

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

**SIGNAL TRANSMITTER**

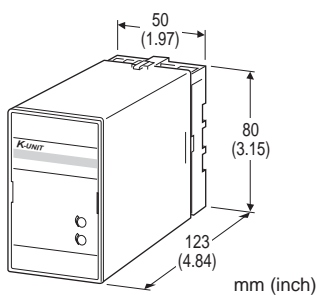
(high speed response)

**Functions & Features**

- Converting a DC input into a standard process signal
- Isolation between input and output
- 500 μsec. response
- High-density mounting
- CE marking

**Typical Applications**

- Isolation for a vibration analyzing system



**MODEL: KSF-[1][2]-[3]/CE**

**ORDERING INFORMATION**

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

**[1] INPUT**

**Current**

- A: 4 - 20 mA DC (Input resistance 250 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)
- 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**

- 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 1000 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 10 kΩ min.)
- 5W: -5 - +5 V DC (Load resistance 5000 Ω 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

**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 - +30V DC
- Span:** min. 1V, max. 30V
- Offset:** max. 1.5 times span



Input resistance:  $\geq 1 \text{ M}\Omega$

## 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

### Power input

AC: Operational voltage range: rating  $\pm 10 \%$ ,  
50/60  $\pm 2$  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:  $\pm 0.02 \%/^{\circ}\text{C}$  ( $\pm 0.01 \%/^{\circ}\text{F}$ )

Response time:  $\leq 500 \mu\text{sec.}$  (0 - 90 %)

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

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

Dielectric strength: 1000 V AC @1 minute

(input to output to power)

2300 V AC @1 minute

(input or output or 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

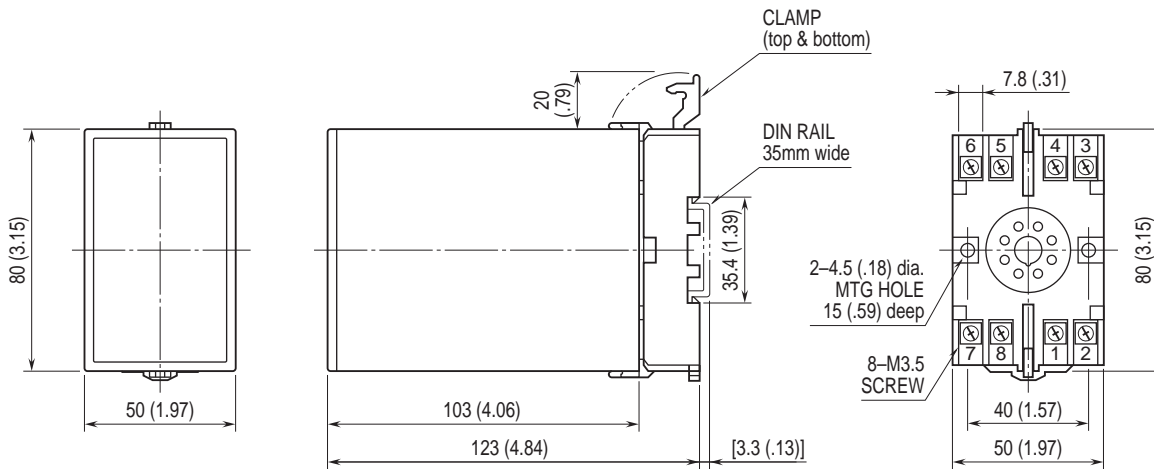
Max. operating voltage 300 V

Input or output to power: Reinforced insulation

Input to output: Basic insulation

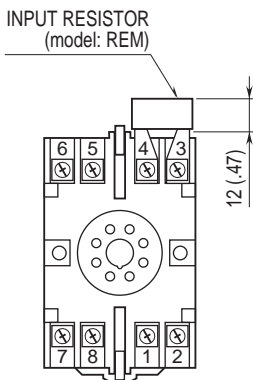


## DIMENSIONS unit: mm (inch)



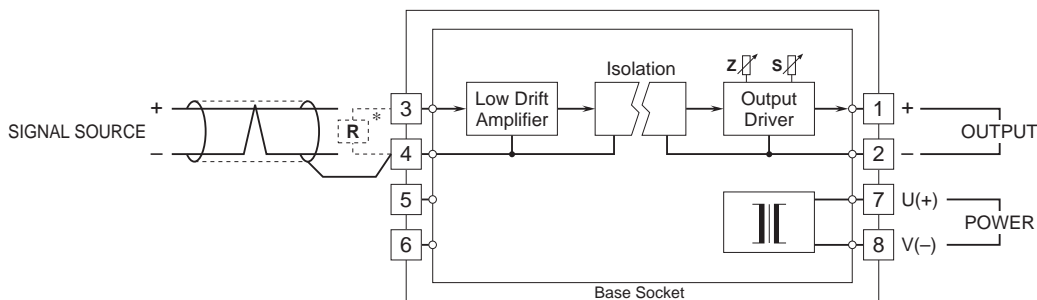
• When mounting, no extra space is needed between units.

## TERMINAL ASSIGNMENTS unit: mm (inch)



Input shunt resistor attached for current input.

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



\*Input shunt resistor attached for current input.

Remark: The unit, due to its fast-response design, does not eliminate noises included in the input signal. Use shielded twisted-pair cable for preventing them.



Specifications are subject to change without notice.

