



**Multifunctional  
power monitors with  
system analysis**

# SINEAX A210, A220, A230s, A230

## Multifunctional power monitors with system analysis

### SINEAX A210 and A220

#### Rational and economic measurement

48 measurands, 8 energy meters, average and max./min. value functions.

The electrical system can be comprehensively assessed in all 4 quadrants.

#### Displays

The measurands are displayed by high-contrast, 14 mm high, dimmable LEDs with 3 digits and sign (energy meters 8 digits, frequency 4 digits).

#### Meters

The integrated energy meters record active energy (incoming/outgoing) and reactive energy (inductive/capacitive).

If the digital input of the extension module is used for switching the tariff, the number of active meters is doubled.

#### Outputs

There are 2 SO outputs that can be used for controlling relays. Energy impulses or as an alternative, the status of the programmable limits can be output.



### SINEAX A230s and A230

#### Versatile and accurate measurement

134 measurands, 8 energy meters, comprehensive average and max./min. value functions, THD and harmonic analysis, asymmetric voltage and zero displacement voltage.

All these measurands form the basis for the comprehensive analysis and assessment of the electrical system in all 4 quadrants.

#### Displays

The measurands are displayed by high-contrast, 14 mm high, dimmable LEDs with 4 digits and sign (energy meters 8 digits). In USER mode, measurands that are not required can be suppressed. The LOOP mode displays from 2 to 10 programmable displays sequentially.

#### Analysis

A trend analysis is available for all the average values. The calculations of the harmonic content and the asymmetry of the system, gives important information on the system status for the operators.

	A210	A220	A230s	A230
Front dimensions	96 x 96 mm	144 x 144 mm	96 x 96 mm	144 x 144 mm
Connection types	Single phase, 3/4 wire balanced, 3/4 wire unbalanced			
Inputs	L-L: 0 – 500 V, L-N: 0 – 290 V, F: 45 – 65 Hz, I: 0 – 1/5A			
Accuracy	U, I: 0,5%; P, Q, S, meters: 1%		U, I: 0,2%; P, Q, S, meters: 0,5%	
Display 14 mm	3 digits + sign		4 digits + sign, programmable	
Power supply	100 – 230 V AC/DC or 24 – 60 V AC/DC			
Outputs	2 digital outputs as pulse or limit outputs			
Measurands	85		266	
Energy meters	8		8	
Mean values	5 P, Q and S mean values each		Various functions	
THD	No		Yes	
Harmonic analysis	No		Up to the 15 <sup>th</sup> harmonic	
Voltage unbalance	No		Yes	
Connections	Spring clamps or screw clamp terminals			
Protection class (front)	IP66			

# EMMOD 201, 202, 203, 204, 205, 206

## Extension modules

The extension modules enlarge the functionality of the A210, A220, A230s and A230 power monitors. They can be simply snapped onto the back of the basic instrument and take their power supply from it.

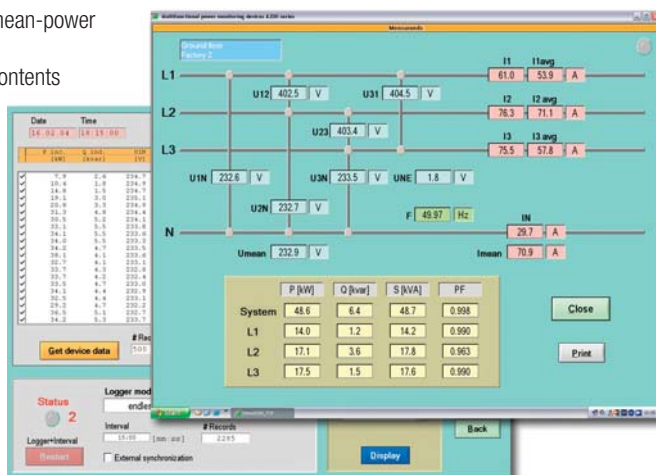


Functionality EMMOD...	201	202	203	204	205 typ A	205 typ E	206
<b>Interface</b>							
• RS232/RS485 (Modbus/RTU)	•						
• Ethernet (Modbus/TCP)			•				
• Profibus DP (RS485)				•			
• LON (communication with U160x)					•		
• LON (standard)						•	
• M-Bus							•
<b>Data logger</b>							
• Mean-values	≤ 2		≤ 14				
• Min/max interval values (A230s / A230 only)			≤ 9				
• Time reference via PC time	•						
• Time reference via built-in RTC			•				
<b>Outputs</b>							
• Analog outputs 0/4...20 mA		2					
• Digital output 125 V DC					1		
<b>Digital inputs</b>							
• Synchronization pulse for mean-values			1				
• Tariff switching HT/LT			1				
• Synchronization or HT/LT	1					1	1
<b>Parametrization of the module</b>							
• via software A200plus	•						
• via basic device		•			•	•	•
• via GSD in the control system				•			
• via software A200plus and browser			•				

## PC-Software A200plus

The clear PC software allows to establish a communication with the devices of the A200 series:

- Upload and modification of all device features: Measuring input, digital outputs, mean-power values, digital input, logger
- Display of present measurands
- Acquisition of integrated mean-power values
- Display/Set/Reset meter contents
- Display/Reset of minimum/maximum values
- Acquisition of mean-power values stored in the logger
- Direct export of logger data to Microsoft Excel
- Store/load logger data on/from disk
- Executable under Windows 95, 98, ME, NT, 2000, XP, Vista



## The benefits of the A series

- The good legibility, the simple operation, and the easy-to-use software, guarantee secure installation and operation.
- The flat design makes more space available in your cabinet.
- The high functionality saves costs for engineering, installation and documentation
- You only pay for the required functions, thanks to the modular extensibility.
- The settings and measurands are power fail-safe.

# A210-HH, A230-HH, A230E-HH

## Handheld 3 Phase Power Analyzers



### A210-HH

3 phase power analyzer with load profile recorder

- 4-quadrant measurement of all values in AC systems
- 2 load profile recorders for active, reactive power
- Energy meters for active and reactive energy
- RS232 interface to your PC and easy to use software

### A230-HH/A230E-HH

3 phase power quality analyzer, load profile/average value recorder

- Adds functions for system and load analysis to the features of A210-HH
- Measurement of harmonics, THD, asymmetry, comprehensive average and max./min. values
- Average value and load profile recording (up to 14 measurands)
- A230E-HH with Ethernet interface and real time clock

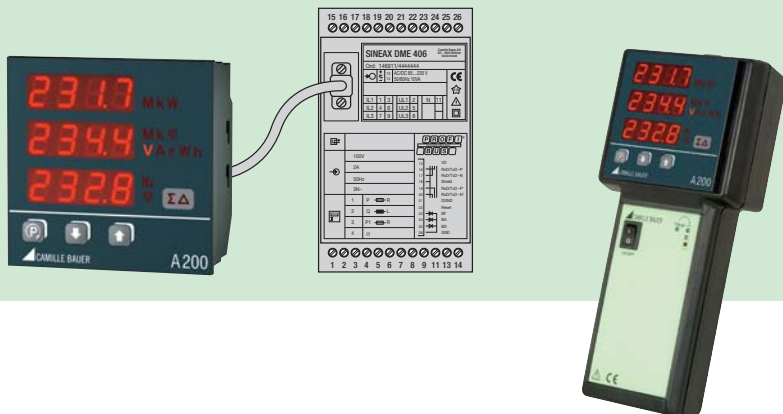
### Kit includes

The 3 phase power analyzers are delivered as a set in a hardcase with or without 3 current clamps WZ11. The set contains additionally: voltage cables with alligator clips, PC software, RS232 cable, Li-Ion battery, mains adaptor.



### Display units A200 and A200-HH

The A series is rounded off with the display units A200 and A200-HH. These instruments can show all the measurands of our SINEAX/EURAX DME4 series. The connection is made with an RS232 cable. The basic functions of the instrument, especially the output of the analog and digital values, and the bus functions for LON, Profibus or Modbus remain unchanged.



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