

## Plug-in Signal Conditioners K-UNIT

### POTENTIOMETER TRANSMITTER

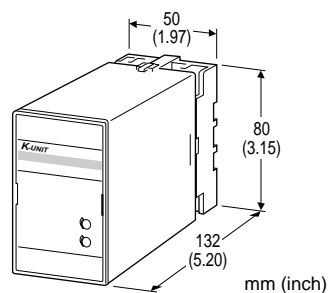
(two isolated outputs)

#### Functions & Features

- Providing two DC outputs proportional to a potentiometer or slidewire position input
- Constant voltage excitation allows the connection of pots with total resistance from 100 Ω - 10 kΩ without affecting accuracy
- 50 % zero/span adjustments with minimal interaction
- Isolation up to 2000 V AC
- Fast response type available
- High-density mounting

#### Typical Applications

- Tank levels
- Positions



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

### ORDERING INFORMATION

- Code number: KWMS-[1][2]-[3][4]

Specify a code from below for each [1] through [4].  
(e.g. KWMS-A6-B/K/Q)

- Special output range (For codes Z & 0)
- Specify the specification for option code /Q  
(e.g. /C01)

Note: When the user requires a current and a voltage output, specify the current to be the Output 1 which allows a greater load.

### INPUT POTENTIOMETER

Total resistance 100 Ω - 10 kΩ

#### [1] OUTPUT 1

##### Current

- A: 4 - 20 mA DC (Load resistance 600 Ω max.)
- B: 2 - 10 mA DC (Load resistance 1200 Ω max.)

- C: 1 - 5 mA DC (Load resistance 2400 Ω max.)
- D: 0 - 20 mA DC (Load resistance 600 Ω max.)
- E: 0 - 16 mA DC (Load resistance 750 Ω max.)
- F: 0 - 10 mA DC (Load resistance 1200 Ω max.)
- G: 0 - 1 mA DC (Load resistance 12 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 1000 Ω min.)
- 4: 0 - 10 V DC (Load resistance 10 kΩ 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 10 kΩ min.)
- 5W: -5 - +5 V DC (Load resistance 5000 Ω min.)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)

#### [2] OUTPUT 2

##### Current

- A: 4 - 20 mA DC (Load resistance 350 Ω max.)
- B: 2 - 10 mA DC (Load resistance 700 Ω max.)
- C: 1 - 5 mA DC (Load resistance 1400 Ω max.)
- D: 0 - 20 mA DC (Load resistance 350 Ω max.)
- E: 0 - 16 mA DC (Load resistance 430 Ω max.)
- F: 0 - 10 mA DC (Load resistance 700 Ω max.)
- G: 0 - 1 mA DC (Load resistance 7000 Ω max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

##### Voltage

Same range availability as Output 1

#### [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

##### RESPONSE TIME (0 - 90 %)

- blank: Standard ( $\leq 0.5$  sec.)
- /K: Fast Response (Approx. 25 msec.)

##### OTHER OPTIONS

- blank: none
- /Q: Option other than the above (specify the specification)



### SPECIFICATIONS OF OPTION: Q

**COATING (For the detail, refer to M-System's web site.)**

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

### GENERAL SPECIFICATIONS

**Construction:** Plug-in

**Connection:** M3.5 screw terminals

**Housing material:** Flame-resistant resin (black)

**Isolation:** Input to output 1 to output 2 to power

**Zero adjustment:** 0 - 50 % of total resistance (front)

**Span adjustment:** 50 - 100 % of total resistance (front)

### INPUT SPECIFICATIONS

**Minimum span:** 50 % of total resistance

**Excitation:** 0.5 V DC

### OUTPUT SPECIFICATIONS

• **DC Current:** 0 - 20 mA DC

**Minimum span:** 1 mA

**Offset:** Max. 1.5 times span

**Load resistance:** Output drive 12 V max. for Output 1;

7 V max. for Output 2

• **DC Voltage:** -10 - +12 V DC

**Minimum span:** 5 mV

**Offset:** Max. 1.5 times span

**Load resistance:** Output drive 1 mA max. at  $\geq 0.5$  V

### INSTALLATION

**Power input**

• **AC:** Operational voltage range: rating  $\pm 10$  %,

50/60  $\pm 2$  Hz, approx. 3 VA

• **DC:** Operational voltage range: rating  $\pm 10$  %

ripple 10 %p-p max., approx. 3 W (125 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 lbs)

### PERFORMANCE in percentage of span

**Accuracy:**  $\pm 0.1$  %

**Temp. coefficient:**  $\pm 0.02$  %/°C ( $\pm 0.01$  %/°F)

**Line voltage effect:**  $\pm 0.1$  % over voltage range

**Insulation resistance:**  $\geq 100$  M $\Omega$  with 500 V DC

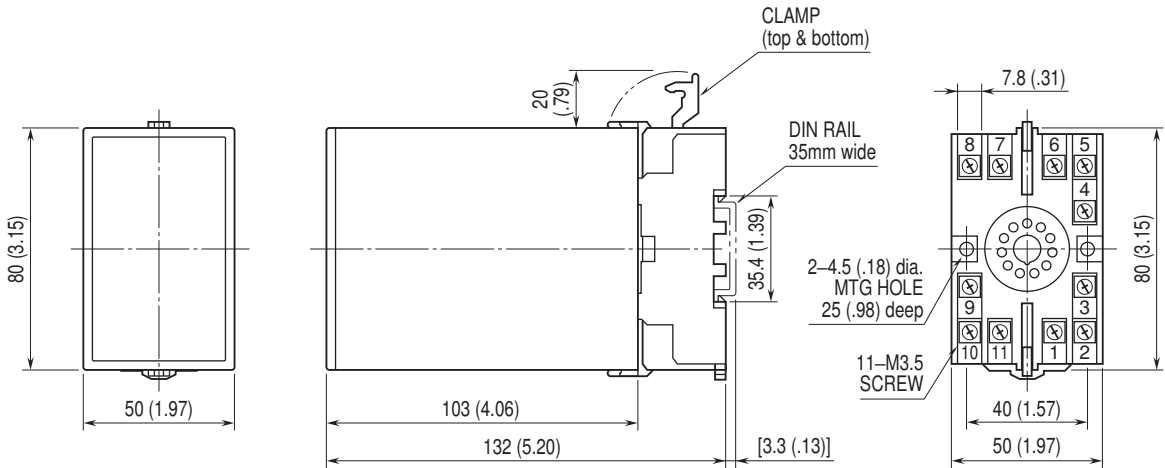
**Dielectric strength:** 2000 V AC @1 minute

(input to output to power to ground)

1000 V AC @ 1 minute (output 1 to output 2)

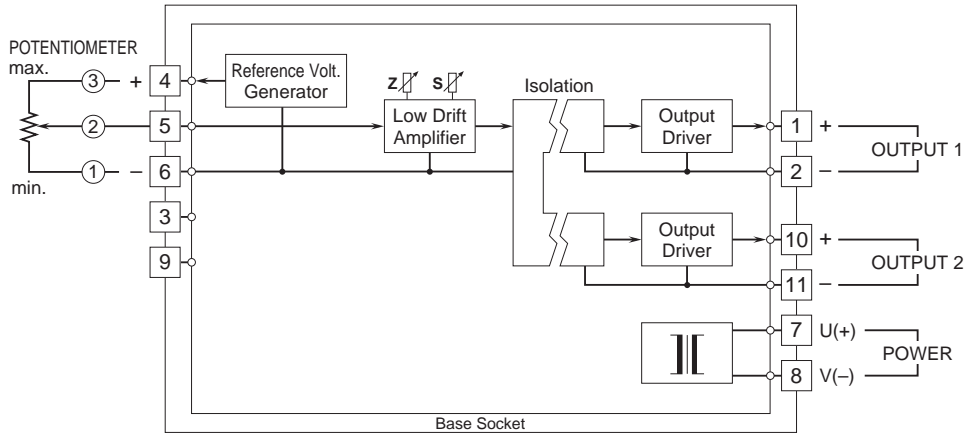


**DIMENSIONS unit: mm (inch)**



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

**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



Specifications are subject to change without notice.

