

Power Transducer Series

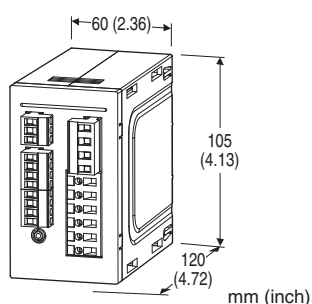
HIGH-SPEED RESPONSE MULTI POWER TRANSDUCER

Functions & Features

- 30 msec. high-speed response
- By connecting just one circuit of the power system, AC current can be measured.
- Various parameters can be configured using the configurator.

Typical Applications

- Multi-functional power measurement in electric device or in switching boards.



MODEL: L53UF-1[1]0[2]-AD4[3]

ORDERING INFORMATION

- Code number: L53UF-1[1]0[2]-AD4[3]
Specify a code from below for each of [1] through [3].
(e.g. L53UF-1202-AD4/Q)
- Specify the specification for option code /Q
(e.g. /C01/SET)

CONFIGURATION

- 1: Single-phase / 2-wire and 3-wire,
3-phase / 3-wire and 4-wire

[1] INPUT

- 1: 480 V / 1 A AC
2: 480 V / 5 A AC

DISCRETE INPUT

0: None

[2] EXTERNAL INTERFACE

- 2: 4 - 20 mA DC × 4
3: 1 - 5 V DC × 4

AUXILIARY POWER SUPPLY

AD4: universal

100 - 240 V AC (Operational range 85 - 264 V, 47 - 66 Hz) /
110 - 240 V DC (Operational range 99 - 264 V,
ripple 10 %p-p max)

[3] OPTIONS

Other Options

blank: none

/Q: Option other than the above (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

EX-FACTORY SETTING

/SET: Preset according to the Ordering Information Sheet
(No. ESU-1948)

RELATED PRODUCTS

- PC Configurator cable (model: COP-US)
 - PC configurator software (model: PMCFG)
- Downloadable at our web site.

GENERAL SPECIFICATIONS

Connection

Voltage input: Connector type terminal block
(applicable wire size: ≤ 2.5 dia, $0.5 - 3.5$ mm²,
stripped length 7 - 8 mm)

Current input: Screw terminal block
(applicable wire size: ≤ 2.4 dia, $0.5 - 3.5$ mm²,
stripped length 13 - 15 mm)

Analog output, auxiliary power supply:

Connector type terminal block
(applicable wire size: ≤ 2.4 dia, $0.5 - 2.5$ mm²,
stripped length 7 - 8 mm)

Configuration: Single phase/2-wire and 3-wire, 3-phase/3-wire balanced/unbalanced load, 3-phase/4-wire balanced/unbalanced load

Housing material: Flame-resistant resin (gray)

Isolation: Voltage input to current input to configurator jack or analog output to auxiliary power

■ Measured variables

Voltage: 1 - N, 2 - N, 3 - N, 1 - 2, 2 - 3, 3 - 1

Current: 1, 2, 3, N

Active / reactive / apparent power: 1, 2, 3, Σ

Power factor: 1, 2, 3, Σ

Frequency

INPUT SPECIFICATIONS

Frequency: 50 / 60 Hz (45 – 65 Hz)

• Voltage Input

Rated voltage

Line-to-line (delta voltage): 480 V

Line-neutral (phase voltage): 277 V (single phase / 2-wire and 3-wire)

Consumption VA: $\leq U_{LN}^2 / 300 \text{ k}\Omega$ / phase

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

Selectable primary voltage range: 50 – 400 000 V

• Current Input

Rated current: 1 A or 5 A

Consumption VA: $\leq I^2 \cdot 0.01 \Omega$ / phase

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

Selectable primary current range: 1 – 20 000 A

Selectable primary power range: $\leq 2 \text{ G VA}$

Operational range

Voltage, current, apparent power: $\leq 120 \%$ of the rating

Active / reactive power: -120 to +120 % of the rating

Frequency: 45 – 65 Hz

Power factor: -1 to +1

OUTPUT SPECIFICATIONS

■ DC Current: 4 – 20 mA DC

Load resistance: $\leq 270 \Omega$

■ DC Voltage: 1 – 5 V DC

Load resistance: $\geq 5000 \Omega$

INSTALLATION

Power consumption

• AC: $< 10 \text{ VA}$

• DC: $< 3 \text{ W}$

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

Operating humidity: 30 to 90 %RH (non-condensing)

Mounting: DIN rail

Weight: 320 g (0.71 lb)

PERFORMANCE

Accuracy (at 23°C $\pm 10^\circ\text{C}$ or 73.4°F $\pm 18^\circ\text{F}$, 45 – 65 Hz)

Voltage: $\pm 0.5 \%$ ^{*1}

Current: $\pm 0.5 \%$ ^{*1}

Power: $\pm 0.5 \%$ ^{*1}

Power factor: $\pm 0.5 \%$

Frequency: $\pm 0.2 \%$ ^{*1}

*1. Percentage of the spans:

480 V for voltage;

1 A or 5 A for current; and

4155 W (5 A) or 831 W (1 A) for active power

The described accuracy levels are ensured at the input 1 %

or more for phase 2 current with 3-phase/3-wire unbalanced load, for neutral current with 3-phase/4-wire unbalanced load, and neutral current with 1-phase/3-wire.

Data update period: 1/4 cycle of the measurement target

Response time to analog signal (input $\geq 50 \text{ Hz}$):

• Other than frequency: $\leq 30 \text{ msec.}$ (0 – 99 %)

• Frequency: $\leq 50 \text{ msec.}$ (0 – 99 %)

Insulation resistance: $\geq 100 \text{ M}\Omega$ with 500 V DC

Dielectric strength:

2000 V AC @ 1 minute

(voltage input or current input or analog output to auxiliary power)

2000 V AC @ 1 minute

(voltage input to current input to configurator jack or analog output)

STANDARDS & APPROVALS

EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

Low Voltage Directive

EN 61010-1

Measurement Category III (input)

Measurement Category II (output)

Installation Category II (auxiliary power)

Pollution Degree 2

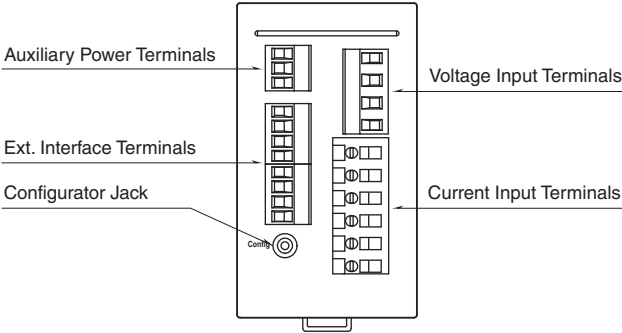
Input to auxiliary power: Reinforced insulation (550 V)

Output to auxiliary power: Reinforced insulation (300 V)

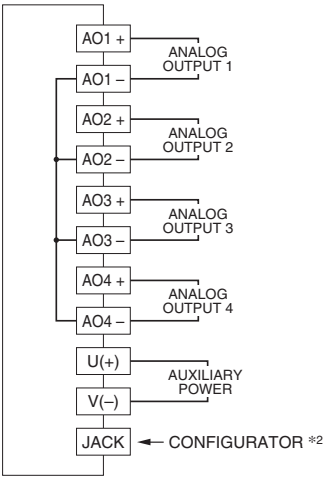
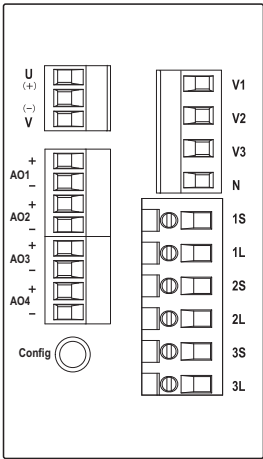
Input to output: Basic insulation (550 V)

RoHS Directive

EXTERNAL VIEW



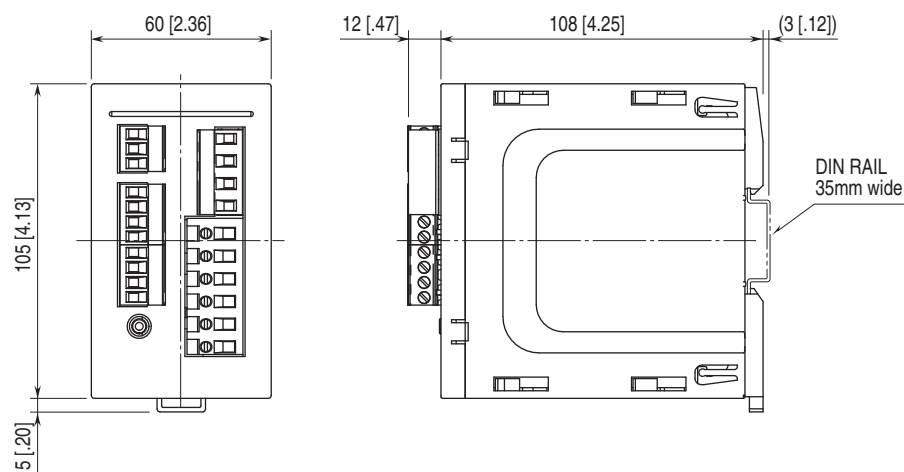
TERMINAL CONNECTIONS



System / Application	Terminal	System / Application	Terminal
Single phase / 2-wire		Three phase / 3-wire, unbalanced load	
Three phase / 3-wire, balanced load		Three phase / 4-wire, balanced load	
Single phase / 3-wire		Three phase / 4-wire, unbalanced load	

Note: For low voltage circuit, grounding is not required.

EXTERNAL DIMENSIONS unit: mm [inch]



Specifications are subject to change without notice.