

## Plug-in Signal Conditioners M-UNIT

### CURRENT LOOP SUPPLY

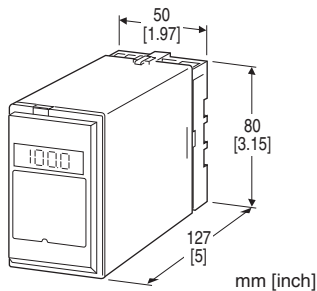
(isolated)

#### 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)



### 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.)

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

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)

#### [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)

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:** 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:** %,  $\mu$ V, mV, V, mA, A, °C, °F,  $\Omega$ , 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: %

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 $\Omega$  with 500 V DC

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

## 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

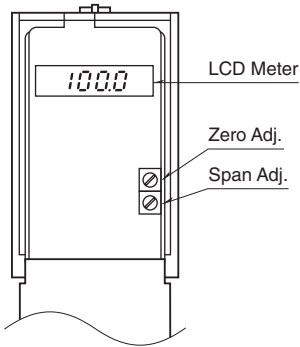
• **AC:** Operational voltage range: rating  $\pm 10$  %, 50/60  $\pm 2$  Hz, approx. 3 VA

(approx. 4 VA with Option /E2)

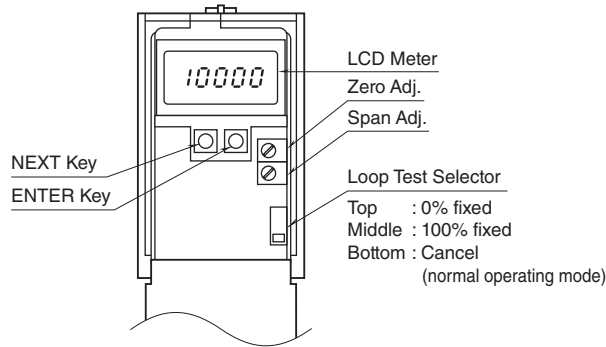
• **DC:** Operational voltage range: rating  $\pm 10$  %, or 85 - 150 V for 110 V rating, ripple 10 %p-p max.

## EXTERNAL VIEW

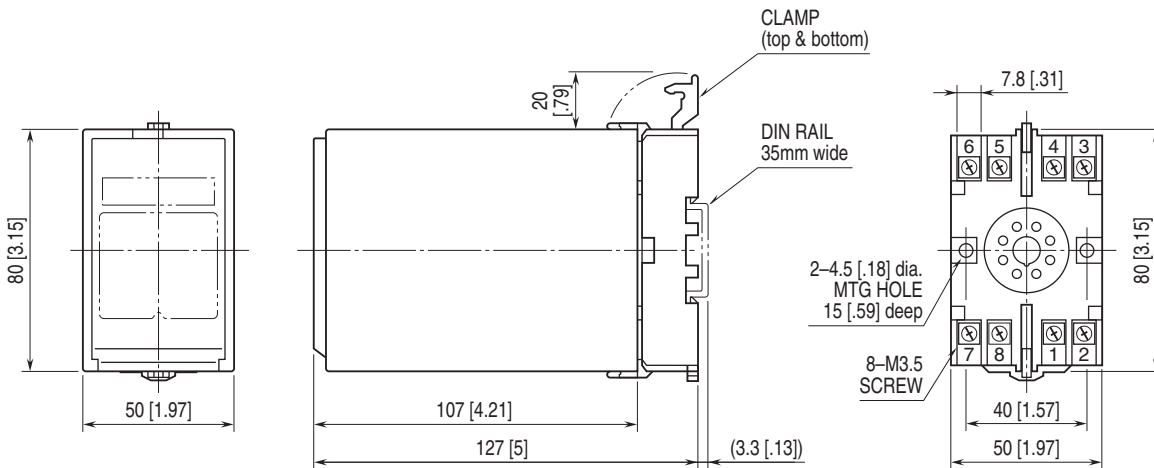
### ■ OPTION /E



### ■ OPTION /E2

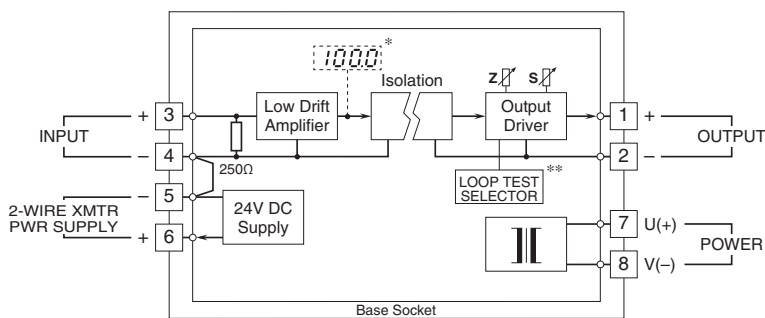


## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

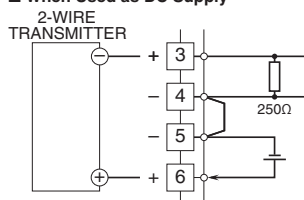
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



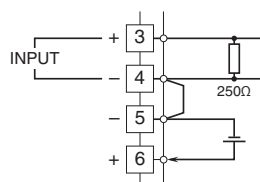
\* Option /E, E2

\*\* Option /E2

### ■ When Used as DC Supply



### ■ When Used as Isolator





Specifications are subject to change without notice.