

Limit Alarms (rotary switch adj.) AL-UNIT

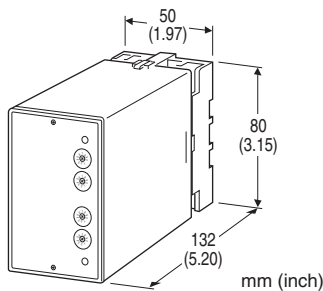
RTD ALARM

Functions & Features

- Providing SPDT relay outputs at preset input levels
- Direct input from an RTD • Dual (Hi/Lo) trip
- Linearization
- Burnout protection
- "Active bridge" circuit containing two constant current sources allows large leadwire resistances up to 200 Ω
- Energized or de-energized coil at a tripped condition selectable
- Rotary switch setpoint adjustments
- Enclosed relays
- Relays can be powered 110 V DC
- High-density mounting

Typical Applications

- Annunciator
- Various alarm applications



MODEL: ALR-[1][2][3]-[4][5]

ORDERING INFORMATION

- Code number: ALR-[1][2][3]-[4][5]
- Specify a code from below for each [1] through [5]. (e.g. ALR-111-B/BL)
- Temperature range (e.g. 0 - 250°C)

[1] INPUT RTD (2- or 3-wire)

- 1:** JPt 100 (JIS'89)
(Usable range: -200 to +500°C, -328 to +932°F; min.span: 50°C, 90°F)
- 3:** Pt 100 (JIS'89)
(Usable range: -200 to +650°C, -328 to +1202°F; min.span: 50°C, 90°F)
- 4:** Pt 100 (JIS'97, IEC)
(Usable range: -200 to +650°C, -328 to +1202°F; min.span: 50°C, 90°F)
- 5:** Pt 50 Ω (JIS'81)
(Usable range: -200 to +500°C, -328 to +932°F; min.span: 100°C, 180°F)
- 6:** Ni 508.4 Ω
(Usable range: -50 to +200°C, -58 to +392°F; min.span: 30°C, 54°F)

0: Specify
Note: Consult M-System for 2-wire RTD

[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] 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

[5] OPTIONS

- Burnout**
- blank: Upscale burnout
 - /BL: Downscale burnout

GENERAL SPECIFICATIONS

- Construction:** Plug-in
- Connection:** M3.5 screw terminals
- Housing material:** Flame-resistant resin (black)
- Isolation:** Input to output 1 to output 2 to power
- Setpoint adjustments:** 10-position rotary switches (front); 0 - 99 % independently; 1 % increments
- Linearization:** Standard
- Hysteresis (deadband):** 0.7 - 2.5 %
- Front LEDs:** Red lights turn on when the coils are energized.
- Power ON timer:** Relays de-energized for approx. 2 seconds after power is turned on.



INPUT SPECIFICATIONS

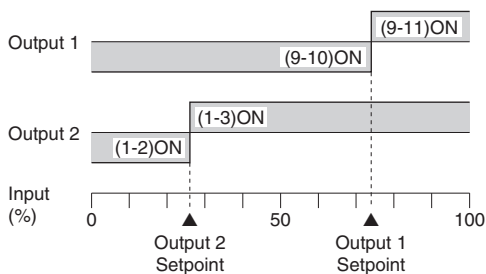
Maximum leadwire resistance: 200 Ω per wire (3-wire)
Sensing current: 2 mA

Dielectric strength: 2000 V AC @1 minute (input to output 1 to output 2 to power to ground)

OUTPUT SPECIFICATIONS

■ **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.

Alarm Trip Operation Terminal No. in parentheses



Trip Operation in Power Failure

- **Output Code: 1 & 4:** Terminals 1 – 2, 9 – 10 turn ON
- **Output Code: 2 & 3:** Terminals 1 – 3, 9 – 11 turn ON

INSTALLATION

Power input

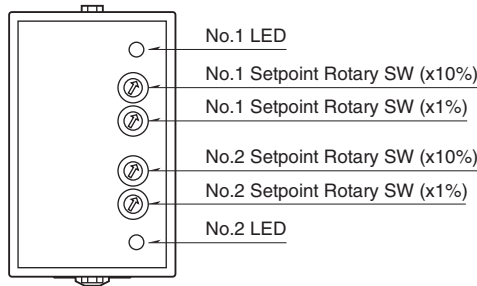
- **AC:** Operational voltage range: rating $\pm 10\%$, 50/60 ± 2 Hz, approx. 2 VA
- **DC:** Operational voltage range: rating $\pm 10\%$, or 85 – 150 V for 110 V rating (ripple 10 % p-p max.)
Approx. 2 W (80 mA at 24 V)
- Operating temperature:** -5 to +60°C (23 to 140°F)
- Operating humidity:** 30 to 90 %RH (non-condensing)
- Mounting:** Surface or DIN rail
- Weight:** 370 g (0.82 lbs)

PERFORMANCE in percentage of span

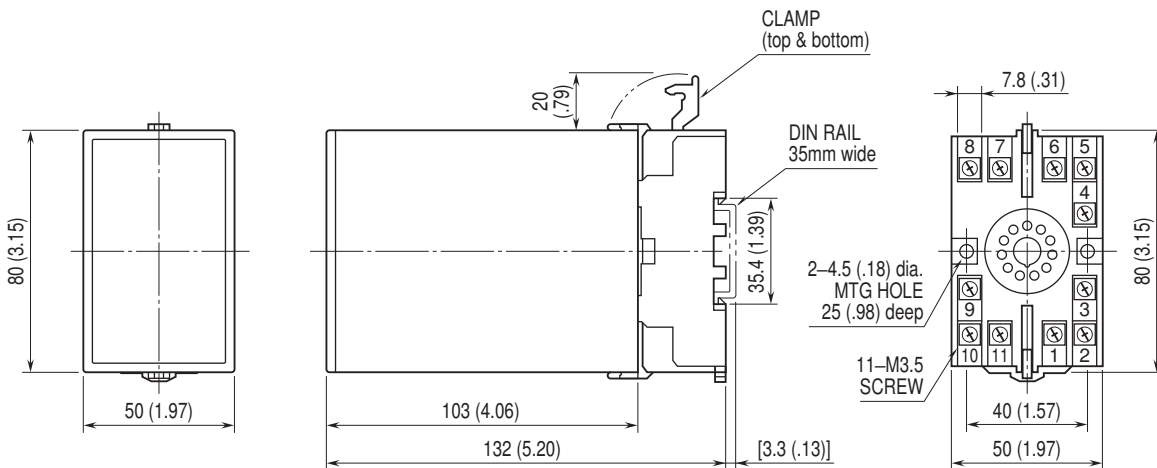
- Setpoint accuracy:** $\pm 0.7\%$
- Trip point repeatability:** $\pm 0.05\%$
- Temp. coefficient:** $\pm 0.015\%/^{\circ}\text{C}$ ($\pm 0.008\%/^{\circ}\text{F}$)
- Response time:** Approx. 0.5 sec. (0 – 100 % at 90 % setpoint)
- Burnout response:** ≤ 10 sec.
- Line voltage effect:** $\pm 0.1\%$ over voltage range
- Insulation resistance:** $\geq 100\text{ M}\Omega$ with 500 V DC



EXTERNAL VIEW

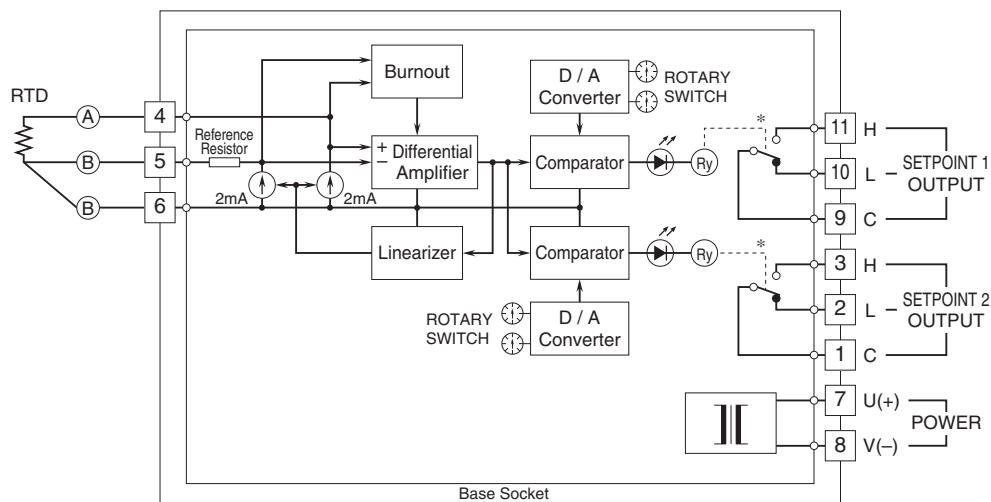


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

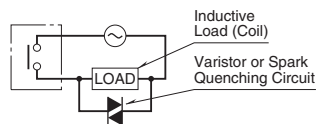
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



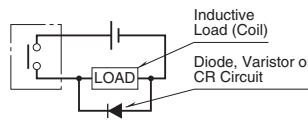
*Relay status for output codes "1" & "4", at power OFF.

■Relay Protection

•AC Powered



•DC Powered





Specifications are subject to change without notice.

