

## Plug-in Signal Conditioners M-UNIT

### SIGNAL TRANSMITTER

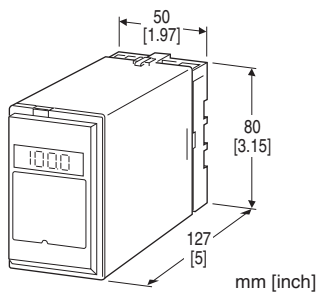
(wide-output)

#### 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 our 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:**  $\pm 0.015 \%/^{\circ}\text{C}$  ( $\pm 0.008 \%/^{\circ}\text{F}$ )

**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

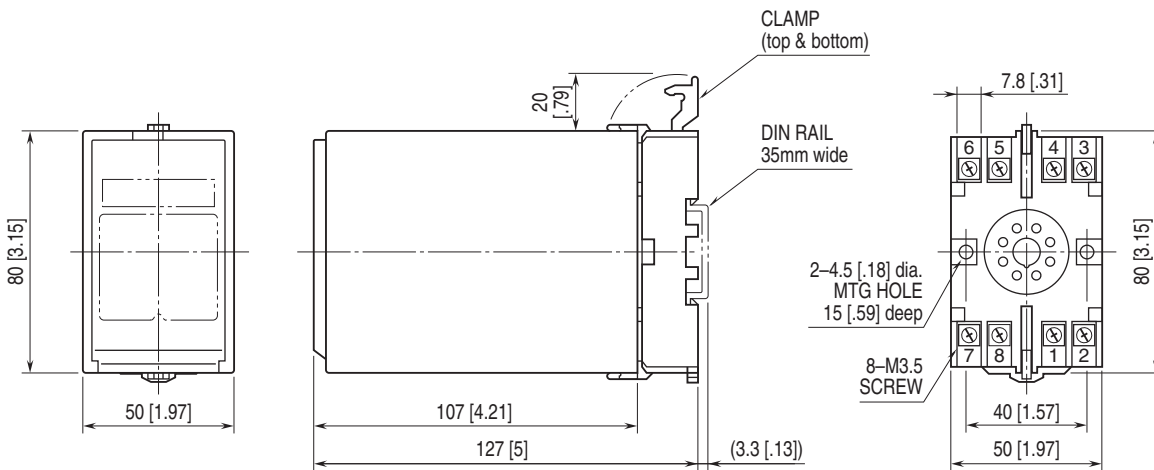
Pollution Degree 2

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

Input to output: Basic insulation (300 V)

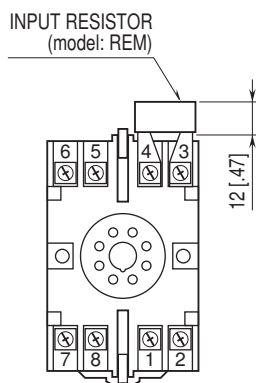
RoHS Directive

## EXTERNAL DIMENSIONS unit: mm [inch]



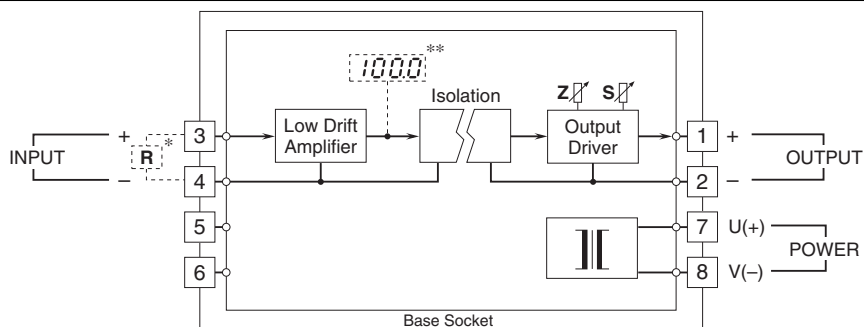
• When mounting, no extra space is needed between units.

## 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.