

## Space-saving Plug-in Signal Conditioners H-UNIT

### SIGNAL TRANSMITTER

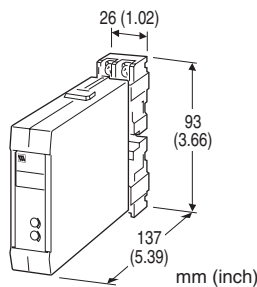
(isolated)

#### Functions & Features

- Converting a DC input into a standard process signal
- Fast response type available
- High-density mounting

#### Typical Applications

- Isolation between control room and field instrumentation



### MODEL: HVS-[1][2]-R[3]

#### ORDERING INFORMATION

- Code number: HVS-[1][2]-R[3]

Specify a code from below for each of [1] through [3].

- (e.g. HVS-6A-R/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  $\Omega$ )
- A1:** 4 - 20 mA DC (Input resistance 50  $\Omega$ )
- B:** 2 - 10 mA DC (Input resistance 500  $\Omega$ )
- C:** 1 - 5 mA DC (Input resistance 1000  $\Omega$ )
- D:** 0 - 20 mA DC (Input resistance 50  $\Omega$ )
- E:** 0 - 16 mA DC (Input resistance 62.5  $\Omega$ )
- F:** 0 - 10 mA DC (Input resistance 100  $\Omega$ )
- G:** 0 - 1 mA DC (Input resistance 1000  $\Omega$ )
- H:** 10 - 50 mA DC (Input resistance 100  $\Omega$ )
- J:** 0 - 10  $\mu$ A DC (Input resistance 1000  $\Omega$ )
- K:** 0 - 100  $\mu$ A DC (Input resistance 1000  $\Omega$ )
- GW:** -1 - +1 mA DC (Input resistance 1000  $\Omega$ )
- FW:** -10 - +10 mA DC (Input resistance 100  $\Omega$ )
- Z:** Specify current (See INPUT SPECIFICATIONS)

Voltage

- 1:** 0 - 10 mV DC (Input resistance 10 k $\Omega$  min.)

- 15:** 0 - 50 mV DC (Input resistance 10 k $\Omega$  min.)
- 16:** 0 - 60 mV DC (Input resistance 10 k $\Omega$  min.)
- 2:** 0 - 100 mV DC (Input resistance 100 k $\Omega$  min.)
- 3:** 0 - 1 V DC (Input resistance 1 M $\Omega$  min.)
- 4:** 0 - 10 V DC (Input resistance 1 M $\Omega$  min.)
- 5:** 0 - 5 V DC (Input resistance 1 M $\Omega$  min.)
- 6:** 1 - 5 V DC (Input resistance 1 M $\Omega$  min.)
- 4W:** -10 - +10 V DC (Input resistance 1 M $\Omega$  min.)
- 5W:** -5 - +5 V DC (Input resistance 1 M $\Omega$  min.)
- 0:** Specify voltage (See INPUT SPECIFICATIONS)

#### [2] OUTPUT

Current

- A:** 4 - 20 mA DC (Load resistance 750  $\Omega$  max.)
- B:** 2 - 10 mA DC (Load resistance 1500  $\Omega$  max.)
- C:** 1 - 5 mA DC (Load resistance 3000  $\Omega$  max.)
- D:** 0 - 20 mA DC (Load resistance 750  $\Omega$  max.)
- E:** 0 - 16 mA DC (Load resistance 900  $\Omega$  max.)
- F:** 0 - 10 mA DC (Load resistance 1500  $\Omega$  max.)
- G:** 0 - 1 mA DC (Load resistance 15 k $\Omega$  max.)
- Z:** Specify current (See OUTPUT SPECIFICATIONS)

Voltage

- 1:** 0 - 10 mV DC (Load resistance 10 k $\Omega$  min.)
- 2:** 0 - 100 mV DC (Load resistance 100 k $\Omega$  min.)
- 3:** 0 - 1 V DC (Load resistance 1000  $\Omega$  min.)
- 4:** 0 - 10 V DC (Load resistance 10 k $\Omega$  min.)
- 5:** 0 - 5 V DC (Load resistance 5000  $\Omega$  min.)
- 6:** 1 - 5 V DC (Load resistance 5000  $\Omega$  min.)
- 4W:** -10 - +10 V DC (Load resistance 10 k $\Omega$  min.)
- 5W:** -5 - +5 V DC (Load resistance 5000  $\Omega$  min.)
- 0:** Specify voltage (See OUTPUT SPECIFICATIONS)

#### POWER INPUT

DC Power

**R:** 24 V DC

(Operational voltage range 24 V  $\pm$ 10 %, ripple 10 %p-p max.)

#### [3] OPTIONS (multiple selections)

Response Time (0 - 90 %)

**blank:** Standard ( $\leq$  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 (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 (torque 0.8 N·m)

**Screw terminal:** Nickel-plated steel (standard) or stainless steel

**Housing material:** Flame-resistant resin (black)

**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:

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:** 3 mV

**Offset:** Max. 1.5 times span

### Input resistance

Span 3 - 10 mV :  $\geq 10 \text{ k}\Omega$

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: 0 - 20 mA DC

**Minimum span:** 1 mA

**Offset:** Max. 1.5 times span

**Load resistance:** Output drive 15 V max.

### ■ DC Voltage: -10 - +12 V DC

**Minimum span:** 5 mV

**Offset:** Max. 1.5 times span

**Load resistance:** Output drive 1 mA max.; at  $\geq 0.5 \text{ V}$

## INSTALLATION

**Current consumption:** Approx. 80 mA

**Operating temperature:** -5 to +55°C (23 to 131°F)

**Operating humidity:** 30 to 90 %RH (non-condensing)

**Mounting:** Surface or DIN rail; Standard Rack Mounting

Frame BX-16H available

**Weight:** 200 g (0.44 lb)

## PERFORMANCE in percentage of span

**Accuracy:**  $\pm 0.1 \%$

**Temp. coefficient:**  $\pm 0.015 \%/^{\circ}\text{C}$  ( $\pm 0.008 \%/^{\circ}\text{F}$ )

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

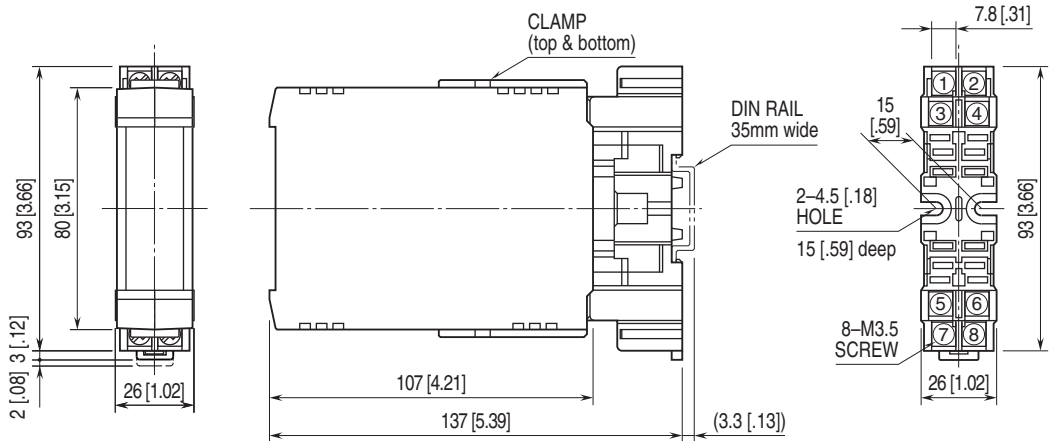
**Insulation resistance:**  $\geq 100 \text{ M}\Omega$  with 500 V DC

**Dielectric strength:** 500 V AC @ 1 minute

(input to output to power)

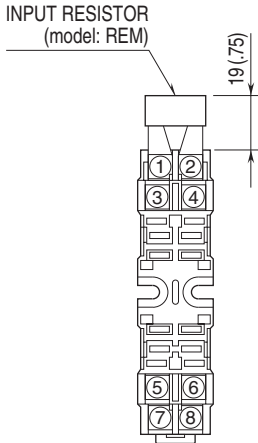
1500 V AC @ 1 minute (input or output or power to ground)

**EXTERNAL DIMENSIONS unit: mm [inch]**



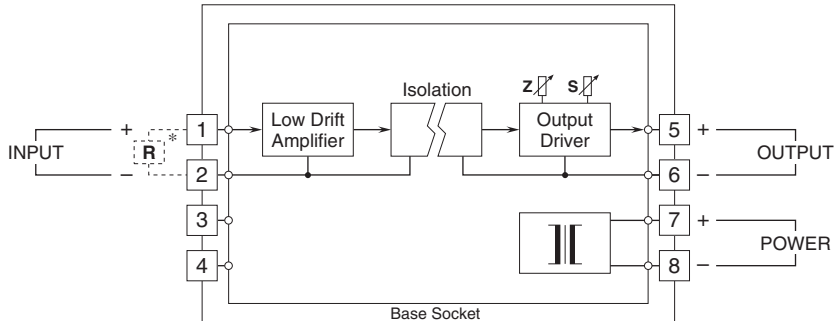
•When mounting, no extra space is needed between units.

**TERMINAL ASSIGNMENTS unit: mm [inch]**



Input shunt resistor attached for current input.

**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



\*Input shunt resistor attached for current input.



Specifications are subject to change without notice.