



add new tech to your business!

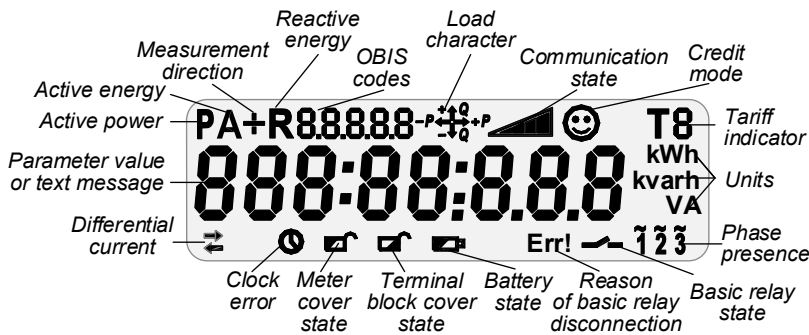
AD13A.1-11-1

MULTI-FUNCTION & MULTI-TARIFF THREE-PHASE ELECTRONIC METERS DESIGNED FOR USE IN AMI/AMR SYSTEM

OVERALL VIEW



DISPLAY INDICATIONS



KWh KVArh VAh	Active energy (<i>export/import</i>) Reactive energy (<i>4 quadrants</i>) Apparent energy
V A	Measured quantities
THD	Calculation of total harmonic distortion factor
T1-T6	Multirate registration
	Built-in clock
	Event Log
	Load profile
I1≠I2	Differential current detection
IP54	Protection level
	Backup power supply
	Standard data model, open protocols
	Optical port
	Built-in relay
	Sensor of meter cover opening
	Sensor of terminal block cover opening
	Magnetic field sensor
	RS-485 communication interface
PLC	Power Line Communication
	Authentication & Encryption

DLMS/COSEM SUPPORT

- Standard data model
- Standard communication protocols
- Interoperability

BUILT-IN CLOCK

- Real Time Clock (RTC), accuracy 0,5 s.
- IEC 62052-21 standard compliant
- External synchronization
- Daylight saving time support

MEASURED QUANTITIES

- Active energy, class B (1), export and import
- Reactive energy, class 2; 4 quadrants
- Apparent energy
- Power, Max Demand
 - integration period: 15', 30', 60', 1 day
 - average interval: day, month
- Phase voltage/current, instantaneous value, RMS, neutral current, difference between phase and neutral currents

METERING DATA

- Actual meter readings
- Periodic meter readings: daily, monthly
- Interval meter readings: 5', 10', 15', 20', 30', 60'
- Timestamp

DATA STORAGE

- Non-volatile memory
- Capacity depends on data type and number of parameters and can be expanded for one type of data on the expense of another
- Up to 3 interval profiles and 1 billing profile. For example:
 - *15 minutes interval profile:* 6 parameters for about 63 days
 - *hourly interval profile:* 6 parameters for about 13 days
 - *monthly billing profile:* 6 parameters for about 110 months

MULTI-RATE METERING

- Up to 6 tariff registers
- Up to 12 changeovers per day
- Tariff indicator is displayed on LCD and transmitted to HES
- Active and passive tariff plans, configurable activation time of the passive tariff plan

CALENDAR

- Up to 12 seasons per year
- Up to 7 daily profiles per week
- Up to 30 special days per year
- Support of movable holidays

EVENTS & ALARMS HANDLING

- Continuous control of current state of meter functional nodes and alarms/events, timestamps
- Standard set of events processing including: registration in the special logs and registers, event report sending, states displaying, load switching off on special cases
- Different types of event logs

METER SELF-CONTROL

- Built-in test for continuous self-control
- Quick response on severe error
- Meter state events registering

TEST OUTPUTS

- Outputs: 2 optical outputs (LEDs), optical port
- Parameters under control: active energy, reactive energy

BUILT-IN DISPLAY

- LCD, 8 digits, configurable decimal place (up to 3 digits)
- Special symbols, data identification according to IEC 62056-61 (OBIS)
- Metering data and specified messages displaying
- Service and client lists of parameters
- Manual and automatic modes of screens scrolling
- Display self-testing
- Configurable backlight mode

LOAD CONTROL

- Built-in relay (80 A)
- Control modes:
 - remote (by command)
 - local (by condition)
 - manual (by push button)
- Continuous relay state control
- Relay status displaying
- Load switch events registering

POWER LOAD CONTROL

- 1 extra relay (2.5 A), which controls external contactor of consumer's appliances
- Control modes:
 - remote (by command)
 - local (by schedule)
- Events registering

ELECTRICAL ENERGY QUALITY CONTROL

- Quality indexes:
 - average voltage
 - voltage sags and swells
 - outages
 - network frequency
 - angles between phases
 - THD for voltage/current harmonics
- Remote or local configuring of parameters thresholds
- Quality events registering

FRAUD & THEFT PROTECTION

- Continuous monitoring;
- Fraud types under control:
 - meter case cover opening
 - meter terminal block cover opening
 - inadmissible differential current
 - strong external magnetic field
- Hall sensor for magnetic field detection
- Protective seals
- Fraud events registering

THRESHOLDS MANAGEMENT

- Configurable thresholds values
- Possibility to disconnect consumer from the network, when a threshold is crossed

INFORMATION SECURITY

- Communication encryption (AES-GCM-128 security suite)
- Data access according to access rights
- Firmware protection
- Secure events registering

DATA TRANSMISSION

- Data transmission on demand or by schedule
- Request types:
 - Concentrator request (via communication channel)
 - Hand Held Unit request (via optical port)

POWER LINE COMMUNICATION (PLC)

- Built-in PLC modem
- G3-PLC (ITU-T G.9903) compliant
- PRIME (ITU-T G.9904, PRIME specifications v.1.3.6 and v.1.4) standard compliant;
- Switching between G3-PLC and PRIME is performed by changing the meter firmware.
- PLC features:
 - ✓ CENELEC A
 - ✓ FCC band
 - ✓ EMC standards compliance
 - ✓ Auto-discovery
 - ✓ Repeating

RS-485 COMMUNICATION INTERFACE

- Built-in RS-485 interface with two paralleled outputs:
 - provides a link between the meter and an extension communication module via mini USB port;
 - ensures the power supply of communication module;
 - provides a link between the meter and other devices via WAGO connectors
 - baud rate - up to 19 200 bps.

COMMUNICATION MODULE

- Two LEDs placed on the terminal block cover to reflect the state of communication module

OPTICAL PORT

- IEC 62056-21 standard compliant;
- Data transmission rate 38400 bps;
- Possibility of local data exchange and meter parameterization.
- A possibility to install the optical port cap with sealing option is provided.

SOFTWARE UPDATE

- Remote (via communication channel) or local (via optical port);
- Sw update events registering.

METER PARAMETERIZATION

- Remote (via communication channel) or local (via optical port);
- Access rights assignment from HES;

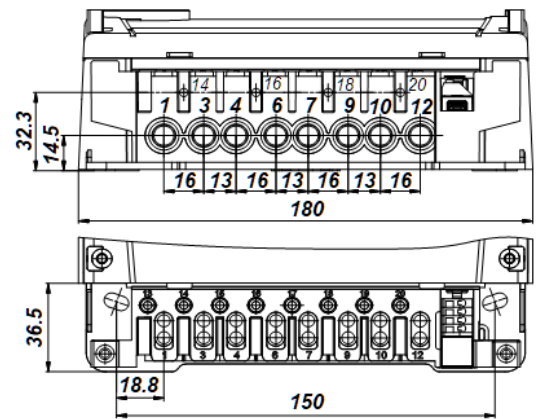
BACKUP POWER SUPPLY

- Battery for meter backup supply when the power is off
- Battery lifetime - not less than 20 years.

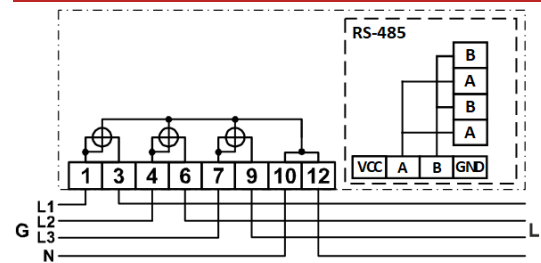
TECHINCAL SPECIFICATIONS

Accuracy class:	
- Active energy	B (1)
- Reactive energy	2
Reference current, Iref	5 A
Maximum current, Imax	80 A
Minimum current	0.05 Iref
Starting current:	
- Active energy	0.004 Iref
- Reactive energy	0.005 Iref
Reference voltage, Un	3×230 V
Voltage range	0.8 Un ... 1.2 Un
Reference frequency	50 Hz
Meter constant:	
- Active energy	1 000 imp/kWh
- Reactive energy	1 000 imp/kvarh
Temperature range	-40°C ... +70°C
Internal clock	quartz crystal 32 kHz
Clock accuracy (at 25°C) (IEC 62052-21)	≤0.5 s / 24 h
PLC raw data rate (with convolucional coding):	
- PRIME v1.3.6, CENELEC A band 3-95 kHz	21.4-64.3 kbps 5.4-64.3 kbps
- PRIME v1.4 for each of 1, 3-8 channel in the band 3 kHz up to 500 kHz	
- G3-PLC CENELEC A band (35-90 kHz)	up to 44 kbps
- G3-PLC FCC band (154-487 kHz)	up to 230 kbps
Inherent consumption of current circuit, not more (IEC 62053-61)	2.5 VA
Inherent consumption of voltage circuit, active/total, per phase, not more (IEC 62053-61)	2 W / 10 V
Insulation strength (IEC 61010-1-90)	4 kV, 50 Hz, 1 min
Impulse voltage (IEC 60060-1)	12 kV, 1.2/50 μs
Electrostatic discharge (IEC 61000-4-2)	15 kV
High frequency radiant field (IEC 61000-4-3)	10 V/m
High frequency interferences (IEC 61000-4-4)	4 kV
Surge immunity (IEC 61000-4-5)	6 kV
IP rating	IP54
Mean total lifetime, not less	20 years
Dimensions, L x W x D	280 x 180 x 68 mm

TERMINAL BLOCK DIMENSIONS



CONNECTION DIAGRAM (IEC)



DESIGN FEATURES

DESIGN

- Compliance with DIN 43857 standard specifications

HOUSING

- Light-tone non-flammable polycarbonate

MOUNTING

- By 3 fixing points or on DIN rail (35mm)

CONTACT US



36 Dragomirna str.
Kishinev MD-2008
Republic of Moldova

Phone : +373 (0) 22 930 012

Fax : +373 (0) 22 930 012

E-mail : info@addgrup.com

Web : www.addgrup.com