# Electricity Three Phase Smart Meter

SMART METER FOR THE INTERNET OF THINGS

The three-phase Smart Electricity Meters **«Smartico E307»** is optimized for smart metering systems. It comes in many shapes and variants. Whether you need a meter with or without breaker, a DIN-rail variant or a meter with or without different wireless data transmission (LoRaWAN/NB-IoT/GSM).

The Smartico E307 is a true intelligent meter, able to store data in non-volatile memory and measure active/reactive energy in both consumed and delivered to the power grid.

Main function is accuracy measure loop power grid parameters, including voltage, current, power, frequency, energy, demand, limits, total harmonic distortion, voltage and current imbalance and other parameters.
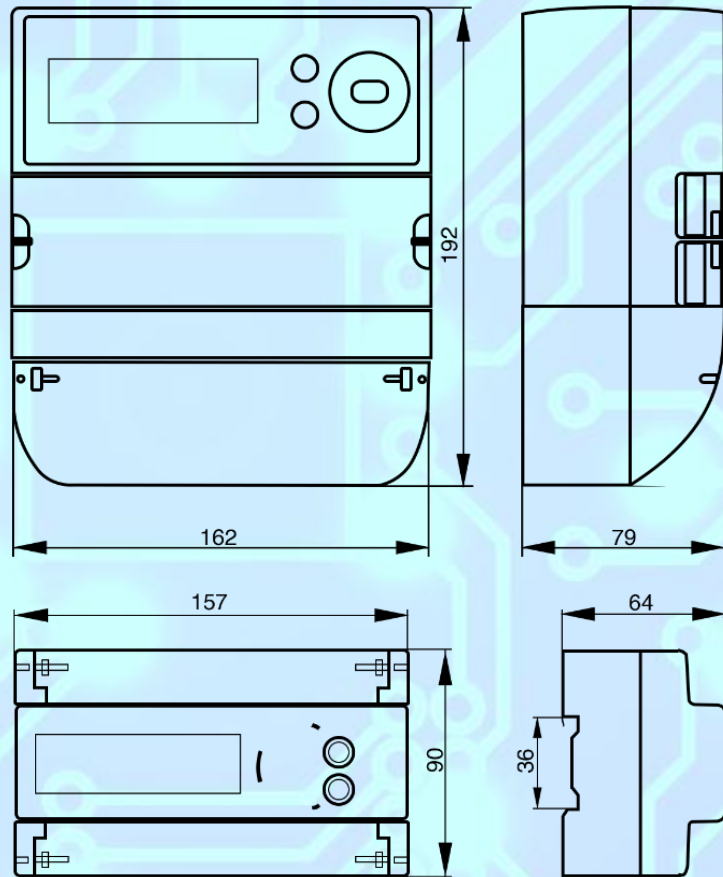
KEY FEATURES:

- Measure active/reactive energy in 3x230/400 V, 50 Hz.
- Base (maximum) load current – 5(100) A.
- Support for up to 8 tariffs and flexible schedule setting.
- Differentiated metering by time of day, by the level of energy consumed and power.
- Ability to account for exported energy.
- Scheduled automatic lighting control
- Monitoring network grid parameters and reporting when exceeding limits
- External magnetic field detection.

- Built-in non-volatile memory, archiving, built-in real-time clock.
- Ability to transfer data in the unlicensed frequency range.
- Exclusion of the human factor when taking readings.
- Available with an external antenna.
- Protection from external influences and transmission of an alarm message to the dispatcher's software when the case is opened.
- Overload protection
- Small size, easy installation.
- Average meter life of at least 30 years.

FIELDS OF APPLICATION:

- Remote meter reading;
- Industry;
- Smart lighting;
- Building smart home and smart city systems;
- Energy & Cost reduction

- Energy Management Solution;
- Public utilities;
- Alternative energy, Green Building initiatives
- Retail & shopping malls
- Tenant cost allocation

SPECIFICATIONS

Parameter	Value	
Connection type	Transformer	Pass-Through
Accuracy class (active energy) according to EN 62053-22: 2015 EN 62053-21: 2015	0.5S 1	– 1
Accuracy class (reactive energy) according to EN 62053-23: 2015	2	2
Nominal voltage, V	3x230/400 3x57.7/100	3x230/400
Installed operating voltage range, V	0.9 – 1.1 of nominal voltage	
Installed operating voltage range, V	0.8 – 1.15 of nominal voltage	
Maximum working voltage range, V	0 – 1.15 of nominal voltage	
Base (Maximum) current, A - model 10м - model 9м	5(10) 5(10)	5(80) 5(100)
Nominal value of frequency, Hz	50	
Starting current (sensitivity), A, no more than: - active energy - reactive energy	0,005 0,01	0,02 0,025
Meter's constant, imp. / KW * h (imp. / KVar * h) - "main" operating mode - "Verification" operating mode	5000 100000	500 10000
Power consumption, V · A (W), no more: - voltage circuit - current circuit	5 (2) 0.1	
Operating temperature range, ˚C	- 40 - 70	
The relative humidity at a temperature of from 0 ° C to 30 ° C, without condensate,%, not more	90	
Atmospheric pressure, kPa	70 – 106.7	
Accuracy of the clock in the presence of a supply voltage at normal temperature, sec/day., No more	± 0.5	
Average meter service life, years, not less	30	
Information retention period at power off, years, not less	10	
Weight, kg - model 9м - model 10м	0.8 1.3	
Overall dimensions WxDxH, mm - model 9м - model 10м	157× 90×64 192×162×105	
Ingress protection	IP51	
Electrical safety class	II	
EMC class according to OIML D	E2	
Mechanical class according to OIML D 11	M1	

Electricity Three Phase Smart Meter modifications

		Smartico	E307	3	2	RR	− 2	L	− D	W	i	Mc

Type of meter

Rated (maximum) current; Accuracy class active / reactive energy	
1	5 (10) A; 0,5S/1
2	5 (80) A; 1/2
3	5 (100) A; 1/2

Rated voltage	
1	3x57,7/100 V
2	3x230 /400 V

The presence of additional interfaces (the main interface is optical port. It present in all meters)	
	No
G	GSM
N	NB-IoT
R	RS-485
L	LoRa
W	WiFi
B	Bluetooth
Z	ZigBee
RG	RS-485, GSM (model 10м only)
RF	RS-485, RF868 (model 10м only)
RR	RS-485, RS-485 (model 10м only)

Model, temperature	
1	9м, - 40 +70 °C
2	10м, - 40 +70 °C

Terminal cover (9m only)	
	Standard
L	Small

Hardware load shedding	
	No
D	Present

Accounting direction	
1	Unidirectional
W	Bidirectional

Display type	
	LCD without backlight
i	LCD with backlight

Communication protocol support	
	Modbus
Mc	DLMS/COSEM (IEC62056)

ADVANTAGES OF THE SYSTEM BASED ON LPWAN:

- Long range communications (up to 15 km with direct visibility);
- Strong network connectivity in dense building areas;
- Unlimited network scaling;
- Intelligent network (adaptive data transfer rate and individual power adjustment);
- Noise immunity (the possibility of demodulation of the signal with a level up to 20 dB below noise and interference);
- Use of license-free frequency bands that do not require additional costs to acquire a radio frequency resource in **LoRaWAN**;
- Two-level data encryption at the gateway level **LoRaWAN/NarrowBand** and application;
- Ability to expand and change functionality without significant additional investment;