

Special Measuring Functions of the METRAClip88

Diode Test

Measuring Range	Resolution	Intrinsic Error under Reference Conditions
0.000 ... 3.199 V DC	1 mV	±(1.0% rdg. + 3 d)

Test current 0.55 mA

Phase Sequence

Frequency range 47 ... 400 Hz
Allowable voltage range 50 to 1000 V
Permissible phase shift ±10°
Permissible amplitude deviation 20%
Permissible harmonic component for voltage: 10%

Measuring Functions and Measuring Ranges of the METRAClip88

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 ... 2000 A	1 A	±(1.5% rdg. + 3 d)

AC frequency range 45 to 65 Hz (reference range)
Bandwidth 1 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 ... 3000 A	1 A	Up to 2 000 A: ± (1.5% rdg. + 3 d) 2 kA DC ... 2.5 kA DC: ± (2.5% rdg. + 3 d) 2.5 kA DC ... 3 kADC: ± (3.5% rdg. + 3 d)

* 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 ... 2000 A DC or peak: 1000 A ... 3000 A	1 A	Up to 2000 A: ± (15% display + 3 D) 2000 ... 2500 A DC: ± (2.5% display + 3 D) 2500 ... 3000 A DC: ± (3.5% display + 3 D)

* After zero-point compensation

AC frequency range 45 to 65 Hz (reference range)
Bandwidth 1 kHz

A AC/DC Starter Current Measurement, True Inrush

Measuring Range	Resolution	Intrinsic Error under Reference Conditions
20 ... 2000 A AC	1 A	±(5% rdg. + 5 d)
3000 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 Alternating Current

Measuring Range	Resolution	Intrinsic Error under Reference Conditions
5.0 ... 999.9 Hz	0.1 Hz	±(0.4% rdg. + 1 d)

Measurements via Current Clamp and Connector Sockets

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 ... 2 kA: ±(2.5% rdg. + 10 d) 2 kA ... 2.5 kA: ±(35% rdg. + 10 d) 2.5 kA ... 3 kA: ±(4.5% rdg. + 10 d)
10.00 ... 99.99 kW	10 W	Up to 1000 A: ±(2.0% rdg. + 3 d) 1 kA ... 2 kA: ±(2.5% rdg. + 3 d) 2 kA ... 2.5 kA: ±(35% rdg. + 3 d) 2.5 kA ... 3 kA: ±(4.5% rdg. + 3 d)
100.0 ... 999.9 kW	100 W	
1000 ... 3000 kW ¹	1 kW	

¹ Overload display for measured power values > 3 kW in single-phase systems (1000 V x 3000 A)

Active Power (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 ... 2 kA: ±(2.5% rdg. + 10 d)
10.00 ... 99.99 kW	10 W	Up to 1000 A: ±(2.0% rdg. + 3 d) 1 kA ... 2 kA: ±(2.5% rdg. + 3 d)
100.0 ... 999.9 kW	100 W	
1000 kW ... 2000 kW ¹	1 kW	

¹ Overload display for measured power values > 2 kW in single-phase systems (1000 V x 2000 A)

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