Power Measurement

Power Measurement Transducer

AD-LU 410 GT

Description

Especially in power plant operations but also in many other switchgear areas, active power for the optimization and control of processes must be continuously measured. The power converter AD-LU 410 GT is always adapted to the individual case by means of plant-specific adaptations. Due to the fully analog design, fast power measurements are possible, e.g. the detection of short-time load changes. The nominal voltage, the power to be measured and the desired output signal are required by the customer. The exact power values are available as standard signal for further processing.

Application

Measurement of the active power in switchgear, power plants, voltage distributions and transformation into an analog standard signal.



Specific characteristics

- Plug and play installation due to customer-specific production
- Fast response time due to analog multipliers
- Measurement of active power in 3- and 4-wire grids
- Measurement of symmetrical or asymmetrical load
- Measurement of active power fed back into the grid
- Analog output also bipolar possible
- Separate auxiliary voltage with wide range power supply

Business data

Type

1 Phase + N	AD-LU 410 GT-1PN
3 phases equally loaded	AD-LU 410 GT-3PG
3 phases unequally loaded	AD-LU 410 GT-3PU
3 phases + N equally loaded	AD-LU 410 GT-3PNG
3 phases + N unequally loaded	AD-LU 410 GT-3PNU

Evaluation

Measuring range in kW	To be specified when ordering
Output range in mA/V	To be specified when ordering
Current and voltage transformers	To be specified when ordering

Customised versions

AD-LU410GT-3PU-C001	input: 3x 208 VAC; 2x 5 AAC output: 4...20 mA Evaluation: 0...900 W
AD-LU410GT-3PU-C002	input: 3x 380 VAC; 2x 5 AAC output: 4...20 mA Evaluation: 0...750 W
AD-LU410GT-3PU-C003	input: 3x 400 VAC; 2x 5 AAC output: 4...20 mA Evaluation: 0...750 W
AD-LU410GT-3PU-C004	input: 3x 400 VAC; 2x 5 AAC output: 4...20 mA Evaluation: 0...900 W
AD-LU410GT-3PU-C005	input: 3x 400 VAC; 2x 5 AAC output: 4...20 mA Evaluation: 0...2000 W
AD-LU410GT-3PU-C006	input: 3x 415 VAC; 2x 5 AAC output: 4...20 mA Evaluation: 0...750 W
AD-LU410GT-3PU-C007	input: 3x 415 VAC; 2x 5 AAC output: 4...20 mA Evaluation: 0...2000 W
AD-LU410GT-3PU-C008	input: 3x 480 VAC; 2x 5 AAC output: 4...20 mA Evaluation: 0...900 W
AD-LU410GT-3PU-C009	input: 3x 480 VAC; 2x 5 AAC output: 4...20 mA Evaluation: 0...2000 W

Other versions are available on request.

Information

Downloads

Safety instructions	ad-safety-instructions.pdf

Technical specifications

Voltage inputs

Rated frequency	50/60 Hz
Nominal Voltage Phase/Delta	230/400 V AC
Max. Voltage Phase/Delta	300/520 V AC
Current consumption per phase	0,5 mA AC
Permanent Overload	120% of nominal voltage
Peak load	600 V AC, 1s

Current inputs

Rated current I1, I2, I3	0 ... 1 A AC, 0 ... 5 A AC
Peak load	100 A AC, 1s
Continuous load	6 A AC
Permanent Overload	120% of nominal current
Input resistance per phase	~20 mOhm

Output

Type	Current (mA) or voltage (V), to be specified when ordering

Subject to technical changes and printing errors.

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Technical specifications

Output current

Max. burden	400 Ohm @ 20 mA
Maximum output range	-21 ... 21 mA @ 50 Ohm

Output voltage

Min. burden	10 kOhm @ 10 V
Maximum output range	-12 ... 12 V (10kOhm)

Accuracy

Accuracy class	0,5% under reference conditions
Temperature drift cos(phi)=1	~3 µA/K @ -10...70°C
Frequency influence	~3,5 µA/Hz @ 40 ... 60Hz
Response time	100 ms (10 ... 90)%

Supply

DC	1,6 W @ 20 ... 253 V DC
AC	3,9 VA @ 50 ... 253 V AC

Housing

Type of protection housing	IP20
Connection method	screw clamp
Cross section fine wire	2,5 mm^2
Cross section one wire	4 mm^2
Max. torque of terminals	0,8 Nm
Mounting	DIN rail mounting
Weight	~ 450 g

Environmental conditions

Operating temperature	-25 ... 70 °C
Storage, transport	-40 ... 70 °C

Electromagnetic compatibility

Product family standard	EN 61326-1
Emission	EN 55011, CISPR11 Cl. B, Gr. 1
Immission	DIN EN 61000-6-5

During an interference effect slight signal deviations are possible.

Electrical safety requirements

Standard	DIN EN 61010-1
Overvoltage category	III
Measurement category	CAT III
Pollution degree	2
Test voltage input/output	4 kV RMS, 1 Min.
Testvoltage output/supply	4 kV RMS, 1 Min.
Testvoltage intput/supply	4 kV RMS, 1 Min.

Product standards

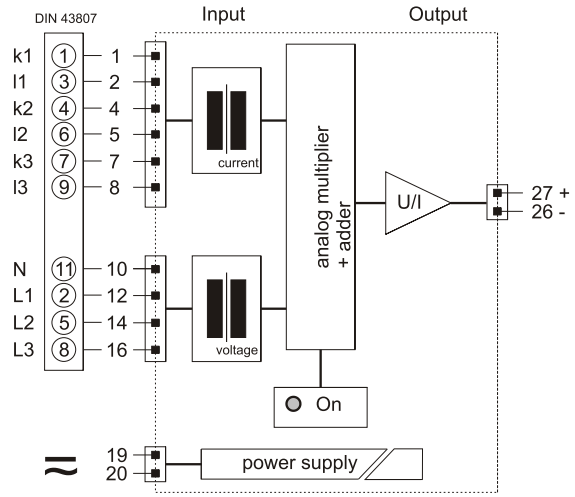
Product family standard	EN 60688

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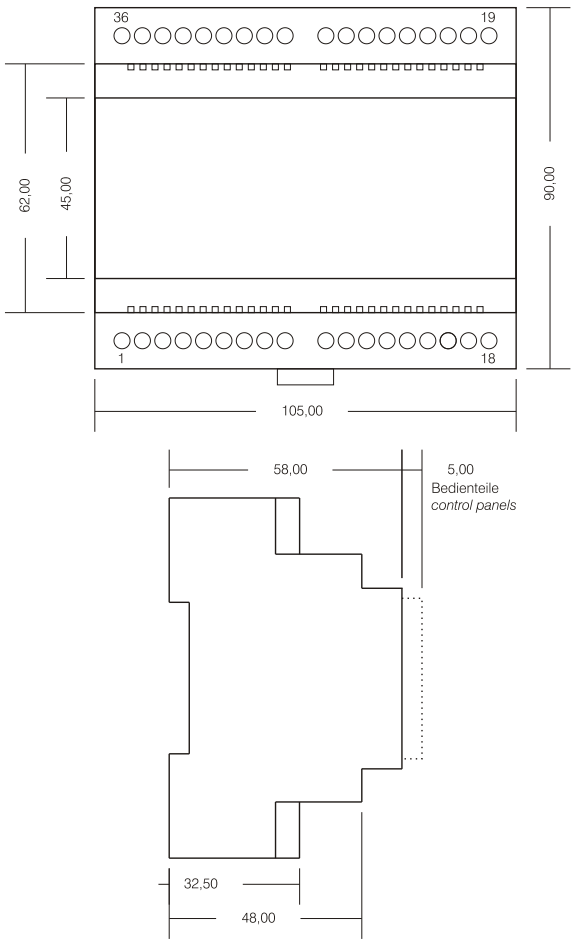
Power Measurement Transducer

AD-LU 410 GT

Block and wiring diagram



Dimensions



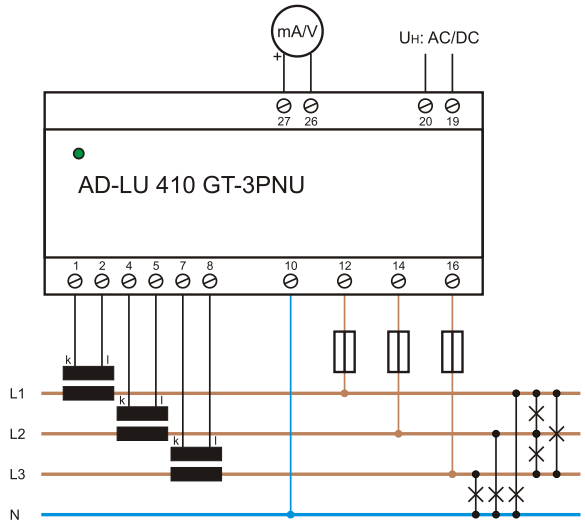
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Power Measurement Transducer

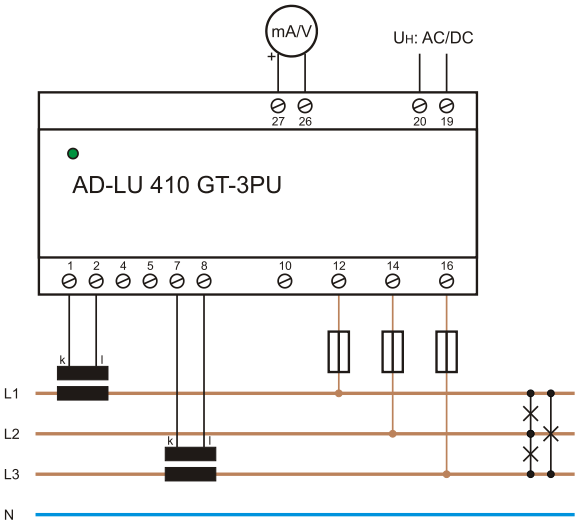
AD-LU 410 GT

Circuit examples

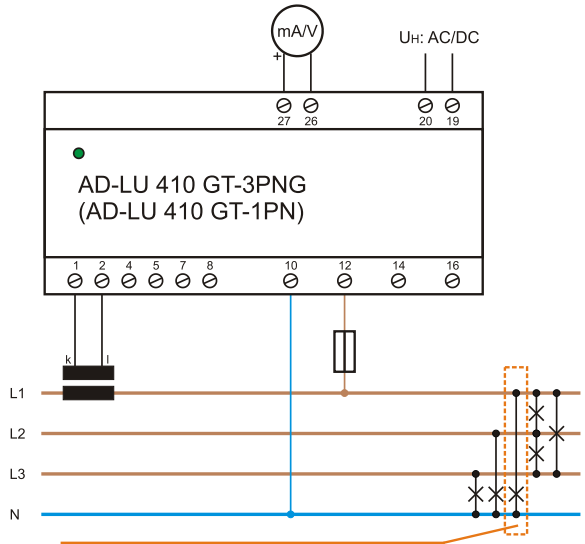
3 Phasen, 4 Leiter, ungleiche Last
3 phases, 4 wire, unbalanced load



3 Phasen, 3 Leiter, ungleiche Last
3 phases, 3 wire, unbalanced load

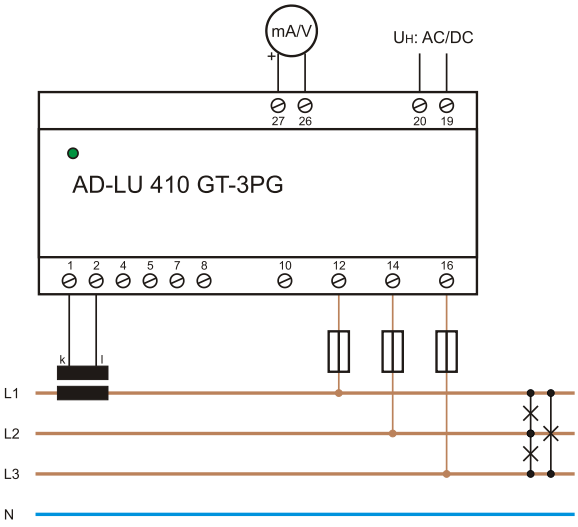


3 Phasen, 4 Leiter, gleiche Last
3 phases, 4 wire, balanced load



Schaltung gilt auch für einphasige Lasten.
Circuit also works for single-phase loads.
AD-LU 410 GT-1PN

3 Phasen, 3 Leiter, gleiche Last
3 phases, 3 wire, balanced load



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