

METRACLIP[®] 81

Digital Clip-On Meter

3-349-065-03
3/3.03

Clip Functions

- Alternating current measurement 0 ... 2000 A AC peak
- Direct current measurement 0 ... 2000 A DC

Multimeter Functions

- Direct and alternating voltage measurement 0 ... 600 V_{eff}
- Frequency measurement 10 Hz ... 1 kHz

Power and Power Factor Measurement, Energy Measurement

- Active, reactive and apparent power ... 1200 kW/kVA/kvar DC
... 850 kW/kVA/kvar AC

Harmonic Analysis

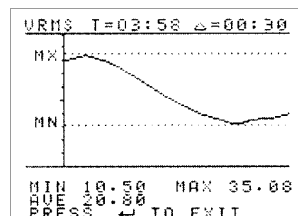
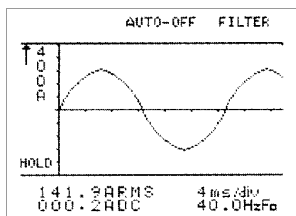
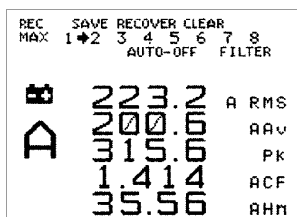
- Harmonic distortion: CF, THD, DF

Additional Functions

- Matrix display for numeric and oscilloscope displays
- 8 display screens can be stored to memory
- MIN MAX and mean value storage
- Data memory for 5 parameters over 24 hours



Display Illuminated Dot Matrix LCD, 160 x 128 Pixels



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

Measuring Range	Resolution	Accuracy	Max. Overload
0 ... 4 V	0.001 V	±1 % of reading ±5 digits	1 kV _{eff}
0 ... 40 V	0.01 V		
0 ... 400 V	0.1 V		
0 ... 600 V	1 V		

Frequency Range 10 Hz ... 1 kHz

Input Impedance 3.2 MΩ

The RMS value for V and A AC is generated over a period of 500 ms.

Frequency

Measuring Range	Resolution	Accuracy	Input Quantities	
			Current	Voltage
10.0 Hz ... 1 kHz	0.1 Hz	±1% (40 ... 70 Hz: 0.5%)	10 A ... 1.4 kA _{eff}	1 V ... 600 V _{eff}

Characteristic Values

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

Measuring Range	Resolution	Accuracy	Max. Overload
0 ... 40 A	0.01 A	±1.5% of reading ±5 digits	10 kA
0 ... 400 A	0.1 A		
0 ... 2000 A	1 A		

Frequency Range 10 Hz ... 1 kHz

Active, Apparent and Reactive Power, W / VA / var (single phase and 3-phase)

Measuring Range	Resolution	Accuracy	Max. Overload
0 ... 4 k	1	±2.5% of reading ±5 digits	1000 V _{eff} / 10 kA
0 ... 40 k	10		
0 ... 400 k	100		
0 ... 1200 kW/VA DC	1000		
0 ... 850 kW/VA AC			
0 ... 850 kvar			

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Digital Clip-On Meter

Energy, kWh

Measuring Range	Resolution	Accuracy	Max. Overload
4 kWh	1 Wh	±3% of reading ±5 digits	1000 V _{eff} / 10 kA
40 kWh	10 Wh		
400 kWh	100 Wh		
4000 kWh	1000 Wh		
40000 kWh	10000 Wh		

Power Factor, PF cosφ (single phase and 3-phase)

Measuring Range	Resolution	Accuracy
0.3 cap. ... 1.0 ... 0.3 ind.	0.01	±3°

Reference Conditions

Ambient Temperature +23° C ±1° C

Power Supply

Battery 6 ea. 1.5 V alkaline-manganese battery per IEC LR6
Service Life approx. 24 hours without illumination

Electrical Safety

Safety Class II (totally insulated) in accordance with IEC 61010-1/EN 61010-1/VDE 0411-1

Overvoltage Category 600 V CAT IV
Contamination Level 2
Nominal Insulation Voltage 600 V_{eff}

Maximum Allowable Voltage

Current Measurement 600 V AC_{eff} or DC between non-insulated conductor and ground
Voltage Measurement 600 V AC_{eff} or DC between input terminals, or between live conductor and local ground

Ambient Conditions

Operating Temp. 0° C ... +50° C
Storage Temperature -20° C ... +60° C (without batteries)
Temp. Coefficient ±0.1% of display value per °C

Relative Humidity max. 80% at max. 31° C with linear decline to 50% at max. 40° C, no condensation allowed
Elevation to 2000 m
Deployment indoors; outdoors only in the specified ambient conditions

Mechanical Design

Protection IP 40
Clip Opening 60 mm
Cable Diameter max. 58 mm
Dimensions W x H x D: 98 mm x 300 mm x 52 mm
Weight 820 gr. with batteries

Data Interface

Data Transmission optocoupler via RS 232 to PC
Baud Rate 9600 baud

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
IEC/EN 61326	Electromagnetic compatibility (EMC)

Standard Equipment

- clip-on ammeter
- carrying pouch
- measurement cables with test probe
- alligator clips
- batteries
- operating instructions

Order Information

Description	Type	Article Number
Digital Clip-On Ammeter	METRACLIP [®] 81	M312D

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

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