

Integrated Parametric IPCT - Current Transformer



Non-intercepting DC current measurement with 10 microamps resolution

To measure:

Return ground currents, DC and AC Leakage current, DC and AC Sum of low 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

New: Now 82mm (3.228") aperture

Widely used for Xray installations periodic recalibration

The IPCT is a DC Current Transformer

Full scale from ±1 mA to ±5 A factory preset

Increased sensitivity with multiple primary turns

±10V analog output

Flat response from DC to 4 kHz

10µArms resolution on any range

Accuracy independent of primary conductor position

Withstands high overload and inrush currents

100 times more precise than Hall effect devices

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.

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Specifications

Full scale range Any value from ± 1 mA to ± 5 A,

factory preset

Over range 120% full scale permanently

Saturation >120% full scale

Spikes Amplitude limited by insulation

breakdown, time unlimited

Damage level DC: unlimited, sensor saturates > 20Arms

Voltage isolation 5kV current conductor to ground

User may add additional insulation

Resolution <10µA (1s integration)

Linearity error <0.1% FS Absolute accuracy ± 0.5% FS

Calibration External current can be applied

Ripple 7kHz and even harmonics See "Ripple" below

Bandwidth DC up to 4kHz, depending on range Output ±10V bipolar, buffered, 20 mA max

±10V bipolar, buffered, 20 mA max stands permanent short circuit

Zero adjust 20-turn front-panel potentiometer

10ms max.

Power supply ± 12V to +-15V, 100mA Connection DB-9 male on front panel

Temperature drift <5µA/K Stabilization after

overload Magnetic field

sensitivity 50µA/Gauss typ.

Weight 0.5 Kg

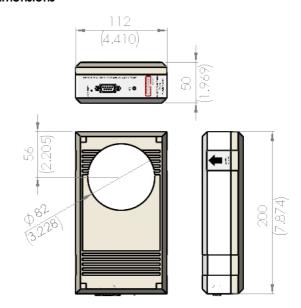
Resolution, bandwidth and ripple

Range	Resolution (1s integr.)	Bandwidth -3dB	Ripple (7kHz)
±1mA	10μΑ	>350Hz	<25mVrms
±10mA	10μA	>1.2kHz	<25mVrms
±100mA	10μΑ	>3.8kHz	<25mVrms
±2000mA	10μΑ	>4.2kHz	<2mVrms



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

Dimensions



Connections

Function

Power supply -12...-15V Power supply +12...+15V 5 Power supply ground Output (-10V to +10V) 2 7 Output ground 1 Optional external resistor Optional external resistor 6 Calibration winding + 8 Calibration winding -3

Order codes

IPCT-XXXmA Integrated Parametric Current

Transformer. Factory-preset Any range XXXmA up to ±5 A

Options

IPCT-0.01% High accuracy calibration

0.01% ±10µA

IPCT-PS-BNC 90-245Vac power supply & BNC output for IPCT

IPCT-CALCERT IPCT initial certificate of Calibration

with test report

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