Measuring Functions and Measuring Ranges of the METRACli87

Measurements via Current Clamp

A AC Current Measurement

Measuring Range	Resolution	Intrinsic Error under Reference Conditions
0.15 … 99.99 A	10 mA	±(1% rdg. + 10 d)
100.0 … 999.9 A	100 mA	±(1% rdg. + 3 d)
1000 A ... 1500 A	1 A	±(1.5% rdg. + 3 d)

AC frequency range 45 to 65 Hz (reference range)
Bandwidth 2 kHz

A DC Current Measurement

Measuring Range	Resolution	Intrinsic Error * under Reference Conditions
0.00 … 99.99 A	10 mA	±(1% rdg. + 10 d)
100.0 … 999.9 A	100 mA	±(1% rdg. + 3 d)
1000 ... 1500 A	1 A	

* After zero-point compensation

A AC+DC Current Measurement

Measuring Range	Resolution	Intrinsic Error * under Reference Conditions
0.15 … 99.99 A	10 mA	±(1% rdg. + 10 d)
100.0 … 999.9 A	100 mA	±(1% rdg. + 3 d)
AC: 1000 A ... 1500 A DC or peak: 1500 A	1 A	

* After zero-point compensation

AC frequency range 45 to 65 Hz (reference range)
Bandwidth 2 kHz

A AC/DC Starter Current Measurement, True Inrush

Measuring Range	Resolution	Intrinsic Error under Reference Conditions
10 … 1000 A AC	1 A	±(5% rdg. + 5 d)
1500 A DC	1 A	±(5% rdg. + 5 d)

Specific data in the **peak function** for true inrush current measurements (from 10 to 400 Hz AC):

- Intrinsic uncertainty: the values in the table have to be increased by ±(1.5% rdg. + 0.5 A).
- Acquisition time for peak values: min. 1 ms to max. 1.5 ms

Applications include:

- Measurement of starting current for electric motors
- Precise specification of fuses and protective circuit breakers (relationship between amplitude and signal time)
- Loading components with a current overload

Frequency Measurement for Direct Voltage

Measuring Range	Resolution	Intrinsic Error under Reference Conditions
5.0 … 1999 Hz	0.1 Hz	±(0.4% rdg. +1 d)

Measurements via Current Clamp and Connector Sockets

Active Power (DC+AC)

Measuring Range	Resolution	Intrinsic Error under Reference Conditions
5 … 9999 W	1 W	Up to 1000 A: ±(2.0% rdg. + 10 d) 1 kA ... 1.5 kA: ±(2.5% rdg. + 10 d)
10.00 … 99.99 kW	10 W	Up to 1000 A: ±(2.0% rdg. + 3 d) 1 kA ... 1.5 kA: ±(2.5% rdg. + 3 d)
100.0 … 999.9 kW	100 W	
1000 ... 1500 kW[1]	1 kW	

[1] Overload display for measured power values > 1.5 kW in single-phase systems (1000 V x 1500 A)

Bandwidth AC voltage measurement: 3 kHz
AC current measurement: 2 kHz

Active Power (DC)

Measuring Range	Resolution	Intrinsic Error under Reference Conditions
0 … 9999 W	1 W	Up to 1000 A: ±(2.0% rdg. + 10 d) 1 kA ... 1.5 kA: ±(2.5% rdg. + 10 d)
10.00 … 99.99 kW	10 W	Up to 1000 A: ±(2.0% rdg. + 3 d) 1 kA ... 1.5 kA: ±(2.5% rdg. + 3 d)
100.0 … 999.9 kW	100 W	
1000 ... 1500 kW[1]	1 kW	

[1] Overload display for measured power values > 1.5 kW in single-phase systems (1000 V x 1500 A)

Active Power (AC)

Measuring Range	Resolution	Intrinsic Error under Reference Conditions
5 … 9999 W	1 W	±(2.0% rdg. + 10 d)
10.00 … 99.99 kW	10 W	±(2.0% rdg. + 3 d)
100.0 … 999.9 kW	100 W	
1000 kW[1]	1 kW	

[1] Overload display for measured power values > 1 kW in single-phase systems (1000 V x 1000 A)

Bandwidth AC voltage measurement: 3 kHz
AC current measurement: 1 kHz

Apparent Power (DC+AC)

Measuring Range	Resolution	Intrinsic Error under Reference Conditions
5 … 9999 VA	1 VA	Up to 1000 A: ±(2.0% rdg. + 10 d) 1 kA ... 1.5 kA: ±(2.5% rdg. + 10 d)
10.00 … 99.99 kVA	10 VA	Up to 1000 A: ±(2.0% rdg. + 3 d) 1 kA ... 1.5 kA: ±(2.5% rdg. + 3 d)
100.0 … 999.9 kVA	100 VA	
1000 ...1500 kVA[1]	1 kVA	

[1] Overload display for measured power values > 1.5 kVA in single-phase systems (1000 V x 1500 A)

Bandwidth AC voltage measurement: 3 kHz
AC current measurement: 2 kHz