

Plug-in Signal Conditioners K-UNIT

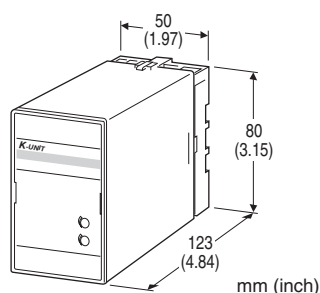
AC TRANSMITTER

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 of [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 k Ω min.)
A2: 0 – 500 mV AC (Input resistance 100 k Ω min.)
A3: 0 – 1 V AC (Input resistance 100 k Ω min.)
A4: 0 – 5 V AC (Input resistance 100 k Ω min.)
A5: 0 – 10 V AC (Input resistance 100 k Ω min.)
A6: 0 – 120 V AC (Input resistance 100 k Ω min.)
A7: 0 – 150 V AC (Input resistance 100 k Ω 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 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 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

blank: none

/Q: Options 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: ± 0.4 %
Temp. coefficient: ± 0.05 %/°C (± 0.03 %/°F)
Response time: ≤ 0.7 sec. (0 – 90 %)
Ripple: 0.5 %p-p max.
Line voltage effect: ± 0.1 % over voltage range
Insulation resistance: ≥ 100 M Ω 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.

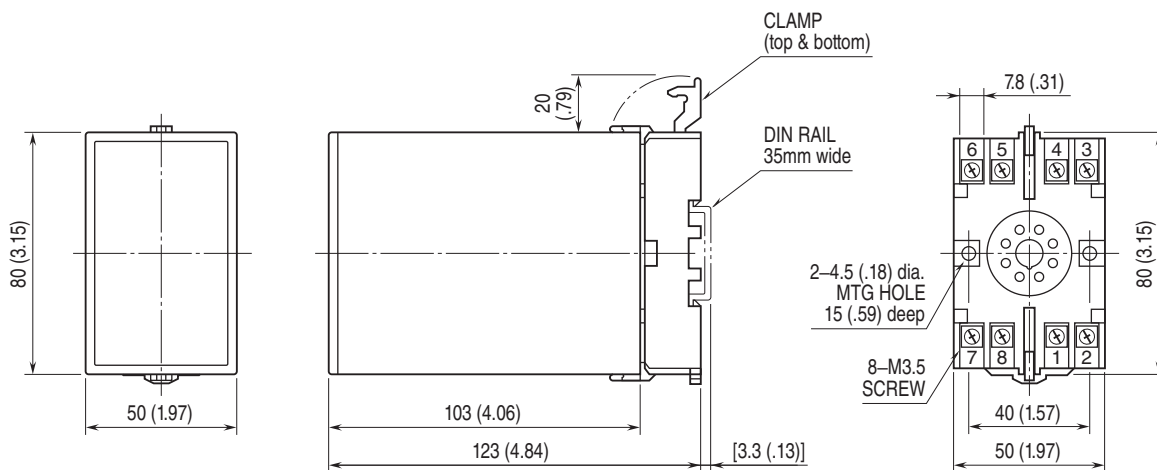
OUTPUT SPECIFICATIONS

■ 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

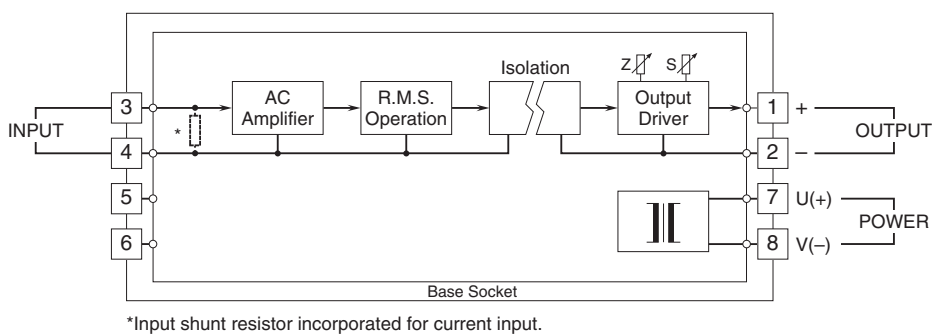
Power input
 • **AC:** Operational voltage range: rating ± 10 %, 50/60 ± 2 Hz, approx. 2 VA
 • **DC:** Operational voltage range: rating ± 10 %, ripple 10 %p-p max., approx. 2 W (80 mA at 24 V)
Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: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

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.