

Plug-in Signal Conditioners M-UNIT

CURRENT LOOP SUPPLY

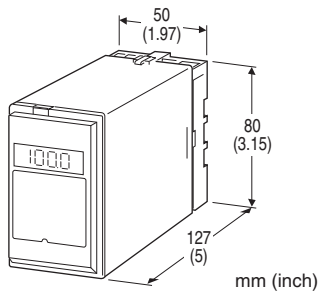
(isolated)

Functions & Features

- Powering a 4 - 20 mA DC current loop
- Shortcircuit protection
- Applicable to smart transmitters
- Isolation up to 2000 V AC
- LCD meter (engineering unit display selectable)
- Simple loop test output (0 % and 100 %)
- High-density mounting

Typical Applications

- Various 2-wire transmitters
- Isolation application (4 - 20 mA input)



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)

[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 (Not selectable with Option /UL)

H: 220 V AC (Not selectable with Option /UL)

J: 240 V AC (Not selectable with Option /UL)

DC Power

S: 12 V DC (Not selectable with Option /UL)

R: 24 V DC (Not selectable with Option /UL)

V: 48 V DC (Not selectable with Option /UL)

P: 110 V DC (Not selectable with Option /E2 or /UL)

MODEL: YVD-[1]-[2][3]

ORDERING INFORMATION

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

Specify a code from below for each of [1] through [3].

(e.g. YVD-A-B/E2/Q)

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

INPUT

Current

4 - 20 mA DC (Input resistance 250 Ω)

[1] 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.)

[3] 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)

Standards & Approvals

blank: Without UL

/UL: UL approval (Not selectable with /E or /E2)

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: M3.5 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
Zero adjustment: -5 to +5 % (front)
Span adjustment: 95 to 105 % (front)
Simple loop test output: 0 % and 100 % signal simulated by selecting the front switch positions. (Only for option code /E2)
■ DISPLAY (Input indicator)
 • **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: %

SUPPLY OUTPUT

Output voltage: 24 - 28 V DC with no load
Current rating: \leq 22 mA DC
 • **Shortcircuit Protection**
Current limited: 40 mA max.
Protected time duration: No limit

INPUT SPECIFICATIONS

■ **DC Current:** Input resistor incorporated

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. 3 VA
 (approx. 4 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. 3 W (120 mA at 24 V; approx. 4 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 0.1 %

Display accuracy: \pm (0.1 % of FS + 1 digit)

Simple loop test output setting accuracy: \pm 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)

STANDARDS & APPROVALS

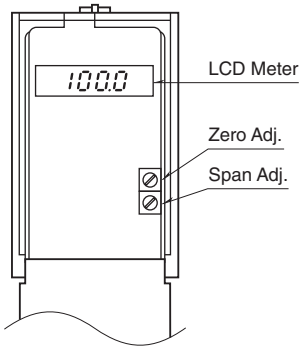
Approval:

UL/C-UL general safety requirements

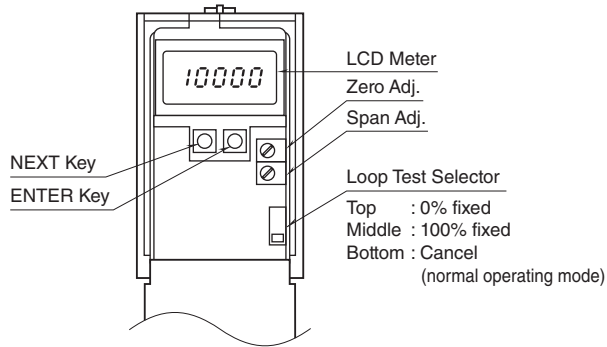
(UL 3111-1, CAN/CSA-C22.2 No.1010-1)

EXTERNAL VIEW

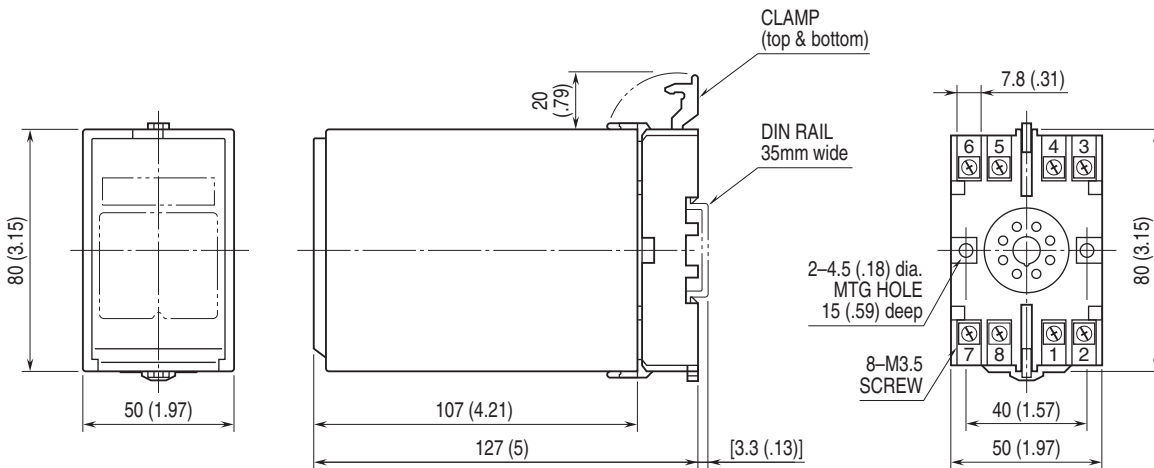
■ OPTION /E



■ OPTION /E2

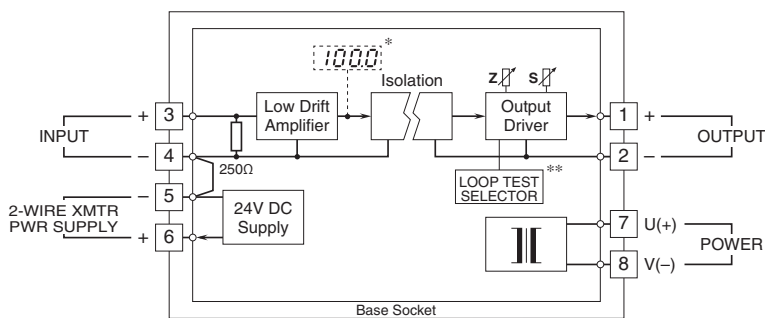


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)

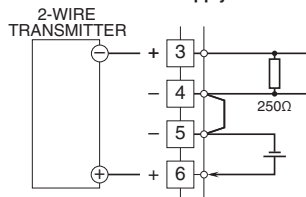


• When mounting, no extra space is needed between units.

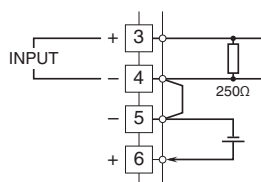
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



■ When Used as DC Supply



■ When Used as Isolator





Specifications are subject to change without notice.