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CURRENT METER AND INTEGRATOR



Features

- 1% Overall accuracy
- Analog A-meter 10 nA to 3 mA
- Digital C-meter 1 nC to 300 C
- Dose preset capability 1 nC up to 300 C
- External beam switch-off capability
- Low input impedance for minimal voltage offset
- Audible "counting signal" with adjustable loudness
- Automatic adjustment to beam polarity with indication
- Fast acting pulse output signal for beam scanning surface display

General description

The HVEE current-meter and integrator is a precision instrument designed for current- and dose measurements on particle accelerators, isotope separators, etc. The current-meter and integrator has an analog meter (60 mm scale) for current measurements and a digital readout (6 digits) for dose measurements. A LED indicates the polarity of the measured ion beam.
An adjustable audible "counting signal" enables the operator to detect even the smallest changes in the beam current without watching the instrument. This acoustic feature has proven to be very useful when adjusting critical parameters in various beam systems.

The ampere- and the coulomb meter, including the audible "counting signal" are operating simultaneously. The measuring range of both meters is chosen by a 12-range selector switch. The coulomb meter is provided with a start/reset push button and a 6 digit manual selector enabling the operator to preset a number of Coulombs in the range of 1 nC up to 300 C. The current-meter and integrator indicates when the preset dose has been reached and this signal can be used to deflect the beam away from the target.

In addition to the start/reset push button, the start/reset function of the current integrator can also be controlled by an external signal.

The current-meter integrator produces further a fast acting output signal. This signal enables the operator, when used in combination with the HVE beam scanning and monitoring system, to display an image of the scanned surface on an oscilloscope. This feature is indispensable for wafer implantation.

HIGH VOLTAGE ENGINEERING EUROPA B.V.

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SPECIFICATIONS

Input
. Ampere meter : 10 nA up to 3 mA full scale in 12 ranges
. Coulomb meter : 1 nC (min. reading) up to 300 C

Accuracy
. Ampere meter : +/- 1% full scale
. Coulomb meter : +/- 1% of reading

Drift : < 1% after 15 minutes warm-up (for 10 nA scale)

Input impedance : 10 k Ohm

Outputs
. Analog output : Variable from 0 V up to + or - 5 V, depending on the amplitude and polarity of the input signal
. Pulse output : Variable from 0 V up to + or - 12 V, depending on the amplitude and polarity of the input signal; RC-time 10 µs
. Relay output : One NO and one NC contact; the output relay is activated when the preset dose is reached
. TTL output : Two TTL outputs; status depends on the operating mode of the current integrator

Overload protection : Indication on front panel; electronics are protected

Acoustic signal : 1 Beep = 0.1 µC x full scale ampere meter

Beam polarity : Automatic adjustment to beam polarity
Polarity indication on front panel

Remote control : Start/reset function of current-integrator

Power requirements : 115/230 V, 50/60 Hz, 0.1 A

Dimensions : Width for 19 inch rack mounting
Height 88 mm, depth 245 mm

HIGH VOLTAGE ENGINEERING EUROPA B.V. reserves the right to change specifications and features without prior notice unless part of a quotation or order.

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