

Plug-in Signal Conditioners M-UNIT

HIGH/LOW SELECTOR

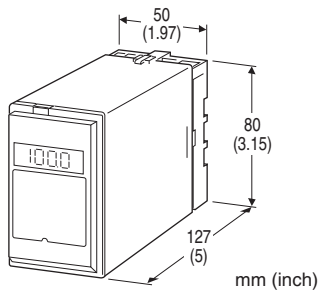
(isolated)

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 MΩ 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 kΩ max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

- 1: 0 - 10 mV DC (Load resistance 10 kΩ min.)
- 2: 0 - 100 mV DC (Load resistance 100 kΩ 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)

LCD Meter (after selection)

- blank: Without
- /E: With (0.0 - 100.0 % display)
- /E2: With (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**Simple loop test output:** 0 % and 100 % signal simulated by selecting the front switch positions. (Only for option code /E2)**■ DISPLAY (LCD meter)**• **Option code:** /E**LCD digital display:** 0.0 - 100.0 % (min. digit 0.1 %)
(No scaling)• **Option code:** /E2**LCD digital display:** Engineering unit**Display scaling:** -10000 - +10000**Decimal position:** 10^{-1} - 10^{-4} or no decimal point**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**Back light:** Green at normal, red at loop test output enable**Factory setting:** scaling 0.00 - 100.00, unit: %**INPUT SPECIFICATIONS****■ DC Current:**

Shunt resistor attached to the input terminals (0.5 W)

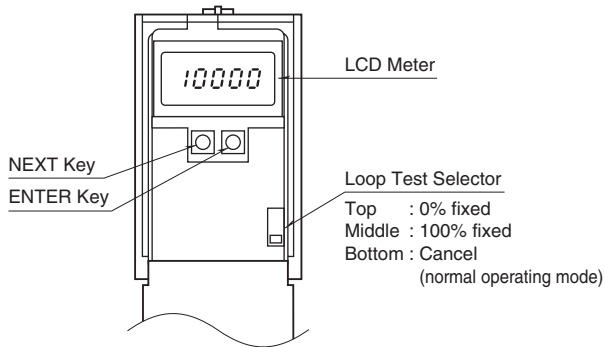
OUTPUT SPECIFICATIONS**■ DC Current:** 0 - 20 mA DC**Minimum span:** 1 mA**Offset:** Max. 1.5 times span**Load resistance:** Output drive 15 V max.**■ DC Voltage:** -10 - +12 V DC**Minimum span:** 5 mV**Offset:** Max. 1.5 times span**Load resistance:** Output drive 10 mA max.; 5 mA for negative voltage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

(approx. 3 VA with Option /E2)

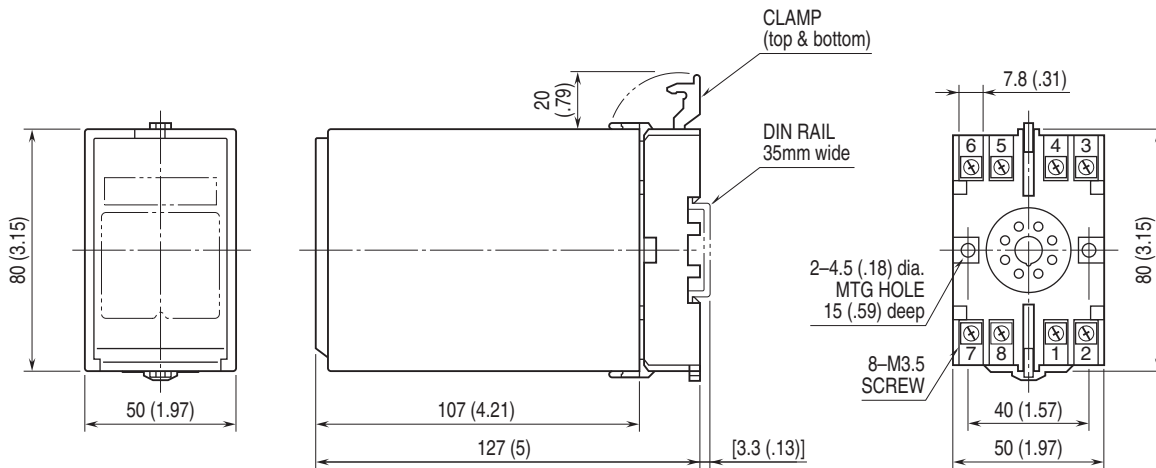
• **DC:** Operational voltage range: rating ± 10 %, or 85 - 150 V for 110 V rating ripple 10 %p-p max.
approx. 2.5 W (110 mA at 24 V; approx. 3.5 W with Option /E2)**Operating temperature:** -5 to +60°C (23 to 140°F)**Operating humidity:** 30 to 90 %RH (non-condensing)**Mounting:** Surface or DIN rail**Weight:** 400 g (0.88 lb)**PERFORMANCE in percentage of span****Accuracy:** ± 0.2 %**Display accuracy:** \pm (0.2 % of FS + 1 digit)**Simple loop test output setting accuracy:** ± 0.5 %**Selecting sensitivity:** 0.5%**Temp. coefficient:** ± 0.015 %/°C (± 0.008 %/°F)**Response time:** ≤ 0.5 sec. (0 - 90 %)**Line voltage effect:** ± 0.1 % over voltage range**Insulation resistance:** ≥ 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

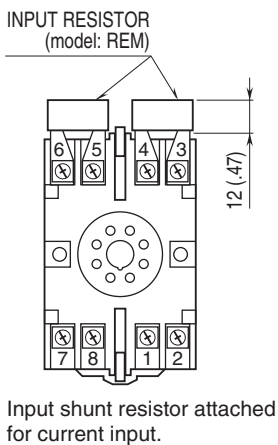


EXTERNAL DIMENSIONS unit: mm (inch)

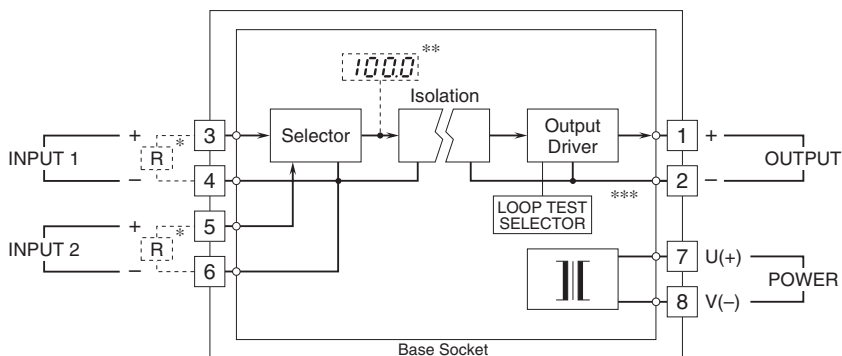


• When mounting, no extra space is needed between units.

TERMINAL ASSIGNMENTS unit: mm (inch)



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



- * Input shunt resistor attached for current inputs.
- ** Option /E, E2
- *** Option /E2



Specifications are subject to change without notice.