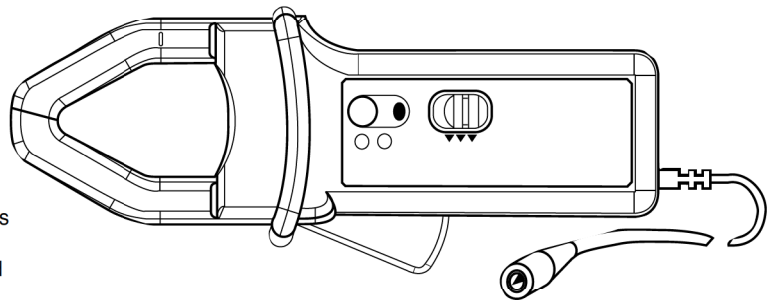


Model PAC22 (insulated current probe)

Current	100 A AC 150 A DC	1000 A AC 1400 A DC
Output	10 mV/A	1 mV/A



■ Description

The PAC22 model accurately measures AC or DC currents using the Hall-effect principle. This clamp with mV output on BNC (direct reading on oscilloscopes, etc.) is equipped with an automatic DC zero system.

■ Electrical specifications

Current calibres:

0.2 A AC...100 A AC (150 A peak) / 0.4 A DC...150 A DC
0.5 A AC...1000 A AC (1400 A peak) / 0.5 A DC...1400 A DC

Output signal:

10 mV AC+DC / A AC+DC (1.5 V for 150 A)
1 mV AC+DC / A AC+DC (1.4 V for 1400 A)

Accuracy and phase shift ⁽¹⁾:

■ 150 A calibre

Primary current	0.5 A...10 A	10 A...20 A	20 A...100 A	100 A...150 A (only DC)
Accuracy in % of output signal	≤ 1.5 % + 5 mV	≤ 1.5 % + 5 mV	≤ 1.5 %	≤ 1.5 %
Phase shift	Not specified	≤ 3°	≤ 2.2°	-

■ 1400 A calibre

Primary current	0.5 A...10 A	10 A...100 A	100 A...200 A	200 A...800 A	800 A...1000 A	1000 A...1400 A (only DC)
Accuracy in % of output signal	≤ 1.5 % + 1 mV	≤ 1.5 % + 1 mV	≤ 2.5 %	≤ 2.5 %	≤ 4 %	≤ 4 %
Phase shift	Not specified	≤ 2°	≤ 2°	≤ 1.5°	≤ 1.5°	-

Bandwidth:

DC...10 kHz (-3 dB) (depending on current value)

Rise/fall time from 10 % to 90 %:

24 μs

10 % delay time:

15 μs

Insertion impedance (at 400 Hz / 10 kHz)

< 2.7 mΩ / < 67 mΩ

Maximum currents:

3000 A DC or 1000 A AC continuous for a frequency ≤ 1 kHz (limitation proportional to the inverse of one third of the frequency above that)

DC zero adjustment:

Automatic

■ 60 A calibre:

± 10 A in 25 mA to 40 mA increments

■ 600 A calibre:

± 10 A in 25 mA to 40 mA increments

Typical output noise level (peak-peak) from DC to 100 kHz:

■ 150 A calibre:

DC to 1 kHz: ≤ 8 mV or 0.8 A DC

DC to 5 kHz: ≤ 12 mV or 1.2 A DC

0.1 Hz to 5 kHz: ≤ 2.0 mV rms or 0.2 Arms

■ 1400 A calibre:

DC to 1 kHz: ≤ 1 mV or 1 A DC

DC to 5 kHz: ≤ 1.5 mV or 1.5 A DC

1 Hz to 5 kHz: ≤ 500 μV rms or 0.5 A rms

Output impedance:

100 Ω

Battery:

9 V alkaline (NEDA 1604A, IEC 6LR61)

Battery life: 50 hours typical

Typical consumption:

10 mA typical / 14 mA max.

Battery level indicator:

Green LED

Overload indicator:

Red LED indicates the measured current is too high for the selected range

Influence of power supply voltage:

≤ 0.1 % of the reading

Influence of temperature:

Measurement: ≤ 300 ppm/K or 0.3 % of

output signal per 10 °K

DC zero: 40 mA/10 °K

Influence of relative humidity:

< 0.5 % of output signal

Influence of adjacent conductor at 23 mm:

≤ 10 mA/A at 50 Hz

Influence of external field:

≤ 1.3 A for 400 A/m

Influence of Ø 20 mm conductor position in jaws:

DC to 440 Hz: ≤ 0.5 % of the reading

DC to 1 kHz: ≤ 1 % of the reading

DC to 2 kHz: ≤ 3 % of the reading

DC to 5 kHz: ≤ 10 % of the reading

Influence of frequency ⁽²⁾:

< 1 % of output signal from 65 Hz to 440 Hz

< 3.5 % of output signal from 440 Hz to 2 kHz

3 dB % of output signal from 2 kHz to 10 kHz

Common mode rejection:

> 65 dB A/V at 50 Hz

Remanence:

0 to 100 A DC: 1 A typical

0 to 250 A DC: 1,7 A typical

0 to 500 A DC: 2.5 A typical

0 to 1000 A DC: 3.6 A typical

0 to 1400 A DC: 4.4 A typical

Model PAC22 (insulated current probe)

■ Mechanical specifications

Max. jaw opening:
31 mm

Clamping capacity:

Cables: Ø 39 mm
 Ø 25.4 mm x 2
Bars: 1 busbar 50 x 12.5 mm
 2 busbars 50 x 5 or 31.5 x 10 mm
 3 busbars 25 x 8 mm
 4 busbars 25 x 5 mm

Output:

Coaxial cable 2 m long, terminated by an insulated BNC connector

Dimensions:

236.5 x 97 x 44 mm

Weight:

520 g with battery

Operating temperature:

-10 °C to +55 °C

Storage temperature:

-40 °C to +80 °C

Relative humidity for operation:

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

Operating altitude:

0 to 2,000 m

Casing protection rating:

IP40 (IEC 529)

Drop test:

1 m (IEC 68-2-32)

Shock resistance:

100 g / 6 ms / half-period (IEC 68-2-27)

Protection against impacts:

IK04 0.5 J (EN 50102)

Vibration resistance:

5-15 Hz: 1.5 mm peak
15-25 Hz: 1 mm peak
25-55 Hz: 0.25 mm peak
(IEC 68-2-6)

Self-extinguishing capability:

UL94 V2

Colours:

Dark grey casing with red jaws

■ 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 IEC 1010-1 & IEC 1010-2-032

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

Electromagnetic compatibility (EMC):

EN 50081-1: class B

EN 50082-2:

- Electrostatic discharge IEC 1000-4-2:
 - 4 kV in contact, performance criterion B
 - 8 kV in the air, performance criterion B
- Radiated field IEC 1000-4-3:
 - 3 V/m level 2: influence < 5 % of measurement range
- Fast transients IEC 1000-4-4:
 - 1 kV performance criterion B
- Magnetic field at the network frequency (IEC 1000-4-8):
 - field of 30 A/m at 50 Hz level 4 performance criterion A
- Conducted disturbances (IEC 1000-4-6):
 - 3 V performance criterion A

(1) Conditions of reference: 23 °C ± 5 °K, 20 % at 75 % RH, power supply voltage 9 V ± 0.1 V DC sinusoidal signal with frequency of DC to 65 Hz, external magnetic field < 40 A/m, no DC components, no external conductor with circulating current, conductor centred for measurement, load impedance > 1 MΩ / < 100 pF.

(2) Out of reference domain.

To order	Reference
Current clamp for AC/DC current model PAC22 for oscilloscope with battery and user's manual	P01120073

Current clamp for AC/DC current

Model PAC22 (insulated current probe)

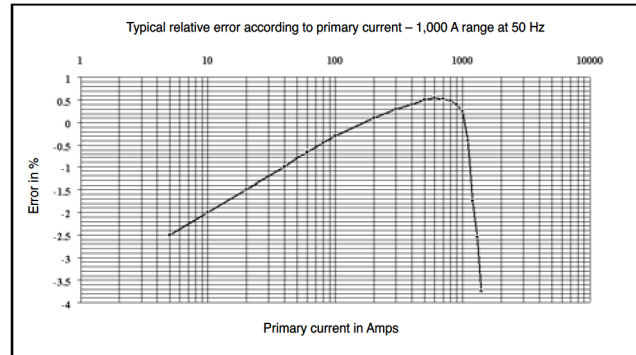
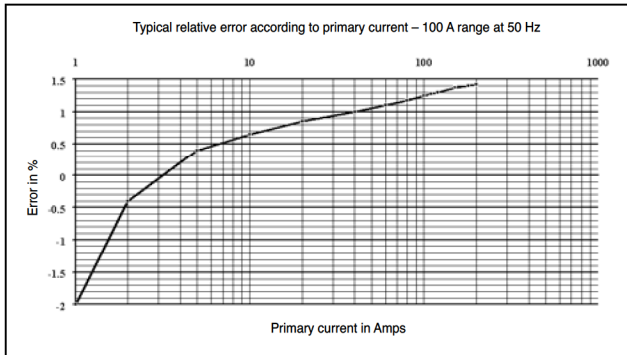
PAC series

Curves

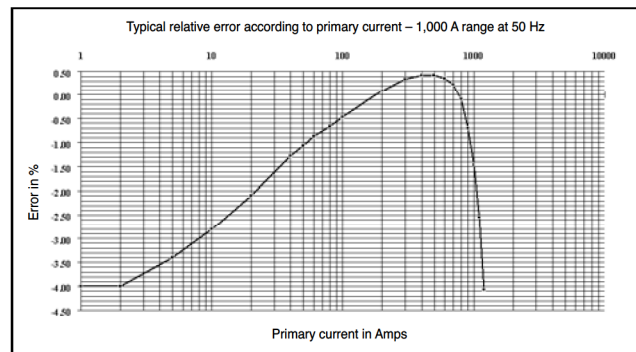
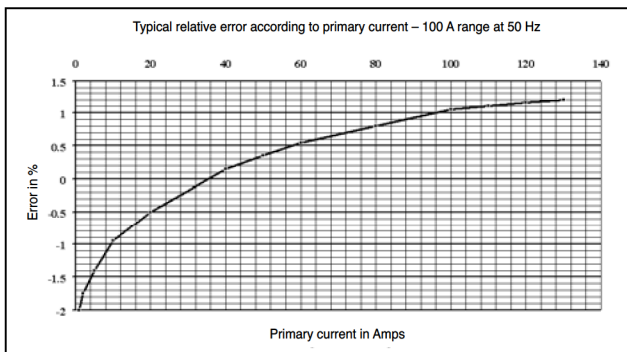
150 A calibre

1400 A calibre

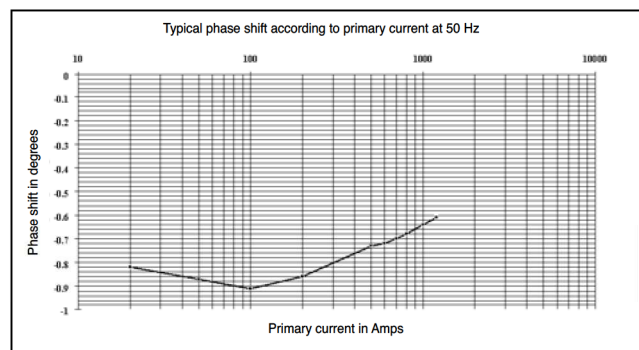
Linearity in DC



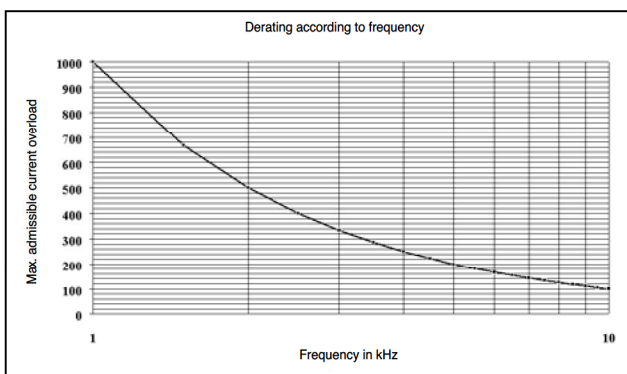
Linearity in AC



Phase shift



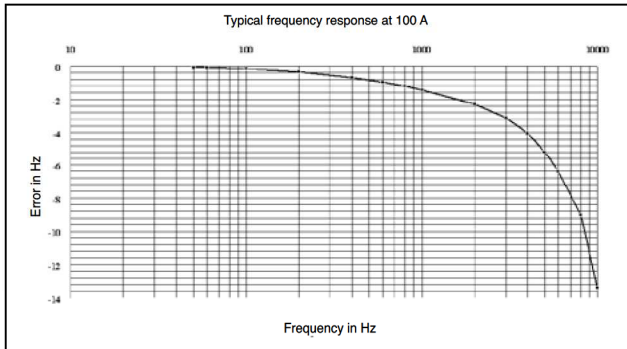
Limitation of measurable current according to the frequency



Model PAC22 (insulated current probe)

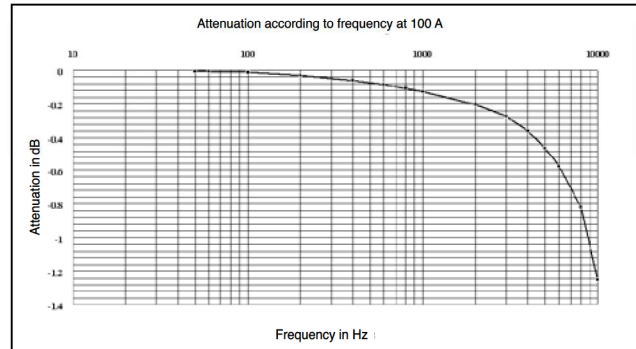
■ Curves

Frequency response



150 A calibre

Attenuation according to frequency



1400 A calibre

Pulse response

