

IPCT

Integrated Parametric Current Transformer Instructions

Revision 3.0

Distributors

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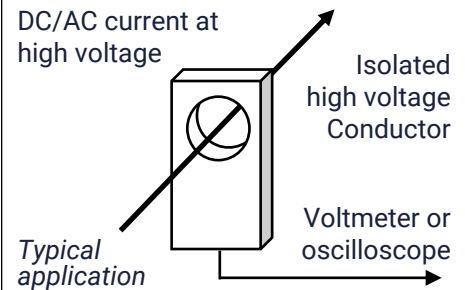
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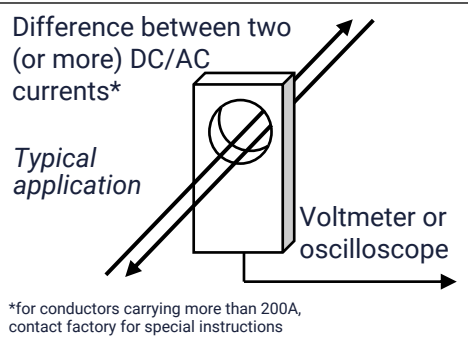
Thank you for your confidence in Bergoz Instrumentation. You purchased a highly precise non-interceptive current measuring instrument. It can be used to measure low DC and AC currents with high absolute accuracy and very high resolution.

Power supply: +15V
Connector DB9
Current range printed on instrument's label.

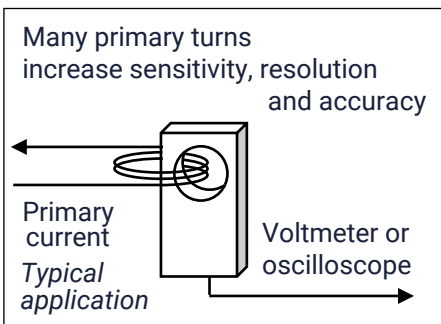
Zero-adjust by front-panel potentiometer:
Turn potentiometer until output voltage ≈ 0.000



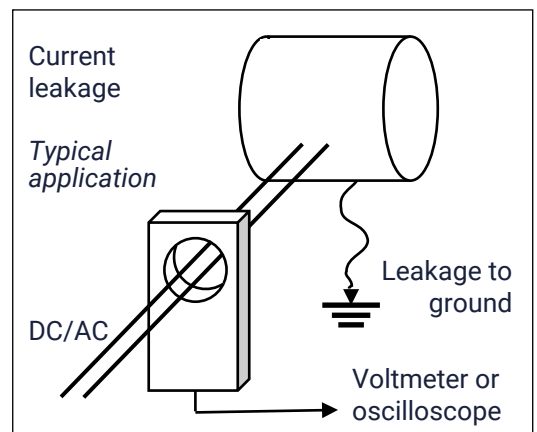
Output is a voltage in range -10V to +10V, proportional to primary current. Output must be measured in a high impedance circuit. Output current is limited to 20mA. Range is determined by a factory-installed load resistor, or user-installed resistor. The precision of this resistor determines the absolute IPCT accuracy.



Polarity: An arrow is printed on the IPCT side: a positive current in the direction of the arrow gives a positive output. A negative current gives a negative output.



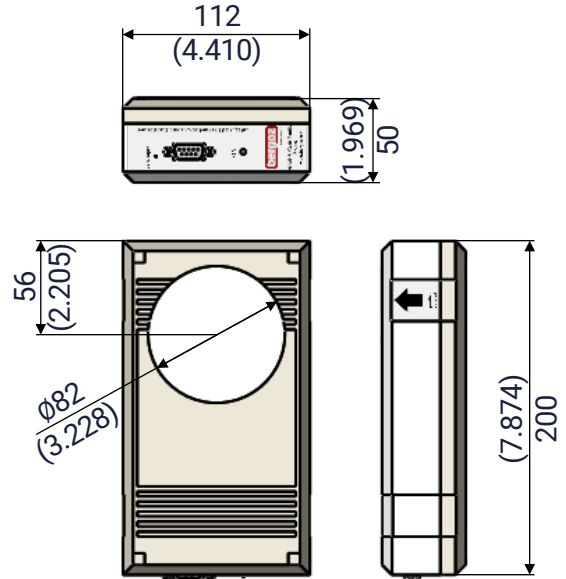
The IPCT is based on the DCCT principle invented in 1969 by Klaus Unser at CERN; not based on Hall effect. 100-1000 times more precise than Hall sensors.



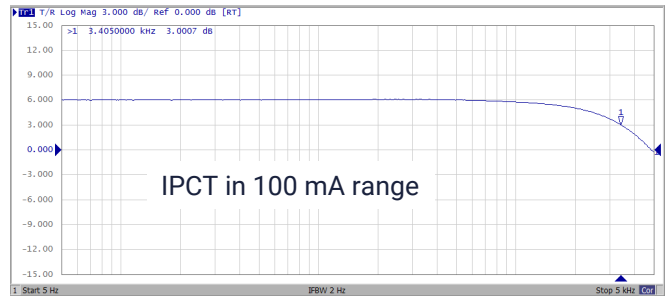
Specifications

Full scale range	Any value from +- 1mA to +- 20A, factory preset
Over range	120% full scale permanently
Saturation	>120% full scale
Damage level	DC: unlimited, AC: > 20Arms Discharge: > 100kA 4/10µs
Voltage isolation ground	5kV current conductor to
Resolution	See "Resolution" table below
Linearity error	<0.1% FS
Absolute accuracy	+/- 0.2% FS
Calibration	External current can be applied
Ripple	7kHz and even harmonics See "Ripple" table below
Bandwidth	DC to 3.8 kHz (-3dB)
Output	See "Bandwidth" table below +- 10V, buffered, 20 mA max stands permanent short circuit
Zero adjust	20-turn front-panel potentiometer
Power supply	+/- 15V, 100mA
Connection	DB-9 male on front panel
Temperature drift	<5µA/K
Stabilization after overload	10ms max.
Magnetic field	50µA/Gauss typ. sensitivity
Mass	0.5 Kg

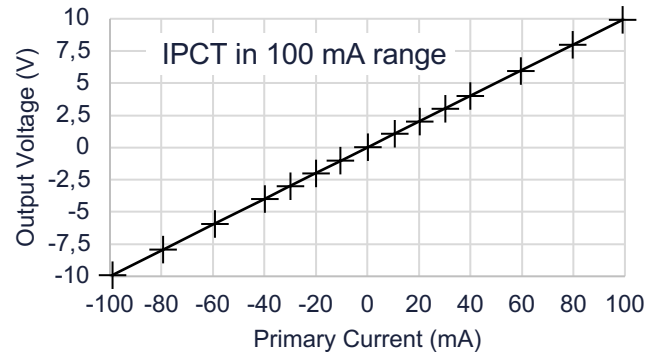
Dimensions



Output voltage vs. frequency



Output voltage vs. input current



Product identifications and connections

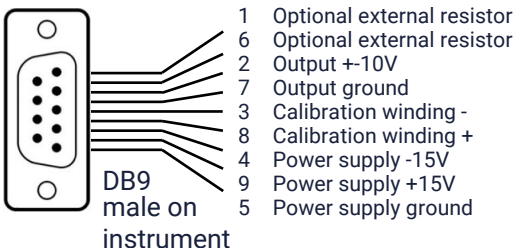
Characteristics at given full scale ranges

Range	Resolution (1s integr.)	Bandwidth -3 dB	Ripple (7kHz)
+/- 1 mA	1 µA	> 150 Hz	< 80 mV rms
+/- 10 mA	10 µA	> 800 Hz	< 70 mV rms
+/- 100 mA	10 µA	> 3 kHz	< 70 mV rms
+/- 2 A	30 µA	> 3.8 kHz	< 12 mV rms
+/- 20 A	200 µA	> 2 kHz	< 12 mV rms

Ordering code

IPCT	
-xxxmA	Factory-preset xxx mA range up to +-20 A
Options	
-0.01%	Linearity error < 0.01% Full Scale
-PS-BNC	90-245Vac power supply and BNC output
-CALCERT	IPCT initial certificate of calibration

Connections



Integrated Parametric Current Transformer

Model IPCT- xxx mA

Serial nr. #0000

DB9 Connector pin allocation

Function	Pin
Power supply -15V.....	4
Power supply +15V.....	9
Power supply ground.....	5
Output (-10V to +10V).....	2
Output ground.....	7
Optional external resistor.....	1
Optional external resistor.....	6
Calibration winding +.....	8
Calibration winding -.....	3

5 0 9

1 0 6

Front view

Fixed range model, with internal load

User-adjustable range model. To set range, install precision load resistor between pins 1-6 of DB9 connector. Select resistor value according to desired range:

1mA	1MΩ	≥1/10W
2mA	500kΩ	≥1/10W
5mA	200kΩ	≥1/10W
10mA	100kΩ	≥1/10W
20mA	50kΩ	≥1/10W
50mA	20kΩ	≥1/10W
100mA	10kΩ	≥1/10W
200mA	5kΩ	≥1/10W
500mA	2kΩ	≥1/10W
1A	1kΩ	≥1/10W
2A	500Ω	≥1/5W
5A	200Ω	≥1/2W
20A	100Ω	≥1W

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