AD13C.2-3-1

00000.71S

○ 3200 imp/kWh

○ 3200 imp/kvarh

ADDAX PRODUCTION 00005878

Ⓒ-ACTIVE ②-REACTIVE

0.15-5(100) A   50Hz
3 x 220/380 V
-40 °C to 70 °C

CE

Made in Moldova 2017

Battery

1 3 4 6 7 9 10 12

L1
L2
L3
N

G

L

استفاده شهر حالی

کار بی

ADD GRUP

ADDAX

AD13C.2-3-1
MULTI-FUNCTION & MULTI-TARIFF THREE-PHASE ELECTRONIC METERS DESIGNED FOR USE IN AMI/AMR SYSTEM

OVERALL VIEW

DISPLAY INDICATIONS

Icon	Description
KWh KVArh VAh	Active energy *(export/import)* Reactive energy *(4 quadrants)* Apparent energy
V A	Measured quantities
T11	Multirate registration
(clock)	Built-in clock
(calendar)	Event Log
(bars)	Load profile
I1≠I2	Differential current detection
IP54	Protection level
(battery)	Backup power supply
(arrows)	Standard data model, open protocols
(circle)	Optical port
(relay)	Built-in relay
(lock)	Sensor of meter cover opening
(x)	Sensor of terminal block cover opening
(magnet)	Magnetic field sensor *(optionally)*
NFC	Contactless NFC technology
($)	Prepayment mode support
(card)	Smart cards support
(fingerprint)	Encryption

FUNCTIONALITY

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
- Local synchronization
- Sleep mode, battery
- Daylight saving time support

MEASURED QUANTITIES
- Active energy, class C, 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 11 tariff registers
- Step tariffs, programmable thresholds
- Tariff indicator is displayed on LCD
- Active and passive tariff plans, configurable activation time of the passive tariff plan

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

EVENTS HANDLING
- Continuous control for fraud and tamper events
- Standard set of events processing including: registration in the special log, states displaying, load switching off on special cases
- Timestamps

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

LOAD CONTROL
- Built-in relay (100 A)
- Continuous relay state control
- Relay status displaying
- Events registering

ELECTRICAL ENERGY QUALITY CONTROL
- Quality indexes:
  - average voltage
  - voltage sags and swells
  - outages
  - network frequency
  - angles between phases

THRESHOLDS MANAGEMENT
- Possibility to configure parameters thresholds
- Possibility to disconnect consumer from the network, when a threshold is crossed
- Events registering

FRAUD & THEFT PROTECTION
- Continuous monitoring, including sleep mode time
- Fraud types under control:
  - meter case cover opening
  - meter terminal block cover opening
  - inadmissible differential current
  - strong external magnetic field *(optionally)*
- Magnetic shield inside to protect measuring transformers *(optionally)*
- Protective seals
- Events registering

METER SELF-CONTROL
- Built-in test for continuous self-control
- Quick response on severe error
- Events registering

SECURITY
- AES-GCM-128 security suite encryption
- Data access according to access rights
- Firmware protection
- Events registering

NEAR FIELD COMMUNICATION (NFC)
- Wireless communication, based on RFID technology
- Frequency band: 13.56MHz (ISO/IEC 14443 Type A compliant)
- Password protected tag access

SMART CARDS HANDLING
- Contactless NFC technology
- Built-in card receiver
- Smart cards for secure transactions:
  - prepayment related tokens and configurations to the meter
  - readings and other information from the meter
- Different card types depending on supported functions
- Secured data storage using AES128 algorithm and digital signature
- Displaying of card manipulation messages of LCD

OPTICAL PORT
- IEC 62056-21 standard compliant
- Data transmission rate 115200 bps
- Possibility of local data exchange and meter parameterization

TECHNOLOGICAL PORT
- Allows replication of essential data and configuration in case of the meter failure
- Technological port is only available when the meter cover is detached

PREPAYMENT FUNCTIONALITY
- Pre-payment and post-payment mode support
- Energy measuring and displaying in kWh and cash *(optionally)*
- Functionality to disconnect consumers' load when their credit amount is exhausted
- Token transmission using smart cards

SOFTWARE UPGRADE
- Locally via optical port

METER PARAMETERIZATION
- Locally via optical port and using dedicated smart cards via NFC
- Differentiation of access rights

BACKUP POWER SUPPLY
- Replaceable battery for meter backup supply in sleep mode
- Battery lifetime - not less than 20 years

TECHINCAL SPECIFICATIONS

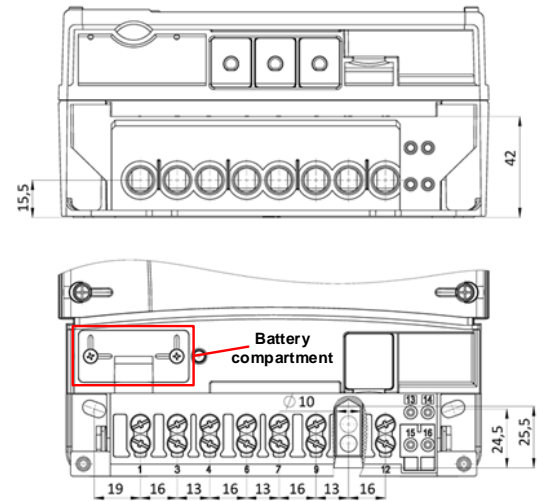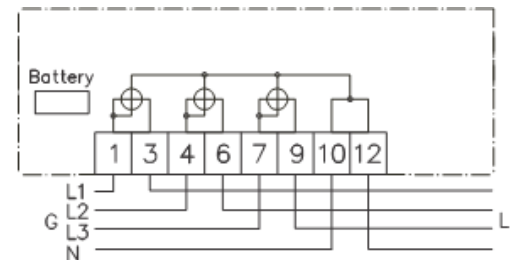|	
Accuracy class:	
- **Active energy**	C
- **Reactive energy**	2
Reference current, Iref	5 A
Maximum current, Imax	100 A
Minimum current:	
- **Active energy**	0.03 Iref
- **Reactive energy**	0.05 Iref
Starting current:	
- **Active energy**	0.004 Iref
- **Reactive energy**	0.005 Iref
Reference voltage, Un	3×230/380 V
Voltage range	0.8 Un … 1.4 Un
Reference frequency	50 Hz
Meter constant:	
- **Active energy**	3200 imp/kWh
- **Reactive energy**	3200 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
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 VA
Insulation strength (IEC 61010-1-90)	4 kV, 50 Hz, 1 min
Shock 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 test (IEC 61000-4-5)	6 kV
IP rating	IP54
Mean total lifetime, not less	20 years
Dimensions	256 x 180 x 87.5 mm

TERMINAL BLOCK DIMENSIONS

CONNECTION DIAGRAM (IEC)

DESIGN FEATURES

HOUSING
- Light-tone non-flammable polycarbonate
- IP 54 protection against water and dust

MOUNTING
- By 3 fixing points

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