



## Eltako RS485 Bus Two Way Three Phase Energy Meter Instructions

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### Eltako RS485 Bus Two Way Three Phase Energy Meter Instructions



Only skilled electricians may install this electrical equipment otherwise there is the risk of fire or electric

**shock!**

**Temperature at mounting location:** -25°C up to +55°C.

**Storage temperature:** -25°C up to +70°C.

**Relative humidity:** annual average value <75%.

**valid for devices from production week 33/23** (see bottom side of housing)

#### **RS485 bus two-way three-phase energy meter.**

**Maximum current 3x80A. Standby loss 0,8W at L1 and only 0,5W at L2 and L3 each.**

Modular device for DIN-EN 60715 TH35 rail mounting in distribution cabinets with IP51 protection class.

4 modules = 70mm wide and 58mm deep. Accuracy class B (1%). With RS485 interface. It measures active energy by means of the current between input and output. The internal power consumption of 0,8W or 0,5W active power per path is neither metered nor indicated.

**The active energy is added depending on the sign. Positive power in the meter means energy consumption, negative power means energy delivery. The energy measurement is balanced. If the energy consumption (P positive) is greater than the energy supply (P negative), the meter reading T → is increased. If the energy supply is greater than the energy consumption, the meter reading T ← is increased. Energy consumption is shown with a right arrow → and energy supply is shown with a left arrow ← above the active bar in the display. The 7 segment LC display is also legible twice within a period of 2 weeks without power supply.**

1, 2 or 3 phase conductors with max. currents up to 80A can be connected. The inrush current is 40mA. The terminals L1 and N must always be connected.

Connection via a FBA14 to the Eltako RS485 bus with a 2-wire shielded bus cable (telephone cable). For the last meter in the RS485 bus, the enclosed terminating resistor (120Ω) must be connected to the RSA/RSB terminals. The meter reading and the momentary power are transferred to the bus – e.g. for transfer to an external computer or a controller – and is also transferred to the wireless network via the FAM14. For this it is necessary that a device address is assigned from the wireless antenna module FAM14, according to the operating instructions. Energy consumption and energy supply values are stored in non-volatile memory and are displayed again immediately after a power failure. The 7 segment LC display is also legible twice within a period of 2 weeks without power supply.

The power consumption and the power supply are indicated by an LED next to the display that flashes 1000 times per kWh. On the right next to the display are the keys MODE and SELECT. Press them to scroll through the menu. First the background lighting switches on. Then the total active energy per consumption and delivery, the active energy of the resettable memory consumption and delivery as well as the instantaneous power, voltage and current values for each phase conductor can be displayed.

#### **Error message**

If a phase connection is missing, the corresponding phase is shown on the display. A device address for the DSZ14 has to be assigned from the FAM14, to hand the telegrams of the DSZ14 over to the bus.

#### **Assign device address for the DSZ14:**

Normal display: Briefly press the SELECT button, the backlight is switched on. If the SELECT button is pressed longer than 3 seconds, the device address appears in the display. Now turn the rotary switch on the FAM14 to position 1 within 60 seconds, its lower LED flashes red. Once the address is assigned by the FAM14, its lower LED lights green for 5 seconds and the normal display appears again on the DSZ14.

#### **Delete device address of the DSZ14:**

Normal display: Briefly press the SELECT button, the backlight is switched on. If the SELECT button is pressed longer than 3 seconds, the device address appears in the display. Now hold the SELECT button for 5 seconds, the device address is set to zero.

#### **Transmit teach-in telegram:**

Normal display: Briefly press the SELECT button, the backlight is switched on. If the SELECT button is pressed longer than 3 seconds, the device address appears in the display. By briefly pressing the MODE button, a teach-in telegram and a data telegram is sent. The FAM14 has to be operated in position 2 or 5, to sent the telegrams of the DSZ14 into the Eltako Wireless Building.

A data telegram containing meter reading, power and serial number is automatically sent and cyclically transmitted every 10 minutes after switching on the supply voltage. If you change the meter reading by 0.1 kWh, the meter reading telegram is sent.

**PcH** is the value (factory setting 200 watts) of the power change required for the meter to send a power telegram immediately.

**Change PcH value:**

Short press the MODE button, the backlight will turn on. Then press the MODE button repeatedly until PcH appears on the display.

Now briefly press the MODE and SELECT buttons together. The first digit of the number flashes. MODE increases the number and SELECT decreases the number. Between 10 to 100 in increments of 10 and from 100 to 1000 in increments of 100. If no more keys are pressed, the current value is saved after 5 seconds. With MODE you get back to the normal display.

The DSZ14 can be read-out with the PC tool PCT14.

The serial number, meter reading T→total, resettable meter reading T→part., meter reading T←part and resettable meter reading T←part. will be displayed.

**Meter special operating modes:**

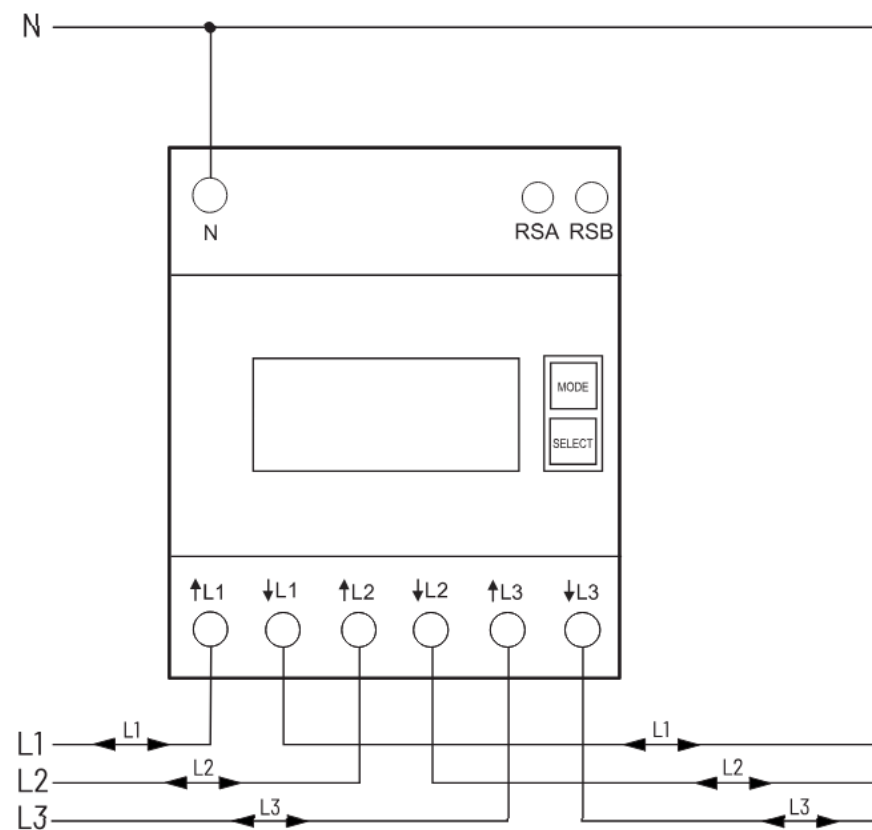
**In the meter operating modes of the FAM14, the focus is on the adjustable transmission speed of electricity meter data for external building energy managers.**

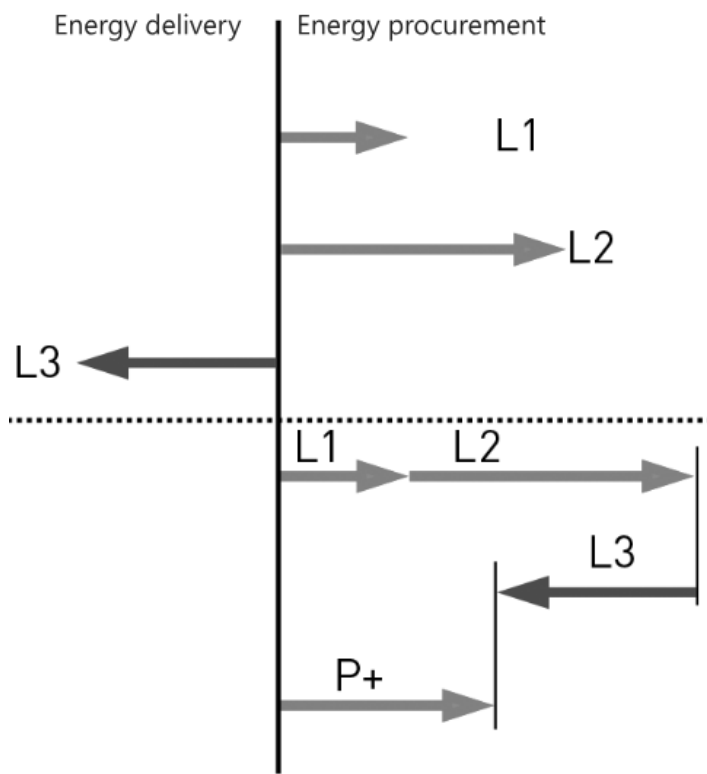
Data can be accessed and forwarded via gateways connected to the FAM14 (FGW14, FGW14-USB, FGW14W(L)-IP).

Additional setting options are available on the FAM14 for meters from production week **33/23**.

**Typical connection:**

4-wire-connection 3×230/400V

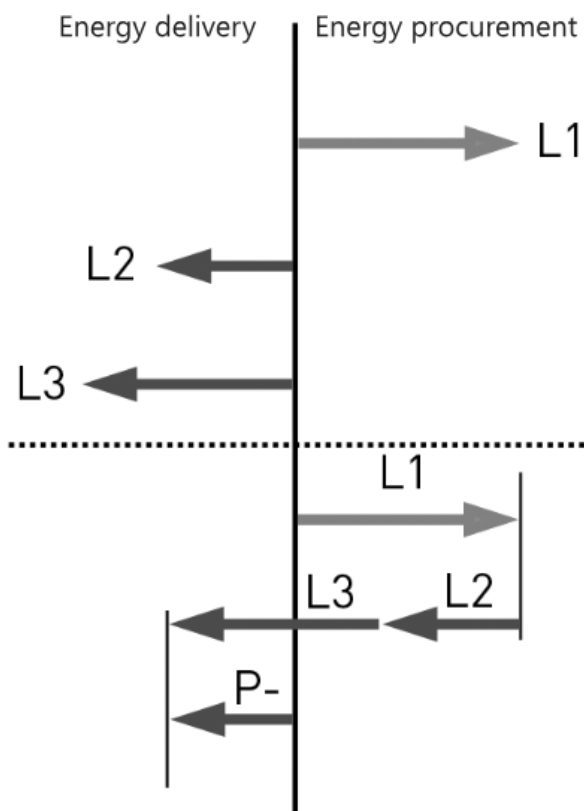
**How it works**



$T_{\text{total}}^{\rightarrow}$  Will be increased

**Data telegram**

DB0 = 0C

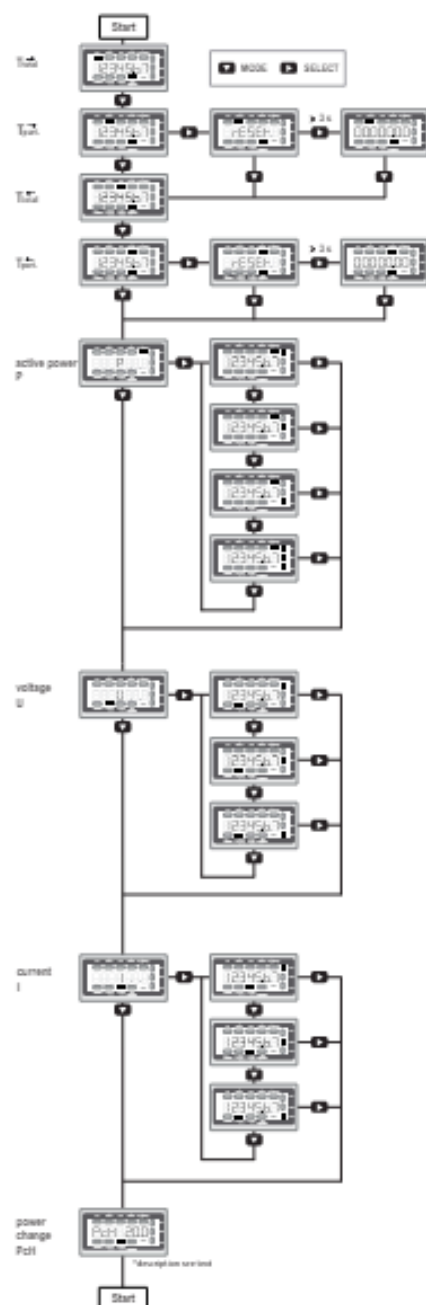


$T_{\text{total}}^{\leftarrow}$  Will be increased

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## Menu guidance



## Technical data

Rated voltage, extended range	3×230/400V, 50Hz, -20%/+15%
Reference current Iref (Limiting current I <sub>max</sub> )	3×0.5 – 10 (80)A
Internal consumption active power	0,8W at L1 and only 0,5W at L2 and L3
Display	LC display 7 digits, therefrom 1 or 2 digits after the decimal point
Accuracy class ±1%	B
Inrush current according to accuracy class B	40mA
Operating temperature	-25/+55°C
Interface	RS485 bus Series 14
Terminal cover sealable	Terminal cover claps
Protection degree	IP50 for mounting in distribution cabins with protection class IP51
Maximum conductor cross section 1)	L terminals 25mm <sup>2</sup> , N terminals 16mm <sup>2</sup> , RSA/RSB terminals 6mm <sup>2</sup>
Recommended torque 2)	L terminals 2,0Nm (max. 2,5Nm) N terminals 1,5Nm (max. 2,0Nm) RSA/RSB terminals 0,8Nm (max. 1,2Nm)
EC type examination certificate	0120/SGS0204
The energy meter is used indoors.	
Mechanical environmental conditions	class M1
Electromagnetic environmental conditions	class E2

1. The carrying capacity of cables and wires is defined in DIN VDE 0298-4.
2. The torques for screw terminals are mentioned in DIN EN 60999-1.

**To avoid damages at the energy meter, the recommended torque values for each terminal must not be exceeded!**

## EC DECLARATION OF CONFORMITY

**Product** :R3485 bus two-way three-phase energy meter, MID approval

**Type designation**: DSZ14DRSZ-3x80A

**EC-type examination**: 0120/SGS0204  
certificate

The manufacturer herewith declares, on his own responsibility that the designated products which this certificate refers to, are in accordance with the following harmonized standards or normative documents as well as with the following Directives of the European Parliament and of the Council (relevant version):

**DIN EN 50470** :part 1: 2019-08 and part 3: 2020-03 (electronic meters)

**2014/32/EU** :measuring instruments

**2014/30/EU** :electromagnetic compatibility

**2011/65/EU**: restriction of the use of certain hazardous substances (RoHS Directive)

The designated products are placed on the market by ELTAKO GmbH, Hofener Straße 54, 70736 Fellbach, Germany.

**Notified body:** SGS Fimko OY, No. 0598 Takomotie 8, FI-00380 Helsinki, Finland

**Manufacturer:** Shenzhen Chuangren Technology Co. Ltd. Building 33, No.3 Industrial Area, Mashantou, Gongming Street, New Guangming District, Shenzhen City, Guangdong Province, 518106, China

**Place, Date:** Shenzhen, 07 November 2022

## Signature

This declaration proves the compliance with the above-mentioned EC Directives but it does not include any assurance of properties.

Security advices of the provided product information have to be noticed.

## Manuals and documents in further languages:



[http://eltako.com/redirect/DSZ14DRSZ-3\\*80A\\_MID](http://eltako.com/redirect/DSZ14DRSZ-3*80A_MID)



1.



2.



3.

### Must be kept for later use!

We recommend the housing for operating instructions GBA14

**Eltako GmbH** D-70736 Fellbach

**Technical Support English:**



+49 711 94350025



[technical-support@eltako.de](mailto:technical-support@eltako.de)

[eltako.com](http://eltako.com)

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## Documents / Resources



[Eltako RS485 Bus Two Way Three Phase Energy Meter](#) [pdf] Instructions

RS485 Bus Two Way Three Phase Energy Meter, Bus Two Way Three Phase Energy Meter, Three Phase Energy Meter, Phase Energy Meter, Energy Meter, Meter

## References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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