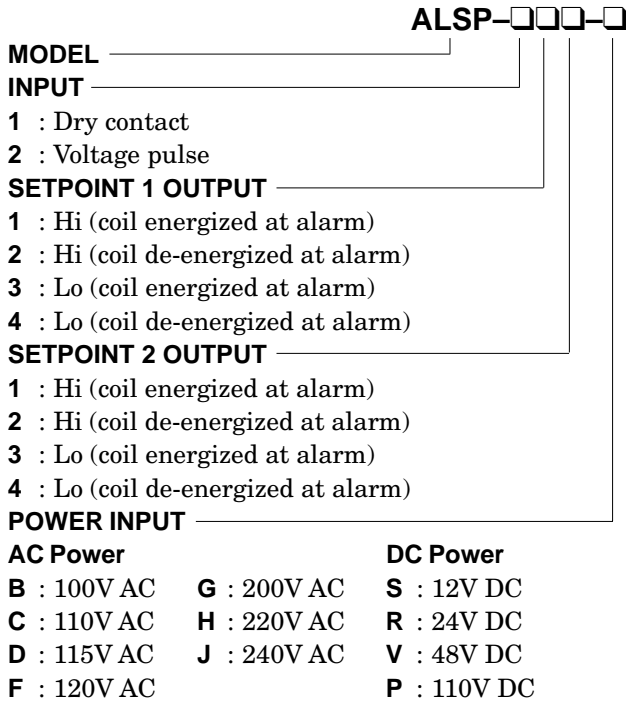


**Limit Alarms (rotary switch adj.) AL-UNIT**

**FREQUENCY ALARM**

MODEL **ALSP**

**MODEL & SUFFIX CODE SELECTION**



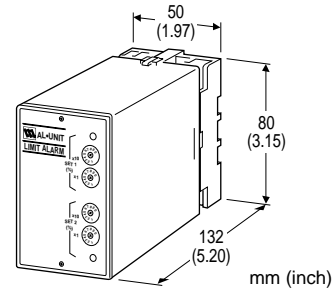
**ORDERING INFORMATION**

Specify code number and variables.

- Code number (e.g. ALSP-111-B)
- Frequency range (e.g. 0 – 500 Hz)

**GENERAL SPECIFICATIONS**

**Construction:** plug-in  
**Connection:** M3.5 screw terminals  
**Housing material:** flame-resistant resin (black)  
**Isolation:** input to output to power  
**Input pulse sensing:** capacitor coupled; detecting pulse rise  
**Setpoint adjustments:** 10-position rotary switches (front); 0 – 99% independently; 1% increments  
 Remark: The ALSP has low-end cutout function below 2 – 5% input. A setpoint below this equals 0%.  
**Hysteresis (deadband):** 0.7 – 2.5%  
**Front LEDs:** red lights turn on when coils are energized.  
**Low-end cutout:** 2 – 5%  
**Power ON timer:** relays de-energized for approx. 2 seconds after power is turned on.



**Functions & Features**

- Providing SPDT relay outputs at preset frequency levels
- Dual (Hi/Lo) trip
- Low-end cutout
- Energized or de-energized coil at a tripped condition selectable
- Rotary switch setpoint adjustments
- Enclosed relays
- Relays can be powered 110V DC
- High-density mounting

**Typical Applications**

- Annunciator
- Various alarm applications

**INPUT & OUTPUT**

**INPUT**

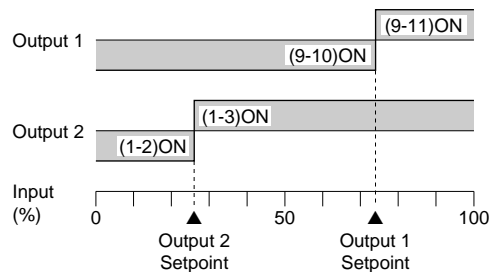
**Frequency range:** 0 – 50 Hz through 10 kHz  
**Pulse width (time) requirement:** duty ratio 20 – 80% at 100% input

- Dry Contact:** mechanical contact or open collector
- Sensing:** approx. 7.5V DC @1mA
- ON/OFF level:** ≤200Ω for ON, ≥100kΩ for OFF

- Voltage Pulse:** square or sine waveforms
- Input amplitude:** 2 – 50V p-p
- Input impedance:** 100kΩ minimum

**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  $5 \times 10^5$  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:**  $5 \times 10^7$  cycles  
For maximum relay life with inductive loads, external protection is recommended.

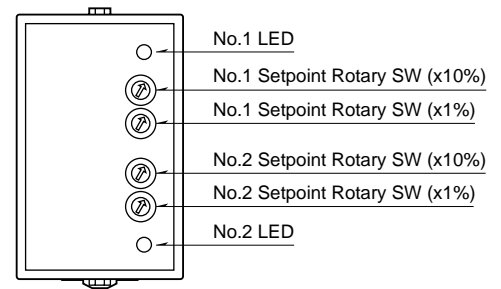
**INSTALLATION**

- Power input**
  - AC:** rating  $\pm 10\%$ , 50/60  $\pm 2$  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×D132 mm (1.97"×3.15"×5.20")  
See General Spec. Sheet Figure A.
- Weight:** 370 g (0.82 lbs)
- Terminal assignment:** See General Spec. Sheet Figure B-1.

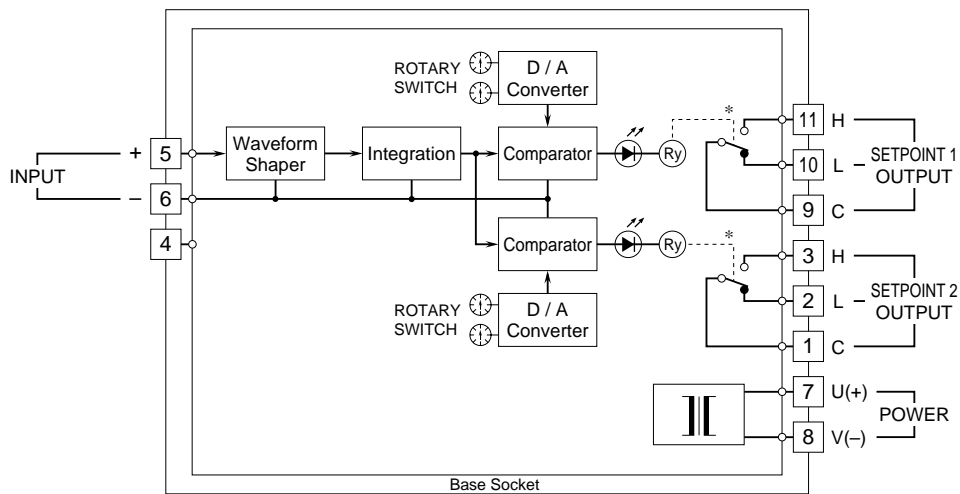
**PERFORMANCE in percentage of span**

- 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:** (0 – 100% at 90% setpoint)  
approx. 2 seconds for 0 – 50 Hz  
approx. 1 second for 0 – 100 Hz  
approx. 0.5 seconds for 0 – 500 Hz  
approx. 0.5 seconds for 0 – 10 kHz
- 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**



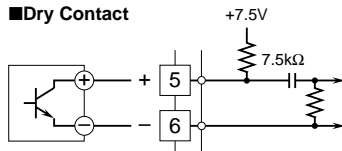
**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



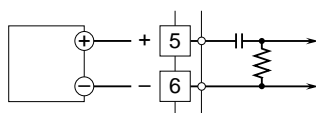
\*Relay status for output codes "1" & "4", at power OFF.

**Input Connection Examples**

■ **Dry Contact**

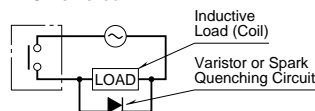


■ **Voltage Pulse**



■ **Relay Protection**

• **AC Powered**



• **DC Powered**

