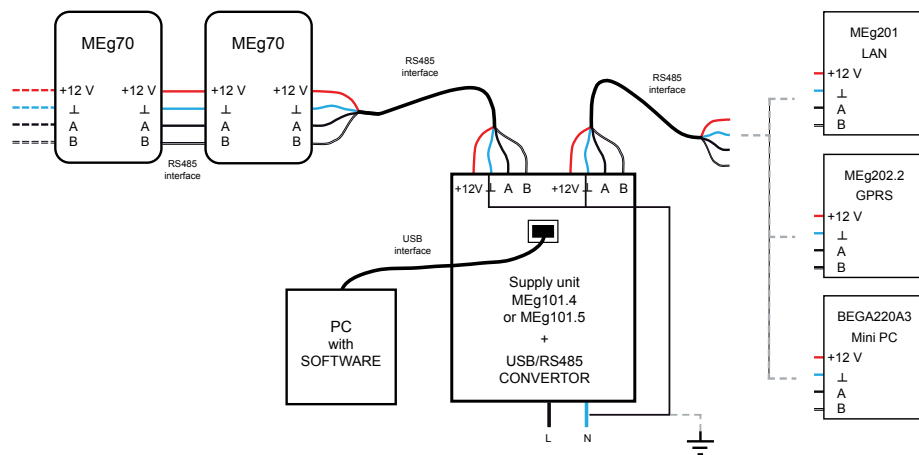
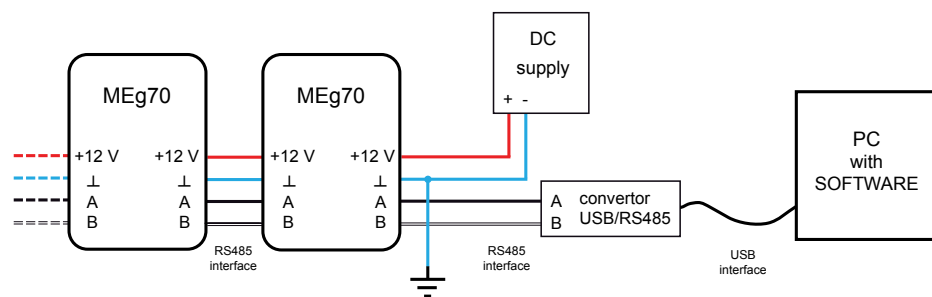


Wiring diagram with DC supply unit MEg101.4 or MEg101.5



General wiring diagram



Manufacturer

MEgA – Measuring Power Apparatus, plc., 664 31 Česká 390, Czech Republic
tel. +420 545 214 988, e-mail: mega@e-mega.cz, www.e-mega.cz

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Compact phase monitor MEg70



The compact phase monitor MEg70 is intended for measuring voltages, currents, powers and energies of one LV phase. It records and evaluates voltage events using methods of class S of the quality standard EN 50160 ed. 3. It evaluates and records also overcurrents as events.

The compact monitor MEg70 carries out the following measuring functions:

- on-line measurement,
- recording of time courses of measured quantities,
- evaluation of daily current diagrams,
- recording of voltage and current events,
- measurement of electrical power in six registers.

The compact monitor MEg70 is characterized by mechanical connection of voltage and current measurements, measuring and evaluating circuits including a serial interface into a unit, which is to be connected to the measured phase conductor in a suitable place. A contact mechanism with a replaceable tip is used for contacting with the measured voltage also of an insulated phase conductor. A flexible current sensor is used for measuring the phase conductor current. The monitor MEg70 is provided with a pair of interconnected four-pole spring

terminal blocks allowing chaining of more monitors MEg70 and their connecting to a common power supply unit and a superior communication system.

There is a safe terminal used for detecting a correct contact with the measured conductor; it can be alternatively used for connecting the measured voltage safely through a measuring cord without breaking the insulation of the measured wire.

The monitor MEg70 is provided with an internal backup clock, a flash memory for storage of measured and digitally processed data, a serial interface RS485 for data transmission into the superior measuring networks and systems and a standardized communication protocol MODBUS.

The parameterization and on-line measurement can be performed on PC with the program MERCI, the measured data files can be browsed and evaluated using the browser program DVMEG and the program WebDatOr is used for data saved in a database.

The compact monitor MEg70 has the advantage of measurement without front-end instrument transformers and other components, which significantly reduces installation costs and allows also additional implementation of accurate measurements according to applicable standards.

TECHNICAL PARAMETERS

Measured quantities

Voltage U, measurement category IV, direct measurement

$$U_{nom} = 230 V_{AC}$$

U measurement error: 0.1 % of measured value $\pm 0.05 \% U_{nom}$

Measuring range of U: 5 % – 150 % U_{nom}

Maximum overloading of voltage input: MEg70.L – 2.5 kV, MEg70.H – 8 kV

Change of measured U with temperature: 0.05 % of measured value / 10 °C

Change of measured U with frequency: 0.05 % of measured value / 1 Hz

Current I, measurement category IV, direct measurement

$$I_{nom} = 30 A_{AC}, 100 A_{AC}, 300 A_{AC}, 1000 A_{AC} \text{ (options as ordered)}$$

Measurement error I: 0.2 % of measured value $\pm 0.2 \% I_{nom}$ ¹⁾

Measuring range of I: 5 % – 130 % I_{nom}

Maximum overloading of current input: 10 kA

Active power P

Measurement error of P: 0.5 % of measured value $\pm 0.2 \% P_{nom}$ ¹⁾

Measuring range of P: from 5 % to 120 % of rated value, $\cos \phi \geq 0.27$

Reactive power Q

Measurement error of Q: 0.5 % of measured value $\pm 0.2 \% Q_{nom}$ ¹⁾

Measuring range of Q: from 5 % to 120 % of rated value, $\cos \phi \leq 0.87$

Active energy A_{act}

Measurement error of A_{act} : in accordance with class A according to EN 50470 ¹⁾

Reactive energy A_{react}

Measurement error of A_{react} : accuracy class 2 according to EN 62053-23 ¹⁾

Voltage events, voltage deviations

Class S according to EN 61000-4-30, Ed. 2

Note: ¹⁾ Wire with measured current is attached in a hook

Working conditions

Operating temperature: -25 °C to +60 °C Relative humidity: 10 % – 90 % at 40 °C

Frequency of measured quantities: 47.4 Hz – 52.9 Hz Supply voltage: 9 V_{DC} – 16 V_{DC}

Supply current: 35 mA_{DC} during measurement
45 mA_{DC} during measurement and communication

Protection rating: IP20 except for the measuring tip

Safety class of the instrument: II Overvoltage category: CAT IV

Design details

Dimensions: 97.5 × 44 × 50.5 mm

Hook dimensions: 46.5 × 43 × 24 mm

Heights of replaceable tips: 3 mm, 4 mm
tip 3 mm up to cross-section of the measured wire 35 mm²,
tip 4 mm for larger cross-sections;
wire only with insulation, no covering

Weight: 0.135 kg

Diameter of measured wire, max/min: 28 mm / 7 mm

Max. cross-section of triangle
profile of measured wire: 240 mm²

Internal diameter
of flexible sensor loop: 55 mm

Diameter of wires of terminal block: 0.8 mm – 1.0 mm

Maximum length of power
and communication wires: 30 m

Li battery type for internal time: CR2032/1HFE

General data

Voltage input resistance: 16.24 MΩ

Data memory: 4 MB – flash

Data memory organisation: linear or circular

Serial interface: RS485 – 115.2 kbit/sec

DESCRIPTION OF FUNCTION

The MEg70 compact monitor measures, evaluates and records voltage including deviations and events, current, output power and energy of phase wire of low voltage network in flash memory. It passes measured data through electrically isolated RS485 serial interface to display and evaluation units of local technological measuring network or to communication unit of remote information system. For connection to a PC without the RS485 interface, it is necessary to use interface converter RS485/USB or a set consisting of power supply unit MEg101.4 or MEg101.5 and a RS485/USB converter.

The MEg70 monitor is designed for easy installation on low voltage wire with minimum space requirements, the voltage and current is measured directly on the live parts too.