

**Plug-in Signal Conditioners K-UNIT**

**SIGNAL TRANSMITTER**

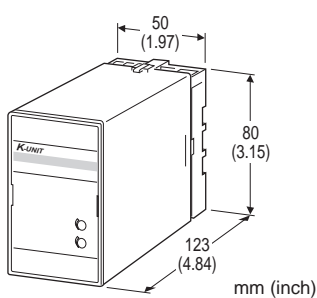
(3-port isolation)

**Functions & Features**

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

**Typical Applications**

- Isolation between control room and field instrumentation



**MODEL: KVS-[1][2]-[3][4]/CE**

**ORDERING INFORMATION**

- Code number: KVS-[1][2]-[3][4]/CE
- Specify a code from below for each [1] through [4].  
(e.g. KVS-6A-H/K/CE)
- Special input and output ranges (For codes Z & 0)

**[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 Ω max.)
- B: 2 - 10 mA DC (Load resistance 1500 Ω max.)
- C: 1 - 5 mA DC (Load resistance 3000 Ω max.)
- D: 0 - 20 mA DC (Load resistance 750 Ω max.)
- E: 0 - 16 mA DC (Load resistance 900 Ω max.)
- F: 0 - 10 mA DC (Load resistance 1500 Ω max.)
- G: 0 - 1 mA DC (Load resistance 15 kΩ max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

**Voltage**

- 1: 0 - 10 mV DC (Load resistance 10 kΩ min.)
- 2: 0 - 100 mV DC (Load resistance 100 kΩ min.)
- 3: 0 - 1 V DC (Load resistance 3000 Ω min.)
- 4: 0 - 10 V DC (Load resistance 10 kΩ min.)
- 5: 0 - 5 V DC (Load resistance 5000 Ω min.)
- 6: 1 - 5 V DC (Load resistance 5000 Ω min.)
- 4W: -10 - +10 V DC (Load resistance 20 kΩ min.)
- 5W: -5 - +5 V DC (Load resistance 10 kΩ min.)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)

**[3] POWER INPUT**

**AC Power**

- G: 200 V AC
- H: 220 V AC
- J: 240 V AC

**DC Power**

- S: 12 V DC
- R: 24 V DC

**[4] OPTIONS**

**RESPONSE TIME (0 - 90 %)**

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

**GENERAL SPECIFICATIONS**

- Construction: Plug-in
- Connection: M3.5 screw terminals
- 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:** -30 - +30 V DC

**Span:** min. 3 mV, max. 30 V  
**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  $\geq 3 \text{ V}$

## INSTALLATION

**Power input**  
**AC:** Operational voltage range: rating  $\pm 10 \%$ ,  
50/60  $\pm 2 \text{ Hz}$ , approx. 2 VA  
**DC:** Operational voltage range: rating  $\pm 10 \%$ ,  
ripple 10 %p-p max., approx. 2 W (80 mA at 24 V)  
**Operating temperature:** -5 to +55°C (23 to 131°F)  
**Operating humidity:** 30 to 90 %RH (non-condensing)  
**Mounting:** Surface or DIN rail  
**Weight:** 400 g (0.88 lbs)

## PERFORMANCE in percentage of span

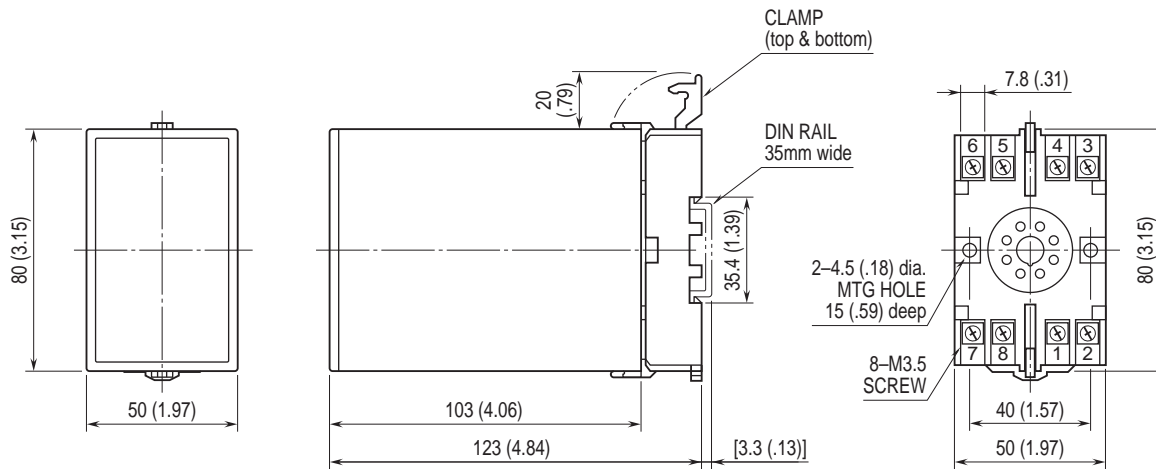
**Accuracy:**  $\pm 0.1 \%$   
**Temp. coefficient:**  $\pm 0.02 \%/^{\circ}\text{C}$  ( $\pm 0.01 \%/^{\circ}\text{F}$ )  
**Line voltage effect:**  $\pm 0.1 \%$  over voltage range  
**Insulation resistance:**  $\geq 100 \text{ M}\Omega$  with 500 V DC  
**Dielectric strength:**  
1350 V AC @1 minute (input to output)  
2300 V AC @1 minute (input or output to power to ground)

## STANDARDS & APPROVALS

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

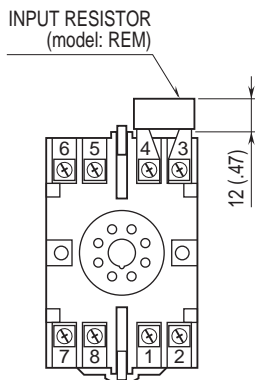


## DIMENSIONS unit: mm (inch)



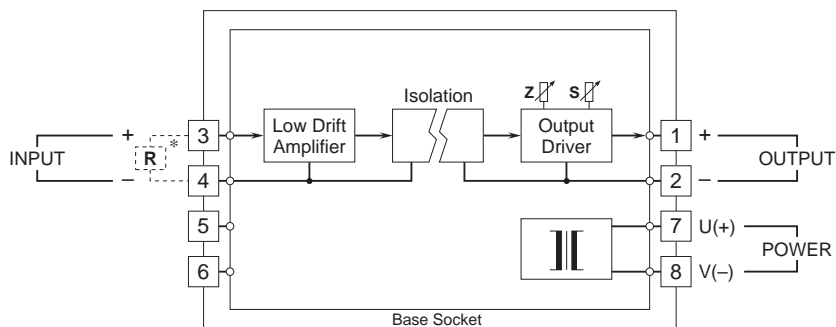
• When mounting, no extra space is needed between units.

## 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.

