

**Power Transducer Series LT-UNIT**

**POWER FACTOR TRANSDUCER**

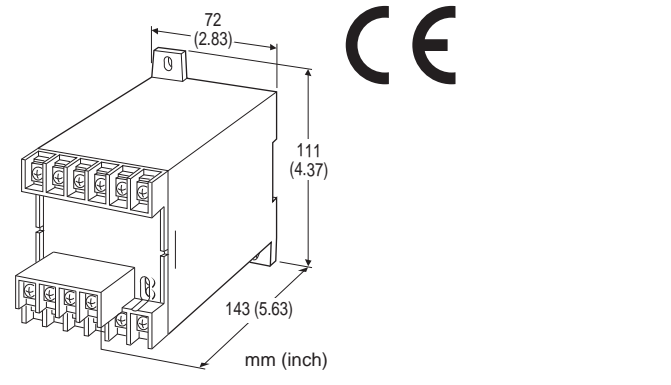
(self-powered)

**Functions & Features**

- Providing a DC output signal in proportion to power factor
- DC output containing little ripple is ideal for computer input
- Isolation up to 2000 V AC
- High-density mounting
- Conforms to IEC 60688
- No auxiliary power supply required

**Typical Applications**

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



**MODEL: LTPFN-[1][2][3][4][5][6]**

**ORDERING INFORMATION**

- Code number: LTPFN-[1][2][3][4][5][6]
- Specify a code from below for each [1] through [6]. (e.g. LTPFN-115PA/T)
- Special output range (For codes Z & 0)

**[1] CONFIGURATION**

- 1: 3-phase / 3-wire
- 4: 3-phase / 4-wire

**[2] VT INPUT (balanced load)**

- For 3-phase / 4-wire, phase voltages (e.g. 110 V /  $\sqrt{3}$  ) are used.
- 1: 110 V AC
  - 2: 220 V AC
  - 4: 220 V / 380 V AC (3-phase/4-wire only)

**[3] CT INPUT (balanced load)**

- Current**
- 1: 1 A AC
  - 2: 2 A AC
  - 5: 5 A AC

**[4] OUTPUT SIGNAL POLARITY**

- P: Negative in lag, positive in lead  
M: Negative in lead, positive in lag

**[5] OUTPUT**

- Current**
- A: 4 - 20 mA DC (Load resistance 500  $\Omega$  max.)
  - FW: -10 - +10 mA DC (Load resistance 1000  $\Omega$  max.)
  - GW: -1 - +1 mA DC (Load resistance 10 k $\Omega$  max.)
  - JW: -5 - +5 mA DC (Load resistance 2000  $\Omega$  max.)
  - Z: Specify current (See OUTPUT SPECIFICATIONS)
- Voltage**
- 6: 1 - 5 V DC (Load resistance 5000  $\Omega$  min.)
  - 1W: -10 - +10 mV DC (Load resistance 10 k $\Omega$  min.)
  - 2W: -100 - +100 mV DC (Load resistance 100 k $\Omega$  min.)
  - 3W: -1 - +1 V DC (Load resistance 1000  $\Omega$  min.)
  - 4W: -10 - +10 V DC (Load resistance 10 k $\Omega$  min.)
  - 5W: -5 - +5 V DC (Load resistance 5000  $\Omega$  min.)
  - 0: Specify voltage (See OUTPUT SPECIFICATIONS)

**[6] OPTIONS**

- Terminal Cover**
- blank: Without
  - /T: With

**GENERAL SPECIFICATIONS**

- Connection:** M4 screw terminals (torque 1.2 N·m)
- Screw terminal:** Chrome-plated 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**

- A device which employs different measuring methods may show different outputs from that of M-System's with distorted input waveforms.
- Frequency:** 50 or 60 Hz
  - **VOLTAGE INPUT**
  - Operational range:** 85 - 110% of rating
  - Overload capacity:** 150 % of rating for 10 sec., 110 % continuous



Input burden: 2.5 VA

## ■ CURRENT INPUT

Operational range: 10 - 120 % of rating

Overload capacity: 4000 % of rating for 1 sec., 2000 % for 4 sec., 120 % continuous

Input burden: 0.1 VA (input 1 A)

0.2 VA (input 2 A)

0.5 VA (input 5 A)

## ■ Input range:

Lag 0.5 - 1 - lead 0.5

Lead 0.5 - 1 - lag 0.5

## OUTPUT SPECIFICATIONS

■ DC Current: -10 - +20 mA DC

Span: Min. 1 mA, max. 20 mA

Offset: Max. 1.5 times span

Load resistance: Output drive 10 V max.

■ DC Voltage: -10 - +12 V DC

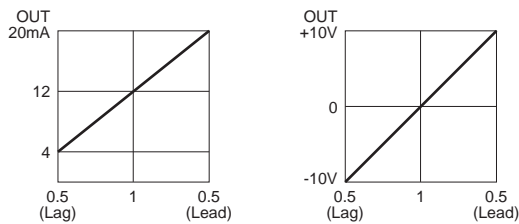
Minimum span: 5 mV

Offset: Max. 1.5 times span

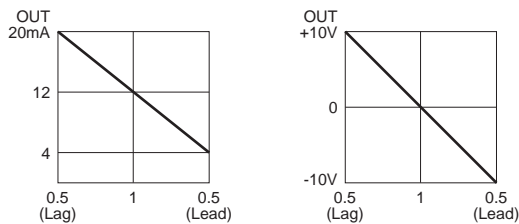
Load resistance: Output drive 1 mA max. at  $\geq 0.5$  V

## ■ OPERATION DIAGRAM (example)

### • Negative in lag, positive in lead



### • Negative in lead, positive in lag



Remark: When there is 5% or less of rated input current, the output may become unstable (hunting).

## 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:  $\pm 2$  % with input 1 - 0.866, balanced load

$\pm 4$  % with input 0.866 - 0.5, balanced load (at 23°C  $\pm 10$ °C)

or 73.4°F  $\pm 18$ °F, 45 - 65 Hz)

Magnetic field (ext. origin) effect:  $\pm 2$  % (400 A/m)

Response time:  $\leq 2$  sec. (0 - 100 %  $\pm 1$  %)

Ripple: 0.5 %p-p max.

Insulation resistance:  $\geq 100$  M $\Omega$  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  $\mu$ sec.,  $\pm 5$  kV

(input to output or ground)

## STANDARDS & APPROVALS

### CE conformity:

EMC Directive (2004/108/EC)

EMI EN 61000-6-4: 2007

EMS EN 61000-6-2: 2005

Low Voltage Directive (2006/95/EC)

EN 61010-1: 2001

Measurement Category II

Pollution Degree 2

Input to output: Reinforced insulation (300 V)

IEC Standard: IEC 60688



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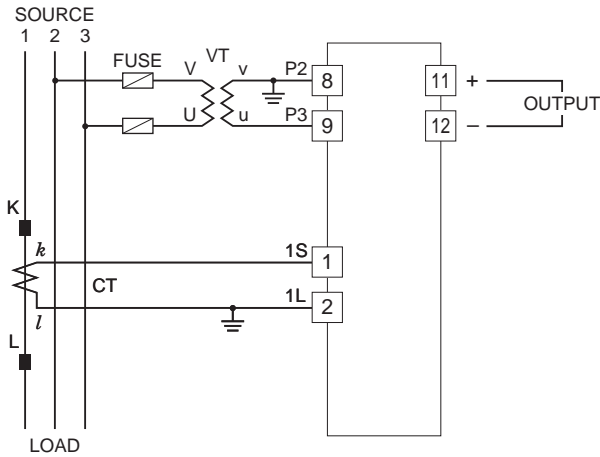
FAX : (02)2596-2331

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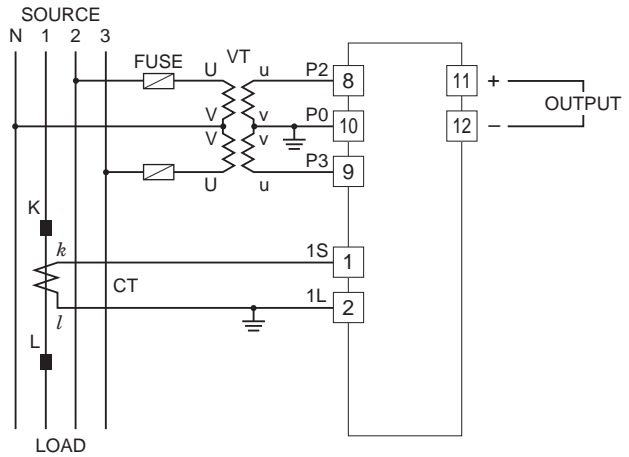
Website : www.xintop.com

## CONNECTION DIAGRAM

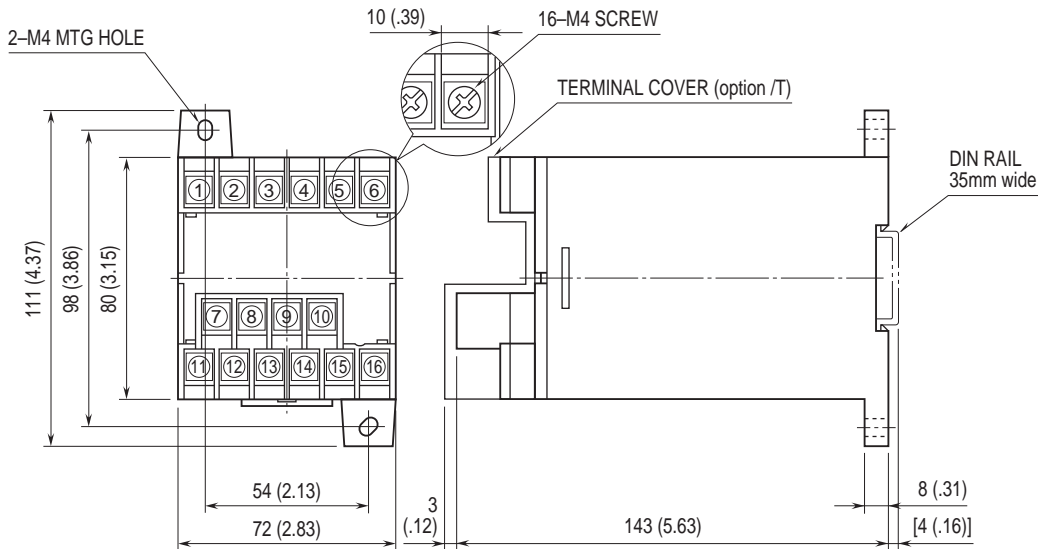
### ■ 3-PHASE/3-WIRE



### ■ 3-PHASE/4-WIRE



## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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



Specifications are subject to change without notice.



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