



Three Phase Electronic Meter **MET410**

Three-phase electronic electricity meters are designed to be used for measuring active and reactive energy and demand of three-phase AC power system with 4 line leads (3 lines for Aron's coupling), nominal frequency of 50Hz, 60 Hz.

Electronic meter has the following functions:

- Real time clock with calendar function
- Remote firmware upgrade
- Measurement of imported (+A, +R), exported (-A, -R) and absolute (|A|, |R|) active and reactive energy in both energy flow directions and maximum demand
- Measurement of instantaneous voltage, current, frequency and power factor by phase, voltage THD
- Load profile recording with programmable integration period (typically 5, 10, 15, 30 or 60 minutes, 1 day)
- Event log rec. with 1000 events with time stamp
- Grid quality monitoring
- Billing data archiving based on predefined plan
- Parameterization and data reading locally by IR port
- Logging and recording of metering integrity violation
- DLMS communication protocol
- AMI functionality with modular GSM/GPRS, RF, PLC (S-FSK, D-CSK, BPL, G3), M-Bus, ZigBee and RS485 communication modem
- Local device control and management through RS232 / RS485 communication interface
- Meter can be equipped with integrated RS232, RS485 and/or MBus micro master comm. interface
- Router meter function (optional)
- Relays outputs for remote and local load control
- Power monitoring and load control with integrated or external load control switch for maximum current up to 60 A. External load control switch is controlled through MBus protocol
- Very High EMC immunity
- Self-extinguishing polycarbonate housing
- IP54 protection against water and dust



Technical information

Nominal voltage

Direct connection	3 x 230V/400V +15%/-20%
Semi-direct connection	3 x 230V/400V +15%/-20%
Indirect connection	3 x 58V/100V +15%/-20%

Nominal current

Direct connection	5 A, 10 A
Semi-direct, indirect, Aron's conn.	1 A, 5 A

Maximum current

Direct connection	40A, 60A, 80A
Semi-direct, indirect, Aron's conn.	1.2 A, 6 A

Starting current

	0.2% in
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Nominal frequency

	50 Hz, 60 Hz
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Accuracy class

Active energy	0.2, 0.5, 1, 2
Reactive energy	2, 3

Self-consumption in voltage circuit

on nominal voltage <2 W / 10 VA

Self-consumption in current circuit on nominal current < 2.5 VA

Self-consumption on tariff input on nominal voltage < 150 mW

Display

Type	LCD
Display digit numbers for energy	6 + 2
Display digit numbers for power	2 + 3
Display digit numbers for OBIS	7
Display modes	Auto, manual and test

Tariff management

Number of daily tariffs	Changing up to 8
Internal tariff plan	Via internal RTC
External tariff plan	Meter contains external tariff inputs

Mass

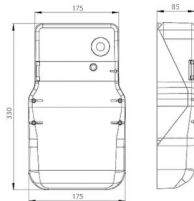
	< 1.2 kg
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Overall dimensions

With PLC communication modem and load control switch	330 x 175 x 85 mm
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Meter lifetime

	>16 years
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Load Profile

Programmable LP period	5, 10, 15, 30, 60 min
Capacity (2 measurement values with a time stamp and status, period 1 hour)	560 days

Daily profile

Capacity (8 measurement values with a time stamp and status)	15 days
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Hourly profile

Capacity (8 measurement values with a time stamp and status)	48 hours
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Daily deviation of time base

0.5 s / 24 h

Backup time

12 years with Li-battery

Local interface

Communication interface

Optical IR port (ETC 62056-21)
PLC (5-FSK, D-CSK, BPL, G3),
GSM/GPRS, RS-485, M-Bus,
Wireless M-Bus
DLMS / COSEM

Communication protocol

Operating temperature range

-40° C to +70° C

Storage temperature

-40° C to +85° C

Consumption control

2 relay outputs
150 mA, 230 V
or 5 A (10 A), 230 V

Fast transient burst test

Current and voltage circuits under/not under load	4 kV
Auxiliary and communication circuits > 40V	2 kV

Fast transient surge test

Current and voltage circuits	4 kV
Auxiliary circuits > 40V	1 kV

Isolation strength

4 kV, 50 Hz, 1 min

Impulse voltage test

Current and voltage and auxiliary circuits	8 kV, 12 kV (optional) 1.2 / 50 μs
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Electrostatic discharge

Contact discharge	8 kV
Air discharge	15 kV

Flammability - Glow-wire

flammability test

Contact force of heating wire	1 N
Duration	30 s
Test temperature (terminal block)	960° C
Test temperature (housing)	650° C

IP degree of protection

IP54

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