Super-space-saving Signal Conditioners
M3S-UNIT Series

SIGNAL TRANSMITTER
(two isolated outputs)

Functions & Features
• Galvanically isolates process instrumentation signals
• Universal AC/DC power input
• High-density mounting
• Power indicator LED

MODEL: M3SWVS-[1][2][3]-[4][5]

ORDERING INFORMATION
• Code number: M3SWVS-[1][2][3]-[4][5]
Specify a code from below for each [1] through [5].
(e.g. M3SWVS-AAA-R/K/Q)
• Special input range (For codes Z & 0)
• Specify the specification for option code /Q
(e.g. /C01)

[1] INPUT
Current
A: 4 – 20 mA DC (Input resistance 50 Ω)
B: 2 – 10 mA DC (Input resistance 100 Ω)
C: 1 – 5 mA DC (Input resistance 200 Ω)
D: 0 – 20 mA DC (Input resistance 50 Ω)
E: 0 – 16 mA DC (Input resistance 50 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 20 Ω)
Z: Specify current (See INPUT SPECIFICATIONS)

Voltage
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 1
Current
A: 4 – 20 mA DC (Load resistance 280 Ω max.)
D: 0 – 20 mA DC (Load resistance 280 Ω max.)

Voltage
5: 0 – 5 V DC (Load resistance 5000 Ω min.)
6: 1 – 5 V DC (Load resistance 5000 Ω min.)

[3] OUTPUT 2
Same range availability as Output 1
Y: None

[4] 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.)

[5] OPTIONS (multiple selections)
Response Time (0 – 90 %)
blank: Standard (≤ 0.5 sec.)
/K: Fast Response (Approx. 3.5 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 1 to output 2 to power
Zero adjustment: -2 to +2 % (front)
Span adjustment: 98 to 102 % (front)
Power LED: Green light turns on when the power is supplied.
**INPUT SPECIFICATIONS**

- **DC Current**: Input resistor incorporated
  Specify input resistance value among followings for code Z.
  20Ω, 50Ω, 100Ω, 200Ω, 249Ω, 1000Ω
  \((0.125 \text{ W} \geq \text{[Input current]}^2 \times R)\)
- **DC Voltage**: -30 - +30 V DC
  - **Minimum span**: 100 mV
  - **Offset**: Max. 1.5 times span
  - **Input resistance**: 1 MΩ min. (10 kΩ min. with no power supplied)

**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. 0.6 W
    - AD: Approx. 1 W
  - **Operating temperature**: -20 to +55°C (-4 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 1 to output 2 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 VIEW

Power LED
Zero Adj.
Span Adj.
Output 1
Zero Adj.
Span Adj.
Output 2

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)

DIN RAIL 35mm wide

110.5 (4.35) 5 (.20)
106 (4.17) 12 (.47)

When mounting, no extra space is needed between units.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

Low Drift Amplifier
Input shunt resistor incorporated for current input.
*Remark: The section enclosed by broken line is only with 2nd output option.
Specifications are subject to change without notice.