

Plug-in Signal Conditioners K-UNIT

PHASE ANGLE TRANSDUCER

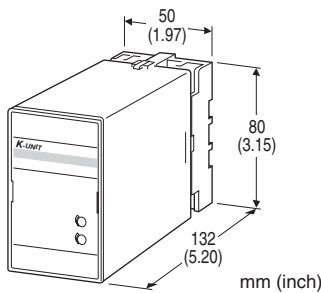
(for unbalanced load; self-powered)

Functions & Features

- Provides a DC output signal in proportion to phase angle
- Usable with unbalanced load
- DC output containing little ripple is ideal for computer input
- Isolation up to 2000 V AC
- High-density mounting
- No auxiliary power source required

Typical Applications

- Centralized monitoring and control of power management system in a manufacturing facility or building
- Measuring phase angle for a motor



MODEL: KEPAUN-1[1][2][3][4][5]

ORDERING INFORMATION

• Code number: KEPAUN-1[1][2][3][4][5]

Specify a code from below for each of [1] through [5].

- (e.g. KEPAUN-111PA/Q)
- Special output range (For codes Z & 0)
- Specify the specification for option code /Q (e.g. /C01/S01)

CONFIGURATION

1: 3-phase / 3-wire

[1] INPUT (unbalanced load)

- 1: 110 V / 5 A AC
- 2: 110 V / 1 A AC
- 3: 220 V / 1 A AC
- 4: 220 V / 5 A AC

[2] FREQUENCY

- 1: 50 Hz
- 2: 60 Hz

[3] OUTPUT SIGNAL POLARITY

P: Negative in lag, positive in lead

M: Negative in lead, positive in lag

[4] OUTPUT

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.)

GW: -1 - +1 mA DC (Load resistance 10 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.)

1W: -10 - +10 mV DC (Load resistance 10 kΩ min.)

2W: -100 - +100 mV DC (Load resistance 100 kΩ min.)

3W: -1 - +1 V DC (Load resistance 1000 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)

[5] OPTIONS

blank: none

/Q: With options (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

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: Voltage input to current input to output

Computation: Phase angle detection

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

Zero adjustment: -5 to +5 % (front)
 Span adjustment: 95 to 105 % (front)

INPUT SPECIFICATIONS

■ INPUT

Frequency: 50 or 60 Hz

• Voltage Input

Input burden: 2.5 VA

Operational range: 85 - 110 % of rating

Overload capacity: 150 % of rating for 10 sec., 110 % continuous

• Current Input

Input burden: 0.1 VA (input 1 A)

0.5 VA (input 5 A)

Operational range: 10 - 120 % of rating

Overload capacity: 1000 % of rating for 3 sec., 200 % for 10 sec., 120 % continuous

■ Input range:

Lag 60° - 0 - lead 60°

Lead 60° - 0 - lag 60°

OUTPUT SPECIFICATIONS

■ DC Current: 0 - 20 mA DC and ± 1 mA

Minimum span: 1 mA

Offset: Max. 1.5 times span

Load resistance: Output drive 12 V max.

■ DC Voltage: -10 - +12 V DC

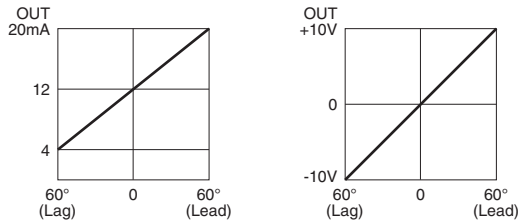
Minimum span: 5 mV

Offset: Max. 1.5 times span

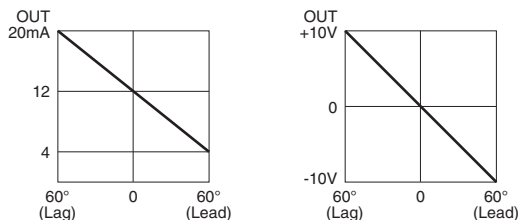
Load resistance: Output drive 1 mA max. at ≥ 0.5 V

■ OPERATION DIAGRAM (example)

• Negative in lag, positive in lead



• Negative in lead, positive in lag



Note: When there is 5% or less of the rated input current, the transducer output equals approximately to '0' (phase angle).

INSTALLATION

Operating temperature: -10 to +55°C (14 to 131°F)

Operating humidity: 30 to 85 %RH (non-condensing)

Mounting: Surface or DIN rail

Weight: 400 g (0.88 lb)

PERFORMANCE in percentage of span

Accuracy: ± 2 % (at 23°C ± 10 °C or 73.4°F ± 18 °F, at rated frequency ± 5 %)

Response time: ≤ 2 sec. (0 - 100 % ± 1 %)

Ripple: 0.5 %p-p max.

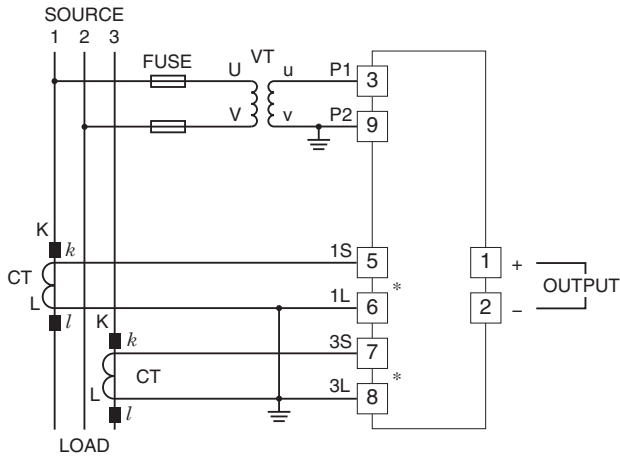
Insulation resistance: ≥ 100 M Ω with 500 V DC

Dielectric strength: 2000 V AC @ 1 minute (voltage input to current input to output to ground)

Impulse withstand voltage: 1.2 / 50 μ sec., ± 5 kV (input to output or ground)

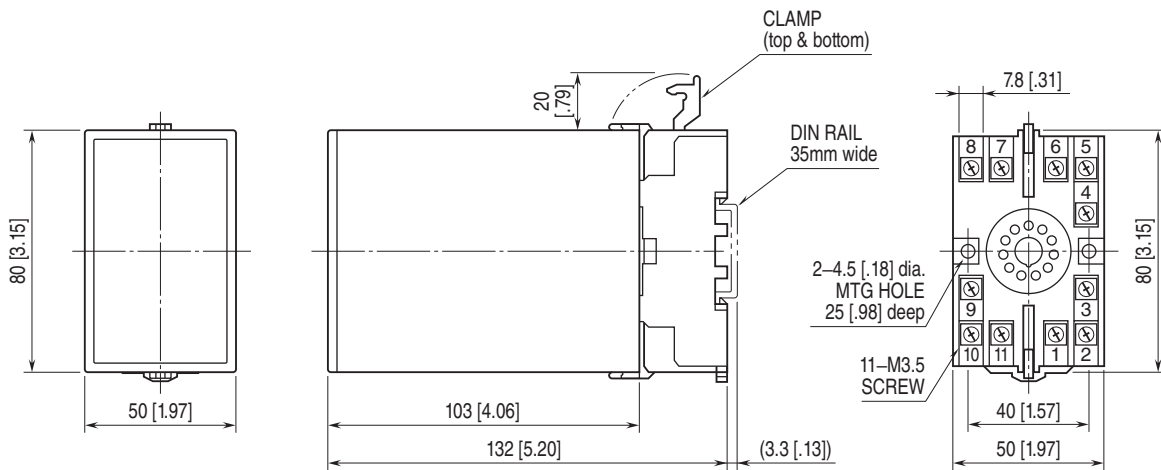
CONNECTION DIAGRAM

■ 3-PHASE/3-WIRE



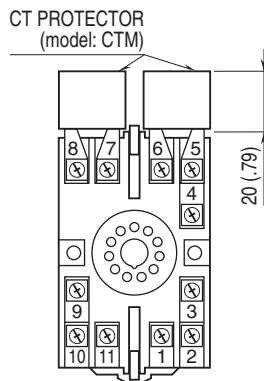
*CT Protector (model: CTM) attached to these terminals.

EXTERNAL DIMENSIONS unit: mm [inch]



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

TERMINAL ASSIGNMENTS unit: mm [inch]





Specifications are subject to change without notice.