

Plug-in Signal Conditioners M-UNIT

HIGH/LOW SELECTOR

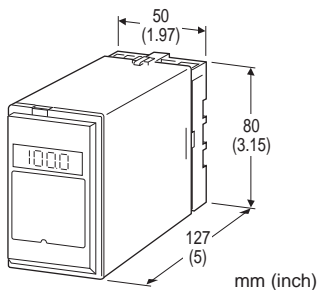
(3-port isolation)

Functions & Features

- Monitoring two DC input signals and transmitting an output signal proportional to the higher or lower input
- LCD meter indicates the selected input signals (engineering unit display selectable)
- Simple loop test output (0 % and 100 %)
- Isolation up to 2000 V AC
- High-density mounting

Typical Applications

- Selecting greater flow, pressure, etc. for control
- Heating control by multiple T/C's on a furnace



MODEL: SES-[1][2][3]-[4][5]

ORDERING INFORMATION

- Code number: SES-[1][2][3]-[4][5]
- Specify a code from below for each [1] through [5].
(e.g. SES-1AA-B/E2Q)
- Special output range (For codes Z & 0)
 - Specify the specification for option code /Q
(e.g. /C01/S01)

[1] SELECTING FUNCTION

- 1: Low input
- 2: High input

[2] INPUT

Current

- A: 4 - 20 mA DC (Input resistance 250 Ω)
 B: 2 - 10 mA DC (Input resistance 500 Ω)
 C: 1 - 5 mA DC (Input resistance 1000 Ω)
 H: 10 - 50 mA DC (Input resistance 100 Ω)

Voltage

- 6: 1 - 5 V DC (Input resistance 1 M Ω min.)

[3] OUTPUT

Current

- A: 4 - 20 mA DC (Load resistance 750 Ω max.)
 B: 2 - 10 mA DC (Load resistance 1500 Ω max.)
 C: 1 - 5 mA DC (Load resistance 3000 Ω max.)
 D: 0 - 20 mA DC (Load resistance 750 Ω max.)
 E: 0 - 16 mA DC (Load resistance 900 Ω max.)
 F: 0 - 10 mA DC (Load resistance 1500 Ω max.)
 G: 0 - 1 mA DC (Load resistance 15 k Ω max.)
 Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

- 1: 0 - 10 mV DC (Load resistance 10 k Ω min.)
 2: 0 - 100 mV DC (Load resistance 100 k Ω min.)
 3: 0 - 1 V DC (Load resistance 100 Ω min.)
 4: 0 - 10 V DC (Load resistance 1000 Ω min.)
 5: 0 - 5 V DC (Load resistance 500 Ω min.)
 6: 1 - 5 V DC (Load resistance 500 Ω min.)
 4W: -10 - +10 V DC (Load resistance 2000 Ω min.)
 5W: -5 - +5 V DC (Load resistance 1000 Ω min.)
 0: Specify voltage (See OUTPUT SPECIFICATIONS)

[4] 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
 P: 110 V DC (Not selectable with Option /E2)

[5] OPTIONS (multiple selections)

Input Signal Indicator (after selection)

- blank: Without
 /E: With LCD meter (0.0 - 100.0 %)
 /E2: With LCD display in engineering unit with backlight and the simple loop test output

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:** M3.5 screw terminals**Screw terminal:** Chromated steel (standard) or stainless steel**Housing material:** Flame-resistant resin (black)**Isolation:** Input to output to power**Overrange output:** Approx. -10 to +120 % at 1 - 5 V**Selecting operation:** Automatic**Display scaling:** -10000 - +10000; ex-factory set to 0.00 - 100.00 (%)**Engineering unit:** %, μ V, mV, V, mA, A, °C, °F, Ω , DEG K, mHz, Hz, kHz, VAC, AAC, mg, g, kg, t, rpm or rps selectable**Simple loop test output:** 0 % and 100 % signal simulated by selecting the front switch positions.**INPUT SPECIFICATIONS**■ **DC Current:**

Shunt resistor attached to the input terminals (0.5 W)

OUTPUT SPECIFICATIONS■ **DC Current:** 0 - 20 mA DC**Minimum span:** 1 mA**Offset:** Max. 1.5 times span**Load resistance:** Output drive 15 V max.■ **DC Voltage:** -10 - +12 V DC**Minimum span:** 5 mV**Offset:** Max. 1.5 times span**Load resistance:** Output drive 10 mA max.; 5 mA for negative voltage output; at \geq 0.5 V**INSTALLATION****Power input**•**AC:** Operational voltage range: rating \pm 10 %, 50/60 \pm 2 Hz, approx. 2 VA

(approx. 3 VA with Option /E2)

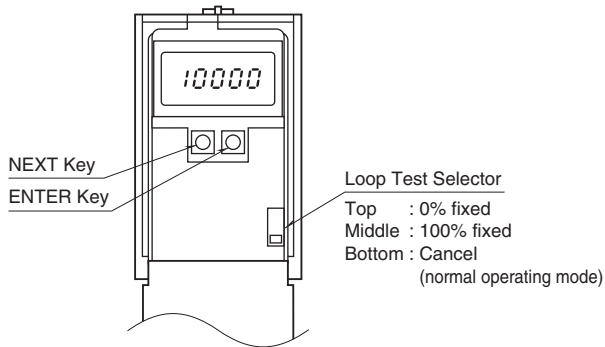
•**DC:** Operational voltage range: rating \pm 10 %, or 85 - 150 V for 110 V rating ripple 10 %p-p max.

approx. 2.5 W (110 mA at 24 V; approx. 3.5 W with Option /E2)

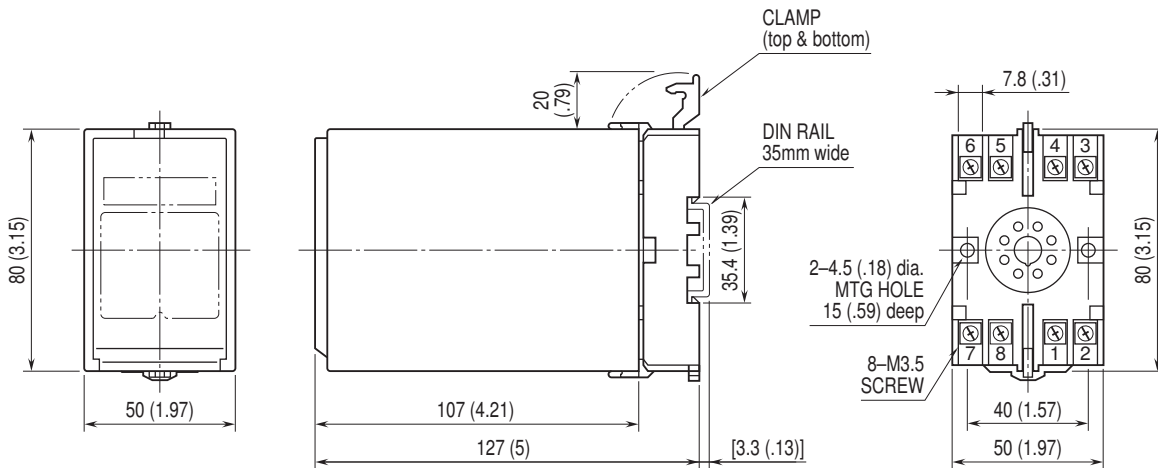
Operating temperature: -5 to +60°C (23 to 140°F)**Operating humidity:** 30 to 90 %RH (non-condensing)**Mounting:** Surface or DIN rail**Weight:** 400 g (0.88 lb)**PERFORMANCE in percentage of span****Accuracy:** \pm 0.2 %**Display accuracy:** \pm (0.2 % of FS + 1 digit)**Simple loop test output setting accuracy:** \pm 0.5 %**Selecting sensitivity:** 0.5%**Temp. coefficient:** \pm 0.015 %/°C (\pm 0.008 %/°F)**Response time:** \leq 0.5 sec. (0 - 90 %)**Line voltage effect:** \pm 0.1 % over voltage range**Insulation resistance:** \geq 100 M Ω with 500 V DC**Dielectric strength:** 2000 V AC @1 minute (input to output to power to ground)

EXTERNAL VIEW

OPTION /E2

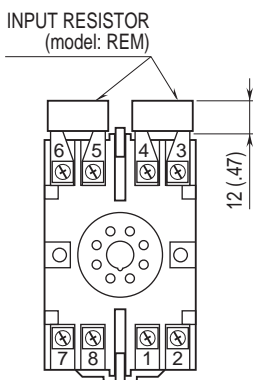


DIMENSIONS unit: mm (inch)



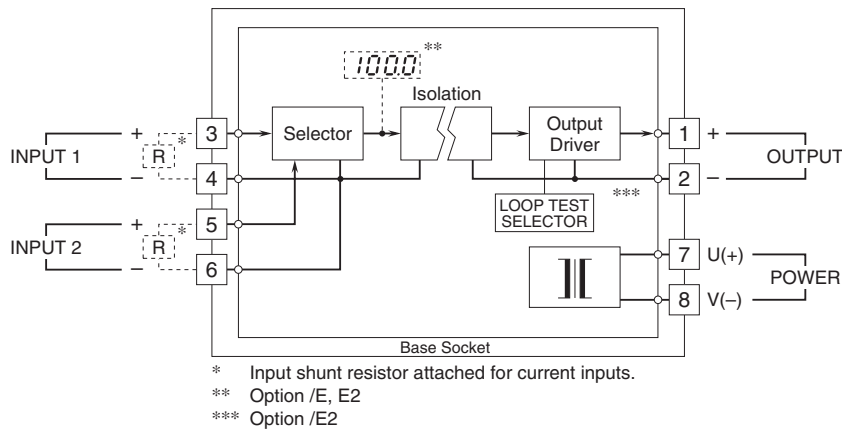
• When mounting, no extra space is needed between units.

TERMINAL ASSIGNMENTS unit: mm (inch)



Input shunt resistor attached for current input.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.

