

Plug-in Signal Conditioners K-UNIT

WATT TRANSDUCER

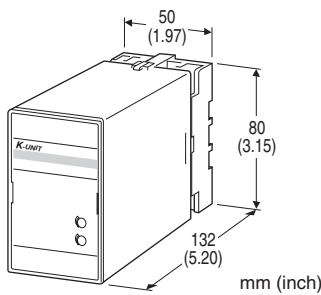
(self-powered)

Functions & Features

- Providing a DC output signal in proportion to AC active power
- Measuring bidirectional power flow
- DC output containing little ripple is ideal for computer input
- "Time division multiplication" method accepts distorted waveforms
- 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
- SCR - Silicon Controlled Rectifier



MODEL: KEWTN-[1][2][3][4]

ORDERING INFORMATION

- Code number: KEWTN-[1][2][3][4]
- Specify a code from below for each of [1] through [4]. (e.g. KEWTN-11A/Q)
- Calibration range (e.g. -750 - +750 W)
- VT ratio, CT ratio (e.g. VT 3300 / 110 V, CT 250 / 5 A)
- Special DC output range (For codes Z & 0)
- Specify the specification for option code /Q (e.g. /C01/S01)

[1] CONFIGURATION

- 1: 3-phase / 3-wire
- 2: Single-phase / 2-wire
- 3: Single-phase / 3-wire

[2] 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
- A: 100 V / 200 V / 1 A AC (single-phase / 3-wire)
B: 100 V / 200 V / 5 A AC (single-phase / 3-wire)

[3] 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.)
J: 0 - 5 mA DC (Load resistance 2400 Ω 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)

[4] 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: Time division multiplication

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

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

Span adjustment: 95 to 105 % (front)

INPUT SPECIFICATIONS

Frequency: 50 or 60 Hz

• Voltage Input

Operational range: 85 - 110 % of rating

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

• Current Input

Operational range: 0 - 120 % of rating

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

■ How to determine Wattage Range

Calibration Range [W] = Measuring Wattage ÷ ((VT Ratio) × (CT Ratio))

Check that the required calibration range is within the available range in the table. Specify this range when ordering.

[Example]

3-phase / 3-wire, measuring wattage 750 kW,

VT 3300/110 V, CT 250/5 A

$750 \times 10^3 [W] \div ((3300 \div 110) \times (250 \div 5)) = 500 [W]$

■ INPUT RANGE

• 3-phase / 3-wire

INPUT	STD.RANGE	AVAILABLE RANGE	BURDEN (VA)	
			VOLT.	CURR.
110V/1A	±200 W	±100 - ±240 W	P ₁ : 2.5	0.1/ph
110V/5A	±1000 W	±500 - ±1200 W	P ₃ : 0.2	0.5/ph
220V/1A	±400 W	±200 - ±480 W	P ₁ : 2.5	0.1/ph
220V/5A	±2000 W	±1000 - ±2400 W	P ₃ : 0.4	0.5/ph

• Single-phase / 2-wire

INPUT	STD.RANGE	AVAILABLE RANGE	BURDEN (VA)	
			VOLT.	CURR.
110V/1A	±100 W	±50 - ±120 W	2.5	0.1
110V/5A	±500 W	±250 - ±600 W		0.5
220V/1A	±200 W	±100 - ±240 W	2.5	0.1
220V/5A	±1000 W	±500 - ±1200 W		0.5

• Single-phase / 3-wire

INPUT	STD.RANGE	AVAILABLE RANGE	BURDEN (VA)	
			VOLT.	CURR.
200V/1A	±200 W	±100 - ±240 W	P ₁ : 2.5	0.1/ph
200V/5A	±1000 W	±500 - ±1200 W	P ₂ : 0.2	0.5/ph

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.

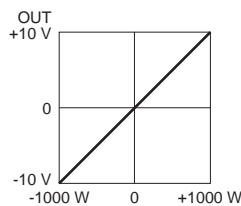
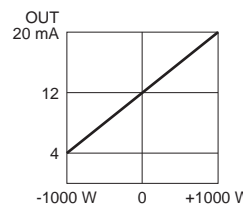
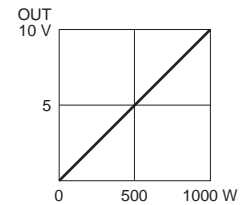
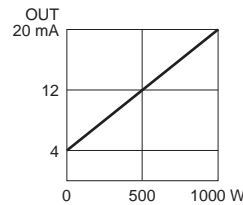
■ **DC Voltage:** -10 - +12 V DC

Minimum span: 5 mV

Offset: Max. 1.5 times span

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

■ OPERATION DIAGRAM (example)



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: 450 g (0.99 lb)

PERFORMANCE in percentage of span

Accuracy: ±0.5 % (at 23°C ±10°C or 73.4°F ±18°F, 45 - 65 Hz)

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

Ripple: 0.5 %p-p max.

Insulation resistance: ≥ 100 MΩ with 500 V DC

Dielectric strength: 2000 V AC @ 1 minute

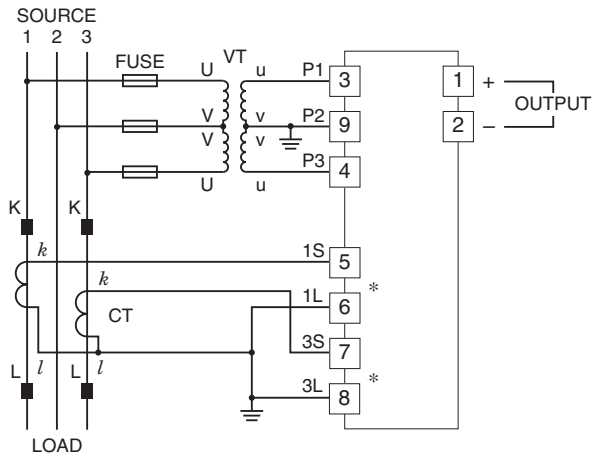
(voltage input to current input to output to ground)

Impulse withstand voltage: 1.2 / 50 μsec., ±5 kV

(input to output or ground)

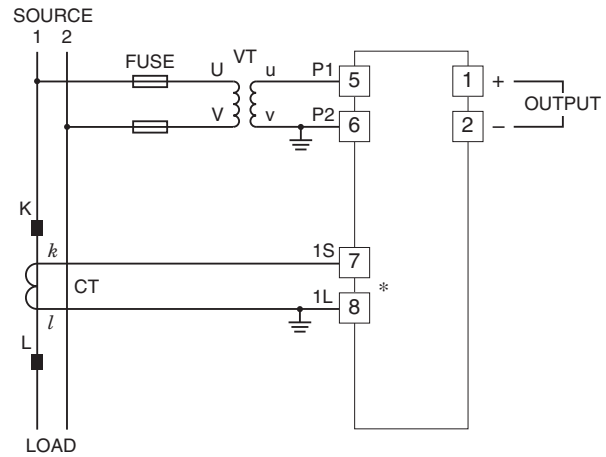
CONNECTION DIAGRAM

3-PHASE/3-WIRE



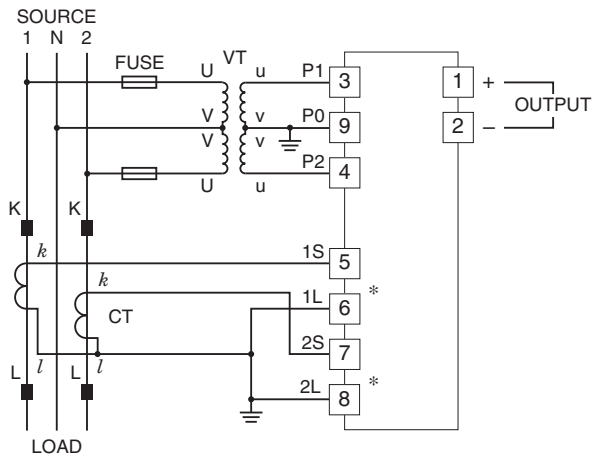
*CT Protector (model: CTM) attached to these terminals.

SINGLE-PHASE/2-WIRE



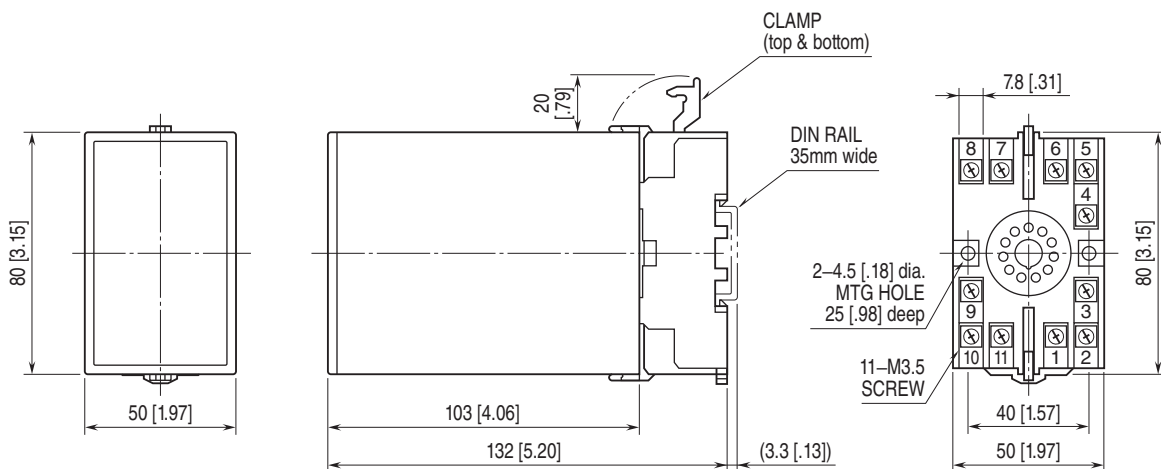
*CT Protector (model: CTM) attached to these terminals.

SINGLE-PHASE/3-WIRE



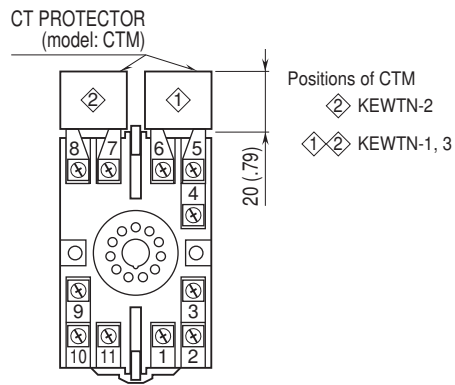
*CT Protector (model: CTM) attached to these terminals.

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.