

Super-mini Signal Conditioners Mini-M Series

DC ALARM

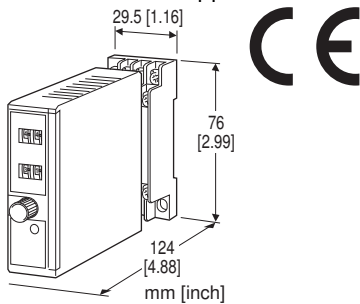
(thumbwheel switch adjustment; DPDT output)

Functions & Features

- Provides a DPDT relay output at a preset DC input level
- Thumbwheel switch setpoint adjustments
- Adjustable deadband
- Latching or non-latching output
- Relays energized or de-energized at tripped condition

Typical Applications

- Annunciator
- Various alarm applications



MODEL: M2AS-[1][2][3][4][5]-[6][7]

ORDERING INFORMATION

- Code number: M2AS-[1][2][3][4][5]-[6][7]
Specify a code from below for each of [1] through [7].
(e.g. M2AS-6111S-M2/CE/Q)
 - Specify the specification for option code /Q
(e.g. /C01/S01)
- Note: Must be used with its socket. NOT installable to a multi-unit installation base. (e.g. model: M2BS-16)

[1] INPUT

Current

A: 4 - 20 mA DC (Input resistance 250 Ω)

Voltage

- 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.)

[2] ALARM 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] ON DELAY TIME

- 1: 0.05 second
- 2: 0.1 second
- 3: 0.2 second
- 4: 0.5 second
- 5: 1 second
- 6: 2 seconds
- 7: 5 seconds
- 8: 10 seconds

[4] POWER ON DELAY TIME

- 1: 1 second
- 2: 2 seconds
- 3: 3 seconds
- 4: 4 seconds

[5] RELAY TYPE

- N: Standard type
- S: Enclosed type

[6] POWER INPUT

AC Power

M2: 100 - 240 V AC (Operational voltage range 85 - 264 V, 47 - 66 Hz)

DC Power

- R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)
- R2: 11 - 27 V DC
(Operational voltage range 11 - 27 V, ripple 10 %p-p max.)
(Select 'N' for 'Standards & Approvals' code.)
- P: 110 V DC
(Operational voltage range 85 - 150 V, ripple 10 %p-p max.)

[7] OPTIONS (multiple selections)

Standards & Approvals (must be specified)

- /N: Without CE
- /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 M-System's web site.)

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

TERMINAL SCREW MATERIAL

- /S01: Stainless steel

GENERAL SPECIFICATIONS

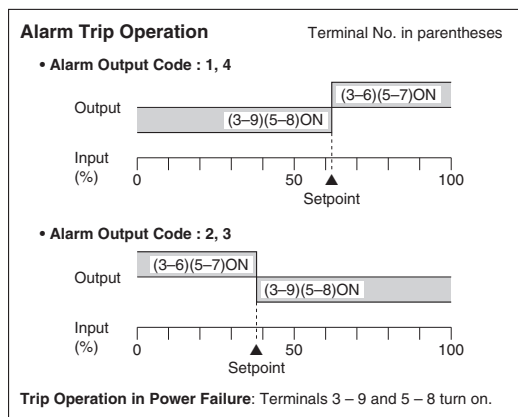
Construction: Plug-in
Connection: M3 screw terminals (torque 0.8 N·m)
Screw terminal: Chromated steel (standard) or stainless steel
Housing material: Flame-resistant resin (black)
Isolation: Input to output to power
Overrange input: -14 to +113.5 %
 When the relay's untripped point relative to the preset alarm setpoint and deadband is out of this range, the relay remains latched.
Setpoint adjustments: Thumbwheel switches (front); 0 - 99 % independently; 1 % increments
Deadband (hysteresis) : Thumbwheel switches (front); 1 - 99 % independently; 1 % increments (latching output when set to 00)
Front LEDs: Red LED turns on when the coil is energized.
Reset input: Latched output reset with the front control button or remotely via base socket terminals.

INPUT SPECIFICATIONS

■ **DC Current:**
 Shunt resistor attached to the input terminals (0.5 W)
 ■ **Reset Contact Input**
ON resistance: ≤ 1 kΩ
 Detecting level: ≤ 0.43 V
OFF resistance: ≥ 50 kΩ
 Detecting level: ≥ 4 V

OUTPUT SPECIFICATIONS

■ **Relay Contact:**
 120 V AC @5 A (cos φ = 1)(120 V @3 A with enclosed relay)
 240 V AC @2.5 A (cos φ = 1)
 30 V DC @5 A (resistive load)
Maximum switching voltage: 250 V AC or 30 V DC
Maximum switching power: 600 VA (360 VA with enclosed relay) or 150 W
Minimum load: 5 V DC @10 mA
Mechanical life: 5 × 10⁷ cycles



INSTALLATION

Power Consumption
 • **AC:**
 Approx. 3 VA at 100 V
 Approx. 4 VA at 200 V
 Approx. 5 VA at 264 V
 • **DC:** Approx. 3 W
Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail
 Installation Base (model: M2BS) is not adaptable.
Weight: 150 g (0.33 lb)

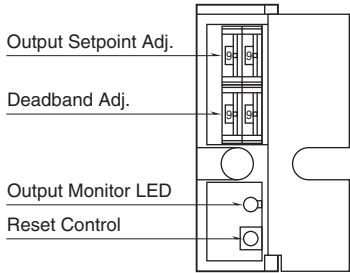
PERFORMANCE in percentage of span

Setpoint accuracy: ±0.5 %
Deadband setpoint accuracy: ±0.5 %
Power ON timer: Rating ±0.5 sec.
Trip point repeatability: ±0.05 %
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
Delay time (response time with 90 % setpoint for a step input 0 - 100 %)
Codes 1, 2: Rating ±25 msec.
Codes 3 to 8: Rating ±20 %
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)

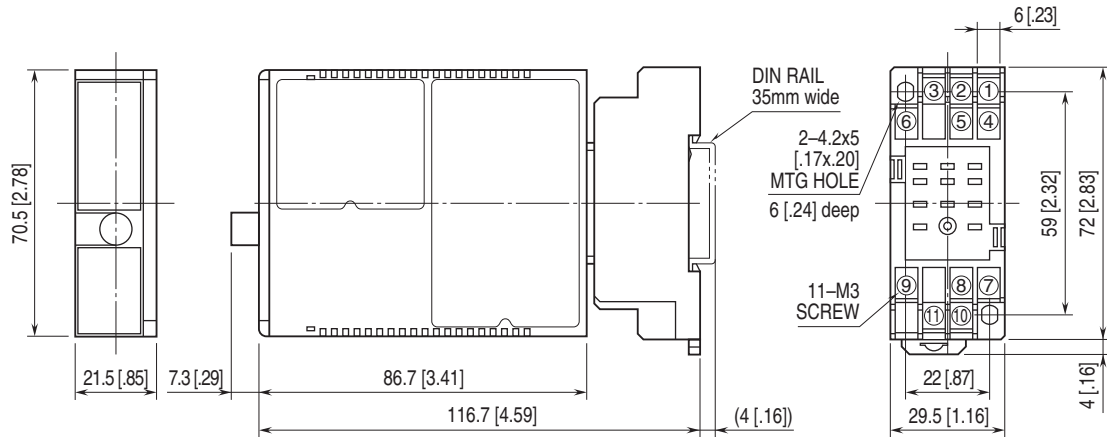
STANDARDS & APPROVALS

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)
 Input to output: Basic insulation (300 V)
 RoHS Directive

EXTERNAL VIEW

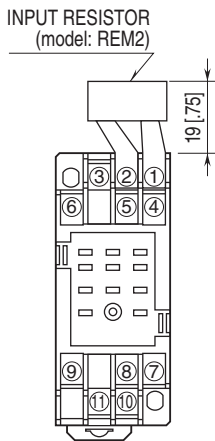


EXTERNAL DIMENSIONS unit: mm [inch]



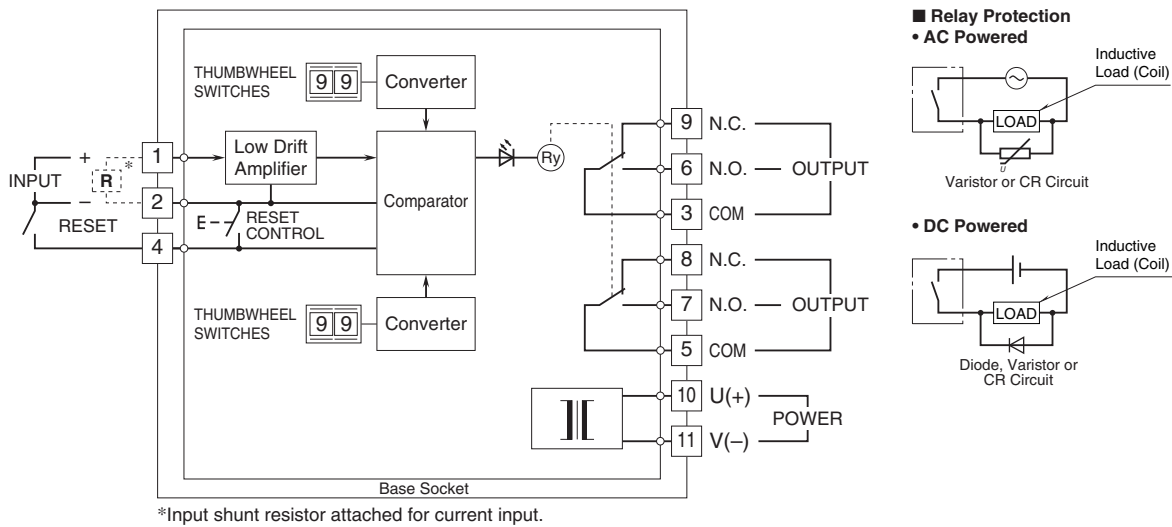
• When mounting, no extra space is needed between units.

TERMINAL ASSIGNMENTS unit: mm [inch]



Input shunt resistor attached for current input.

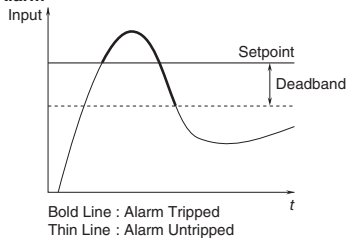
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



FUNCTIONS

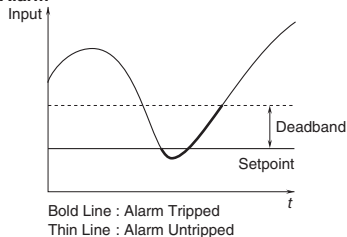
■ **HIGH ALARM:** When the signal input exceeds the preset setpoint, the relay provides a tripped condition.

• **Hi Alarm**



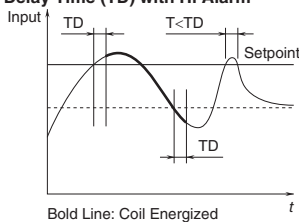
■ **LOW ALARM:** When the signal input goes below the preset setpoint, the relay provides a tripped condition.

• **Lo Alarm**



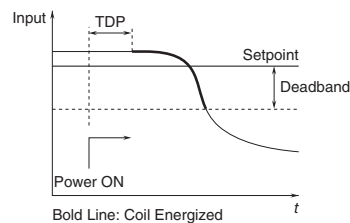
■ **ON DELAY TIME:** The relay status does not change until after the preset ON Delay Time (TD) once the signal input goes across the threshold.

• **ON Delay Time (TD) with Hi Alarm**



■ **POWER ON DELAY TIME:** The relay does not provide a tripped condition for a duration of the preset Power ON Delay Time (TDP) after the power supply is turned on, even when the signal input is in an alarm range.

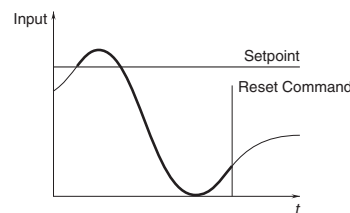
• **Power ON Delay Time (TDP) with Hi Alarm**



■ **LATCHING OUTPUT:** The relay does not return to an untripped condition once the signal input goes across the threshold, unless:

- (1) the Reset control button is pressed,
- (2) the Reset input terminal is closed, or
- (3) the power supply is removed.

• **Latching Output with Hi Alarm**





Specifications are subject to change without notice.