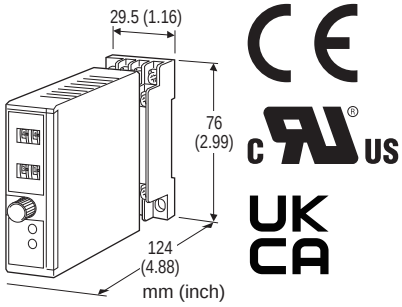
Super-mini Signal Conditioners Mini-M Series

DC ALARM

(thumbwheel switch adjustment)

Functions & Features
- Provides SPDT relay outputs at preset DC input levels
- Dual (Hi / Lo) trip
- Thumbwheel switch setpoint adjustments
- Enclosed relays
- Relays can be powered 110 V DC

Typical Applications
- Annunciator
- Various alarm applications



MODEL: M2SED–[1][2]-[3][4]

ORDERING INFORMATION

- Code number: M2SED-[1][2]-[3][4]
  Specify a code from below for each of [1] through [4].
  (e.g. M2SED-613-P/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] SETPOINT 1 OUTPUT / SETPOINT 2 OUTPUT

13: Hi (coil energized at alarm)
Lo (coil energized at alarm)
(/UL NOT available)
AB: Hi (coil energized at alarm)
Lo (coil energized at alarm)
(/UL available)

[3] POWER INPUT

AC Power
M2: 100 – 240 V AC, 50 – 60 Hz
(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.)

[4] OPTIONS (multiple selections)

Standards & Approvals (must be specified)
/N: Without CE, UKCA or UL
/CE: CE marking
/UK: CE, UKCA marking
/UL: UL approval, CE marking
(For /UL, "13" of setpoint output is NOT selectable)
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 (UL not available)
/C04: Polyolefin coating
TERMINAL SCREW MATERIAL
/S01: Stainless steel (UL not available)

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
Setpoint adjustments: Thumbwheel switches (front);
0 – 99 % independently; 1 % increments
Hysteresis (deadband): 1 ± 0.3 %
Front LEDs: Red LED turns on when the coil is energized.

INPUT SPECIFICATIONS

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

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OUTPUT SPECIFICATIONS

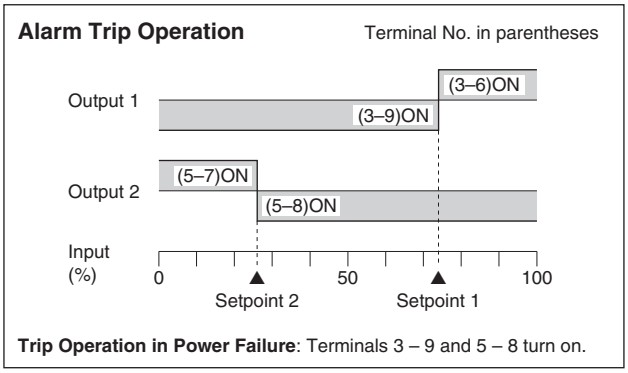
■ Relay Contact

Rated load:

100 V AC @5 A (cos ø = 1)
120 V AC @5 A (cos ø = 1)
240 V AC @2.5 A (cos ø = 1) (UL not available)
30 V DC @5 A (resistive load)

Maximum switching voltage (Note): 250 V AC or 125 V DC
Maximum switching power (Note): 600 VA or 150 W
Minimum load: 5 V DC @10 mA
Mechanical life: 5 × 10^7 cycles

(Note) The value indicate capacity of output relay in equipment. For EU, UK and UL, use within rated load.



INSTALLATION

•**AC**:

≤ 3 VA at 100 V
≤ 4 VA at 200 V
≤ 5 VA at 264 V

•**DC**: ≤ 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 %
Trip point repeatability: ±0.05 %
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
Response time: 0.5 ± 0.2 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)

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

UK conformity (UKCA):

The UK legislations and designated standards are equivalent to the applicable EU directives.
(Refer to our website for more information about the legislations and designated standards.)

Approval:

UL/C-UL general safety requirements
(UL 61010-1, CAN/CSA-C22.2 No.61010-1)

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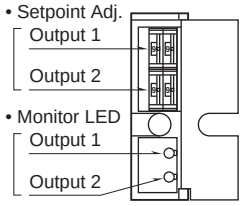
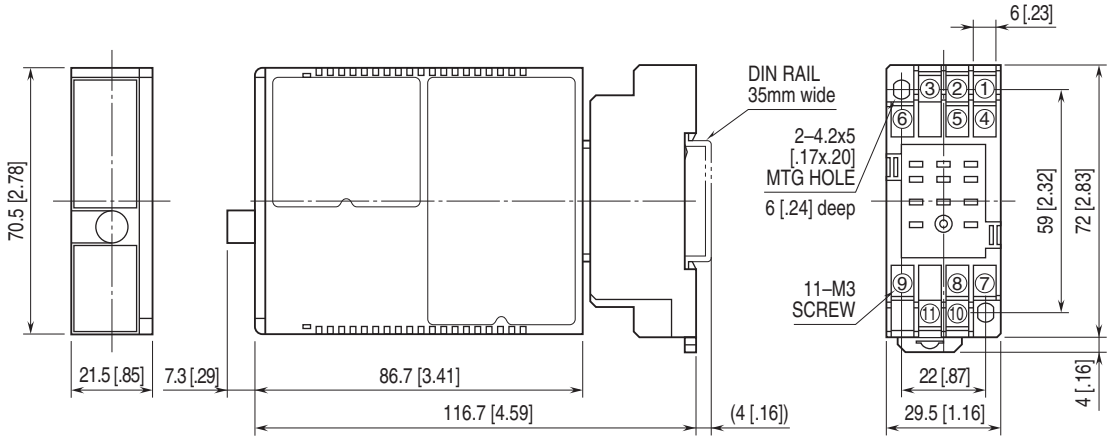
FRONT VIEW



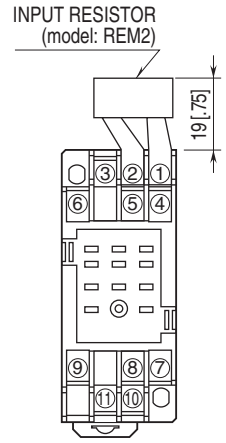
The front cover cannot be turned open by 180 deg. when there is no extra space between units.

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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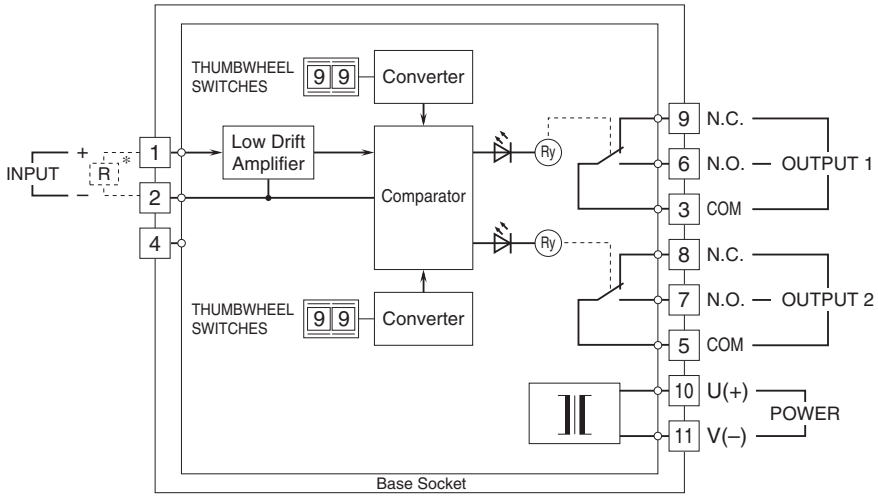
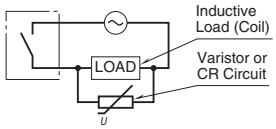
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



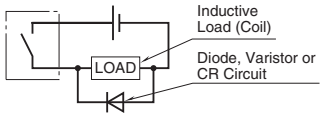
* Input shunt resistor attached for current input.

■ **Relay Protection**

• AC Powered



• DC Powered



⚠ Specifications are subject to change without notice.

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