

Plug-in Signal Conditioners M-UNIT

SIGNAL TRANSMITTER

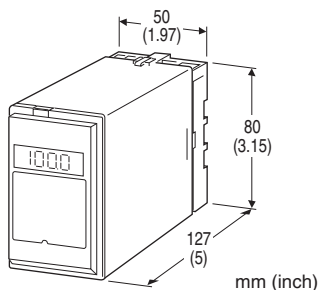
(wide-output)

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



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

ORDERING INFORMATION

- Code number: SVB-[1][2]-[3][4]
- Specify a code from below for each of [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.)

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)

■ DISPLAY (Input indicator)

LCD digital display: 0.0 - 100.0 % (min. digit 0.1 %)
(No scaling)

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 : $\geq 10 \text{ k}\Omega$

Span 0.1 - 1 V : $\geq 100 \text{ k}\Omega$

Span $\geq 1 \text{ V}$: $\geq 1 \text{ M}\Omega$

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: $\pm 0.1 \%$

Display accuracy: $\pm (0.1 \%$ of FS + 1 digit)

Temp. coefficient: $\pm 0.015 \%$ /°C ($\pm 0.008 \%$ /°F)

Line voltage effect: $\pm 0.1 \%$ over voltage range

Insulation resistance: $\geq 100 \text{ M}\Omega$ 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

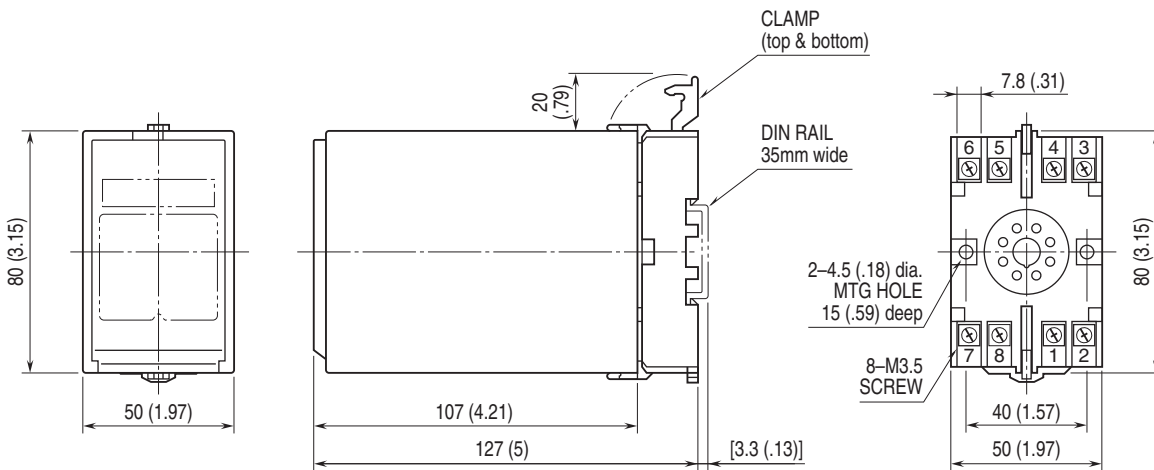
Input or output to power: Reinforced insulation (300 V)

Input to output: Basic insulation (300 V)

RoHS Directive

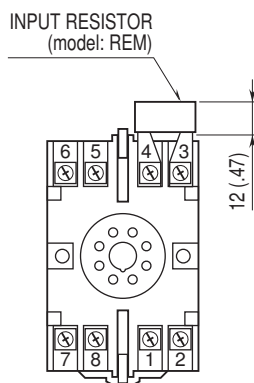
EN 50581

EXTERNAL DIMENSIONS unit: mm (inch)



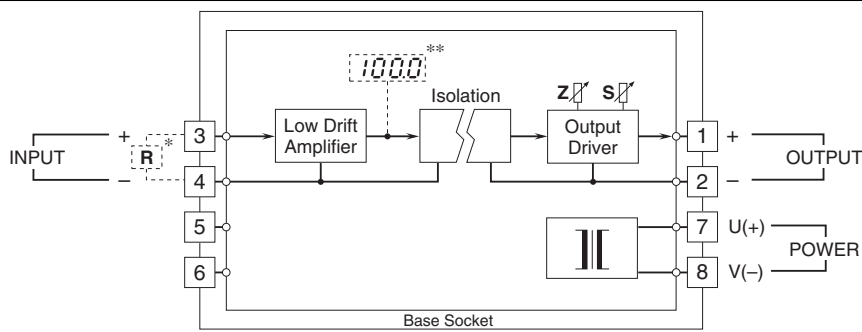
• When mounting, no extra space is needed between units.

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.