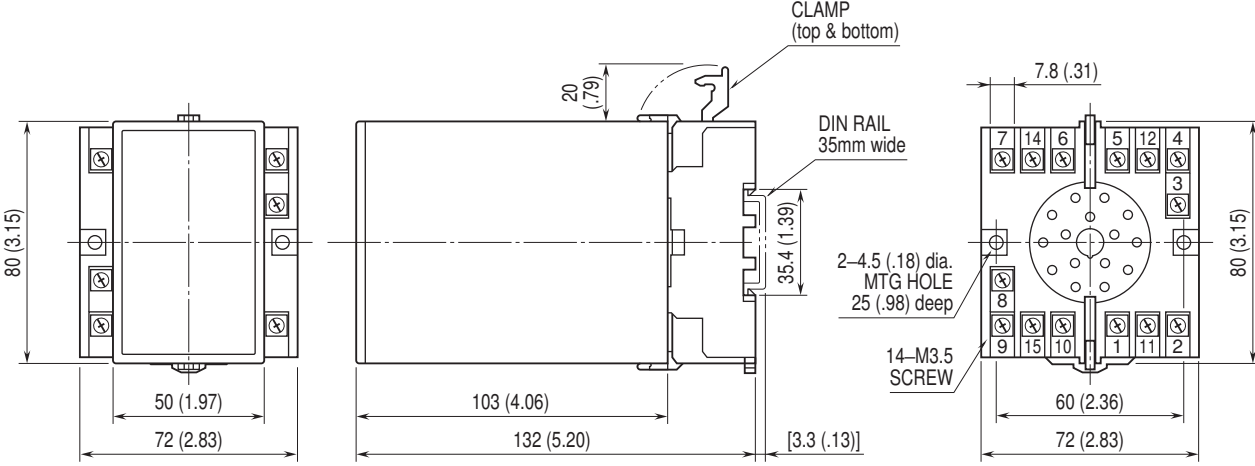
(input to DC output to alarm output 1 to alarm output 2 to power to ground)



EXTERNAL VIEW



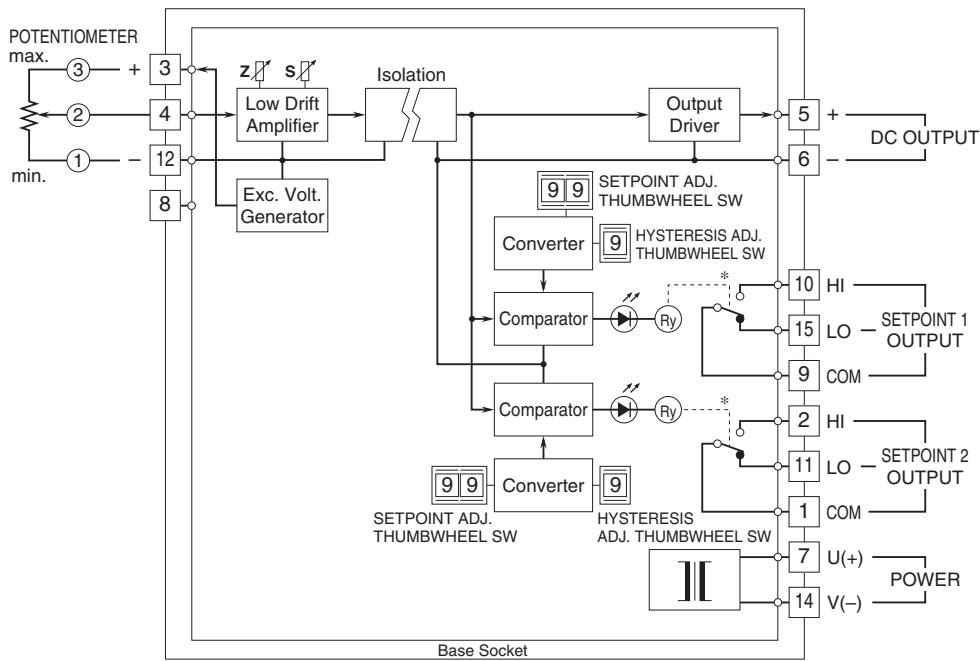
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

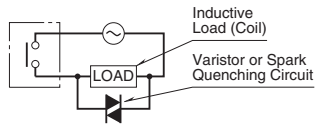


SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

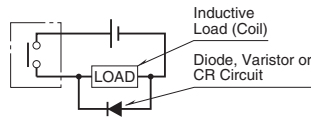


*Relay status for output codes "1" & "4", at power OFF.

■ Relay Protection
•AC Powered



•DC Powered



Specifications are subject to change without notice.

