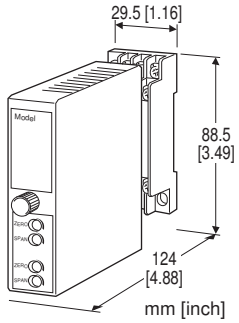
Space-saving Dual Output Signal Conditioners
Mini-MW Series

CURRENT LOOP SUPPLY
(with square root extractor)

Functions & Features
- Powers a 4 – 20 mA DC current loop
- Square root extraction
- Shortcircuit protection
- Applicable to smart transmitters

Typical Applications
- Various 2-wire transmitters



MODEL: W2DNY–24[1][2]-[3][4]

ORDERING INFORMATION
- Code number: W2DNY-24[1][2]-[3][4]

Specify a code from below for each of [1] through [4].
(e.g. W2DNY-24A6-M2/CE/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.

SUPPLY OUTPUT
24: 24 V DC

INPUT
Current
4 – 20 mA DC

[1] OUTPUT 1
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 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.)
0: Specify voltage (See OUTPUT SPECIFICATIONS)

[2] OUTPUT 2
Y: None

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
M: 85 – 264 V AC (Operational voltage range 85 – 264 V, 47 – 66 Hz)
(Select '/N' for 'Standards & Approvals' code.)
M2: 100 – 240 V AC (Operational voltage range 85 – 264 V, 47 – 66 Hz)
(90 – 264 V for UL)

DC Power
R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)
R2: 11 – 27 V DC
(Operational voltage range 11 – 27 V, ripple 10 %p-p max.)
(Select '/N' for 'Standards & Approvals' code.)
P: 110 V DC
(Operational voltage range 85 – 150 V, ripple 10 %p-p max.)
(110 V ±10 % for UL)

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[4] OPTIONS (multiple selections)

Standards & Approvals (must be specified)

/N: Without CE or UL

/CE: CE marking

/UL: UL approval, CE marking

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 (UL not available)

TERMINAL SCREW MATERIAL

/S01: Stainless steel (UL not available)

GENERAL SPECIFICATIONS

Construction: Plug-in

Connection: M3 screw terminals (torque 0.8 N·m)

Screw terminal: Chromated steel (standard) or stainless steel

Housing material: Flame-resistant resin (black)

Isolation: Input to output 1 to output 2 to power

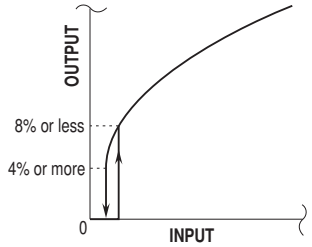
Overrange output: 0 to 110 % at 1 – 5 V

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. 4 – 8 % (output)



SUPPLY OUTPUT

(across the terminals 1 – 5)

Output voltage: 24 – 28 V DC with no load

18 V DC min. at 20 mA

Current rating: ≤ 22 mA DC

• Shortcircuit Protection

Current limited: 30 mA max.

Protected time duration: No limit

INPUT SPECIFICATIONS

■ DC Current: Input resistors incorporated

Approx. 300 Ω (50 Ω as receiving resistor, 250 Ω across the monitor terminals)

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. for Output 1; 7 V max. for Output 2

■ DC Voltage: 0 – 12 V DC (up to 10 V for Output 2)

Minimum span: 10 mV

Offset: Max. 1.5 times span

Load resistance: Output drive 1 mA max.; at ≥0.5 V

INSTALLATION

Power Consumption

•AC:

Approx. 5 VA at 100 V

Approx. 6 VA at 200 V

Approx. 7 VA at 264 V

•DC: Approx. 3 W

Operating temperature: -5 to +55°C (23 to 131°F)

Operating humidity: 30 to 90 %RH (non-condensing)

Mounting: Surface or DIN rail

Weight: 200 g (0.44 lb)

PERFORMANCE in percentage of span

Accuracy: ±0.2 % (input 1 – 100 %)

Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)

Response time: ≤ 0.5 sec. (0 – 90 %)

Line voltage effect

Supply output: ±3 % 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 1 to output 2 to power to ground)

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STANDARDS & APPROVALS

EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

Low Voltage Directive

EN 61010-1

Installation Category II

Pollution Degree 2

Input or output 1 or output 2 to power input:

Reinforced insulation (300 V)

Input to output 1 to output 2: Basic insulation (300 V)

RoHS Directive

Approval:

UL/C-UL nonincendive Class I, Division 2,

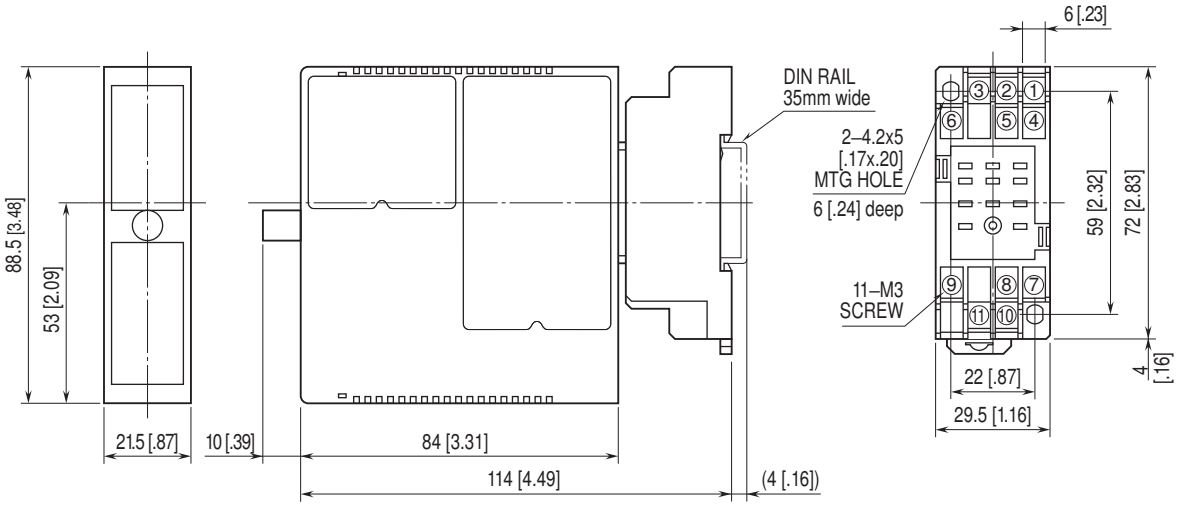
Groups A, B, C, and D

(UL 121201, CAN/CSA-C22.2 No.213-17)

UL/C-UL general safety requirements

(UL 61010-1, CAN/CSA-C22.2 No.61010-1-12)

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

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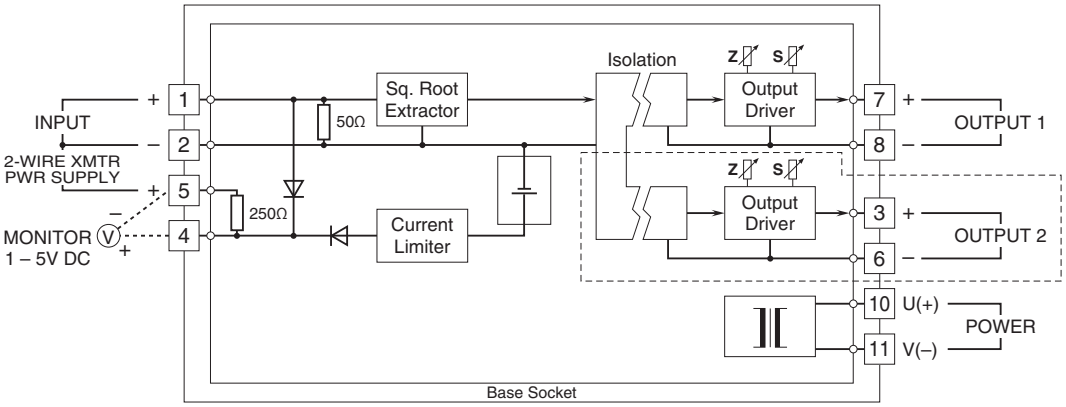
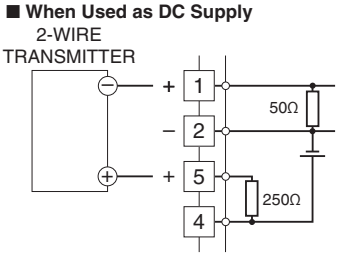
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

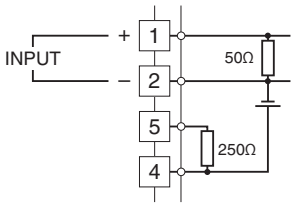


Note: The section enclosed by broken line is only with 2nd output option.

■ **When Used as DC Supply**



■ **When Used as Square Root Extractor**



⚠ Specifications are subject to change without notice.

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