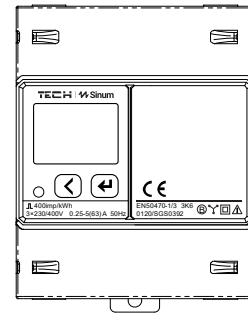


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EN



LE-3x230mb  
[www.sinum.eu](http://www.sinum.eu)

Product description

The LE-3x230mb energy meter is mounted on a DIN rail (TH-35). Thanks to the use of advanced integrated circuits for energy measurement and the use of digital sample processing and SMT technology, the device accurately shows the user's actual energy consumption.

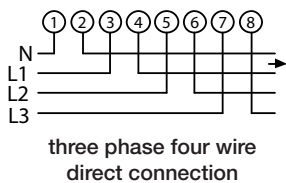
The LE-3x230mb is a certified energy meter.

Display

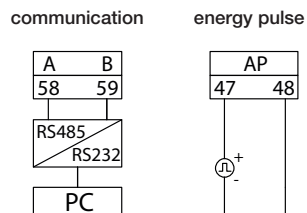
DIN-rail mounted energy meters show the measured data of voltage, current, power, power factor, frequency and energy. Press  $\leftarrow$  and  $\leftarrow$  buttons at the same time to switch between different display interfaces.

Installation and wiring

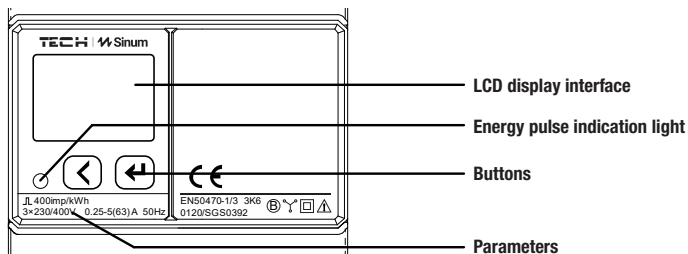
Wiring mode



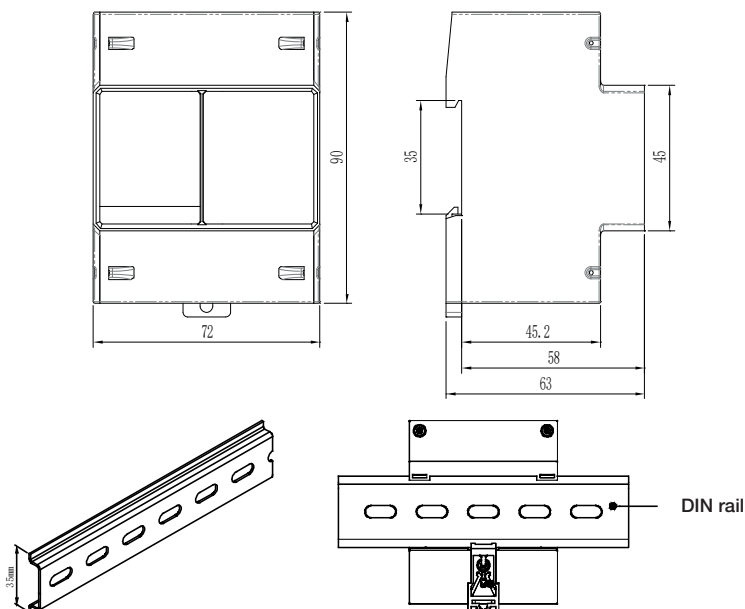
Signal terminal wiring diagram



Device description



Dimensions and assembly



Energy and electrical variables display interfaces

Display	Description	Display	Description
	Import active energy: EP = 780.62 kWh		Total multi-rate energy under T1 208.09 kWh
	Export active energy EP- = -0.00 kWh		Total multi-rate energy under T2 101.06 kWh
	Import reactive energy EQ = 18.80 kvarh		Total multi-rate energy under T3 382.23 kWh
	Export reactive energy EQ- = -7.10 kvarh		Total multi-rate energy under T4 89.24 kWh
	Phase voltage Ua: Ua = 220.1 V		Phase A reactive power: Qa = 0.108 kvar
	Phase voltage Ub: Ub = 220.2 V		Phase B reactive power: Qb = 0.210 kvar
	Phase voltage Uc: Uc = 220.0 V		Phase C reactive power: Qc = 0.098 kvar
	Line voltage Uab: Uab = 381.3V		Total reactive power: Q = 0.416 kvar
	Line voltage Ubc: Ubc = 381.2 V		Phase A apparent power: Sa = 2.218 kVA
	Line voltage Uca: Uca = 381.2 V		Phase B apparent power: Sb = 2.207 kVA
	Phase A current: Ia = 10.10A		Phase C apparent power: Sc = 2.211 kVA
	Phase B current: Ib = 10.20A		Total apparent power: S = 6.636 kVA

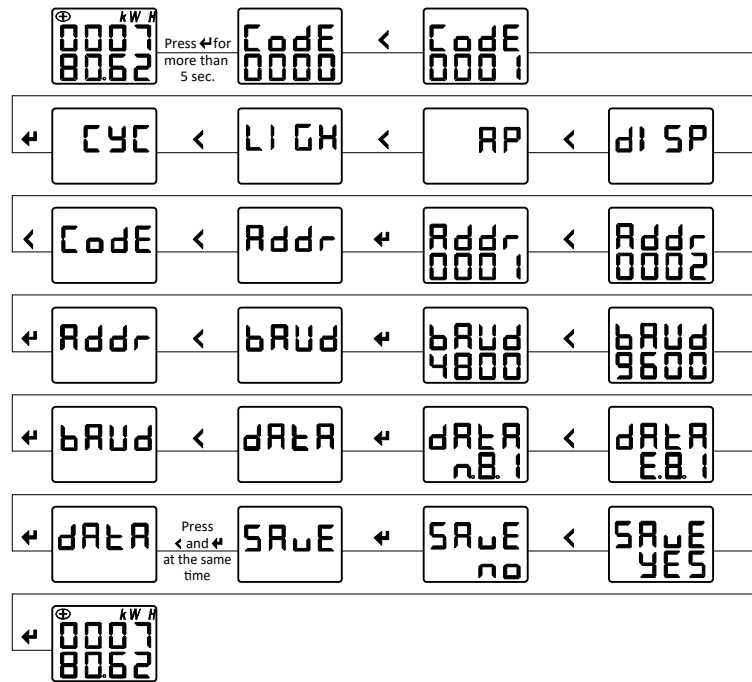
Display	Description	Display	Description
	Phase C current: Ic = 11.00A		Phase A power factor: PFa = 0.985
	Phase A active power: Pa = 2.128 kW		Phase B power factor: PFb = 0.998
	Phase B active power: Pb = 2.040 kW		Phase C power factor: PFc = 0.988
	Phase C active power: Pc = 2.100 kW		Total power factor: PF = 1.000
	Total active power: P = 6.267 kW		Grid frequency: F = 50.00 Hz

### How to register the device in the Sinum system

The device should be connected to the Sinum central device using the RS-485 connector, and then enter the address of the Sinum central device in the browser and log in to the device. In the main panel, click the **Settings > Devices > MODBUS devices > (+) > Energy meter > Energy meter TECH LE-3x230mb**. Then the following communication parameters should then be set:

- communication address **2**
- baud rate **9600**
- parzystość bitu **E.B.1**

The operation process is as follows:



### Technical data

Rated voltage	3x230/400V
Input current	0.25-5 (63) A
Frequency	50/60 Hz
Voltage range	0.8Un ÷ 1.2Un
Voltage circuit consumption	< 4VA
Current circuit consumption	< 1VA
Work temperature	-25°C ÷ 70°C
Storage temperature	-30°C ÷ 80°C
Relative humidity	5 ÷ 95% (no condensation)
Accuracy class (voltage, current:)	0.2 Class
Accuracy class (active energy)	0.5S Class
Accuracy class (reactive energy)	2 Class
Communication	Modbus-RTU protocol (RS-485)

### Setting

#### Enter programming mode:

1. Press the  $\leftarrow$  button (> 5 sec.) when the display shows the meter reading - the screen will display **Code**, press  $\leftarrow$  to confirm that you want to enter the authorization code.
2. Enter the code using the buttons  $\leftarrow$  (change value) and  $\rightarrow$  (next digit). The initial system password is 0001.
3. Press  $\rightarrow$  to confirm. If the entered password is correct, the meter will display the settings menu. In the case of an incorrect password, the display will remain unchanged.

#### Options available in programming mode

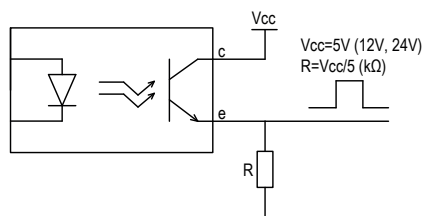
- **CYC** - cyclic settings
- **LI GH** - backlight time
- **AP** - optical output settings
- **dl SP** - welcome screen after switching on
- **Code** - password change
- **CLrE** - reset consumption
- **CLrD** - reset demand
- **Addr** - communication address
- **bAUD** - transmission speed
- **dAtA** - Check Mode
- **Prot** - communication protocol
- **Ct** - currently set rate
- **vEr** - software version
- **SAUE** - save and exit

#### Exit programming mode

Press  $\leftarrow$  and  $\rightarrow$  simultaneously in any settings screen, the meter will display **SAUE**, then press  $\rightarrow$ , and the meter will display **no**. At this point, do one of the following:

- (1) To save the changed settings, press  $\leftarrow$  to change the status to **SAUE--YES**, confirm saving by pressing  $\rightarrow$ .
- (2) To exit without saving changes, leave the status **no**, confirm by pressing  $\leftarrow$ .

### Energy pulse meter



### Note

#### Please do not touch the terminals when the meter is in operation!!!

Please read this operation instruction carefully and follow the instructions strictly to ensure your safe, correct and efficient use of the product. Make sure only the qualified technicians perform the installation and maintenance. Always use a properly rated voltage sensing device to confirm that all power is off. The cables should be connected to the terminals according to the diagram included in the instructions. Disconnecting / connecting the communication plug with the power on and incorrect order of connecting the inputs or outputs may result in damage to the device.

The product may not be disposed of to household waste containers. The user is obliged to transfer their used equipment to a collection point where all electric and electronic components will be recycled.



### EU Declaration of conformity

**Tech Sterowniki II Sp. z o.o.**, ul. Biała Droga 34, Wieprz (34-122)

Hereby, we declare under our sole responsibility that the **LE-3x230mb** energy meter is compliant with Directive :

- 2014/35/UE
- 2014/30/UE
- 2009/125/WE
- 2017/2102/UE

For compliance assessment, harmonized standards were used:

- EN 61010-1:2010+A1:2019
- EN IEC 61010-2-030:2021+A11:2021
- EN IEC 61326-1:2021
- EN IEC 61000-3-2:2019+A1:2021
- EN 61000-3-3:2013+A2:2021
- EN IEC 63000:2019 RoHS.

Wieprz, 01.17.2024

*Paweł Jura*  
Paweł Jura Janusz Master  
Prezesa firmy

The full text of the EU declaration of conformity and the user manual are available after scanning the QR code or at [www.tech-controllers.com/manuals](http://www.tech-controllers.com/manuals)

