Plug-in Signal Conditioners K-UNIT

LOW FREQUENCY TRANSMITTER

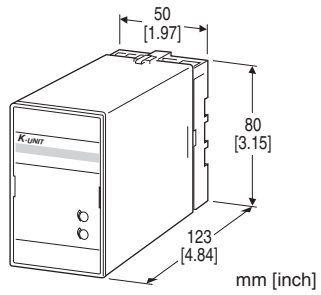
(50 Hz minimum, for Mitsubishi inverter)

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 of [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)

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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

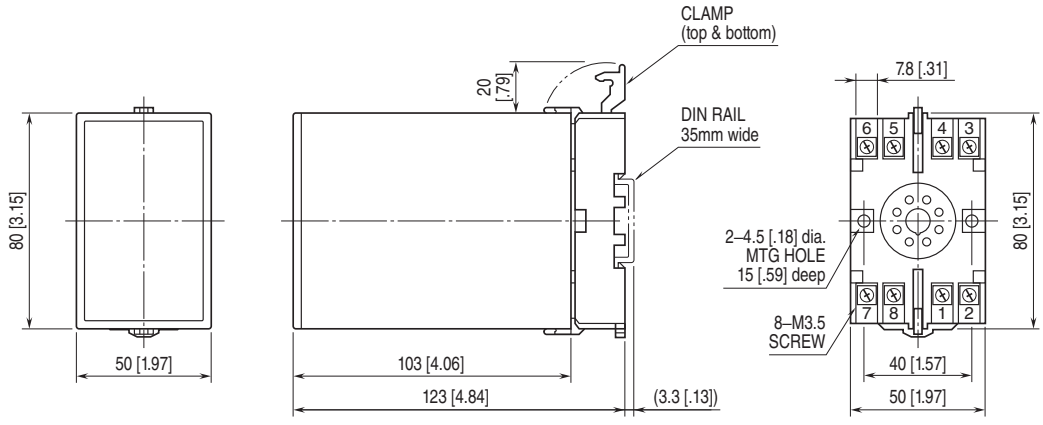
INSTALLATION

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 – 1440 Hz
Ripple: 0.2 %p-p max. with input ≥ 10 %
Line voltage effect: ±0.1 % over voltage range
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 2000 V AC @1 minute (input to output to power to ground)

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

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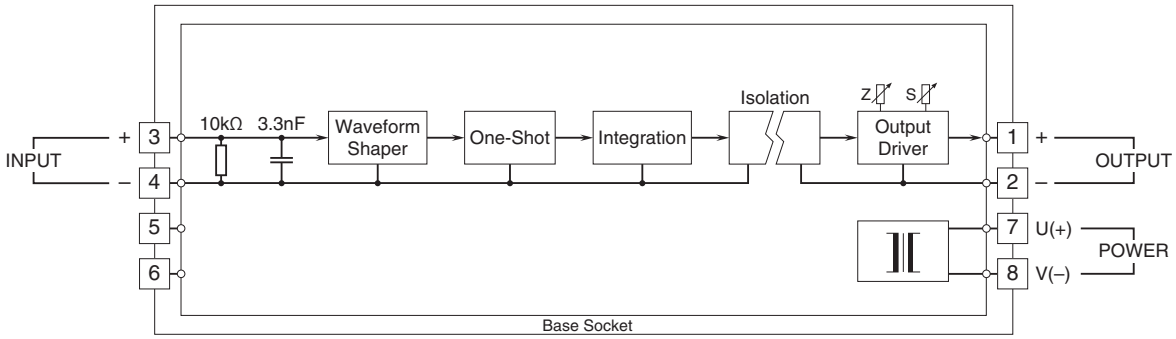
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



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Do NOT bundle the FM and motor wirings.

⚠ Specifications are subject to change without notice.

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