

Dual Output Plug-in Signal Conditioners W-UNIT

CURRENT LOOP SUPPLY

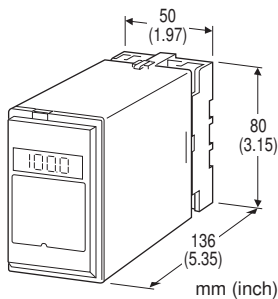
(with square root extractor)

Functions & Features

- Powering a 4 - 20 mA DC current loop
- Square root extraction
- Shortcircuit protection
- Applicable to smart transmitters
- Isolation up to 2000 V AC
- LCD meter
- High-density mounting

Typical Applications

- Various 2-wire transmitters
- Square root extractor application (4 - 20 mA input)



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

ORDERING INFORMATION

- Code number: WDNY-[1][2]-[3][4]

Specify a code from below for each [1] through [4].

(e.g. WDNY-A6-B/E/Q)

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

Note: When the user requires a current and a voltage output, specify the current to be the Output 1 which allows a greater load.

INPUT

Current

4 - 20 mA DC (Input resistance 250 Ω)

[1] OUTPUT 1

Current

- A: 4 - 20 mA DC (Load resistance 600 Ω max.)
- B: 2 - 10 mA DC (Load resistance 1200 Ω max.)
- C: 1 - 5 mA DC (Load resistance 2400 Ω max.)

- D: 0 - 20 mA DC (Load resistance 600 Ω max.)
- E: 0 - 16 mA DC (Load resistance 750 Ω max.)
- F: 0 - 10 mA DC (Load resistance 1200 Ω max.)
- G: 0 - 1 mA DC (Load resistance 12 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 1000 Ω min.)
- 4: 0 - 10 V DC (Load resistance 10 kΩ min.)
- 5: 0 - 5 V DC (Load resistance 5000 Ω min.)
- 6: 1 - 5 V DC (Load resistance 5000 Ω min.)
- 4W: -10 - +10 V DC (Load resistance 10 kΩ min.)
- 5W: -5 - +5 V DC (Load resistance 5000 Ω min.)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)

[2] OUTPUT 2

Current

- A: 4 - 20 mA DC (Load resistance 350 Ω max.)
- B: 2 - 10 mA DC (Load resistance 700 Ω max.)
- C: 1 - 5 mA DC (Load resistance 1400 Ω max.)
- D: 0 - 20 mA DC (Load resistance 350 Ω max.)
- E: 0 - 16 mA DC (Load resistance 430 Ω max.)
- F: 0 - 10 mA DC (Load resistance 700 Ω max.)
- G: 0 - 1 mA DC (Load resistance 7000 Ω max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

Same range availability as Output 1

[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

[4] OPTIONS (multiple selections)

LCD Meter (after function or low-end cutout)

blank: Without

/E: LCD meter (0.0 - 100.0 %)

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

•DC: Operational voltage range: rating $\pm 10\%$,
or 85 - 150 V for 110 V rating, ripple 10 %p-p max.,
approx. 3 W (125 mA at 24 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)

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 1 to output 2 to power

Overrange output: 0 - 105 % at 1 - 5 V

Zero adjustment: -5 to +5 % (front)

Span adjustment: 95 to 105 % (front)

Adjustable individually for each output 1 and output 2.

Low-end cutout: Approx. 5 - 8 % (output)

■ DISPLAY (LCD meter)

LCD digital display: 0.0 - 100.0 % (min. digit 0.1 %)

(No scaling)

PERFORMANCE in percentage of span

Accuracy: $\pm 0.3\%$ (input 1 - 100 %)

Display accuracy: $\pm (0.3\% \text{ of FS} + 1 \text{ digit})$ (Input 1 - 100 %)

Temp. coefficient: $\pm 0.02\%/^{\circ}\text{C}$ ($\pm 0.01\%/^{\circ}\text{F}$)

Response time: $\leq 0.5 \text{ sec.}$ (0 - 90 %)

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

Insulation resistance: $\geq 100 \text{ M}\Omega$ with 500 V DC

Dielectric strength: 2000 V AC @1 minute

(input to output to power to ground)

1000 V AC @ 1 minute (output 1 to output 2)

SUPPLY OUTPUT

Output voltage: 24 - 28 V DC with no load

Current rating: $\leq 22 \text{ mA DC}$

• Shortcircuit Protection

Current limited: 35 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 12 V max. for Output 1;

7 V max. for Output 2

■ DC Voltage: -10 - +12 V DC

Minimum span: 5 mV

Offset: Max. 1.5 times span

Load resistance: Output drive 1 mA max. at $\geq 0.5 \text{ V}$

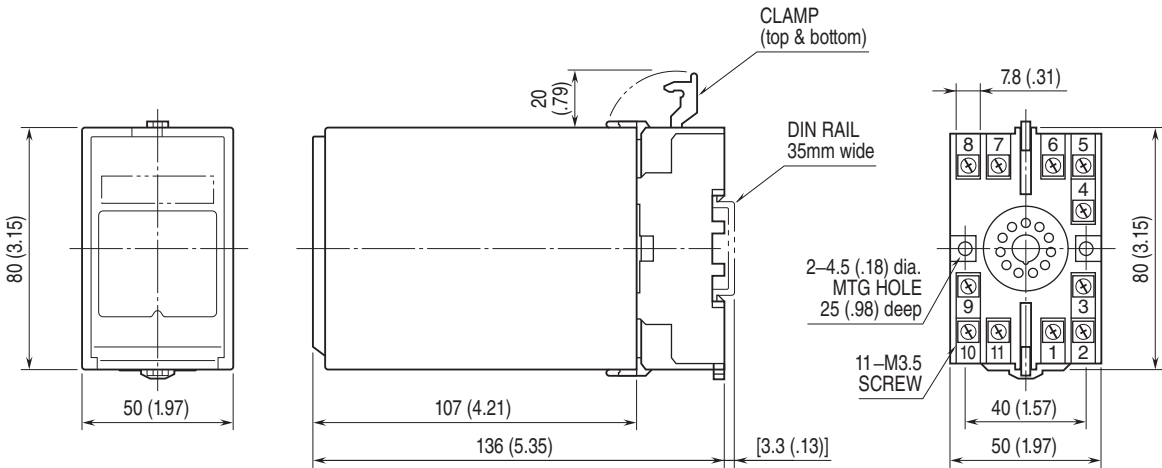
INSTALLATION

Power input

•AC: Operational voltage range: rating $\pm 10\%$,

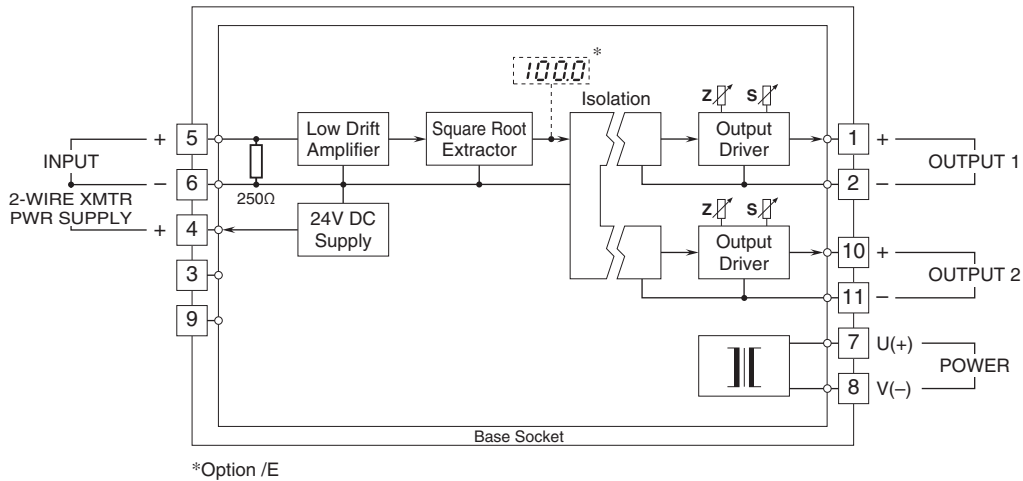
50/60 $\pm 2 \text{ Hz}$, approx. 3 VA

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

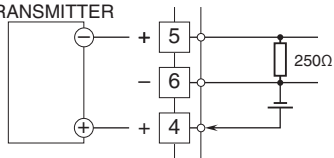
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



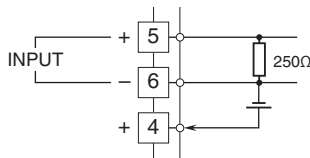
*Option /E

■ When Used as DC Supply

2-WIRE TRANSMITTER



■ When Used as Square Root Extractor



Specifications are subject to change without notice.