

Super-mini Signal Conditioners *Mini-M Series*

CURRENT LOOP SUPPLY
(with square root extractor; isolated)

MODEL **M2DNY**

MODEL & SUFFIX CODE SELECTION

M2DNY-24 □ □ □ □

MODEL _____

SUPPLY OUTPUT _____

24: 24V DC

INPUT _____

4 – 20mA DC

OUTPUT SIGNAL _____

Current	Voltage
A : 4 – 20mA DC	1 : 0 – 10mV DC
B : 2 – 10mA DC	2 : 0 – 100mV DC
C : 1 – 5mA DC	3 : 0 – 1V DC
D : 0 – 20mA DC	4 : 0 – 10V DC
E : 0 – 16mA DC	5 : 0 – 5V DC
F : 0 – 10mA DC	6 : 1 – 5V DC
G : 0 – 1mA DC	0 : Specify voltage
Z : Specify current	

POWER INPUT _____

AC Power	DC Power
M : 85 – 264V AC *1	R : 24V DC
M2: 100 – 240V AC	R2: 11 – 27V DC *1
	P : 110V DC

*1: Select 'N' for 'Standards & Approvals' code.

STANDARDS & APPROVALS _____

/N : Without CE

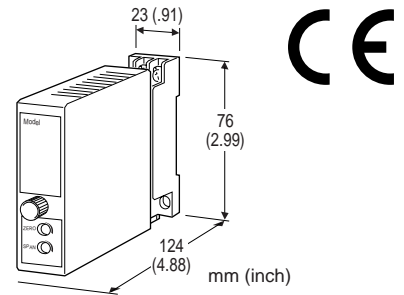
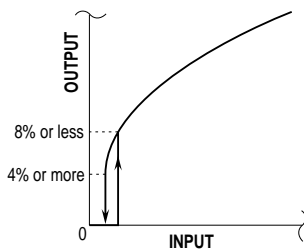
/CE: CE marking

ORDERING INFORMATION

- Specify code number and variables.
- **Code number** (e.g. M2DNY-24A-M2/CE)
 - **Special output range** (For codes Z & 0)

GENERAL SPECIFICATIONS

- Construction:** Plug-in
- Connection:** M3 screw terminals (torque 0.8 N·m)
- Housing material:** Flame-resistant resin (black)
- Isolation:** Input to output to power
- Overrange output:** 0 – 110% at 1 – 5V
- Front adjustments:** Zero and span; ±5%
- Low-end cutout:** Approx. 4 – 8% (output)



Functions & Features

- Powering a 4 – 20mA DC current loop
- Square root extraction
- Shortcircuit protection
- Applicable to smart transmitters
- Universal power input
- High-density mounting
- CE marking

Typical Applications

- Various 2-wire transmitters

INPUT & OUTPUT

■ **SUPPLY OUTPUT** (across the terminals 1 – 8)

Output voltage: 24 – 28V DC with no load
18V DC maximum at 20mA

Current rating: 22mA DC maximum

• **Shortcircuit Protection**

Current limited: 30mA maximum

Protected time duration: No limit

■ **INPUT:** 4 – 20mA DC; input resistor incorporated (0.5W)

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

■ **OUTPUT SIGNAL**

• **DC Current:** 0 – 20mA DC

Minimum span: 1mA

Zero suppression/elevation: Max. 1.5 times span

Load resistance: Output drive 15V maximum

Output	Load Resistance
4 – 20mA	: 750 (Ω maximum)
2 – 10mA	: 1500
1 – 5mA	: 3000
0 – 20mA	: 750
0 – 16mA	: 900
0 – 10mA	: 1500
0 – 1mA	: 15k

•DC Voltage: 0 – 12V DC

Minimum span: 10mV

Zero suppression/elevation: Max. 1.5 times span

Load resistance: Output drive 1mA maximum; at $\geq 0.5V$

Output	Load Resistance
0 – 10mV	: 10k (Ω minimum)
0 – 100mV	: 100k
0 – 1V	: 1000
0 – 10V	: 10k
0 – 5V	: 5000
1 – 5V	: 5000

INSTALLATION

Power input

AC: Operational voltage range 85 – 264V
47 – 66 Hz; approx. 3VA at 100V
approx. 4VA at 200V
approx. 5VA at 264V

DC: Operational voltage range for R: 24V
 $\pm 10\%$, R2: 11 – 27V, or P: 85 – 150V,
ripple 10% p-p max.; approx. 3W

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

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

Mounting: Surface or DIN rail

Dimensions: W23×H76×D124 mm (0.91"×2.99"×4.88")
See General Spec. Sheet Figure A-1.

Weight: 150 g (0.33 lbs)

Terminal assignment: See General Spec. Sheet Figure B-1.

PERFORMANCE in percentage of span

Accuracy: $\pm 0.2\%$ (input 1 – 100%)

Temp. coefficient: $\pm 0.015\%/^{\circ}C$ ($\pm 0.008\%/^{\circ}F$)

Response time: ≤ 0.5 seconds (0 – 90%)

Line voltage effect

Supply output: $\pm 3\%$ over voltage range

Output signal: $\pm 0.1\%$ over voltage range

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

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

STANDARDS & APPROVALS

CE conformity: EMC Directive (89/336/EEC)

EMI EN61000-6-4

EMS EN61000-6-2

Low Voltage Directive (73/23/EEC)

Installation category II

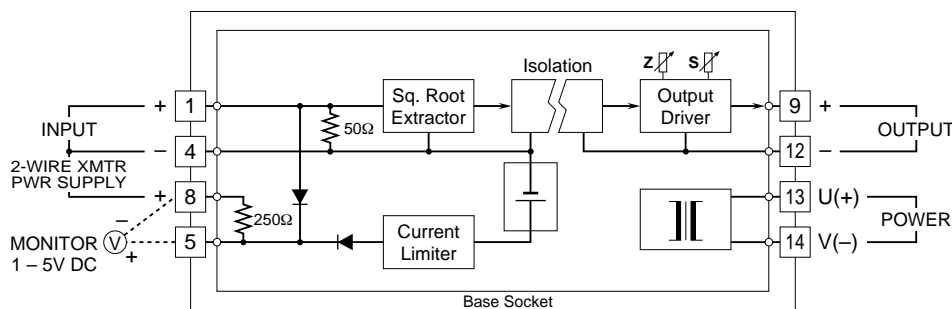
Pollution degree 2

Max. operating voltage 300V

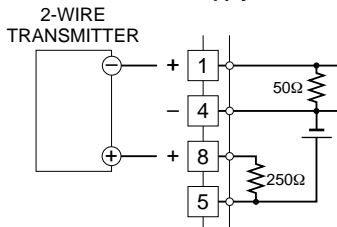
Input or output to power – Reinforced insulation

Input to output – Basic insulation

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



■When Used as DC Supply



■When Used as Square Root Extractor

