OMNIPOWER®
Industrial smart meter

kamstrup

The intelligent smart grid component

- High precision smart meter
- Load management and power quality
- Interoperability and firmware upgrade
- Safety and data protection

Voltage quality registration

OMNIPOWER® enables voltage quality measurements based on the European standard EN 50160 specifying: "Voltage characteristics of electricity supplied by public electricity networks" and helps the utilities to fulfill their obligations concerning energy, power and voltage quality measurements.

Cost-effective investment

The OMNIPOWER meters constitute a cost-saving device minimizing the need for manual technical intervention and allowing for upload of software to the meters over-the-air.

Open communication and interoperability

Seamless integration and flexibility are key factors in exploiting the full potential of the fast developing and diversified communication technologies. OMNIPOWER® provides the DLMS/COSEM and IEC 62056-21 data collection protocols as system integration interface. This along with integration features for third-party suppliers assures a standardized interface between the electricity meter and any data collection system supporting these common specifications.

Safety comes first

As a high-end smart meter, OMNIPOWER® takes all security and privacy aspects into consideration providing the highest safety level, protecting revenue and assuring accurate and reliable metering data for exact billing and documentation purposes.

OMNIPOWER® holds comprehensive event and data loggers with anti-fraud and security features that enable the utility to immediately discover tamper and attempts to physically access the meter.

Energy and power measurements

- Net-power and energy register (own production)
- Power and energy per phase
- Apparent power and energy – kVA and kVAh
- Power factor
- Mean and peak power values

Power quality measurements

- Frequency accuracy
- Supply voltage variations
- Rapid supply voltage variation (sags and swells)
- Supply voltage dropout and unbalance
- Total harmonic distortion (THD)

OMNIPOWER® meets the requirements

Features	OMNIPOWER® three-phase	OMNIPOWER® CT
4-quadrant metering Active positive and active negative as well as reactive positive and negative energy.	■	■
Voltage quality Voltage, current and power per phase. Time stamp on power failures on one or more phases. Registration in configurable levels - overvoltage and undervoltages. Detection of sags and swells, THD and supply voltage unbalance.	■	■
Disconnection Smart disconnect enables on-demand disconnect of consumers as well as handling of load limitation functionality.	■	■
Real-time clock (RTC) Timestamping of measurements and events provided by a real-time clock.	■	■
Magnetic immunity The meter is immune to external magnetic influences.	■	■
Tamper Detection and registration of attempts to manipulate the meter installation.	■	■
Communication technology via modules Radio (optional integrated radio communication), GSM, GPRS, M-Bus and RS-485. Modules can be fitted from factory and retrofitted.	■	■
Consumer communication channel module slot Open slot for communication module for wireless communication with smart home equipment.	■	■
Analysis log Logs up to 16 different registers at a time from a selection of more than 80 different values, eg power, current or voltage per phase. In intervals of 5, 10, 15, 30 or 60 minutes.	■	■
Load profile log Configurable in the following intervals: 15, 30 or 60 minutes.	■	■
Smart metering-based prepayment Prepayment function possible. The integrated breaker disconnects the supply when the acquired kWh are used.	■	■
Encryption AES 128 encryption securing the meter data transmission.	■	■
Standard communication protocols Integrated DLMS/COSEM and IEC 62056-21 mode A & C communication protocols	■	■

OMNIPOWER® at a glance

	OMNIPOWER® Three-phase	**OMNIPOWER® CT**
Connection	Direct connection: 3-phase 3-wire - 3 x 230 V (ARON) 3-phase 4-wire - 3 x 230/400 V	Indirect connection: 3-phase 3-wire - 3 x 230 V (ARON) 3-phase 4-wire - 3 x 230/400 V
Type tests	Active energy: EN 50470-1 (MID), EN 50470-3 (MID), IEC 62052-11, IEC 62053-21, IEC 62053-22 Reactive energy: IEC 62053-23	
Accuracy class	Active energy: MID: Class A, Class B IEC: Class 2, Class 1 Reactive energy: IEC: Class 3, Class 2	Class 1 (IEC)/Class B (MID) Class 0.5 (IEC)/Class C (MID) Class 2 (IEC) (reactive energy)
Current range	5(65)A, 10(60)A, 5(80)A, 10(80)A, 5(100)A	1(6)A, 5(6)A
Ref. voltage/frequency	1, 2, 3 x 230/400 V – 50/60 Hz	
Measurement values	A+, A-, R+, R-, active, reactive and apparent power – total and per phase. Mean and peak power. RMS voltage and RMS current per phase, main frequency, power factor and total harmonic distortion	
Temperature range	Operation: -40 °C to +70 °C – Storage and transport: -40 °C to +85 °C	
Protection class	IP54	
Power consumption *)	Current circuit 0.01 VA Without breaker: 0.1 W With breaker: 0.1 W	Current circuit 0.02 VA 0.1 W
Voltage quality log	Overvoltage and undervoltage, power outage, up to 400 loggings Detection of sags and swells, measuring of THD and supply voltage unbalance	
Log for events, tamper and magnetic disturbance	Status event logger with 200 loggings RTC event logger with 200 loggings	Status event logger with 200 loggings RTC event logger with 200 loggings Transformer ratio with 10 loggings
Time-of-use metering	Up to 8 tariffs	
Measurement principle	Current measurement via shunt per phase	Single-phased current measurement via current transformer Single-phased voltage measurements
Standards	Terminals according to DIN 43857 S0 pulse output according to DIN 43864 Optical reading according to EN 62056-21 OBIS codes according to IEC 62056-61	

* Measured by notified body during type test. Measured at phase L1.

5811318_J1_GB_11.2018

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