Power Measurement

AD-LU 650 GA

Description

The AD-LU 650 GA is a programmable transmitter for measuring all parameters such as power, voltage, current or frequency in the mains. The mains system can be single-phase or three-phase. Any measured quantity can be allocated to each analogue outlet. The measuring ranges can be configured in wide ranges. Filters, which can be individually parameterized, supplement the adaption possibilities of the measuring task. Each switching output can be assigned to a specific function. Possible functions include, for example, Limit or pulse output for energy metering.

Application

Transducer for a maximum of any 4 three-phase current quantities. Limiting value indicator for monitoring of a maximum of 2 three-phase current quantities. Registration of all relevant measuring quantities of the three-phase current network and supply of the measuring quantities via a modbus interface.



Specific characteristics

- Measuring quantities: effective power, reactive power, apparent power, currents and voltages, frequency, power factor, energy metering
- Four bipolar analogue outputs as current output or voltage output, configurable per software
- Two switching outputs as relay or opto-coupler. Functions: limiting value, window, trend, S0, monitor
- Meter for effective energy, reactive energy and apparent energy
- Values for each phase and they can be polled as sum
- Output of up to four measuring quantities of the three-phase current network such as effective power, current, voltage or frequency
- Indication of the power fed back into the network is possible via analogue output and/or switching output
- Connection configurations: single-phase, three-phase current with/without neutral conductor, equally/unequally loaded
- All measuring quantities can be read out via modbus
- All measuring ranges, output ranges and device functions can be configured per software with a PC programme.

Business data

Order number

AD-LU 650 GA	
Preconfigured	optional
Optocoupler outputs	optional

please enter the options when ordering in clear text.

Information

Downloads

Instruction manual	man-lu650-ad-en.pdf
Tender text	lu650ga.zip
Safety instructions	ad-safety-instructions.pdf

Technical specifications

Voltage inputs

U1N, U2N, U3N Nominal	230 V AC
U1N, U2N, U3N Max	300 V AC
Current consumption per phase	0,5 mA AC
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
Input resistance per phase	~20 mOhm

Analog outputs

Number	4
Current or voltage configurable	

Current outputs

Max. residual ripple	40 µAss
Max. burden	400 Ohm
Maximum output range	-21 ... 21 mA

Voltage outputs

Max. residual ripple	20 mVss
Min. burden	10 kOhm
Maximum output range	-10,5 ... 10,5 V

Contact outputs

Closing contact	2
Switching capacity AC	250 V AC, 2A, 50Hz
Switching capacity DC	50 V DC, 2A

Optocoupler outputs

Switching capacity DC	30 V DC, 50 mA DC

Subject to technical changes and printing errors.

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Technical specifications

Accuracy

Accuracy class	0,5%
Temperature influence	< 200 ppm/K
Frequency influence	~0,2 %, 40 ... 60 Hz
Influence of phase angle	~0,2 %, 40 ... 60 Hz
Response time	~500 ms, 10 ... 90 %

Communication interface

Physical	RS-485
Parameter	19200, 8, 1 , even
Protocol	Modbus RTU

Supply

DC	20 ... 253 V DC, 5 W
AC	50 ... 253 V AC, 9 VA

Housing

Type of protection	IP 20
Connection method	screw clamp
Cross section fine wire	2,5 mm^2
Cross section one wire	4 mm^2
Mounting	DIN rail mounting
Weight	~ 450 g

Environmental conditions

Operating temperature	-10 ... 50 °C
Storage, transport	-25 ... 80 °C

Electromagnetic compatibility

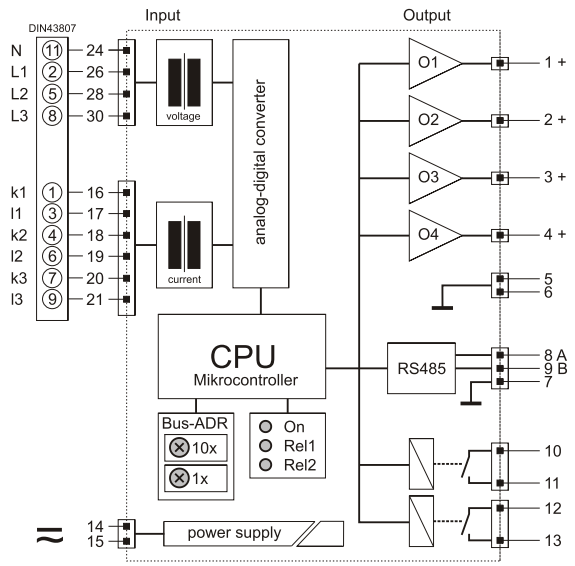
Product family standard	EN 61326-1
Emission	EN 55011, CISPR11 Cl. B, Gr. 1

During an interference effect slight signal deviations are possible.

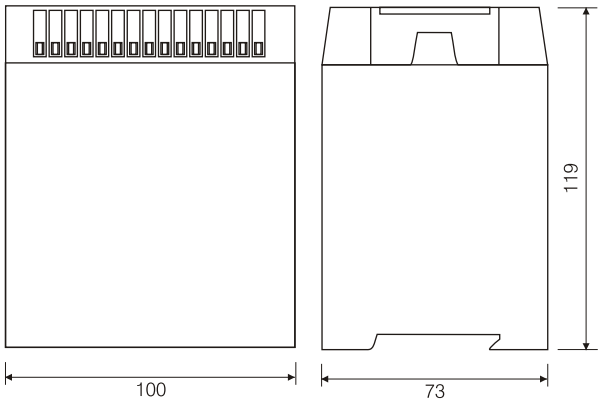
Electrical safety requirements

Product family standard	EN 60688
Overvoltage category	III
Pollution degree	2
Isolation-voltage	500 V AC
Test voltage input/output	5 kV RMS, 1 Min.
Test voltage output/supply	4 kV RMS, 1 Min.

Block and wiring diagram

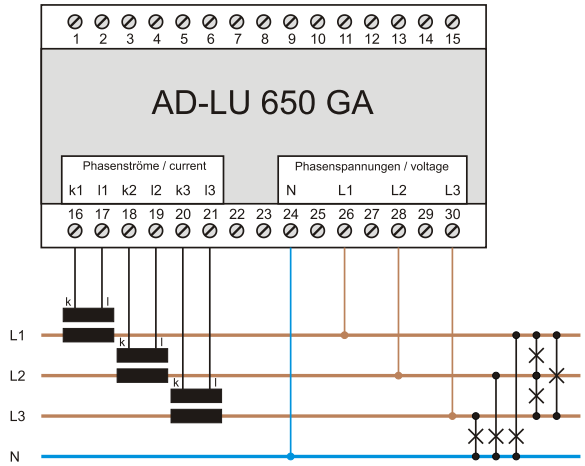


Dimensions

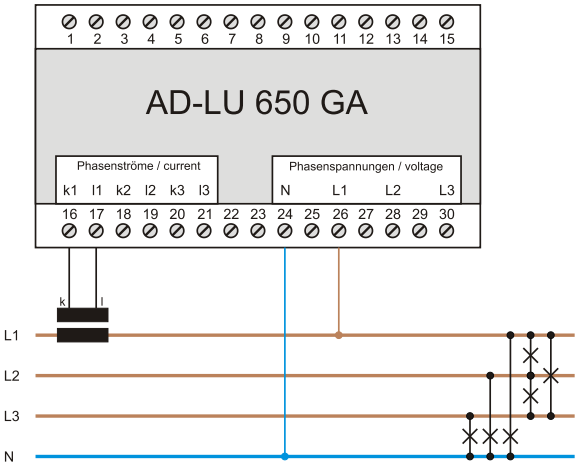


Circuit examples

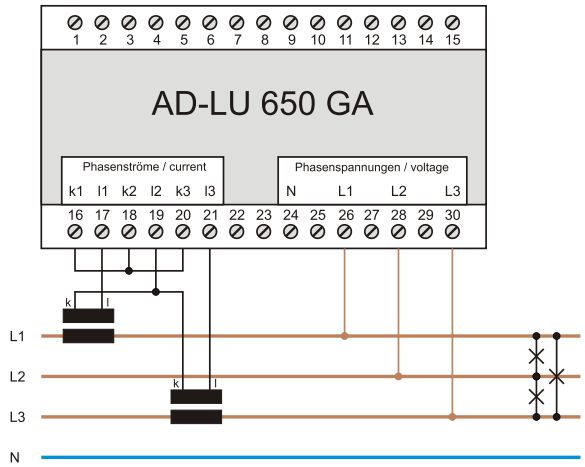
3 Phasen, 4 Leiter, ungleiche Last
3 phases, 4 wire, unbalanced load



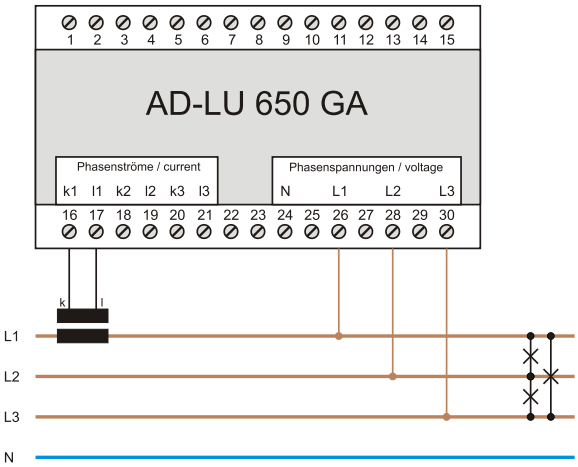
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3 phases, 4 wire, balanced load



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



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



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