Super-space-saving Signal Conditioners
M3S-UNIT Series

SIGNAL TRANSMITTER

Functions & Features
- Accepts a DC mV, V or mA input and provides an isolated DC signal
- Universal AC/DC power input
- High-density mounting

Typical Applications
- Signal conversion between control room and field instrumentation with isolation
- Ideal for use as a fast solution, multifunctional spare part

MODEL: M3SVS–[1][2]–[3][4]

ORDERING INFORMATION
- Code number: M3SVS–[1][2]–[3][4]
  Specify a code from below for each [1] through [4].
  (e.g. M3SVS-6A-M2/K/Q)
- Special input and output ranges (For codes Z & 0)
- Specify the specification for option code /Q
  (e.g. /C01)

[1] INPUT
Current
A: 4 – 20 mA DC (Input resistance 250 Ω)
A1: 4 – 20 mA DC (Input resistance 50 Ω)
B: 2 – 10 mA DC (Input resistance 500 Ω)
C: 1 – 5 mA DC (Input resistance 1000 Ω)
D: 0 – 20 mA DC (Input resistance 50 Ω)
E: 0 – 16 mA DC (Input resistance 62.5 Ω)
F: 0 – 10 mA DC (Input resistance 100 Ω)
G: 0 – 1 mA DC (Input resistance 1000 Ω)
H: 10 – 50 mA DC (Input resistance 100 Ω)
J: 0 – 10 μA DC (Input resistance 1000 Ω)
K: 0 – 100 μA DC (Input resistance 1000 Ω)
GW: -1 – +1 mA DC (Input resistance 1000 Ω)
FW: -10 – +10 mA DC (Input resistance 100 Ω)
Z: Specify current (See INPUT SPECIFICATIONS)

Voltage
1: 0 – 10 mV DC (Input resistance 10 kΩ min.)
15: 0 – 50 mV DC (Input resistance 10 kΩ min.)
16: 0 – 60 mV DC (Input resistance 10 kΩ min.)
2: 0 – 100 mV DC (Input resistance 100 kΩ min.)
3: 0 – 1 V DC (Input resistance 1 MΩ min.)
4: 0 – 10 V DC (Input resistance 1 MΩ min.)
5: 0 – 5 V DC (Input resistance 1 MΩ min.)
6: 1 – 5 V DC (Input resistance 1 MΩ min.)
4W: -10 – +10 V DC (Input resistance 1 MΩ min.)
5W: -5 – +5 V DC (Input resistance 1 MΩ min.)
0: Specify voltage (See INPUT SPECIFICATIONS)

[2] OUTPUT
Current
A: 4 – 20 mA DC (Load resistance 550 Ω max.)
B: 2 – 10 mA DC (Load resistance 1100 Ω max.)
C: 1 – 5 mA DC (Load resistance 2200 Ω max.)
D: 0 – 20 mA DC (Load resistance 550 Ω max.)
E: 0 – 16 mA DC (Load resistance 680 Ω max.)
F: 0 – 10 mA DC (Load resistance 1100 Ω max.)
G: 0 – 1 mA DC (Load resistance 11 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.)
4W: -10 – +10 V DC (Load resistance 10 kΩ min.)
5W: -5 – +5 V DC (Load resistance 5000 Ω min.)
0: Specify voltage (See OUTPUT SPECIFICATIONS)

[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 (multiple selections)
Response Time (0 - 90 %)
blank: Standard (≤ 0.5 sec.)
/K: Fast Response (Approx. 25 msec.)
Other Options
blank: none
/Q: Option other than the above (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

GENERAL SPECIFICATIONS
Construction: Small-sized front terminal structure
Connection: Euro type connector terminal
Applicable wire size: 0.2 to 2.5 mm², stripped length 8 mm
Housing material: Flame-resistant resin (gray)
Isolation: Input to output to power
Overrange output: Approx. -10 to +120 % at 1 - 5 V
Zero adjustment: -5 to +5 % (front)
Span adjustment: 95 to 105 % (front)

INPUT SPECIFICATIONS
■ DC Current: Input resistor incorporated
Specify input resistance value for code Z.
(R ≤ 0.25 W ÷ [F.S. Current]²)
■ DC Voltage: -300 – +300 V DC
Minimum span: 3 mV
Offset: Max. 1.5 times span
Input resistance
Span 3 – 10 mV : ≥ 10 kΩ
Span 10 – 100 mV : ≥ 10 kΩ
Span 0.1 – 1 V : ≥ 100 kΩ
Span ≥ 1 V : ≥ 1 MΩ

OUTPUT SPECIFICATIONS
■ DC Current: 0 – 20 mA DC
Minimum span: 1 mA
Offset: Max. 1.5 times span
Load resistance: Output drive 11 V max.
■ DC Voltage: -10 – +11 V DC
Minimum span: 5 mV
Offset: Max. 1.5 times span
Load resistance: Output drive 1 mA maximum; at ≥ 0.5 V

INSTALLATION
Power consumption
•AC:
Approx. 2 VA at 100 V
Approx. 3 VA at 200 V
Approx. 4 VA at 264 V
•DC: 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: 100 g (3.53 oz)

PERFORMANCE in percentage of span
Accuracy: ±0.1 %
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
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)

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 DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)

![Dimension Diagram](image)

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

DIN RAIL 35mm wide

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

![Schematic Diagram](image)

* Shunt resistor incorporated for current input.

⚠️ Specifications are subject to change without notice.