

METRACLIP[®] 70

Digital Clip-On Ammeter

 3-349-064-03
 3/3.10

Clip Functions

- Alternating current measurement 200 mA ... 1000 A_{eff}
- Direct current measurement 200 mA ... 1400 A

Multimeter Functions

- Alternating voltage measurement 200 mV ... 600 V_{eff}
- Direct voltage measurement 200 mV ... 600 V
- Resistance measurement 0.5 Ω ... 4 MΩ
- Acoustic continuity test
- Diode test
- Frequency measurement 1.00 Hz ... 4 kHz

Common Functions and Characteristics

- 4½ place digital display
- Automatic or manual measuring range selection
- DATA HOLD and MIN-MAX display



Features

Storage of Display Values to Memory (HOLD, MIN-MAX)

The current measurement value or MIN-MAX value can be frozen at the display.

Overrange Indication

Optical, and in some cases acoustic signals are generated if measuring ranges are exceeded.

Automatic Shut-Down

The instrument shuts itself off automatically if any of the keys or the rotary switch are not activated for a period of 10 minutes. The automatic shut-down function can be disabled.

Characteristic Values

Digital Display 7 segment characters, 4½ digits
Sampling Rate 500 ms

Direct and Alternating Current, A DC and A AC_{eff}

Measuring Range	Resolution	Accuracy		Overload Capacity	
		V _{DC}	V _{eff}	Value	Duration
0.2 ... 399.9 A	100 mA	0.2 ... 50 A: 2% rdg. ± 10 D 50 A ... 399.9 2.5% rdg. ± 2 D		2000 A _{eff} to 1 kHz	continuous
400 ... 1000 A~ ... 1400 A _{DC}	1 A	400 ... 999 A: 2.5% rdg. ± 2 D 1000...1400 A: 8% rdg. ± 5 D	400 ... 799 A: 2.5% rdg. ± 2 D 800...1000 A: 5% rdg. ± 5 D		

Frequency range 45 Hz ... 450 Hz

Direct and Alternating Voltage, V DC and V AC_{eff}

Measuring Range	Resolution	Accuracy		Overload Capacity	
		V _{DC}	V _{eff}	Value	Duration
200 ... 399.9 mV	0.1 mV	1% rdg. ± 2 D	—	1 kV _{eff}	continuous
0.400 ... 3.999 V	1 mV		1.5% rdg. ± 2 D		
4.00 ... 39.99 V	10 mV				
40.0 ... 399.9 V	100 mV	1% rdg.	1.5% rdg.		
400 ... 600 V	1 V				

Frequency range 45 Hz ... 450 Hz

Input impedance 10 MΩ

Resistance Measurement

Measuring Range	Resolution	Accuracy	Overload Capacity	
			Value	Duration
0.5 ... 399.9 Ω	0.1 Ω	1.5% rdg. ± 7 D	600 V _{eff}	continuous
0.400 ... 3.999 kΩ	1 Ω	1.5% rdg. ± 4 D		
4.00 ... 39.99 kΩ	10 Ω			
40.0 ... 399.9 kΩ	100 Ω			
0.400 ... 3.999 MΩ	1 kΩ			

Maximum open-circuit voltage 0.5 V

Maximum short-circuit current 0.37 mA

Frequency

Measuring Range	Resolution	Accuracy
1.00 ... 99.99 Hz	0.01 Hz	0.1% rdg. ± 15 D
100.0 ... 999.9 Hz	0.1 Hz	
1000 ... 3999 Hz	1 Hz	

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Diode Test

Forward Direction	Display: conducting-state voltage in V (4 V range)
Reverse Direction	Display: max. open-circuit voltage in V
Accuracy	3% rdg. ± 10 mV
Resolution	1 mV
Max. Open-Circuit Voltage	3.5 V
Max. Short-Circuit Current	0.88 mA
Overload Protection	to 600 V _{eff} , continuous

Reference Conditions

Ambient Temperature	+ 23° C ± 3 K
Relative Humidity	45 ... 75%
Battery Voltage	8.5 ... 9 V
Conductor Position	centered, in accordance with markings on the clip
Conductor Diameter	≤ 15 mm
Ext. AC Magnetic Field	none
Ext. Electrical Field	none
Frequency of AC Components for Sinusoidal Signals	45 ... 65 Hz

Power Supply

Battery	1 ea. 9 V alkaline-manganese block battery per IEC 6LR61
Service Life	Approx. 60 hours for alkaline-manganese block batteries
Battery Test	Battery symbol appears at display when battery voltage falls to below 7.8 V.
Automatic Shut-Down	At less than 7.2 V

Electromagnetic Compatibility (EMC)

Interference Emission/ Interference Immunity	EN 61 326-1
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Electrical Safety

Protection Class	II (totally insulated) per IEC61010-1/ EN 61010-1/VDE 0411-1
Measuring Category	III
Contamination Degree	2
Circuit Insulation Voltage	600 V

Ambient Conditions

Operating Temp.	0° C ... +50° C
Storage Temperature	-40° C ... +70° C (without battery)
Relative Humidity	0 ... 80% at max. 40° C, no condensation allowed
Elevation	to 2000 m

Mechanical Design

Protection IP 30

Extract from table on the meaning of IP codes

IP XY (1 st digit X)	Protection against foreign object entry	IP XY (2 nd digit Y)	Protection against the penetration of water
3	≥ 2.5 mm dia.	0	not protected

Clip Opening	2 busbars, 50 x 5 mm 2 cables, 25 mm diameter 1 cable, 42 mm diameter
Dimensions	W x H x D: 97 mm x 254 mm x 46 mm
Weight	approx. 600 gr. with battery

Applicable Regulations and Standards

IEC 61010-1/EN 61010-1/ VDE 0411-1	Safety requirements for electrical equipment for measurement, control and laboratory use
IEC 61010-2-032/ EN 61010-2-032/ VDE 0411-2-032	Special requirements for clip-on ammeters
DIN EN 61326 VDE 0843 Part 20	Electrical equipment for measurement, control and laboratory use – EMC requirements

Standard Equipment

- clip-on ammeter
- bag
- measuring cables with test probe
- battery
- operating instructions

Order Information

Description	Type	Article Number
Digital Clip-On Ammeter	METRACLIP®70	M312A

For additional information concerning accessories, please refer to

- our Measuring Instruments and Testers Catalog
- our website www.gossenmetrawatt.com

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