

MAVOWATT 210

Three-Phase Power and Energy Logger

3-447-113-03

2/5.22

- Accurate, three-phase, bidirectional power and energy logger to identify and record common PQ issues
- Portable, small and compact
- 3+1 voltage and 4 current channels
- 4 voltage leads and 3 flexible AC Rogowski current probes
- Suitable for monitoring single, two, and three phase applications
- Ethernet and USB
- Integrated web server for easy configuration and real time data monitoring
- Dran-View XP software
- Softcase



Applications

Various local or remote power monitoring applications:

- Energy audits according to DIN EN 16247-1
- Demand side management
- Basic PQ surveys
- Check metering
- Sub metering
- Tenant metering
- Alternative energy production
- Energy cost allocation
- Load profiling
- Power factor studies
- Residential applications including energy using and PQ detection

Features

- 3+1 voltage channels – Direct measurements up to 600 VRMS, CAT III
- 4 current channels – MAVOWATT 210 Rogowski or hinged CTs (see Optional Accessories)
- Measures: V, I, W (P), VA (S), VAR (Q), PF, demand, energy & much more
- PQ disturbance detector – Detects and records trends of RMS sags/dips, swells, current changes (IEC 61000-4-30 1/2 cycle methods)
- Harmonic measurements & recording – V_{thd}, I_{thd}. Measurements according to IEEE 519-2014/ IEC 61000-4-7
- Integrated web browser for setup, real time metering, and data transfer
- Dran-View XP software for analysis and reporting
- 7 hours battery runtime
- Automatic wiring verification – LEDs indicate wiring errors
- Ethernet and USB communications
- Modbus, BACnet®

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Technical Data

Mechanical Design

Housing (W × H × D):	Approx. 6.4 × 8.9 × 18.8 cm
Weight:	Approx. 0.64 kg
Protection:	IP50 (in vertical position)

Ambient Conditions

Operating temperature:	0 ... +45 °C
Storage temperature:	-15 ... +55 °C
Elevation:	max. 2000 m above sea level
Relative humidity:	5% to 95%, no condensation allowed

Power Supply

AC Power Supply	Range: 90 to 264 VAC, 47 to 63 Hz Consumption: 15 W max.
Internal Battery	Rechargeable lithium ion battery 3.6 V, 7.2 Ah Run time: 7 hours (typical) Charge time: 15 hours (typical)

Electrical Safety

Protection category:	CAT II
Pollution degree:	2

Electrical Safety for Measurement

Measuring category	CAT III
Pollution degree	2

Data Interfaces

Ethernet	10 Mbit/s
USB	2.0
Protocols	Modbus, BACnet®
Internal Memory Storage Capacity	8 GB

Relevant Standards

The instrument has been manufactured and tested in accordance with the following safety regulations:

EN 61326	Class A, Electromagnetic Compatibility - Electrical equipment for Measurement, Control and Laboratory use
CISPR 11	Class A Limits Of Radio Disturbance and Immunity Measuring Apparatus
EN 61000-4-2	Electrostatic Discharge Immunity
EN 61000-4-3	Electromagnetic Field Immunity
EN 61000-4-4	Electrical Fast Transient Burst Immunity
EN 61000-4-5	Surge Immunity
EN 61000-4-6	Immunity to Conducted Disturbances
DIN EN 60529/ IEC 60529	Degrees of protection provided by enclosures (IP Code)
EN 61010-1	Safety Requirements of Electrical Equipment for Measurement, Control, and Laboratory Use

Characteristic Values)

General	Sampling frequency	32 ksps (recorded and real-time meters), 128 samples per cycle (periodic waveform snapshots)
	Sag/dip, swell trigger resolution	1-cycle (uses IEC 61000-4-30 Class S methods)
Voltage	Range	90 to 600 VRMS CATIII
	Accuracy	90 VRMS to 600 VRMS = ±0.1%, < 90 VRMS = 0.5%
	Connections	4 safety banana voltage inputs - 3-phase voltage and 1 neutral/reference
Current	Input	0.333 VRMS full scale, connections: BNC
	Accuracy	±0.1% + probe

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Frequency	Range	50 Hz = 45 Hz to 55 Hz, 60 Hz = 55 Hz to 65 Hz
	Accuracy	50/60 Hz: ± 0.001 Hz
Energy Parameters	(True/Active) energy (P)	0.1%
	Reactive energy (Q)	0.1%
	Apparent energy (S)	0.1%
	Fundamental active energy (P)	0.2%
	Fundamental reactive energy (Q)	0.2%
	Fundamental apparent energy (S)	0.2%
Power Parameters	Demand	0.2%
	Active power (P)	0.2%
	Reactive power (Q)	0.2%
	Apparent power (S)	0.2%
	Fundamental active power (P)	0.2%
	Fundamental reactive power (Q)	0.2%
	Fundamental apparent power (S)	0.2%
Power factor	$\pm 0.001\%$	

- 1 Ethernet cable
- 1 Software Dran-View XP
- 1 Softcase

Optional Accessories

- 1 Flexible AC current probe based on the Rogowski principle, 50 – 500 A, measuring head length 40 cm (product no. Z840A)
- 1 Flexible AC current probe based on the Rogowski principle, 150 – 1500 A, measuring head length 40 cm (product no. Z840B)
- 1 Flexible AC current probe based on the Rogowski principle, 300 – 3000 A, measuring head length 40 cm (product no. Z840C)
- 1 Split core current transformer MAVOWATT 210 CT-H-5A with connection cable suitable for MAVOWATT 210; 600 V CAT III; 5 A; class 0.5; cable opening diameter 10 mm (product no. Z840J)
- 1 Split core current transformer MAVOWATT 210 CT-H-20A with connection cable suitable for MAVOWATT 210; 600 V CAT III; 20 A; class 0.5; cable opening diameter 10 mm (product no. Z840K)
- 1 Split core current transformer MAVOWATT 210 CT-H-50A with connection cable suitable for MAVOWATT 210; 600 V CAT III; 50 A; class 0.5; cable opening diameter 10 mm (product no. Z840L)

Scope of Delivery

Please check for completeness of the set (product no. M840B):

- 1 MAVOWATT 210
- 1 Power pack (IP42)
- 4 Voltage leads with detachable alligator jaw safety clip assembly, maximum jaw opening 20 mm
- 3 Flexible AC current probe based on the Rogowski principle, 50 – 500 A, measuring head length 40 cm (product no. Z840A)

Order Information

Description	Type	Article number
MAVOWATT 210	Three-phase power and energy logger	M840B


For additional information regarding accessories please refer to

- Measuring Instruments and Testers catalog
- www.gossenmetrawatt.com

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 **GOSSEN METRAWATT**
Gossen Metrawatt GmbH
Südwestpark 15
90449 Nürnberg • Germany

Phone +49 911 8602-0
Fax +49 911 8602-669
E-mail info@gossenmetrawatt.com
www.gossenmetrawatt.com