Power Measurement

# Power Measurement Transducer

AD-LU 50 GT

## Description

The digital power measuring transducer AD-LU 50 GT measures all quantities of the three-phase network (current, voltage, energy, harmonics, phase angle, active power, reactive power, apparent power … ) and converts these measuring values onto two freely scalable analogue outputs (20 mA / 10 V). The unit is therefore optimal suitable for integration in energy management systems. 3- or 4-wire systems can be measured. 4-wire networks can be loaded balanced or unbalanced, whereby 3-wire networks can only be measured balanced. The AD-LU 50 GT is supplied via its measuring voltage L1. The current measuring is carried out via the bar-type transformer mounted on the front. For measuring of high voltages or high currents, external transformers can be connected in series at any time. The AD-LU 50 GT can be read out and parameterised via the integral interface with the aid of the available AD-Studio. An LED at the front signals the operating condition. The compact type of construction and the high performance ability with simultaneous low energy consumption allows usage in almost any application.

## Application

Typical usage in plant, machines or energy management systems for balancing and determination of energy distribution.


## Specific characteristics

- compact design
- measurement via clamp on current transfomrers
- supplied via its measuring voltage L1
- current and voltage output
- monitoring all variables of the three-phase network
- parameterization via AD-Studio

## Business data

**Order number**

| | |
|---|---|
| Power measurement transducer AD-LU 50 GT | AD-LU 50 GT |

**Accessory (optional)**

| | |
|---|---|
| VarioPass3 | USB-Schnittstellenadapter |
| AD-Studio | Konfigurationssoftware |



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## Technical specifications

**Current-inputs (I1...I3)**

| | |
|---|---|
| Measuring ranges | 0 ... 1 A AC; 0 ... 5 A AC; 0 ... 20 A AC |
| Max. conductor diameter | 4,8 mm |
| Max. measurable harmonic | 40 |

**Voltage-inputs (L1...L3)**

| | |
|---|---|
| Measuring range | 80 ... 253 V AC |
| Input resistance | > 900 kOhm |

**Output current**

| | |
|---|---|
| Output range | 0/4 ... 20 mA |
| Max. load | 400 Ohm |
| Resolution | 11 Bit |
| Residual ripple | 25 µAss |

**Output voltage**

| | |
|---|---|
| Output range | 0/2 ... 10 V |
| Min. load | 10 kOhm |
| Resolution | 11 Bit |
| Residual ripple | 30 mVss |

**Supply**

| | |
|---|---|
| Voltage range AC | 80 ... 253 V AC, 50/60 Hz (see voltage-inputs) |
| Nominal voltage AC | 230 V AC |
| Power consumption | max. 3,9 VA |

**Transfer behavior - in reference to the current value**

| | |
|---|---|
| Basic accuracy | < 0,5 % (class 0.5) |
| Temperature influence | 80 ppm/K |
| Response time | < 0,5 s |

**Housing**

| | |
|---|---|
| Dimensions (WxHxD) | 71x90x70 mm |
| Type of protection | IP 20 |
| Connection method | screw clamp |
| Terminals, wire cross section | 2,5 mm² flex wire / 4 mm² one wire |
| Bolting torque terminals | 0,6 Nm |
| Skinning length | 6 mm |
| Weight | ~ 170 g |
| Manner of fastening | 35 mm DIN rail 35mm |

**Environmental conditions**

| | |
|---|---|
| Ambient temperature | -10 ... 50 °C |
| Storage and transport | -10 ... 70 °C (no condensation) |

**EMC**

| | |
|---|---|
| Product family standard | EN 61326-1 [1)] |
| Emitted interference | EN 55011, CISPR11 Cl. B, Gr. 1 |

**Electrical safety requirements**

| | |
|---|---|
| Product family standard | EN 61010-1 |
| Overvoltage category | II |
| Pollution degree | 2 |
| Safety measurement | EN 61010-2-030 |
| Measurement category | CAT III |

**Galvanic isolation, test voltages**

| | |
|---|---|
| Power supply to analog outputs | 4 kV, 50 Hz (1 min.) |
| Power supply to relay | 4 kV, 50 Hz (1 min.) |
| Relay to analog outputs | 4 kV, 50 Hz (1 min.) |

**Protection circuits**

| | |
|---|---|
| Input | electrical surge protection |
| Power supply | protection against over-temperature, over-voltage and over-current |
| Analog outputs | electrical surge protection |

[1)] During checking, slight signal deviations are possible.

# Power Measurement Transducer AD-LU 50 GT

## Block and wiring diagram

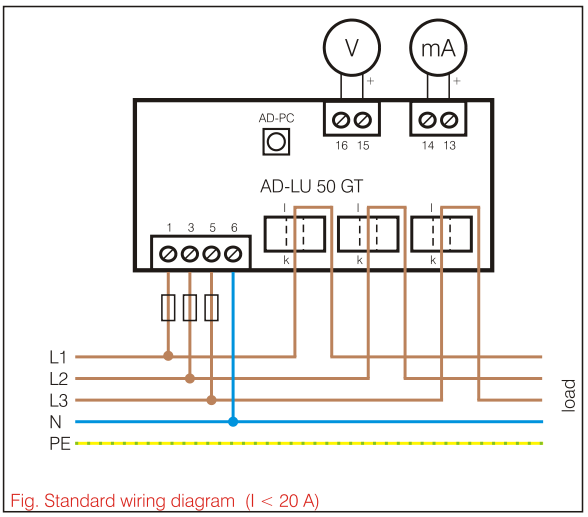



Fig. Standard wiring diagram (I < 20 A)

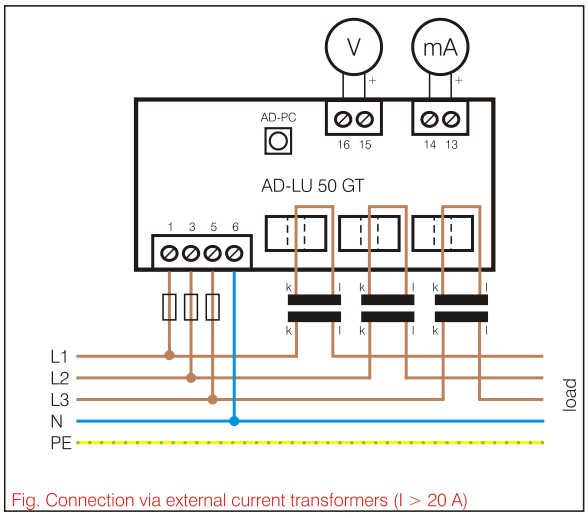



Fig. Connection via external current transformers (I > 20 A)

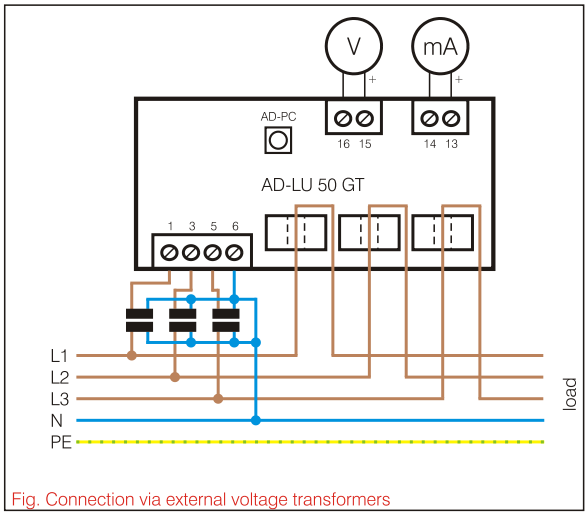
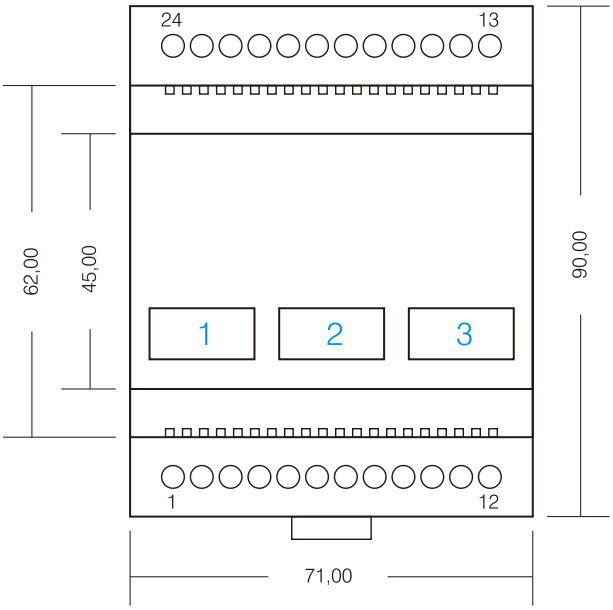
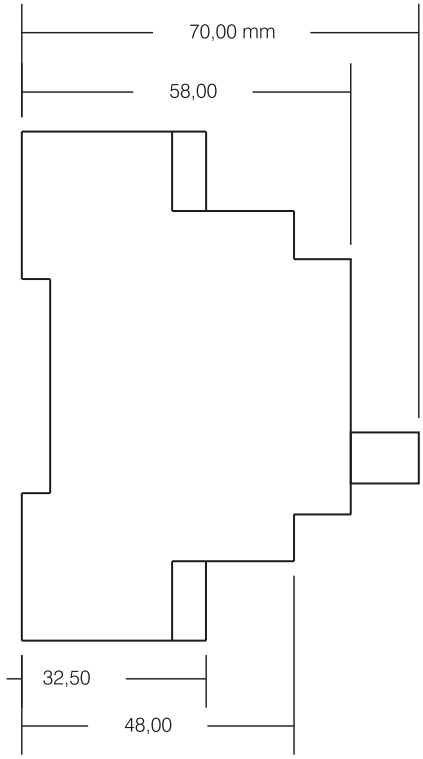



Fig. Connection via external voltage transformers

## Dimensions




Hinweis:
Für die Messung symmetrischer Lasten kann das Gerät so umparametriert werden, dass nur ein Stromwandler für die Messung notwendig ist.
In diesem Fall bitte die Strommessung mit Stromwandler 1 auf Phase L1 durchführen.