

Euro Terminal Ultra-Slim Signal Conditioners *M6D Series*

POTENTIOMETER TRANSMITTER
(PC programmable)

MODEL **M6DXM**

MODEL & SUFFIX CODE SELECTION

MODEL _____ **M6DXM-1□-R**

INPUT POTENTIOMETER _____

1 : Total resistance 100Ω – 5000Ω

OUTPUT _____

Current _____

Z1 : Range 0 – 20mA DC

Voltage _____

V2 : Range -10 – +10V DC

V3 : Range -5 – +5V DC

POWER INPUT _____

R : 24V DC

PC Configurator Software is used to change I/O types and precise ranges.

ORDERING INFORMATION

Specify code number and variables. Default setting (table below) will be used if not otherwise specified.

- **Code number** (e.g. M6DXM-1Z1-R)
- **Output range** (e.g. 4 – 20mA DC)

| INPUT CODE | DEFAULT |
|-------------|-------------|
| 1 | 0 – 1200Ω |
| OUTPUT CODE | DEFAULT |
| Z1 | 4 – 20mA DC |
| V2 | 0 – 10V DC |
| V3 | 1 – 5V DC |

RELATED PRODUCTS

- PC configurator software (model: M6CFG)
Downloadable at M-System's web site:
<http://www.m-system.co.jp>
- PC configurator cable (model: MCN-CON)

ISO/AT/ON

Functions & Features

- 5.9-mm wide ultra-slim design
- Low profile allows the M6D module mounted in a 120-mm deep panel
- Provides a DC output proportional to a potentiometer or slidewire position input
- Linearization and burnout protection
- PC programmable
- High-density mounting
- Power and status indicator LEDs

GENERAL SPECIFICATIONS

- Connection:** Euro terminal (torque 0.3 N·m)
- Applicable wire size:** 0.2 to 2.5 mm²
- Housing material:** Flame-resistant resin (black)
- Isolation:** Input to output to power
- Overrange output:** -2 – +102%
(Negative current output is not available.)
- Zero & span adjustments:** ±2% (PC programming)
- Burnout protection:** Upscale standard; downscale or no burnout optional by programming
- Linearization:** Standard
- Power LED:** Green light turns on when the power is supplied.
- Status indicator LED:** Orange LED; Flashing patterns indicate different operating status of the transmitter.
- Programming:** Downloaded from PC; input range, output type and range, zero and span, burnout type, user's linearization table, etc.
- Configurator connection:** 2.5 dia. miniature jack; RS-232C level

INPUT

■ **INPUT:** Total resistance 100Ω – 5000Ω

Sensing current: ≤1.5mA

Minimum span

| | |
|------------------|--------|
| (Range) 0 – 100Ω | : 10Ω |
| 0 – 300Ω | : 30Ω |
| 0 – 600Ω | : 60Ω |
| 0 – 1200Ω | : 120Ω |
| 0 – 2500Ω | : 250Ω |
| 0 – 5000Ω | : 500Ω |

OUTPUT

■ **DC CURRENT**

Operational range: 0 – 20mA DC

Conformance range: 0 – 20.4mA DC

Minimum span: 1mA

Offset: Lower range can be any specific value within the output range provided that the minimum span is maintained.

Load resistance: Output drive 11V maximum
(e.g. 4 – 20mA: 550Ω [11V/20mA])

■ **DC VOLTAGE**

Code V2 (wide spans)

Operational range: -10 – +10V DC

Conformance range: -10.4 – +10.4V DC

Minimum span: 1V

Code V3 (narrow spans)

Operational range: -5 – +5V DC

Conformance range: -5.2 – +5.2V DC

Minimum span: 0.5V

Offset: Lower range can be any specific value within the output range provided that the minimum span is maintained.

Load resistance: output drive 1mA maximum
(e.g. 1 – 5V: 5000Ω [5V/1mA])

INSTALLATION

Power input: Operational voltage range 24V DC ±10%, approx. 0.5W; ripple 10% p-p max.

Operating temperature: -20 to +55°C (-4 to +131°F)

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

Mounting: DIN rail

Dimensions: W5.9×H94×D102 mm (0.23"×3.70"×4.02")
See General Spec. Sheet Figure A-1.

Weight: 65 g (2.3 oz)

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

PERFORMANCE

Accuracy: Input accuracy + output accuracy

Input accuracy*: (% of range)

(Range) 0 – 100Ω : ≤ ±0.05 (%)

0 – 300Ω : ≤ ±0.05

0 – 600Ω : ≤ ±0.03

0 – 1200Ω : ≤ ±0.03

0 – 2500Ω : ≤ ±0.01

0 – 5000Ω : ≤ ±0.01

Output accuracy*: ≤ ±0.04% of operational range

*Inversely proportional to the span.

**Except the accuracy of input resistor.

[Example] Total Resistance 0 – 1200Ω, Input Range 250 – 750Ω, Output Type -5 – +5V, Output Range 1 – 5V

Max. Input Range (1200Ω) / Span (500Ω) × 0.01% +

Max. Output Range (10V) / Span (4V) × 0.04% = 0.17%

Temp. coefficient: ±0.01%/°C (±0.006%/°F) of max. span

Response time: ≤1 second (0 – 90%)

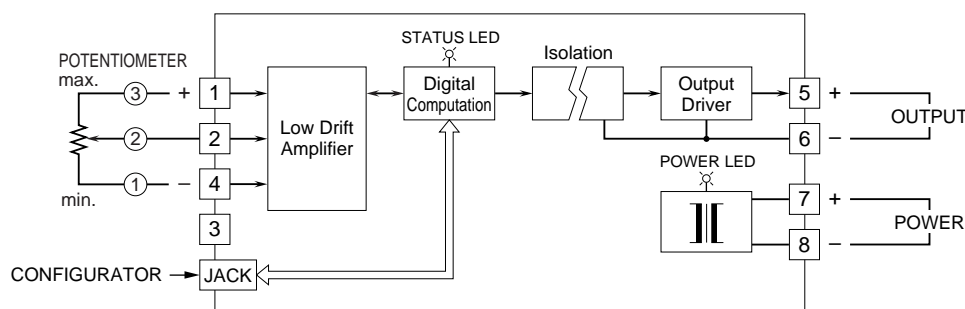
Burnout response time: ≤10 seconds

Line voltage effect: ±0.1% over voltage range

Insulation resistance: ≥100MΩ with 500V DC

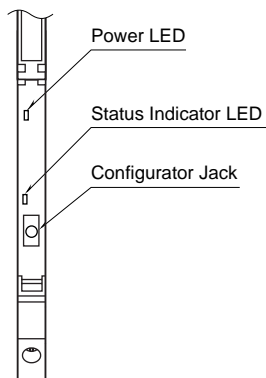
Dielectric strength: 2000V AC @1 minute

(input to output to power to ground)

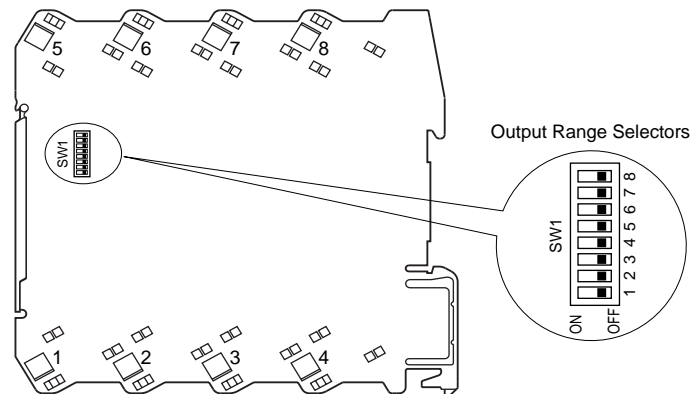
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

EXTERNAL VIEWS

■ FRONT VIEW (with the cover open)



■ SIDE VIEW



INPUT & OUTPUT RANGING

The internal DIP switch setting is required to select output types before setting a precise output range using PC Configurator Software (model: M6CFG).

For detailed information on the PC configuration, refer to the M6CFG instruction manual.

Table 1. DIP switch setting: Output type

| Output Type | SW1 | | | | | | | |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 0 – 20mA*1 | ON | ON | OFF | OFF | OFF | OFF | ON | OFF |
| -5 – +5V | OFF | OFF | ON | OFF | ON | OFF | OFF | ON |
| -10 – +10V | OFF | OFF | ON | OFF | OFF | ON | OFF | ON |

*1. For 0 – 1mA range, set switches as in the table below.

| Output Range | SW1 | | | | | | | |
|--------------|-----|-----|----|-----|-----|-----|----|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 0 – 1mA | OFF | OFF | ON | OFF | OFF | OFF | ON | OFF |