

Datenblatt

Vertriebs-Hotline: +49 (0) 89 894 222 74

E-Mail: info@alldaq.com

Wir beraten Sie gerne!



B series

The only model in the B series, the B102 is designed to measure earth leakage currents caused by insulation faults. It enables the fault to be located and diagnosed before failure occurs thus avoiding installation shutdown.

It is designed specifically for locating low-current faults on high-current circuits.

The B102 measures differential or leakage current from 500 μ A upwards and may be used to measure currents up to 400 A in continuous use (400 A max.).

The B102 has two measurement ranges, 1 mV/mA or 1 mV/A.

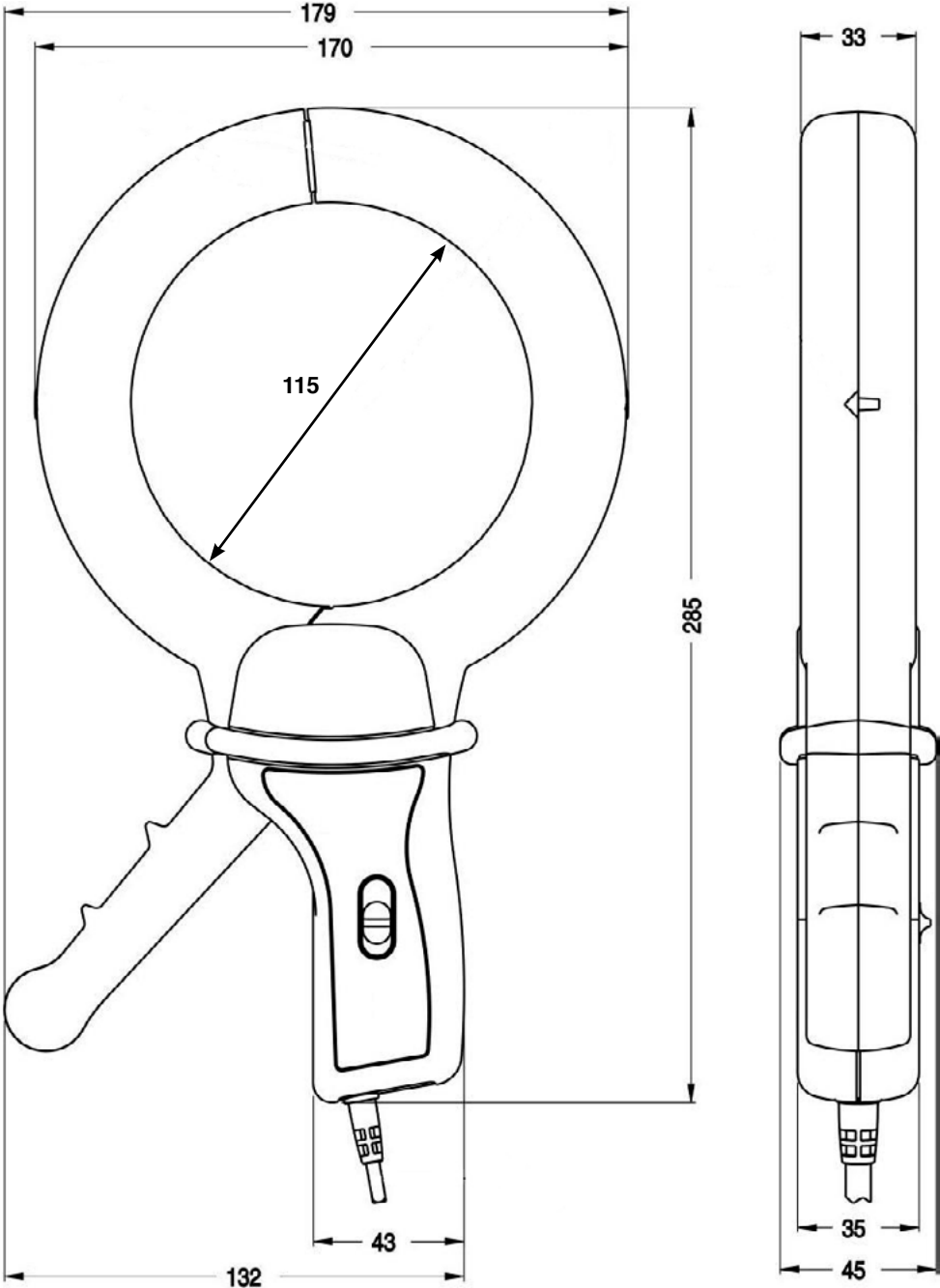
As a leakage current detector, the B102 can be used on single or multiphase systems whether the currents are in or out of phase, balanced or unbalanced.

The B02 may be used simply as a high-precision clamp-on current probe.

With its 115 mm jaw opening and dynamic measurement range from 500 μ A to 400 A, the B102 is a versatile instrument, highly useful in the analysis of unbalanced circuits, leakage currents and earth loop currents.

When operated in conjunction with an artificial neutral, the B102 can also be used to measure fault currents on 3-phase circuits with no neutral.

(1) AN1 artificial neutral box (see chapter 12)



Current clamp for AC current

Model B102 (clamp for leakage currents)

B100 series

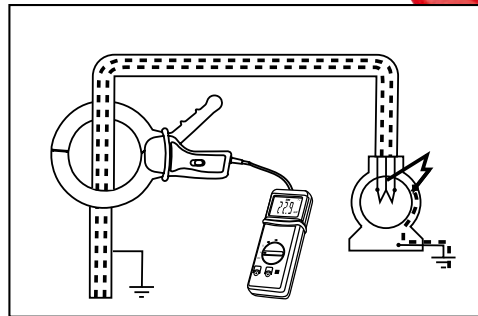
Current	4 A AC	400 A AC
Output	1 mV/mA	1 mV/A

Description

The B102 clamp measures leakage currents or residual currents as low as 500 μ A and can be used with multimeters equipped with a calibre in mV AC.

The B102 clamp measures the currents flowing in earth loops as well as leakage currents. It can be used on live installations to detect insulation faults on the earth circuits of single and three-phase networks.

For three-wire three-phase systems, use the artificial neutral box.



Electrical specifications

Current calibres:

0.5 mA AC...4 A AC
0.5 A AC ...400 A AC

Output signal:

1 mV AC / mA AC (4 V for 4 A)
1 mV AC / A AC (0.4 V for 400 A)

Accuracy and phase shift ⁽¹⁾:

Calibre	4 A		
Primary current	0.5 mA...10 mA	10 mA...100 mA	100 mA...4 A
Accuracy in % of output signal	$\leq 3\% + 1\text{ mV}$	$\leq 0.5\% + 0.5\text{ mV}$	$\leq 0.5\% + 0.5\text{ mV}$
Phase shift	not specified	$\leq 15^\circ$	$\leq 10^\circ$

Calibre	400 A		
Primary current	0.5 mA...10 mA	10 A...200 A	200 A...400 A
Accuracy in % of output signal	$\leq 0.5\% + 0.5\text{ mV}$	$\leq 0.35\% + 0.5\text{ mV}$	$\leq 0.35\% + 0.5\text{ mV}$
Phase shift	not specified	$\leq 1^\circ$	$\leq 0.7^\circ$

Bandwidth:

30 kHz ...1 kHz (depending on current value)

Maximum currents:

400 A AC continuous for a frequency ≤ 1 kHz:
Peak current < 1000 A

Max. voltage output:

Electronic protection limiting the voltage to 6 V peak max.

Influence of temperature:

Measurement: ≤ 100 ppm/K or 0.1 % of output signal per 10 °K

Influence of adjacent conductor:

0.4 mA/A typical at 50 Hz

Influence of an external field:

- 4 A calibre: ≤ 60 mA
- 400 A calibre: ≤ 0.1 A
- for 400 A/m calibre at 50 Hz

Influence of conductor position in jaws:

$\leq 0.1\%$ of the reading at 50/60 Hz (non-residual current)
 $\leq 0.2\%$ of the reading at 50/60 Hz (residual current)

Influence of a DC current superimposed on the rated AC current:

- 4 A calibre: ≤ 1 mA
- 400 A calibre: ≤ 0.1 A for a current DC of 1 A

Influence of frequency:

- 4 A calibre: $\leq 2\%$
- 400 A calibre: $\leq 0.5\%$ from 30 Hz to 1 kHz (limited to 100 A for 1 kHz)

Influence of the measurement instrument's input impedance:

- 4 A calibre:
 $E\% = [Ze/(Ze + 4.8) - 1] * 100$
- 400 A calibre:
 $E\% = [Ze/(Ze + 0.0048) - 1] * 100$

Mechanical specifications

Operating temperature:

-10 °C to +55 °C

Storage temperature:

-40 °C to +70 °C

Max. jaw insertion capacity:

Cables: \varnothing 115 mm
Bars: 1 busbar 20 x 50 mm

Casing protection rating:

IP 40 with clamp closed (NF EN 60529 Ed. 95)
IP 30 with jaws open

Relative humidity for operation:

0 to 85 % RH with a linear decrease above 35°C

Operating altitude:

0 to 2,000 m

Drop test:

1 m (NF EN 61010-2-032)

Self-extinguishing capability:

Casing: V0 according to UL94
Jaws: V2 according to UL94

Dimensions:

285 x 175 x 43 mm

Weight:

1.3 kg approx.

Colours:

Casing: dark grey
Jaws: red

Output:

Cable with double insulation, length 1.5 m, terminated by 2 insulated elbowed male \varnothing 4 mm banana plugs

Safety specifications

Electrical safety:

Instrument with double insulation or reinforced insulation between the primary, the secondary and the grippable part located under the guard as per EN 61010-1 Ed. 2: 2001, EN 61010-2-031 Ed. 2002 & EN 61010-2-032 Ed. 2003

- 600 V category III, pollution degree 2
- 300 V category IV, pollution degree 2

Electromagnetic compatibility:

CE-certified equipment compliant with standard EN 61326-1 (Ed. 97) + A1 (Ed. 98) + A2 (Ed. 01)

- Emission: regulations for class B equipment (domestic use)
- Immunity: regulations for equipment operated intermittently on industrial sites

Current clamp for AC current

Model B102 (clamp for leakage currents)

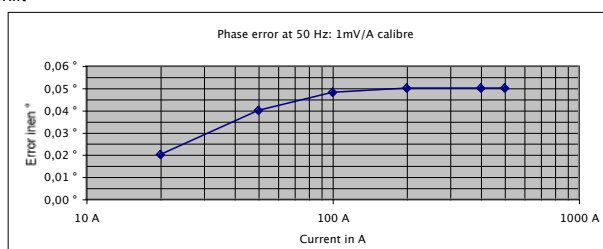
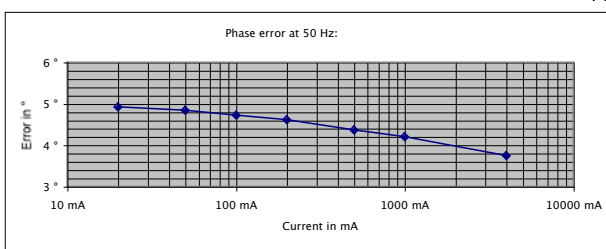
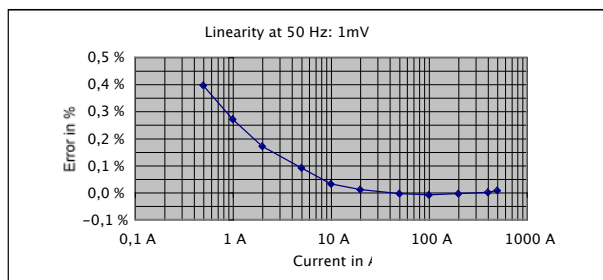
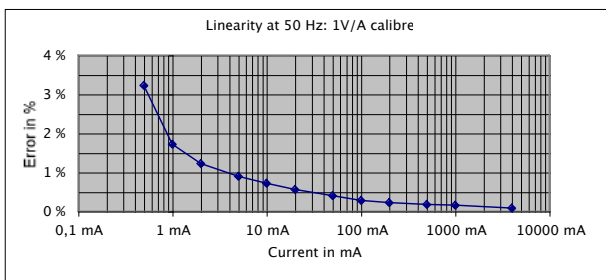
B100 series

Curves at 50 Hz

4 A calibre

400 A calibre

Linearity for AC



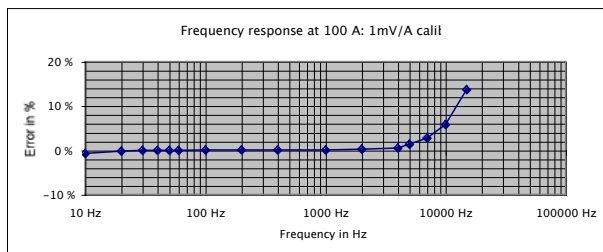
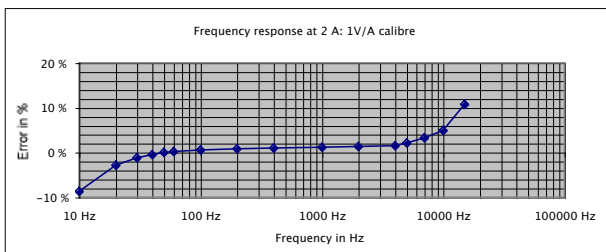
Phase shift

Frequency response

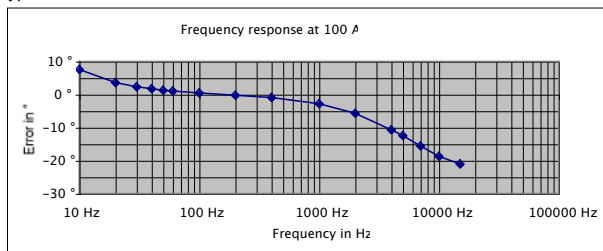
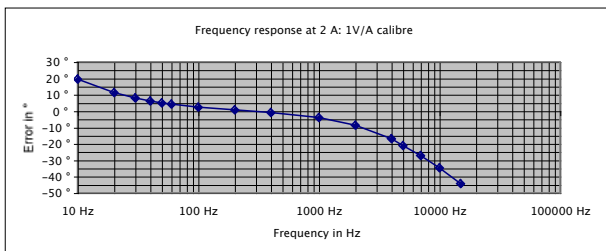
4 A calibre

400 A calibre

Typical error on measurement



Phase shift typical



(1) Conditions of reference: 23 °C ± 3 °K, 20 % to 75 % RH, sinusoidal signal with frequency of 48 to 65 Hz, distortion factor < 1 %, no DC components, external magnetic field < 40 A/m, no AC magnetic field, no external conductor with current flowing, conductor centred for measurement, load impedance ≥ 10 MΩ / ≤ 100 pF.

To order	Reference
AC current clamp model B102 with operating manual	P01120033
Accessories: AN1 artificial neutral box (see chapter 12)	P01197201
Bag No. 11	P01100120