

Limit Alarms (rotary switch adj.) AL-UNIT

ANGLE SENSOR ALARM

MODEL **ALNR**

MODEL & SUFFIX CODE SELECTION

MODEL _____ ACTION _____

ALNR-□□□□

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

SETPOINT 1 OUTPUT _____

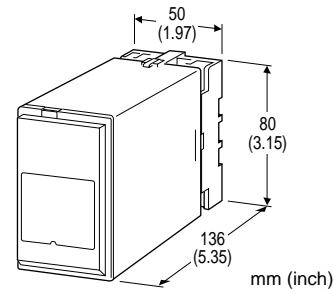
1 : Hi (coil energized at alarm)
 2 : Hi (coil de-energized at alarm)
 3 : Lo (coil energized at alarm)
 4 : Lo (coil de-energized at alarm)

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)

POWER INPUT _____

AC Power		DC Power
B : 100V AC	G : 200V AC	S : 12V DC
C : 110V AC	H : 220V AC	R : 24V DC
D : 115V AC	J : 240V AC	V : 48V DC
F : 120V AC		P : 110V DC



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 110V DC
- High-density mounting

Typical Applications

- Annunciator
- Various alarm applications

ORDERING INFORMATION

Specify code number. (e.g. ALNR-111-B)

RELATED PRODUCTS

- Brushless angle sensor (model: NRA)

GENERAL SPECIFICATIONS

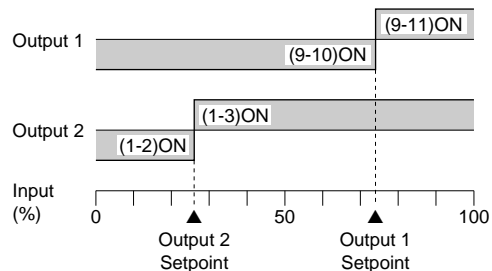
- Construction:** plug-in
- Connection:** M3.5 screw terminals
- Housing material:** flame-resistant resin (black)
- Isolation:** input to output to power
- Front adjustments:** 0 – 50% of linearity-assured range of the angle sensor for zero; 50 – 100% for span
- Setpoint adjustments:** 10-position rotary switches (front); 0 – 99% independently; 1% increments
- Hysteresis (deadband):** 0.7 – 2.5%
- LEDs:** red lights turn on when coils are energized (located behind the front cover)
- Power ON timer:** relays de-energized for approx. 2 seconds after power is turned on.

INPUT & OUTPUT

■INPUT: 2 – 3V DC (output from Angle Sensor)
 Excitation: 5V DC ±2%

■OUTPUT

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

- Relay Contact: 120V AC @1A (cosφ=1)
 240V AC @0.5A (cosφ=1)
 30V DC @1A (resistive load)
 electrical life 5 × 10⁵ cycles (rate 30/min.)
- Maximum switching voltage:** 380V AC or 125V DC
- Maximum switching power:** 100VA or 30W
- Minimum load:** 5V DC @10mA
- Mechanical life:** 5 × 10⁷ cycles

For maximum relay life with inductive loads, external protection is recommended.

INSTALLATION

Power input

AC: rating $\pm 10\%$, 50/60 ± 2 Hz, approx. 2VA
DC: rating $\pm 10\%$, or 85 – 150V for 110V rating (ripple 10% p-p max.)
 approx. 2W (80mA at 24V)

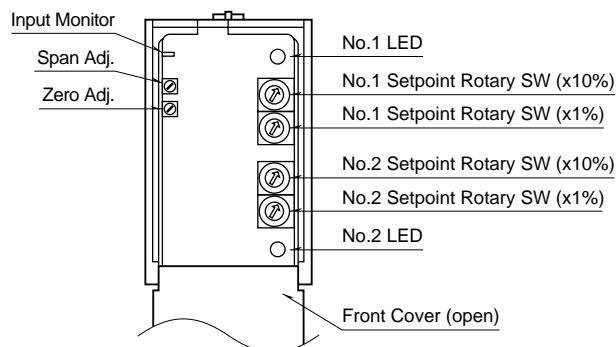
Operating temperature: -5 to +60°C (23 to 140°F)
Operating humidity: 30 to 90% RH (non-condensing)
Mounting: surface or DIN rail
Dimensions: W50×H80×D136 mm (1.97"×3.15"×5.35")
Weight: 370 g (0.82 lbs)

PERFORMANCE in percentage of span

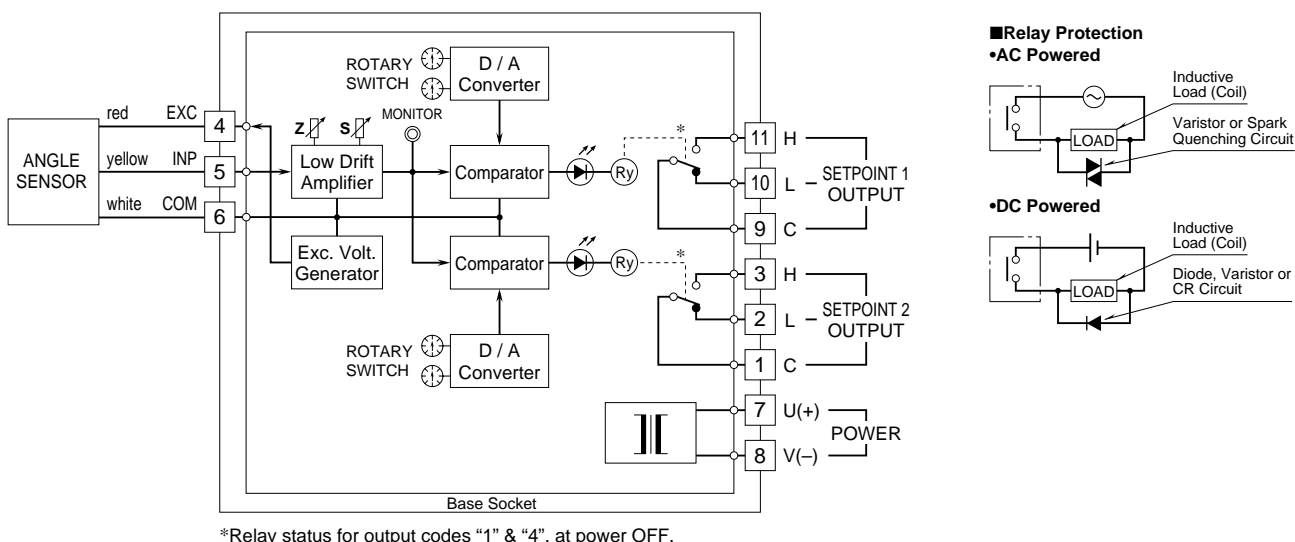
Setpoint accuracy: $\pm 0.5\%$
Trip point repeatability: $\pm 0.05\%$
Temp. coefficient: $\pm 0.015\%/^{\circ}\text{C}$ ($\pm 0.008\%/^{\circ}\text{F}$)
Response time: approx. 0.5 sec. (0 – 100% at 90% setpoint)

Line voltage effect: $\pm 0.1\%$ over voltage range
Insulation resistance: $\geq 100\text{M}\Omega$ with 500V DC
Dielectric strength: 2000V AC @1 minute (input to output 1 to output 2 to power to ground)

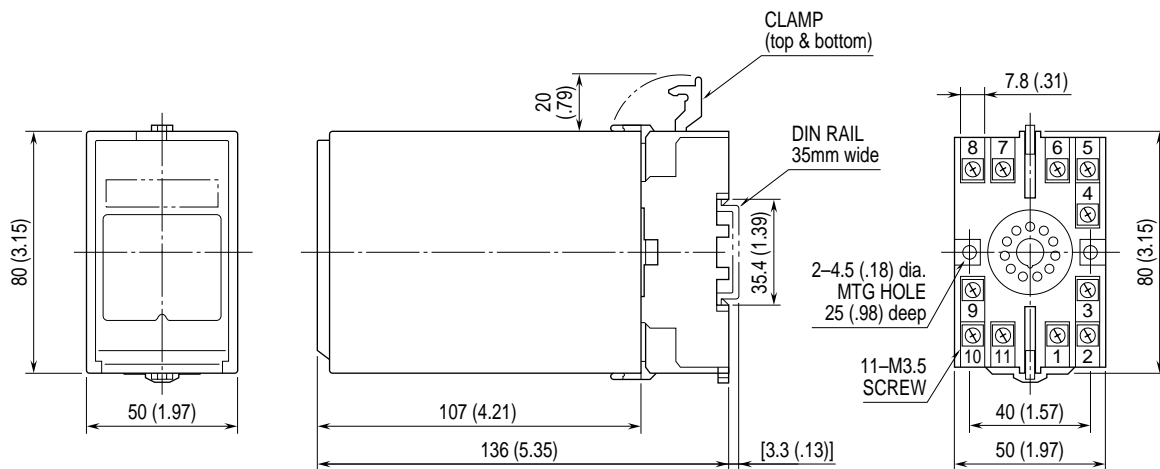
FRONT PANEL CONFIGURATION



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENT mm (inch)



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

Specifications subject to change without notice.