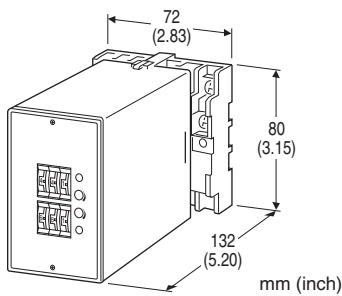


**Limit Alarms (with DC output) AE-UNIT**

**PT ALARM**

**Functions & Features**

- Providing SPDT relay outputs at preset AC voltage levels from an AC voltage transformer
- 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: AEPT-[1][2][3][4][5][6]-[7][8]**

**ORDERING INFORMATION**

- Code number: AEPT-[1][2][3][4][5][6]-[7][8]
- Specify a code from below for each of [1] through [8].  
(e.g. AEPT-621101-D/Q)
- Special DC output range (For codes Z & 0)
- Specify the specification for option code /Q  
(e.g. /C01/S01)

**[1] INPUT**

Voltage

- 1: 0 - 110 V AC
- 2: 0 - 220 V AC
- 5: 0 - 150 V AC
- 6: 0 - 300 V AC

**[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  
**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

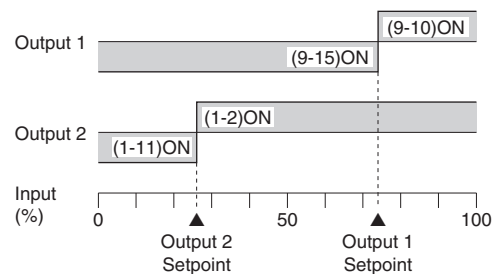
**Frequency:** 50 or 60 Hz  
**Input burden:** 0.5 VA max.  
**Overload capacity:** 200 % of rating for 1 minute, 120 %

continuous  
**Operational range:** 0 - 100 % of rating

### 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 x 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

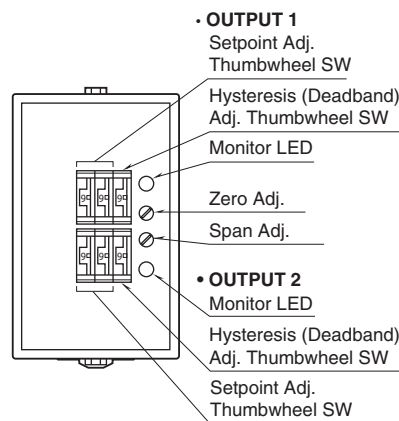
### INSTALLATION

**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 lb)

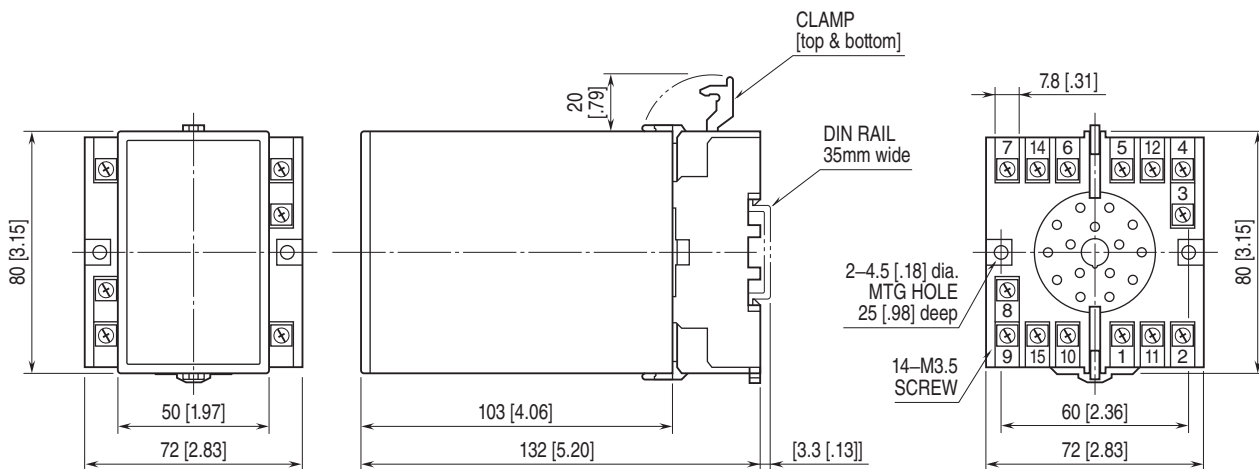
## PERFORMANCE in percentage of span

- DC output
  - Accuracy:  $\pm 0.2\%$
  - Response time:  $\leq 0.9$  sec. (0 - 90 %)
- Alarm output
  - Setpoint accuracy:  $\pm 0.7\%$
  - Hysteresis (Deadband) setpoint accuracy:  $\pm 0.3\%$
  - ON delay time accuracy: Rating  $\pm 20\%$  or 0.9 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

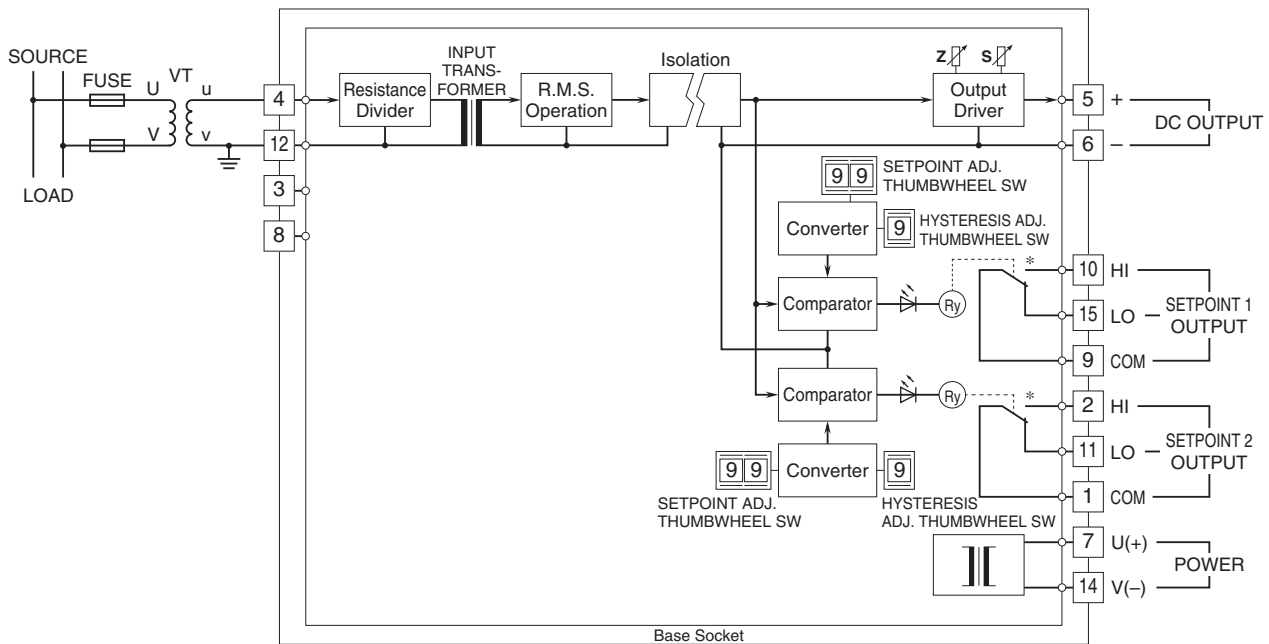


## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

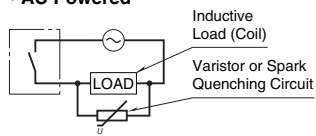
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



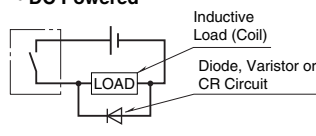
\*Relay status for output codes "1" & "4", at power OFF.

### ■ Relay Protection

#### • AC Powered



#### • DC Powered



Specifications are subject to change without notice.