

Plug-in Signal Conditioners K-UNIT

SIGNAL TRANSMITTER

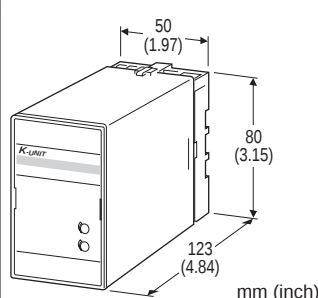
(CE, isolated)

Functions & Features

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

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 μ A DC (Input resistance 1000 Ω)
- K: 0 - 100 μ A 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 k Ω min.)
- 15: 0 - 50 mV DC (Input resistance 10 k Ω min.)

- 16: 0 - 60 mV DC (Input resistance 10 k Ω min.)
- 2: 0 - 100 mV DC (Input resistance 100 k Ω min.)
- 3: 0 - 1 V DC (Input resistance 1 M Ω min.)
- 4: 0 - 10 V DC (Input resistance 1 M Ω min.)
- 5: 0 - 5 V DC (Input resistance 1 M Ω min.)
- 6: 1 - 5 V DC (Input resistance 1 M Ω min.)
- 4W: -10 - +10 V DC (Input resistance 1 M Ω min.)
- 5W: -5 - +5 V DC (Input resistance 1 M Ω 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 k Ω max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

- 1: 0 - 10 mV DC (Load resistance 10 k Ω min.)
- 2: 0 - 100 mV DC (Load resistance 100 k Ω min.)
- 3: 0 - 1 V DC (Load resistance 3000 Ω min.)
- 4: 0 - 10 V DC (Load resistance 10 k Ω 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 k Ω min.)
- 5W: -5 - +5 V DC (Load resistance 10 k 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

[4] OPTIONS (multiple selections)

Response Time (0 - 90 %)

blank: Standard (≤ 0.5 sec.)

/K: Fast Response (Approx. 25 msec.)

Standards & Approvals (must be specified)

/CE: CE marking

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 ± 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 lb)

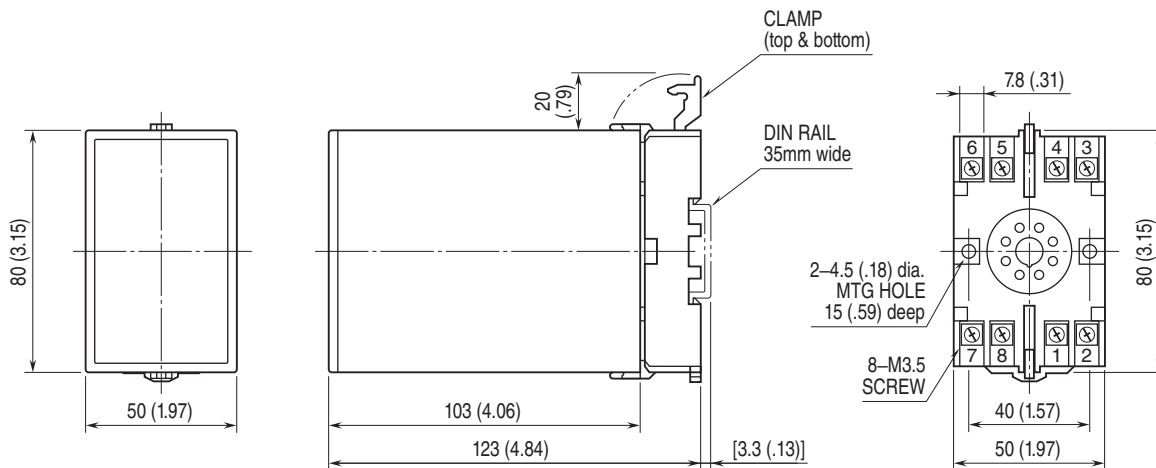
PERFORMANCE in percentage of span

Temp. coefficient: $\pm 0.02 \text{ }^\circ\text{C}$ ($\pm 0.01 \text{ }^\circ\text{F}$)
Accuracy: $\pm 0.1 \%$
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)

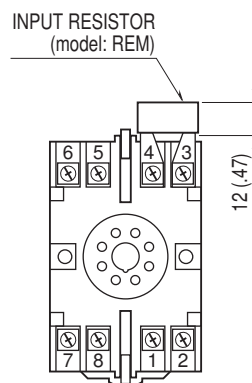
STANDARDS & APPROVALS

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

DIMENSIONS unit: mm (inch)

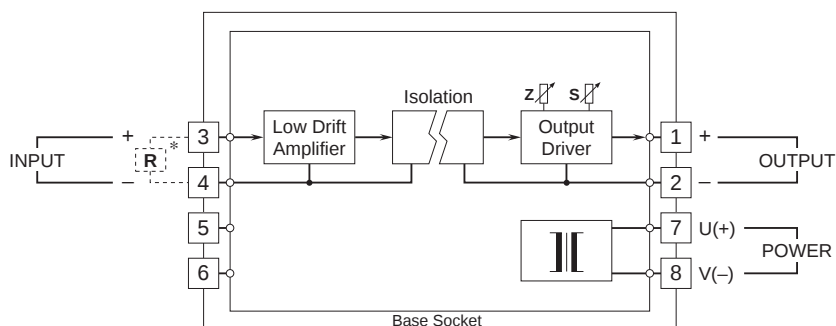


- When mounting, no extra space is needed between units.

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.