

Feedthrough **eoVac™**

2nd generation

Make EM-field measurement in vacuum or inside pressure chambers

Vacuum/high pressure feedthrough compliant with eoProbe™ optical RX antennas

Removable and very easy to operate feedthrough

Industry standard KF flange to be used both with gases and liquids

Removable feedthrough withstanding pressure from ultra low (10^{-3} Pa - High Vacuum) to high values (7 atm)





KEY PARTNER FOR ELECTROMAGNETISM

kapteos

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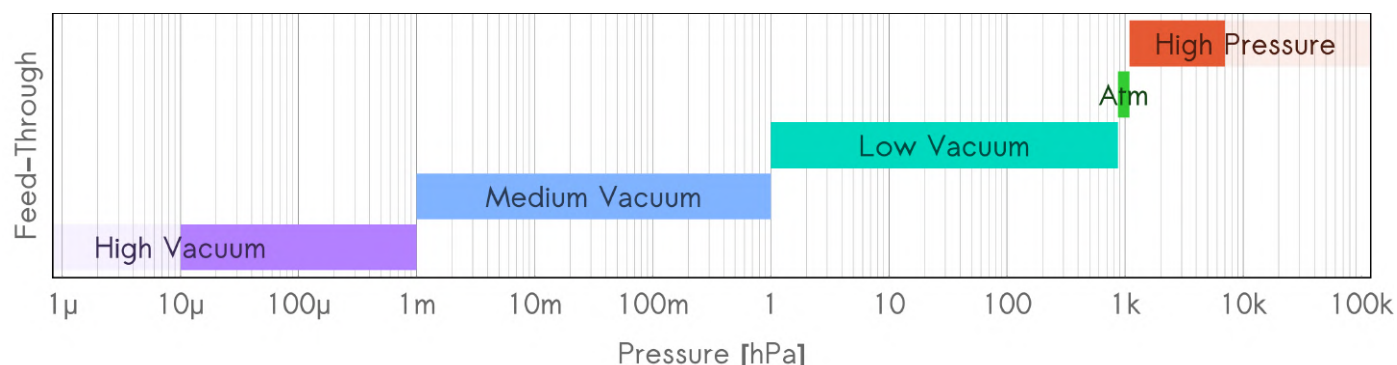
APPLICATIONS

These removable feedthroughs are based on state-of-the-art seal fittings: they are compliant with high vacuum, highly pressurized gases and liquids like transformer oils. Their design allow to insert and remove Kapteos® EM-field probes in both vacuum down to 10^{-8} bar and high pressure chambers which could be filled by gases or liquids without any leakage up to 7 bars. Their unique features make them ideal for use in a wide range of applications for various industries.

Industries	Applications
 Aerospace	Qualification ground test of: <ul style="list-style-type: none">• Satellite antenna horns in T-VAC chamber• Satellite EM shielding in flight conditions• Plasma thrusters in T-VAC chamber
 Defense	Qualification test of: <ul style="list-style-type: none">• Vacuum EM pulse generators
 Energy	<ul style="list-style-type: none">• Localization of PD (Partial Discharge) in GIS (Gas Insulating Switchgear)• Assesment of PD in oil-insulated HV (High Voltage) transformers
 Science	<ul style="list-style-type: none">• Characterization of EM pulse generated by intense laser-plasma interaction• Monitoring of particle beam position and shape

IMPLEMENTATION

These removable feedthroughs allow the use of Kapteos® EM-field probes inside vacuum and pressure chambers, whatever their flange connection. Indeed, eoVac™ feedthroughs fit with either standard KF-connector, standard CF-connector or standard ISO-K connector. Their operating pressure covers almost 9 decades.



Setup flange connection	Use & features	Configuration example
CF covering full UHV range	Feedthrough with native KF flange 3 sizes available: KF16, KF25 & KF40	
ISO-K covering full HV range	Feedthrough with embedded KF-to-CF adapter 2 sizes available: CF16 & CF40	
KF down to HV range & for high pressure	Feedthrough with embedded KF-to-ISO-K adapter 3 sizes available: ISO-K63, ISO-K100 & ISO-K160	

Glossary of acronyms

HV High Vacuum: $10^{-8} \rightarrow 10^{-3}$ hPa (mbar)

UHV Ultra High Vacuum: $10^{-11} \rightarrow 10^{-8}$ hPa (mbar)

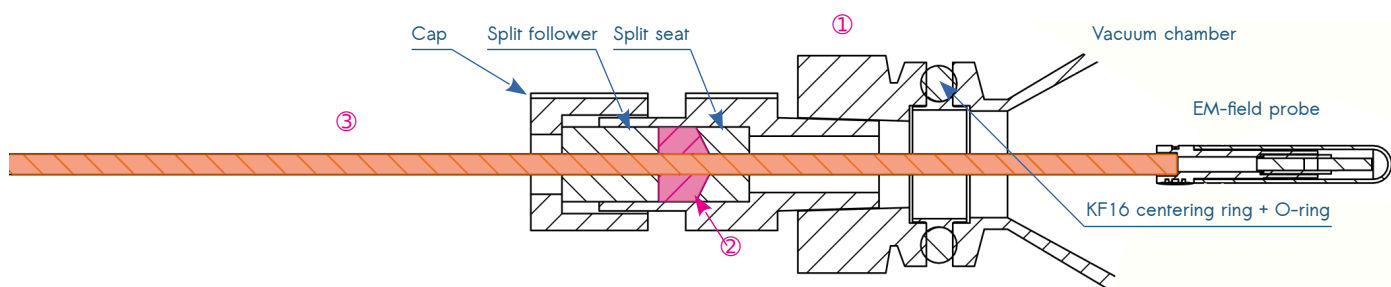
PERFORMANCE SPECIFICATIONS

		Min	Typical	Max	Unit
Withstand pressure	With standard probes (medium vacuum)	10^{-3}		2000	hPa (mbar)
	With harsh environment probes (high vacuum)	10^{-5}		7000	
Seal durability	Viton split seal	20			mating

MECHANICAL SPECIFICATIONS

		Type	Min	Typical	Max	Unit
Dimensions ± 0.2mm	Diameter	FT-16		30		mm
		FT-25		40		
		FT-40		55		
		FT-CF16		33.8		
		FT-CF40		69.5		
		FT-ISO63		95		
		FT-ISO100		130		
		FT-ISO160		180		
	Length	FT-16, FT-25, FT-40		64		
		FT-CF16		111		
		FT-CF40		113		
		FT-ISO63, FT-ISO100		110		
		FT-ISO160		118		
Weight	FT-16, FT-25, FT-40		0.11			kg
	FT-CF16, FT-CF40					
	FT-ISO63, FT-ISO100, FT-ISO160					
Ingress Protection rating	All types			IP68		
Low/high pressure end I/O	① Flange	FT-16			KF16	
		FT-25			KF25	
		FT-40			KF40	
		FT-CF16			CF16	
		FT-CF40			CF40	
		FT-ISO63			ISO-K63	
		FT-ISO100			ISO-K100	
		FT-ISO160			ISO-K160	
Vacuum seal	② Split seal	All types		Viton		
Atmospheric pressure end I/O	③ 3mm Ø Probe fiber sheath	All types		PVC sheath for standard probes PEEK sheath for harsh environ. probes		

Sectional view (for FT-16)



ENVIRONMENTAL SPECIFICATIONS

		Min	Typical	Max	Unit
Temperature	For standard probes	0		60	°C
	For harsh environ. probes	-60		85	
Relative humidity	Non-condensing			90	%
Storage	Only in a clean, dry environment with its dust caps				
Cleaning	1. Submerge all eoVac elements in DI water ultrasonic bath for 10 min. 2. Wipe dry all elements with lint free cloth. 3. Wipe Viton seal and probe fiber sheath with isopropanol & lint free cloth just prior mounting into eoVac				

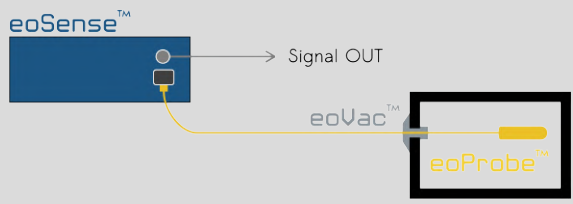
STANDARDS COMPLIANCE

Stainless steel grades	303
	316L

PACKAGING INFORMATION

	Contents
Cap	1 piece Hex. 19 mm x 17.2 mm
Split follower	2 pieces Ø 11 mm x 14.2 mm
Split seal ②	1 piece Ø 11 mm x 7.7 mm
Split seat	2 pieces Ø 11 mm x 7.8 mm
Body ①	1 piece Ø 30-to-55 mm x 54.7 mm with its plastic dust cap
Adpater (CF & ISO-K flanges)	1 KF centering ring with its O-ring + 1 KF adapter + 1 KF clamp ring
Test in vacuum	Vacuum feed-through delivered with a routine test report (test pressure: 10 ⁻¹ hPa)
User guide	See website https://en.kapteos.com/

COMPATIBLE DEVICES AND ACCESSORIES

Device	Associated data sheet	Use	Outline schematic
EM-field probe	eoProbe-E-FT-25.01.pdf	Recommended setup in most cases	

HARDWARE OPTIONS, CUSTOMIZATION AND ACCESSORIES

Field of activity	Issue	Options and/or accessories
Plasma	Specific vacuum flange	Vacuum flange adapter
High Voltage	Specific feed-through for GIS	Feed-through adapter for Gas Insulating Switchgear
	Feed-through for HV transformer	Feed-through adapter to submerge harsh environ. probe in transformer oil
Antennas	Ground test of satellite horns in T-VAC chamber	Vacuum flange adapter

ORDERING INFORMATION

Model	Type
eoVac FT	-25
	-CF40
	-ISO160

- Examples:
- Vacuum feed-through with native KF25 flange:
 - product **eoVac FT** - Qty: 1
 - option **-25** - Qty: 1
 - Vacuum feed-through with adapter to CF40 flange:
 - product **eoVac FT** - Qty: 1
 - option **-CF40** - Qty: 1
 - Vacuum feed-through with adapter to ISO-K160 flange:
 - product **eoVac FT** - Qty: 1
 - option **-ISO160** - Qty: 1