



CERTIFIKAT o EU-pregledu tipa

EU-Type Examination Certificate

št. /No. **SI 20-11-002 MID**

revizija št. / Revision No. **1**

certifikat izdal
issued by

Urad RS za meroslovje
Metrology Institute of the Republic of Slovenia (MIRS)

Priglašen organ št. 1376
Notified body No.

na podlagi
in accordance with

1. odstavka 9. člena Zakona o meroslovju (Ur. list RS, št. 26/05 – uradno prečiščeno besedilo) in 14. člena Pravilnika o merilnih instrumentih (Ur. list RS, št. 19/16), ki povzema vsebino Direktive 2014/32/EU Evropskega parlamenta in Sveta
Metrology Act (OJ of RS, No. 26/05), Article 9, Paragraph 1, and Rules on measuring instruments (OJ of RS, No. 19/16), Article 14, which implements Directive 2014/32/EU of the European Parliament and Council.

izdano
proizvajalcu
issued to

Finder S.p.A.
Via Drubiaglio 14, 100140 Almeso (TO), Italy

za
in respect of

Enofazni elektronski števec delovne električne energije
Single-phase active electronic electrical energy meter

tip
type

7M.24.8.230.xxxx

bistvene zahteve
essential requirements

Pravilnik o merilnih instrumentih, Priloga 1, Bistvene zahteve, in Priloga 5 (MI-003), Števci delovne električne energije
Rules on measuring instruments, which implements Measuring Instruments Directive, Annex 1 Essential requirements, and Annex 5 (MI-003) Active electrical energy meters

veljavnost do
valid until

30. 6. 2030

Glavne značilnosti, pogoji in omejitve so podani v Prilogi, ki je sestavni del tega certifikata.
The principal characteristics, approval conditions are set out in the Annex hereto, which forms part of the approval documents.

Št. strani priloge: 7
No. of Annex pages:

Št. dokumenta: 6413-8/2020/5
Reference No.

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Postopek vodil:

Grega Kovačič
podsekretar



dr. Samo Kopač
direktor

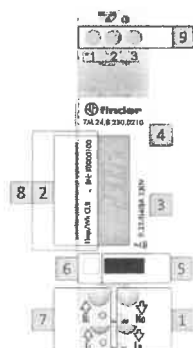
1. Instrument

The meters **7M.24.8.230.xxxx** are intended for energy measurements in a single-phase electrical power network. The meters measure energy directly in 2-wire networks according to the principle of fast sampling of voltage and current signals. A built-in microprocessor calculates active/reactive/apparent power and energy, current, voltage, frequency, power factor, power angle and frequency from the measured signals. This EU type examination certificate refers to measurement of active electrical energy.

Type 7M.24.8.230.xxxx	Description
7M.24.8.230.0010	Single phase energy meter 40 A, S0, MID
7M.24.8.230.0110	Single phase energy meter 40 A, S0, IR, NFC, MID
7M.24.8.230.0210	Single phase energy meter 40 A, RS485 MODBUS, IR, NFC, MID
7M.24.8.230.0220	Single phase energy meter 40 A, RS485 MODBUS, IR, NFC, Crypto chip, MID
7M.24.8.230.0310	Single phase energy meter 40 A, M-Bus, IR, NFC, MID

2. Design of the instrument

2.1. Construction



1. Current terminals – to load
2. Information display
3. IR COMM PORT –ON SIDE
4. DIN-Rail fitting
5. Cap touch
6. LED indicator
7. Current terminal – source
8. NFC
9. AUX terminals

Figure 1: Meter parts

2.2. Sensors

Current and voltage are measured in measurement system. Shunt resistor is used for current sensing. Measuring mains voltage is applied with resistor voltage divider.

2.3. Measurement value processing

2.3.1. Operating principle

The meter is connected via terminal block to the network. The metering elements consist of a current sensor (shunt) and a voltage sensor, which signals are fed to A/D conversion front end. The microcontroller acquires digital data from A/D converter, processes them and calculates values of measured energy. Results are stored in registers and can be seen on the LCD.

2.3.2. Hardware

System on a Chip (SoC) microcontroller is used which performs measuring function, controlling and monitoring of all other hardware. System for measuring is on STM32 microcontroller chip, which includes 64kB block of FLASH memory.

2.3.3. Software

Software was developed for the meter which is designed based on the microcontroller STM32. The software is identified by software version and software checksum. Both are displayed immediately after full display test at the startup. They can also be read using optional IR or RS485 MODBUS communication or displayed on LCD Info menu using cap touch interface. For readout using communication software FI-MIS 2.1 can be used.