

Limit Alarms (rotary switch adj.) AL-UNIT

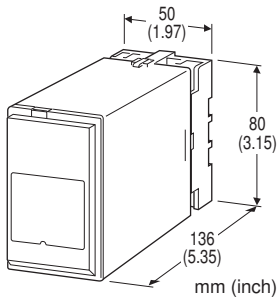
ANGLE SENSOR ALARM

Functions & Features

- Providing SPDT relay outputs at preset voltage level provided from Angle Sensor (model: NRA)
- Dual (Hi/Lo) trip
- Energized or de-energized coil at a tripped condition selectable
- Rotary switch setpoint adjustments
- 50 % zero/span adjustments
- Enclosed relays
- Relays can be powered 110 V DC
- High-density mounting

Typical Applications

- Annunciator
- Various alarm applications



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

ORDERING INFORMATION

- Code number: ALNR-[1][2][3]-[4][5]
- Specify a code from below for each of [1] through [5].
(e.g. ALNR-111-B/Q)
- Specify the specification for option code /Q
(e.g. /C01/S01)

[1] ACTION

- 1: Direct (output increases with input increase)
- 2: Reverse (output increases with input decrease)

[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

- 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

RELATED PRODUCTS

- Brushless angle sensor (model: NRA)

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

Zero adjustment: 0 - 50 % of linearity-assured range of the angle sensor (front)

Span adjustment: 50 - 100 % of linearity-assured range of the angle sensor (front)

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.
(located behind the front cover)

Power ON timer: Relays de-energized for approx. 2 seconds after power is turned on.

INPUT SPECIFICATIONS

Input: 2 – 3 V DC (output from Angle Sensor)

Excitation: 5 V DC $\pm 2\%$

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

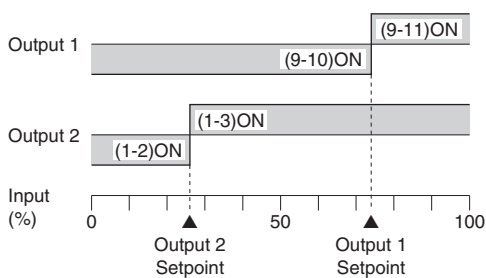
Maximum switching power: 120 VA or 30 W

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 lb)

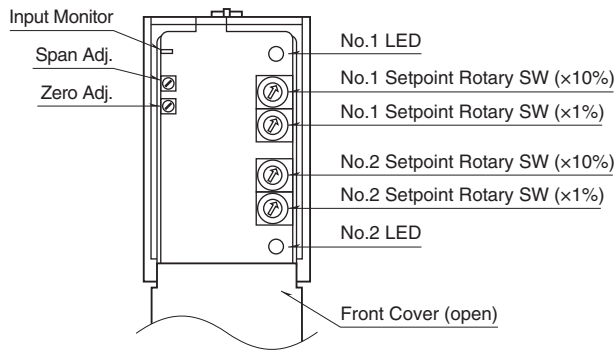
PERFORMANCE in percentage of span

Setpoint accuracy: $\pm 0.5\%$

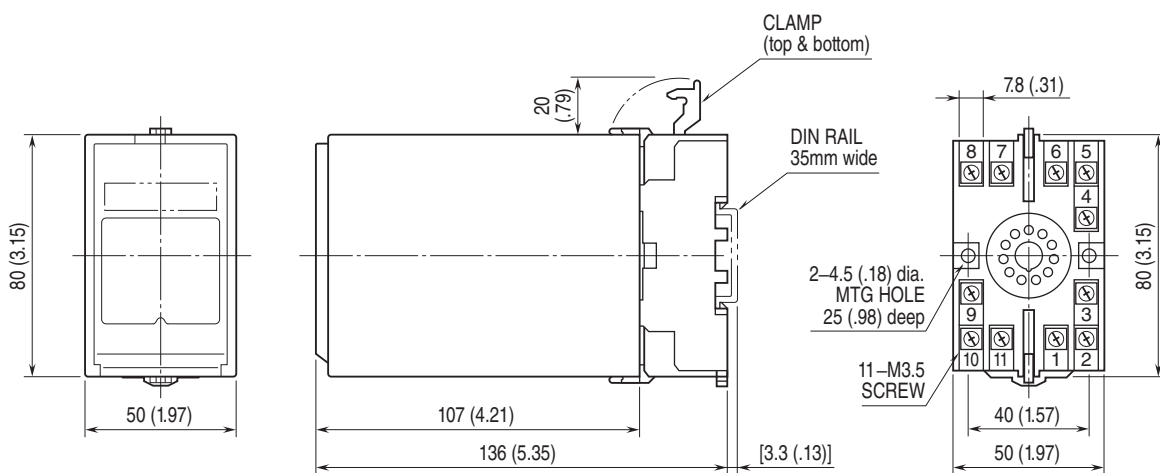
Trip point repeatability: $\pm 0.05\%$

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

EXTERNAL VIEW

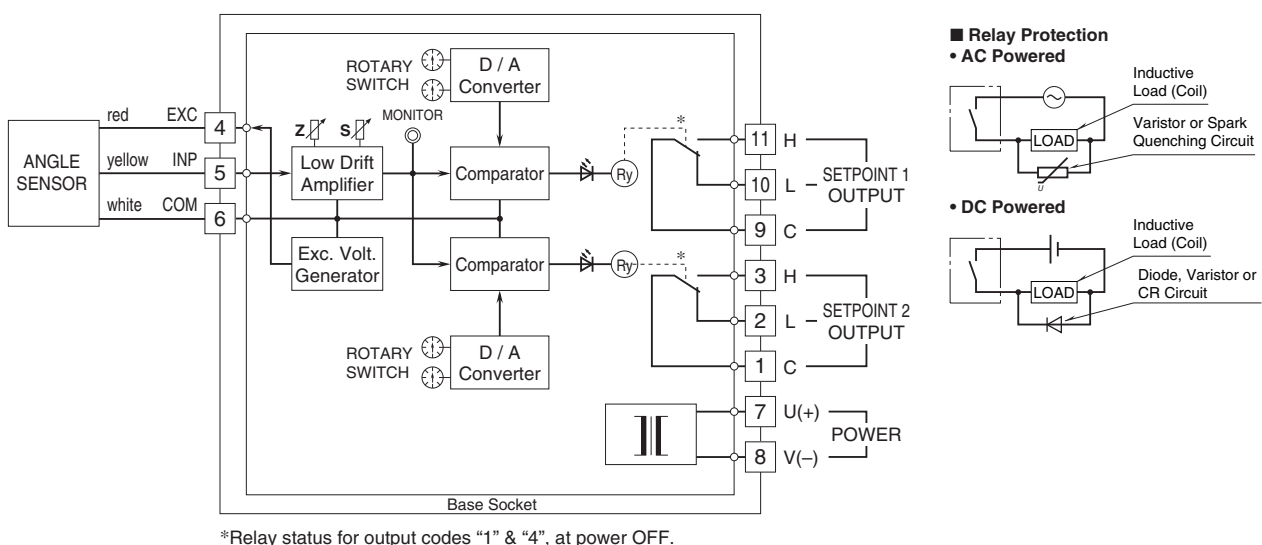


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



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



Specifications are subject to change without notice.