

## Limit Alarms (rotary switch adj.) AL-UNIT

### TWO-WIRE TRANSMITTER ALARM

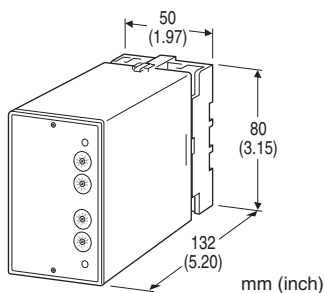
(with square root extractor)

#### Functions & Features

- Powering a 4 – 20 mA DC current loop
- Providing SPDT relay outputs at preset current levels
- Shortcircuit protection
- Square root extraction
- Applicable to smart transmitters
- Dual (Hi/Lo) trip
- 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: ALDN-[1][2]-[3]

### ORDERING INFORMATION

- Code number: ALDN-[1][2]-[3]
- Specify a code from below for each [1] through [3].  
(e.g. ALDN-11-B)

### INPUT

#### Current

4 – 20 mA DC (Input resistance 250 Ω)

### [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

### 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

**Low-end cutout function:** Below 1 % input. A setpoint below 10 % output equals 0 %.

**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.

### SUPPLY OUTPUT

**Output voltage:** 24 – 28 V DC with no load

**Current rating:** ≤ 22 mA DC

- Shortcircuit Protection

**Current limited:** 35 mA max.

**Protected time duration:** No limit

### INPUT SPECIFICATIONS

- DC Current: Input resistor incorporated

### OUTPUT SPECIFICATIONS

- Relay Contact: 100 V AC @ 1 A (cos  $\theta$  = 1)

120 V AC @ 1 A (cos  $\theta$  = 1)

240 V AC @ 0.5 A (cos  $\theta$  = 1)

30 V DC @ 1 A (resistive load)



**Maximum switching voltage:** 380 V AC or 125 V DC

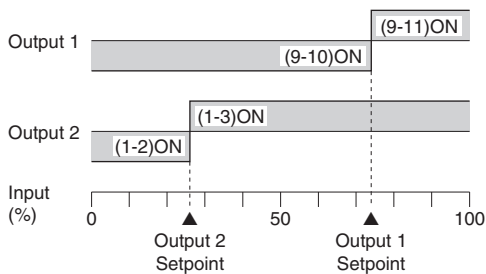
**Maximum switching power:** 120 VA or 30 W

**Minimum load:** 5 V DC @ 10 mA

**Mechanical life:**  $5 \times 10^7$  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  $\pm 2$  Hz, approx. 2.5 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:** 380 g (0.84 lbs)

## PERFORMANCE in percentage of span

**Setpoint accuracy:**  $\pm 0.5\%$  (within 1 - 100 % input)

**Trip point repeatability:**  $\pm 0.05\%$

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

**Response time:** Approx. 0.7 sec. (0 - 100 % at 90 % setpoint)

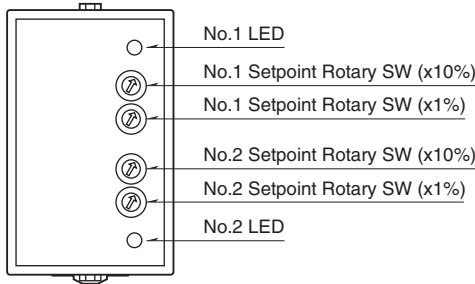
**Line voltage effect:**  $\pm 0.1\%$  over voltage range

**Insulation resistance:**  $\geq 100\text{ M}\Omega$  with 500 V DC

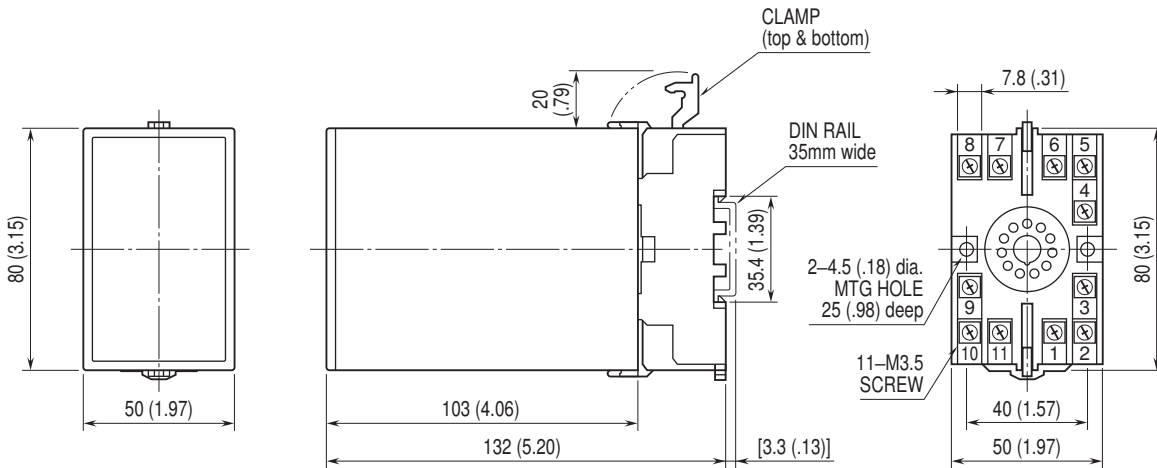
**Dielectric strength:** 2000 V AC @1 minute (input to output 1 to output 2 to power to ground)



## EXTERNAL VIEW

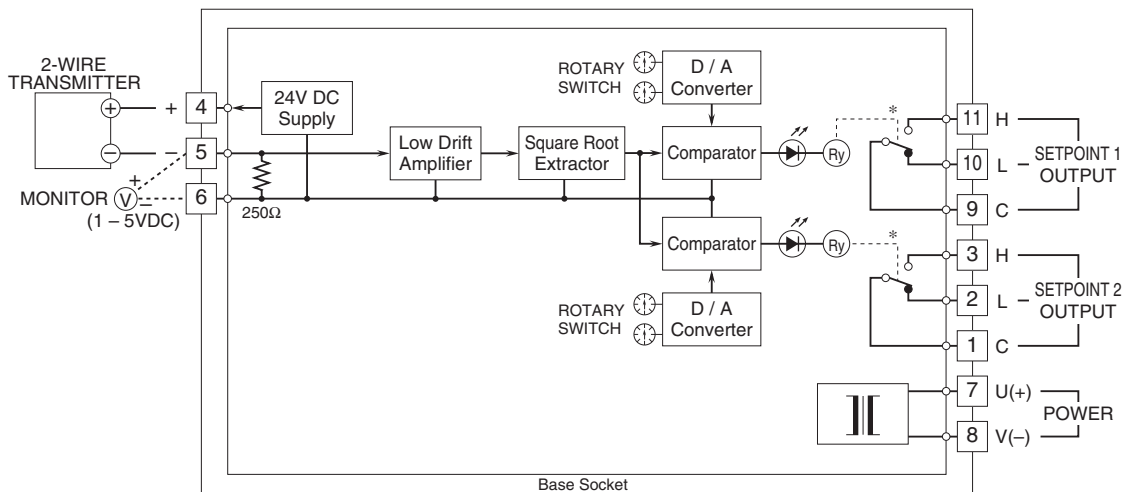


## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

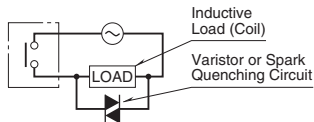
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



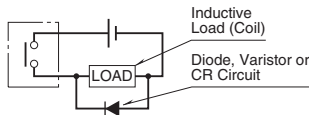
\* Relay status for output codes "1" & "4", at power OFF.

### Relay Protection

#### AC Powered



#### DC Powered





Specifications are subject to change without notice.

