

OMNIPOWER RESIDENTIAL SMART METER

THE INTELLIGENT SMART GRID COMPONENT

Available with
BS 7856
terminals



HIGH PRECISION SMART METER

One of the most important components for establishing an intelligent smart grid system is the smart meter. It does much more than measure energy consumption. It is a key element assuring utilities the possibility of exploiting the full potential of the smart grid.

OMNIPOWER is Kamstrup's latest high precision smart meter offering long-term stability and reliability for all applications.

SMART HOME ENABLED

OMNIPOWER is the optimum solution in applications focusing on consumer engagement. It offers an optional ZigBee® Smart Energy 1.1 communication channel for Home Energy Management or Home Area Networks.

POWERFUL SMART GRID COMPONENT

Looking to maximise the utilisation of assets? With a multitude of loggers and tariff registers, OMNIPOWER provides information on loads, time-of-use and voltage quality. Load profiles can be generated in various configurable time intervals. This detailed information optimizes load planning and management.



VOLTAGE QUALITY REGISTRATION



OMNIPower
Single-phase

OMNIPower has implemented 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.

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

Voltage quality measurements

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



OMNIPower
Three-phase

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 provide the DLMS/COSEM and IEC 62056-21 data collection protocols as system integration interface. This 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.





OMNIPOWER MEETS THE REQUIREMENTS

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



OMNIPOWER AT A GLANCE

Meter type	OMNIPOWER Single-phase	OMNIPOWER Three-phase
		
Connection	Direct 1-phase, 2-wire	Direct 3-phase, 4-wire 3-phase, 3-wire
Type tests	Active energy: EN 50470-1 (MID), EN 50470-3 (MID), IEC 62052-11, IEC 62053-21 Reactive energy: IEC 62053-23	
Accuracy class	Class 2 (IEC)/Class A (MID) Class 1 (IEC)/Class B (MID) Class 2 (IEC) (reactive energy)	
Current range	5(65)A, 10(60)A, 5(80)A, 10(80)A, 5(100)A	
Ref. voltage/frequency	230 V - 50/60 Hz	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: 0.2 W With breaker: 0.2 W	Current circuit 0.01 VA Without breaker: 0.1 W With breaker: 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	
Time-of-use metering	Up to 8 tariffs	
Measurement principle	Current measurement via shunt	Current measurement via shunt per phase
Standards	Terminals according to DIN 43857 or BS 7856 SO pulse output according to DIN 43864 OBIS codes according to IEC 62056-61	Terminals according to DIN 43857 SO pulse output according to DIN 43864 OBIS codes according to IEC 62056-61

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