

Plug-in Signal Conditioners K-UNIT

LOW FREQUENCY TRANSMITTER

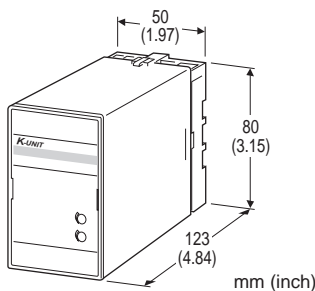
(50 Hz minimum, for Mitsubishi inverter)

Functions & Features

- Converting the pulse output from FM terminal of Mitsubishi inverter into standard process signal
- Isolation up to 2000 V AC
- High-density mounting

Typical Applications

- Positive displacement flowmeters, turbine flowmeters and vortex flowmeters
- Proximity switches



MODEL: KSP-2[1]-[2]-ME

ORDERING INFORMATION

- Code number: KSP-2[1]-[2]-ME
- Specify a code from below for each [1] and [2].
(e.g. KSP-2A-B-ME)
- Frequency range (e.g. 0 - 1440 Hz)

INPUT

2: Voltage pulse

[1] 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)

[2] 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

GENERAL SPECIFICATIONS

Construction: Plug-in

Connection: M3.5 screw terminals

Housing material: Flame-resistant resin (black)

Isolation: Input to output to power

Overrange output: 0 to 120 % at 1 - 5 V

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

Span adjustment: 95 to 105 % (front)

Input pulse sensing: DC coupled standard

Input filter: CR filter incorporated

(C = 3.3 nF, R = 10 kΩ; parallel connection)

Low-end cutout: 2 to 5 %

Applicable inverter:

Mitsubishi electric FREQROL series: A024, A200, A500, A700, A800, D700, E500, E700, F400, F500, F700, F700PJ, F800, S500, U100, B, B3

Mitsubishi electric MELTRAC series: A100, A200, V200

(Note) Do NOT connect other devices except the transmitter to the inverter's FM terminal. Do NOT bundle the FM and motor wirings.

INPUT SPECIFICATIONS

Frequency range: 0 - 50 Hz through 0 - 1440 Hz

Pulse width (time) requirement: ≥ 280 μsec. (Hi and Lo)

■ Voltage Pulse

Waveform: Square

Input amplitude: V_H 4 ± 0.7 - 50 V, V_L 1 ± 0.7 V

Input impedance: ≥ 7 kΩ (for 9 V DC pulse)



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

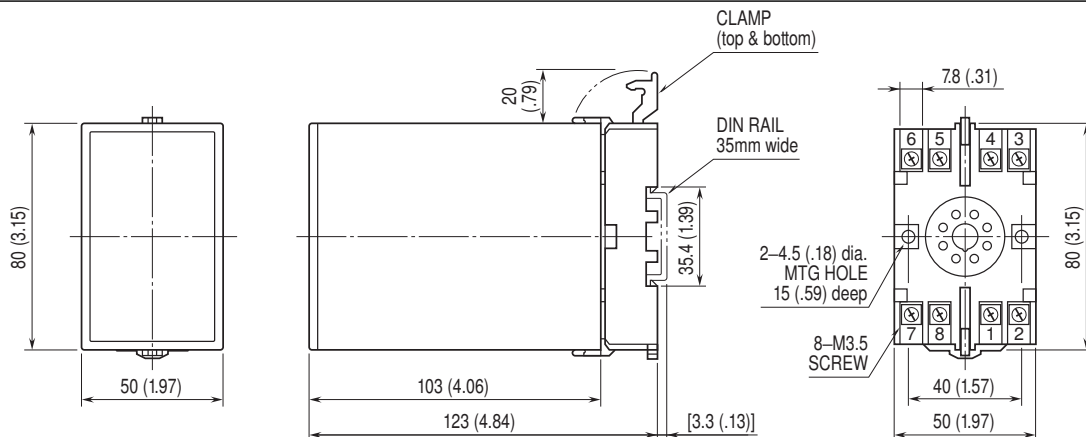
Power input

- **AC:** Operational voltage range: rating ± 10 %, 50/60 ± 2 Hz, approx. 2.5 VA
- **DC:** Operational voltage range: rating ± 10 %, ripple 10% p-p max.; approx. 2.5 W (100 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:** 350 g (0.77 lb)

PERFORMANCE in percentage of span

- Accuracy:** ± 0.3 % (output 10 - 100 %)
- Temp. coefficient:** ± 0.02 %/°C (± 0.01 %/°F)
- Response time:** (0 - 90 %)
- Approx. 2 sec. for 0 - 50 Hz
- Approx. 1 sec. for 0 - 100 Hz
- Approx. 0.5 sec. for 0 - 500 Hz
- Approx. 0.5 sec. for 0 - 10 kHz
- Ripple:** 0.2 %p-p max. with input ≥ 10 %
- 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)

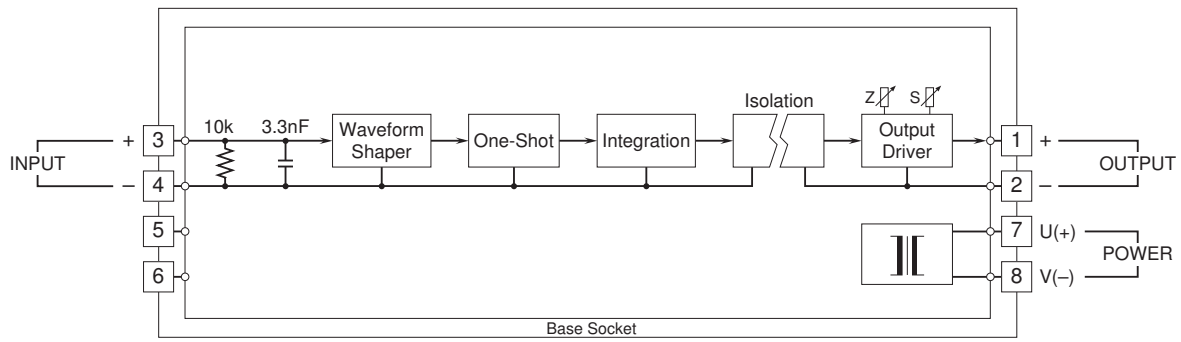
DIMENSIONS unit: mm (inch)



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



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



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Do NOT bundle the FM and motor wirings.



Specifications are subject to change without notice.

