

Plug-in Signal Conditioners M-UNIT

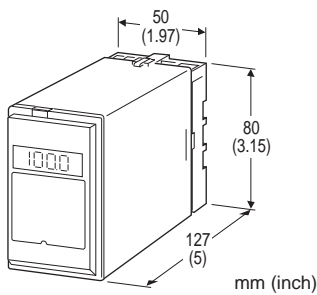
AC TRANSMITTER

Functions & Features

- Converting an alternating current/voltage into a standard process signal
- True RMS sensing
- Isolation up to 2000 V AC
- LCD meter (engineering unit display selectable)
- Simple loop test output (0 % and 100 %)
- High-density mounting

Typical Applications

- Converting a large AC current in combination with a shunt resistor, or a narrow span AC voltage



MODEL: AC-[1][2]-[3][4]

ORDERING INFORMATION

- Code number: AC-[1][2]-[3][4]
- Specify a code from below for each [1] through [4].
(e.g. AC-A1A-B/E2/Q)
- Special input and output ranges for codes AZ, A8, Z & 0
- Specify the specification for option code /Q
(e.g. /C01/S01)

[1] INPUT

Current

- AA:** 0 - 10 mA AC (Input resistance 100 Ω)
- AB:** 0 - 50 mA AC (Input resistance 20 Ω)
- AC:** 0 - 100 mA AC (Input resistance 10 Ω)
- AD:** 0 - 500 mA AC (Input resistance 1 Ω)
- AZ:** Specify current (See INPUT SPECIFICATIONS)
(0 % input must be 0 mA.)

Voltage

- A1:** 0 - 100 mV AC (Input resistance 100 kΩ min.)
- A2:** 0 - 500 mV AC (Input resistance 100 kΩ min.)
- A3:** 0 - 1 V AC (Input resistance 100 kΩ min.)
- A4:** 0 - 5 V AC (Input resistance 100 kΩ min.)
- A5:** 0 - 10 V AC (Input resistance 100 kΩ min.)

- A6:** 0 - 120 V AC (Input resistance 100 kΩ min.)
- A7:** 0 - 150 V AC (Input resistance 100 kΩ min.)
- A8:** Specify voltage (See INPUT SPECIFICATIONS)
(0 % input must be 0 V.)

[2] 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)

[3] 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)

[4] OPTIONS (multiple selections)

Input Signal Indicator

- 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**Input waveform****RMS sensing:** Up to 15 % of 3rd harmonic content**Overrange output:** 0 to 120 % at 1 - 5 V**Zero adjustment:** -5 to +5 % (front)**Span adjustment:** 95 to 105 % (front)**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****Frequency:** 40 Hz min., 1 kHz max.■ **AC Current:** 0 - 1 A AC; input resistor incorporated**Minimum span:** 1 mA**Input resistance**Span 1 mA: 1 k Ω Span \leq 2 mA: 500 Ω Span \leq 5 mA: 200 Ω Span \leq 10 mA: 100 Ω Span \leq 20 mA: 50 Ω Span \leq 50 mA: 20 Ω Span \leq 100 mA: 10 Ω Span \leq 500 mA: 1 Ω Span \leq 1 A: 0.5 Ω ■ **AC Voltage:** 0 - 250 V AC**Minimum span:** 50 mV**Input resistance:** 100 k Ω min.**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

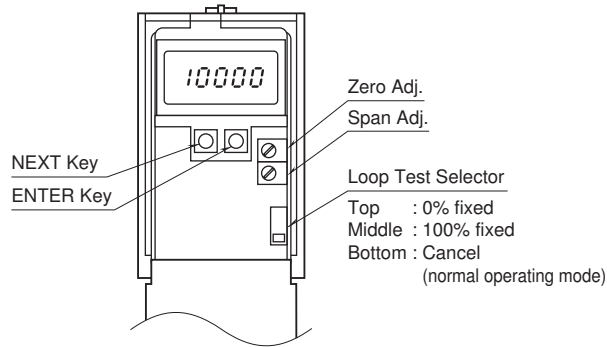
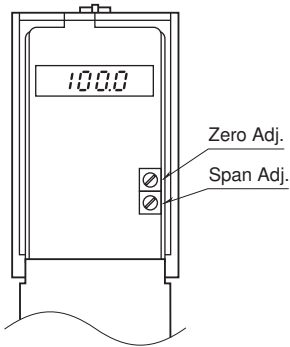
(approx. 3 VA with Option /E2)

•**DC:** Operational voltage range: rating \pm 10 %, or 85 - 150 V for 110 V rating (ripple 10 % p-p max.) approx. 2 W (80 mA at 24 V; approx. 3 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 0.4 %**Display accuracy:** \pm (0.4 % of FS + 1 digit)**Simple loop test output setting accuracy:** \pm 0.5 %**Temp. coefficient:** \pm 0.05 %/°C (\pm 0.03 %/°F)**Response time:** \leq 0.7 sec. (0 - 90 %)**Ripple:** 0.5 %p-p max.**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)

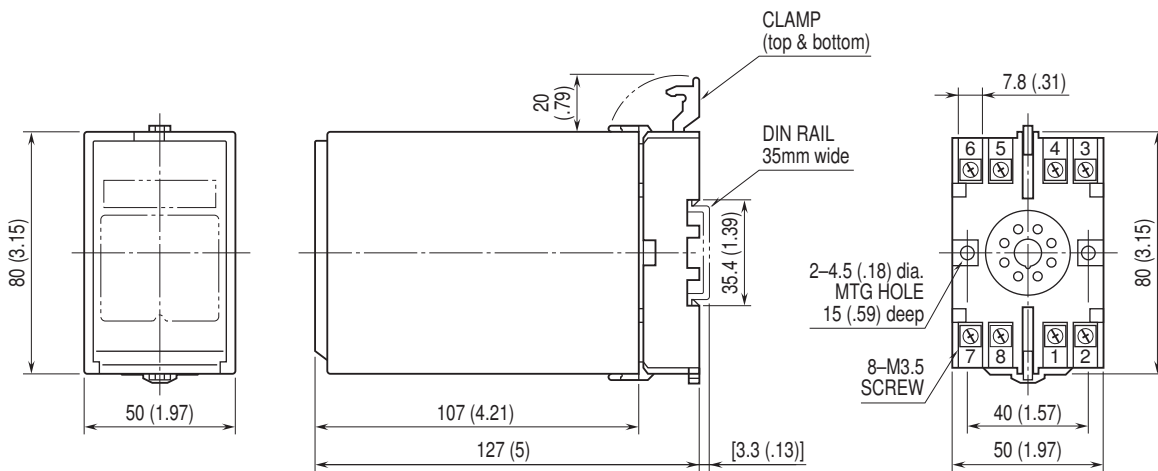
EXTERNAL VIEW

OPTION /E

OPTION /E2

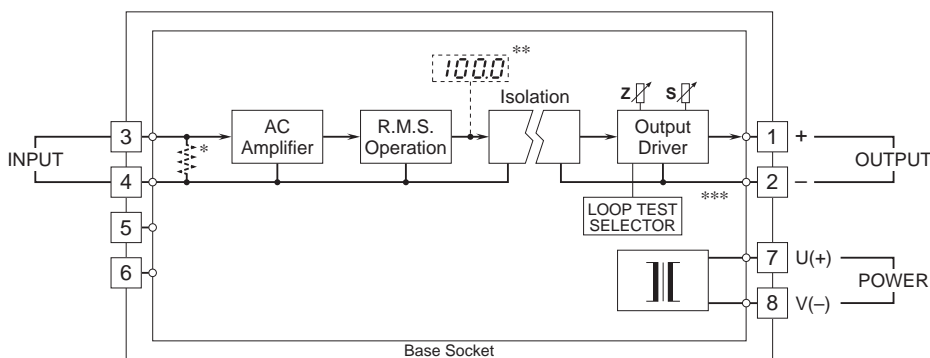


DIMENSIONS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



* Input shunt resistor incorporated for current input.

** Option /E, E2

*** Option /E2



Specifications are subject to change without notice.