

METRACLIP® 5110 and 5111 Clip-On Power Meters

3-348-806-03
3/8.00

- Various clip openings
- Automatic measuring range selection
- High measuring accuracy
- Automatic storage of measured values
- Maximum value storage for current measurement
- TRMS value for distorted waveshapes
- Analog output
- Automatic device shutdown
- Compact and rugged
- VDE GS mark and electrical safety per IEC 61010-1



METRACLIP®5110

METRACLIP®5111



QUALITY MANAGEMENT SYSTEM



DQS Certified per
DIN EN ISO 9001 reg. no. 1262

Applications

METRACLIP®5110 and 5111 clip-on power meters are battery powered measuring instruments for the determination of nominal values in electrical systems.

The following values can be measured at round conductors and busbars with these instruments:

- Direct and alternating current
- Direct and alternating voltage
- Active or apparent power
- Power factor
- Frequency

Clip-on measuring instruments allow for convenient measurement of current within conductors. The circuit need not be interrupted, and no electrical connection exists between the measuring clips and the conductor (total insulation).

The METRACLIP®5111 has a clip opening for round conductors with diameters of up to 23 mm, or for busbars of up to 10 x 20 mm.

The METRACLIP®5110 has a larger clip opening for round conductors with diameters of up to 60 mm, or for busbars of up to 25 x 60 mm.

The analog quantity is read out additionally via the analog output for current measurements.

An optional 3-phase adapter is required for the measurement of power and $\cos\phi$ in 3-wire systems.

Description

Automatic Measuring Range Selection

The measuring range is automatically matched to the measured value. The unit of measure for the measured quantity is displayed as well.

Automatic Storage of Measured Values

Measurements are made possible at difficult to access locations thanks to automatic storage of measured values. The value can be read by the operator after measurement has been completed.

Maximum Value Storage for Current Measurement

After activating the "max hold" function, the maximum current value as of the beginning of the measurement is continuously updated at the display.

TRMS Value for Distorted Waveshapes

The utilized measuring method allows for practically waveshape independent TRMS measurement of pulsating quantities (AC + DC).

Analog Output

In addition to the digital display, the TRMS value (e.g. for recorders) or the instantaneous value (e.g. for oscilloscopes) is made available as an analog quantity for current measurement.

METRACLIP® 5110 and 5111

Clip-On Power Meters

Features

Display

Type	LCD
Character Height	13 mm
Display Range	±1999
Overload	indicated with a 1 at the far left of the display
Battery Level	indicated automatically at the LCD, BAT symbol appears for low battery voltage

Battery Saving Circuit

The measuring instruments are switched off automatically if none of the keys are activated for a period of approximately 30 seconds. The last measured value remains in memory up until this point in time. Automatic shutdown can be disabled.

VDE GS Mark

VDE testing authorities have confirmed that the requirements set forth by device safety legislation have been fulfilled.

Applicable Regulations and Standards

IEC 61010-1 / EN 61010-1 / VDE 0411 Part 1	Safety requirements for electrical equipment for measurement, control and laboratory use
IEC 60529 / EN 60529 / VDE 0470 Part 1	Test instruments and test procedures, protection provided by enclosures (IP code)
EN 50081-1 / VDE 0839 Part 81-1	Electromagnetic compatibility (EMC), generic standard for interference emission
EN 50082-1 / VDE 0839 Part 82-1	Electromagnetic compatibility (EMC), generic standard for interference immunity

Characteristic Values

Alternating and Direct Current

Measuring Range Upper Limit		Resolution	Intrinsic Error ± (% of U. + d ¹⁾)
Type 5111	Type 5110		
20 A	–	10 mA	1% + 1
200 A	200 A	100 mA	
–	1000 A	1 A	

Alternating and Direct Voltage

Measuring Range Upper Limit		Resolution	Intrinsic Error ± (% of U. + d ¹⁾)
200 V		0.1 V	0.5% + 1
750 V		1 V	
Input impedance 1 MΩ			

Active Power

Measuring Range Upper Limit		Resolution	Intrinsic Error ± (% of U. ²⁾) depends upon input quantities	
Type 5111	Type 5110		Type 5111	Type 5110
2 kW	–	1 W	0.8 typical	2 typical
20 kW	20 kW	10 W		
–	200 kW	100 W		

Apparent Power

Measuring Range		Resolution	Intrinsic Error ± (% of U. ²⁾) depends upon input quantities	
Type 5111	Type 5110		Type 5111	Type 5110
2 kVA	–	1 VA	1.5 typical	2 typical
20 kVA	20 kVA	10 VA		
–	200 kVA	100 VA		

Power Factor cosφ

Measuring Range	Resolution	Intrinsic Error ± (% of U. + d ¹⁾)
0.3 cap. ... 1.0 ... 0.3 ind.	0.01	1% + 1
Input voltage	Type 5111	10 V ... 750 V
	Type 5110	20 V ... 750 V
Input current	Type 5111	4 A ... 200 A
	Type 5110	20 A ... 1000 A

Frequency

Measuring Range	Resolution	Intrinsic Error ± (% of U. + d ¹⁾)
5.0 Hz ... 200 Hz	0.1 Hz	
200 Hz ... 1000 Hz	1 Hz ... 3 Hz	

Overload Capacity

Direct and alternating voltage	all measuring ranges	1000 V
Direct and alternating current	all measuring ranges	10000 A
Active and apparent power, power factor	all measuring ranges	1000 V, 10000 A
Frequency	all measuring ranges	1000 V

Analog Output

Current	Output Voltage		Maximum Load Current
	Type 5111	Type 5110	
0 ... 20 A	50 mV / A	–	1 mA
0 ... 200 A	5 mV / A	5 mV / A	
0 ... 1000 A	–	1 mV / A	

¹⁾ Percentage of upper range value plus digits

²⁾ Percentage of upper range value

Reference Conditions

Ambient Temperature	23 °C ± 1 K
Measured Quantity Frequency	50 Hz
Measured Quantity Waveshape	sine
Conductor Position	centered
Accuracy	0 ... 45 °C

METRACLIP® 5110 and 5111

Clip-On Power Meters

Nominal Ranges of Use

Temperature	0 ... 45 °C
Frequency for Direct and Alternating Voltage	15 ... 1000 Hz
For Direct and Alternating Current	15 ... 1000 Hz
For Apparent Power	15 ... 1000 Hz
For Active Power and Power Factor (cosφ)	15 ... 66 Hz
Crest Factor	≤ 7

Mechanical Design

Protection	housing: IP 40, terminals: IP 20 per IEC 60529
Clip Opening	Type 5111: 23 mm for round conductors or 10 x 20 mm for busbars Type 5110: 60 mm for round conductors or 25 x 60 mm for busbars
Dimensions (W x H x D)	90 x 250 x 65 mm
Weight	approx. 0.5 kg including battery

Ambient Conditions

Operating Temp.	-10 °C ... +50 °C
Relative Humidity	max. 85%, no condensation allowed
Elevation	max. 2000 m
Deployment	indoors only

Power Supply

Battery	9 volt block battery, IEC 6 LR 61 AlMn, service life approx. 1 year for typical use of 45 to 85 hours continuous operation (depending upon selected measuring range), automatic shutdown after 30 seconds of inactivity
---------	--

Electrical Safety

Safety Class	II per IEC 61010-1
Operating Voltage	750 V
Test Voltage	5.55 kV
Overvoltage Category, 600 V	III

Electromagnetic Compatibility (EMC)

Interference Emission	EN 50081-1
Interference Immunity	EN 50082-1

METRACLIP® 5110 and 5111

Clip-On Power Meters

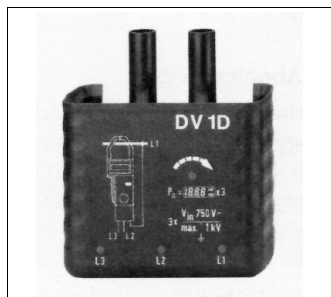
Standard Equipment

- 1 clip-on power meter, METRACLIP®5110 or 5111
- 1 safety measurement cable (with 4 mm plug)
- 1 cable for analog output (with 2 mm plug)
- 1 9 volt block battery per IEC 6 LR61
- 1 operating instructions

Accessories

3-Phase Adapter

DV1D 3-phase adapter for the measurement of power and $\cos\phi$ in 3-wires systems with phase sequence indicator



Carrying Pouch

F831 carrying pouch for clip-on power meter

Order Information

Designation	Type	Article Number
Clip-On Power Meter	METRACLIP®5110	GTM 5110 000 R0001
	METRACLIP®5111	GTM 5111 000 R0001
3-Phase Adapter	DV1D	GTZ 3208 000 R0001
Carrying Pouch for Meter	F831	GTZ 3301 000 R0005

Printed in Germany • Subject to change without notice

GOSEN-METRAWATT GMBH
Thomas-Mann-Str. 16-20
90471 Nuremberg, Germany
Phone: +49 911 8602-0
Fax: +49 911 8602-669
e-mail: info@gmc-instruments.com
<http://www.gmc-instruments.com>

GOSEN
METRAWATT
CAMILLE BAUER