ACCELERATOR CONTROL COMPONENTS
National Electrostatics Corp.

Precision Pulse Current Integrator (PPCI)

Design

The precision pulse current integrator (PPCI) consists of two identical pulse integration circuits and a current source.

The current integrator operates by collecting charge in a capacitor. This produces a voltage on the capacitor. The PPCI measures the charge collected on the capacitor by capturing the value in two places (V1, V2) while the capacitor is being charged and subtracting the two values from each other.

The integrator channels may be used independently or may be interconnected to form a single integrator capable of measuring two independent pulses from one Faraday cup.

The PPCI contains an onboard current source. The current source may be routed to either integrator channel or to an auxiliary output jack. The auxiliary output jack doubles as an input jack which may be used as an input for an external current source. This makes it possible to calibrate all of the integrator channels in a system using one current source. The current source is bipolar and has six ranges. There are vernier and offset controls which are used to set the value within each range. The controlling software allows the user to set the current value. The software automatically determines the appropriate range, vernier, and offset settings needed to produce the desired current by using information from an onboard factory established calibration table.

An onboard flash memory is used to store calibration tables for the current source and the integrator channels.

Contact NEC

www.pelletron.com +1 (608) 831-7600 nec@pelletron.com

7540 Graber Rd, Middleton, WI 53562-0310 USA