



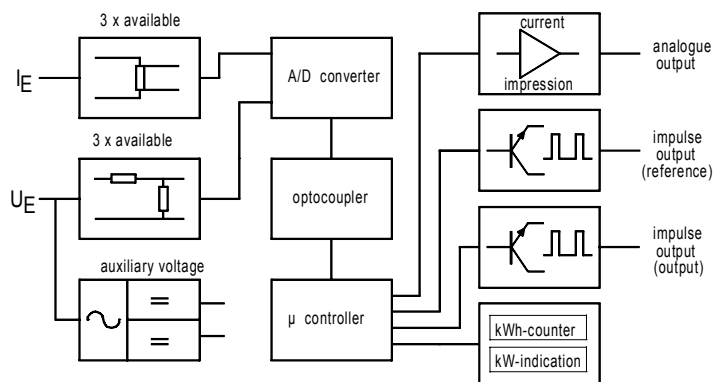
Energy meter for three-phase current with current converter or direct coupling

- Pulse outputs for energy consumption (reference and output)
- Analogue output for active power
- Energy consumption display and storage (reference and output)
- Active power display
- Resettable kWh meter with reversal preventing device
- Optional current converter
- Optional weight of pulses/kWh
- LEDs for function check
- Housing width 71 mm, sealable cover

Application

The EZD electronic energy meter is used to detect the energy consumption of three-phase consumers (regardless of load) in industrial plant, workshops, machines, offices, etc. It can be used for metering plant with burst firing controls (intermittent power consumption) and can also measure distorted sine waves. It can display and save the value of the energy consumed, output it in pulse format for further processing and display the instantaneous active power via an analogue output 0-20 mA or 4-20 mA.

Function



The values to be measured are sent to an IC via **external** current converters or directly via push-through openings and voltage dividers. The instantaneous current and voltage values are multiplied and converted into a frequency corresponding to the active power. A downstream microcontroller analyses these values, outputs the pulses and saves the measured values. The values are displayed on an LCD. Two open collector outputs enable the active power reference and output to be output in pulse format. A 20 mA analogue output indicates the instantaneous power. An isolated auxiliary voltage is not required (this is generated from the measurement-circuit voltage). The meter readings are stored in the event of a mains failure.

Technical data

Input

Type

Rated voltage
Rated current

Rated frequency
Power consumption

Continuous overload
Impulse overload

Temperature range

EZD

400/230 V and 3 x 400 V \pm 20%

0-5 A, option 0-1 A, (**only via external current converters**)

Option 0-10 A (63 A) direct coupling via push-through openings

40 different primary currents, can be selected via pushbuttons on the front panel
5/10/15/20/25/30/40/50/60/75/80/100/150/200/250/300/350/400/450/500/550/600/
650/700/750/800/850/900/1000/1200/1250/1500/1600/1800/2000/2400/2500/
3000/3500 or 4000 A

50-60 Hz

Voltage circuit approx. 0.1 VA, between L1 and L2 2.5 VA, current circuit approx. 0.5 VA

Current and voltage, 1.2x, direct coupling current 6.3x

Voltage 2x 1 second, current 20x 0.5 seconds

current direct coupling 30x 10 ms

-15 to +20 to +30 to +55 °C

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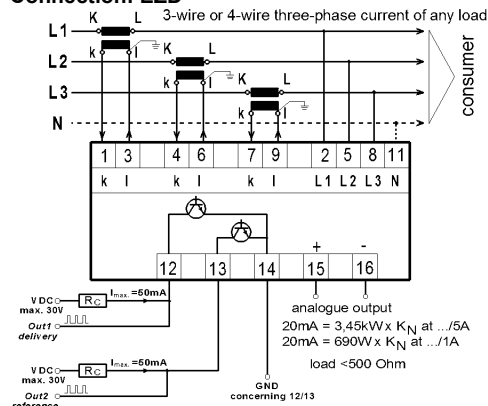
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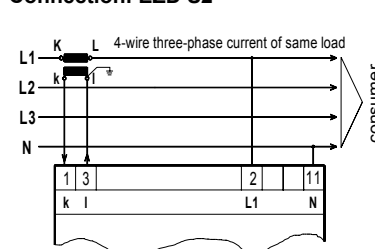
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Display		Two-line LCD Active power, reference, +9 999 999 kWh (with reversal preventing device) Instantaneous active power, 9 999.99 kW, with (-) for negative power Active power, output -9 999 999 kWh (with reversal preventing device) Selected primary current Selected output pulse weight LED for active power, 2000 pulses/kWh for current converter connection 200 pulses/kWh for direct coupling
	Via key Via key Via key Function indicators	LED for energy flow direction (-P), lights when negative power Transistor, 24 V DC (max. 30 V/50 mA), ON (active) 10-27 mA, OFF (inactive) < 1 mA 1/10/100/1000/2000 or 5000 pulses/kWh, can be selected via pushbuttons on the front panel (with the addition of 25,000 pulses/kWh for option 0-1 A) Attention! The weight of the pulses must be divided by the transformation ratio (K_N) of the current converter used.
Pulse outputs	Active power, reference and delivery Priority, with current converter	1/10/100/200 or 500 pulses/kWh, can be selected via pushbuttons on the front panel
	Priority, with direct coupling	1/10/100/200 or 500 pulses/kWh, can be selected via pushbuttons on the front panel
	Accuracy Pulse length Test voltage	$\pm 1\%$ 60 - 100 ms 4 KV, 50 Hz 10 sec.
Analogue output	Rated value, with current converter Rated value, with direct coupling	0-20 mA or 4-20 mA corresponds to 0-3.45 kW at 5/5 A (690 W at 1/1 A) Attention! The power value 3.45 kW or 690 W must be multiplied by the transformation ratio (K_N) of the current converter used. 0-20 mA or 4-20 mA corresponds to 0-40 kW
	Accuracy Load Test voltage	Analogue value corresponds to + P, - P or + / - P, can be selected via pushbuttons on the front panel $\pm 0.5\%$ 0 -500 Ohm 4 KV, 50 Hz 10 sec.
Reset		The kWh display can be reset to zero via keys on the front panel.
Regulations	EMC Mechanical strength Electrical safety	DIN EN 61326 DIN EN 61 010 Part 1 DIN EN 61010 part 1 Housing all insulated, protection class II, at a working voltage up to 300V (network to neutral conductor) degree of pollution 2, measuring category CAT III
	Pulse output Accuracy, overload Creepages and clearances Degree of protection	DIN S0 43 864 DIN EN 60 688 DIN EN 61 010 Part 1 DIN EN 60 529, IP 20 220 g
Weight		220 g
Installation	Mounting Electrical connection	Snap-on mounting on rail to DIN EN 50 022 Screw-type terminal max. 4 mm ²

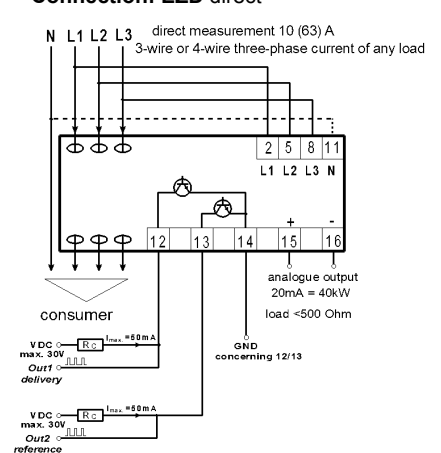
Connection: EZD



Connection: EZD S2



Connection: EZD direct



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Functions and Programming:

- Indication of (-)kWh for the active power input (about 6 sec.)



- Menu option for selection of current transformer
- Selection of the current transformer with the key (Selection: 5/10/15/20/25/ ... /4000)



- End of current transformer selection and next menu option for selection of impulse rate of the S0-output

- Selection of impulse/kWh with the key (Selection: 1/10/100/1000/2000/5000 Imp/kWh)



- End and next menu option for the adjustment of the analog output 0-20 mA
- Selection with the key Indication: + P ⇒ 20 mA-output only in case of active power input

Indication: - P ⇒ 20 mA-output only in case of active power output

Indication: +/- P ⇒ 20 mA-output in case of input and output of active power



- End and next menu option for adjustment of active power work counter
- Selection with the key Indication: +kWh ⇒ all energy consumption will be added up to the active power work counter (+kWh)

Indication: +/- kWh ⇒ all energy consumption will be added up to the corresponding counters depending on input (+ kWh) or output (-kWh)



- End of programming and storage of the adjustments

Reset: If you press the keys and for 3 seconds the counters -kWh and +kWh will be reseted.

Types

EZD	Energy meter for three-phase current, any load, three-phase measurement
EZD S2	Energy meter for three-phase current, equal load, single-phase measurement
EZD S3	Energy meter for three-phase current, any load, three-phase measurement, connection to voltage converter sec. 100 V
Options	Input 1 A Direct coupling 10 A (63 A) Direct coupling 10 A (63 A) on EZD S2



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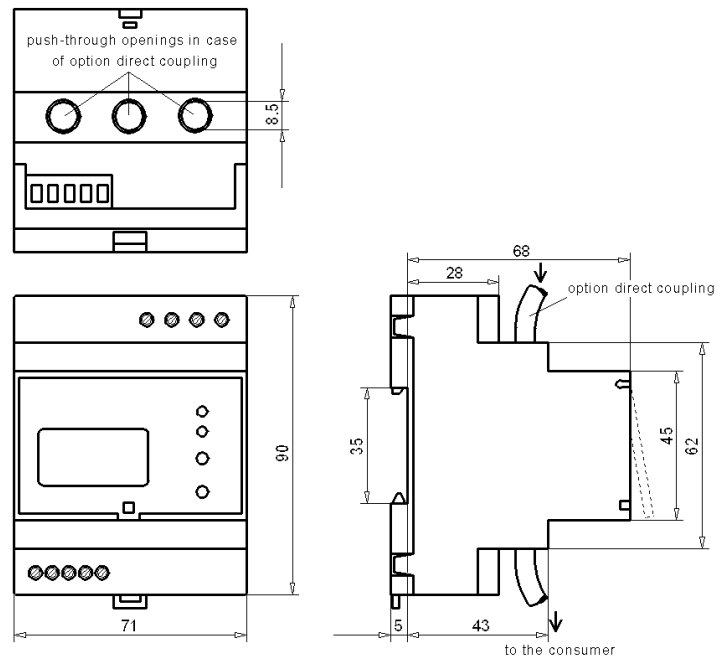
GENERAL DESCRIPTION: ENERGY METERS

EZW/EZD

- Application** Type EZW and EZD energy meters are meters which can be coupled both via converters and directly. The wall-mounting devices can only be used when connected to external current converters. They are used to detect energy consumption and instantaneous active power on AC and DC mains. Both plant with burst firing controls (intermittent power consumption) and distorted sine waves can be metered. The meters are used in industrial plant, workshops, machines, offices, etc., and snap onto 35 mm rails.
- Special features**
- Pulse outputs for energy consumption (reference and output)
 - Analogue output for active power 0-20 mA or 4-20 mA
 - Energy consumption display and storage (reference and output)
 - Active power display
 - Resettable kWh meter with reversal preventing device
 - Optional current converter
 - Direct coupling via push-through openings, max. 63 A
 - Optional weight of pulses/kWh
 - LEDs for function display
 - Slimline design, housing width 71 mm
 - Sealable cover
- Design** EZW and EZD energy meters are manufactured in accordance with DIN EN 60 688 and in compliance with applicable VDE and DIN guidelines. They can measure electrical energy and the active power reference and output on AC and DC mains (identical or non-identical load). The electronic energy meters feature two pulse outputs, one analogue output and a 2-line, resettable LCD. The pulse outputs can be set with a weight of between 1 and 25,000 pulses/kWh. The accuracy is 1% in relation to the upper range value. 40 different primary currents on external current converters with ratings from 5 to 4000 A can be selected. The 20 mA analogue output for the instantaneous active power is isolated and corresponds to a power rating of 1150 W (EZW) or 3450 W (EZD) at 5/5 A, to be multiplied by the current converter transformation ratio (K_N). The 20 mA output is programmable for the instantaneous power reference (+P) or output (-P) or reference and output (+/-P). The accuracy is 0.5% in relation to the upper range value. The electronics are housed in impact-resistant enclosures made from NORYL plastic. The enclosures are dimensioned in accordance with DIN 43 880 for installed equipment.

Dimension drawing

EZW, EZD



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