



STANDARD PRODUCT RANGE

FRIALIT®-DEGUSSIT® High Performance Ceramics

www.friatec-ceramics.com

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MATERIALS

Material	FRIATEC-Brand	Characterisation
Al_2O_3 Aluminium Oxide	DEGUSSIT AL23	Pure Al_2O_3 , dense, excellent thermal and electrical resistance properties, corrosion resistant, permeable to microwaves
Al_2O_3 Aluminium Oxide	DEGUSSIT AL24	Pure Al_2O_3 , slightly porous, good resistance to thermal shock, extremely good creep strength
Al_2O_3 Aluminium Oxide	DEGUSSIT AL25	Pure Al_2O_3 , very porous, good thermal insulation, highest resistance to thermal shock of all the Al_2O_3 materials
Al_2O_3 Aluminium Oxide	DEGUSSIT DD57	Pure Al_2O_3 , dense, without any binder, red colour, wear resistant and tough, also called 'sintered ruby'
Al_2O_3 Aluminium Oxide	FRIALIT F99,7	Pure Al_2O_3 , dense, extremely resistant to wear and corrosion, very high electrical insulating properties
Al_2O_3 (+ ZrO_2) Aluminium Oxide, fine grain stabilized	FRIALIT FZT	Al_2O_3 toughened with ZrO_2 , dense, high strength, good resistance to thermal shock, extremely resistant to wear and corrosion, fine grain size
ZrO_2 Zirkonium Oxide	FRIALIT FZM	ZrO_2 partially stabilized with MgO , dense, high strength and highly wear resistant, extremely resistant to corrosion and thermal shock
ZrO_2 Zirkonium Oxide	DEGUSSIT FZY	Partially stabilized with Y_2O_3 , dense, high purity ZrO_2 , high temperature and corrosion resistance, ion conducting for measuring oxygen

On request, we also supply parts with dimensions not listed as well as parts made of other ceramic materials

TOLERANCES IN HIGH-TEMPERATURE TECHNOLOGY

The dimensional accuracy of the size of the sintered parts essentially depends on the material and the forming method.

Tubes, multi-bore tubes and rods $\varnothing \geq 3$ mm as well as bands:

Diameter $\pm 5\%$ (but not less than $\pm 0,1$ mm); Cut length tolerance: $\pm 1\%$, < 100 mm upon request;
Straightness: maximum crescent height 0.5% of total length

Tubes, multi-bore tubes and rods $\varnothing < 3$ mm:

Diameter $\pm 5\%$ (but not less than $\pm 0,05$ mm); Cut length tolerance: $\pm 1\%$, < 100 mm upon request;
Straightness: maximum crescent height: 0.5% of total length

Crucibles, boats, combustion trays:

Tolerances $\pm 3\%$ (but not less $\pm 0,1$ mm)

Plates:

Tolerances $\pm 3\%$ (but not less $\pm 0,1$ mm); Deflection: maximum 0,5 % of the diagonal

Insulating beads and grinding bodies:

Tolerances $\pm 3\%$ (but not less than $\pm 0,1$ mm)

All dimensions in mm

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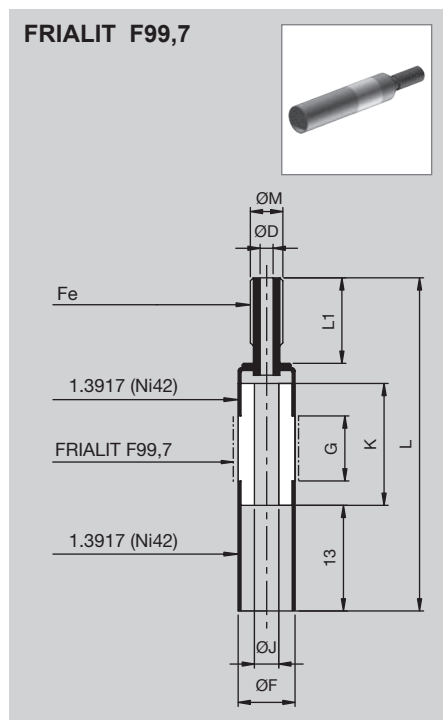




ELECTRICAL **ENGINEERING**

Feedthroughs, Tube-To-Tube Insulator, Standoffs

SINGLE TERMINAL FEEDTHROUGHS

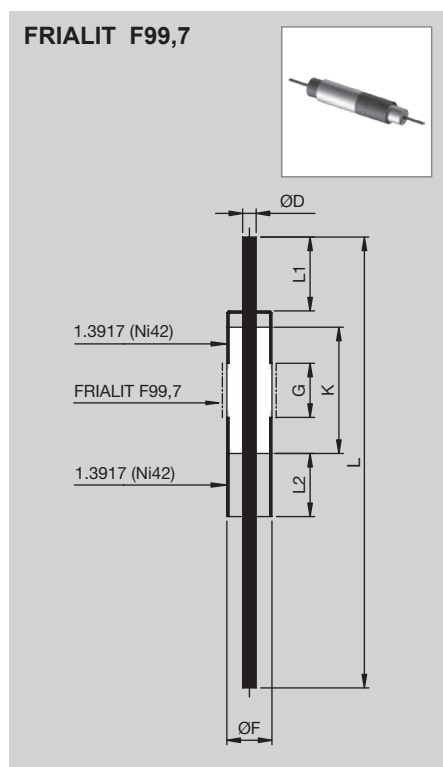


Voltage (DC)	$\varnothing M$	$\varnothing D$	$\varnothing F$	$\varnothing J$	G	K	L	L1	Product No.
4 kV	M4	1,6	7	3	8	15	41	10	551-1001
6 kV	M6	2,5	9	4	13	20	47	10	551-1002
6 kV	M6	2,5	10,8	5	13	20	47	10	551-1003
6 kV	M8	3,8	13,5	6,5	13	20	54	17	551-1004

Feedthroughs are also available in other dimensions

Also available with welded-on flanges (CF, KF, etc.)

SINGLE TERMINAL FEEDTHROUGHS



Voltage (DC)	Conductor	Current	$\varnothing D$	$\varnothing F$	G	K	L	L1	L2	Product No.
2 kV	NiFeCo	4 A	1,5x0,25	5	4	10,5	60	10	7	551-1063
2 kV	NiFeCo	5 A	1,5	5	4	10,5	60	10	7	551-1064
3 kV	NiFeCo	5 A	1,5	5	6	12,5	60	10	7	551-1066
3 kV	Cu	15 A	1,5	5	6	12,5	60	10	7	551-1066-2
4 kV	Ni42	5 A	1,5	7	8	15	57	10	13	551-0412
4 kV	Cu	15 A	1,5	7	8	15	57	10	13	551-0412-1
4 kV	Ni42	8 A	2	7	8	15	52	10	13	551-1006
4 kV	Cu	25 A	2	7	8	15	52	10	13	551-1006-1
5 kV	NiFeCo	5 A	1,5	5	10	16,5	60	10	7	551-1068
5 kV	Cu	15 A	1,5	5	10	16,5	60	10	7	551-1068-2
6 kV	Ni42	12 A	3	9	13	20	58	10	13	551-1007
6 kV	Cu	40 A	3	9	13	20	58	10	13	551-1007-1
6 kV	Ni42	20 A	4	10,8	13	20	58	10	13	551-1008
6 kV	Cu	60 A	4	10,8	13	20	58	10	13	551-1008-1
6 kV	Ni42	25 A	5	13,5	13	20	65	10	13	551-1009
6 kV	Cu	80 A	5	13,5	13	20	65	10	13	551-1009-1
8 kV	Cu	120 A	8	19,8	16	23	68	10	13	551-1010-1

Feedthroughs are also available in other dimensions

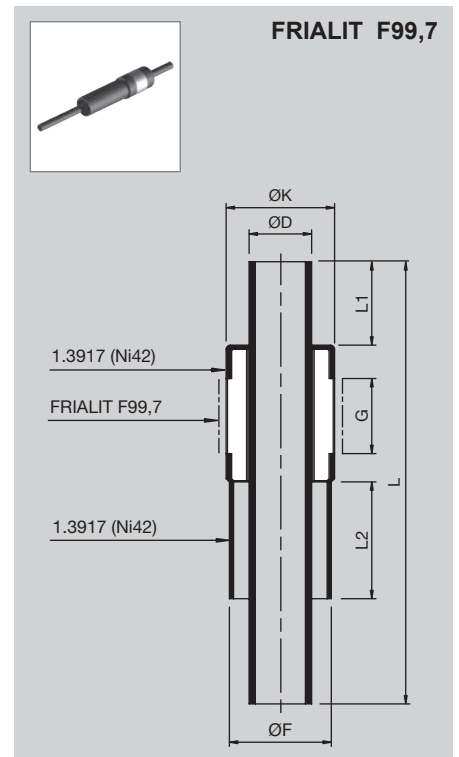
Also available with welded-on flanges (CF, KF, etc.)

SINGLE TERMINAL FEEDTHROUGHS

Voltage (DC)	Conductor	Current	Ø D	Ø F	G	Ø K	L	L1	L2	Product No.
1 kV	Ni42	4 A	1,5x0,25	4	2,8	4,5	35	6	10	551-1491
1 kV	Ni42	5 A	1,5	4	2,8	4,5	35	6	10	551-1425
1 kV	Cu	5 A	1,5	4	2,8	4,5	35	6	10	551-1425-1
4 kV	Ni42	30 A	7,5x0,75	12	8	13	53	10	14	551-1633
4 kV	Cu	90 A	7,5x0,75	12	8	13	53	10	14	551-1633-1

Feedthroughs are also available in other dimensions

Also available with welded-on flanges (CF, KF, etc.)

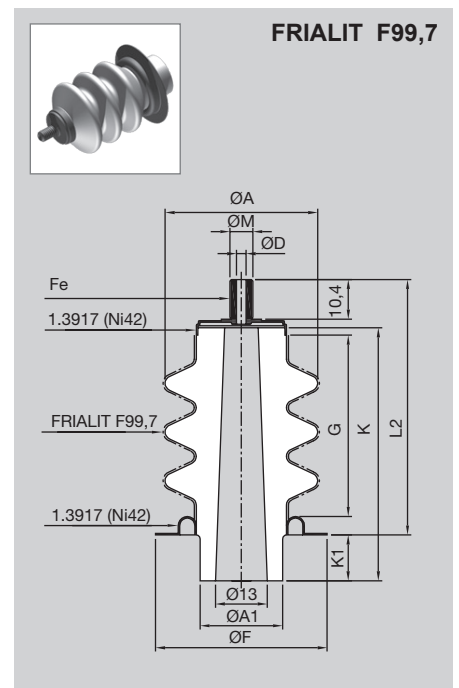


SINGLE TERMINAL FEEDTHROUGHS

Voltage (DC)	No. of Flutes	Leakage Path	Ø M	Ø D	Ø F	Ø A	Ø A1	G	K	K1	L2	Product No.
25 kV	3	54	M6	2,5	45	40	22	45	66	12	67	551-1012

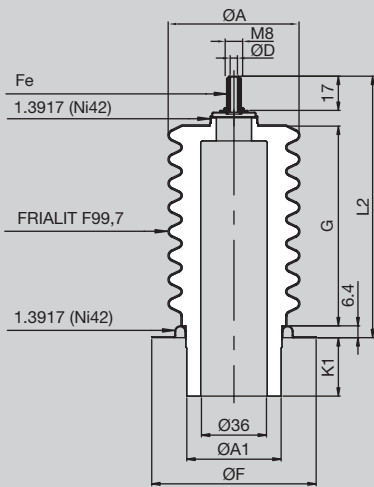
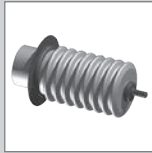
This feedthrough could be adjusted with different conductors for special electrical standards

Also available with welded-on flanges (CF, KF, etc.)



SINGLE TERMINAL FEEDTHROUGHS

FRIALIT F99,7



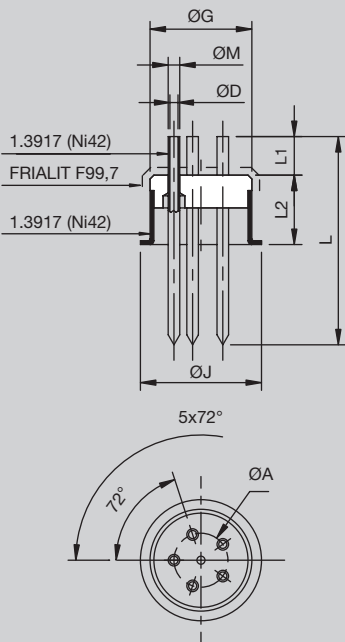
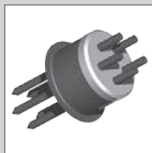
Voltage (DC)	No. of Flutes	Leakage Path	Ø M	Ø D	Ø F	Ø A	Ø A1	G	K1	L2	Product No.
50 kV	8	150	M8	3,8	88,9	70	52	108	31,6	141.4	551-0970

This feedthrough could be adjusted with different conductors for special electrical standards

Also available with welded-on flanges (CF, KF, etc.)

MULTITERMINAL FEEDTHROUGHS

FRIALIT F99,7



Voltage (DC)	Current	Ø D	Ø A	Ø G	Ø J	L	L1	L2	No. of Feedthroughs	Product No.
500 V Pin-Pin 1 kV Pin-Flange	4 A	1,5x0,25	7	13,2	15,7	27	5	9	5	552-2548

Feedthrough are also available in other dimensions

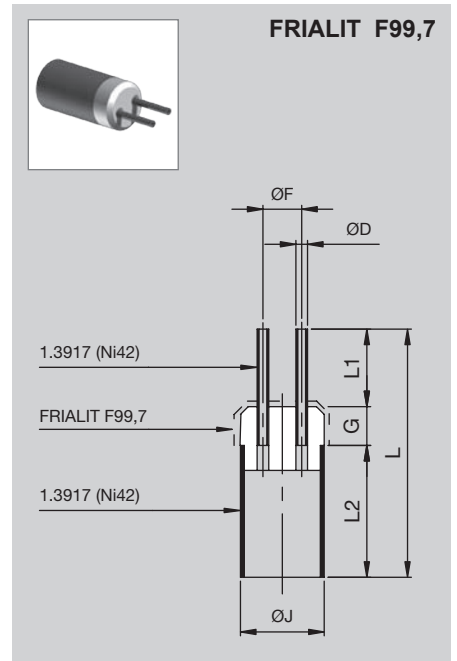
Also available with welded-on flanges (CF, KF, etc.)

MULTITERMINAL FEEDTHROUGHS

Voltage (DC)	Current	Ø D	Ø F	Ø J	G	L	L1	L2	No. of Feedthroughs	Product No.
500 V Pin-Pin 1 kV Pin-Flange	4 A	1,5x0,25	5	10,8	5	32	10	17	2	552-0861
500 V Pin-Pin 1 kV Pin-Flange	4 A	1,5x0,25	5	10,8	5	32	10	17	4	552-0838

Feedthroughs are also available in other dimensions

Also available with welded-on flanges (CF, KF, etc.)

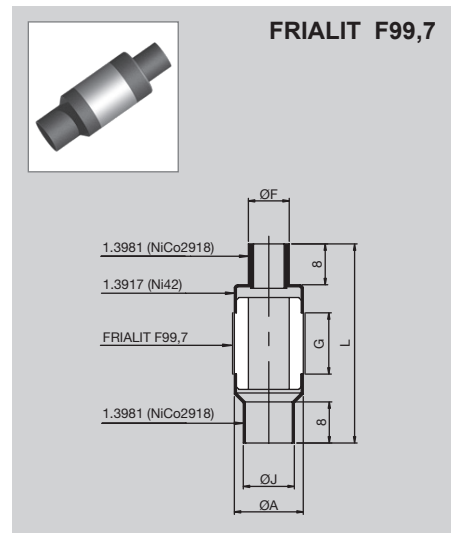


TUBE-TO-TUBE INSULATORS

Voltage (DC)	Ø F	Ø A	Ø J	G	L	Product No.
5 kV	8x6	13,5	10	12	39	559-1464

Tube-To-Tube Insulator is also available in other dimensions

Also available with welded-on flanges (CF, KF, etc.)

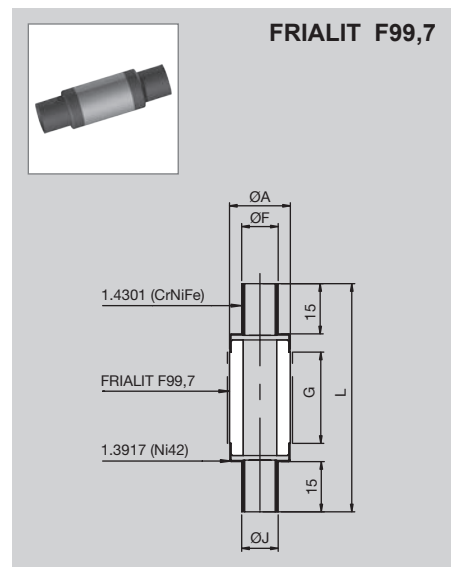


TUBE-TO-TUBE INSULATORS

Voltage (DC)	Ø F	Ø A	Ø J	G	L	Product No.
15 kV	18	23	18	30	74	559-3664-2

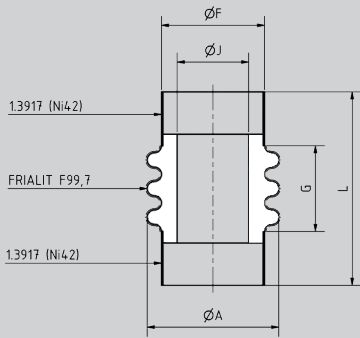
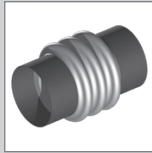
Tube-To-Tube Insulator is also available in other dimensions

Also available with welded-on flanges (CF, KF, etc.)



TUBE-TO-TUBE INSULATORS

FRIALIT F99,7



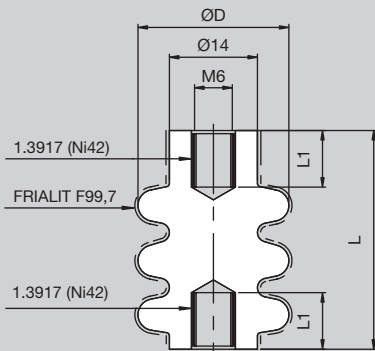
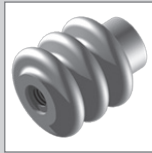
Voltage (DC)	No. of Flutes	Leakage Path	$\varnothing F$	$\varnothing A$	$\varnothing J$	G	L	Product No.
15 kV	3	44	36	46	36	30	67.6	559-0654

Tube-To-Tube Insulator is also available in other dimensions

Also available with welded-on flanges (CF, KF, etc.)

STANDOFFS

FRIALIT F99,7



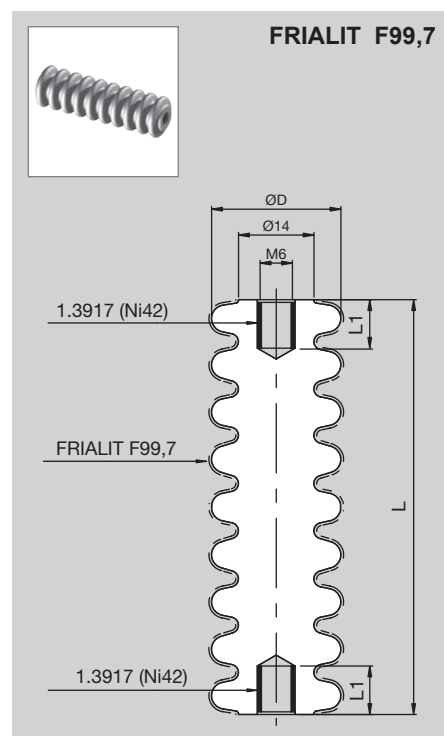
Voltage (DC)	Leakage Path	$\varnothing D$	L	L1	Product No.
15 kV	40	24	30	9	558-1162

Standoff is also available in other dimensions

STANDOFFS

Voltage (DC)	Leakage Path	Ø D	L	L1	Product No.
40 kV	130	24	80	9	558-2105

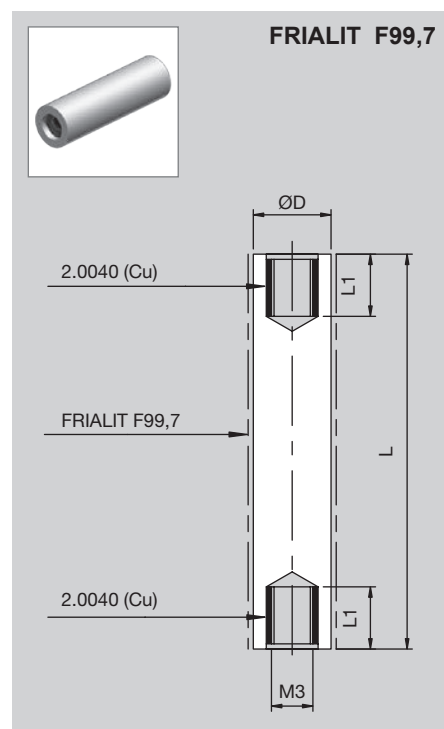
Customized parts with different lengths, different diameters or different number of flutes are also available



STANDOFFS

Voltage (DC)	Leakage Path	Ø D	L	L1	Product No.
10 kV	25	7,5	25	8	558-1511
15 kV	38	9,5	38.1	6	558-1984

Standoffs are also available in other dimensions



COMPETENCE PLUS RESPONSIBILITY

Our customers rightly expect first-class performance with lasting value. Besides the competence to achieve this, we also undertake the responsibility for it. Ask for the evidence: FRIATEC is the technological and market leader in ceramic materials for the 21st Century.



- | | |
|----------------------------------------------------|------------------------------------------------------------------------|
| 01 Image-intensifier for radiology | 13 Guide strip for the printing industry |
| 02 X-Ray tube for radiology | 14 Isolator for the printing industry |
| 03 Pressure sensor for aerospace | 15 Square tubes for the printing industry |
| 04 Camera housing for aerospace | 16 Tubes, rods and capillaries for high temperature applications |
| 05 Accelerator tube for radiology | 17 Thermal protection tubes for the glass and metallurgical industries |
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| 08 Insulating tubes for high-vacuum technology | 20 Dielectric elements for fuel cells |
| 09 High current feedthroughs for energy systems | 21 Dielectric elements for fuel cells |
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Electrical Engineering
High Temperature Technology
Mechanical Engineering
Surface Finishing



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