Plug-in Signal Conditioners M-UNIT

DC ALARM

Functions & Features
- Providing relay contact closures at preset DC input levels
- Dual (Hi/Lo) trip
- Energized or deenergized coil at tripped conditions selectable
- Multi-turn screwdriver setpoint adjustments
- Monitor jacks provided for setpoint adjustments
- Enclosed relays
- Relays can be powered 110 V DC
- Isolation up to 2000 V AC
- High-density mounting

Typical Applications
- Annunciator
- Various alarm applications

mm (inch)
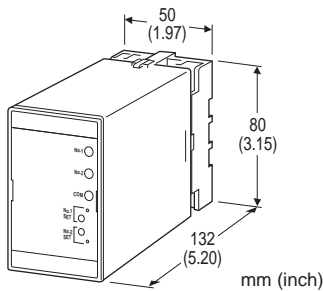
MODEL: AYAV–[1][2][3]–[4][5]

ORDERING INFORMATION
- Code number: AYAV-[1][2][3]-[4][5]
  Specify a code from below for each [1] through [5].
  (e.g. AYAV-612-B/Q)
- Specify the specification for option code /Q
  (e.g. /C01/S01)

[1] INPUT
Current
A: 4 – 20 mA DC (Input resistance 250 Ω)
H: 10 – 50 mA DC (Input resistance 100 Ω)
Voltage
6: 1 – 5 V DC (Input resistance 1 MΩ min.)

[2] OUTPUT 1
1: Relay; SPDT or transfer contact
(coil energized with input > setpoint)
2: Relay; SPDT or transfer contact
(coil de-energized with input > setpoint)

[3] OUTPUT 2
1: Relay; SPDT or transfer contact
(coil energized with input > setpoint)
2: Relay; SPDT or transfer contact
(coil de-energized with input > setpoint)

[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

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 to power
Setpoint adjustments: Multi-turn screwdriver adjustments (front); 0 – 100 % independently
Setpoint monitor: Output 0 – 10 V for 0 – 100 % setpoints
Monitor jack diameter: 2 mm (.08")
Hysteresis (deadband): 0.2 ± 0.1 %
Front LEDs: Red lights turn on when the coils are energized.

INPUT SPECIFICATIONS
■ DC Current:
Shunt resistor attached to the input terminals (0.5 W)

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)

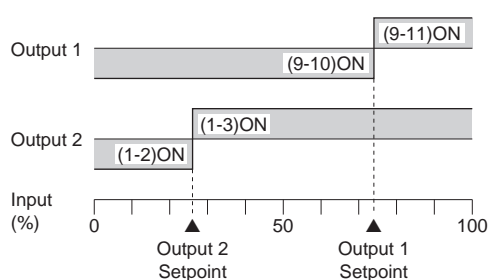**Maximum switching voltage**: 380 V AC or 125 V DC

Maximum switching power: 120 VA or 30 W

Minimum load: 5 V DC @ 10 mA

Mechanical life: 5×10^7 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 1**: (9 – 10) turn ON with code 1

(9 – 11) turn ON with code 2

•**Output 2**: (1 – 2) turn ON with code 1

(1 – 3) turn ON with code 2

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. 1.3 W (50 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: 400 g (0.88 lb)

PERFORMANCE in percentage of span

Setpoint monitor accuracy: ± 0.5 %

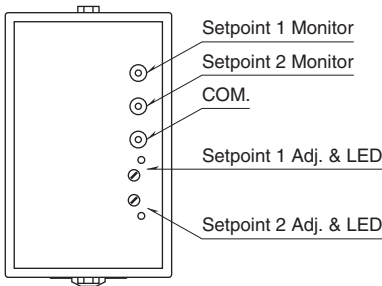**Trip point repeatability**: ±0.05 %

Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)

Response time: ≤ 0.5 sec. (0 – 100 % at 90 % setpoint)
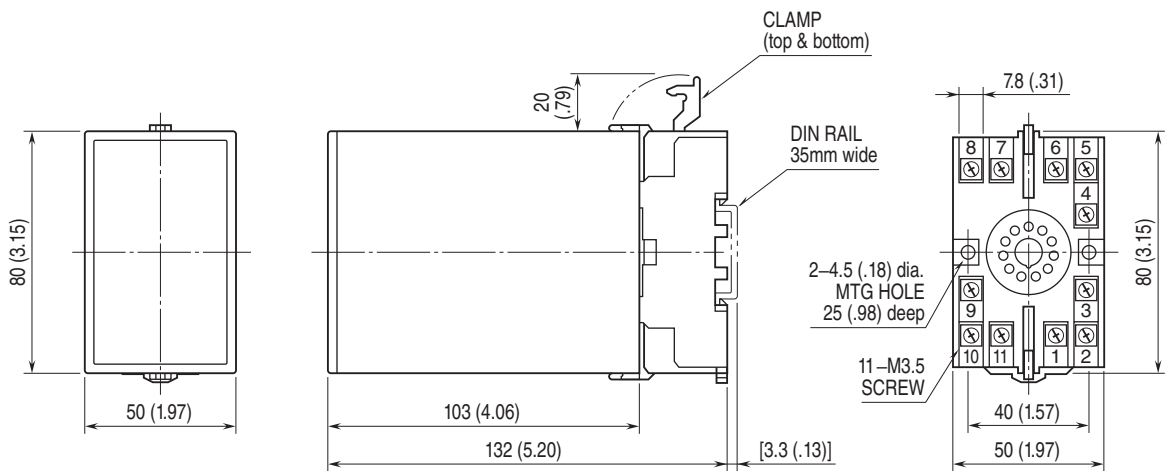
Line voltage effect: ±0.1 % over voltage range

Insulation resistance: ≥ 100 MΩ with 500 V DC

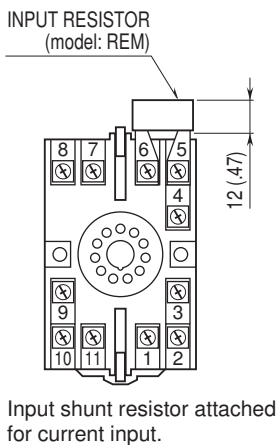**Dielectric strength**: 2000 V AC @1 minute (input to output to power to ground)

EXTERNAL VIEW

Setpoint 1 Monitor
Setpoint 2 Monitor
COM.
Setpoint 1 Adj. & LED
Setpoint 2 Adj. & LED

EXTERNAL DIMENSIONS 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)]

2–4.5 (.18) dia.
MTG HOLE
25 (.98) deep

11 –M3.5
SCREW

80 (3.15)

40 (1.57)

50 (1.97)

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

TERMINAL ASSIGNMENTS unit: mm (inch)

INPUT RESISTOR
(model: REM)

12 (.47)

Input shunt resistor attached
for current input.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM
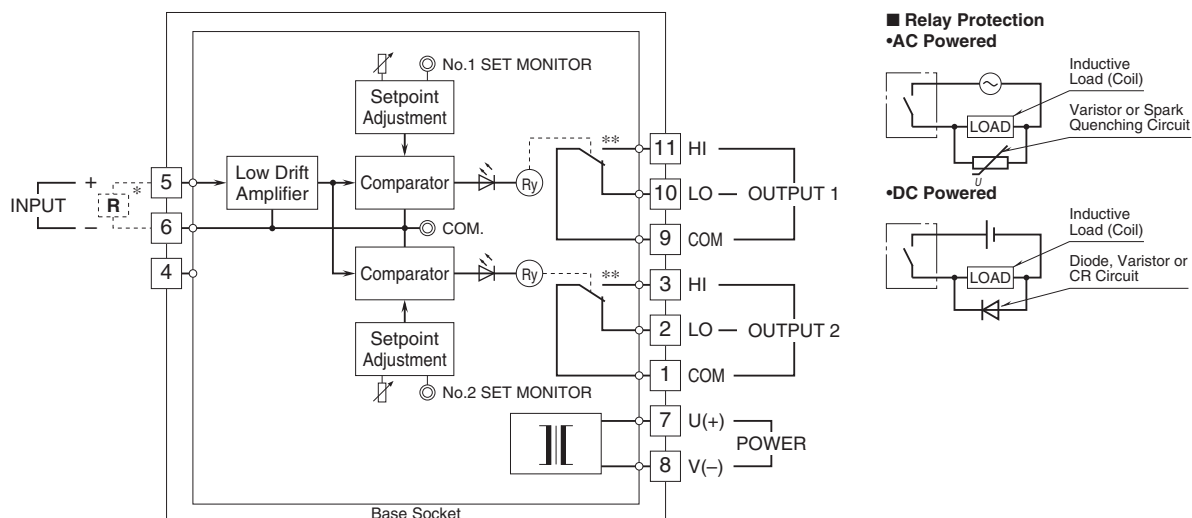
* Input shunt resistor attached for current input.
** Relay status for output code "1", at power OFF.

⚠ Specifications are subject to change without notice.