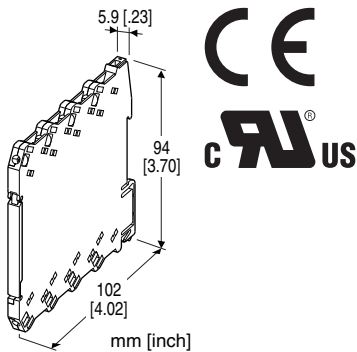**Euro Terminal Ultra-Slim Signal Conditioners M6D Series**

SIGNAL TRANSMITTER

(PC programmable)

Functions & Features

• 5.9-mm wide ultra-slim design
• Low profile allows the M6D module mounted in a 120-mm deep panel
• Converts a DC input into a standard process signal
• PC programmable
• High-density mounting
• Power indicator LED

5.9 [.23]

94 [3.70]

102 [4.02]

mm [inch]

MODEL: M6DXV–[1][2]–R[3]

ORDERING INFORMATION

• Code number: M6DXV-[1][2]-R[3]
Specify a code from below for each of [1] through [3].
   (e.g. M6DXV-Z1Z1-R/UL/Q)
• Input range (e.g. 4 – 20 mA DC)
• Output range (e.g. 4 – 20 mA DC)
 Specify the specification for option code /Q
   (e.g. /C01/SET)

[1] INPUT

Current
Z1: Range 0 – 50 mA DC (Input resistance 24.9 Ω)
Voltage
S1: Range -1000 – +1000 mV DC (Input resistance 1 MΩ min.)
S2: Range -10 – +10 V DC (Input resistance 1 MΩ min.)
(Configurator software is used to change the input type and precise range.)

[2] OUTPUT

Current
Z1: Range 0 – 20 mA DC
Voltage
V2: Range -10 – +10 V DC
V3: Range -5 – +5 V DC
(Configurator software is used to change output over the

described range of the selected suffix code.
For changing between suffix codes, set the Output Range Selector on the side of unit before software adjustment.)

POWER INPUT

DC Power
R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

[3] OPTIONS (multiple selections)

Standards & Approvals
blank: 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 M-System's web site.)
/C01: Silicone coating
/C02: Polyurethane coating
EX-FACTORY SETTING
/SET: Preset according to the Ordering Information Sheet
 (No. ESU-7832)(UL not available)

RELATED PRODUCTS

• PC configurator software (model: M6CFG)
Downloadable at M-System's web site.
A dedicated cable is required to connect the module to the PC. Please refer to the internet software download site or the users manual for the PC configurator for applicable cable types.

GENERAL SPECIFICATIONS

Connection
Input and output: Euro terminal (torque 0.3 N·m)
Power input: Via the Installation Base (model: M6DBS)
or Euro terminal (torque 0.3 N·m)
Applicable wire size: 0.2 to 2.5 mm^2, stripped length 8 mm
Housing material: Flame-resistant resin (black)
Isolation: Input to output to power
Overrange output: -2 – +102 %
(Negative current output is not available.)
Zero adjustment: -2 to +2 % (PC programming)
Span adjustment: 98 to 102 % (PC programming)
Power indicator LED: Green LED turns on when the power is supplied.
Status indicator LED: Orange LED; Blinking patterns indicate different operating status of the transmitter.
Programming: Downloaded from PC; input type and range,

output type and range, zero and span, user's linearization table (max. 101 points, specified within -2 to +102% for both input and output), etc.
For detailed information, refer to the users manual for the PC configurator.
Configurator connection: 2.5 dia. miniature jack; RS-232-C level

INPUT SPECIFICATIONS

■ **DC Current**: Input resistor incoporated
(If not specified, the input range is 4 – 20 mA DC.)
Input range: 0 – 50 mA DC
Minimum span: 2 mA
Offset: Lower range can be any specific value within the input range provided that the minimum span is maintained.
■ **DC Voltage**
•**Code S1 (narrow spans)**
  Input range: -1000 – +1000 mV DC
  Minimum span: 100 mV
•**Code S2 (wide spans)**
  Input range: -10 – +10 V DC
  Minimum span: 1 V
Offset: Lower range can be any specific value within the input range provided that the minimum span is maintained.
If not specified, the input range is shown below.
S1: 0 – 100 mV DC
S2: 1 – 5 V DC

OUTPUT SPECIFICATIONS

■ DC Current
Output range: 0 – 20 mA DC
Conformance range: 0 – 20.4 mA DC
Minimum span: 1 mA
Offset: Lower range can be any specific value within the output range provided that the minimum span is maintained.
Load resistance: Output drive 11 V max.
(e.g. 4 – 20 mA: 550 Ω [11 V ÷ 20 mA])
If not specified, the output range is 4 – 20 mA DC.
■ DC Voltage
Code V2 (wide spans)
  Output range: -10 – +10 V DC
  Conformance range: -10.4 – +10.4 V DC
  Minimum span: 1 V
Code V3 (narrow spans)
  Output range: -5 – +5 V DC
  Conformance range: -5.2 – +5.2 V DC
  Minimum span: 0.5 V
Offset: Lower range can be any specific value within the output range provided that the minimum span is maintained.

Load resistance: Output drive 1 mA max.
 (e.g. 1 – 5 V: 5000 Ω [5 V ÷ 1 mA])
If not specified, the output range is shown below.
V2: 0 – 10 V DC
V3: 1 – 5 V DC

INSTALLATION

Power consumption: Approx. 0.5 W
Operating temperature: -20 to +55°C (-4 to +131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Installation Base (model: M6DBS) or DIN rail
Weight: 65 g (2.3 oz)

PERFORMANCE in percentage of span

Overall accuracy: Input accuracy + output accuracy
Inversely proportional to the span.
See CALCULATION EXAMPLES OF OVERALL ACURACY.
• **Input accuracy**: (% of max. input range)
-1000 – +1000 mV : ±0.01 %
-10 – +10 V : ±0.01 %
0 – 50 mA : ±0.02 %
• **Output accuracy**: ±0.04 % of max. output range
Temp. coefficient: ±0.01 %/°C (±0.006 %/°F) of max. span
Response time: ≤ 0.5 sec. (0 – 90 %)
Line voltage effect: ±0.1 % over voltage range
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 2000 V AC @1 minute (input to output to power to ground)

CALCULATION EXAMPLES OF OVERALL ACCURACY

[Example] Input Type -10 – +10 V, Input Range 1 – 5 V, Output Type -5 – +5 V, Output Range 1 – 5 V
• Input accuracy = Max. Input Range (20 V) ÷ Span (4 V) × 0.01 % = 0.05 %
• Output accuracy = Max. Output Range (10 V) ÷ Span (4 V) × 0.04 % = 0.1 %
Accuracy= ±0.15 %

STANDARDS & APPROVALS

EU conformity:
EMC Directive
  EMI EN 61000-6-4
  EMS EN 61000-6-2
RoHS Directive
Approval:
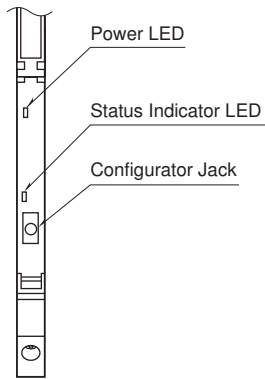UL/C-UL nonincendive Class I, Division 2, Groups A, B, C, and D
  (ANSI/ISA-12.12.01, CAN/CSA-C22.2 No.213)
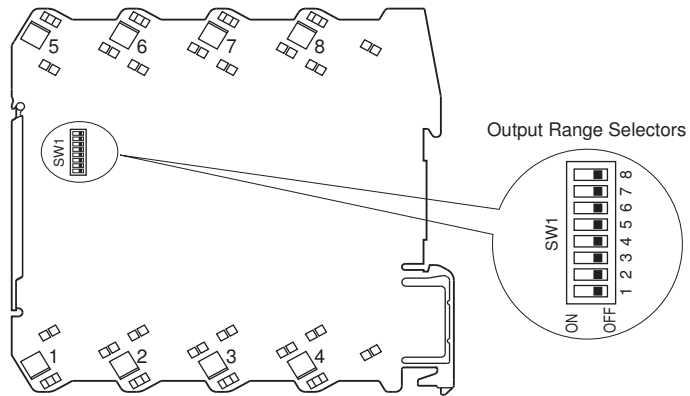UL/C-UL general safety requirements
  (UL 61010-1, CAN/CSA-C22.2 No.61010-1)
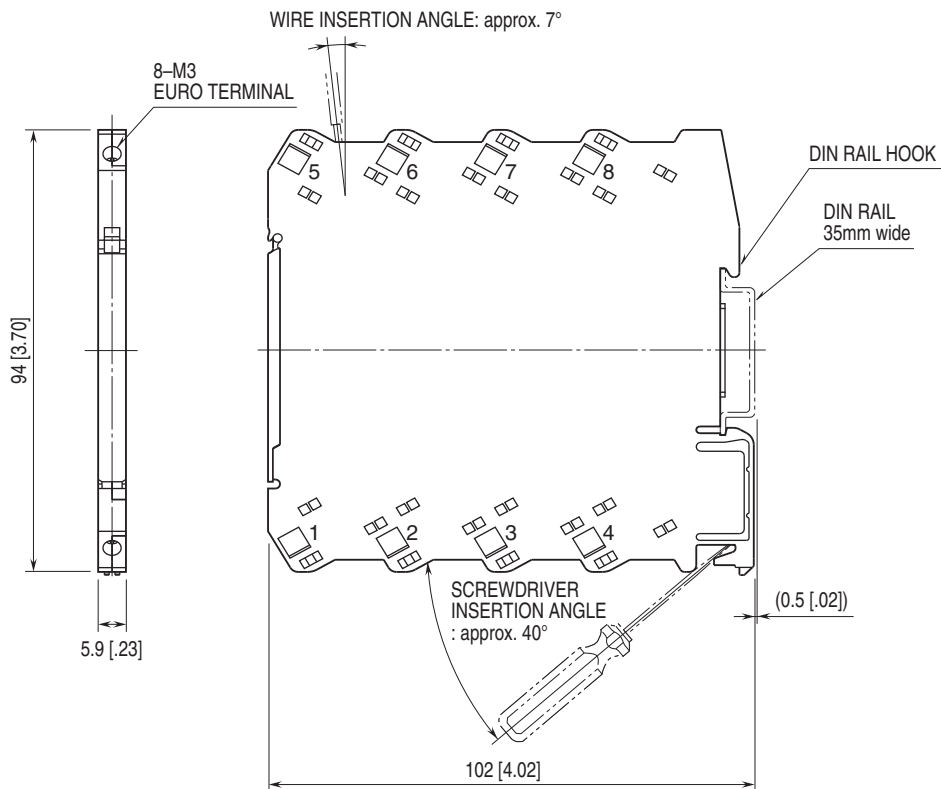
EXTERNAL VIEW

FRONT VIEW (with the cover open)

Power LED

Status Indicator LED

Configurator Jack

SIDE VIEW

5 6 7 8

SW1

Output Range Selectors

SW1

ON
OFF
1 2 3 4 5 6 7 8

1 2 3 4

The DIP switch setting is required to select output types
before setting a precise output range using PC Configurator
Software (model: M6CFG).
Refer to the instruction manual for detailed procedures.

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS   unit: mm [inch]

WIRE INSERTION ANGLE: approx. 7°

8–M3
EURO TERMINAL

5 6 7 8

DIN RAIL HOOK

DIN RAIL
35mm wide

94 [3.70]

1 2 3 4

SCREWDRIVER
INSERTION ANGLE
: approx. 40°

(0.5 [.02])

5.9 [.23]

102 [4.02]

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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM
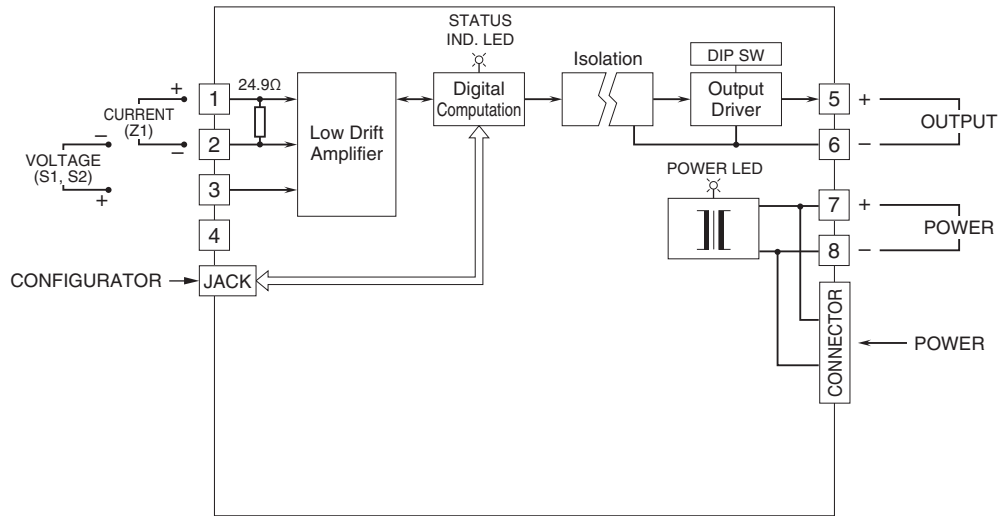
⚠ Specifications are subject to change without notice.