

## Plug-in Signal Conditioners K-UNIT

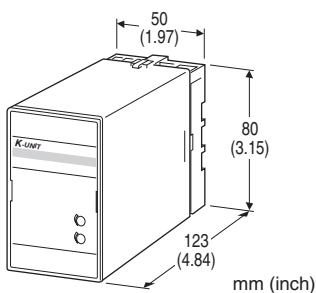
### AC TRANSMITTER

#### 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 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

**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:**  $\pm 0.4$  %  
**Temp. coefficient:**  $\pm 0.05$  %/°C ( $\pm 0.03$  %/°F)  
**Response time:**  $\leq 0.7$  sec. (0 - 90 %)  
**Ripple:** 0.5 %p-p max.  
**Line voltage effect:**  $\pm 0.1$  % over voltage range  
**Insulation resistance:**  $\geq 100$  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 $\Omega$   
 Span  $\leq 2$  mA: 500  $\Omega$   
 Span  $\leq 5$  mA: 200  $\Omega$   
 Span  $\leq 10$  mA: 100  $\Omega$   
 Span  $\leq 20$  mA: 50  $\Omega$   
 Span  $\leq 50$  mA: 20  $\Omega$   
 Span  $\leq 100$  mA: 10  $\Omega$   
 Span  $\leq 500$  mA: 1  $\Omega$   
 Span  $\leq 1$  A: 0.5  $\Omega$   
**■ AC Voltage:** 0 - 250 V AC  
**Minimum span:** 50 mV  
**Input resistance:** 100 k $\Omega$  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  $\geq 0.5$  V

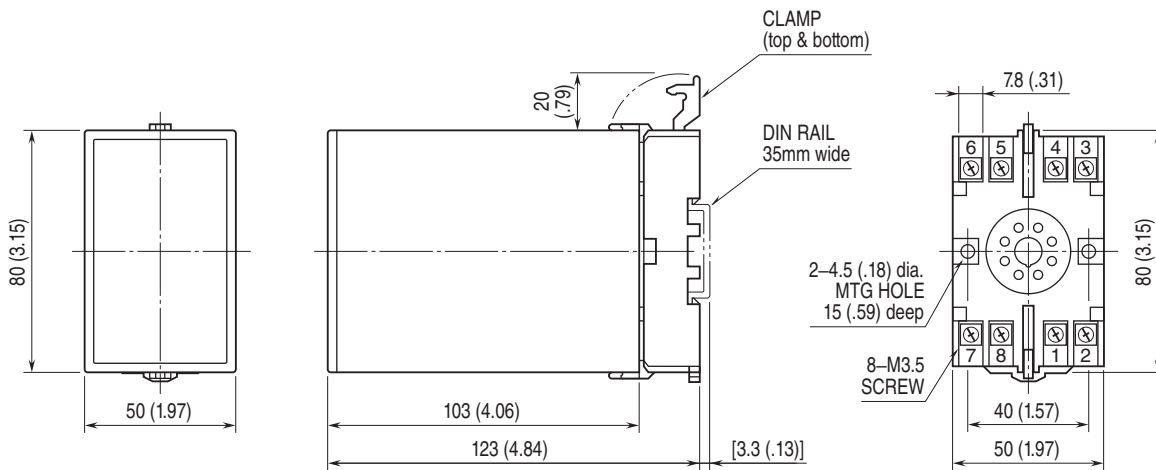
**INSTALLATION**

**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)

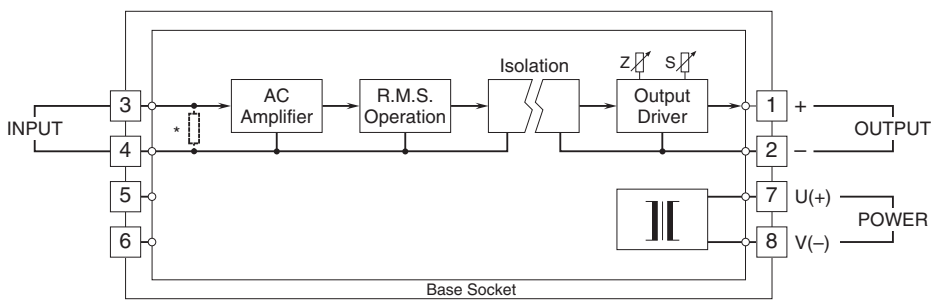
**Operating temperature:** -5 to +55°C (23 to 131°F)  
**Operating humidity:** 30 to 90 %RH (non-condensing)  
**Mounting:** Surface or DIN rail

## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



\*Input shunt resistor incorporated for current input.



Specifications are subject to change without notice.