The Integrated Parametric Current Transformer (IPCT) is a DCCT ... 

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

Increased sensitivity with multiple primary turns

+-10 V analog output

Flat response from DC to 4 kHz

10 µA rms resolution on any range

Large aperture 69 mm (2.7”)

Accuracy independent of primary conductor position

Withstands high overload and inrush currents

100 times more precise than Hall effect devices

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

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.
Specifications

Full scale range: Any value from +-1 mA to +-5 A, factory preset
Overrange: 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: 5 kV current conductor to ground
User may add additional insulation
Resolution: < 10 µA (1s integration)
Linearity error: < 0.1% FS
Absolute accuracy: + 0.5% FS
Calibration: External current can be applied
Ripple: 7 kHz and even harmonics
Bandwidth: DC up to 4 kHz, depending on range
Output: +10 V bipolar, buffered (20 mA max.) stands permanent short circuit
Zero adjust: 20-turn front-panel potentiometer
Power supply: +12V to +15V, 100mA
Connection: DB-9 male on front panel
Temperature drift: < 5µA/K
Stabilization after overload: 10 ms max.
Magnetic field: sensitivity 50 µA/Gauss typ.
Weight: 0.5 Kg

Resolution, bandwidth and ripple

<table>
<thead>
<tr>
<th>Range</th>
<th>Resolution (1s integr.)</th>
<th>Bandwidth -3 dB</th>
<th>Ripple (7 kHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+-1 mA</td>
<td>10 µA</td>
<td>&gt;350 Hz</td>
<td>&lt;25 mV rms</td>
</tr>
<tr>
<td>+-10 mA</td>
<td>10 µA</td>
<td>&gt;1.2 kHz</td>
<td>&lt;25 mV rms</td>
</tr>
<tr>
<td>+-100 mA</td>
<td>10 µA</td>
<td>&gt;3.8 kHz</td>
<td>&lt;25 mV rms</td>
</tr>
<tr>
<td>+-2000 mA</td>
<td>10 µA</td>
<td>&gt;4.2 kHz</td>
<td>&lt;2 mV rms</td>
</tr>
</tbody>
</table>

Output voltage vs. frequency

Ordering codes

IPCT-XXXmA Integrated Parametric Current Transformer. Factory-preset Any range XXXmA up to +-5 A

Distributors

U.S.A.: GMW Associates
955 Industrial Rd.
San Carlos, CA 94070, U.S.A.
Fax: (650) 802-8298 - Tel.: (650) 802-8292
sales@gmw.com www.gmw.com

Japan: REPIC Corporation
28-3 Kita Otsuka 1-Chome
Toshima-ku, Tokyo 170-0004, Japan
Fax: 03-3918-5712 - Tel.: 03-3918-5326
sales@repic.co.jp www.repic.co.jp

Manufacturer

BERGOZ Instrumentation
Espace Allondon Ouest
01630 Saint Genis Pouilly, France
Fax: +33-450.426.643 - Tel.: +33-450.426.642
sales@bergoz.com www.bergoz.com

Dimensions

Connections

Function  |  Power supply -12...-15V  |  4
        |  Power supply +12...+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

Output voltage vs. input current

Instrumentation

V.2.2