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

SETPOINT 2 OUTPUT
3: Lo (coil energized at alarm)

[2] POWER INPUT
AC Power
M2: 100 – 240 V AC (Operational voltage range 85 – 264 V, 47 – 66 Hz)
(90 – 264 V for UL)

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.)
(110 V ±10 % for UL)

[3] OPTIONS (multiple selections)
Standards & Approvals (must be specified)
/N: Without CE or UL
/CE: CE marking
/UL: UL approval, 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 (UL not available)
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 light turns on when the coil is energized.

ORDERING INFORMATION
• Code number: M2SED-[1]13-[2][3]
  Specify a code from below for each [1] through [3].
  (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.)

SETPOINT 1 OUTPUT
1: Hi (coil energized at alarm)

[3] OPTIONS (multiple selections)
Standards & Approvals (must be specified)
/N: Without CE or UL
/CE: CE marking
/UL: UL approval, 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.)
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Hysteresis (deadband): 1 ± 0.3 %
Front LEDs: Red light turns on when the coil is energized.

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

- **Relay Contact:**
  - 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)
  - 30 V DC @5 A (resistive load)

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

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**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)

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**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)

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**STANDARDS & APPROVALS**

- **EU conformity:**
  - EMC Directive
  - EMI EN 61000-6-4
  - EMS EN 61000-6-2

- **Low Voltage Directive**
  - EN 61010-1
  - Installation Category II
  - Pollution Degree 2
  - Input or output to power: Reinforced insulation (300 V)
  - Input to output: Basic insulation (300 V)

- **RoHS Directive**
  - EN 50581

- **Approval:**
  - UL/C-UL general safety requirements
  - (UL 61010B-1, CAN/CSA-C22.2 No.1010-1)
FRONT VIEW

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

DIMENSIONS unit: mm (inch)

TERMINAL ASSIGNMENTS unit: mm (inch)

Input shunt resistor attached for current input.
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

* Input shunt resistor attached for current input.

- Relay Protection
  - AC Powered
  - DC Powered

Specifications are subject to change without notice.