Plug-in Signal Conditioners M-UNIT

DC ALARM

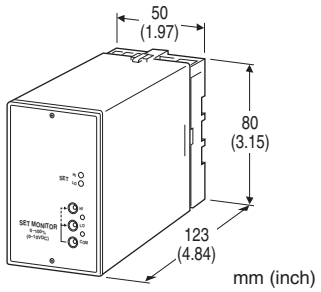
(CE)

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 of [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 μA DC (Input resistance 1000 Ω)
K: 0 – 100 μA 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 kΩ min.)
16: 0 – 60 mV DC (Input resistance 10 kΩ min.)
2: 0 – 100 mV DC (Input resistance 100 kΩ min.)
3: 0 – 1 V DC (Input resistance 1 MΩ min.)
4: 0 – 10 V DC (Input resistance 1 MΩ min.)
5: 0 – 5 V DC (Input resistance 1 MΩ min.)
6: 1 – 5 V DC (Input resistance 1 MΩ min.)
4W: -10 – +10 V DC (Input resistance 1 MΩ min.)
5W: -5 – +5 V DC (Input resistance 1 MΩ 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 (must be specified)

/CE: CE marking

Other Options

blank: none
/Q: Option other than the above (specify the specification)

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to our web site.)

/C01: Silicone coating
/C02: Polyurethane coating
/C03: Rubber coating

TERMINAL SCREW MATERIAL

/S01: Stainless steel

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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
Monitor jacks: Output 0 – 10 V for 0 – 100 % setpoints
Monitor jack diameter: 2 mm (.08")
Hysteresis (deadband): 0.5 – 1.0 %
Front LEDs: Red LED turns 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

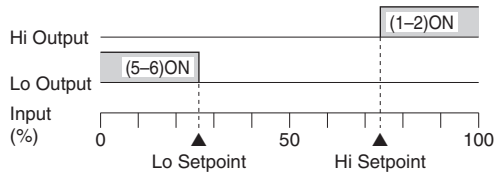
■ **DC Current**:
Shunt resistor attached to the input terminals (0.5 W)
Specify input resistance value for code Z.
■ **DC Voltage**: -30 – +30 V DC
Span: Min. 50 mV, Max. 30 V
Offset: Max. 1.5 times span
Input resistance
Span 50 – 100 mV : ≥ 10 kΩ
Span 0.1 – 1 V : ≥ 100 kΩ
Span ≥ 1 V : ≥ 1 MΩ

OUTPUT SPECIFICATIONS

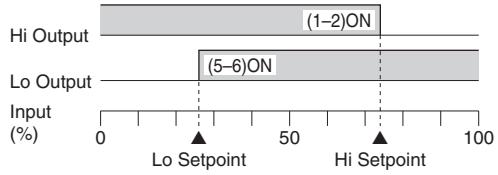
■ **Open Collector**: 50 V DC @100 mA
Voltage drop: ≤ 2 V
■ **Relay Contact**:
120 V AC @ 0.5 A (cos ø = 1)
240 V AC @ 0.5 A (cos ø = 1)
30 V DC @ 0.5 A (resistive load)
Maximum switching voltage: 380 V AC or 125 V DC
Maximum switching power: 120 VA or 30 W (≤ 0.5 A)
Minimum load: 5 V DC @ 10 mA
Mechanical 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 ±10 %, 50/60 ±2 Hz, approx. 2 VA
•**DC**: Operational voltage range: rating ±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 lb)

PERFORMANCE in percentage of span

Setpoint monitor accuracy: ± 0.5 %
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: 2300 V AC @1 minute (input to output to power to ground)

STANDARDS & APPROVALS

EU conformity:
EMC Directive
EMI EN 61000-6-4
EMS EN 61000-6-2
Low Voltage Directive
EN 61010-1
Measurement Category II (output)
Installation Category II (power)
Pollution Degree 2
Input or output to power: Reinforced insulation (300 V)

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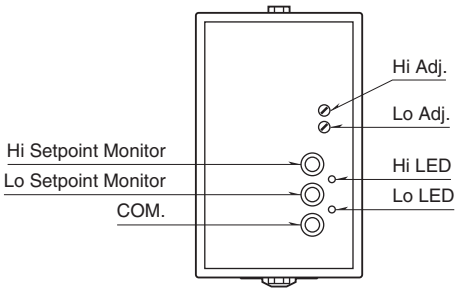
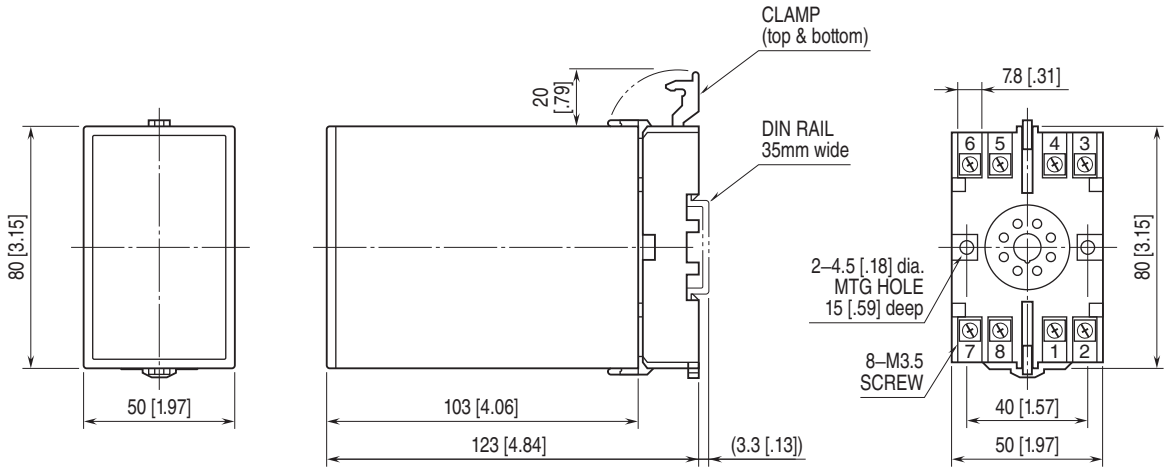
Input to output: Basic insulation (300 V)
(When 150 V AC max. load voltage or measurement category I, applicable as reinforced insulation)
RoHS Directive

EXTERNAL VIEW

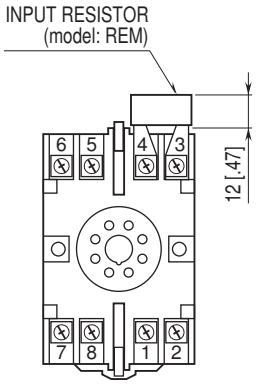


EXTERNAL DIMENSIONS unit: mm [inch]



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

TERMINAL ASSIGNMENTS unit: mm [inch]



Input shunt resistor attached for current input.

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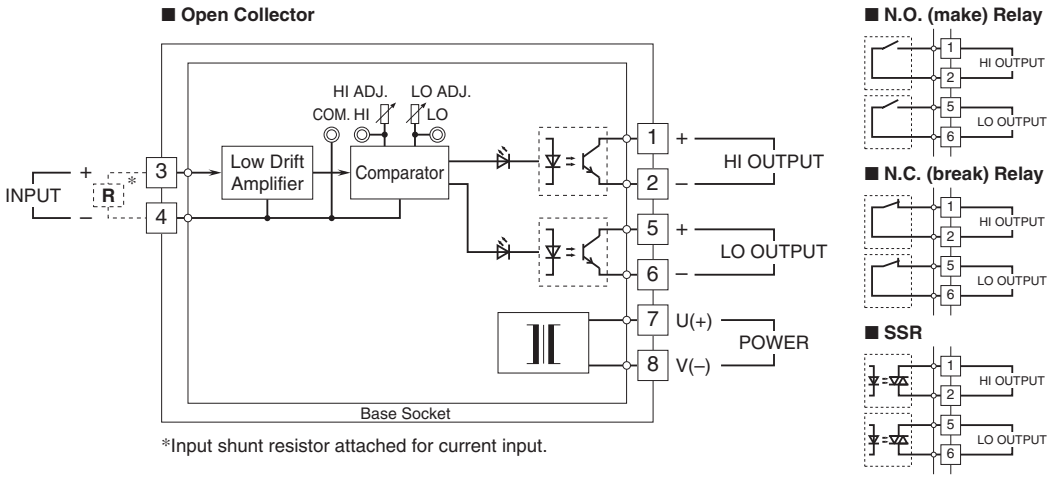
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*Input shunt resistor attached for current input.

⚠ Specifications are subject to change without notice.

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