

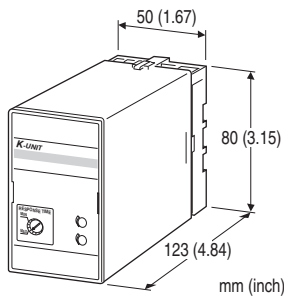
## Plug-in Signal Conditioners K-UNIT

### RAMP BUFFER

(non-isolated)

#### Functions & Features

- Limiting the rate of change of the output once the rate of the input exceeds the preset value
- Rate-of-change adjustable up to 40 seconds



### MODEL: KCR-[1][2]-[3][4]

#### ORDERING INFORMATION

- Code number: KCR-[1][2]-[3][4]
- Specify a code from below for each of [1] through [4].  
(e.g. KCR-6A-B/Q)
- Special input and output ranges (For codes Z & O)
  - Specify the specification for option code /Q  
(e.g. /C01/S01)

#### [1] INPUT

Current

- A:** 4 - 20 mA DC (Input resistance 250  $\Omega$ )
- A1:** 4 - 20 mA DC (Input resistance 50  $\Omega$ )
- B:** 2 - 10 mA DC (Input resistance 500  $\Omega$ )
- C:** 1 - 5 mA DC (Input resistance 1000  $\Omega$ )
- D:** 0 - 20 mA DC (Input resistance 50  $\Omega$ )
- E:** 0 - 16 mA DC (Input resistance 62.5  $\Omega$ )
- F:** 0 - 10 mA DC (Input resistance 100  $\Omega$ )
- G:** 0 - 1 mA DC (Input resistance 1000  $\Omega$ )
- H:** 10 - 50 mA DC (Input resistance 100  $\Omega$ )
- J:** 0 - 10  $\mu$ A DC (Input resistance 1000  $\Omega$ )
- K:** 0 - 100  $\mu$ A DC (Input resistance 1000  $\Omega$ )
- GW:** -1 - +1 mA DC (Input resistance 1000  $\Omega$ )
- FW:** -10 - +10 mA DC (Input resistance 100  $\Omega$ )
- Z:** Specify current (See INPUT SPECIFICATIONS)

Voltage

- 1:** 0 - 10 mV DC (Input resistance 10 k $\Omega$  min.)
- 15:** 0 - 50 mV DC (Input resistance 10 k $\Omega$  min.)
- 16:** 0 - 60 mV DC (Input resistance 10 k $\Omega$  min.)
- 2:** 0 - 100 mV DC (Input resistance 100 k $\Omega$  min.)

- 3:** 0 - 1 V DC (Input resistance 1 M $\Omega$  min.)
- 4:** 0 - 10 V DC (Input resistance 1 M $\Omega$  min.)
- 5:** 0 - 5 V DC (Input resistance 1 M $\Omega$  min.)
- 6:** 1 - 5 V DC (Input resistance 1 M $\Omega$  min.)
- 4W:** -10 - +10 V DC (Input resistance 1 M $\Omega$  min.)
- 5W:** -5 - +5 V DC (Input resistance 1 M $\Omega$  min.)
- 0:** Specify voltage (See INPUT SPECIFICATIONS)

#### [2] OUTPUT

Current

- A:** 4 - 20 mA DC (Load resistance 750  $\Omega$  max.)
- B:** 2 - 10 mA DC (Load resistance 1500  $\Omega$  max.)
- C:** 1 - 5 mA DC (Load resistance 3000  $\Omega$  max.)
- D:** 0 - 20 mA DC (Load resistance 750  $\Omega$  max.)
- E:** 0 - 16 mA DC (Load resistance 900  $\Omega$  max.)
- F:** 0 - 10 mA DC (Load resistance 1500  $\Omega$  max.)
- G:** 0 - 1 mA DC (Load resistance 15 k $\Omega$  max.)
- Z:** Specify current (See OUTPUT SPECIFICATIONS)

Voltage

- 1:** 0 - 10 mV DC (Load resistance 10 k $\Omega$  min.)
- 2:** 0 - 100 mV DC (Load resistance 100 k $\Omega$  min.)
- 3:** 0 - 1 V DC (Load resistance 100  $\Omega$  min.)
- 4:** 0 - 10 V DC (Load resistance 1000  $\Omega$  min.)
- 5:** 0 - 5 V DC (Load resistance 500  $\Omega$  min.)
- 6:** 1 - 5 V DC (Load resistance 500  $\Omega$  min.)
- 4W:** -10 - +10 V DC (Load resistance 2000  $\Omega$  min.)
- 5W:** -5 - +5 V DC (Load resistance 1000  $\Omega$  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 our web site.)

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

TERMINAL SCREW MATERIAL

/S01: Stainless steel

50/60 ±2 Hz, approx. 2 VA

•DC: Operational voltage range: rating ±10 %, ripple 10 %p-p max., approx. 2 W (90 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)

## 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 or output to power

**Overrange output:** Approx. -10 to +120 % at 1 - 5 V

**Rate-of-change adjustment:** 270°-turn screwdriver adjustment (front)

**Rate-of-change adjustment range:** Approx. 0.5 to 40 sec. (0 - 100 %; factory set to MIN.)

**Zero adjustment:** -5 to +5 % (front)

**Span adjustment:** 95 to 105 % (front)

## PERFORMANCE in percentage of span

**Accuracy:** ±0.2 %

**Temp. coefficient:** ±0.02 %/°C (±0.01 %/°F)

**Line voltage effect:** ±0.1 % over voltage range

**Insulation resistance:** ≥ 100 MΩ with 500 V DC

**Dielectric strength:** 2000 V AC @1 minute (input or output to power to ground)

## INPUT SPECIFICATIONS

### ■ DC Current:

Shunt resistor attached to the input terminals (0.5 W)

Specify input resistance value for code Z.

### ■ DC Voltage: -300 - +300 V DC

**Minimum span:** 3 mV

**Offset:** Max. 1.5 times span

### Input resistance

Span 3 - 10 mV : ≥ 10 kΩ

Span 10 - 100 mV : ≥ 10 kΩ

Span 0.1 - 1 V : ≥ 100 kΩ

Span ≥ 1 V : ≥ 1 MΩ

## 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

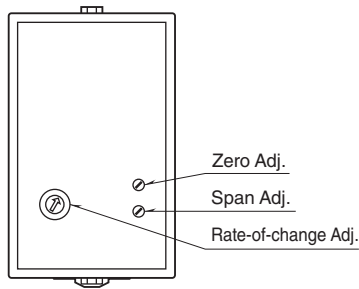
**Load resistance:** Output drive 10 mA max.; 5 mA for negative voltage output; at ≥ 0.5 V

## INSTALLATION

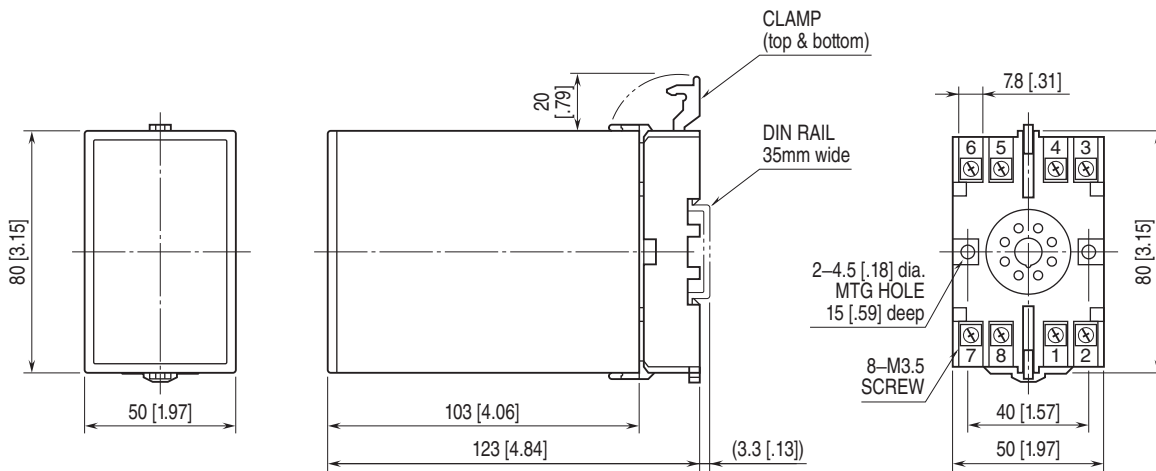
### Power input

• AC: Operational voltage range: rating ±10 %,

## EXTERNAL VIEW

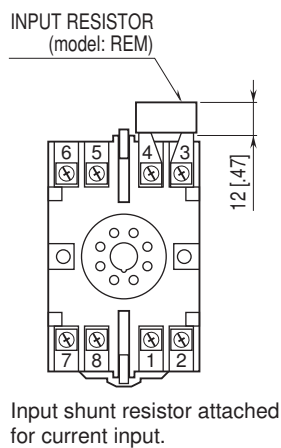


## EXTERNAL DIMENSIONS unit: mm [inch]

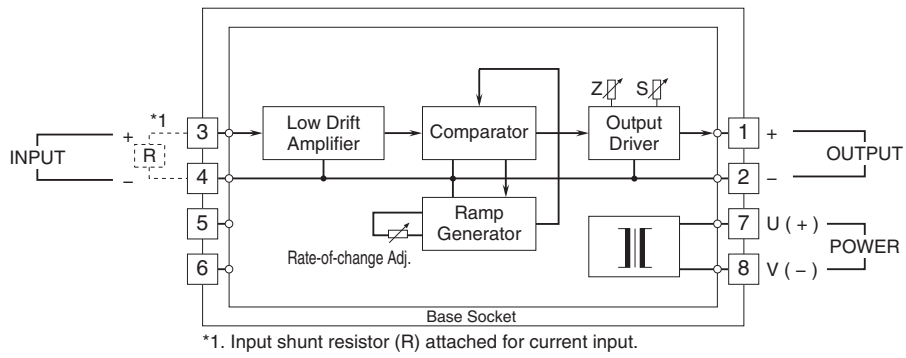


• When mounting, no extra space is needed between units.

## TERMINAL ASSIGNMENTS unit: mm [inch]



**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



Specifications are subject to change without notice.