

MC 320 - ENERGY METER, MC 330 - MULTIMETER



USE

For electricity distribution and energy production companies, utilities, dwellings, energy management solution providers, industry, business buildings, designers of small power stations, panel builders, etc.

Main features are:

- Measurements of instantaneous values for more than 60 quantities (U, I, P, Q, S, PF, PA, f, j, THD, MD ...)
- 4 Energy counters
- Accuracy class U, I, P 0.5 (Active energy Class 1)
- Large frequency range from 16 2/3 Hz to 400 Hz
- Up to 2 tariff inputs (option)
- Up to 2 pulse or relay outputs (option)
- AC or Universal (option) power supply
- Graphical LCD; 128 x 64 dots with illumination
- Automatic range of nominal current (max. 12.5 A) and voltage (option)
- User-adjustable display of measurements
- Multilingual support (13 languages)
- RS 485 or RS232 communication up to 115,200 bit/s (option)
- MODBUS communication protocol supported
- User-friendly PC MiQen software for setting via RS485 or RS232 communication

Measurands

- RMS values of currents and voltages (only MC330)
- Measurements of active, reactive, apparent power and power factor (only MC330)
- Measurements of energy in all 4 quadrants
- Average values of measurands per interval (only MC330)

225.9₂ V U₁
144.2₉ mA I₁
23.7₃ W P₁

42.7₃ W P
39.2₆ var Q
59.0₃ VA S

MD values
P+ = 143.20 kWh
P- = 184.50 kWh

Input / output modules

The modules are available with double inputs/outputs. Each module has three terminals. The meter is available with-out, with one or with two modules. The following modules are available:

- Output module (relay version MC330 only) 2 outputs
- Tariff input 2 inputs

Output module is available as:

- Opto output according EN62053-31:2001 (27 V, 27 mA)
- Relay output in MC330 can be used for pulse output or alarm output (40 V, 1 A).

Communication

Option is communication module for reading measured values and instrument setting. Available is RS232 or RS485 communication type module. Communication is galvanic separated from other circuits. For setting we suggest using MIQEN software.

Supply

Standard is AC power supply enables connection of the meter to AC voltage (57.7 & 63.5 / 100 & 110 / 230 / 400). Option is a universal power supply enables connection of the meter to DC (20–300 V) or AC voltage (48–276 V / 50 Hz).

MiQEN

MiQen software is intended for supervision of the meter on PC. It enables setting meter parameters that are transferred into the instrument via communication (option). Multilingual software functions on Windows 98, 2000, NT, XP operating systems.

MULTIMETER MC 330, ENERGY METER MC 320

Accuracy

Accuracy is presented as percentage from nominal value of the measurand except when it is stated as an absolute value.

Measurand	Accuracy
Rms current (I1, I2, I3, Iavg, In, MD)	0.5
Rms phase voltage (U1, U2, U3, Uavg, MD)	25 ... 600 V 0.5
Phase-to-phase voltage (U12, U23, U31, Uavg)	0.5
Frequency (f)	10 mHz
Power factor (PF)	0.5
Phase and phase-to-phase angle (ϕ , ϕ_{12} , ϕ_{23} , ϕ_{31})	0.5°
Active, reactive and apparent power	0.5
Active energy	EN 62053-21 Class 1
Reactive energy	EN 62053-23 Class 2
Pulse output	EN 62053-31 Class A & B

Inputs

Inputs signals	Current	Voltage
Nominal frequency range		50, 60 Hz
Measuring frequency range		16 - 400 Hz
Nominal value (In, Un)	1 / 5 A	75, 120, 250, 500 VL-N
Maximal value	12.5 A	600 VL-N
Consumption	< 0.1 VA	< 0.1 VA

Power supply

Power supply	Universal	AC
Nominal voltage AC	48 - 276 V	57.7 & 63.5 / 100 & 110 / 230 / 400
Nominal frequency	40 - 65 Hz	40 - 65 Hz
Nominal voltage DC	20 - 300 V	—
Consumption	< 3 VA	< 3 VA

Safety

Safety	Protection clas II 600 v rms, installation category II 300 v rms, installation category III Pollution degree 2 in compliance with EN 61010-1:2002
Enclosure material	PC/ABS Incombustibility-self-extinguish ability, complying with UL94 V-0
Enclosure protection	IP 52 (IP 00 for terminals) in compliance with EN 60529:1997

Reference conditions

Ambient temperature	-10 ... 23 ... 55 °C
Voltage input	+/- 20 % Un
Voltage input with voltage autorange	50 ... 500 V
Current input	0 ... 100 % In
Active/reactive power factor	$\cos \phi = 1 / \sin \phi$
Waveform	sinus

Ambient conditions

Temperature range of operation	-10 to +55 °C
Storage temperature range	-40 to +70 °C
Average annual humidity	≤ 75 % r.h.