ELGAMA ELEKTRONIKA

From SIMPLE

- Accuracy class 1.0 (B) or 2.0 (A)
- Active energy measurement
- Single-tariff
- Optical communication interface
- Data storage in non-volatile memory

To SOPHISTICATED

- Accuracy class 1.0 (B) or 2.0 (A)
- Active energy and maximum demand measurement
- Multi-tariff
- Optical and electrical communication interfaces (AMR compatible)
- Data storage in non-volatile memory
- Internal real-time clock with changeable Li-ion battery or Super-Cap backup
- Extended anti-tamper features
- Events logbook
- Relay output

GAMA 100

for residential and commercial metering

New generation single-phase static electricity meter GAMA 100 is developed for residential applications and is approved according to EN 50470-1, EN 50470-3, IEC 62052-11 and IEC 62053-21. The electricity meter satisfies the requirements of Directive 2004/22/EC of the European Parliament and of the Council of 31 March 2004 on measuring instruments.
GAMA 100 can be either simple, single-tariff or sophisticated, multi-tariff meter with extended functionality. Meter can be provided with various optional features – including maximum demand measurement, possibility to connect meter to AMR system, extended anti-tamper capability, relay output.

Measuring

The meter operates in single-phase electricity networks and independently of current flow direction measure:

- Active energy with accuracy class 1.0 (B) or 2.0 (A)
- Instantaneous power
- (Optional) Maximum demand with programmable integration periods 15, 30, 60 min.
- (Optional) Measurement in two channels (in phase and neutral lines).
- (Optional) Instantaneous values (A, V) – readout only from communication interfaces;

Tariff module

The GAMA 100 meter can be single-tariff or multi-tariff. The multi-tariff GAMA 100 modification has an internal real-time clock with Li-ion battery ([Optional] can be changeable without uninstalling meters from site) or Super-Cap backup and a complex tariff structure (Time-Of-Use):

Number of energy tariffs	Up to 4 tariffs
Number of seasons	Up to 12 tariff seasons
Number of week profiles	Up to 10-week profiles
Number of day profiles	Up to 15-day profiles
Special days	Up to 365 days
[Optional] Number of maximum demand tariffs	Up to 4 tariffs

Data storage

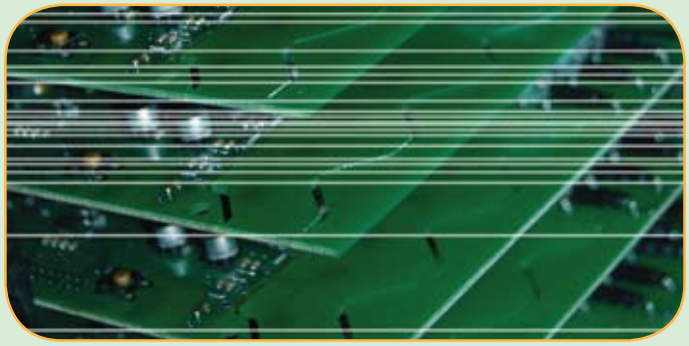
The GAMA 100 meter has non-volatile memory which allows to store metering data without the influence of power outages. Capacity of stored data:

Total energy	from installation date;
Monthly energy	of last 16 months;
Events logbook records	up to 10 records of each event type
[Optional] Monthly maximum demand	last 16 months

Billing

At the end of the billing period, the billing period reset signal triggers the storage of the current values to the non-volatile memory. The billing period reset may be initiated:

Manually	by pressing push button;
Automatically (programmable)	on decade days; on ½ month; on predefined day.



Communications

The meter has optical communication interface in accordance with IEC 62056-21. Optical communication interface allows the user to read data and to program the meter in the field or in the workshop.

[Optional] The GAMA 100 meter can have electrical communication interface (20 mA current loop or RS485) with protocol in accordance with IEC 62056-21 or IEC 62056-31, allowing connection of meters to AMR system through external GSM/GPRS, RF, PSTN, and LAN controllers.

Outputs

- Electric pulse output (S0)
- LED test output
- [Optional] Relay, normally open contacts are connected:
  - When specified energy tariff is valid;
  - For two programmed periods during the 24-hour interval (periods are set in 15 minutes step).

Security features

Hardware protection allows only authorized persons to access the meter:

- Two seals on main cover;
- One seal on terminal cover;
- [Optional] Optical communication interface sealing;
- [Optional] current measurement in neutral.

Software protection allows only authorized persons to program the meter with software for meter programming and data reading:

- Meters programming is password protected; if incorrect password is entered four times a day, the communication interfaces will be locked for 24 hours. During that period communication is impossible.

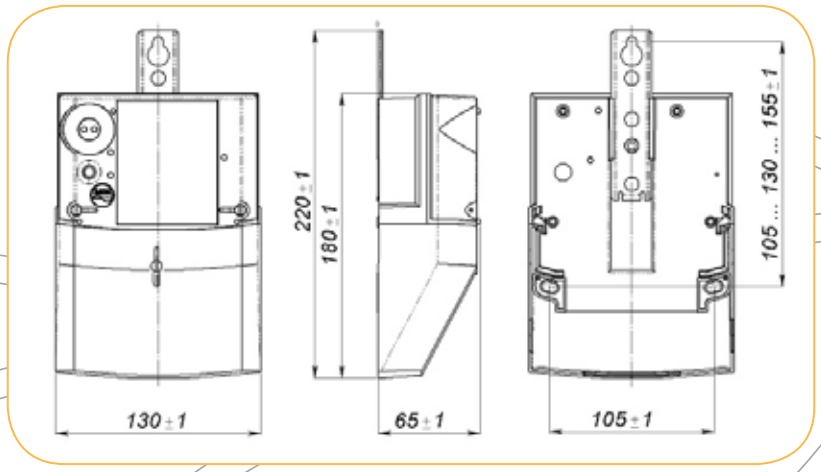
The meter with internal clock has Events logbook registering the following events:

Power outages	last 10 events with date & time;
Meter programming	last 10 events with date & time;
Magnetic field influence	last event with date & time;
[Optional] Main cover openings	last event with date & time;
[Optional] Terminal cover openings	last event with date & time.

Display

The GAMA 100 meter is equipped with LCD (liquid crystal display). LCD contains 8 digits with programmable decimal point: 8-5 for whole numbers and 0-3 digits for decimal numbers. LCD displays majority of data accumulated in meter and parameterization constants. Features:

- Cyclic (automatic) and static (manual) data scroll;
- Data indication on LCD during power outages;
- Reverse current flow indication;
- Li-ion battery (Super-cap) status indication;
- Menu control by pushbutton or [optional] light signals.



Technical specifications

Ratings

System	Single-phase 2-wire
Accuracy class	class 1.0 or 2.0 (IEC 62053-21), class A or B (EN 50470-3)
Reference voltage, U_n	100V; 120V; 127V; 220V; 230V; special on request
Reference (maximum) current, I_b (Imax)	5(60) A; 5(80) A; 5(100) A; 10(60) A; 10(80) A; 10(100) A
Current threshold	0.4% Ib
Reference Frequency, Hz	50 or 60
Meter constant, imp/kWh	1...19999, programmable
Power consumption:	
• In voltage circuit	< 0.75W; < 1 VA
• In current circuit	< 0.05 VA
Temperature ranges:	
• Meter operating	-40°C to +70°C
• Meter storage	-40°C to +70°C

Internal real-time clock

Accuracy	< 0.5 s/24 h (T = 23 °C),
Backup power supply	Li-ion battery or Super-Cap (rechargeable)
Operation duration using only backup:	
• Li-ion battery	> 16 years
• Super-Cap	> 7 days

Case & Dimensions

Case	UV stabilized polycarbonate
Insulation	Protective class II
Protection class	IP53
Dimensions, mm	180 x 130 x 65
Weight, kg	0.6

ELGAMA-ELEKTRONIKA
Visorių st. 2, 08300 Vilnius, Lithuania
Phone: +370 5 2375009, Fax +370 5 2375020
E-mail: marketing@elgama.eu,
www.elgama.eu