

Electricity Meters for commercial and industrial Applications

High-precision metering with a green difference



Power Savings

The new generation of transformer connected C+I meters from Kamstrup takes power savings to a higher level. With a power consumption of only 0.3 W per phase a Kamstrup C+I meter is a true low-power device. Not only does it hold all the features of a high-precision meter; it brings considerable reductions in the power consumption of a meter fleet. This truly green difference brings cost savings throughout the life-time of an electricity meter and supports the requirements for energy savings.

Load Management

Looking to maximise the utilisation of assets? With a multitude of loggers and tariff registers the Kamstrup C+I meters provide information on loads, time-of-use, voltage quality and transformer ratio. Load profiles can be generated on primary or secondary energy and in various easy configurable time intervals. This detailed information helps simplify the load planning and load management and optimize the use of the existing resources.

Interoperability

Seamless integration and flexibility are key factors in exploiting the full potential of the fast developing and diversified communication technologies. Kamstrup C+I meters provide the DLMS/COSEM data collection protocol as system integration interface. This assures a standardized interface between the electricity meter and any data collecting system supporting this common specification.





Kamstrup 351 and 382 – electricity metering of the future

Kamstrup C+ I meters are high-end electronic meters equipped with a wide range of communication possibilities. The robust design emphasises the quality of Kamstrup electricity meters dedicated to commercial and industrial applications.

As standard all meter types offer real-time load profile generation for all 4 quadrants, voltage quality measurements and logging of events. The same versions can be used in automated metering systems for billing, analysis and optimized utility management. The comprehensive tariff features offer wide possibilities of revenue control and security.

Communication technologies are constantly evolving and opening new opportunities. In this respect Kamstrup C+I meters represent a secure investment for all utilities as they can be fitted and retrofitted with communication modules assuring efficient and reliable meter reading and data transfer. Kamstrup meters communicate over wired link as well as wireless, being high-power radio, GSM, GPRS, WiFi, Zigbee and Z-Wave.





We meet the requirements

Features	351	382
<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 of overvoltage and undervoltage.</p>	■	■
<p>Real Time Clock (RTC)</p> <p>Timestamping of measurements and events provided by a real time clock.</p>	■	■
<p>Communication Technology via Modules</p> <p>Modules for radio communication, GSM, GPRS, M-Bus, PLC and TCP/IP can be fitted and retrofitted.</p>	■	■
<p>DLMS/COSEM Protocol</p> <p>Data collection protocol as system integration interface.</p>	■	■
<p>Tamper</p> <p>Recognition and registration of attempt to manipulate.</p>		■
<p>Magnetic Immune</p> <p>The meter is immune to external magnetic influence</p>		■



Technical Specifications

Meter type	Kamstrup 351	Kamstrup 382
Connection	Indirect/3-phase 4-wire	Direct/3-phase 4-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 1 (IEC)/Class B (MID) Class 0.5S (IEC)/Class C (MID) Class 2 (IEC) (reactive energy)	Class 2 (IEC)/Class A (MID) Class 1 (IEC)/Class B (MID) Class 2 (IEC) (reactive energy)
Current Range	0.05 – 5(6)A	Without breaker: 5(65)A 10(60)A 5(85)A 10(85)A 5(105)A With breaker: 5(65)A 10(60)A 5(85)A 10(85)A
Ref. Voltage/Frequency	3 x 230/400V – 50/60 Hz	
Measurement Values	A+, A-, R+, R- – Voltage and current per phase, load, acc. energy, RMS voltage, RMS current	
Temperature Range	Spec. operating range -40°C - +70°C – Limit range for storage and transport -40°C - +85°C	
Protection Class	IP52	
Power Consumption	Current circuit 0.02 VA 0.3 W per phase	Current circuit 0.01 VA Without breaker: 0.2 W per phase With breaker: 0.45 W per phase
Voltage Quality Log	Voltage, max. and min voltage, power outage, sag & swell	
Data Logging	In intervals of 5, 15, 30 or 60 min	
Log for Events, Tamper, magnetic Disturbance and Transformer ratio	Status event logger 200 loggings RTC event logger 200 loggings Voltage quality logger 200 loggings Transformer ratio 10 loggings	Status event logger 200 loggings RTC event logger 200 loggings Voltage quality logger 200 loggings
Time of Usage Metering	Up to 8 tariffs	
Measurement Principle	Single-phase current measurements via power transformer Single-phase voltage measurements via voltage transformer	Single-phase current measurements via shunt
Standards	Terminal according to DIN 43857 SO pulse output according to DIN 43864 Optical reading according to DLMS/COSEM OBIS codes according to IEC 62056-61	