

Digital Current Integrator

DCI-100 μ



HIGHLIGHTS

Measures DC current or average value of pulsating current

Auto selectable input ranges

Integration using analog method to show total charge

Retains the charge value during power fail

LED indication of current polarity and working range

Switch selectable Integration (counting) mode

Multifunction Push Button

Buzzer ticks during integration

Fuse protection for input current and AC power supply

Large LCD display

RS232 communication

The Digital Current Integrator DCI-100 μ has been designed to measure the DC beam current or average value of pulsating beam current and the integrated charge value for accelerator and other research facilities. The instrument can measure bipolar currents ranging from 50pA to 100 μ A with an accuracy of <0.5% (of reading).

All the five input ranges, having full scale value from 10nA to 100 μ A, are auto-selectable according to instantaneous current value.

Other than a large LCD to display the current and charge with high accuracy, an analog meter on the front panel also displays the scaled input current whose full scale value and polarity are shown on LED array.

Unlike the electro-mechanical counter based old design, the absolute value of total integrated charge is calculated using the Combination of VFC and digital counters and then displayed and stored electronically.

A front panel ON/OFF switch allows the user to start/ stop the integration (counting). Ticks from an internal buzzer indicates the ongoing integration. The charge value can be reset and other configurations can be monitored or modified with a multifunctional push button.

This instrument is equipped with RS232 port, by which parameters can be monitored or configured from a remote location through predefined command set.

SPECIFICATIONS

INPUT

Input Range: (\pm) 50 pA - 100 μ A

No. of input channels: Single

Impedance: Virtually Ground

Connector: BNC (front panel)

Polarity: Positive or Negative

Ranges: 10nA-100 μ A
(5 ranges in decades)

Maximum allowed current: 10 mA

Max charge counts: 2³² (9.5 digits)

INDICATION/CONTROL

Current display: Analog and LCD

Charge Display: LCD

Working range: LED array

Input Polarity: LED

Integration (counting) mode:
toggle switch

Configuration: Push button

OPERATION/ PERFORMANCE

Digital Readout accuracy
(Current): < $\pm 0.5\%$ of reading
(Charge): < $\pm 2\%$ of reading

Analog Readout accuracy
(Current): < $\pm 2\%$ of reading

Input leakage current: 10pA

Communication: RS232

Commn connector: DB9 (F)

Power supply: 230V AC, 50Hz