

## Plug-in Signal Conditioners M-UNIT

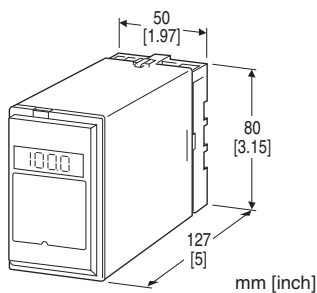
### PARAMETER GENERATOR

#### Functions & Features

- Providing a constant DC signal
- Setpoint monitoring with LCD meter
- Isolation up to 2000 V AC
- High-density mounting

#### Typical Applications

- Various parameter settings for computers and DCS's



### MODEL: MS-[1]-[2][3]

#### ORDERING INFORMATION

- Code number: MS-[1]-[2][3]

Specify a code from below for each of [1] through [3].  
(e.g. MS-A-B/E/Q)

- Special output range (For codes Z & 0)
- Specify the specification for option code /Q  
(e.g. /C01/S01)

#### [1] OUTPUT

Current

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

Voltage

- 1:** 0 - 10 mV DC (Load resistance 10 k $\Omega$  min.)
- 2:** 0 - 100 mV DC (Load resistance 100 k $\Omega$  min.)
- 3:** 0 - 1 V DC (Load resistance 100  $\Omega$  min.)
- 4:** 0 - 10 V DC (Load resistance 1000  $\Omega$  min.)
- 5:** 0 - 5 V DC (Load resistance 500  $\Omega$  min.)
- 6:** 1 - 5 V DC (Load resistance 500  $\Omega$  min.)

**4W:** -10 - +10 V DC (Load resistance 2000  $\Omega$  min.)

**5W:** -5 - +5 V DC (Load resistance 1000  $\Omega$  min.)

**0:** Specify voltage (See OUTPUT SPECIFICATIONS)

#### [2] 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

#### [3] OPTIONS (multiple selections)

LCD Meter

**blank:** None

**/E:** with LCD meter (0.0 - 100.0 % display)

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

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:** Output to power

**Output adjustment:** Multi-turn screwdriver (front)

**Monitor jacks:** Output 0 - 10 V for 0 - 100 % setpoint  
(deleted with option /E)

**Monitor jack diameter:** 2 mm (.08")

■ **DISPLAY (LCD meter)**

**LCD digital display:** 0.0 - 100.0 % (min. digit 0.1 %)  
(No scaling)

**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

• **DC:** Operational voltage range: rating  $\pm 10$  %, or 85 - 150 V

for 110 V rating (ripple 10 % p-p max.)

Approx. 2.5 W (100 mA at 24 V)

**Operating temperature:** -5 to +60°C (23 to 140°F)

**Operating humidity:** 30 to 90 %RH (non-condensing)

**Mounting:** Surface or DIN rail

**Weight:** 350 g (0.77 lb)

**PERFORMANCE in percentage of span**

**Setting accuracy (monitor jacks):**  $\pm 0.1$  %

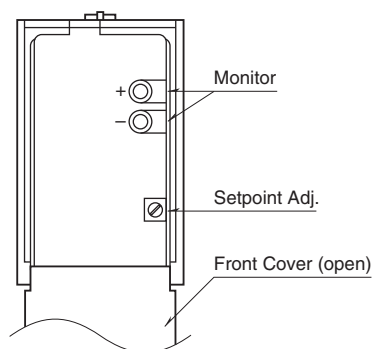
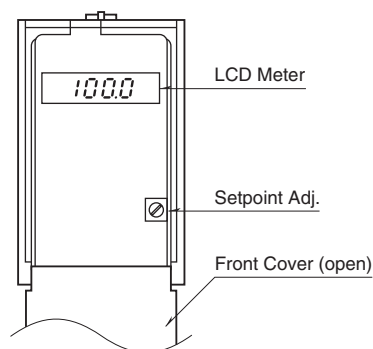
**Setting accuracy (digital display):**  $\pm 0.1$  %  $\pm 1$  digit

**Temp. coefficient:**  $\pm 0.015$  %/°C ( $\pm 0.008$  %/°F)

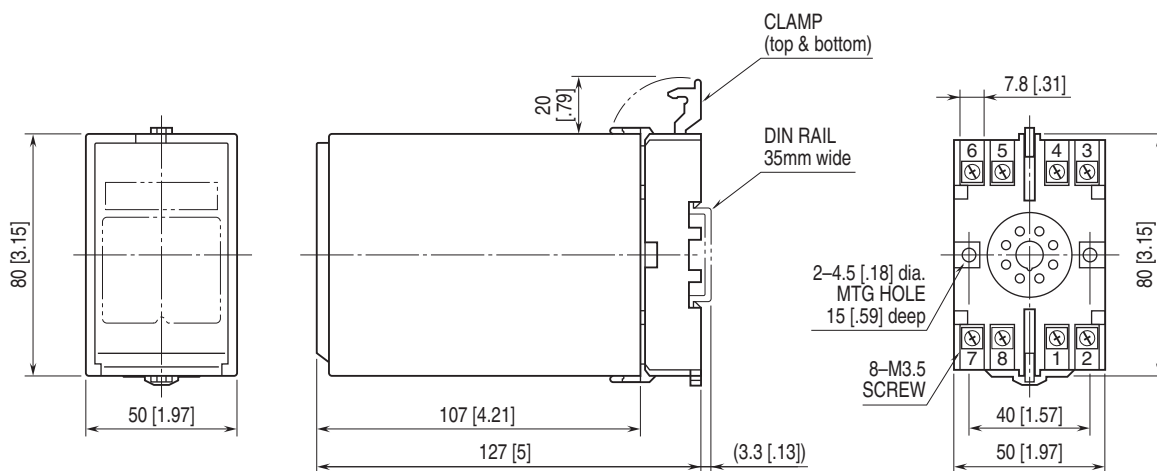
**Line voltage effect:**  $\pm 0.1$  % over voltage range

**Insulation resistance:**  $\geq 100$  M $\Omega$  with 500 V DC

**Dielectric strength:** 2000 V AC @ 1 minute (output to power to ground)

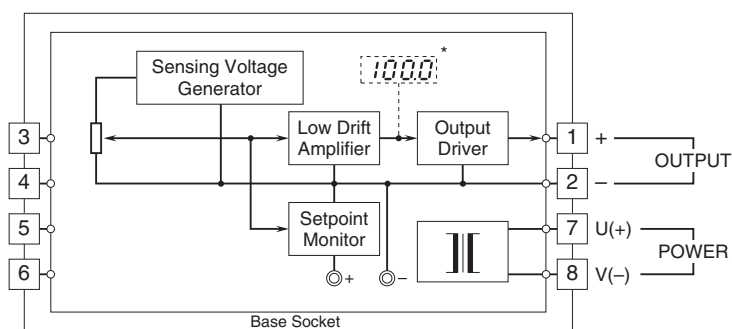
**EXTERNAL VIEW**■ **STANDARD TYPE: MONITOR JACKS**■ **OPTION /E: LCD METER**

## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



\*Option/E.  
Setpoint monitor circuit and monitor jacks are deleted when Option/E is selected.



Specifications are subject to change without notice.