

Plug-in Signal Conditioners K-UNIT

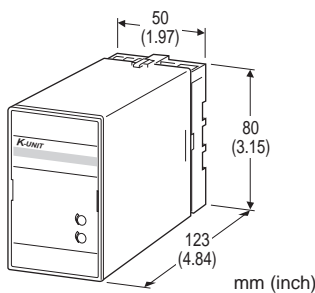
AC TRANSMITTER

Functions & Features

- Converting an alternating current/voltage into a standard process signal
- True RMS sensing
- Isolation up to 2000 V AC
- High-density mounting

Typical Applications

- Converting a large AC current in combination with a shunt resistor, or a narrow span AC voltage



MODEL: KAC-[1][2]-[3][4]

ORDERING INFORMATION

- Code number: KAC-[1][2]-[3][4]
- Specify a code from below for each [1] through [4].
(e.g. KAC-A1A-B/Q)
- Special input and output ranges (For codes AZ, A8, Z & 0)
- Specify the specification for option code /Q
(e.g. /C01/S01)

[1] INPUT

Current

- AA:** 0 - 10 mA AC (Input resistance 100 Ω)
- AB:** 0 - 50 mA AC (Input resistance 20 Ω)
- AC:** 0 - 100 mA AC (Input resistance 10 Ω)
- AD:** 0 - 500 mA AC (Input resistance 1 Ω)
- AZ:** Specify current (See INPUT SPECIFICATIONS)
(0 % input must be 0 mA.)

Voltage

- A1:** 0 - 100 mV AC (Input resistance 100 kΩ min.)
- A2:** 0 - 500 mV AC (Input resistance 100 kΩ min.)
- A3:** 0 - 1 V AC (Input resistance 100 kΩ min.)
- A4:** 0 - 5 V AC (Input resistance 100 kΩ min.)
- A5:** 0 - 10 V AC (Input resistance 100 kΩ min.)
- A6:** 0 - 120 V AC (Input resistance 100 kΩ min.)
- A7:** 0 - 150 V AC (Input resistance 100 kΩ min.)

A8: Specify voltage (See INPUT SPECIFICATIONS)
(0 % input must be 0 V.)

[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 100 Ω min.)
- 4:** 0 - 10 V DC (Load resistance 1000 Ω min.)
- 5:** 0 - 5 V DC (Load resistance 500 Ω min.)
- 6:** 1 - 5 V DC (Load resistance 500 Ω min.)
- 4W:** -10 - +10 V DC (Load resistance 2000 Ω min.)
- 5W:** -5 - +5 V DC (Load resistance 1000 Ω min.)
- 0:** Specify voltage (See OUTPUT SPECIFICATIONS)

[3] POWER INPUT

AC Power

- B:** 100 V AC
- C:** 110 V AC
- D:** 115 V AC
- F:** 120 V AC
- G:** 200 V AC
- H:** 220 V AC
- J:** 240 V AC

DC Power

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

[4] OPTIONS

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 M-System's 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
Input waveform
RMS sensing: Up to 15 % of 3rd harmonic content
Overrange output: 0 to 120 % at 1 - 5 V
Zero adjustment: -5 to +5 % (front)
Span adjustment: 95 to 105 % (front)

Weight: 400 g (0.88 lb)

PERFORMANCE in percentage of span

Accuracy: $\pm 0.4\%$
Temp. coefficient: $\pm 0.05\%/^{\circ}\text{C}$ ($\pm 0.03\%/^{\circ}\text{F}$)
Response time: ≤ 0.7 sec. (0 - 90 %)
Ripple: 0.5 %p-p max.
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)

INPUT SPECIFICATIONS

Frequency: 40 Hz min., 1 kHz max.
■ **AC Current:** 0 - 1 A AC; input resistor incorporated
Minimum span: 1 mA
Input resistance
Span 1 mA: 1 k Ω
Span ≤ 2 mA: 500 Ω
Span ≤ 5 mA: 200 Ω
Span ≤ 10 mA: 100 Ω
Span ≤ 20 mA: 50 Ω
Span ≤ 50 mA: 20 Ω
Span ≤ 100 mA: 10 Ω
Span ≤ 500 mA: 1 Ω
Span ≤ 1 A: 0.5 Ω
■ **AC Voltage:** 0 - 250 V AC
Minimum span: 50 mV
Input resistance: 100 k Ω min.

OUTPUT SPECIFICATIONS

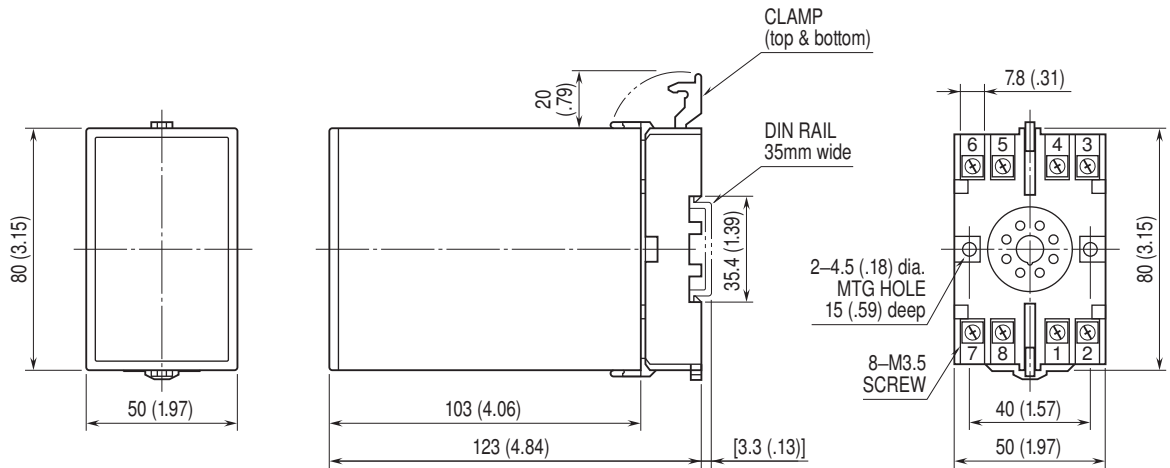
■ **DC Current:** 0 - 20 mA DC
Minimum span: 1 mA
Offset: Max. 1.5 times span
Load resistance: Output drive 15 V max.
■ **DC Voltage:** -10 - +12 V DC
Minimum span: 5 mV
Offset: Max. 1.5 times span
Load resistance: Output drive 10 mA max.; 5 mA for negative voltage output; at ≥ 0.5 V

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 $^{\circ}\text{C}$ (23 to 131 $^{\circ}\text{F}$)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail

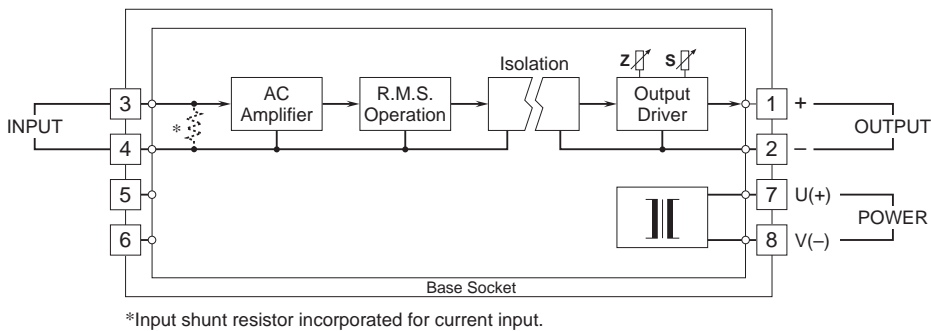


DIMENSIONS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.