

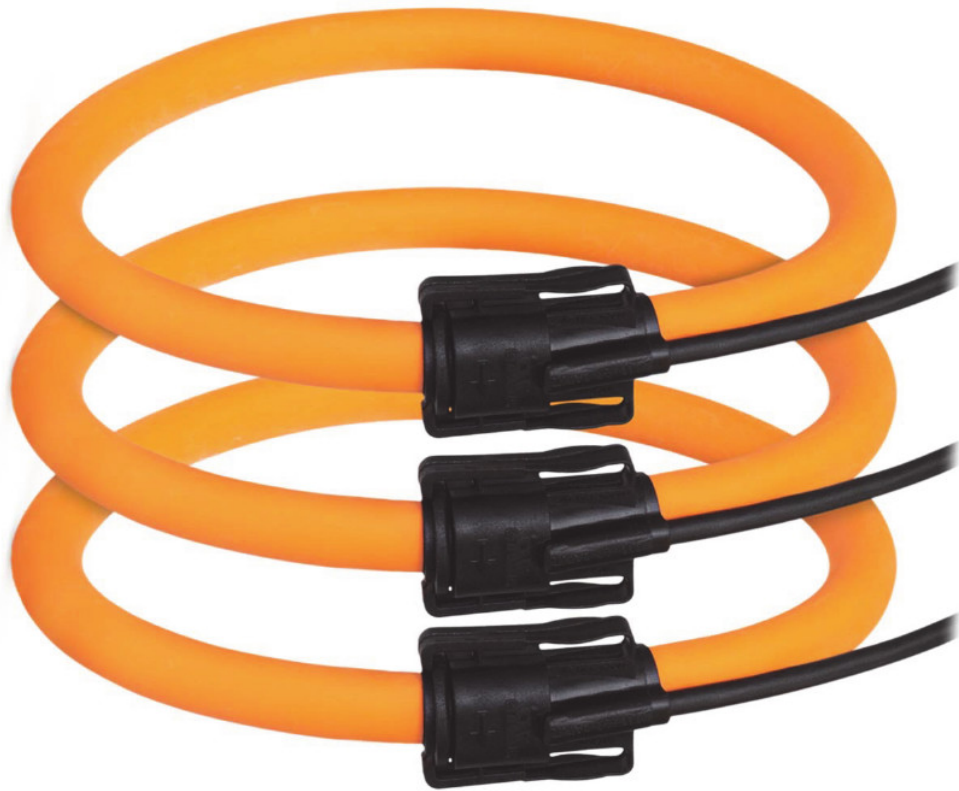


# GOSSEN METRAWATT 210 Rogowski Flexible AC Current Probe Instruction Manual

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Operating Instructions  
MAVOWATT 210 ROGOWSKI  
Flexible AC Current Probe  
based on the Rogowski Principle  
3-447-115-03  
1/4.22



**MAVOWATT 210 Rogowski  
Gossen Metrawatt GmbH**

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## **Safety Precautions**

### **General**

- Carefully and completely read and adhere to these operating instructions.  
The document can be found at <http://www.gossenmetrawatt.com>. Retain this document for future reference.
- Carefully and completely read and adhere to the product documentation of the combined products. Retain these documents for future reference.
- Observe and comply with all safety regulations which are applicable for your work environment.

### **Handling**

- The probe may only be used as long as it is fully intact.  
Inspect all cables and the probe before use. Pay particular attention to damage, broken insulation or kinked cables.
- If the probe doesn't function flawlessly, remove it from operation and secure it against inadvertent use.
- If the probe is damaged during use, e.g. through falling, remove it from operation and secure it against inadvertent use.
- If the equipment is used in a manner not specified in this reference guide, the protection provided by the equipment may be impaired. These safety precautions are repeated where appropriate throughout this manual.

## Operating conditions

- Only use the probe in conjunction with the measuring device MAVOWATT 210.
- Only use the probe in compliance with the specified technical data and under the specified conditions (ambient conditions, IP protection class, measuring category, etc.).
- Do not use the probe after long periods of storage under unfavorable conditions (e.g. humidity, dust or extreme temperature).

## Electricity

- Installation, operation, and maintenance of this product must be performed by qualified personnel only.
- Qualified personnel who work on or near exposed energized electrical conductors must follow applicable safety related work practices and procedures including appropriate personal protective equipment.
- Wear proper personal protective equipment, including safety glasses and insulated gloves when making connections to power circuits.
- Hands, shoes, and floor must be dry when making any connection to a power line.
- Never apply the probe around bare conductors with hazardous voltages without having the appropriate permission to perform such work and without wearing protective clothing and gloves as required.
- Connections must be made to the measuring device first, then to the circuit to be monitored.
- The probe may only be used within the limits of the specifications listed in this manual. Loads exceeding the specified values may destroy the probe and the electrical equipment connected to it.

## Applications

Please read this important information!

### 2.1 Intended Use / Use for Intended Purpose

The MAVOWATT 210 Rogowski current probes are based upon the Rogowski principle. They can be used exclusively to measure AC current by being connected to MAVOWATT 210 Three-phase Power and Energy Logger.

The flexible probes allow current measurements on conductors that are hard to reach.

Installation, operation, and maintenance of this product must be performed by qualified personnel only. Safety of the operator, as well as that of the product, is only assured when it's used for its intended purpose.

### 2.2 Use for Other than Intended Purpose

Using the product for any purposes other than those described in the condensed operating instructions or these product operating instructions is contrary to use for intended purpose.

### 2.3 Liability and Guarantee

Gossen Metrawatt GmbH assumes no liability for property damage, personal injury or consequential damage resulting from improper or incorrect use of the product, in particular due to failure to observe the product documentation.

Furthermore, all guarantee claims are rendered null and void in such cases.  
Nor does Gossen Metrawatt GmbH assume any liability for data loss.

**2.4 Opening the Instrument / Repairs**

Unauthorized modifications to the product are prohibited.

**The Product**

**3.1 Scope of Application**

This documentation applies to the following articles:

Product	Product no.	Description
MAVOWATT 210 Rogowski 500/40	Z840A	Flexible AC current probe based on the Rogowski principle, suitable for MAVOWATT 210, 50 – 500 A, measuring head length 40 cm.
MAVOWATT 210 Rogowski 1500/40	Z840B	Flexible AC current probe based on the Rogowski principle, suitable for MAVOWATT 210, 150 – 1500 A, measuring head length 40 cm.
MAVOWATT 210 Rogowski 3000/40	Z840C	Flexible AC current probe based on the Rogowski principle, suitable for MAVOWATT 210, 300 – 3000 A, measuring head length 40 cm.

**3.2 Product Overview**

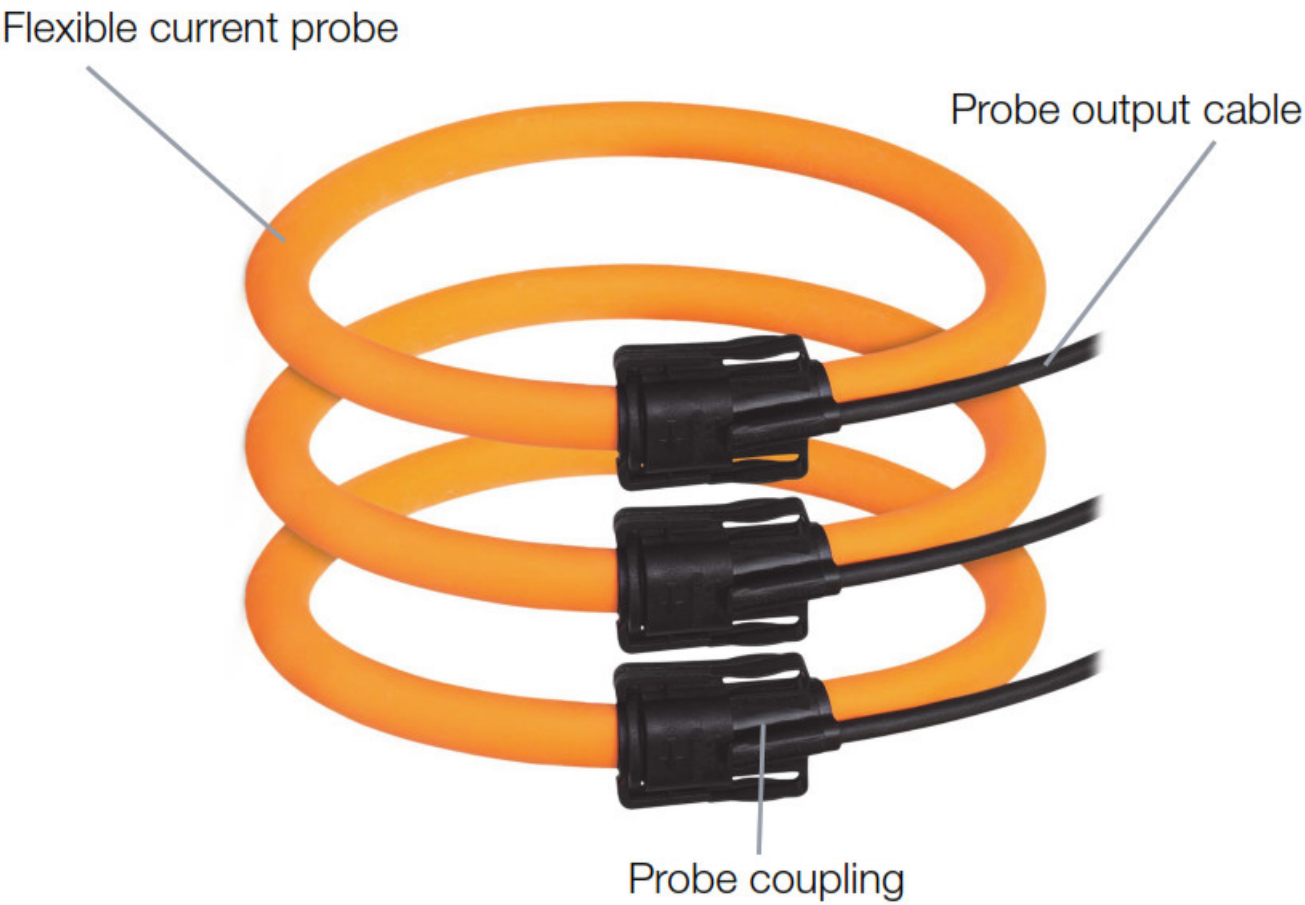








Figure 1: Flexible AC current probes based on the Rogowski principle  
**3.2.1 Symbols on the product and the included accessories:**

	Warning concerning a point of danger (attention, observe documentation!)
	Double insulation (protection category II)
	Do not apply around or remove from hazardous live conductors without additional protective means.
	European conformity marking
	The device may not be disposed of with household trash a “Returns and Environmentally Sound Disposal”  9.

### 3.3 Relevant Standards

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

DIN EN 61326	Electrical Equipment for Measurement, Control and Laboratory Use – EMC Requirements
DIN EN 61010-1	Safety Requirements of Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements
DIN EN 61010-1-031	Safety Requirements of Electrical Equipment for Measurement, Control, and Laboratory Use – Part 031: Safety Requirements for Hand-held Probe Assemblies for Electrical Measurement and Test
DIN EN 61010-2-032	Safety Requirements of Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-032: Particular Requirements for Hand-held and Hand-manipulated Current Sensors for Electrical Test and Measurement

### 3.4 Technical Data

Rated Current	Measurement range	MAVOWATT 210 Rogowski 500/40	50 A — 500 A
		MAVOWATT 210 Rogowski 1500/40	150 A — 1500 A
		MAVOWATT 210 Rogowski 3000/40	300 A — 3000 A
	Accuracy		0.5% per IEEE C57.13 class 0.6
	Positioning error		±0.1 %
Ambient Conditions	Operating temperature		—20 ... +70 °C
	Relative humidity		5% to 95%, no condensation allowed
Electrical	Phase orientation		Arrow points towards load
	Frequency range		45 Hz — 65 Hz
	Frequency response		10 Hz — 20 kHz
Safety	Working voltage		1000 V CAT III, 600 V CAT IV
	Dielectric strength		7400 Vac at 50/60 Hz for 1 minute
Mechanical Design	Protection		IP61 per DIN EN 60529 / IEC 60529
	Coil length		40 cm
	Coil diameter		15.5 mm
	Window size		10.6 cm
	Wire length		2 m
	Protection type		IP61

## Installation

### 4.1 Unpacking the Product

1. Carefully remove product and accessories from the packaging.
2. Check delivery for completeness and possible damage.
3. In case of detected damages, hidden defects and short deliveries, document type and scope and contact the manufacturer or supplier immediately.
4. Keep packing material for further transport.

### 4.2 Making Measurement Connections

To perform measurements, the Rogowski current probes are first connected to MAVOWATT 210. Subsequently, the Rogowski current probes are connected to the object to be measured.



#### Attention!

To avoid the risk of electric shock or burns, always connect the earth ground before making any other connections.



### Attention!

Do not exceed the marked maximum ratings.

#### 4.2.1 Connecting MAVOWATT 210 Rogowski Current Probes to MAVOWATT 210

✓ **MAVOWATT 210 is powered off.**

1. Plug the output cable of the current probe to the current input of MAVOWATT 210.

#### 4.2.2 Connecting MAVOWATT 210 Rogowski Current Probes to the Circuit to be Measured



### Attention!

DO NOT attempt to measure current in any circuit in which the circuit to ground voltage exceeds the insulation rating of the current probe.



### Attention!

Make sure the current probes are tightly closed. Keep mating surfaces clean and free from foreign matter.



### Note!

Do not locate the probe coupling close to other conductors carrying high current.



### Note!

Be sure to connect the current probes with the arrow pointing towards the load or an erroneous power reading will result.

✓ MAVOWATT 210 is powered off.

1. Open the probe coupling and slip the measuring head over the conductor carrying the current to be measured.
2. Close the probe coupling such that it visibly and audibly snaps into place.



The arrow marking on the current probe points in the direction of current flow and towards the load.  
The conductor is centered within the measuring head.  
The measuring head forms a perfect circle.

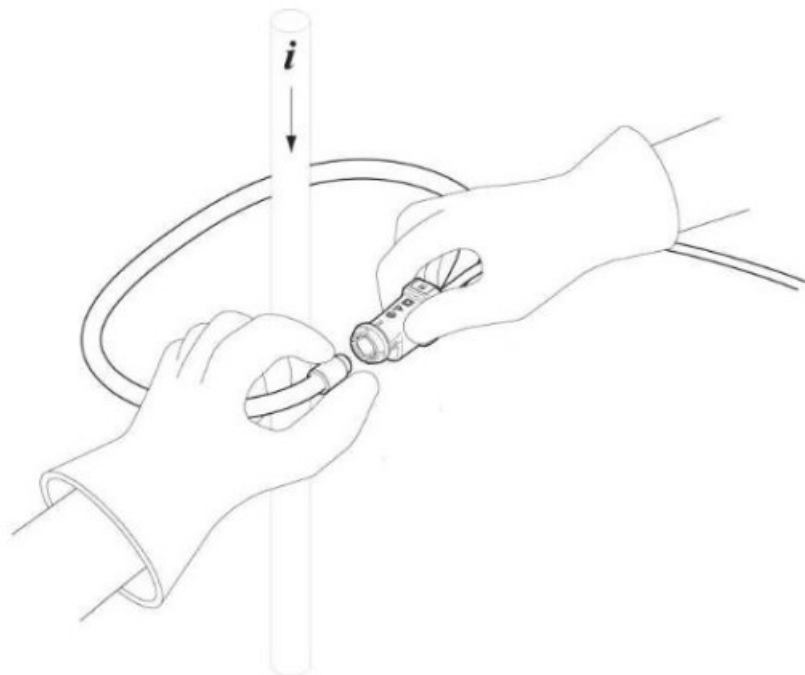


Figure 2: Placing the current probe

## Operation

For the different measurement configurations, refer to the Operating Instructions of MAVOWATT 210.

## Maintenance

### Cleaning

Keep the probe free of surface contamination. If necessary, clean the probe with isopropyl alcohol.

## Contact, Support and Service

You can reach Gossen Metrawatt GmbH directly and uncomplicated, we have one number for everything! Whether it's a support question, or individual desire, we answer every request at:

+49-911-8602-0

Monday–Thursday: 8:00 a.m. – 4:00 p.m.

Friday: 8:00 a.m. – 2:00 p.m.

You can also e-mail to: [info@gossenmetrawatt.com](mailto:info@gossenmetrawatt.com)

### Do you prefer support via e-mail?

Measuring and test instruments: [support@gossenmetrawatt.com](mailto:support@gossenmetrawatt.com)

Industrial equipment: [support.industrie@gossenmetrawatt.com](mailto:support.industrie@gossenmetrawatt.com)

For repairs, replacement parts, and calibrations please contact GMC-I Service GmbH:

[service@gossenmetrawatt.com](mailto:service@gossenmetrawatt.com)

[www.gmci-service.com](http://www.gmci-service.com)

+49-911-817718-0



<https://www.gmci-service.com/>

Beuthener Str. 41  
90471 Nürnberg  
Germany

1. DAKKS calibration laboratory per DIN EN ISO/IEC 17025.

Accredited at the Deutsche Akkreditierungsstelle GmbH under registration no. D-K15080-01-01.

## CE Declaration


The product fulfills all requirements of applicable EU directives and national regulations. We confirm this with the CE mark. The CE Declaration of Conformity is available upon request.

## Returns and Environmentally Sound Disposal



This product is subject to directive 2012/19/EC on Waste Electrical and Electronic Equipment (WEEE) and its German national equivalent implemented as the Waste Electrical and Electronic Equipment Act (ElektroG) on the marketing, return and environmentally sound disposal of electrical and electronic equipment. The product is a category 9 product (monitoring and control instrument) in accordance with ElektroG (German Waste Electrical and Electronic Equipment Act).




The symbol at the left indicates that this device and its electronic accessories must be disposed of in accordance with applicable legal regulations, and not together with household waste. In order to dispose of the device, bring it to a designated collection point or contact our product support department (  ). Separate disposal and recycling conserves resources and protects our health and the environment. Current and further information is available on our website at <http://www.gossenmetrawatt.com> under the search terms “WEEE” and “environmental protection”.

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## Documents / Resources

	<p><b><a href="#">GOSSEN METRAWATT 210 Rogowski Flexible AC Current Probe</a></b> [pdf] Instruction Manual 210 Rogowski Flexible AC Current Probe, 210 Rogowski, Flexible AC Current Probe, AC Current Probe, Current Probe, Probe</p>
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## References

- [Servicepartner für Kalibrierungen, Reparaturen, Ersatzteile, Mietgeräte | GOSSEN METRAWATT GMC-I Service GmbH](#)
- [GOSSEN METRAWATT, GMC-I Messtechnik, GMC-Instruments](#)