

METRACLIP[®] 71

Digital Clip-On Ammeter

3-349-061-03
2/7.00

Clip Function

- Alternating current measurement 10 mA ... 1000 A_{eff}

Multimeter Functions

- Alternating voltage measurement 10 mV ... 600 V_{eff}
- Crest factor measurement 1.00 ... 10.00
- Frequency measurement 0.50 Hz ... 19.99 kHz
- Harmonic distortion measurement THD: 0.2 ... 600%
DF: 0.2 ... 100%

Power Measurement

- Active, reactive and apparent 1 W/var/VA ... 600 kW/kvar/kVA
- Power factor, displacement factor

Common Functions and Characteristics

- Three 4½ place digital displays with background illumination
- DATA HOLD and MIN-MAX display



Features

Storage of Display Values to Memory (HOLD)

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

Data Logging (RECORD, MIN-MAX)

Measurement values can be stored over a period of up to 24 hours for long-term observation of measured quantities. Maximum, minimum and mean values are determined for the selected recording duration. All changes to minimum and maximum values are indicated with an acoustic signal.

Measurement Value Smoothing

For purposes of stabilization, measurement values can be averaged and displayed at an interval of 3 seconds.

Overrange Indication

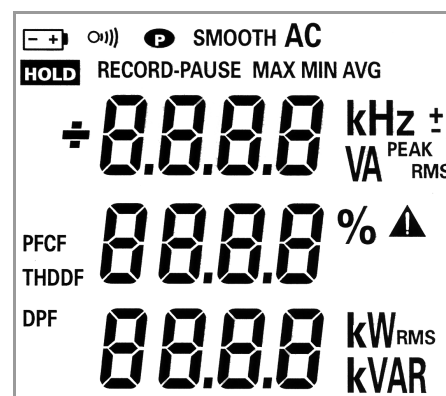
Optical, and in some cases acoustic signals are generated if measuring ranges are exceeded.

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.

Triple LCD Display

Display	7 segment characters with background illumination
Places	4½ digits



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Characteristic Values

Alternating Current, A AC

Measuring Range	Resolution	Accuracy	Overload Capacity	
			Value	Duration
0.30 ... 59.99 A _{eff}	10 mA	2.0% rdg. ± 2 D + 0.2 A	2000 A at 50 Hz	continu- ous
60.0 ... 599.9 A _{eff}	100 mA	2.0% rdg. ± 2 D		
600 ... 1000 A _{eff} 600 ... 1500 A _{SS}	1 A			

Frequency range 10 Hz ... 5 kHz

Alternating Voltage, V AC

Measuring Range	Resolution	Accuracy	Overload Capacity	
			Value	Duration
0.05 ... 59.99 V _{eff}	10 mV	1.0% rdg. ± 10 D	1.5 kV	continu- ous
60.0 ... 599.9 V _{eff}	100 mV	1.0% rdg. ± 2 D		
600 ... 1500 V _{SS}	1 V			

Frequency range 10 Hz ... 5 kHz

Input impedance 1 MΩ

Crest Factor, CF

Measuring Range	Resolution	Accuracy
1.00 ... 3.50	0.01	2% rdg. ± 2 D
3.51 ... 5.99		5% rdg. ± 2 D
6.00 ... 10.00		10% rdg. ± 2 D

Frequency

Measuring Range	Resolution	Accuracy
0.50 ... 99.99 Hz	0.01 Hz	0.1% rdg. ± 2 D
100.0 ... 999.9 Hz	0.1 Hz	
1000 ... 9999 Hz	1 Hz	0.2% rdg. ± 2 D
10.00 ... 19.99 kHz	10 Hz	0.5% rdg. ± 2 D

Harmonic Factors: THD, DF

Function	Measuring Range	Accuracy
Total Harmonic Distortion	0.2 ... 600%	1% rdg. ± 2 D
Distortion Factor	0.2 ... 100%	

Active Power, W

Measuring Range	Resolution	Accuracy
10 ... 5999 W	1 W	2.0% rdg. ± 2 D
6.00 ... 59.99 kW	10 W	
60.0 ... 599.9 kW	100 W	

Reactive Power, var

Measuring Range	Resolution	Accuracy
10 ... 5999 var	1 var	2.0% rdg. ± 2 D
6.00 ... 59.99 kvar	10 var	
60.0 ... 599.9 kvar	100 var	

Apparent Power, VA

Measuring Range	Resolution	Accuracy
10 ... 5999 VA	1 VA	2.0% rdg. ± 2 D
6.00 ... 59.99 kVA	10 VA	
60.0 ... 599.9 kVA	100 VA	

Power Factor, PF cosφ

Measuring Range	Resolution	Accuracy
0.00 ... 0.20	0.01	10.0% rdg. ± 2 D
0.21 ... 0.50		5.0% rdg. ± 2 D
0.51 ... 1.00		3.0% rdg. ± 2 D

Displacement Factor, DPF

Measuring Range	Resolution	Accuracy
-0.00 ... -1.00	0.01	5.0% rdg. ± 2 D
+0.00 ... +1.00		

Reference Conditions

Ambient Temperature	+ 23° C ± 3 K
Relative Humidity	45 ... 75%
Operating Voltage	6 V ± 0.1 V
Conductor Position	centered
Conductor Diameter	≤ 15 mm
Ext. DC Magnetic Field	earth magnetic field (< 40 A/m)
Ext. AC Magnetic Field	none
Ext. Electrical Field	none
Frequency of AC	
Components in Signal	45 ... 65 Hz

Power Supply

Batteries	4 ea. 1.5 V alkaline-manganese cell per IEC LR6 or rechargeable batteries
Service Life	For alkaline-manganese cells: approx. 40 hours or 2500 measurements with a duration of 1 minute each
Battery Test	- Automatic: Battery symbol is displayed when battery voltage is too low. - Manual: Current battery voltage is displayed, as well as remaining service life in hours.
Automatic Shut-Down	At less than 3.3 V

Electromagnetic Compatibility (EMC)

Interference Emission	EN 50081-1: 1992
Interference Immunity	EN 50082-1: 1992

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Electrical Safety

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

Standard Equipment

- 1 clip-on ammeter
- 1 carrying case
- 2 measuring cables with test probe
- 2 alligator clips
- 4 batteries
- 1 operating instructions

Ambient Conditions

Operating Temp.	-10° C ... +55° C
Storage Temperature	-40° C ... +70° C (without batteries)
Relative Humidity	10 ... 90% at max. 40° C, no condensation allowed
Elevation	to 2000 m
Applications	indoors only

Order Information

Description	Type	Article Number
Digital Clip-On Ammeter	METRACLIP [®] 71	M312B

Please refer to our Measuring Instruments and Testers Catalog for additional information concerning accessories.

Mechanical Design

Protection	IP 40
Clip Opening	2 power supply bars 50 x 5 mm with a distance of 5 mm 1 power supply bar 80 x 5 mm 1 cable with 50 mm diameter
Dimensions	W x H x D: 103 mm x 275 mm x 50 mm
Weight	approx. 670 gr.

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
EN 50081-1	Electromagnetic compatibility (EMC), generic standard for interference emission
EN 50082-1	Electromagnetic compatibility (EMC), generic standard for interference immunity

METRACLIP[®] 71

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