

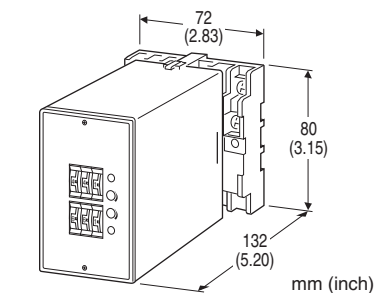
Limit Alarms (with DC output) AE-UNIT

A8: Specify voltage (See INPUT SPECIFICATIONS)
(0 % input must be 0 V.)

AC ALARM

Functions & Features

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



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

ORDERING INFORMATION

- Code number: AEAC-[1][2][3][4][5][6]-[7][8]
Specify a code from below for each of [1] through [8].
(e.g. AEAC-A6A2101-D/Q)
- Special input and DC output ranges
(For codes AZ, A8, Z & 0)
- Specify the specification for option code /Q
(e.g. /C01/S01)

[1] INPUT

Current

- AA:** 0 - 10 mA AC (Input resistance 100 Ω)
- AB:** 0 - 50 mA AC (Input resistance 20 Ω)
- AC:** 0 - 100 mA AC (Input resistance 10 Ω)
- AD:** 0 - 500 mA AC (Input resistance 1 Ω)
- AZ:** Specify current (See INPUT SPECIFICATIONS)
(0 % input must be 0 mA.)

Voltage

- A1:** 0 - 100 mV AC (Input resistance 100 k Ω min.)
- A2:** 0 - 500 mV AC (Input resistance 100 k Ω min.)
- A3:** 0 - 1 V AC (Input resistance 100 k Ω min.)
- A4:** 0 - 5 V AC (Input resistance 100 k Ω min.)
- A5:** 0 - 10 V AC (Input resistance 100 k Ω min.)
- A6:** 0 - 120 V AC (Input resistance 100 k Ω min.)
- A7:** 0 - 150 V AC (Input resistance 100 k Ω min.)

[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 k Ω min.)
- 2:** 0 - 100 mV DC (Load resistance 100 k Ω min.)
- 3:** 0 - 1 V DC (Load resistance 1000 Ω min.)
- 4:** 0 - 10 V DC (Load resistance 10 k Ω 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 k Ω 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
Input waveform: Up to 15 % of 3rd harmonic content
Overrange output: 0 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] ≤ 102
Front LEDs: Red LED turns on when the coil is energized.

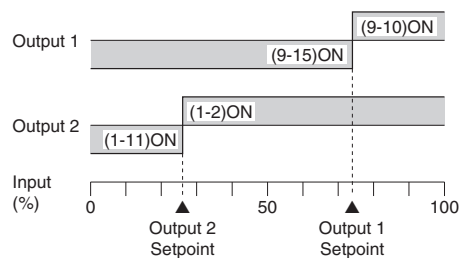
INPUT SPECIFICATIONS

Frequency: 40 Hz min., 1 kHz max.
AC Current: 0 - 1 A AC; input resistor incorporated
Minimum span: 1 mA
Input resistance
 Span 1 mA: 1 kΩ
 Span ≤ 2 mA: 500 Ω
 Span ≤ 5 mA: 200 Ω
 Span ≤ 10 mA: 100 Ω
 Span ≤ 20 mA: 50 Ω
 Span ≤ 50 mA: 20 Ω
 Span ≤ 100 mA: 10 Ω
 Span ≤ 500 mA: 1 Ω
 Span ≤ 1 A: 0.5 Ω
AC Voltage: 0 - 250 V AC
Minimum span: 50 mV
Input resistance: 100 kΩ min.

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.

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 $\pm 10\%$, 50/60 ± 2 Hz, approx. 3 VA
- **DC:** Operational voltage range: rating $\pm 10\%$, 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)

PERFORMANCE in percentage of span

•DC output

Accuracy: $\pm 0.4\%$

Response time: ≤ 0.7 sec. (0 - 90 %)

•Alarm output

Setpoint accuracy: $\pm 0.9\%$

Hysteresis (Deadband) setpoint accuracy: $\pm 0.3\%$

ON delay time accuracy: rating $\pm 20\%$ or 0.7 sec., whichever is greater.

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

Trip point repeatability: $\pm 0.05\%$

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

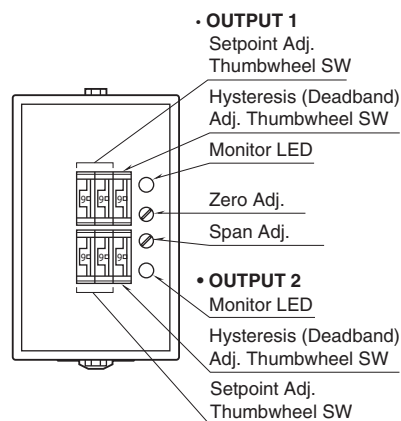
Line voltage effect: $\pm 0.1\%$ over voltage range

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

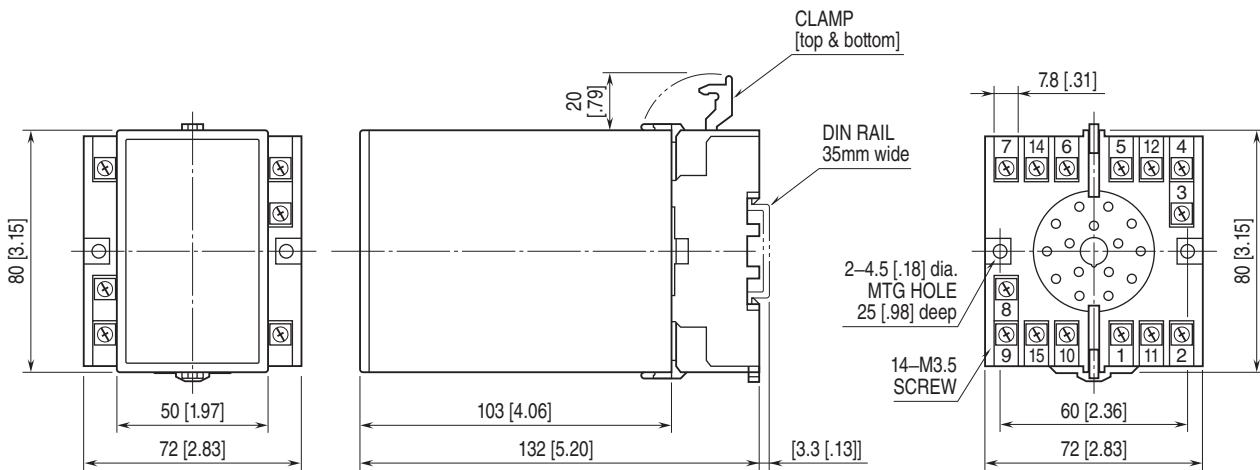
Dielectric strength: 2000 V AC @ 1 minute

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

EXTERNAL VIEW

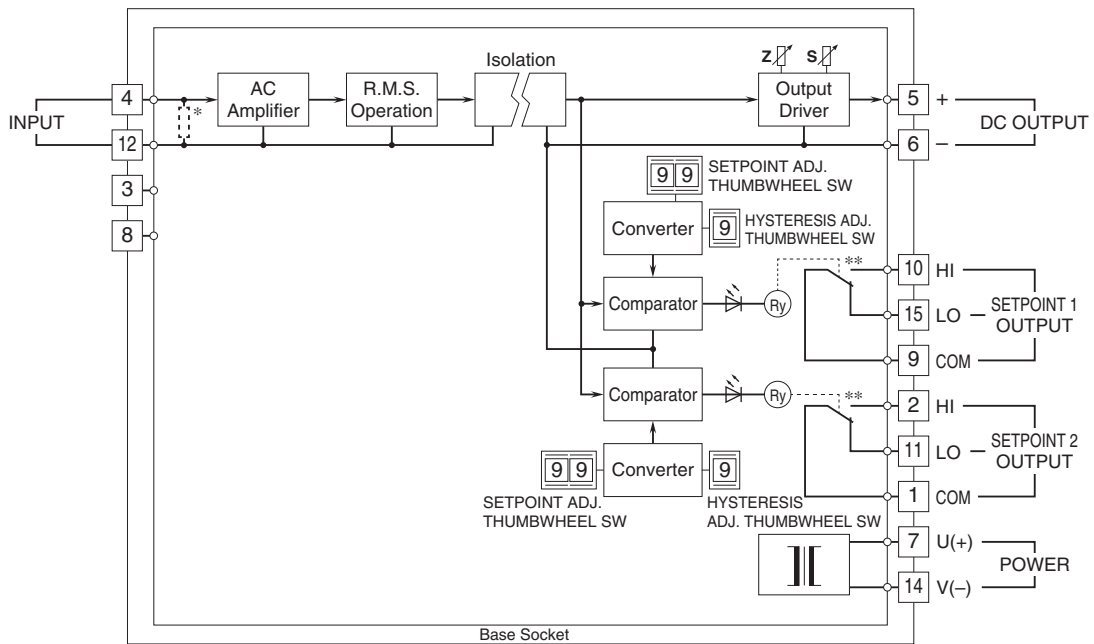


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

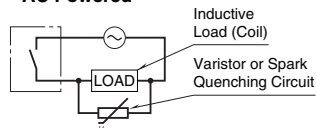


* Input resistor incorporated for current input.

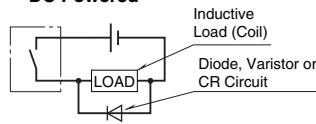
**Relay status for output codes "1" & "4", at power OFF.

■ Relay Protection

• AC Powered



• DC Powered



Specifications are subject to change without notice.