

In-flange.CT

for installation in vacuum



Instrumentation



Any...

- **Fast Current Transformer (FCT)**
- **Integrating Current Transformer (ICT)**
- **AC Current Transformer (ACCT)**
- **Tuned Current Transformer (TCT)**
- **New Parametric Current Transformer (NPCT)**

can be built inside a Conflat flange

Vacuum < 10⁻¹⁰ mbar

Radiation hardness >10¹⁶ n/cm²

Est.: IRMM Geel, Dr. J.-M. Salomé

Simple installation between two existing flanges

Great savings of time and money :

- Ceramic gap: eliminated
- Bellows: eliminated
- Mechanical holder: eliminated
- Wall current bypass: eliminated

Assurance that instrument will perform on beam, same as it performs on bench

For UHV Ultra-High Vacuum down to 10⁻¹⁰ mbar

(with adequate pumping speed):

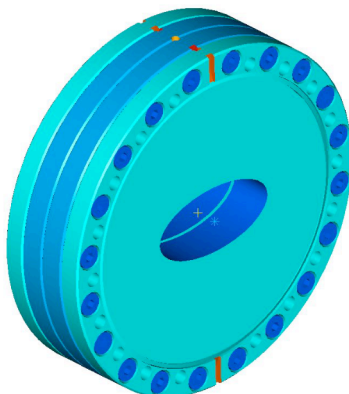
Leak rate <10⁻⁹ mbar.l./s

Ceramic gap vacuum-brazed over kovar transitions

Bakable up to 100 °C (210 °F)

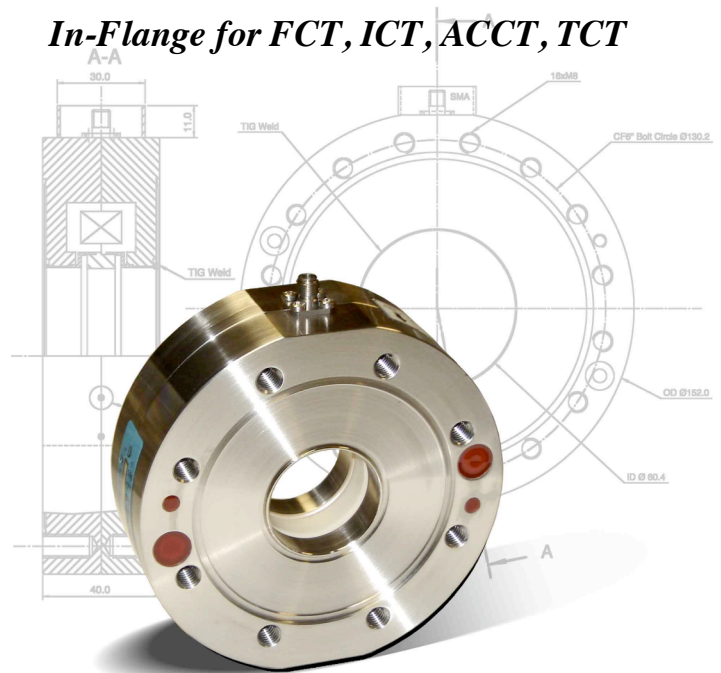
Non-circular apertures

Outer flanges with any arbitrary aperture shape can be added to the In-flange core:

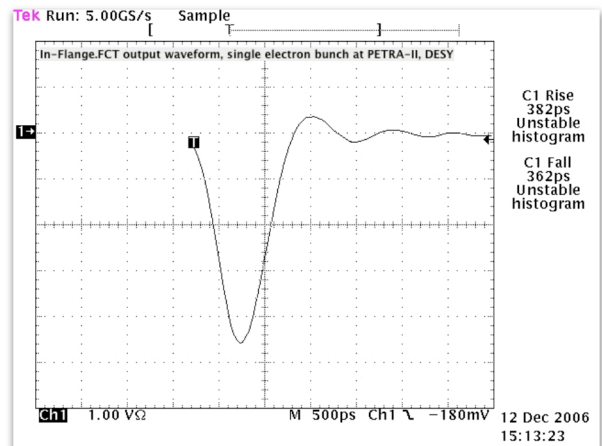


Courtesy of DESY

In-Flange for FCT, ICT, ACCT, TCT

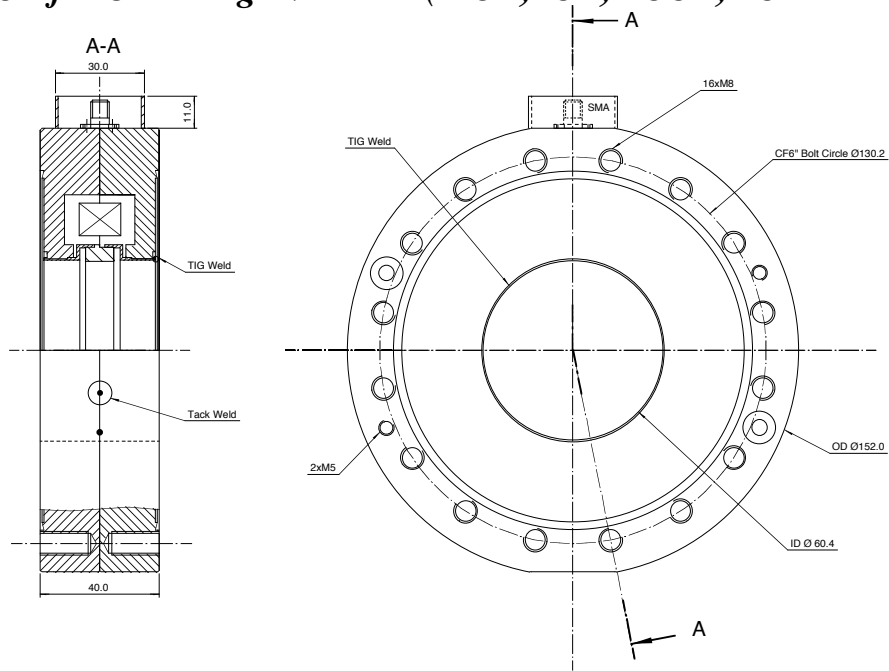


FCT transformer built inside a double-sided 4" 1/2 CF



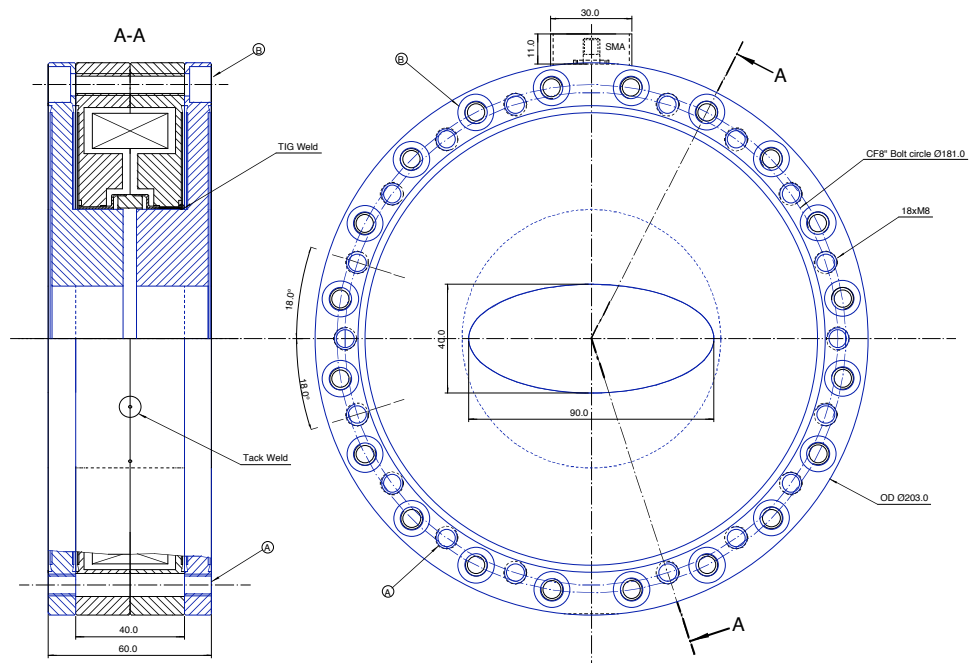
In-flange.FCT output waveform, single electron bunch at PETRA-II (DESY)

In-flange.CT for Ultra-High Vacuum (FCT, ICT, ACCT, TCT models)



In-flange.CT with elliptical aperture (FCT, ICT, ACCT, TCT models)

Any arbitrary shape aperture could be done



The Ultra-High Vacuum In-flange.CT was designed in close collaboration with DESY's Dipl. Ing. (FH) Annette Brenger

Standard dimensions :

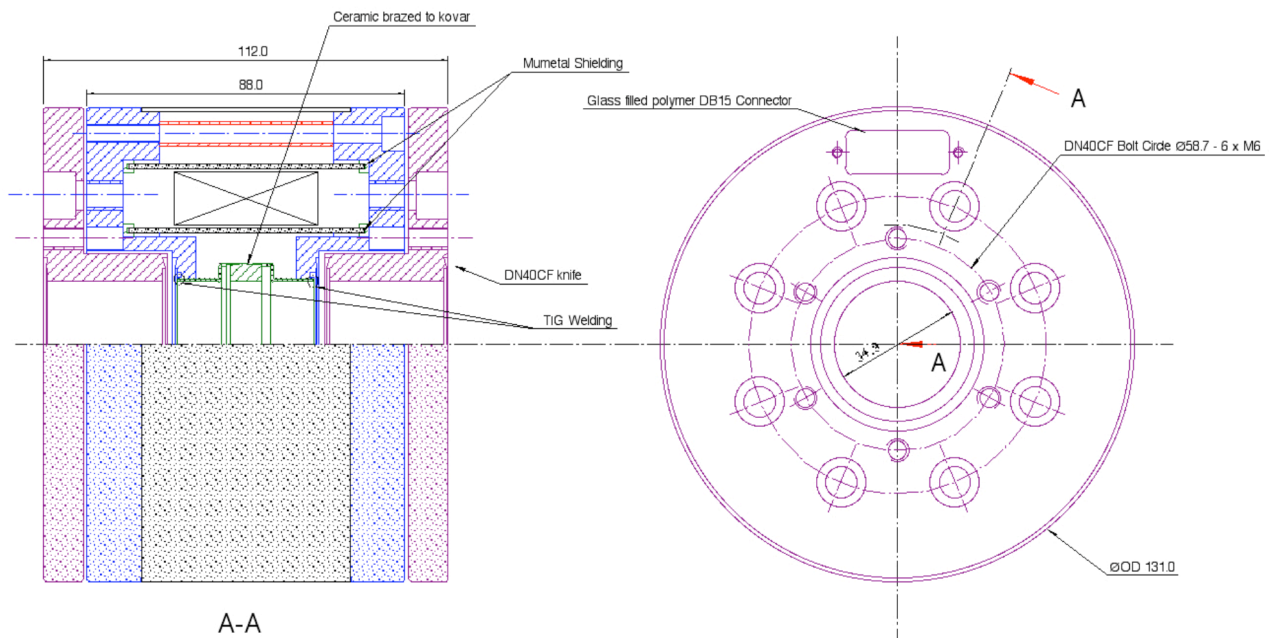
(More dimensions on request)

40-mm axial length for round aperture,
60 mm for other aperture shapes.

Model	ID (mm)
CF3"3/8 (DN50 NW50CF)	22.2
CF4"1/2 (DN63 NW63CF)	34.9
CF6" (DN100 NW100CF)	60.4
CF6"3/4 (DN130 NW130CF)	96.0
CF8" (DN160 NW150CF)	96.0

In-Flange FCT, ICT, ACCT Options:	In-Flange TCT Options:
<p>-316LN- AISI 316LN option, instead of 304 -ARB#XXX- Arbitrary shape aperture -XX:X- Sensitivity -LD- Low Droop Option* -H Radiation resistant sensor option</p> <p>Refer to FCT & ICT datasheet for Sensitivity, Low Droop Option . *not available for ACCT</p>	<p>-316LN- AISI 316LN option, instead of 304 -ARB#XXX Arbitrary shape aperture -xxxMHz- Tuned frequency -XX:X- Sensitivity -MATCH- Matching TCT to another TCT -H Radiation resistant sensor option</p> <p>Refer to Tuned-CT datasheet for Tuned frequency, Sensitivity & MATCH option</p>

In-Flange NPCT: New Parametric Current Transformer



In-Flange.NPCT Options:

- 316LN-
- AISI 316LN option, instead of 304
- ARB#XXX
- Arbitrary shape aperture
- CXXX-
- Interconnect cable length, max 130 meters
- HR-
- High-Resolution sensor option*
- VHR-
- Very High-Resolution sensor option*
- H Radiation resistant sensor option

*Refer to NPCT datasheet for resolution option

Standard dimensions :

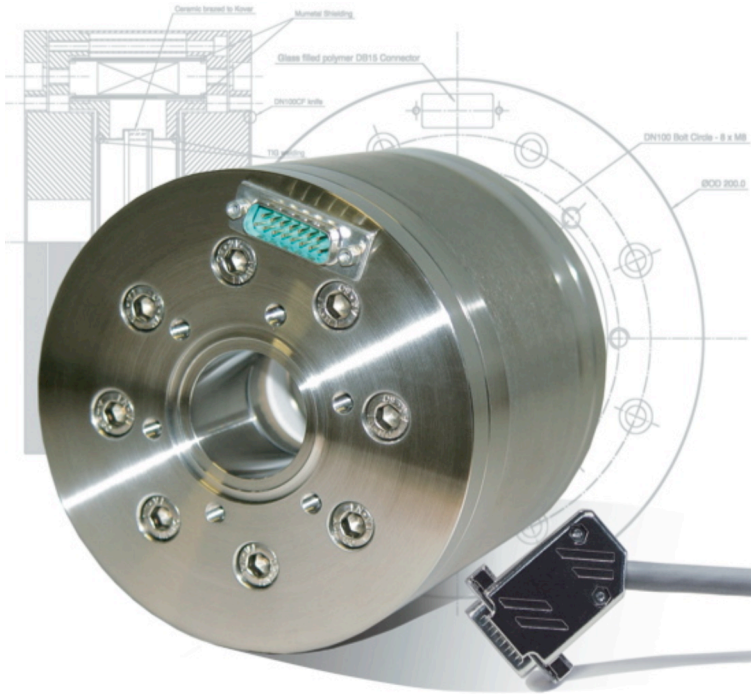
(More dimensions on request)

Model	ID (mm)
CF2"3/4 (DN40 NW35CF)	22.2
CF2"3/4 (DN40 NW35CF)	34.9
CF4"1/2 (DN63 NW63CF)	60.4
CF6" (DN100 NW100CF)	96.0
CF8" (DN160 NW150CF)	147.6
CF10" (DN200 NW200CF)	198.4

Axial length : 112 mm

New *In-flange.CT*

for New Parametric Current Transformer



Bakable to 100 °C (212 °F)

Radiation hard

Lower installation cost

Optimized magnetic shielding

Resolution as low as 0.3 uA

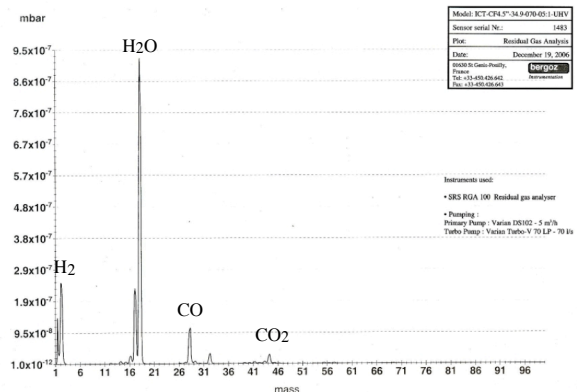
Only 112-mm axial length!

Manufacturer

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Instrumentation



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