Limit Alarms (rotary switch adj.) AL-UNIT

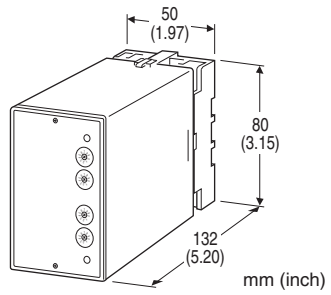
POTENTIOMETER ALARM

Functions & Features

• Providing SPDT relay outputs at preset potentiometer or slidewire positions
• Dual (Hi/Lo) trip
• Constant voltage excitation allows use with pots with total resistances from 100 Ω – 10 kΩ without affecting accuracy
• 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: ALM–[1][2]–[3][4]

ORDERING INFORMATION

• Code number: ALM-[1][2]-[3][4]
Specify a code from below for each of [1] through [4].
(e.g. ALM-11-B/Q)
• Input zero/span adjustments (e.g. 200 – 800 Ω / 1 kΩ)
Specify when you need scaled potentiometer input.
• Specify the specification for option code /Q
(e.g. /C01/S01)

INPUT POTENTIOMETER

Total resistance 100 Ω – 10 kΩ

[1] 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)

[2] 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)

[3] 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

[4] OPTIONS

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

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to M-System's 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 output 1 to output 2 to power
Setpoint adjustments: 10-position rotary switches (front); 0 – 99 % independently; 1 % increments
Hysteresis (deadband): 0.7 – 2.5 %
Front LEDs: Red LED turns on when the coil is energized.
Power ON timer: Relays de-energized for approx. 2 seconds after power is turned on.

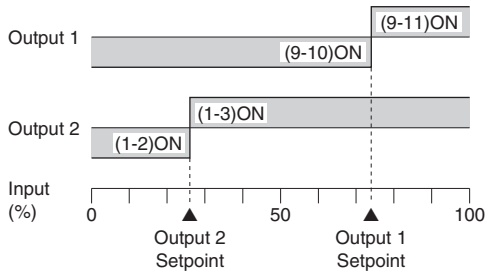
INPUT SPECIFICATIONS

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

OUTPUT SPECIFICATIONS

■ **Relay Contact**: 100 V AC @ 1 A (cos ø = 1)
120 V AC @ 1 A (cos ø = 1)
240 V AC @ 0.5 A (cos ø = 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 10^7 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

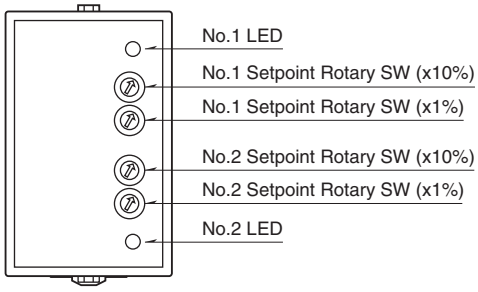
INSTALLATION

Power input
• **AC**: Operational voltage range: rating ±10 %, 50/60 ±2 Hz, approx. 2 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 +60°C (23 to 140°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail
Weight: 370 g (0.82 lb)

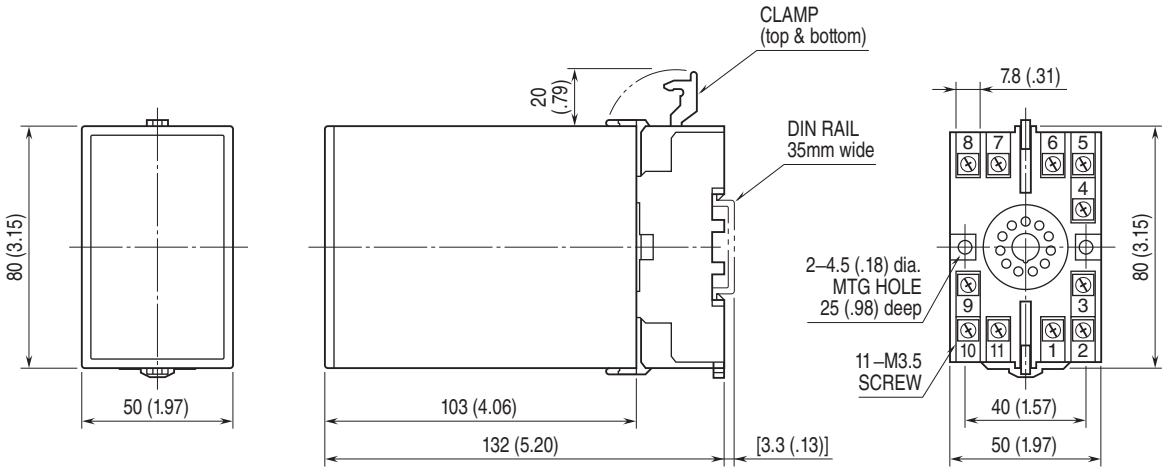
PERFORMANCE in percentage of span

Setpoint accuracy: ±0.5 %
Trip point repeatability: ±0.05 %
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
Response time: Approx. 0.5 sec. (0 – 100 % at 90 % setpoint)
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 output 1 to output 2 to power to ground)

EXTERNAL VIEW

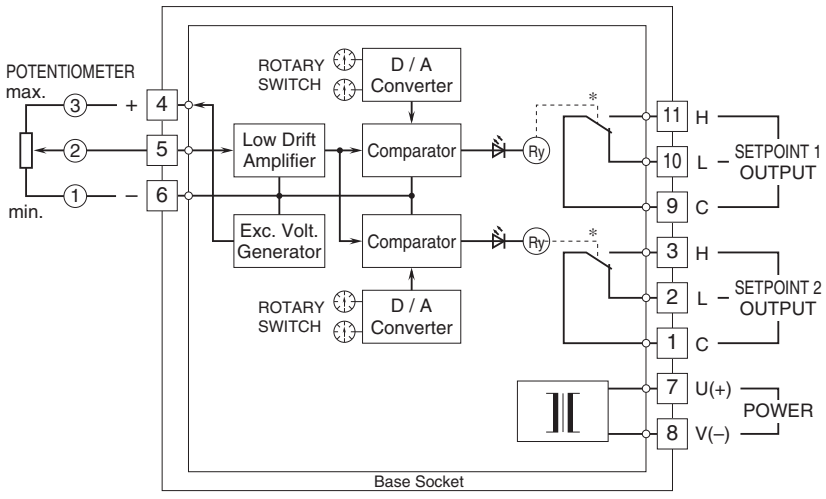


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

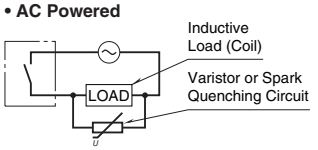
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



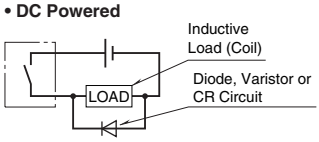
*Relay status for output codes “1” & “4”, at power OFF.

■ **Relay Protection**

• AC Powered



• DC Powered



⚠ Specifications are subject to change without notice.