

Non-intercepting DC current measurement  
with 10 microamps resolution

To measure:

- Return ground currents, DC and AC
- Leakage current, DC and AC
- Sum of currents
- Small difference of high currents
- Low current at high voltage
- Power tube electrode currents
- Electrostatic corona discharge
- Electrochemically induced currents
- Standby systems charging currents

### Main features

The IPCT is a DC Current Transformer

Large aperture 82mm (3.23")

Widely used for Xray installations periodic  
recalibration

Full scale from  $\pm 1$  mA to  $\pm 20$  A factory preset

$\pm 10$ V analog output

DC to 3.8 kHz (-3dB) response

Accuracy independent of primary conductor  
position

Withstands 100kA 4/10 $\mu$ s discharges

100 times more precise than Hall effect  
devices

Increased sensitivity with multiple primary turns

### Operating principle

The IPCT works on the principle of the DCCT, invented at CERN, the European Particle Physics Laboratory, by K.Unser in 1969. The DC component of the current flowing through the toroid sensor is detected by a magnetic modulator, also called fluxgate or second harmonic detector. The AC component is detected by an active Hereward transformer. The two circuits are cascaded in a common feedback loop to generate a magnetic flux which always cancels the primary current flux. The IPCT output is the voltage developed by the feedback current passing through a precision resistor.

### DISTRIBUTORS

**U.S.A.:** GMW Associates  
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**Japan:** REPIC Corp.  
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**India:** GEEBEE International  
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**China:** Beijing Conveyi Limited  
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### MANUFACTURER

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### Specifications

Full scale range	Any value from $\pm 1$ mA to $\pm 20$ A, factory preset
Over range	120% full scale permanently
Saturation	>120% full scale
Damage level	DC: unlimited, AC: > 20 Arms Discharge: > 100kA 4/10 $\mu$ s
Voltage isolation	5kV current conductor to ground
Resolution	See "Resolution" table below
Linearity error	<0.1% FS
Absolute accuracy	$\pm 0.2\%$ FS
Calibration	External current can be applied
Ripple	7kHz and even harmonics See "Ripple" table below
Bandwidth	DC to 3.8kHz (-3dB), See "Bandwidth" table below
Output	$\pm 10$ V, 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	<5 $\mu$ A/K
Stabilization after overload	10ms max.
Magnetic field	50 $\mu$ A/Gauss typ. sensitivity
Mass	0.5 Kg

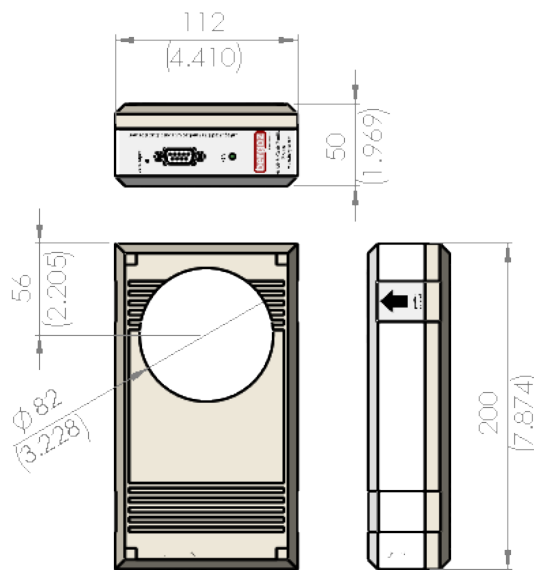
### Resolution, bandwidth and ripple

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

### Connections

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

### Dimensions



### Order codes

IPCT-XXXmA	Integrated Parametric Current Transformer. Factory-preset Any range XXXmA up to $\pm 20$ A
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### Options

IPCT-0.01%	Linearity error < 0.01% Full Scale
IPCT-CALCERT	IPCT initial certificate of Calibration with test report
IPCT-PS-BNC	90-245Vac power supply & BNC output for IPCT



IPCT-PS-BNC (on option): Power supply & BNC output for IPCT

### DISTRIBUTORS

**U.S.A.:** GMW Associates  
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