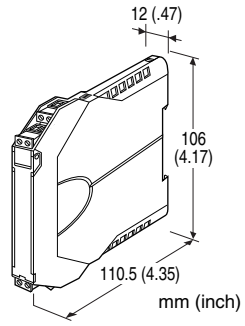
Super-space-saving Signal Conditioners M3S-UNIT Series

SIGNAL TRANSMITTER

(PC programmable)

Functions & Features

- Converts a DC input into a standard process signal
- PC programmable
- Universal AC/DC power input
- High-density mounting
- Power and status indicator LED



MODEL: M3SXV–[1][2]–[3][4]

ORDERING INFORMATION

- Code number: M3SXV-[1][2]-[3][4]

Specify a code from below for each [1] through [4].
(e.g. M3SXV-Z1Z1-R/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)

[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.)

[3] POWER INPUT

AC Power

M2: 100 – 240 V AC (Operational voltage range 90 – 264 V, 47 – 66 Hz)

DC Power

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

Universal

AD: 100 – 240 V AC / 24 – 240 V DC (universal)
(Operational voltage range 90 - 264 V AC, 47 - 66 Hz / 21.6 - 264 V DC, ripple 10 %p-p max.)

[4] OPTIONS

blank: none
/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q

COATING (For the detail, refer to M-System's web site.)

/C01: Silicone coating
/C02: Polyurethane coating
/C03: Rubber coating

RELATED PRODUCTS

- PC configurator software (model: M3SCFG)

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

Construction: Small-sized front terminal structure
Connection: Euro type connector terminal
Applicable wire size: 0.2 to 2.5 mm^2, stripped length 8 mm
Housing material: Flame-resistant resin (gray)
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 LED: Green light 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
•**AC**:
Approx. 2 VA at 100 V
Approx. 3 VA at 200 V
Approx. 4 VA at 264 V
•**DC**:
R: Approx. 0.5 W
AD: Approx. 1 W
Operating temperature: -10 to +55°C (14 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: DIN rail
Weight: 85 g (3.0 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: ±0.015 %/°C (±0.008 %/°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

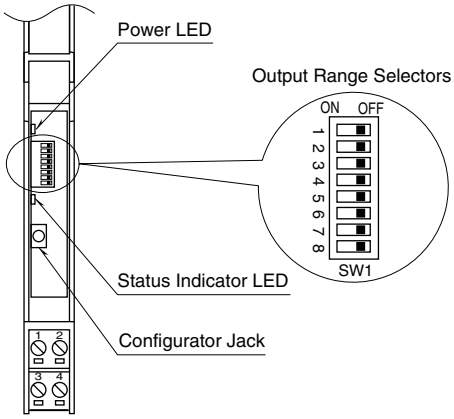
EU conformity:

EMC Directive
- EMI EN 61000-6-4
- EMS EN 61000-6-2

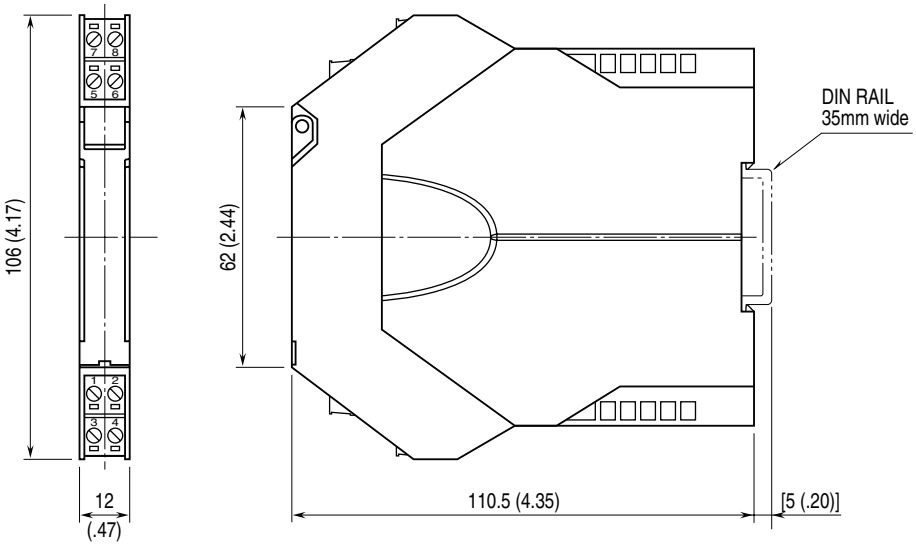
Low Voltage Directive
- EN 61010-1
- Installation Category II
- Pollution Degree 2
- Input or output to power: Reinforced insulation (300 V)
- Input to output: Basic insulation (300 V)

RoHS Directive
- EN 50581

EXTERNAL VIEW

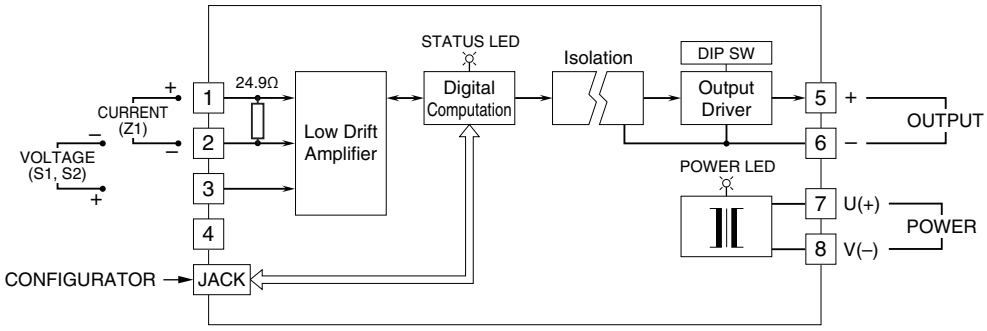


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



⚠ Specifications are subject to change without notice.

M-SYSTEM CO., LTD.
http://www.m-system.co.jp/