





Fastest current transformer Reaches 3 GHz bandwidth Ideal for non-destructive observations of short pulses or high repetition rate beams

Rise time below 120 ps Sensitivity about 1 V/A

# **Operating Principle**

The VFCT is a wall current transformer is based on an original idea from the 1970s for inductive beam position measurements. Via inductive coupling, the beam induces a current flowing on the surface of the vacuum chamber, the so-called wall current. By cutting the vacuum chamber in segments equally distributed around the beam, the wall current becomes measurable by small current transformers placed around each of the segments. The sum of these individual signals is proportional to the beam current. The internal structure of the VFCT differs considerably from normal current transformers. Resonances can be avoided. And a higher bandwidth can be reached. Yet, integration and especially length of the VFCT are like a standard current transformer.

# Integration

**In-flange VFCT** is mounted in the beam line. Short axial length, includes a ceramic gap vacuum-brazed to kovar. Does not require bellows, wall current bypass nor electromagnetic shield. UHV compatible.

# **Specifications**

Sensitivity (nominal)	1.0	V/A
Rise time (typ.)	120	ps
Droop (typ.)	<0.13	%/ns
Upper cutoff frequency -3dB (typ.)	3	GHz
Lower cutoff frequency -3dB (typ.)	200	kHz
L/R time constant (typ.)	800	ns

### Connectors

Two SMA jacks  $50\Omega$ , differential, to be read by two oscilloscope/digitizer channels ( $50\Omega$  terminated) or transformed to single-ended signal by external balun

# Order codes

In-flange VFCT sensor order code	Pipe OD	Mating flange	ID (mm)	H (mm)	
VFCT-CF6"-34.9-40-UHV	1.5″	DN/NW100CF	34.9	40	
For other diameters please ask.					

# Options

-316LN AISI 316LN instead of AISI 304 SS

### MANUFACTURER

### **BERGOZ Instrumentation**

www.bergoz.com Espace Allondon Ouest 01630 Saint Genis Pouilly, France info@bergoz.com

### DISTRIBUTORS

U.S.A.: GMW Associates www.gmw.com sales@gmw.com

**Japan**: Hayashi-Repic Co. www.h-repic.co.jp sales@h-repic.co.jp India: GEEBEE International www.geebeinternational.com info@geebeeinternational.com

**China**: Beijing Conveyi Limited www.conveyi.com sales@conveyi.com 1.0