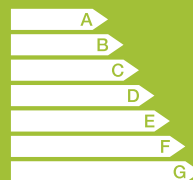
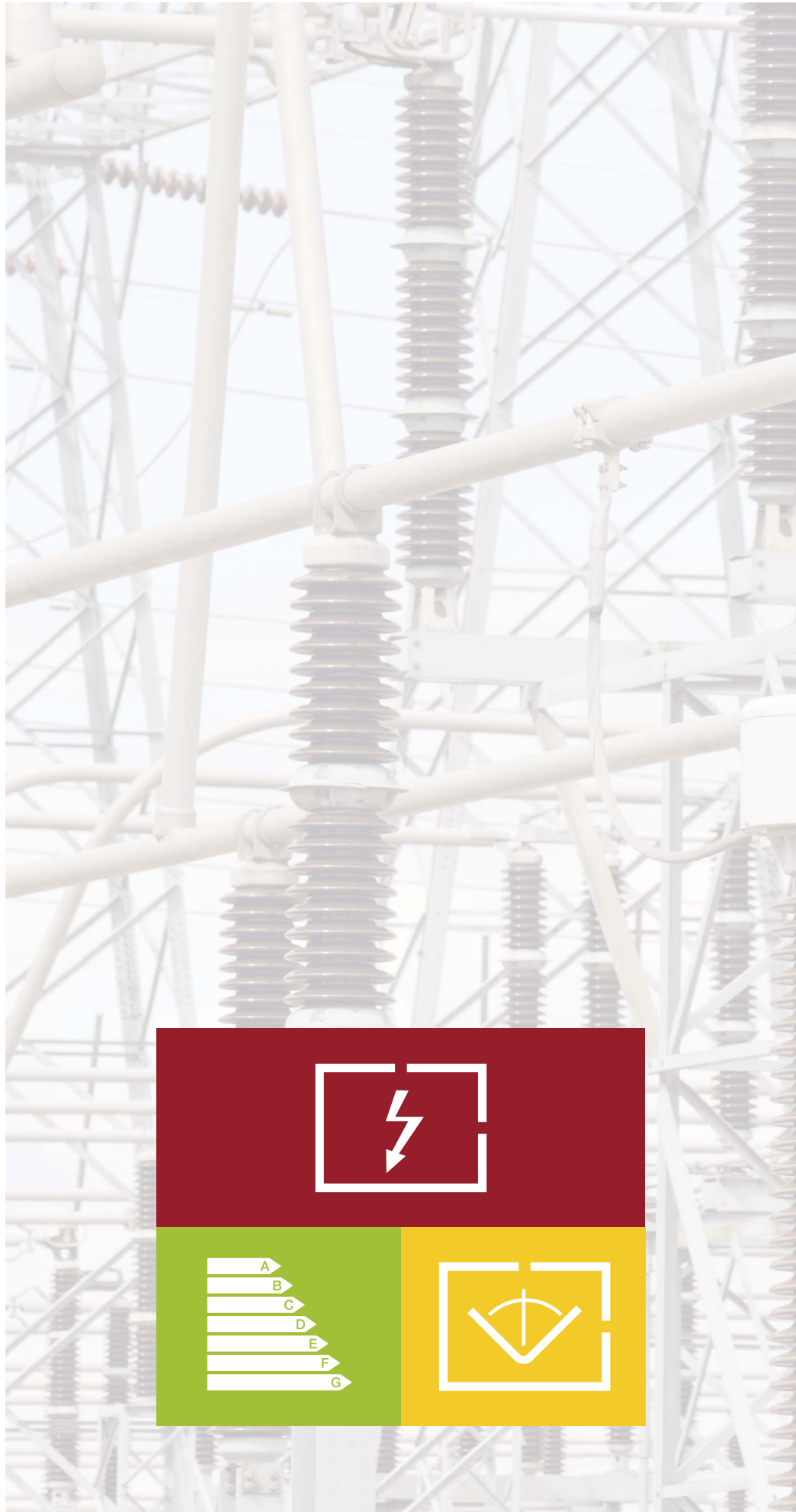


 GOSSEN METRAWATT

 CAMILLE BAUER

CORE RANGE INDUSTRIAL ENGINEERING

HEAVY CURRENT MONITORING
ROBUST POSITION SENSORS
POWER QUALITY
SOFTWARE SOLUTIONS



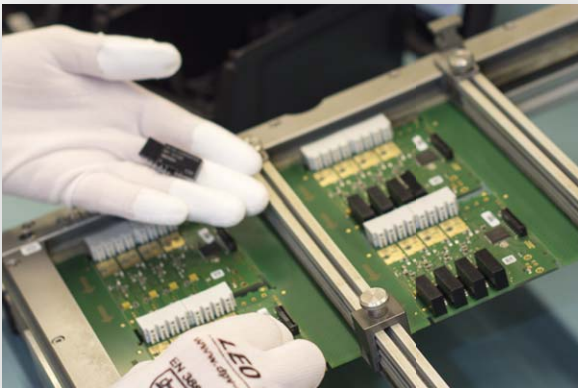
**WELCOME TO
CAMILLE BAUER METRAWATT AG.**

Operating as a leading provider of high-quality instrumentation, we have pursued the goal of making electric engineering processes safer, more transparent and thus more efficient for more than 120 years.

With our instrumentation and complete solutions, we monitor all invisible variables of electrical energy and distribution processes, secure a stable energy supply and prevent harm to people and property.



Camille Bauer Metrawatt AG is a company of the GMC-Instruments Group.



SWISS TOP QUALITY

At our location, we develop and produce our own products. We are active internationally and export our products and services to destinations all over the world.

SUSTAINABILITY WITH A SYSTEM

- Resource-conserving raw material management
- Environmentally-friendly production processes
- Permanent further development of products and services under efficiency aspects
- Meticulous quality and environment compatibility tests
- Member of Cleantech Industry Association Switzerland
- Certified according to ISO 9001:2015 and ISO 14001:2015



The products in this catalogue are only an excerpt from our overall program.

PRODUCTS, SYSTEMS, SOLUTIONS FOR ELECTRICAL INSTRUMENTATION

ENERGY IS LIFE

You cannot imagine life today without electrical energy any more. Having this energy always reliably and in high quality available requires the well-conceived interaction between energy producers, grid operators and consumers.

Our products and services help you to devise your energy supply safely and reliably today and in future.



MEASURING AND DISPLAYING

Grid management and equipment monitoring require precise and reliable information of different grid variables. For this purpose, we offer a wide range of high-quality instruments to acquire all variables of the electrical grid. Our position sensors reliably acquire

mechanical positions, angles and inclinations. Supplemented by temperature transmitters and isolating amplifiers, our device portfolio is used throughout the entire measuring chain.



MEASURING AND DISPLAYING

- Programmable power instruments with process visualisation
- Unifunctional as well as multifunctional transducers for all electrical variables
- Energy meters
- Extensive process instrumentation for low-voltage signals
- Position sensors to acquire precise angle positions and inclinations

The **SINEAX AM-series** and the **SINEAX DM5000** devices are compact instruments to measure and monitor in heavy current grids. They excel in display quality and intuitive operation. The devices provide a wide range of functionalities which may even be extended by optional components. They are connected to the process environment by communication interfaces, via digital I/Os, analog outputs or relays.

The devices have been designed for universal use in industrial plants, building automation or in energy distribution. Nominal voltages of up to 690 V and measurement category CATIII can be directly connected in low voltage systems.


SINEAX AM SERIES AND SINEAX DM5000

- Direct measurement up to 690V, CATIII
- Condition monitoring
- Energy consumption analysis (meters, load curves, trend analysis)
- Harmonic analysis acc. IEC 61000-4-7
- System imbalance monitoring
- Limit monitoring with alarming
- Universal process I/O
- Graphical measurement displays
- High resolution color TFT display
- Device parameterization via WEB browser

	AM1000	AM2000	AM3000	DM5000
Design	96 x 96 mm DIN rail	144 x 144 mm	144 x 144 mm	DIN rail
Input channels voltage / current	3 / 3	3 / 3	4 / 4	4 / 4
MEASURED VALUES				
Instantaneous values	▪	▪	▪	▪
Neutral current	calculated	calculated	measured / calculated	measured / calculated
Earth wire current (calculated)	–	–	▪	▪
Visualisation waveform U/I	▪	–	▪	▪
MEASUREMENT UNCERTAINTY				
Voltage, current	±0.2%	±0.2%	±0.1%	±0.1%
Active, reactive, apparent power	±0.5%	±0.5%	±0.2%	±0.2%
Frequency	±10mHz	±10mHz	±10mHz	±10mHz
Active energy (IEC 62053-21/22)	Class 0.5S	Class 0.5S	Class 0.2S	Class 0.2S
Reactive energy (IEC 62053-24)	Class 0.5S	Class 0.5S	Class 0.2S	Class 0.2S
DATA LOGGER (OPTION, ONLY WITH ETHERNET)	internal (≥8GB)	Micro SD card (≥16GB)	Micro SD card (≥16GB)	Micro SD card (≥16GB)
Disturbance recorder (with pretrigger)				
a) 1/2 cycle RMS progression U/I	≤3min.	–	≤3min.	≤3min.
b) Curve shape U/I [#cycles]	5/6 (pretrigger) +10/12	–	5/6 (pretrigger) +10/12	5/6 (pretrigger) +10/12
COMMUNICATION				
Standard I/Os	1 dig. OUT ; 1 dig. IN/OUT	1 dig. IN ; 2 dig. OUT	1 dig. IN ; 2 dig. OUT	1 dig. IN ; 2 dig. OUT
Ethernet: Modbus/TCP, web server, NTP	(Option)	(Option)	▪	▪
Relais	(Option)	(Option)	(Option)	(Option)
Analogue outputs active / passive	(Option)	(Option)	(Option)	(Option)
Digital inputs active / passive	(Option)	(Option)	(Option)	(Option)
IEC 61850 / PROFINET IO	(Option)	(Option)	(Option)	(Option)
RS485: Modbus/RTU	(Option)	(Option)	(Option)	▪
RCM fault current detection	(Option)	(Option)	(Option)	(Option)
GPS time synchronisation	(Option)	(Option)	(Option)	(Option)
Temperature monitoring	(Option)	(Option)	(Option)	(Option)
Uninterruptible power supply	--	--	(Option)	(Option)



DISPLAYING POWER METERS

The **APLUS** is designed for applications in power distribution, in strongly distorted industrial environments and in building automation. This powerful platform for the measuring, monitoring and analyzing of power systems is the ideal device for demanding measurement tasks, where fast, accurate and insensitive analysis of power systems and loads is required.



APLUS

- Acquisition and monitoring of system state quantities
- Universal process-I/O
- Open communication via Modbus, Ethernet or Profibus DP
- Long-term data storage with event recording
- Extended energy consumption monitoring
- Analysis of power quality aspects
- Monitoring means of production

You may select optionally either a TFT or LED display for on-site data visualization.

MULTIFUNCTIONAL DEVICES

The **SINEAX CAM** is an universal, high-precision measurement system, which can be optimally adapted to the measurement task by means of the parameterization. Much emphasis was placed on the communication capabilities. So the device can be easily connected to a control system via analog and digital I/Os as well as standardized interfaces.



SINEAX CAM

- Suited for monitoring strongly-distorted power systems
- Ideal for different test laboratory applications
- Communication via Modbus/TCP or IEC 61850 as an option
- Free assembly of I/O interface
- Optional internal or external display in 7 languages
- Version with Rogowski current inputs available
- Also available for mobile application

The **SINEAX DM5S** and **SINEAX DM5F** are classical high-accuracy transducers, suited for monitoring tasks and retrofit applications in energy distribution and industry. They provide either analog outputs and / or Modbus communication.



SINEAX DM5S / SINEAX DM5F

- System state monitoring: Class 0.2
- All-purpose: V/I, P/Q/S, f, PF etc.
- Remote communication via Modbus
- DM5S: Energy metering Class 0.5 S
- DM5F: Response time 15...25 ms
- Configuration without power supply

SIRAX devices provide the basic functionalities of a measuring transducer at a low price.



SIRAX BM1200 / SIRAX BM1250 / SIRAX BM1400

- Well-visible one-line indication of measured data with backlit LCD display
- BM1400: Clear and unambiguous indication of measured values on LED display
- Easy on-site operation and parameterization
- Communication via Modbus/RTU or TCP
- Automatic cyclical scrolling of measured data
- Integrated active and reactive energy meters, cost-effective alternative to energy meters (BM1200 and BM1250)



SIRAX BT5700

- Well-visible two-line indication of measured data with backlit LCD display
- Easy on-site operation and parameterization
- Communication via Modbus/RTU or TCP
- Automatic cyclical scrolling of measured data
- Integrated active and reactive energy meters



SIRAX MM1200 / SIRAX MM1400

- Clear and unambiguous indication of measured values on TFT display
- Easy operation and parameterization via touchscreen
- Automatic cyclical scrolling of measured data
- Communication via Modbus/RTU or TCP
- MM1400: Monitoring and analysis of harmonics (U, I)
- Integrated active and reactive energy meters

The **SIRAX BM1450** multifunctional DC energy meter can be used for monitoring and controlling in DC systems. These meters measure a wide range of electrical parameters such as DC voltage, current, power, energy and many more.



SIRAX BM1450

- Multi-channel support
- Bi-directional voltage and current measurement
- Onsite configuration
- Communication via Modbus/RTU or TCP
- DC power system metering
- Monitoring and control power switches



UNIFUNCTIONAL DEVICES

This instrument series features the basic functionalities of a measuring transducer and is used as a cost-effective standard solution for the safe acquisition of measured variables in one-phase or three-phase heavy current systems. They convert a heavy current variable such as current, voltage, frequency or power, respectively, into a low-voltage signal (current or voltage).

MEASURING TRANSDUCER FOR VOLTAGE, CURRENT OR FREQUENCY



- One-phase connection (voltage, current or frequency)
- 2 configurable analog outputs linear or kinked in a range from 0...20 mA / 4...20 mA or 0...10 V
- Quick on-site programming using push buttons or via CB-Configurator software
- Simple on-site device operation
- Clear and well readable representation of measured data via LCD display
- Flexible communication and remote readout via integrated Modbus RTU interface
- DIN rail for top-hat rail mounting

Description	Measuring input
SIRAX BT5100	Voltage
SIRAX BT5200	Current
SIRAX BT5300	Frequency

MEASURING TRANSDUCER FOR POWER



SIRAX BT5400

- Connection type: One-phase, 3-phase 3-wire balanced or unbalanced load or 3-phase 4-wire balanced or unbalanced load
- Measuring input for power
- Nominal voltage up to 500 V, nominal current 1 / 5 A
- 2 configurable analog outputs linear or kinked in a unipolar range of 0...20 mA / 4...20 mA or 0...10 V or a bipolar range of -20...0 mA or -10...0...+10 V
- Quick on-site programming using push buttons or via CB-Configurator software
- Simple on-site device operation
- Clear and well readable representation of measured data via LCD display
- Flexible communication and remote readout via integrated Modbus RTU interface
- DIN rail for top-hat rail mounting

MULTI-TRANSDUCER



SIRAX BT5500

- True RMS measurement
- Detection and signaling of incorrect phase sequence
- THD measurement
- Measured quantities: V, A, Hz, KW, KVA, PF, KWH, KVAh, THD
- Fully onsite programmable input potential (PT) and current (CT) transformer ratio
- Programmable parameters through the RS485 interface when using Modbus RTU or USB when using the configuration software
- Onsite selectable analog output range
- Diagnostic LEDs
- Fast and easy installation on DIN Rail or onto a wall or in a panel using optional screw hole bracket
- Simple connection through conventional screw type terminals
- DIN rail for top-hat rail mounting

UNIFUNCTIONAL DEVICES

These mostly analog based devices are produced as requested by the customer. They convert a heavy-current quantity into a proportional analog DC output signal. Therefore they are suited to a specific measurement task.

Alternating current transducers are available in different qualities. If the input current is almost sinusoidal a more cost-effective device can be used than for distorted currents, where the measurement of the RMS value is more complex.

These devices do not contain any microprocessors. No software is used. The devices can't be modify by any user.



Non-μP measuring instruments

Features	I542	I538	I552
Measurement of distorted alternating currents			▪
RMS value measurement			▪
2 measuring ranges	▪		▪
Adjustable maximum value of the measuring range	0	0	S
Without power supply	▪		

0 = Optional S = Standard

Alternating voltage transducers are also divided in different application categories.

Here as well sinusoidal and distorted input signals are distinguished.

These devices do not contain any microprocessors. No software is used. The devices can't be modify by any user.



Non-μP measuring instruments

Features	U543	U539	U553	U554
Measurement of distorted alternating voltages			▪	▪
RMS value measurement (standard)			▪	▪
Adjustable maximum value of the measuring range (option)	▪	▪	▪	
Different characteristics (primary value scale, step)				▪
Without power supply (standard)	▪			
2-wire technology with 4 ... 20 mA output (option)		▪		

Transducers for frequency, phase angle or their differences.



SINEAX F534 / SINEAX F535 / SINEAX G536 / SINEAX G537

- Frequency (SINEAX F534), frequency difference (SINEAX F535)
- Phase angle (SINEAX G536), phase angle difference (SINEAX G537)
- Determining the system frequency stability
- Monitoring of the reactive power requirement
- Determination of characteristic value for reactive power compensation
- Applicable for display, recording, monitoring, controlling

Transducers for active and reactive power are available for different systems.

These devices do not contain any microprocessors. No software is used. The devices can't be modify by any user.



Non-μP measuring instruments

SINEAX P530 / Q531

- Monitoring of power demand
- Nominal voltages up to 690 V, nominal current up to 6 A
- Applicable for display, recording, monitoring, controlling
- Connection via transformer or directly

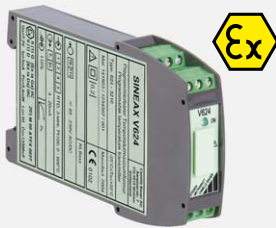
PROCESS CONTROL ENGINEERING

To ensure a continuous and steady process, and to store, manage and visualize process data, we offer a wide portfolio of signal converters and Process-Management-Systems.



SINEAX V604s Programmable multifunctional transmitter

- Measurement of DC voltage, DC current, temperature (RTD, TC) and resistance
- 2 inputs (e.g. for sensor redundancy or subtraction)
- 2 outputs (U and / or I)
- System capability: Communication via Modbus interface
- Freely programmable relay, e.g. for limit or alarm signalling
- AC/DC wide-range power supply unit
- Due to intelligent mathematical functions applicable for:
 - DC energy metering
 - Power measurement
 - Load monitoring
 - Difference monitoring
 - Redundant temperature measurement
 - Signal adaptation
 - Gradient / limit value monitoring



SINEAX V624 Programmable temperature transmitter

- Programmable without any power supply connection
- Zero and span calibration via software
- Suitable for temperature measurement in hazardous areas
- Sensor breakage and short-circuit monitoring



SINEAX TV809 Programmable isolation amplifier

- Current or voltage output in one device
- Safe isolation, enhanced up to 600 V (Cat. II) or 1000 V (Cat. I)
- Limit value relay secures monitoring function



SINEAX VS-Series

- Signal converters with very narrow design, only 6.2 mm wide
- On site parameterizing via DIP-switches
- Electrical isolation of all circuits
- Spring-cage clamp connection
- Functions as isolating amplifier, temperature transmitter, or alarm unit
- Power supply optional via DIN rail connector

VIDEOGRAPHIC RECORDERS

The latest generation of paperless Camille Bauer videographic recorders are modular and may thus be adapted individually to the requirements of the most varied applications.

Today videographic recorders are not used for data recording only, but also as powerful indicators, intelligent interfaces between different signal transmission and bus systems (e.g. 4...20 mA to Modbus) and as intelligent and independent computing units on site.



LINAX DR2000 Videographic recorder

- Inexpensive videographic recorder for basic applications
- Very distinct, high-quality TFT display
- Device can be equipped and extended according to customer requirements
- Device protection IP65 / NEMA4 device protection (front)
- Fast scanning of 100ms/channel
- Low operating costs (TCO)



LINAX DR3000 Videographic recorder

- Powerful videographic recorder with high performance
- Simple intuitive operation, with built-in Help
- Up to 12 mathematics channels for complex calculations
- For applications in rough environment due to IP65 / NEMA4 device protection (front)
- Data security in accordance with FDA 21 CFR Part 11
- Guaranteed data integrity (flash memory)
- Low operating costs (TCO)

TRANSMITTERS FOR ANGULAR POSITION



KINAX WT720 Absolute, programmable shaft transmitter for angular position for applications in rough environments, diameter 58 mm

- Robust transmitter version suitable for field applications
- Absolute value angular transmitter
- Capacitive measuring system
- Low wear and maintenance free
- Safe electrical connection thanks to spring-type clamp and reverse polarity protection
- Sturdy against high mechanical loads
- High degree of sealing against water and dust (housing protection class IP67/IP69K)
- Measuring range linear or V-characteristic free programmable
- Interface analog 4 ... 20 mA (2-wire connection) / center position 0° = 12 mA
- Available with explosion protection „Ex ia IIC T4 Gb“, „Ex ia IIIC T80°C Db“ and „Ex tb IIIC T80°C Db“ according to ATEX and IECEx
- With maritime execution (formely GL, Germanischer Lloyd) available



KINAX HW730 Absolute, programmable hollow-shaft angular position transmitter for applications in rough environments, diameter 78 mm

- Robust hollow shaft angular transmitter suitable for field applications
- High absolute accuracy ($\pm 0.35^\circ$) thanks to capacitive 2-wire technology
- Low wear and maintenance free
- Safe electrical connection thanks to spring-type clamp and reverse polarity protection
- Sturdy against high mechanical loads
- High degree of sealing against water and dust (housing protection class IP67/IP69K)
- Flexible and easy to install thanks to hollow shaft up to 30 mm
- Measuring range linear or V-characteristic free programmable
- Interface analog 4 ... 20 mA (2-wire connection) and digital Modbus with PoE
- Easy, variable installation thanks to hollow shaft \varnothing 30/20/16/12/10 mm
- Available with explosion protection „Ex ia IIC T4 Gb“, „Ex ia IIIC T80°C Db“ and „Ex tb IIIC T80°C Db“ according to ATEX and IECEx
- With maritime execution (formely GL, Germanischer Lloyd) available



KINAX WT707 / WT717 Absolute shaft angular position transmitter for applications in rough environments, diameter >100 mm

- Robust single- or multiturn angular transmitter suitable for field applications
- Absolute value angular transmitter
- Sturdy against high mechanical loads
- Low wear and maintenance free
- Programmable and non-programmable versions
- Interface analog 4 ... 20 mA
- Available with explosion protection „Ex ia IIC T6 Gb“, according to ATEX and IECEx
- With maritime execution (formely GL, Germanischer Lloyd) available
- Available in sea-water resistant version
- Also available with gear ratio up to 1600:1

TRANSMITTER FOR ANGULAR POSITION

KINAX 3W2 / 2W2 Absolute shaft angular position transmitter to be installed

- Compact version to be installed into other equipment and apparatus
- Absolute value angular transmitter
- Low wear and maintenance free
- Small starting torque < 0.001 Ncm
- Programmable and non-programmable versions
- Interface analog 4 ... 20 mA (2-wire connection)
- Available with explosion protection „Ex ia IIC T6 Gb“, according to ATEX and IECEx
- With maritime execution (formerly GL, Germanischer Lloyd) available

INCLINATION TRANSMITTERS

KINAX N702 Programmable inclination transmitter unidimensional

- Robust inclination transmitter suitable for field applications
- Absolute position always available
- Magnetostrictive measuring system
- High degree of absolute measuring accuracy ($\pm 0.2^\circ$)
- Unidimensional oil-damped pendulum system
- Measuring range and sense of rotation free programmable
- Interface analog 4 ... 20 mA and digital CANopen or SSI
- Easy installation and commissioning


KINAX N702 INOX Programmable inclination transmitter

- Hermetic watertight and dust-proof housing IP68/IP69K
- Optimally resistant to aggressive media such as sea water and detergents
- Stainless steel housing INOX AISI 316Ti (1.4571)
- High degree of absolute measuring accuracy ($\pm 0.2^\circ$)
- Resistant against high mechanical strains thanks to robust design and high quality materials
- Safe electrical connection through flexible control cable
- Standard synchro flange or mounting plate
- 2-wire connection via flexible control cable
- Free parameterization via control line
- Interface analog 4 ... 20 mA or digital HART

ENERGY MONITORING

Acquiring, evaluating and optimizing the energy consumption and its allocation to incurring cost centres constitutes a central task of any company. To enable its recognition on all levels, we offer all of the required components, from energy meters and summators through to the analysis and billing software.



Summator SMARTCONTROL

- Acquisition of energy and consumption data, temperatures, switching statuses and process variables
- Error message management, continuous comparison of characteristic values and indication of errors via switching output, e-mail or SMS
- Peak load management in combination with switching outputs
- Manufacturer-independent connection of data sources via analog, digital or SO pulse and temperature inputs as well as universal M-Bus, LON and Modbus interfaces



Energy automation Measure - Control - Visualize

• Intelligent summator

The CENTRAX collects freely selectable data from various devices via Modbus/TCP, Modbus/RTU or also via impulse from energy meters. The data can be stored, combined into individual packets and communicated to a higher-level system.

• Submetering, Gateway

Submetering, Gateway Gateway between Modbus/RTU and Modbus/TCP. Via the IP address of the CENTRAX, each device can be identified by its device address. Thus the RTU devices can be queried and respond directly.

• Collect, log and evaluate data

Up to 16 counters can be connected to the CENTRAX via pulse output. If the meter constant is known, the energy and power can be calculated directly from the pulses over time. Thus, even the simplest meters become smart meters.



Energy Meters ENERGYMID

- Professional energy counters for 2-, 3-, 4-wire systems with up to 80 A direct or 1 A, 5 A transformer connection
- Flexible communication and remote readout thanks to a broad range of interfaces such as LON, M-Bus, Modbus RTU, Ethernet, BACnet or pulsed output
- Maximum transparency through multifunctional design for the acquisition of reactive energy and other measured variables in the grid
- Integrated connection error diagnose for simple and time-saving installation
- Adaptable to future rate structure in the energy market thanks to the possibility of setting up to 8 different rates



Energy Meters ENERGYSSENS

- Intelligent sensor system to measure the power, energy, current, voltage and frequency of individual consumers in low-voltage systems
- Different sensor variants with 3 or 12 measuring points. The nominal current amounts to 40A or 80A
- Facilitates the integration into any system due to universal Modbus interfaces (TCP/RTU)
- Warning against overload before larger damage can occur
- Very low internal consumption compared to other measuring systems



Winding current transformers

Winding current transformers convert small primary rated currents from 1 A into galvanically isolated secondary rated currents of 5 A or 1 A which can be used by the measuring system. In contrast to clip-on or cable-type current transformers, wound current transformers have 4 screw terminals. The primary current as well as the secondary current are connected via terminals.



Plug-on current transformers

Plug-on current transformers are used wherever high currents are to be recorded and further processed. They are plugged directly through the opening onto the primary conductor (busbar or line). The secondary side (usually a measuring device, energy meter or display) is connected through the terminals on the front and back.



Cable conversion current transformer

Thanks to their compact design and easy installation, cable conversion current transformers are particularly suitable for use in hard-to-reach places and where space is limited. The separable core halves additionally facilitate installation on the cable or on the rail.



Summation current transformer

If the current measurement is carried out via several current transformers to record a total consumption, the secondary currents of the individual current transformers are added up and the sum divided by the number of summands (number of inputs). This means that the total consumption can only be recorded with one measuring instrument. A standardized measuring signal (5 A) is available at the output of the summation current transformer.



Plug-on current transformer for PQ

Plug-on current transformers for power quality applications ensure reliable transmission at a sampling rate of up to 20 kHz. They are designed for harmonics up to 9 kHz.



Plug-on differential current transformers

The plug-on differential current transformers of the «DACT» type A series detect very small currents. In connection with our device variants SINEAX DM5000, AMx000, CENTRAX CUx000 and LINAX PQx000 they can be used for differential and residual current monitoring of machines and plants.



Cable conversion residual current transformers

Wherever an interruption of the current path is problematic or a measuring device has to be retrofitted in an uncomplicated way, these transformers are the right choice. They detect very small currents. In combination with our device variants SINEAX DM5000, AMx000, CENTRAX CUx000 and LINAX PQx000 they can be used for residual and fault current monitoring of machines and plants.



AC/DC Current Transformers with Transmitter Functionality

The SIRAX BT7000/BT7050 and SIRAX BT7100/BT7150 series are current transformers with integrated measuring transformer functionality for monitoring 1-phase AC or DC applications. The current measurement is galvanically isolated from the measured line. The large number of measured variables, the maximum current of up to 300 AAC or 400 ADC allow a versatile use of the devices.



AC/DC current transformers with energy meter functionality

The SIRAX BT7200/BT7250 and SIRAX BT7300/BT7350 series are current transformers with integrated energy meter functionality for monitoring 1-phase AC and DC applications. The large number of measured variables, the maximum current of up to 300 AAC or 400 ADC at maximum 1000 VDC or 800 VAC, respectively, allow the devices to be used in a wide range of applications.

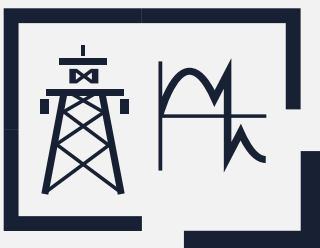


Divisible Current Transformers

Wherever an interruption of the current path is problematic or a measuring device needs to be retrofitted in an uncomplicated way, cable conversion current transformers are the right choice.

POWER QUALITY

Modern power electronics and non-linear consumers increasingly impair the electrical grid which is the reason why alternating current has not shown the original sinusoidal characteristic already for a long time. This bears heavily on electrical devices and machines and extends to higher thermal losses, increased energy consumption through to the disturbance and downtime of plants. Our solutions ensure that problems are early recognised, even before they occur.



POWER QUALITY

- Certified power quality analysis according to IEC61000-4-30 Ed. 3 in class A
- Certified energy flow analysis with accuracy class 0.2S
- Data export to PQDIF, COMTRADE and CSV, periodically or event-driven
- REST interface, IEC 61850, Profinet, Modbus RTU/TCP
- PQ Easy-Report conformity reports without additional software (e.g. EN 50160, GB/T, IEEE 519, IEC 61000-x-x, user defined, ...)
- Role-based access control, encrypted communication and secure logging of security-related events



24/7 - STATIONARY MEASUREMENT OF POWER QUALITY

Traditionally, power quality monitoring is only conducted as a reaction to trouble such as device failure, plant malfunctions, process interruption or communication breakdown. However, all these problems cost money and nobody wants to experience the same thing again just to be able to create a corresponding record for analysis. Therefore, the greatest advantage of continuous power quality monitoring is that users put

themselves in a position to proactively build up their knowledge thus increasing system availability.

Devices such as **LINAX PQ1000 / PQ3000 / PQ5000** help to detect trouble before it can do any damage and to provide data for the identification of the root cause in case an event actually occurs.

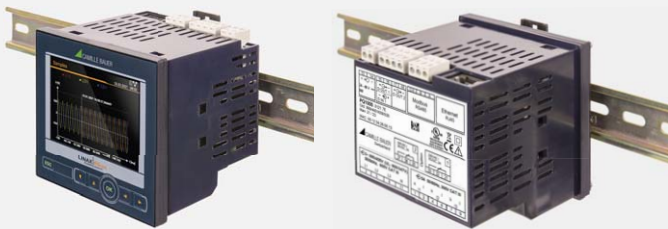
Measuring instruments for power quality monitoring, metrologically certified



LINAX PQ1000

The system for power system analysis

- Power quality analysis in class S according to IEC 61000-4-30
- Conformity assessment in distribution networks and IPCs according to common standards and own limit values
- Design variants (top hat rail mounting with/without display, panel mounting 96x96 mm)



LINAX PQ3000/PQ5000

Compact devices for power quality monitoring in electrical grids

- Certified power quality analysis in Class A, according to IEC 61000-4-30 Ed. 3
- Data exchange for power quality data: PQDIF
- PQ conformity reports via website possible without any external software



LINAX PQ5000-RACK

Power quality monitoring in the electrical system in a 19" rack according to EN 60297

- Certified power quality analysis in Class A, according to IEC 61000-4-30 Ed. 3
- Analyzing of two power systems (e. g. double busbar, transformer)
- Optional data transmission via cellular network and synchronization via GPS
- Current measurement via current transformer (1/5 A) or small signal sensors (<3V)





MOBILE MEASUREMENT OF POWER QUALITY



By means of the mobile measurement solution **LINAX PQ5000-Mobile** the operational aspects of the energy supply can be verified:

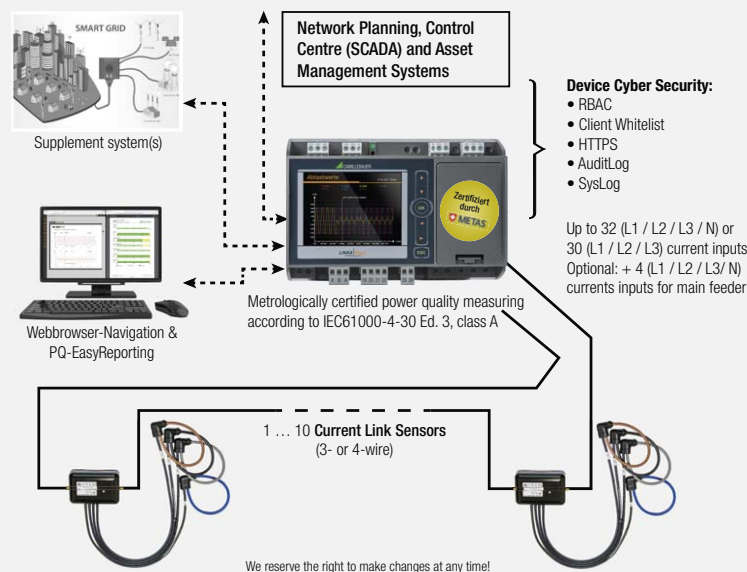
- Quality of supply
- Availability of supply
- Evaluation of changes or improvement measures
- Energy flow analysis

This measurement solution supports campaigns (repeated measurements at the same location) by a configuration manager with up to 20 storable device settings, can provide a WLAN access point for connecting mobile devices and provide all data for evaluation via the device's own website. In order to be able to validate the power quality at the measuring location, the duration of the measurement should be at least 7 full days.

SMART GRID SOLUTION WITH A SCALABLE POWER QUALITY MEASUREMENT SYSTEM

Due to the increasing changes in electrical grids, load flow information is becoming more and more important. For you as a distribution network operator, increasingly also in combination with power quality data. As a distribution network operator, you are increasingly complaining that the relevant information at grid level 7 is either not available at all or is inadequate. Without a proper smart grid solution, this would be

equivalent to "flying blind." Intelligent metering systems (smart meters) won't help you with this either. This is because, among other things, these are only suitable to a limited extent (e.g. due to data protection rules, insufficient measurement performance for network management, etc.).



Advantages of the scalable measuring system with LINAX PQ5000

- A scalable system for the areas of certified power quality as well as for load and efficiency management
- Time-synchronous load management for $U/I/P/Q/\cos\phi$
- Network tariff meter P & Q (purchase & delivery)
- Upgrade for control task in smart grid (e.g. PQ grid utilization)
- System management via a user-friendly multi-device tool for easy commissioning and efficient maintenance
- Low space requirement due to the one-time voltage measurement
- Low wiring effort based on the scalable current sensors
- Sampling 54kHz for detailed information in the current conductor
- Current values are time-synchronous to voltage (IEC61000-4-30)
- Optional fault recording in the event of a short circuit



	LINAX PQ1000	LINAX PQ3000 LINAX PQ5000	LINAX PQ5000-MOBILE
Design	DIN rail / 96x96	DIN rail / 144x144	Handheld
Display/operation	▪ / Buttons	▪ / Buttons	– / Buttons
MEASURING			
IEC 61000-4-30	Class S, Ed. 3	Class A, Ed. 3	Class A, Ed. 3
Sampling rate (bandwidth)	18 kHz (4.5 kHz)	18 kHz (4.5 kHz)	18 kHz (4.5 kHz)
Samples per period 50 / 60 Hz	360 / 300	360 / 300	360 / 300
RCM	(Option)	(Option)	–
Energy meter	▪	▪	▪
Conformity standards	EN 50160 IEC 61000-2-2 IEC 61000-2-4 IEC 61000-2-12 IEEE 519 GB/T	EN 50160 IEC 61000-2-2 IEC 61000-2-4 IEC 61000-2-12 IEEE 519 GB/T	EN 50160 IEC 61000-2-2 IEC 61000-2-4 IEC 61000-2-12 IEEE 519 GB/T
Accuracy U / I [%]	0.2	0.1	0.1
Accuracy energy meter	0.5S	0.2S	0.2S
VOLTAGE MEASUREMENT			
Overvoltage category	600 V CAT III	600 V CAT III	600 V CAT III
Number of channels	3	4	4
Measuring range LN / LL	480 V / 832 V	PQ3000: 480 V / 832 V PQ5000: 520 V / 900 V	520 V / 900 V
Power frequency	42 ... 69.5 Hz	42 ... 69,5 Hz	42 ... 69,5 Hz
CURRENT MEASUREMENT			
Sensor technology	CT	CT	Rogowski/clip
Category	300 V CAT III	300 V CAT III	600 V CAT IV / 600 V CAT III
Number of channels	3	4	4
RECORDING / PROTOCOL			
Memory size	16GB	16GB	16GB
PQDIF	via browser / SFTP	via browser / SFTP	via browser / SFTP
CSV	via browser / SFTP	via browser / SFTP	via browser / SFTP
PDF conformity report	via browser / software	via browser / software	via browser / software
POWER SUPPLY			
Supply	100-230 V AC/DC 24/48 V DC	100-230 V AC/DC 24/48 V DC	100-230 V AC
USV	–	5 x 3 min (option)	5 x 3 min
COMMUNICATION			
Interface	Ethernet RS485	Ethernet RS485	Ethernet WiFi
Protocol	Modbus Profinet IEC 61850	Modbus Profinet IEC 61850	Modbus



RECORDING AND EVALUATION OF THE MEASURED DATA

Energy supply disturbance can lead to production and equipment failure. Frequently, the reaction only comes after a high financial loss has occurred. But many of these incidents could be avoided, if the signs had been recognized in time by continuous monitoring of the situation.

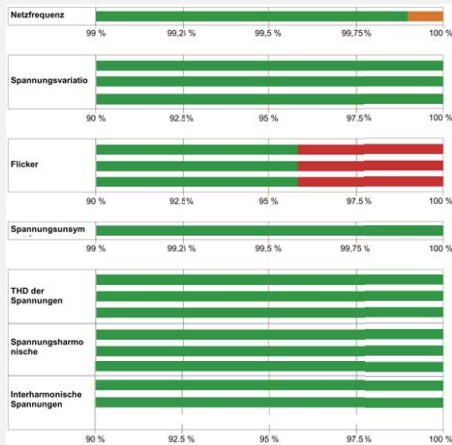
Power quality monitoring provides both a statistical evaluation permitting a comparison with standards (e.g. EN 50160) or supply contracts and recording of grid events (e.g. voltage drops) to enable the analysis of their causes and consequences.

POWER QUALITY EVALUATION

DESCRIPTION

BENEFIT

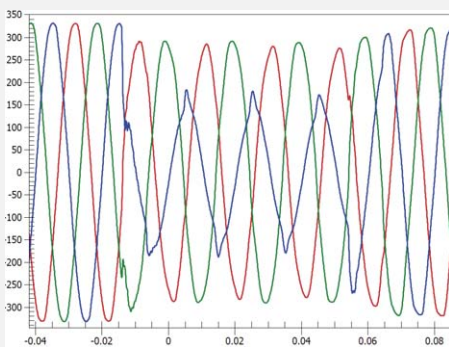
Statistical evaluation



All of the relevant supply voltage parameters are monitored, statistically averaged and compared with specified values. In this way, conformity can be proven or attention can be drawn to possible problems. Currents are also monitored in relation to level, harmonic content and imbalance. However, these results do not form an integral part of the statistical evaluation since limit values are not available.

Verification of the adherence to standards (e.g. EN 50160) or contracts between energy supplier and energy consumer. Observing the change of results makes it possible to determine a deterioration of the power quality and the search of its causes in good time. The effectiveness of introduced measures can be directly verified.

Event recording



All of the voltages are monitored in terms of disturbances like dip, interruption or excess of supply. These disturbances are recorded as events. A statistical evaluation is not performed since the number of permitted events is not limited. Event recording comprises, on the one hand, the curve shape of voltages as well as currents upon the occurrence of the event.

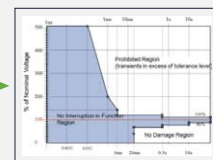
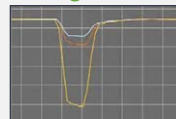
The evaluation of a disturbance recording enables the discovery of the cause and, in the best case, a correlation with the determined events can be established (e.g. breakdown of control or equipment). Appropriate remedy measures can be derived from this and verified in respect of their effectiveness.

POWER QUALITY EVALUATION

PQ data

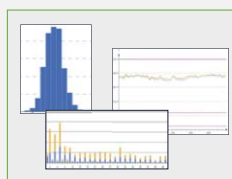


Voltage events



Classification according to the ITIC curve

Statistical evaluation



- Evaluation according to**
- EN 50160
 - IEC 61000-2-2 (LV)
 - IEC 61000-2-4 (industry)
 - IEC 61000-2-12 (MV)
 - IEEE519
 - GB/T
 - + further items in progress

THE EXPERTS IN POWER QUALITY ANALYSIS

Power quality monitoring - avoiding problems before they arise

- Conformity assessment according to
EN 50160 (LV / MV / HV), including island systems
IEC 61000-2-2 LV
IEC 61000-2-4 (Class 1 / 2 / 3)
IEC 61000-2-12 MV
IEEE519
GB/T
and own limits
- Recording of power quality events
- Metrologically certified



Conformity report via
browser without extra
software

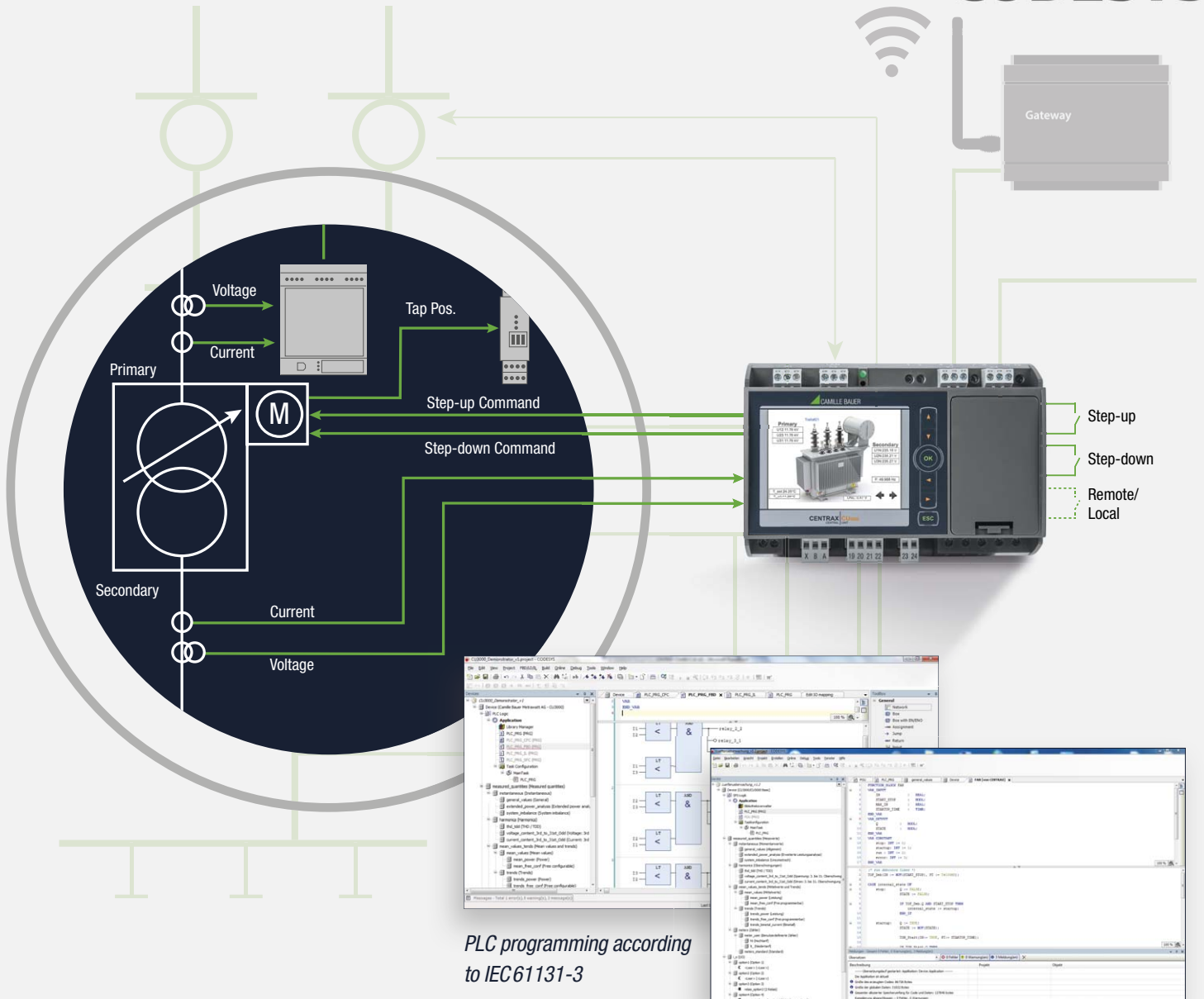


MONITORING AND CONTROLLING

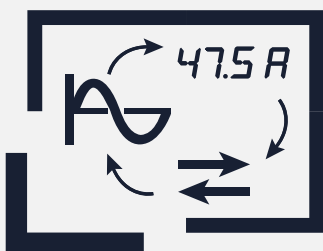
We offer the unique possibility of not only acquiring all variables of the electrical grid precisely and reliably, but also processing them directly via a PLC integrated into the device and controlling processes. This enables us to realise process controls directly at the measuring point. You thus save a separate PLC or you realise an autarkically working redundant solution.



CODESYS



PLC programming according to IEC61131-3



MONITORING AND CONTROLLING

- Functionality of a highly precise instrument combined with a Soft-PLC
- On-site recording and visualising of measured data
- User-specific visualising of the programmed PLC facility
- Innovative and scalable operating concepts for intuitive use of data (WebGUI)
- Integration of further devices via Modbus interface
- Measuring tasks and automation tasks derived from the same can be solved directly

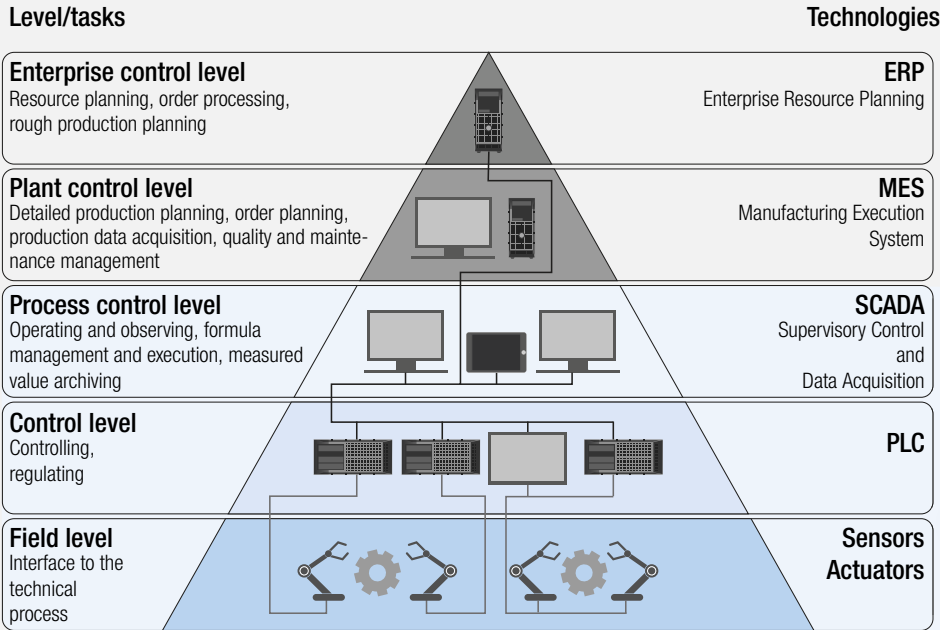
DISPLAYING POWER METERS

Classical automation processes usually follow the system shown in the Figure. The most varied measuring devices collect data on the field level and forward it for processing to the control level. Depending on the requirements, control tasks are derived from the measured data or the data is sent to the next higher level for visualising or analysis.

This separation of functionalities causes a not inconsiderable input of devices, installation, know-how and time even for the most insignificant control tasks.

Especially for the highly precise measurement of all variables in the power grid and the diversity of control and regulating tasks occurring in this respect, Camille Bauer Metrawatt AG offers an innovative solution.

Classical instrumentation



CENTRAX



Automation pyramid according to ISA-85/DIN EN 62264-1

FUNCTIONS

- Direct measurement up to 690V, CATIII
- Condition monitoring: class 0.1 (U/I), class 0.2 (P/Q/S)
- Energy consumption analysis, class 0.5S (meters, load profiles, trend analysis)
- Harmonic analysis acc. IEC 61000-4-7
- System imbalance monitoring
- Universal process I/O
- Graphical measurement displays
- High resolution color TFT display

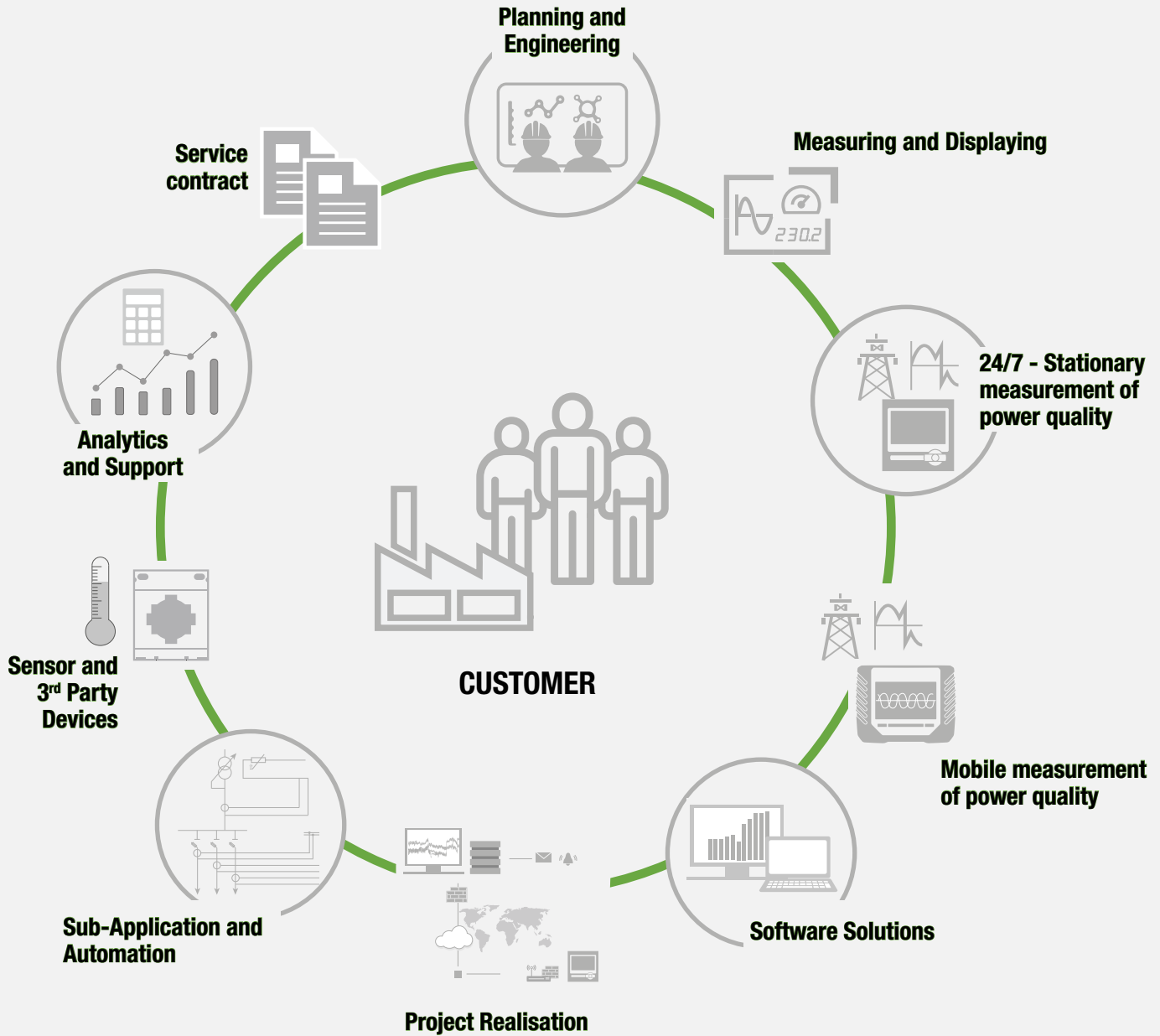
PREPARATION OF INDIVIDUAL CONTROL USING STANDARD LANGUAGES ACCORDING TO IEC61131-3:

- KOP Contact plan
- AWL Instruction list
- FUP Function component
- AS Sequential function chart
- ST Structured text
- CFS Signal flow plan

SOFTWARE, SYSTEMS AND SOLUTIONS

We design modular customer-specific solutions and systems which can be extended at any time regardless of manufacturer. Through our non-proprietary interfaces is also an integration in

already existing applications and systems with components from different manufacturers no problem.



SOFTWARE, SYSTEMS AND SOLUTIONS

- Use of targeted software solutions
- Central recording and structuring of measured data of the most varied instruments
- Preparation of cost centre-related energy reports
- Extensive visualising of measured values and grid events
- Individual process visualising
- Conducting measurement campaigns
- Analysis of power quality data and fault finding

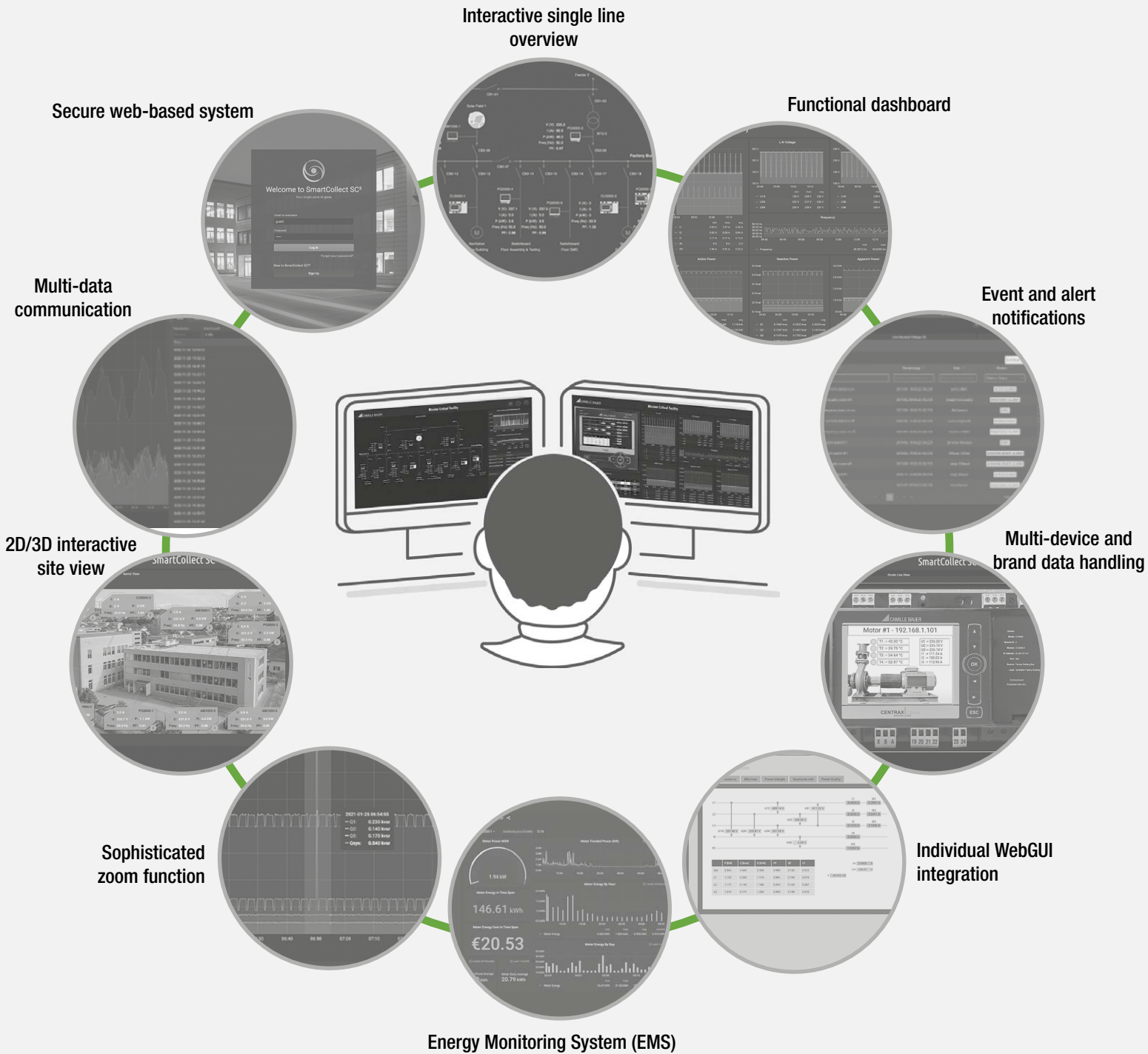


SMARTCOLLECT® SC²

SMARTCOLLECT® SC² is a scalable HMI/SCADA software for the visualization of electrical distribution and other physical parameters. Unlike other SCADA software, SMARTCOLLECT® SC² is built on a new,

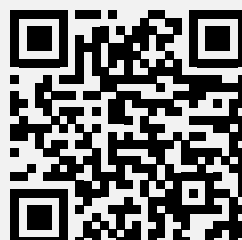
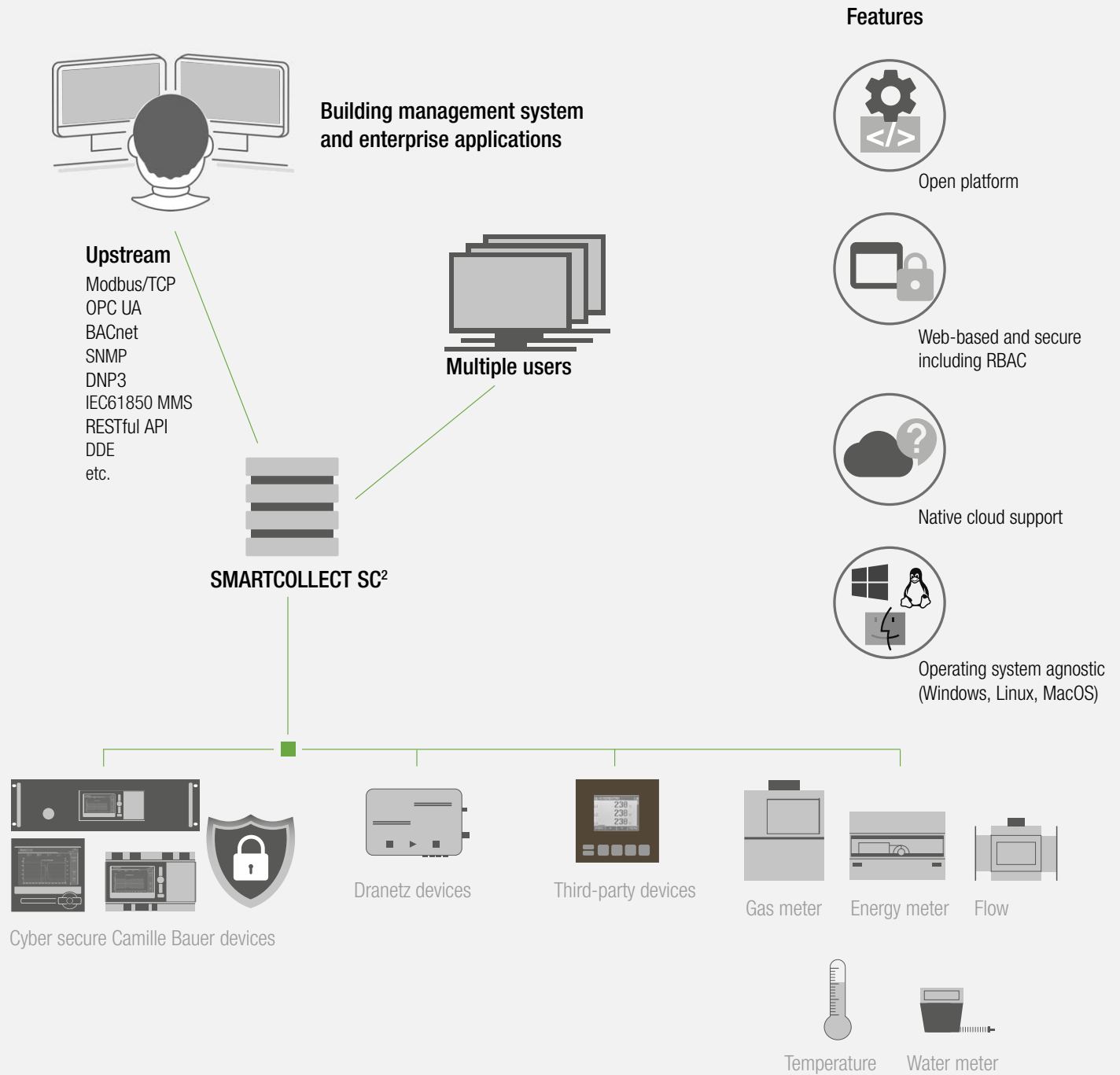
ultra-modern platform with a visually pleasing 2D/3D web-based graphical user interface. Powerful communications and software interfaces, expansion options, ease of use and an affordable price are just some of

the other user benefits of SMARTCOLLECT® SC². Just one look at SMARTCOLLECT® SC² makes you wonder how you used anything else before.





SYSTEM OVERVIEW



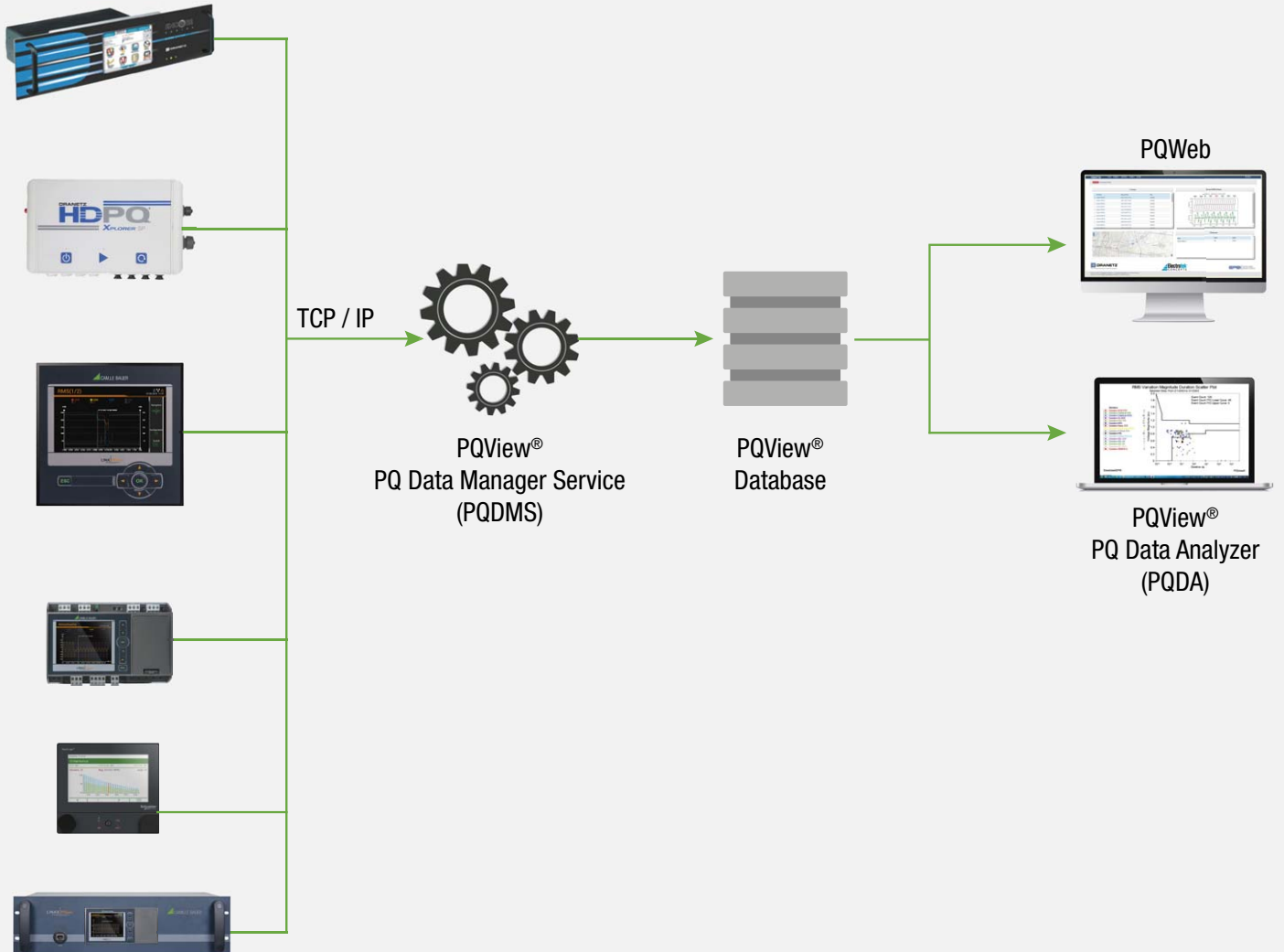
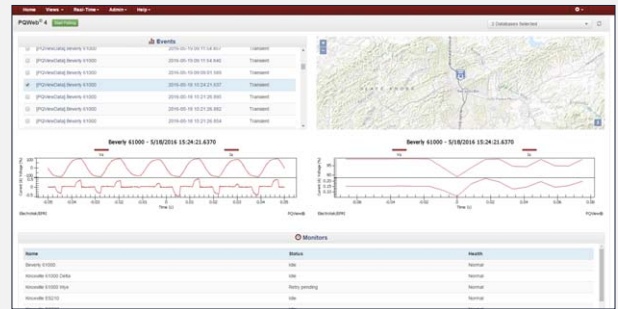
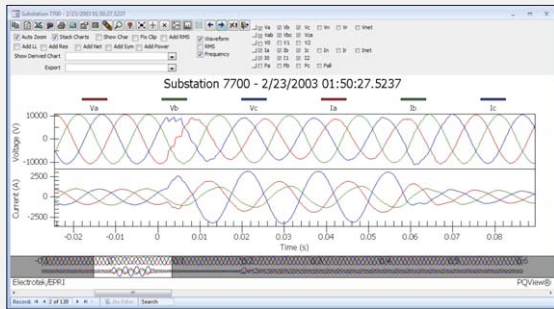
To see the benefits for yourself, visit our live page: www.scada-smartcollect.com



PQ-VIEW®

INTELLIGENT, WEB-BASED SOFTWARE FOR POWER QUALITY ANALYSIS

- Web-based access
- Works as system controller and user surface
- Automated communication with connected devices via supported communication methods
- Application from small systems through to large multipoint, plant and supply monitoring
- Data like trends, real-time views and reports can be easily exchanged and checked, e.g. Word, Excel
- Client-, Server architecture (database)



CYBER SECURITY

Critical infrastructures - and this undoubtedly includes the supply of electrical energy - are increasingly the target of cyber attacks. There is not only the attempt of stealing data by unauthorised access or eavesdropping of communication but also the limitation or even interruption of energy supplies by manipulating data or data traffic.

SAFETY MECHANISMS

- **Role-Based Access Control (RBAC):** Allows different users to be granted individual rights or to restrict them to those activities that correspond to their role. Each available menu item, whether measured value, setting value or service function, can thus be displayed, hidden, changeable or locked. As soon as the RBAC is active, even software can only access data of the device via access keys.
- During the login process, information is never transmitted in plain text, and the latency time is constantly increased in the event of repeated, unsuccessful login attempts.
- **Encoded data transmission via HTTPS** using root certificates
- **Audit log:** Logging of all activities relevant to safety. Transfer option to central grid monitoring server by Syslog.
- **Client white list:** Limitation of computers with access authorisation
- **Digitally signed firmware files** for secure updates
- **Data logger & Uninterruptible Power Supply (UPS)**
 - SD card memory
 - 16 GB data memory lasts for many years in typical operation
 - UPS with 5×3 minutes in case of power failure on the supply
- **Data export**
 - Manual data export via CSV & PQDIF
 - Automated data export csv & PQDIF (scheduler)
 - Event push (PQDIF) to the SFTP server
- **Secure connection via gateway**
 - VPN Cloud-Service
 - Mobile phone connection

A comprehensive safety concept on plant level comprising each grid component is required to repel such attacks. The safety mechanisms integrated into LINAX PQx000 support such concepts, thus contributing to safe energy supplies.

• Metrologically certified measuring system

- METAS Certificate (Swiss Federal Institute of Metrology)
- Certified power quality according to IEC61000-4-30 Ed.3, Class A & S
- Zertifizierte Wirkenergie nach Klasse 0.2S

• Non-µP Measurement Devices

The easiest way to implement cyber security

- Transducer for I/U/P/Q
- “Stupid” hardware prevents IT attacks (no IP address)
- High availability and durability over decades
- Global proven technology

Results per page: 25

Filter: Emergency Alert Critical Error Warning Notice Info Debug

Time	PID	Priority	IP address	User name	Message
13.01.2021, 14:38:03	cb-gui	Info	192.168.57.69:49270	admin	User logged out successfully
13.01.2021, 14:22:47	cb-gui	Notice	192.168.57.69:63931	admin	User reviewed latest security event log (allow)
13.01.2021, 14:22:32	cb-gui	Notice	192.168.57.69:63933	admin	User logged in successfully
13.01.2021, 14:20:28	cb-gui	Notice	192.168.57.69:63790	anonymous	User reviewed latest security event log (allow)
13.01.2021, 14:07:31	cb-gui	Info	195.49.116.212:62261	admin	User has been logged out due to inactivity
13.01.2021, 13:47:31	cb-gui	Notice	195.49.116.212:60235	admin	User reviewed latest security event log (allow)
13.01.2021, 13:33:11	cb-gui	Notice	195.49.116.212:60136	admin	User logged in successfully
07.01.2021, 11:51:09	cb-gui	Warning	46.126.246.147:1436	admin	Failed login attempt# 3
07.01.2021, 11:49:39	cb-gui	Warning	46.126.246.147:1417	admin	Failed login attempt# 2
07.01.2021, 11:49:30	cb-gui	Warning	46.126.246.147:1419	admin	Failed login attempt# 1
29.12.2020, 10:49:27	cb-gui	Notice	223.186.41.211:5122	anonymous	User reviewed latest security event log (allow)

Audit log with filter option

	admin	localgui	anonymous	Operator1	Operator2	Operator3	[API]AccessKey
Local account (no weblgin)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Instantaneous values	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Energy	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Harmonics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Phasor diagram	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Waveform	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PQ statistic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Service	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Reset values	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Reset/Update device	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Audit Log	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Use IO simulation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Settings	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Basic device settings	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Measurement	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Communication	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Security system	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

RBAC access rights of different users

INFORMATIVE WEBSITE ON THE SUBJECT OF POWER QUALITY

Bringing more light into the dark

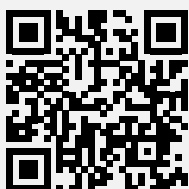
For the stakeholders, whether already familiar with the topic of power quality today or not, the website on the topic of power quality aims to provide useful information from theory and practice. And this is exactly what the name «Power Quality as a Service», already known in software services, is intended to emphasize with it. The website provides knowledge about relevant standards, measurement methods,

why and where power quality is actually an issue, what are the phenomena and how do they manifest themselves, what to look out for, how to ensure good power quality, application examples, term hygiene, FAQ, etc.

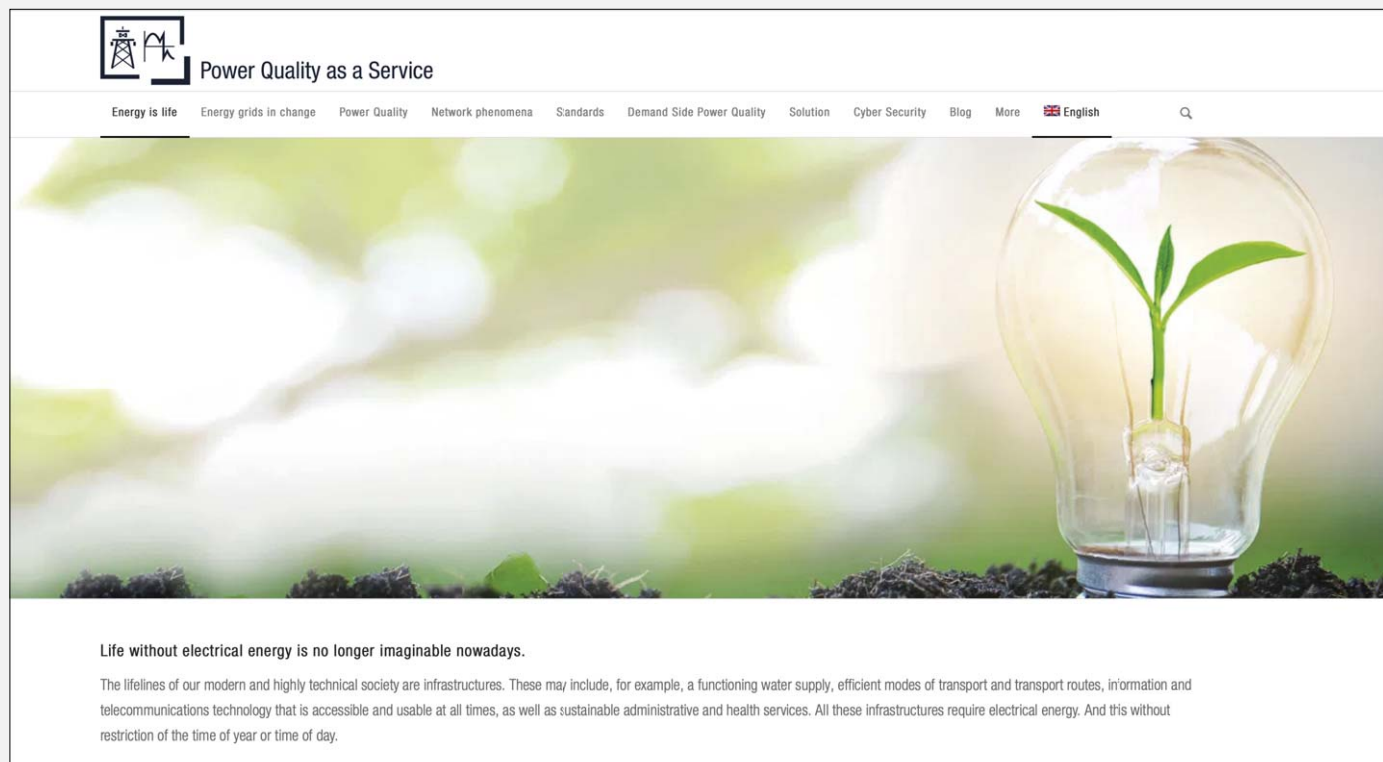
The website sees itself as a cooperation platform

In order to do justice to the topic of power quality in its various facets, Power Quality as a Service, or PQaaS for short, is based on standards, guidelines and experience. Thus, the PQaaS is not a stand-alone production, but rather combines international knowledge and technologies from the most diverse areas on the topic of power quality. In doing so, the PQaaS tries to keep itself up to date and interesting and thus actively

participates in the social media scene. The inclusion for the provision of content contributions is thereby desired. Blog contributions as well as interactive chats support this. Not least also, in order to develop the partner network of the PQaaS further and to create trusting use for all interested ones.



<https://pq-as-a-service.com>



The screenshot shows the homepage of the 'Power Quality as a Service' website. At the top left is a logo featuring a power line tower and a plug. The navigation menu includes: Energy is life, Energy grids in change, Power Quality, Network phenomena, Sandards, Demand Side Power Quality, Solution, Cyber Security, Blog, More, and English. The main visual is a large image of a glowing lightbulb with a small green plant growing inside it, set against a background of soft-focus green leaves. Below the image, the text reads: 'Life without electrical energy is no longer imaginable nowadays.' followed by a paragraph: 'The lifelines of our modern and highly technical society are infrastructures. These may include, for example, a functioning water supply, efficient modes of transport and transport routes, information and telecommunications technology that is accessible and usable at all times, as well as sustainable administrative and health services. All these infrastructures require electrical energy. And this without restriction of the time of year or time of day.'

CAMILLE BAUER METRAWATT ACADEMY

The Camille Bauer Metrawatt stands as a traditional Swiss company, for a high degree of quality, reliability and expertise. In many inspiring seminars, we offer a platform to participate in our knowledge and that of many external experts.

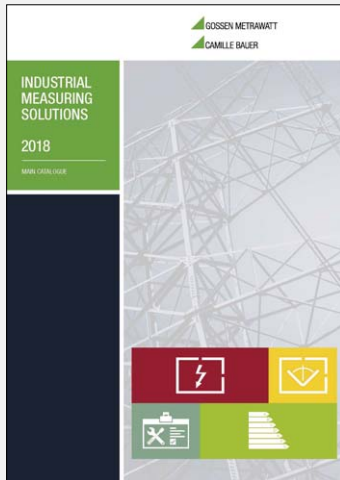
Our goal is to provide all those interested with the necessary expertise in the field of electrical energy and thus make processes more efficient, to protect the environment and to protect man and machine.



Each of our seminars offers you:

- A platform for maintaining your personal network
- The opportunity to ask questions at any time and get to know the speakers in person
- Catering at day seminars
- An on-site calibration service for your measurement devices
- A certificate of participation as proof of your further education

Find our complete product portfolio in our main catalogue:



POWER SYSTEM MONITORING



POSITION SENSORS



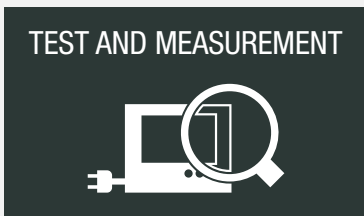
ENERGY MANAGEMENT



SERVICES



Further fields of the GMC-Instruments Group:

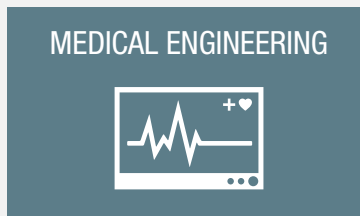


TEST AND MEASUREMENT

Being a leading provider of measuring and testing technology, we offer our customers a wide and modern portfolio of instruments. High-quality multimeters, device testers, installation test devices as well as an extensive service program – this is what Gossen Metrawatt stands for.



Secutest



MEDICAL ENGINEERING

More than 100 years of experience in measuring and testing technology combined with state-of-the-art standards guarantee the highest degree of quality and reliability in sensitive areas. Our medical engineering instruments ensure the correct and safe operation of often vital equipment.



Seculife Hit



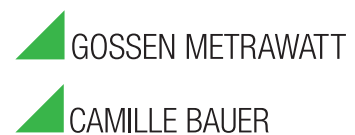
PHOTOGRAPHY AND LIGHT MEASURING

Gossen Foto- und Lichtmesstechnik GmbH is specialised in light measurement and has decades of experience in this field. The portfolio comprises instruments to determine illumination intensity and light density and to monitor interior light.



Mavolux

GMC INSTRUMENTS



DISTRIBUTION PARTNERS IN OVER 40 COUNTRIES

GMC-I Messtechnik GmbH

Südwestpark 15
D-90449 Nürnberg
TEL +49 911 8602-111 · FAX +49 911 8602-777
www.gossenmetrawatt.com · info@gossenmetrawatt.com

Electromediciones Kainos S.A.U.

Paseo de los Ferrocarriles Catalanes · 97-117 Planta 1ª
Local 2 · E-08940 Cornellá de Llobregat · Barcelona
TEL +34 934 742 333 · FAX +34 934 743 447
www.kainos.es · kainos@kainos.es

GMC-Instruments Italia S.r.l.

Via Romagna, 4
I-20853 Biassono (MB)
TEL +39 039 2480 51 · FAX +39 039 2480 588
www.gmc-instruments.it · info@gmc-i.it

GMC-Instruments Nederland B.V.

Daggeldersweg 18
NL-3449 JD Woerden
TEL +31 348 42 11 55 · FAX +31 348 42 25 28
www.gmc-instruments.nl · info@gmc-instruments.nl

GMC-Instruments France SAS

3 rue René Cassin
F-91349 Massy Cedex
TEL +33 1 6920 8949 · FAX +33 1 6920 5492
www.gmc-instruments.fr · info@gmc-instruments.fr

GMC-měřicí technika s.r.o.

Fügnerova 1a
CZ-67801 Blansko
TEL +420 516 482 611/-617 · FAX +420 516 410 907
www.gmc.cz · gmc@gmc.cz

GMC-Instruments Austria GmbH

Richard-Strauss-Str. 10 / 2
A-1230 Wien
TEL +43 1 890 2287 · FAX +43 1 890 2287 99
www.gmc-instruments.co.at · office@gmc-instruments.co.at

GMC-Instruments (Tianjin) Co., Ltd

Rm.710 · Jin Ji Ye BLD. No.2 · Sheng Gu Zhong Rd.
P.C.: 100022 · Chao Yang District
TEL +86 10 84798255 · FAX +86 10 84799133
www.gmci-china.cn · info@gmci-china.cn

YOUR DISTRIBUTION PARTNER

Camille Bauer Metrawatt AG

Aargauerstrasse 7 · 5610 Wohlen · Switzerland
TEL +41 56 618 21 11 · FAX +41 56 618 21 21

www.camillebauer.com · info@cbmag.com