Plug-in Signal Conditioners M-UNIT

SIGNAL TRANSMITTER

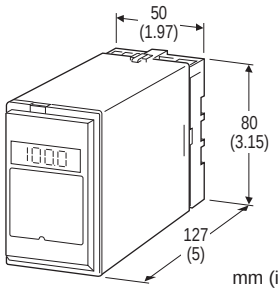
(wide-output)

Functions & Features

- Converts a DC input into a standard process signal
- Isolation up to 2000 V AC
- Fast response type available
- LCD meter
- Max. 30 V output available
- Load resistance 1500 Ω (20 mA output)
- High-density mounting

Typical Applications

- Isolation between control room and field instrumentation



CE

MODEL: SVB-[1][2]-[3][4]

ORDERING INFORMATION

- Code number: SVB-[1][2]-[3][4]
  Specify a code from below for each [1] through [4].
(e.g. SVB-6A-M2/E/K/Q)
- Special input and output ranges (For codes Z & 0)
- Specify the specification for option code /Q
(e.g. /C01/S01)

[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 750 - 1500 Ω)
B: 2 – 10 mA DC (Load resistance 1500 - 3000 Ω)
C: 1 – 5 mA DC (Load resistance 3000 - 6000 Ω)
D: 0 – 20 mA DC (Load resistance 750 - 1500 Ω)
E: 0 – 16 mA DC (Load resistance 935 - 1875 Ω)
F: 0 – 10 mA DC (Load resistance 1500 - 3000 Ω)
G: 0 – 1 mA DC (Load resistance 15k - 30kΩ)
DW: -20 – +20 mA DC (Load resistance 500 - 1000Ω)
FW: -10 – +10 mA DC (Load resistance 1000 - 2000Ω)
Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

8: 0 – 20 V DC (Load resistance 2000 Ω min.)
9: 0 – 30 V DC (Load resistance 3000 Ω min.)
8W: -20 – +20 V DC (Load resistance 2000 Ω min.)
0: Specify voltage (See OUTPUT SPECIFICATIONS)
Caution: The load resistance must be within the indicated range for adequate operation.

[3] POWER INPUT

AC Power

M2: 100 – 240 V AC (Operational voltage range 85 – 264 V, 47 – 66 Hz)

DC Power

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

[4] OPTIONS (multiple selections)

Input Signal Indicator

blank: Without
/E: With (0.0 - 100.0 % display)

Response Time (0 – 90 %)

blank: Standard (≤ 0.5 sec.)
/K: Fast Response (≤ 25 msec.)

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Standards & Approvals
blank: Without CE
/CE: CE marking (Not selectable with /E)
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
/C03: Rubber coating
TERMINAL SCREW MATERIAL
/S01: Stainless steel

GENERAL SPECIFICATIONS

Construction: Plug-in
Connection: M3.5 screw terminals
Screw terminal: Chromated steel (standard) or stainless steel
Housing material: Flame-resistant resin (black)
Isolation: Input to output to power
Overrange output: Approx. -10 to +110 % at 0 – 20 V
Zero adjustment: -2 to +2 % (front)
Span adjustment: 98 to 102 % (front)

INPUT SPECIFICATIONS

■ **DC Current**:
Shunt resistor attached to the input terminals (0.5 W)
Specify input resistance value for code Z.
■ **DC Voltage**: -300 – +300 V DC
Minimum span: 10 mV
Offset: Max. 1.5 times span
Input resistance
Span 10 – 100 mV : ≥ 10 kΩ
Span 0.1 – 1 V : ≥ 100 kΩ
Span ≥ 1 V : ≥ 1 MΩ

OUTPUT SPECIFICATIONS

■ **DC Current**: -20 – +20 mA DC
Minimum span: 1 mA
Offset: Max. 1.5 times span
Load resistance: Output drive 30 V max. and 15 V min.; 20 V max. and 10 V min. (0 % output = negative value)
■ **DC Voltage**: -20 – + 30 V DC
(The 0 – 100 % output range values within -10 – +12 V range are not available.)
Minimum span: 10 V
Offset: Max. 1.5 times span
Load resistance: Output drive 10 mA max.

INSTALLATION

Power Consumption
•**AC**:
Approx. 5 VA at 100 V
Approx. 6 VA at 200 V
Approx. 7 VA at 264 V
•**DC**: Approx. 3 W
Operating temperature: -5 to +60°C (23 to 140°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail
Weight: 400 g (0.88 lb)

PERFORMANCE in percentage of span

Accuracy: ±0.1 %
Display accuracy: ±(0.1 % of FS + 1 digit)
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

CE conformity:
EMC Directive (2004/108/EC)
EMI EN 61000-6-4: 2007
EMS EN 61000-6-2: 2005
Low Voltage Directive (2006/95/EC)
EN 61010-1: 2001
Installation Category II
Pollution Degree 2
Input or output to power: Reinforced insulation (300 V)
Input to output: Basic insulation (300 V)

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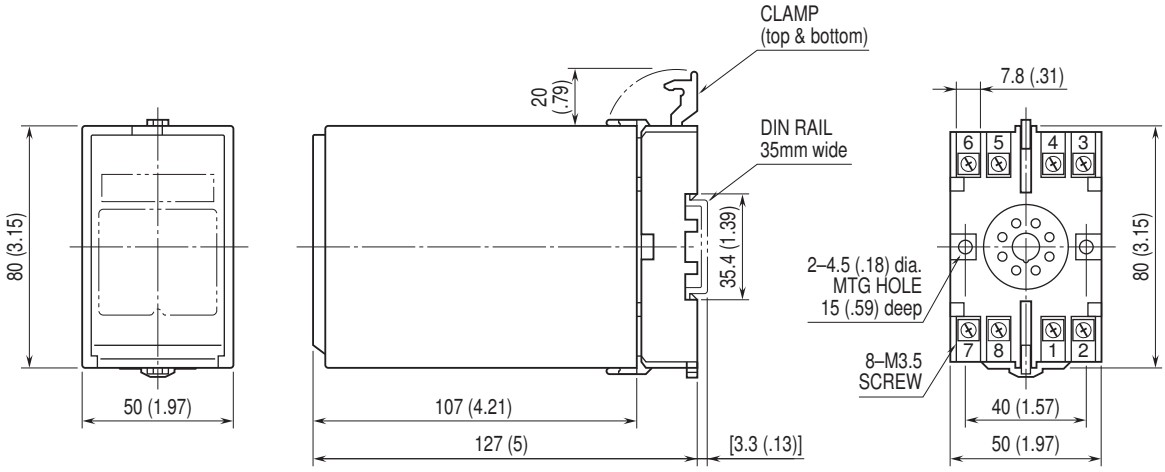
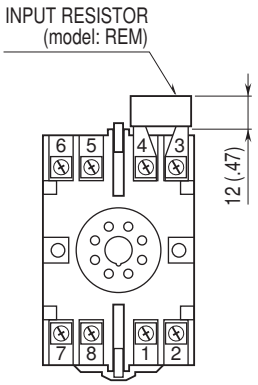
DIMENSIONS unit: mm (inch)



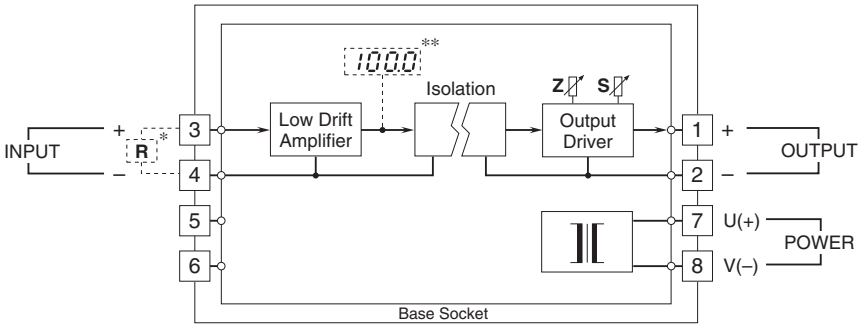
• When mounting, no extra space is needed between units.

TERMINAL ASSIGNMENTS unit: mm (inch)



Input shunt resistor attached
for current input.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*Input shunt resistor attached for current input.
**Option /E

⚠ Specifications are subject to change without notice.

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