

# PRODUCTS SYSTEMS SOLUTIONS

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FOR ELECTRICAL INSTRUMENTATION



ENERGY GENERATION ■ ENERGY DISTRIBUTION ■ ENERGY CONSUMPTION

# WELCOME TO CAMILLE BAUER METRAWATT AG.

Being a leading provider of high-quality instrumentation, we have made the electrotechnical processes of our customers more efficient and safer for more than 70 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.



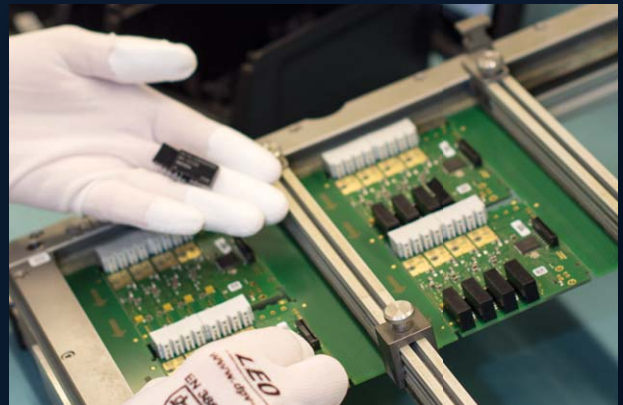
## SWISS TOP QUALITY

We are a Swiss company domiciled in Wohlen in the Canton of Aargau.

At this location, we develop and produce our own products. We are active internationally and export more than 90 % of our products and services to destinations all over the world.

## RELY ON US

Customers come first for us. We manufacture more than 80% of our products according to individual configurations. If requested, we deliver within 24 hours. All of our products are subjected to extensive quality controls to ensure the excellence of all articles at any time. Swiss quality is just uncompromising.



## 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

# 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



Devices for grid management and equipment monitoring.

## POWER QUALITY



Avoiding grid problems before they occur.

## MONITORING AND CONTROLLING



Highly precise instruments combined with a Soft-PLC and logic function.

## INDUSTRIAL ENERGY AND DATA MANAGEMENT



Comprehensive solutions for transparency and analysis in an industrial environment.

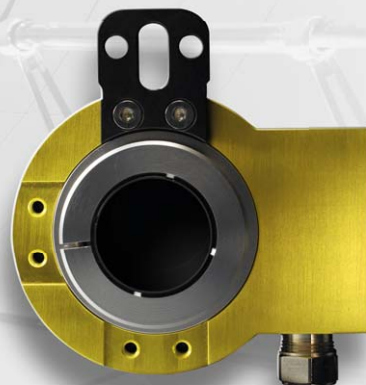




# MEASURING AND DISPLAYING

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 visualising
- 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

# 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.



The image shows a Camille Bauer LINAX device displaying a table of PQ events. The table has columns for 'Time', 'Trigger channel', 'Event type', 'Event value', 'Event value', 'Duration [s]', and 'Severity [s]'. The data is as follows:

#	Time	Trigger channel	Event type	Event value	Event value	Duration [s]	Severity [s]
1	13.02.2018, 13:45:20.170	U1	Response				0.020
2	21.01.2018, 03:07:47.812	U2	Rapid voltage change	ΔUmax: 25.98 V	ΔUmin: 0.80 V		0.100
3	21.01.2018, 01:45:48.220	U1, U2	Rapid voltage change	ΔUmax: 25.98 V	ΔUmin: 0.88 V		0.400
4	21.01.2018, 01:07:42.804	U1	Rapid voltage change	ΔUmax: 23.32 V	ΔUmin: 0.85 V		0.400
5	18.01.2018, 09:54:12.702	U1	Rapid voltage change	ΔUmax: 12.90 V	ΔUmin: 2.17 V		0.400
6	03.01.2018, 13:06:03.001	U1	Rapid voltage change	ΔUmax: 14.72 V	ΔUmin: 0.98 V		0.070
7	03.01.2018, 13:05:02.818	U1	Rapid voltage change	ΔUmax: 20.19 V	ΔUmin: 0.22 V		0.540
8	03.01.2018, 12:54:18.642	U1	Rapid voltage change	ΔUmax: 18.08 V	ΔUmin: 0.27 V		0.000
9	03.01.2018, 12:08:03.361	U2	Rapid voltage change	ΔUmax: 18.04 V	ΔUmin: 2.16 V		0.100
10	03.01.2018, 12:07:07.960	V2L	Voltage dip	Residual voltage: 102.65 V	Depth: 24.35 V		0.020
11	03.01.2018, 12:07:07.259	U1	Rapid voltage change	Residual voltage: 166.41 V	Depth: 27.25 V		0.000

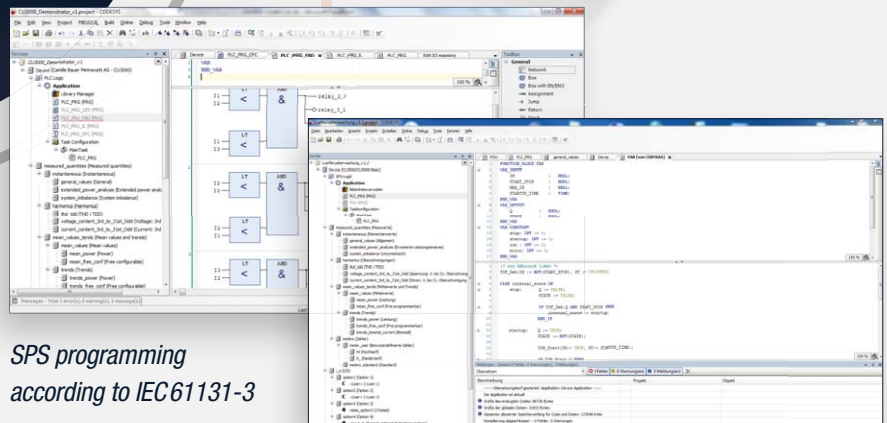
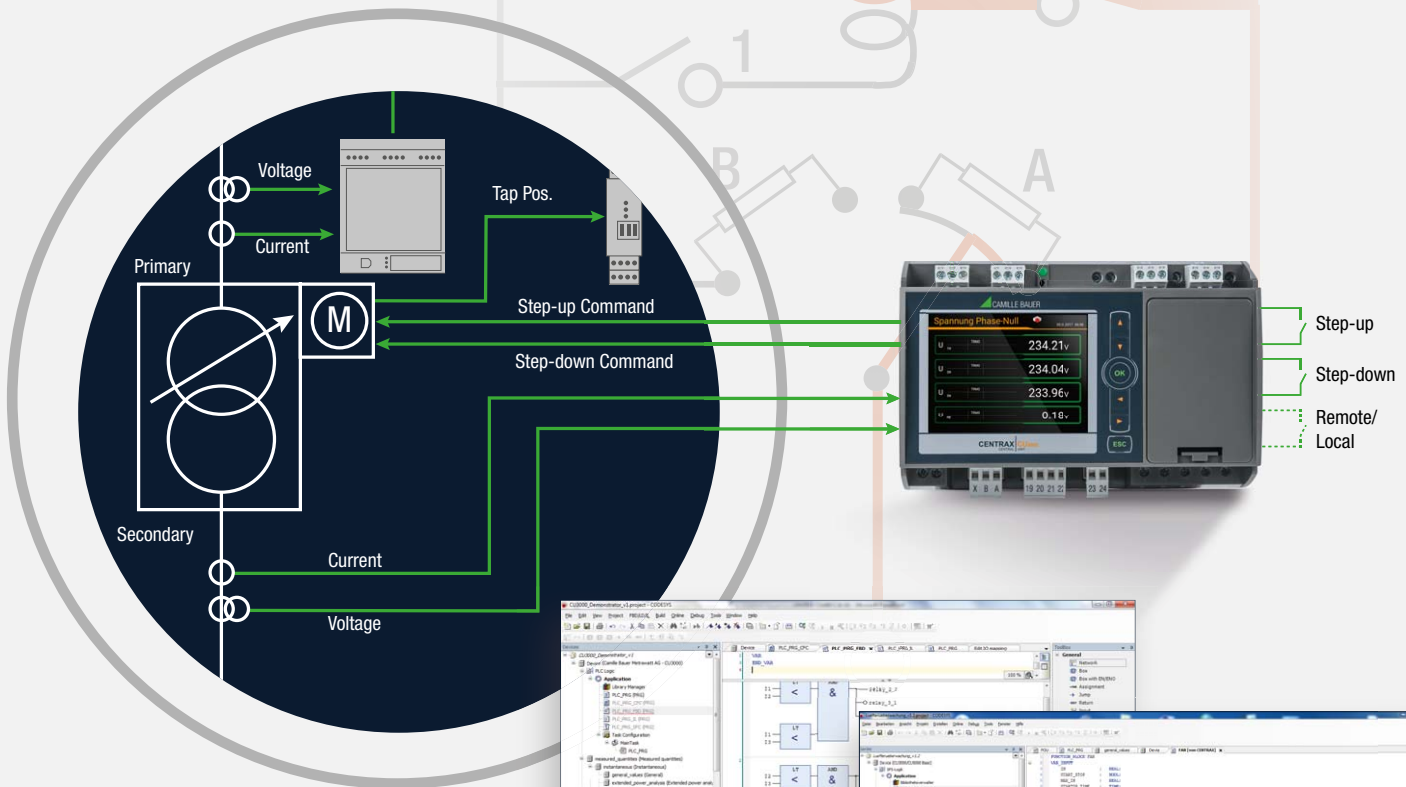
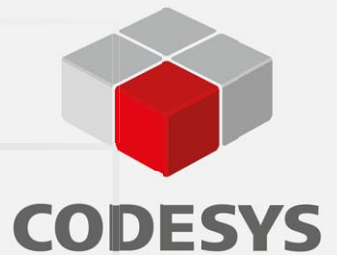


## POWER QUALITY

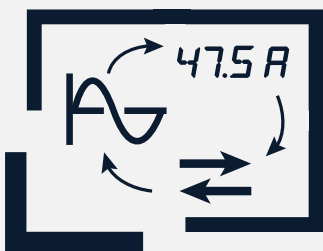
- Recording of power quality events to secure supply quality
- Power quality instruments Class A according to IEC 61000-4-30 Ed. 3 and IEC 62586-1 Ed. 2
- Independent certification according to IEC 62586-2 Ed. 2 by an accredited institute
- Power Quality data by PQDIF format according to IEEE 1159.3 available
- Supports conformity reports concerning the voltage quality standard (e.g. according to EN 50160, etc.)
- Stationary and portable devices available

# 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.



SPS programming according to IEC 61131-3



## MONITORING AND CONTROLLING

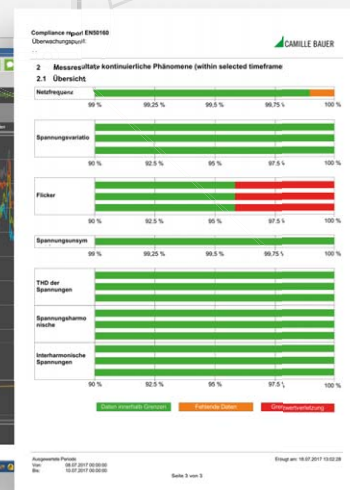
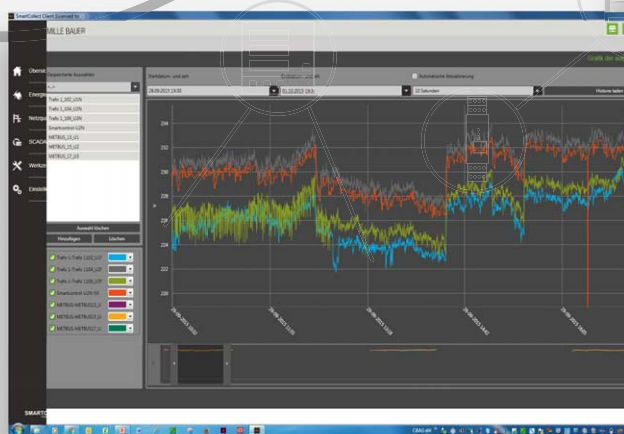
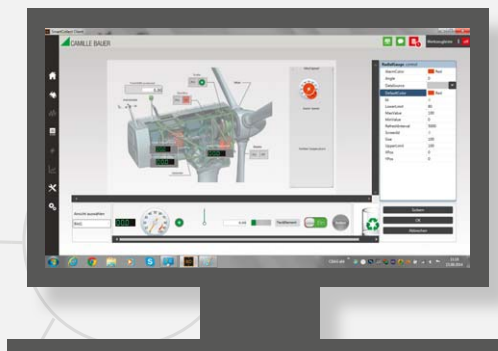
- Functionality of a highly precise instrument combined with a Soft-PLC
- On-site recording and visualising of measured data
- User-specific visualising of the programmed PLC facility
- Innovative and scalable operating concepts for intuitive use of data (WebGUI)
- Integration of further devices via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



# INDUSTRIAL ENERGY AND DATA MANAGEMENT

We collect all of your instrumentation data and manage it centrally. Your processes are clearly structured, energy consumption becomes visible. From the measured data, we prepare reports, e.g. energy overview

reports, measured data reports or, in relation to power quality, a report according to EN50160. Graphic representation of the entire process as well as a navigation through the process itself can also be realised.



## INDUSTRIAL ENERGY AND DATA MANAGEMENT

- Central acquisition and structuring of measured data of the most varied instruments
- Preparation of cost centre-related energy reports
- Analysis of power quality data via PQDIF
- Extensive visualising of measured values and grid events
- Individual process visualising via linked process images
- Control of processes via screen or logic linking

WHAT MOTIVATES US ...

BEING ALWAYS IN TUNE WITH THE TIMES AND PROVIDING  
CUSTOMISED SOLUTIONS FOR A SAFE ELECTRICAL ENERGY SUPPLY.

NOW AND IN FUTURE.

**GMC INSTRUMENTS**

 **GOSSEN METRAWATT**  
 **CAMILLE BAUER**

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INDUSTRIAL TECHNOLOGY



PHOTOGRAPHY



TEST AND MEASUREMENT



MEDICAL ENGINEERING

