Plug-in Signal Conditioners M-UNIT

CURRENT LOOP SUPPLY

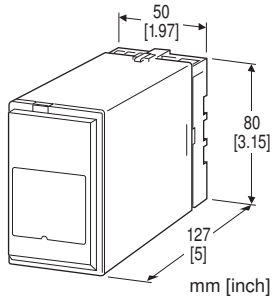
(10 – 50mA loop, isolated)

Functions & Features

- Powering a 10 – 50 mA DC current loop
- Switching constant current circuit employed for shortcircuit protection, beneficial for low heat radiation
- Usable as isolator for 10 – 50 mA DC signals
- Isolation up to 2000 V AC
- High-density mounting

Typical Applications

- Retrofitting a system with 10 – 50 mA DC



MODEL: YVDU-50[1]-[2][3]

ORDERING INFORMATION

- Code number: YVDU-50[1]-[2][3]

Specify a code from below for each of [1] through [3].
(e.g. YVDU-506-K3/Q)

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

SUPPLY OUTPUT

50: 50 V DC

INPUT

Current

10 – 50 mA DC (Input resistance approx. 100 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

K3: 100 – 120 V AC
(Operational voltage range 90 – 132 V, 47 – 66 Hz)
L3: 200 – 240 V AC
(Operational voltage range 180 – 264 V, 47 – 66 Hz)

DC Power

P: 110 V DC
(Operational voltage range 85 – 150 V, ripple 10 %p-p max.)

[3] OPTIONS

blank: none
/Q: With options (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
Zero adjustment: -5 to +5 % (front)
(±1 % with the output suffix codes 4W and 0 selected)
Span adjustment: 95 to 105 % (front)

SUPPLY OUTPUT

Output voltage: 50 – 59 V DC with no load
Current rating: 60mA
• **Shortcircuit Protection**
Current limited: ≤ 75 mA
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 ≥ 0.5 V

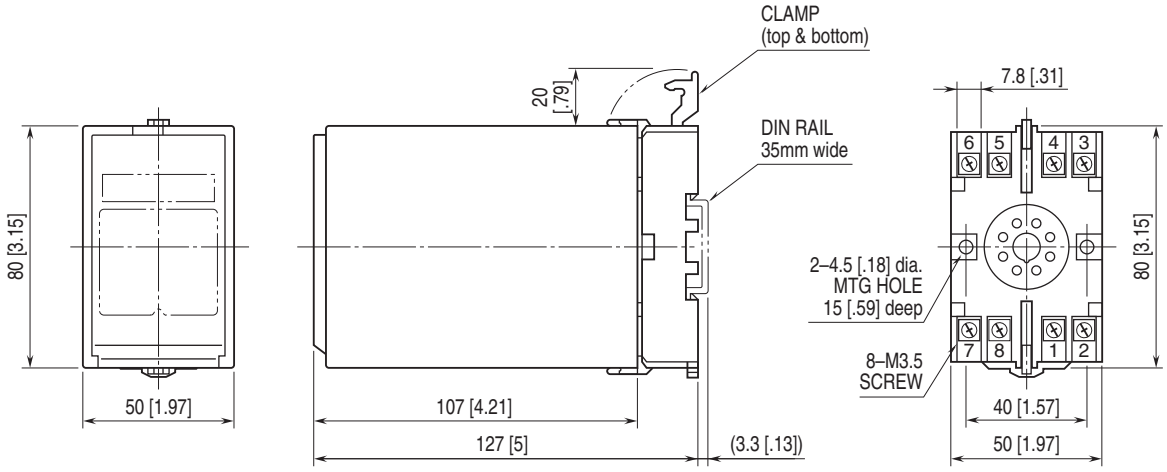
INSTALLATION

Power consumption
•**AC**: Approx. 12 VA
•**DC**: Approx. 5 W (45 mA at 110 V)
Operating temperature: -5 to +55°C (23 to 131°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

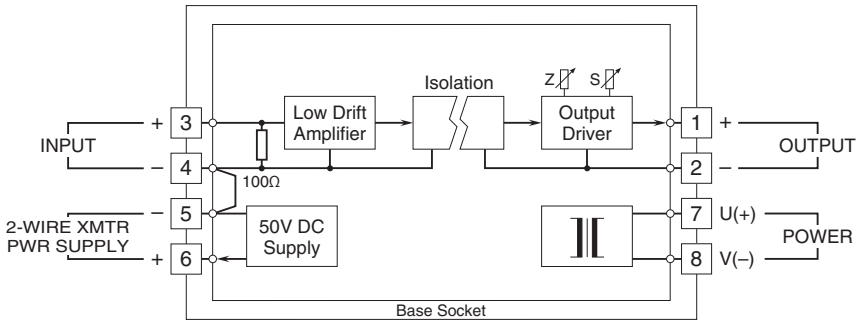
Accuracy: ±0.1 %
Temp. coefficient: ±0.02 %/°C (±0.01 %/°F)
Response time: ≤ 0.5 sec. (0 – 90 %)
Line voltage effect
Supply output: ±5 % over voltage range
Output signal: ±0.1 % over voltage range
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 2000 V AC @1 minute (input to output to power to ground)

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]

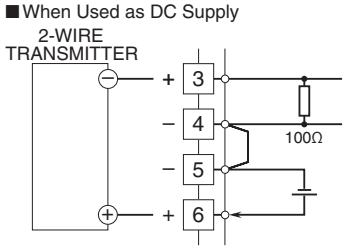


• When mounting, no extra space is needed between units.

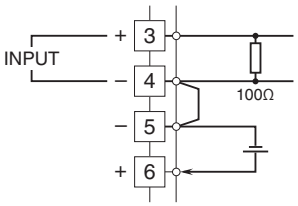
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



■When Used as DC Supply



■When Used as Isolator



⚠ Specifications are subject to change without notice.