Space-saving Dual Output Signal Conditioners
Mini-MW Series

CURRENT LOOP SUPPLY

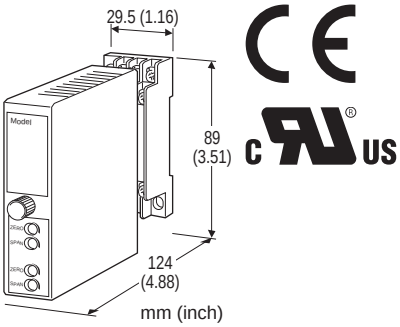
(with square root extractor)

Functions & Features

- Powers a 4 – 20 mA DC current loop
- Square root extraction
- Shortcircuit protection
- Applicable to smart transmitters
- CE marking
- UL approval

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 [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: If one of the outputs should be a current range, specify it for the Output 1 to allow 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)

[4] OPTIONS (multiple selections)

Standards & Approvlas (must be specified)
/N: Without CE or UL

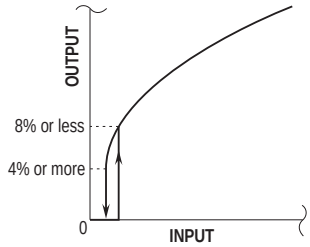
/CE: CE marking
/UL: UL approval, CE marking
Other Options
blank: none
/Q: Option other than the above (specify the specification) (UL not available)

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 screw terminals (torque 0.8 N·m)
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)
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 lbs)

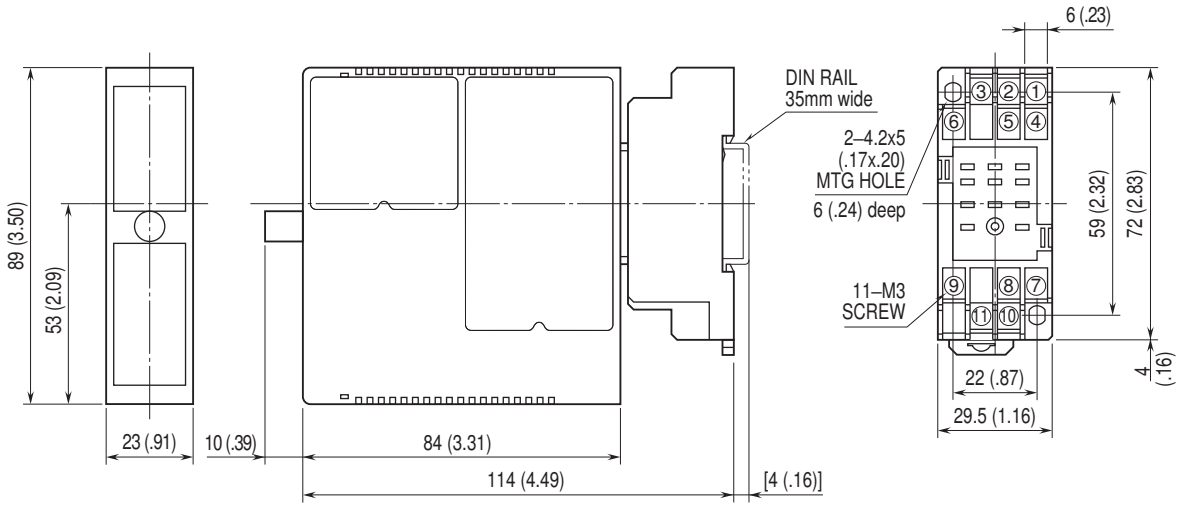
PERFORMANCE in percentage of span

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)

STANDARDS & APPROVALS

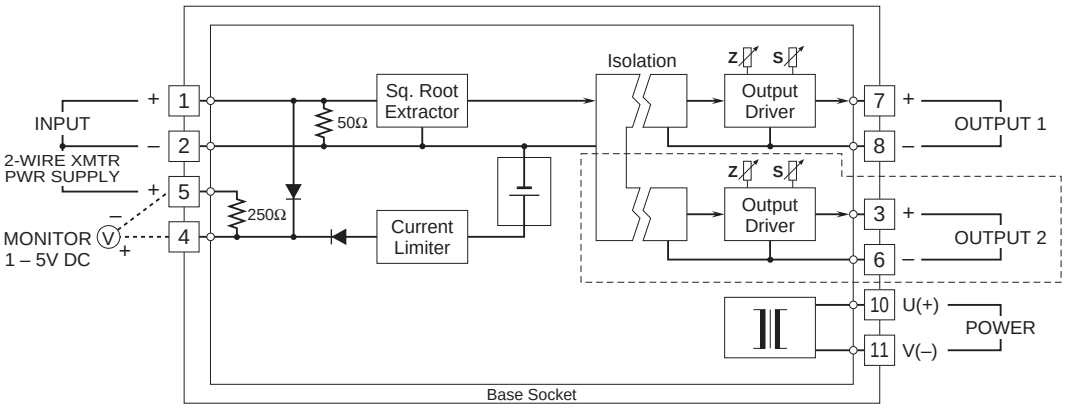
CE conformity:
EMC Directive (2004/108/EC)
EMI EN 61000-6-4: 2007
EMS EN 61000-6-2: 2005
Low Voltage Directive (2006/95/EC)
EN 61010-1: 2001
Installation Category II
Pollution Degree 2
Input or output 1 or output 2 to power input:
Reinforced insulation (300 V)
Input to output 1 to output 2: Basic insulation (300 V)
Approval:
UL/C-UL nonincendive Class I, Division 2,
Groups A, B, C, and D hazardous locations
(ANSI/ISA-12.12.01:2007, CAN/CSA-C22.2 No.213:1987)
UL/C-UL general safety requirements
(UL 61010B-1:2003, CAN/CSA-C22.2 No.1010-1:1992)

DIMENSIONS unit: mm (inch)



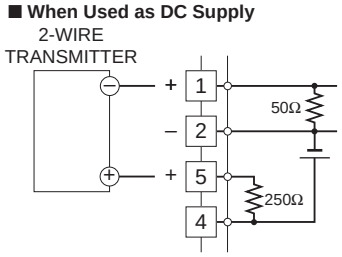
When mounting, no extra space is needed between units.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

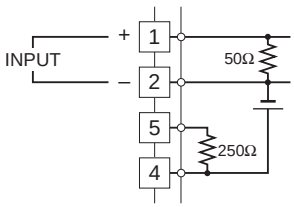


Remark: The section enclosed by broken line is only with 2nd output option.

■ **When Used as DC Supply**



■ **When Used as Square Root Extractor**



⚠ Specifications are subject to change without notice.