

Super-mini Signal Conditioners Mini-M Series

DC ALARM

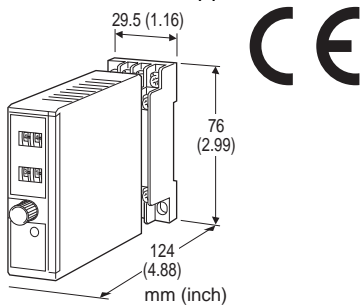
(thumbwheel switch adjustment; DPDT output)

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
- CE marking

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 [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

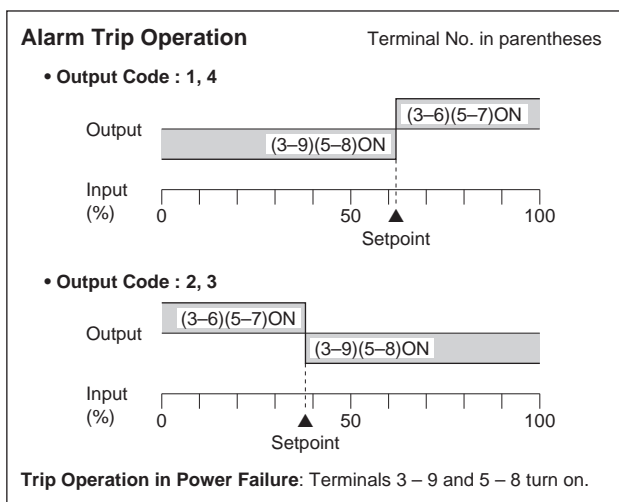
Construction: Plug-in
Connection: M3 screw terminals (torque 0.8 N·m)
Housing material: Flame-resistant resin (black)
Isolation: Input to output to power
Overrange input: -14 to +113.5 %
 When the relay's untripped point relative to the preset alarm setpoint and deadband is out of this range, the relay 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 light 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
OFF resistance: ≥ 50 kΩ

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 Power input:**
 Approx. 3 VA at 100 V
 Approx. 4 VA at 200 V
 Approx. 5 VA at 264 V
 • **DC power input:** 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 lbs)

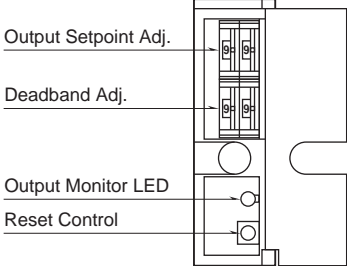
PERFORMANCE in percentage of span

Setpoint accuracy: ±0.5 %
Deadband setpoint accuracy: ±0.5 %
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 %
Power ON timer: Rating ±0.5 sec.
Trip point repeatability: ±0.05 %
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
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)

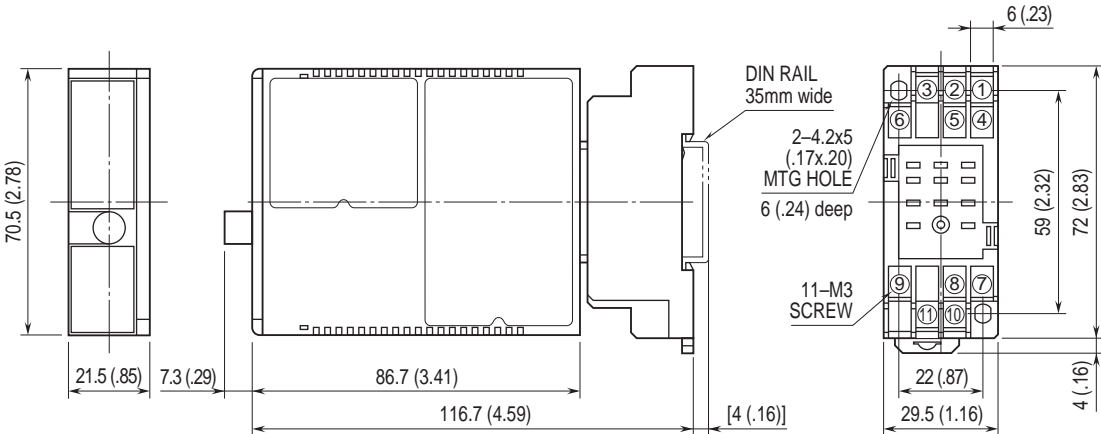
STANDARDS & APPROVALS

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
 Installation Category II
 Pollution Degree 2
 Input or output to power: Reinforced insulation (300 V)
 Input to output: Basic insulation (300 V)

EXTERNAL VIEW

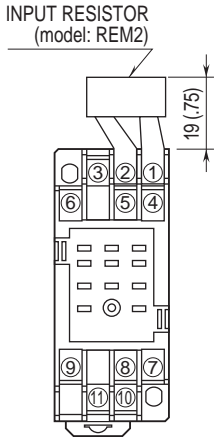


DIMENSIONS unit: mm (inch)



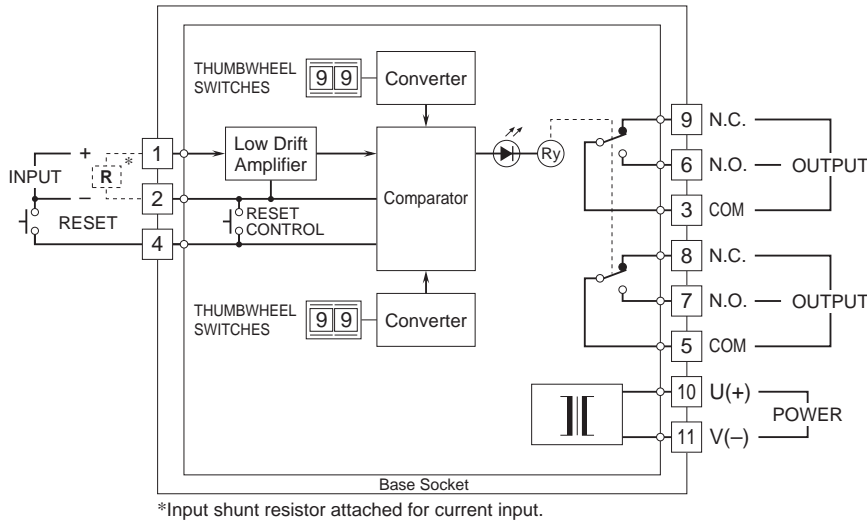
• When mounting, no extra space is needed between units.

TERMINAL ASSIGNMENTS unit: mm (inch)



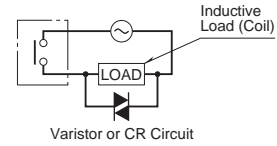
Input shunt resistor attached for current input.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

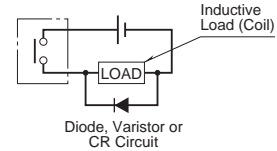


Relay Protection

AC Powered



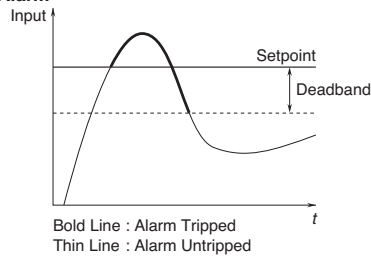
DC Powered



FUNCTIONS

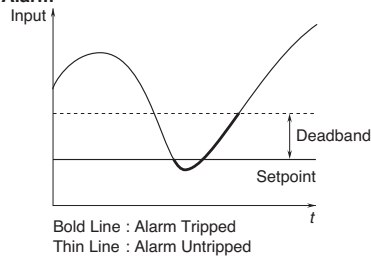
- **HIGH ALARM:** When the signal input exceeds the preset setpoint, the relay provides a tripped condition.

Hi Alarm



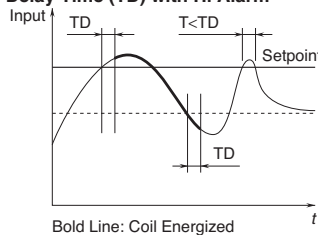
- **LOW ALARM:** When the signal input goes below the preset setpoint, the relay provides a tripped condition.

Lo Alarm



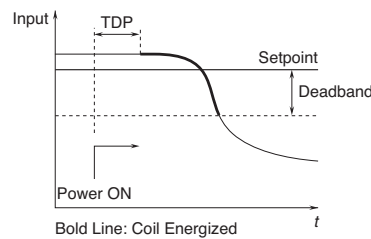
- **ON DELAY TIME:** The relay status does not change until after the preset ON Delay Time (TD) once the signal input goes across the threshold.

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.

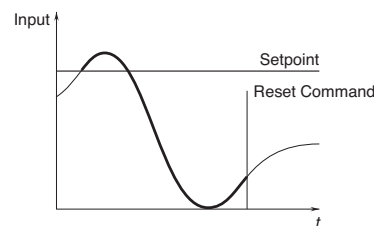
Power ON Delay Time (TDP) with Hi Alarm



- **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.