

Plug-in Signal Conditioners M-UNIT

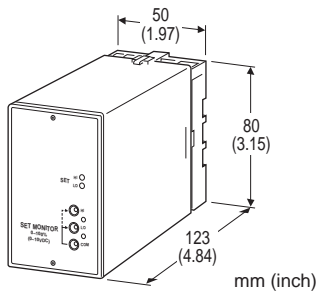
DC ALARM

Functions & Features

- Providing relay contact closures at preset DC input levels
- Dual (Hi/Lo) trip
- Multi-turn screwdriver setpoint adjustments
- Monitor jacks provided for setpoint adjustments
- Enclosed relays
- Relays can be powered 110 V DC
- High-density mounting

Typical Applications

- Annunciator
- Various alarm applications



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

ORDERING INFORMATION

- Code number: AS-[1][2]-[3][4]
- Specify a code from below for each [1] through [4].
(e.g. AS-62-B/CE/Q)
- Special input range (For codes Z & 0)
 - Specify the specification for option code /Q
(e.g. /C01/S01)

[1] INPUT

Current

- A: 4 - 20 mA DC (Input resistance 250 Ω)
- A1: 4 - 20 mA DC (Input resistance 50 Ω)
- B: 2 - 10 mA DC (Input resistance 500 Ω)
- C: 1 - 5 mA DC (Input resistance 1000 Ω)
- D: 0 - 20 mA DC (Input resistance 50 Ω)
- E: 0 - 16 mA DC (Input resistance 62.5 Ω)
- F: 0 - 10 mA DC (Input resistance 100 Ω)
- G: 0 - 1 mA DC (Input resistance 1000 Ω)
- H: 10 - 50 mA DC (Input resistance 100 Ω)
- J: 0 - 10 μ A DC (Input resistance 1000 Ω)
- K: 0 - 100 μ A DC (Input resistance 1000 Ω)
- GW: -1 - +1 mA DC (Input resistance 1000 Ω)

FW: -10 - +10 mA DC (Input resistance 100 Ω)

Z: Specify current (See INPUT SPECIFICATIONS)

Voltage

- 15: 0 - 50 mV DC (Input resistance 10 k Ω min.)
- 16: 0 - 60 mV DC (Input resistance 10 k Ω min.)
- 2: 0 - 100 mV DC (Input resistance 100 k Ω min.)
- 3: 0 - 1 V DC (Input resistance 1 M Ω min.)
- 4: 0 - 10 V DC (Input resistance 1 M Ω min.)
- 5: 0 - 5 V DC (Input resistance 1 M Ω min.)
- 6: 1 - 5 V DC (Input resistance 1 M Ω min.)
- 4W: -10 - +10 V DC (Input resistance 1 M Ω min.)
- 5W: -5 - +5 V DC (Input resistance 1 M Ω min.)
- 0: Specify voltage (See INPUT SPECIFICATIONS)

[2] OUTPUT

- 1: Open collector
- 2: Relay; N.O. or make contact
- 3: Relay; N.C. or break contact
- 4: SSR

[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

[4] OPTIONS (multiple selections)

Standards & Approvals

/CE: CE marking (must be specified)

Other Options

/Q: Option other than the above (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: Nickel-plated 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
Monitor jacks: Output 0 - 10 V for 0 - 100 % setpoints
Hysteresis (deadband): 0.5 - 1.0 %
Front LEDs: Red lights turn on in tripped conditions
Power ON timer: The output devices will not be driven for approx. 2 sec. after the power is turned on.

INPUT SPECIFICATIONS

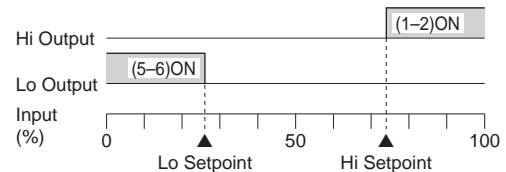
■ **DC Current:**
 Shunt resistor attached to the input terminals (0.5 W)
 Specify input resistance value for code Z.
 ■ **DC Voltage:** -30 - +30 V DC
Span: Min. 50 mV, Max. 30 V
Offset: Max. 1.5 times span
Input resistance
 Span 50 - 100 mV : $\geq 10 \text{ k}\Omega$
 Span 0.1 - 1 V : $\geq 100 \text{ k}\Omega$
 Span $\geq 1 \text{ V}$: $\geq 1 \text{ M}\Omega$

OUTPUT SPECIFICATIONS

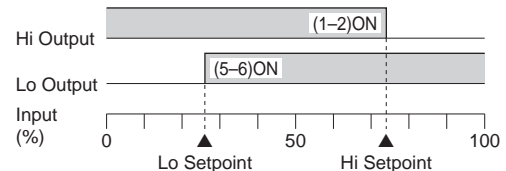
■ **Open Collector:** 50 V DC @100 mA
Voltage drop: $\leq 2 \text{ V}$
 ■ **Relay Contact:**
 120 V AC @ 0.5 A ($\cos \phi = 1$)
 240 V AC @ 0.5 A ($\cos \phi = 1$)
 30 V DC @ 0.5 A (resistive load)
Maximum switching voltage: 380 V AC or 125 V DC
Maximum switching power: 120 VA or 30 W ($\leq 0.5 \text{ A}$)
Minimum load: 5 V DC @ 10 mA
Mechanical life: 5×10^7 cycles
 For maximum relay life with inductive loads, external protection is recommended.
 ■ **SSR:**
 60 - 280 V AC @ 0.1 - 0.5 A
Leakage current at OFF: Approx. 10 mA (240 V AC)

Alarm Trip Operation Terminal No. in parentheses

•Output Code : 1, 2, 4



•Output Code : 3



Trip Operation in Power Failure

•Output Code: 1, 2, 4: both relays turn OFF
 •Output Code: 3: both relays turn ON

INSTALLATION

Power input

•**AC:** Operational voltage range: rating $\pm 10 \%$, 50/60 $\pm 2 \text{ Hz}$, approx. 2 VA
 •**DC:** Operational voltage range: rating $\pm 10 \%$, 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: 400 g (0.88 lbs)

PERFORMANCE in percentage of span

Setpoint monitor accuracy: $\pm 0.5 \%$
Temp. coefficient: $\pm 0.015 \%/^{\circ}\text{C}$ ($\pm 0.008 \%/^{\circ}\text{F}$)
Response time: $\leq 0.5 \text{ sec.}$ (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: 2300 V AC @1 minute (input to output to power to ground)

STANDARDS & APPROVALS

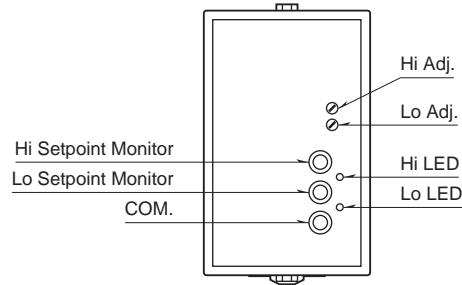
CE conformity:

EMC Directive (2004/108/EC)
 EMI EN 61000-6-4: 2007
 EMS EN 61000-6-2: 2005
 Low Voltage Directive (2006/95/EC)
 EN 61010-1: 2001
 Measurement Category II (output)
 Installation Category II (power)
 Pollution Degree 2
 Input or output to power: Reinforced insulation (300 V)

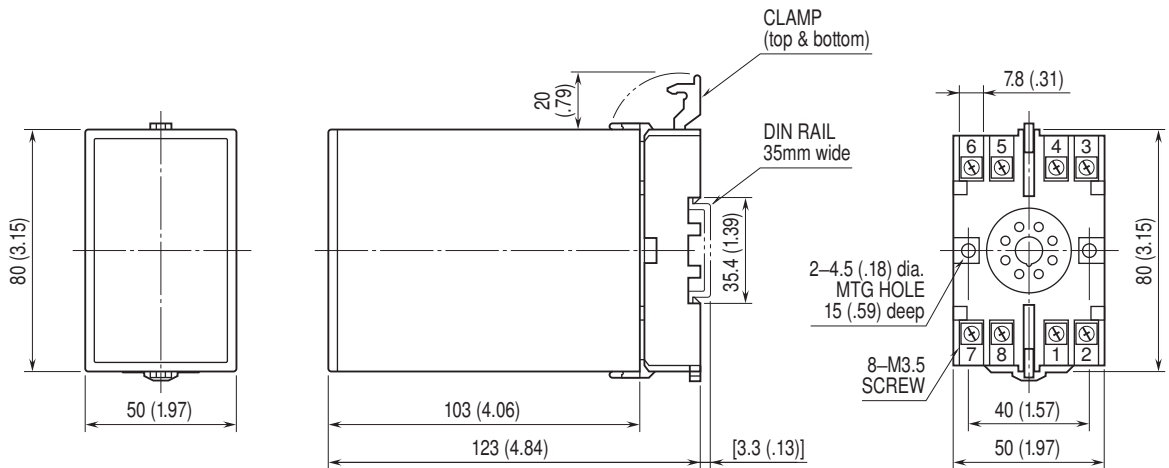


Input to output: Basic insulation (300 V)
 (When 150 V AC max. load voltage or measurement category I, applicable as reinforced insulation)

EXTERNAL VIEW

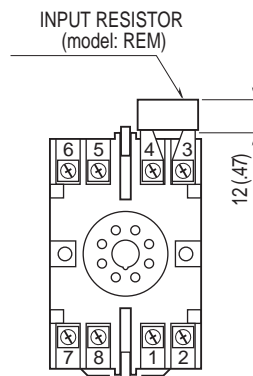


DIMENSIONS unit: mm (inch)



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

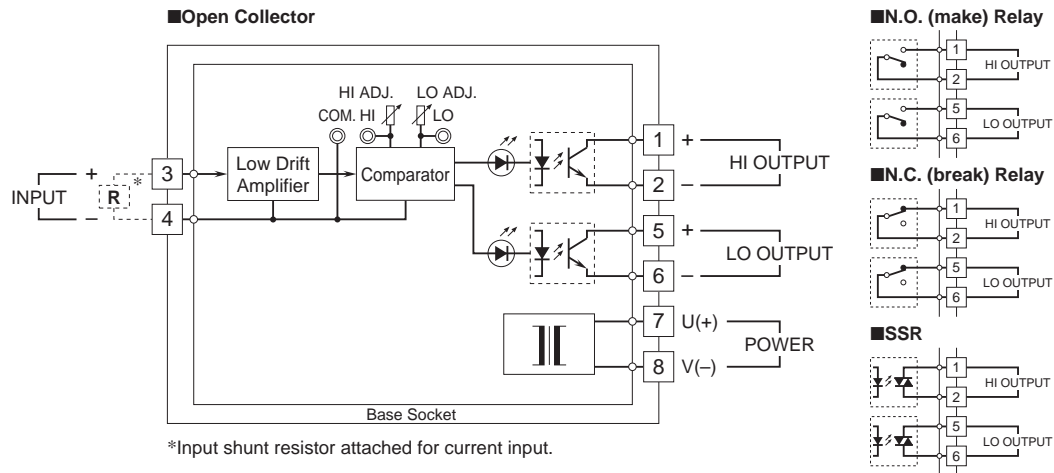
TERMINAL ASSIGNMENTS unit: mm (inch)



Input shunt resistor attached for current input.



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.

