Limit Alarms (potentiometer adj.) A-UNIT
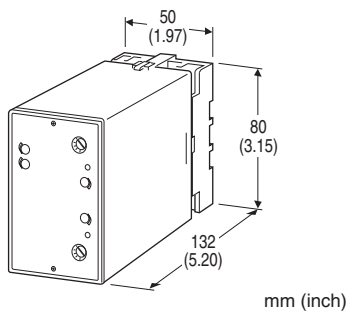
FREQUENCY ALARM
(50 Hz minimum)

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
• Deadband (hysteresis) adjustable
• Enclosed relays
• Relays can be powered 110 V DC
• High-density mounting

Typical Applications
• Annunciator
• Various alarm applications

50 (1.97)
80 (3.15)
132 (5.20)
mm (inch)

MODEL: ASP-[1]1[2][3]-[4]

ORDERING INFORMATION
• Code number: ASP-[1]1[2][3]-[4]
Specify a code from below for each of [1] through [4].
  (e.g. ASP-1111-B)
• Frequency range (e.g. 0 – 500 Hz)

[1] INPUT
1: Dry contact
2: Voltage pulse

[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

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
Zero adjustment: -5 to +5 % (front)
Span adjustment: 95 to 105 % (front)
Setpoint adjustments: 270°-turn screwdriver adjustments (front); 0 – 100 % independently
Remark: The ASP has low-end cutout function below 2 – 5 % input. A setpoint below this equals 0 %.
Hysteresis (deadband) adjustments: 1 – 100 % (front)
Front LEDs: LED turns on at a tripped condition; red for output 1, green for output 2
Power ON timer: Relays de-energized for approx. 2 seconds after power is turned on.
Low-end cutout: 2 to 5 %

INPUT SPECIFICATIONS
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. 7.5 V DC @1 mA
ON/OFF level: ≤ 200 Ω / 0.6 V for ON, ≥ 100 kΩ / 2 V for OFF
■ Voltage Pulse: Square or sine waveforms
Input pulse sensing: Capacitor coupled; detecting pulse rise
Input amplitude: 2 – 50 Vp-p
Input impedance: 100 kΩ min.

OUTPUT SPECIFICATIONS

■ **Relay Contact**: 100 V AC @ 1 A (cos ø = 1)
120 V AC @ 1 A (cos ø = 1)
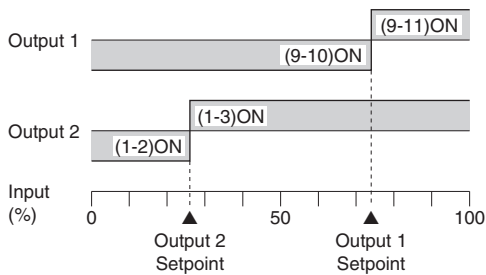240 V AC @ 0.5 A (cos ø = 1)
30 V DC @ 1 A (resistive load)
Maximum switching voltage: 380 V AC or 125 V DC
Maximum switching power: 120 VA or 30 W
Minimum load: 5 V DC @ 10 mA
Mechanical life: 5 x 10^7 cycles
For maximum relay life with inductive loads, external
protection is recommended.

Alarm Trip Operation Terminal No. in parentheses

Output 1   (9-11)ON   (9-10)ON

Output 2   (1-3)ON   (1-2)ON

Input (%)   0   50   100
Output 2 Setpoint   Output 1 Setpoint

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: 450 g (0.99 lb)

PERFORMANCE in percentage of span

Trip point repeatability: ±0.5 %
Temp. coefficient: ±0.05 %/°C (±0.03 %/°F)
Response time: (0 – 100 % at 90 % setpoint)
  approx. 2 seconds for 0 – 50 Hz
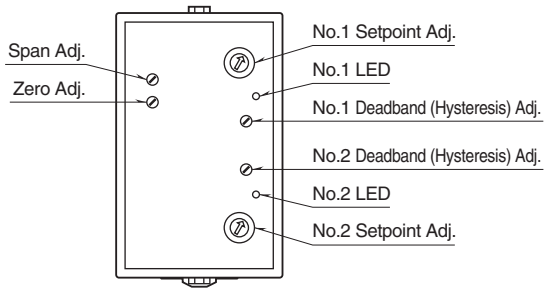 approx. 1 second for 0 – 100 Hz
  approx. 0.5 seconds for 0 – 500 Hz
  approx. 0.5 seconds for 0 – 10 kHz
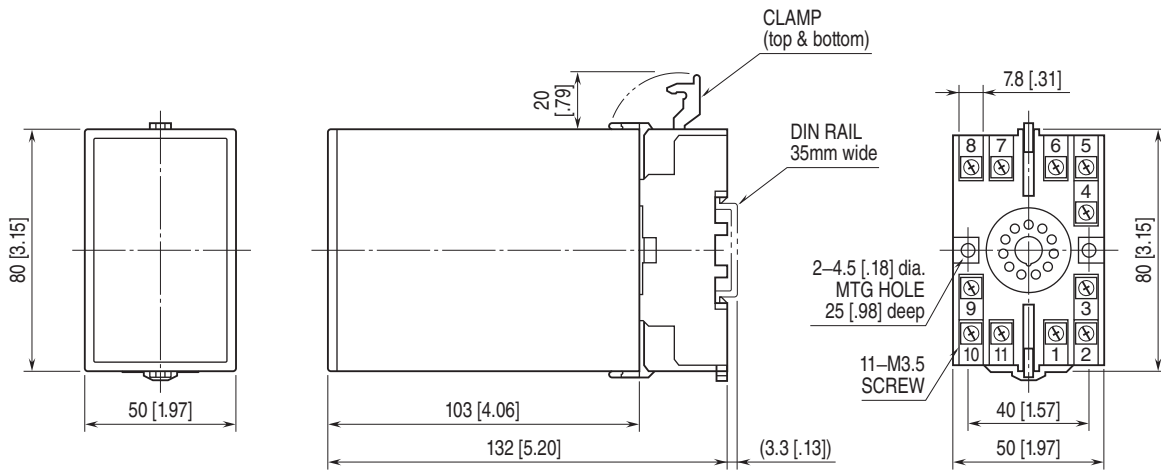**Line voltage effect**: ±0.1 % over voltage range
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 2000 V AC @1 minute (input to output 1
to output 2 to power to ground)

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EXTERNAL VIEW

Span Adj.
Zero Adj.

No.1 Setpoint Adj.
No.1 LED
No.1 Deadband (Hysteresis) Adj.
No.2 Deadband (Hysteresis) Adj.
No.2 LED
No.2 Setpoint Adj.

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS   unit: mm [inch]

CLAMP
(top & bottom)

20 [.79]

DIN RAIL
35mm wide

7.8 [.31]

80 [3.15]

50 [1.97]

103 [4.06]

132 [5.20]

(3.3 [.13])

80 [3.15]

2–4.5 [.18] dia.
MTG HOLE
25 [.98] deep

11–M3.5
SCREW

8 7 6 5
4
9
10 11 1 2
3

40 [1.57]

50 [1.97]

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

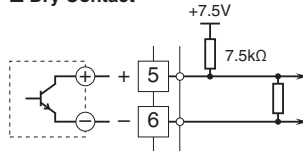MG CO., LTD.
www.mgco.jp

MODEL: ASP
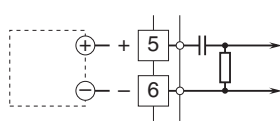
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM
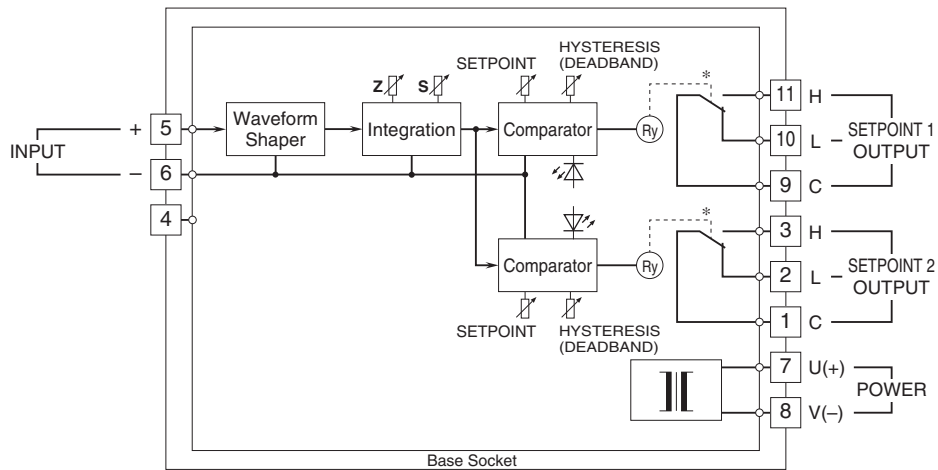
*Relay status for output codes "1" & "4", at power OFF.

Input Connection Examples

■ **Dry Contact**

■ **Voltage Pulse**

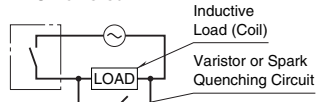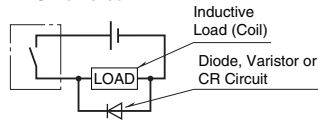■ **Relay Protection**
• **AC Powered**

• **DC Powered**

⚠ Specifications are subject to change without notice.