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INDUCTION HEATING CAPACITORS

Power capacitors

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COMPANY PROFILE

ZEZ SILKO s.r.o. is a reputable manufacturer of power capacitors, capacitors for power electronics, capacitors for induction heating and many other capacitor types. Company ZEZ SILKO s.r.o. provides complete power factor correction service including: power system evaluation including harmonic analysis, technical and commercial quotations, capacitor banks production and commissioning. Components for power factor correction and regulation of electrical energy are also supplied. ZEZ SILKO products are being exported to countries all around the world. They are for use on traction systems (locomotives, trams, troleybuses), green energy generation (wind and photovoltaic power plants), energy sector (power factor correction) and also induction heating equipment. ZEZ SILKO s.r.o. has always been and will continue to be your reliable business partner.

European manufacturer of capacitors

Tradition of capacitor production since 1930

Emphasis to quality of products

Quality control system (ISO 9001) since 1999

IRIS certification since 2014

Products are exported to countries all around the world

BUREAU VERITAS Certification

Certificate

ZEZ SILKO, s.r.o.

ČSN EN ISO 9001:2016

DEVELOPMENT, PRODUCTION, SALE AND SERVICE OF POWER CAPACITORS AND INDUCTORS.
PRODUCTION OF SWITCHGEAR CABINETS AND METAL PARTS.
DESIGN, PRODUCTION, INSTALLATION AND SERVICE IN A BRANCH OF THE POWER FACTOR COMPENSATION.
SALE OF COMPONENTS FOR POWER ELETRONICS

FUJJS 50.. - $U_n/C_n/f_n$
FUJJS 70.. - $U_n/C_n/f_n$

Maximum single parameters of product line

Max output	Q_{Nmax}	4 000 kvar
Max voltage	U_{Nmax}	2 000 V
Max current	I_{Nmax}	2 000 A
Max frequency	f_{Nmax}	2 000 Hz
Design	LIVE/DEAD CASE	

Standards	IEC 60110-1:1998; EN 60110-1:1998
Capacitance tolerance	-5 / +10%
Ambient temperature	1°C ... 50°C
Power losses	< 0,3 W/kvar
Water-cooling	WF
Max. outlet water temperature	40°C
Water flow rate	> 8 l/min
Presure drop at 8 l/min	< 0,6 bar
Water pressure	6 bar
Over-voltage	1,05 x U_N; 12 hours/day
Over-current	1,15 x I_N
Voltage test between terminals	2,0x U_N AC / 10s or 4,0x U_N DC / 10s
Voltage test between terminals and case	5 000 V AC / 10s
Case	brass welded, painted (RAL 7035)
Dielectric system	all-film
Impregnant	Jarylec (non-toxic, non-PCB)
Instalation	indoor
Protection degree	IP 00

Type	**U_N** (kV)	**C_N** (µF)	**f_N** (kHz)	**Q_N** (kvar)	**I_N** (A)	**Dimensions** W x L x H (mm)	**Weight** (kg)
FUJJS 5032-0,8/336/1	0,8	336	1,0	1 350	1 690	165 x 370 x 325	28
FUJJS 5032-0,9/160/2	0,9	160	2,0	1 628	1 810	165 x 370 x 325	28
FUJJS 5032-1,0/200/1,5	1,0	200	1,5	1 884	1 884	165 x 370 x 325	28
FUJJS 5032-1,2/150/1,5	1,2	150	1,5	2 035	1 690	165 x 370 x 325	28
FUJJS 5040-0,8/500/0,7	0,8	500	0,7	1 407	1 760	165 x 370 x 400	36
FUJJS 5040-1,2/265/1	1,2	265	1,0	2 400	2 000	165 x 370 x 400	36
FUJJS 5046-1,5/200/1	1,5	200	1,0	2 827	1 885	165 x 370 x 460	40
FUJJS 5050-1,0/500/0,6	1,0	500	0,6	1 885	1 885	165 x 370 x 500	45
FUJJS 5060-1,0/600/0,5	1,0	600	0,5	1 885	1 885	165 x 370 x 600	50

Type	**U_N** (kV)	**C_N** (µF)	**f_N** (kHz)	**Q_N** (kvar)	**I_N** (A)	**Dimensions** W x L x H (mm)	**Weight** (kg)
FUJJS 7040-1,6/233/0,8	1,6	233	0,8	2 998	1 874	200 x 370 x 400	45
FUJJS 7055-0,8/1000/0,24	0,8	1 000	0,24	960	1 200	200 x 370 x 550	60
FUJJS 7060-0,8/995/0,3	0,8	995	0,3	1 200	1 500	200 x 370 x 600	65
FUJJS 7060-1,2/530/0,5	1,2	530	0,5	2 398	1 998	200 x 370 x 600	65
FUJJS 7060-1,8/262/0,6	1,8	262	0,6	3 200	1 778	200 x 370 x 600	65
FUJJS 7060-1,8/294/0,5	1,8	294	0,5	2 993	1 663	200 x 370 x 600	65
FUJJS 7060-2,0/217/0,6	2,0	217	0,6	3 272	1 636	200 x 370 x 600	65
FUJJS 7060-2,0/255/0,6	2,0	255	0,6	3 845	1 923	200 x 370 x 600	65
FUJJS 7090-2,0/418/0,3	2,0	418	0,3	3 150	1 575	200 x 370 x 900	93

Other voltage, power and frequency on request.
Dead case type designation FUHJS on request.
Case and connection dimensions are the same like live case design.

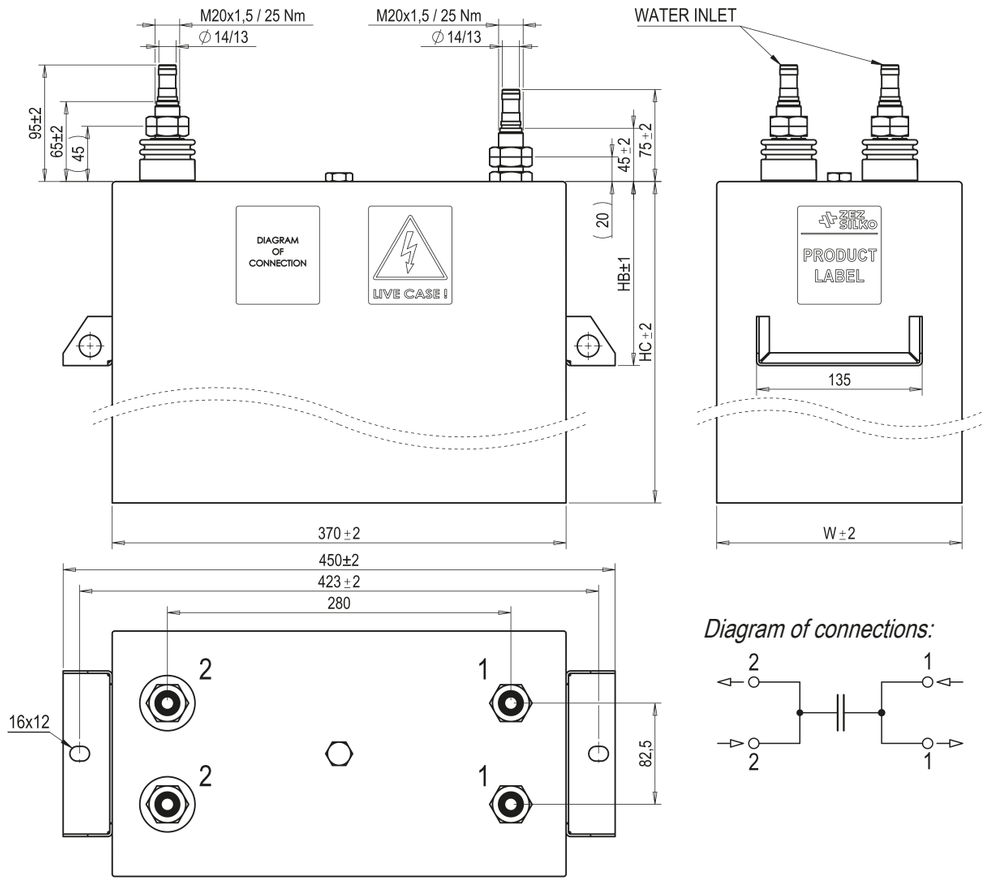


Diagram of connections:

FRJJS 52..-$U_n/C_n/f_n$

Maximum single parameters of product line

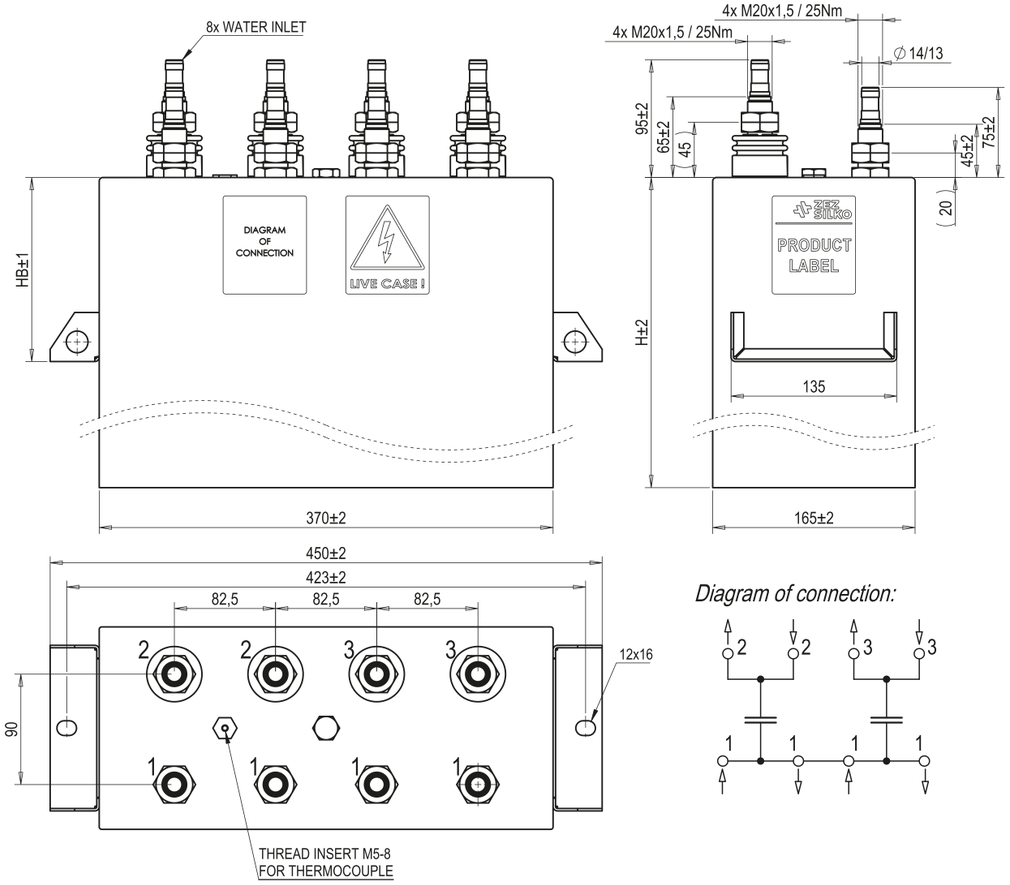
Max output	Q_{Nmax}	8 000 kvar
Max voltage	U_{Nmax}	2 000 V
Max current	I_{Nmax}	4 000 A
Max frequency	f_{Nmax}	8 000 Hz
Design	LIVE/DEAD CASE	

Standards	IEC 60110-1:1998; EN 60110-1:1998
Capacitance tolerance	-5 / +10%
Ambient temperature	1°C ... 50°C
Power losses	< 0,3 W/kvar
Water-cooling	WF
Max. outlet water temperature	40°C
Water flow rate	> 8 l/min
Presure drop at 8 l/min	< 0,4 bar
Water pressure	6 bar
Over-voltage	1,05 x U_N; 12 hours/day
Over-current	1,15 x I_N
Voltage test between terminals	2,0x U_N AC / 10s or 4,0x U_N DC / 10s
Case	brass welded, painted (RAL 7035)
Dielectric system	all-film
Impregnant	Jarylec (non-toxic, non-PCB)
Instalation	indoor
Protection degree	IP 00

Type	U_N (kV)	C_N (µF)	f_N (kHz)	Q_N (kvar)	I_N (A)	Dimensions W x L x H (mm)	Weight (kg)
FRJJS 5225-0,6/2x48,6/5	0,6	2x 48,6	5,0	1 099	1 832	165 x 370 x 250	25
FRJJS 5225-0,8/2x55/6	0,8	2x 55	6,0	2 654	3 318	165 x 370 x 250	25
FRJJS 5232-0,6/2x132,5/4	0,6	2x 132,5	4,0	2 400	4 000	165 x 370 x 325	28
FRJJS 5232-0,65/2x80/6	0,65	2x 80	6,0	2 550	3 923	165 x 370 x 325	28
FRJJS 5232-0,8/2x45/8	0,8	2x 45	8,0	2 895	3 619	165 x 370 x 325	28
FRJJS 5232-0,8/2x95/4	0,8	2x 95	4,0	3 056	3 820	165 x 370 x 325	28
FRJJS 5232-0,8/2x132,5/3	0,8	2x 132,5	3,0	3 200	4 000	165 x 370 x 325	28
FRJJS 5232-1,0/2x100/2	1,0	2x 100	2,0	2 513	2 513	165 x 370 x 325	28
FRJJS 5232-2,0/2x25/5	2,0	2x 25	5,0	6 280	3 140	165 x 370 x 325	28
FRJJS 5232-2,0/2x30/2	2,0	2x 30	2,0	3 016	1 508	165 x 370 x 325	28

Type	U_N (kV)	C_N (µF)	f_N (kHz)	Q_N (kvar)	I_N (A)	Dimensions W x L x H (mm)	Weight (kg)
FRJJS 5240-0,8/2x120/3	0,8	2x 120	3,0	2 900	3 620	165 x 370 x 400	33
FRJJS 5240-0,8/2x170/2,2	0,8	2x 170	2,2	3 000	3 750	165 x 370 x 400	33
FRJJS 5240-1,0/2x132,5/2,4	1,0	2x 132,5	2,4	4 000	4 000	165 x 370 x 400	33
FRJJS 5240-1,5/2x62,5/3	1,5	2x 62,5	3,0	5 300	3 533	165 x 370 x 400	33
FRJJS 5240-2,0/2x35/4	2,0	2x 35	4,0	7 040	3 520	165 x 370 x 400	33
FRJJS 5250-0,6/2x210/2,5	0,6	2x 210	2,5	2 375	3 958	165 x 370 x 500	44
FRJJS 5250-0,6/2x240/2,2	0,6	2x 240	2,2	2 388	3 980	165 x 370 x 500	44
FRJJS 5250-2,0/2x50/3	2,0	2x 50	3,0	7 540	3 770	165 x 370 x 500	44
FRJJS 5260-0,8/2x265/1,5	0,8	2x 265	1,5	3 200	4 000	165 x 370 x 600	52
FRJJS 5260-0,8/2x348/1,2	0,8	2x 348	1,2	3 360	4 200	165 x 370 x 600	52
FRJJS 5260-0,9/2x285/1,2	0,9	2x 285	1,2	3 481	3 868	165 x 370 x 600	52
FRJJS 5280-1,0/2x318/1	1,0	2x 318	1,0	4 000	4 000	165 x 370 x 800	73

Other voltage, power and frequency on request.
Dead case type designation FRHJS on request.
Case and connection dimensions are the same like live case design.



FRJJS 304..-U_n/C_n/f_n

Maximum single parameters of product line

Max output	Q_{Nmax}	2 000 kvar
Max voltage	U_{Nmax}	2 000 V
Max current	I_{Nmax}	1 000 A
Max frequency	f_{Nmax}	4 000 Hz
Design	LIVE CASE	

Standards	IEC 60110-1:1998; EN 60110-1:1998
Capacitance tolerance	-5 / +10%
Ambient temperature	1°C ... 50°C
Power losses	< 0,3 W/kvar
Water-cooling	WF
Max. outlet water temperature	40°C
Water flow rate	> 4 l/min
Presure drop at 4 l/min	< 0,2 bar
Water pressure	6 bar
Over-voltage	1,05 x U_N; 12 hours/day
Over-current	1,15 x I_N
Voltage test between terminals	2,0x U_N AC / 10s or 4,0x U_N DC / 10s
Case	brass welded, painted (RAL 7035)
Dielectric system	all-film
Impregnant	Jarylec (non-toxic, non-PCB)
Instalation	indoor
Protection degree	IP 00

Type	**U_N** (kV)	**C_N** (µF)	**f_N** (kHz)	**Q_N** (kvar)	**I_N** (A)	**Dimensions** W x L x H (mm)	**Weight** (kg)
FRJJS 3040-0,7/80/2,5	0,7	80	2,5	616	880	125 x 335 x 250	16
FRJJS 3040-0,8/60/3	0,8	60	3,0	724	905	125 x 335 x 250	16
FRJJS 3040-0,8/80/1	0,8	80	1,0	322	402	125 x 335 x 250	16
FRJJS 3040-1,0/56/2,5	1,0	56	2,5	880	880	125 x 335 x 250	16
FRJJS 3040-1,5/40/2,5	1,5	40	2,5	1 414	942	125 x 335 x 250	16
FRJJS 3040-1,8/28/2,5	1,8	28	2,5	1 425	792	125 x 335 x 250	16
FRJJS 3040-2,0/21/3	2,0	21	3,0	1 583	792	125 x 335 x 250	16

Type	**U_N** (kV)	**C_N** (µF)	**f_N** (kHz)	**Q_N** (kvar)	**I_N** (A)	**Dimensions** W x L x H (mm)	**Weight** (kg)
FRJJS 3041-0,8/128/1,5	0,8	128	1,5	772	965	125 x 335 x 325	21
FRJJS 3041-0,8/160/1,1	0,8	160	1,1	708	885	125 x 335 x 325	21
FRJJS 3041-0,9/128/1,3	0,9	128	1,3	847	941	125 x 335 x 325	21
FRJJS 3041-1,0/60/2,4	1,0	60	2,4	905	905	125 x 335 x 325	21
FRJJS 3041-1,0/105/1,5	1,0	105	1,5	990	990	125 x 335 x 325	21
FRJJS 3041-1,2/80/1,5	1,2	80	1,5	1 086	905	125 x 335 x 325	21
FRJJS 3041-1,3/60/2	1,3	60	2,0	1 274	980	125 x 335 x 325	21
FRJJS 3041-1,8/42/2	1,8	42	2,0	1 710	950	125 x 335 x 325	21
FRJJS 3041-2,0/28/2,5	2,0	28	2,5	1 760	880	125 x 335 x 325	21

Other voltage, power and frequency on request.

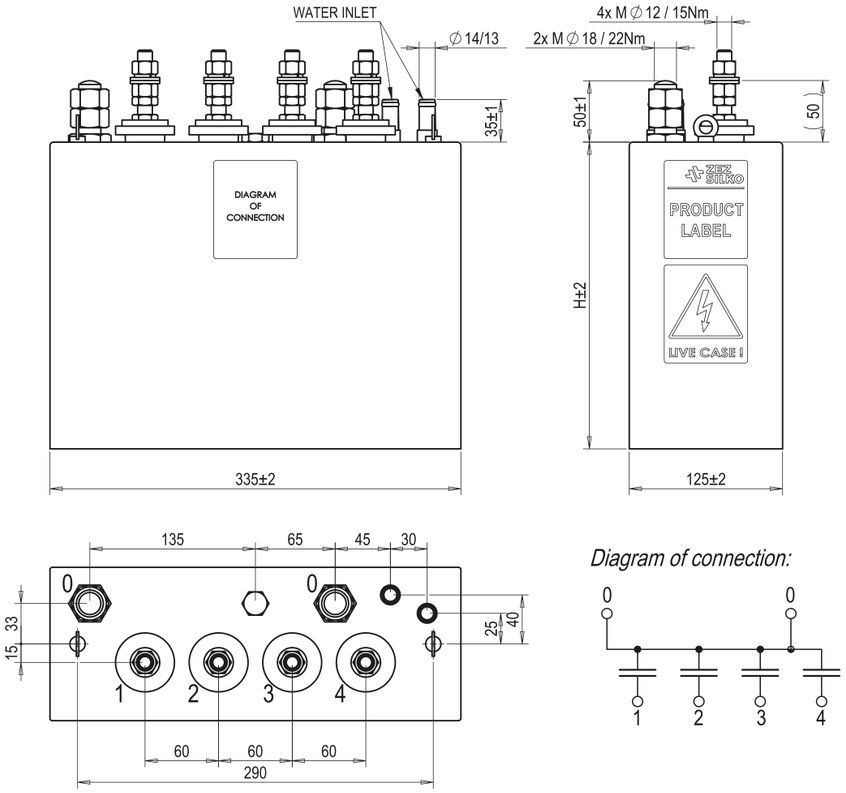


Diagram of connection:

FRJJS 303.. - $U_n/C_n/f_n$
FRJJS 306.. - $U_n/C_n/f_n$

Maximum single parameters of product line

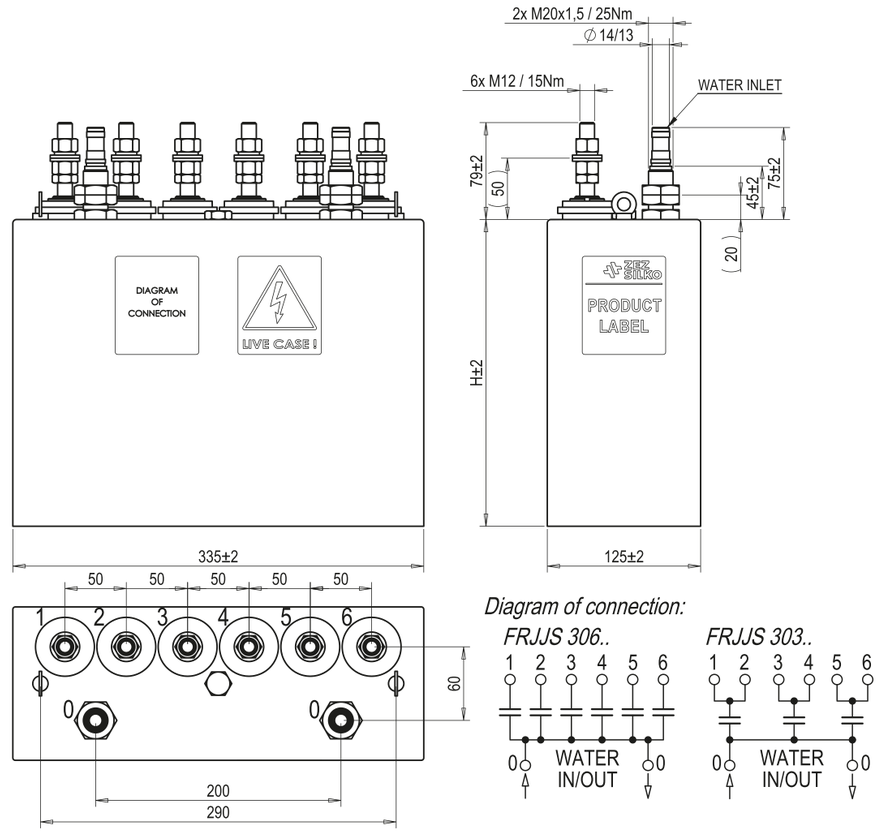
Max output	Q_{Nmax}	2 500 kvar
Max voltage	U_{Nmax}	2 000 V
Max current	I_{Nmax}	1 500 A
Max frequency	f_{Nmax}	4 000 Hz
Design	LIVE/DEAD CASE	

Standards	IEC 60110-1:1998; EN 60110-1:1998
Capacitance tolerance	-5 / +10%
Ambient temperature	1°C ... 50°C
Power losses	< 0,3 W/kvar
Water-cooling	WF
Max. outlet water temperature	40°C
Water flow rate	> 4 l/min
Presure drop at 4 l/min	< 0,2 bar
Water pressure	6 bar
Over-voltage	1,05 x U_N; 12 hours/day
Over-current	1,15 x I_N
Voltage test between terminals	2,0x U_N AC / 10s or 4,0x U_N DC / 10s
Case	brass welded, painted (RAL 7035)
Dielectric system	all-film
Impregnant	Jarylec (non-toxic, non-PCB)
Instalation	indoor
Protection degree	IP 00

Type	**U_N** (kV)	**C_N** (µF)	**f_N** (kHz)	**Q_N** (kvar)	**I_N** (A)	**Dimensions** W x L x H (mm)	**Weight** (kg)
FRJJS 3030-0,6/128/2,4	0,6	128	2,4	695	1 158	125 x 335 x 250	16
FRJJS 3030-0,8/103,5/2,4	0,8	103,5	2,4	1 000	1 250	125 x 335 x 250	16
FRJJS 3030-1,0/45/4	1,0	45	4,0	1 131	1 131	125 x 335 x 250	16
FRJJS 3030-1,0/60/3,0	1,0	60	3,0	1 131	1 131	125 x 335 x 250	16
FRJJS 3030-1,0/72/2,4	1,0	72	2,4	1 086	1 086	125 x 335 x 250	16
FRJJS 3030-1,2/48/3,3	1,2	48	3,3	1 433	1 194	125 x 335 x 250	16
FRJJS 3030-1,5/36/3,3	1,5	36	3,3	1 680	1 120	125 x 335 x 250	16
FRJJS 3030-2,0/20/4	2,0	20	4,0	2 000	1 006	125 x 335 x 250	16

Type	**U_N** (kV)	**C_N** (µF)	**f_N** (kHz)	**Q_N** (kvar)	**I_N** (A)	**Dimensions** W x L x H (mm)	**Weight** (kg)
FRJJS 3031-0,6/192/1,5	0,60	192	1,5	652	1 086	125 x 335 x 325	21
FRJJS 3031-0,8/160/1,5	0,80	160	1,5	965	1 206	125 x 335 x 325	21
FRJJS 3031-1,0/90/2,0	1,0	90	2,0	1 131	1 131	125 x 335 x 325	21
FRJJS 3031-1,2/72/2,2	1,2	72	2,2	1 433	1 194	125 x 335 x 325	21
FRJJS 3031-1,5/54/2,2	1,5	54	2,2	1 680	1 120	125 x 335 x 325	21
FRJJS 3031-2,0/28/2,6	2,0	28	3,0	2 111	1 056	125 x 335 x 325	21
FRJJS 3060-0,4/108/4	0,4	108	4,0	434	1 086	125 x 335 x 250	16
FRJJS 3060-1,0/35,7/2,5	1,0	35,7	2,6	561	561	125 x 335 x 250	16
FRJJS 3061-0,5/144/3	0,50	144	3,0	680	1 360	125 x 335 x 325	21
FRJJS 3061-0,38/166,2/2	0,38	166,2	2,0	302	795	125 x 335 x 325	21

Other voltage, power and frequency on request.
Dead case type designation FRHJS on request.



FRJJS 71..-U_n/C_n/f_n

Maximum single parameters of product line

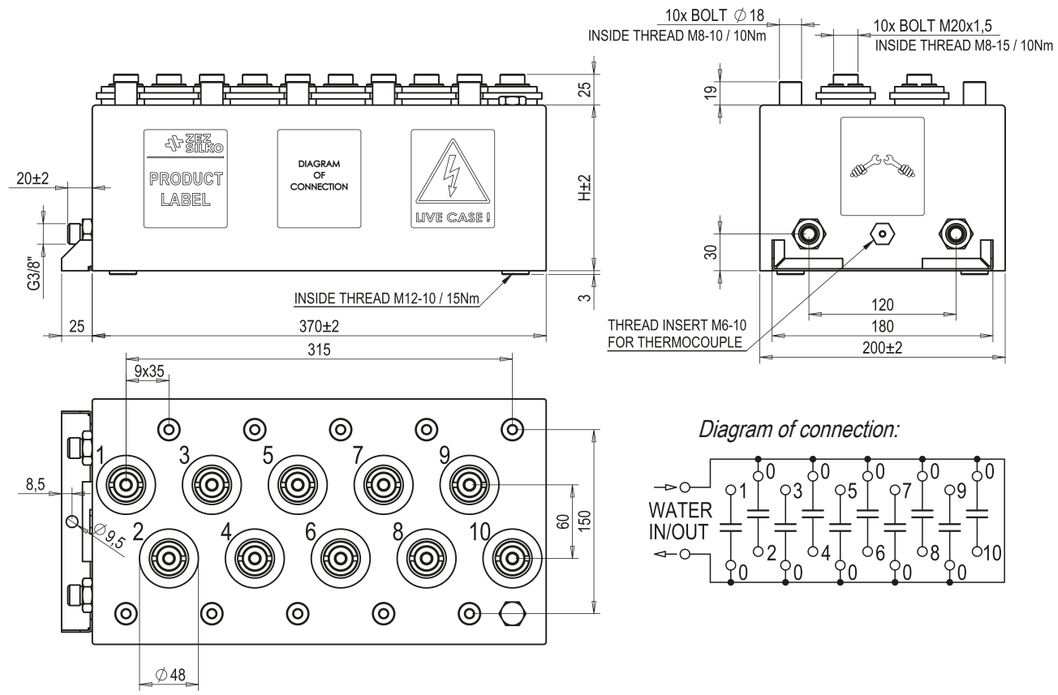
Max output	Q_{Nmax}	7 000 kvar
Max voltage	U_{Nmax}	2 500 V
Max current	I_{Nmax}	5 500 A
Max frequency	f_{Nmax}	20 000 Hz
Design	LIVE CASE	

Standards	IEC 60110-1:1998; EN 60110-1:1998
Capacitance tolerance	-5 / +10%
Ambient temperature	1°C ... 50°C
Power losses	< 0,3 W/kvar
Water-cooling	WF
Max. outlet water temperature	40°C
Water flow rate	> 8 l/min
Presure drop at 8 l/min	< 0,2 bar
Water pressure	6 bar
Over-voltage	1,05 x U_N; 12 hours/day
Over-current	1,15 x I_N
Voltage test between terminals	2,0x U_{MAX} AC / 10s or 4,0x U_{MAX} DC / 10s
Operation	only at cooled busbar <50°C
Case	copper welded, painted (RAL 7035)
Dielectric system	all-film
Impregnant	Jarylec (non-toxic, non-PCB)
Instalation	indoor
Protection degree	IP 00

Type	**U_N / U_{MAX}** (kV)	**C_N** (µF)	**f_N** (kHz)	**Q_N** (kvar)	**I_N** (A)	**Dimensions** W x L x H (mm)	**Weight** (kg)
FRJJS 7102-0,8/10x5/16	0,8 / 1,0	50	16	3 220	4 025	200 x 370 x 135	18
FRJJS 7102-1,0/10x3,0/20	1,0 / 1,5	30	20	3 770	3 770	200 x 370 x 135	18
FRJJS 7102-1,5/10x2,0/20	1,5 / 1,8	20	20	5 655	3 770	200 x 370 x 135	18
FRJJS 7103-0,8/10x14,5/6	0,8 / 0,9	145	6	3 498	4 373	200 x 370 x 175	24
FRJJS 7103-1,0/10x8/8	1,0 / 1,2	80	8	4 020	4 020	200 x 370 x 175	24
FRJJS 7103-1,0/10x5,57/12	1,0 / 1,2	55,7	12	4 200	4 200	200 x 370 x 175	24
FRJJS 7103-1,0/10x6,4/10	1,0 / 1,3	64	10	4 021	4 021	200 x 370 x 175	24
FRJJS 7103-1,0/10x11/6	1,0 / 1,1	110	6	4 147	4 147	200 x 370 x 175	24
FRJJS 7103-1,3/10x3,2/16	1,3 / 1,5	32	16	5 437	4 182	200 x 370 x 175	24
FRJJS 7103-2,0/10x1,5/16	2,0 / 2,4	15	16	6 032	3 016	200 x 370 x 175	24
FRJJS 7103-2,0/10x2,2/10	2,0 / 2,4	22	10	5 520	2 760	200 x 370 x 175	24

Type	**U_N / U_{MAX}** (kV)	**C_N** (µF)	**f_N** (kHz)	**Q_N** (kvar)	**I_N** (A)	**Dimensions** W x L x H (mm)	**Weight** (kg)
FRJJS 7104-0,8/10x19,7/3,3	0,8 / 1,0	197	3,3	2 614	3 268	200 x 370 x 200	28
FRJJS 7104-1,5/10x4,6/10	1,5 / 1,8	46	10	6 500	4 333	200 x 370 x 200	28
FRJJS 7104-2,0/10x2,4/10	2,0 / 2,4	24	10	6 032	3 016	200 x 370 x 200	28
FRJJS 7104-2,0/10x4,5/4	2,0 / 2,0	45	4	4 524	2 260	200 x 370 x 200	28
FRJJS 7105-0,8/10x23,5/4	0,8 / 0,9	235	4	3 780	4 725	200 x 370 x 250	32
FRJJS 7105-0,8/10x29,6/2	0,8 / 1,0	296	2	2 383	2 976	200 x 370 x 250	32
FRJJS 7105-1,0/10x16,5/4	1,0 / 1,2	165	4	4 147	4 147	200 x 370 x 250	32
FRJJS 7105-1,0/10x20/3	1,0 / 1,1	200	3	3 770	3 770	200 x 370 x 250	32
FRJJS 7106-0,8/10x32/3	0,8 / 1,0	320	3	3 860	4 825	200 x 370 x 400	47
FRJJS 7106-0,8/10x36/2,5	0,8 / 1,0	360	2,5	3 619	4 524	200 x 370 x 400	47
FRJJS 7106-0,8/10x50/2	0,8 / 0,9	500	2	4 021	5 026	200 x 370 x 400	47
FRJJS 7106-0,8/10x68/1,1	0,8 / 0,8	680	1,1	3 008	3 760	200 x 370 x 400	47
FRJJS 7106-1,0/10x36/2	1,0 / 1,1	360	2	4 524	4 524	200 x 370 x 400	47
FRJJS 7106-1,0/10x45/1,5	1,0 / 1,0	450	1,5	4 240	4 240	200 x 370 x 400	47
FRJJS 7106-1,0/10x57,7/1	1,0 / 1,0	577	1	3 625	3 625	200 x 370 x 400	47
FRJJS 7106-1,325/10x32/1,4	1,325 / 1,325	320	1,4	4 942	3 730	200 x 370 x 400	47

Other voltage, power and frequency on request.



FRJJS 73..-U_n/C_n/f_n

Maximum single parameters of product line

Max output	Q_{Nmax}	5 000 kvar
Max voltage	U_{Nmax}	2 000 V
Max current	I_{Nmax}	5 000 A
Max frequency	f_{Nmax}	20 000 Hz
Design	LIVE CASE	

Standards	IEC 60110-1:1998; EN 60110-1:1998
Capacitance tolerance	-5 / +10%
Ambient temperature	1°C ... 50°C
Power losses	< 0,3 W/kvar
Water-cooling	WF
Max. outlet water temperature	35°C
Water flow rate	> 8 l/min
Presure drop at 8 l/min	< 0,2 bar
Water pressure	6 bar
Over-voltage	1,05 x U_N; 12 hours/day
Over-current	1,15 x I_N
Voltage test between terminals	2,0x U_{MAX} AC / 10s or 4,0x U_{MAX} DC / 10s
Operation	only at cooled busbar <50°C
Case	brass welded, painted (RAL 7035)
Dielectric system	all-film
Impregnant	Jarylec (non-toxic, non-PCB)
Instalation	indoor
Protection degree	IP 00

Type	**U_N / U_{MAX}** (kV)	**C_N** (µF)	**f_N** (kHz)	**Q_N** (kvar)	**I_N** (A)	**Dimensions** W x L x H (mm)	**Weight** (kg)
FRJJS 7302-0,52/10x3,9/20	0,52 / 1,5	39	20,0	1 325	2 548	200 x 370 x 200	26
FRJJS 7302-0,8/10x14,5/6	0,8 / 0,9	145	6,0	3 498	4 373	200 x 370 x 200	26
FRJJS 7302-0,8/10x19,7/3,3	0,8 / 0,9	197	3,3	2 614	3 268	200 x 370 x 200	26
FRJJS 7302-1,0/10x3,2/16	1,0 / 1,5	32	16,0	3 215	3 215	200 x 370 x 200	26
FRJJS 7302-1,0/10x5,2/12	1,0 / 1,5	52	12,0	3 920	3 920	200 x 370 x 200	26
FRJJS 7302-1,0/10x6,4/10	1,0 / 1,3	64	10,0	4 021	4 021	200 x 370 x 200	26
FRJJS 7302-1,0/10x8/8	1,0 / 1,2	80	8,0	4 020	4 020	200 x 370 x 200	26
FRJJS 7302-1,0/10x11/6	1,0 / 1,1	110	6,0	4 147	4 147	200 x 370 x 200	26
FRJJS 7302-2,0/10x4,5/4	2,0 / 2,0	45	4,0	4 524	2 260	200 x 370 x 200	26

Type	**U_N / U_{MAX}** (kV)	**C_N** (µF)	**f_N** (kHz)	**Q_N** (kvar)	**I_N** (A)	**Dimensions** W x L x H (mm)	**Weight** (kg)
FRJJS 7304-0,8/10x16,5/5	0,8 / 1,4	165	5,0	3 318	4 147	200 x 370 x 400	47
FRJJS 7304-0,8/10x23,5/4	0,8 / 1,2	235	4,0	3 780	4 725	200 x 370 x 400	47
FRJJS 7304-0,8/10x29,6/2	0,8 / 1,1	296	2,0	2 383	2 976	200 x 370 x 400	47
FRJJS 7304-0,8/10x32/3	0,8 / 1,0	320	3,0	3 860	4 825	200 x 370 x 400	47
FRJJS 7304-0,8/10x36/2,5	0,8 / 1,0	360	2,5	3 619	4 524	200 x 370 x 400	47
FRJJS 7304-0,8/10x50/2	0,8 / 0,9	500	2,0	4 021	5 026	200 x 370 x 400	47
FRJJS 7304-0,8/10x68/1,1	0,8 / 0,8	680	1,1	3 008	3 760	200 x 370 x 400	47
FRJJS 7304-1,0/10x16,5/4	1,0 / 1,4	165	4,0	4 147	4 147	200 x 370 x 400	47
FRJJS 7304-1,0/10x20/3	1,0 / 1,3	200	3,0	3 770	3 770	200 x 370 x 400	47
FRJJS 7304-1,0/10x36/2	1,0 / 1,1	360	2,0	4 524	4 524	200 x 370 x 400	47
FRJJS 7304-1,0/10x45/1,5	1,0 / 1,0	450	1,5	4 240	4 240	200 x 370 x 400	47
FRJJS 7304-1,0/10x57,7/1	1,0 / 1,0	577	1,0	3 625	3 625	200 x 370 x 400	47
FRJJS 7304-1,325/10x32/1,4	1,325 / 1,325	320	1,4	4 942	3 730	200 x 370 x 400	47

Other voltage, power and frequency on request.

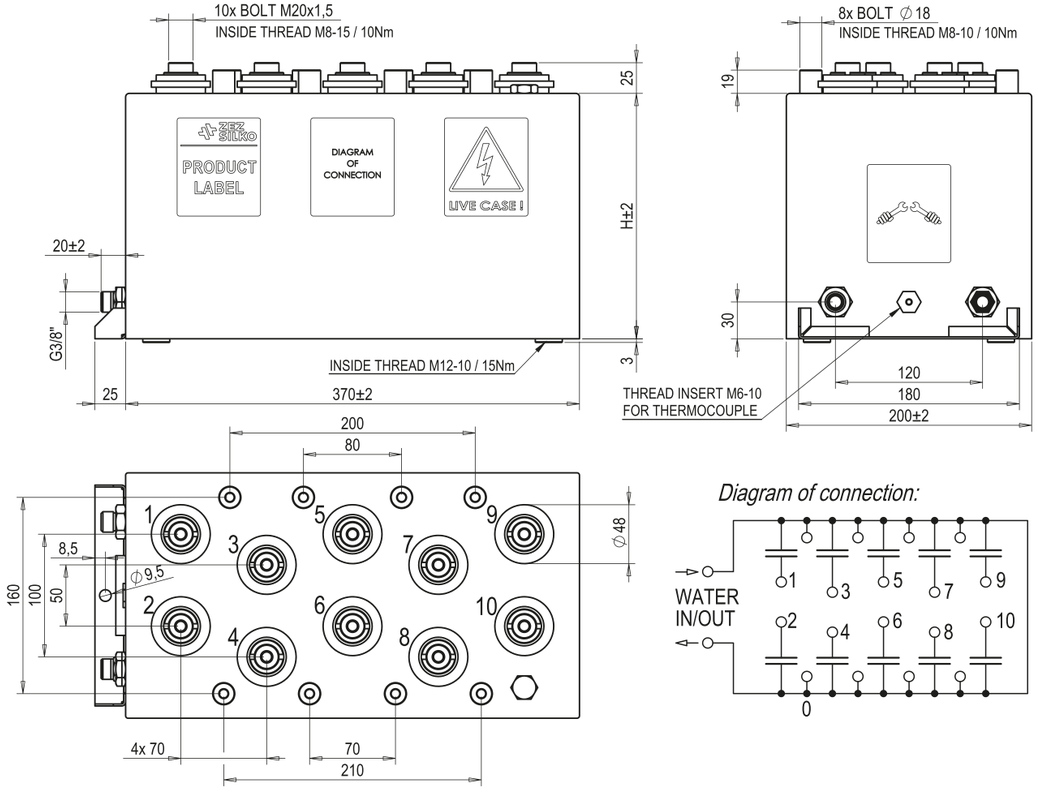


Diagram of connection:

FRJJS 76..-$U_n/C_n/f_n$

Maximum single parameters of product line

Max output	Q_{Nmax}	6 000 kvar
Max voltage	U_{Nmax}	2 000 V
Max current	I_{Nmax}	3 000 A
Max frequency	f_{Nmax}	5 000 Hz
Design	LIVE CASE	

Standards	IEC 60110-1:1998; EN 60110-1:1998
Capacitance tolerance	-5 / +10%
Ambient temperature	1°C ... 50°C
Power losses	< 0,3 W/kvar
Water-cooling	WF
Max. outlet water temperature	35°C
Water flow rate	> 5 l/min
Presure drop at 5 l/min	< 0,1 bar
Water pressure	6 bar
Over-voltage	1,05 x U_N; 12 hours/day
Over-current	1,15 x I_N
Voltage test between terminals	2,0x U_N AC / 10s or 4,0x U_N DC / 10s
Operation	only at cooled busbar <50°C
Case	brass welded, painted (RAL 7035)
Dielectric system	all-film
Impregnant	Jarylec (non-toxic, non-PCB)
Instalation	indoor
Protection degree	IP 00

Type	U_N (kV)	C_N (µF)	f_N (kHz)	Q_N (kvar)	I_N (A)	Dimensions W x L x H (mm)	Weight (kg)	Brackets
FRJJS 7620-0,8/6x24/4	0,8	145	4,0	2 316	2 895	200 x 370 x 200	21	No
FRJJS 7620-0,8/6x31/3	0,8	186	3,0	2 246	2 805	200 x 370 x 200	21	No
FRJJS 7625-0,8/6x38/2,4	0,8	228	2,4	2 200	2 750	200 x 370 x 250	26	No
FRJJS 7625-1,0/6x30/2,4	1,0	180	2,4	2 714	2 714	200 x 370 x 250	26	No
FRJJS 7625-2/6x8,5/3,3	2,0	51	3,3	4 230	2 115	200 x 370 x 250	26	No

Type	U_N (kV)	C_N (µF)	f_N (kHz)	Q_N (kvar)	I_N (A)	Dimensions W x L x H (mm)	Weight (kg)	Brackets
FRJJS 7640-0,6/6x106/1	0,6	636	1,0	1 440	2 400	200 x 370 x 400	42	Yes
FRJJS 7640-0,8/6x50/2	0,8	300	2,0	2 412	3 016	200 x 370 x 400	42	Yes
FRJJS 7640-0,8/6x62,5/1,5	0,8	375	1,5	2 262	2 827	200 x 370 x 400	42	Yes
FRJJS 7640-0,8/6x84/1	0,8	504	1,0	2 027	2 533	200 x 370 x 400	42	Yes
FRJJS 7640-0,8/6x97,4/1	0,8	584	1,0	2 350	2 938	200 x 370 x 400	42	Yes
FRJJS 7640-1,0/6x62,5/1,2	1,0	375	1,2	2 826	2 826	200 x 370 x 400	42	Yes
FRJJS 7640-1,4/6x31/1,4	1,4	186	1,4	3 208	2 291	200 x 370 x 400	42	Yes
FRJJS 7640-1,5/6x16/3	1,5	96	3,0	4 072	2 714	200 x 370 x 400	42	Yes
FRJJS 7640-1,8/6x23,4/2	1,8	141	2,0	5 742	3 180	200 x 370 x 400	42	Yes

Other voltage, power and frequency on request.

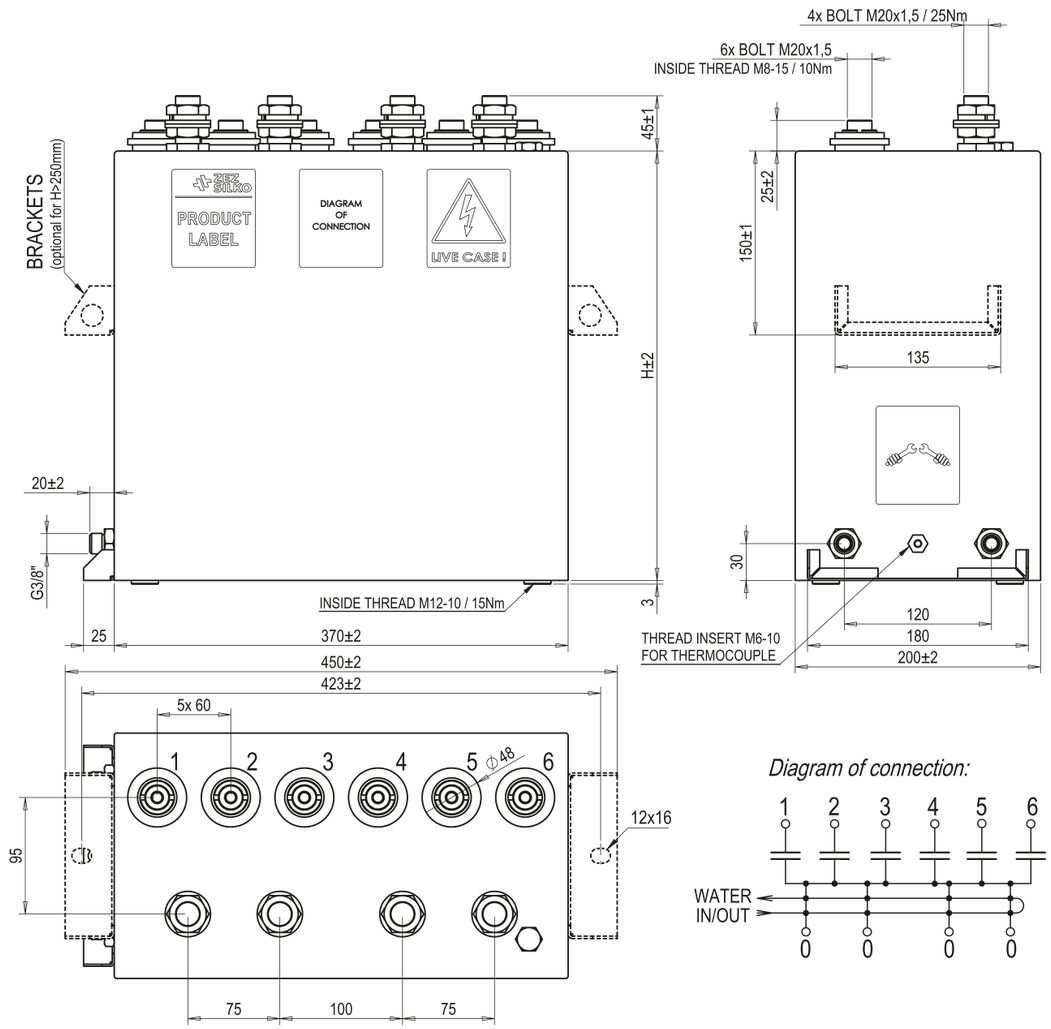


Diagram of connection:

FRHJS 61..-$U_n/C_n/f_n$

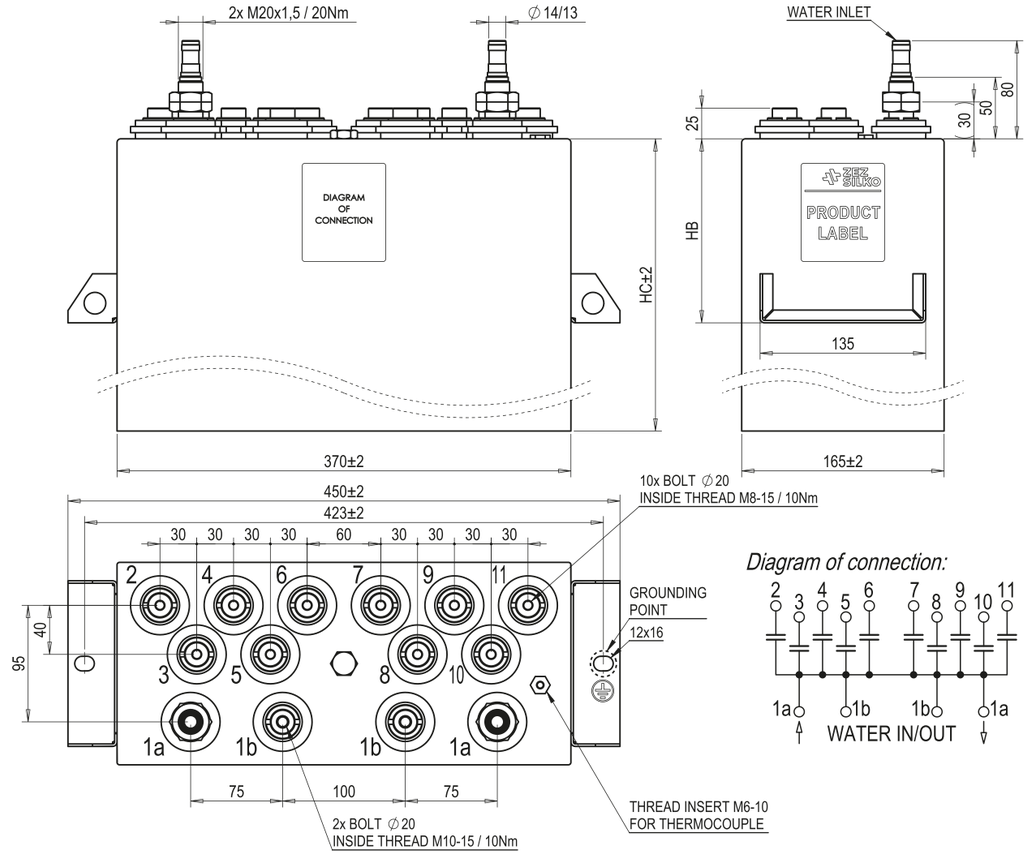
Maximum single parameters of product line

Max output	Q_{Nmax}	5 000 kvar
Max voltage	U_{Nmax}	2 000 V
Max current	I_{Nmax}	4 000 A
Max frequency	f_{Nmax}	5 000 Hz
Design	DEAD CASE	

Standards	IEC 60110-1:1998; EN 60110-1:1998
Capacitance tolerance	-5 / +10%
Ambient temperature	1°C ... 50°C
Power losses	< 0,3 W/kvar
Water-cooling	WF
Max. outlet water temperature	40°C
Water flow rate	> 10 l/min
Presure drop at 10 l/min	< 0,4 bar
Water pressure	6 bar
Over-voltage	1,05 x U_N; 12 hours/day
Over-current	1,15 x I_N
Voltage test between terminals	2,0x U_N AC / 10s or 4,0x U_N DC / 10s
Voltage test between terminals and case	5 000 V AC / 10s
Case	brass welded, painted (RAL 7035)
Dielectric system	all-film
Impregnant	Jarylec (non-toxic, non-PCB)
Instalation	indoor
Protection degree	IP 00

Type	**U_N** (kV)	**C_N** (µF)	**f_N** (kHz)	**Q_N** (kvar)	**I_N** (A)	**Dimensions** W x L x H (mm)	**Weight** (kg)
FRHJS 6132-0,75/211/3,75	0,75	211	3,75	2 800	3 730	165 x 370 x 325	28
FRHJS 6132-0,75/265/2,5	0,75	265	2,5	2 350	3 133	165 x 370 x 325	28
FRHJS 6132-0,8/200/2,5	0,8	200	2,5	2 010	2 513	165 x 370 x 325	28
FRHJS 6132-1,0/159/3,75	1,0	159	3,75	3 750	3 750	165 x 370 x 325	28
FRHJS 6132-1,5/94/3,75	1,5	94,0	3,75	5 000	3 333	165 x 370 x 325	28
FRHJS 6140-0,8/320/2,5	0,8	320	2,5	3 217	4 021	165 x 370 x 400	36
FRHJS 6145-0,8/497/1,25	0,8	497	1,25	2 500	3 125	165 x 370 x 450	40
FRHJS 6145-1,0/398/1,25	1,0	398	1,25	3 125	3 125	165 x 370 x 450	40

Other voltage, power and frequency on request.



FRJJS 15..-U_n/C_n/f_n

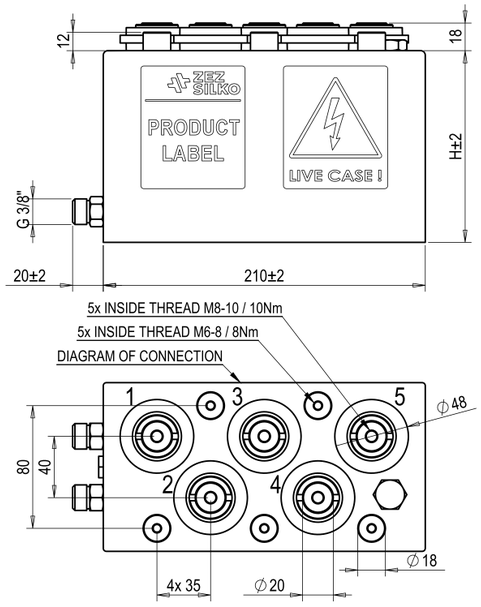
Maximum single parameters of product line

Max output	Q_{Nmax}	2 500 kvar
Max voltage	U_{Nmax}	2 500 V
Max current	I_{Nmax}	1 700 A
Max frequency	f_{Nmax}	150 000 Hz
Design	LIVE CASE	

Standards	IEC 60110-1:1998; EN 60110-1:1998
Capacitance tolerance	-5 / +10%
Ambient temperature	1°C ... 50°C
Power losses	< 0,35 W/kvar
Water-cooling	WF
Max. outlet water temperature	40°C
Water flow rate	> 4 l/min
Presure drop at 4 l/min	< 0,1 bar
Water pressure	6 bar
Over-voltage	1,05 x U_N; 12 hours/day
Over-current	1,15 x I_N
Voltage test between terminals	2,0x U_{MAX} AC / 10s or 4,0x U_{MAX} DC / 10s
Operation	only at cooled busbar <40°C
Case	copper welded, painted (RAL 7035)
Dielectric system	all-film
Impregnant	Jarylec (non-toxic, non-PCB)
Instalation	indoor
Protection degree	IP 00

Type	**U_N / U_{MAX}** (kV)	**C_N** (µF)	**f_N** (kHz)	**Q_N** (kvar)	**I_N** (A)	**Dimensions** W x L x H (mm)	**Weight** (kg)
FRJJS 1501-1,2/2,65/50	1,2 / 1,5	2,65	50	1 200	1 000	110 x 210 x 100	5,5
FRJJS 1501-1,3/3/40	1,3 / 1,5	3,00	40	1 275	980	110 x 210 x 100	5,5
FRJJS 1501-1,6/2/50	1,6 / 2,0	2,00	50	1 608	1 005	110 x 210 x 100	5,5
FRJJS 1501-1,8/0,7/130	1,8 / 2,0	0,70	130	1 850	1 030	110 x 210 x 100	5,5
FRJJS 1502-1,0/10/20	1,0 / 1,2	10,0	20	1 257	1 257	110 x 210 x 125	7
FRJJS 1502-1,5/3,68/30	1,5 / 1,7	3,68	30	1 560	1 040	110 x 210 x 125	7
FRJJS 1502-1,5/4,5/25	1,5 / 1,7	4,50	25	1 590	1 060	110 x 210 x 125	7
FRJJS 1503-0,8/20/15	0,8 / 1,0	20,0	15	1 206	1 508	110 x 210 x 162	9
FRJJS 1503-0,9/16/15	0,9 / 1,1	16,0	15	1 222	1 358	110 x 210 x 162	9
FRJJS 1503-1,5/6/20	1,5 / 1,7	6,00	20	1 700	1 133	110 x 210 x 162	9
FRJJS 1504-1,0/22/10	1,0 / 1,2	22,0	10	1 382	1 382	110 x 210 x 185	10
FRJJS 1504-1,3/16/10	1,3 / 1,5	16,0	10	1 700	1 006	110 x 210 x 185	10
FRJJS 1504-1,5/12/12	1,5 / 1,7	12,0	12	2 036	1 357	110 x 210 x 185	10

Other voltage, power and frequency on request.



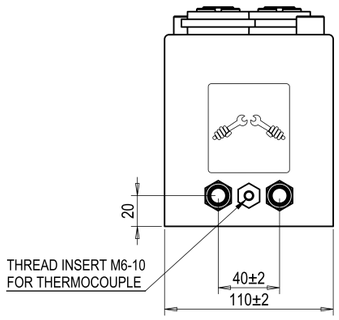
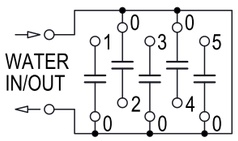


Diagram of connection:



FRJJS 19..-$U_n/C_n/f_n$

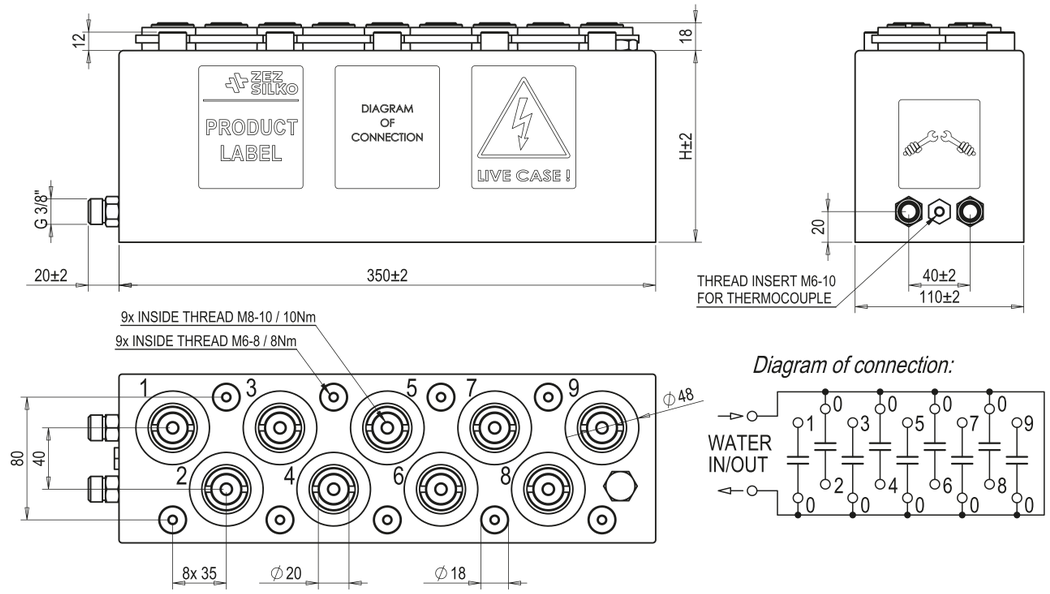
Maximum single parameters of product line

Max output	Q_{Nmax}	5 000 kvar
Max voltage	U_{Nmax}	2 500 V
Max current	I_{Nmax}	3 000 A
Max frequency	f_{Nmax}	200 000 Hz
Design	LIVE CASE	

Standards	IEC 60110-1:1998; EN 60110-1:1998
Capacitance tolerance	-5 / +10%
Ambient temperature	1°C ... 50°C
Power losses	< 0,35 W/kvar
Water-cooling	WF
Max. outlet water temperature	40°C
Water flow rate	> 8 l/min
Presure drop at 8 l/min	< 0,2 bar
Water pressure	6 bar
Over-voltage	1,05 x U_N; 12 hours/day
Over-current	1,15 x I_N
Voltage test between terminals	2,0x U_{MAX} AC / 10s or 4,0x U_{MAX} DC / 10s
Operation	only at cooled busbar <40°C
Case	copper welded, painted (RAL 7035)
Dielectric system	all-film
Impregnant	Jarylec (non-toxic, non-PCB)
Instalation	indoor
Protection degree	IP 00

Type	**U_N / U_{MAX}** (kV)	**C_N** (µF)	**f_N** (kHz)	**Q_N** (kvar)	**I_N** (A)	**Dimensions** W x L x H (mm)	**Weight** (kg)
FRJJS 1901-1,5/1,2/200	1,5 / 2,0	1,20	200	3 393	2 262	110 x 350 x 100	8
FRJJS 1901-1,5/2/150	1,5 / 2,0	2,00	150	4 241	2 827	110 x 350 x 100	8
FRJJS 1901-1,5/3/100	1,5 / 2,0	3,00	100	4 241	2 827	110 x 350 x 100	8
FRJJS 1901-2,0/1,2/120	2,0 / 2,4	1,20	120	3 600	1 508	110 x 350 x 100	8
FRJJS 1901-2,0/2/70	2,0 / 2,4	2,00	70	3 520	1 760	110 x 350 x 100	8
FRJJS 1902-1,0/18/20	1,0 / 1,2	18,0	20	2 260	2 260	110 x 350 x 125	10
FRJJS 1902-2,0/4,5/35	2,0 / 2,2	4,50	35	3 960	1 980	110 x 350 x 125	10
FRJJS 1903-0,8/24/20	0,8 / 1,3	24,0	20	1 930	2 412	110 x 350 x 162	13
FRJJS 1903-2,0/7,5/20	2,0 / 2,4	7,50	20	3 770	1 885	110 x 350 x 162	13
FRJJS 1904-1,8/12/15	1,8 / 2,2	12,0	15	3 664	2 036	110 x 350 x 185	14
FRJJS 1904-2,0/9,95/20	2,0 / 2,4	9,95	20	5 000	2 500	110 x 350 x 185	14
FRJJS 1904-2,0/18/10	2,0 / 2,0	18,0	10	4 525	2 263	110 x 350 x 185	14

Other voltage, power and frequency on request.



FUBJS 0.. - $U_n/C_n/f_n$ - MIDICOAX

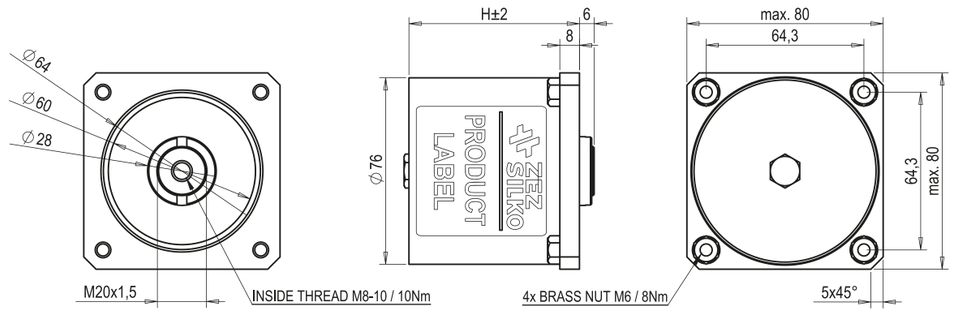
Maximum single parameters of product line

Max output	Q_{Nmax}	500 kvar
Max voltage	U_{Nmax}	2 000 V
Max current	I_{Nmax}	260 A
Max frequency	f_{Nmax}	200 000 Hz
Design	LIVE CASE	

Standards	IEC 60110-1:1998; EN 60110-1:1998
Capacitance tolerance	-5 / +10%
Ambient temperature	1°C ... 50°C
Power losses	< 0,3 W/kvar
Cooling by contact cooling	< 50°C
Over-voltage	1,05 x U_N; 12 hours/day
Over-current	1,15 x I_N
Voltage test between terminals	2,0x U_N AC / 10s or 4,0x U_N DC / 10s
Operation	only at cooled busbar <50°C
Case	copper
Dielectric system	all-film
Impregnant	Jarylec (non-toxic, non-PCB)
Instalation	indoor
Protection degree	IP 00

Type	**U_N** (kV)	**C_N** (μF)	**f_N** (kHz)	**Q_N** (kvar)	**I_N** (A)	**Case height** H (mm)	**Weight** (kg)
FUBJS 02 - 1,0/0,6/50	1,0	0,60	50	188	188	68	1,1
FUBJS 02 - 1,0/1,1/30	1,0	1,10	30	207	207	68	1,1
FUBJS 02 - 1,2/0,75/30	1,2	0,75	30	204	170	68	1,1
FUBJS 02 - 1,4/0,09/250	1,4	0,09	250	277	197	68	1,1
FUBJS 02 - 1,4/0,22/103	1,4	0,22	103	280	200	68	1,1
FUBJS 02 - 1,6/0,33/50	1,6	0,33	50	265	166	68	1,1
FUBJS 02 - 1,8/0,17/70	1,8	0,17	70	242	135	68	1,1
FUBJS 02 - 1,8/0,09/200	1,8	0,09	200	366	204	68	1,1
FUBJS 02 - 1,8/0,022/200	1,8	0,022	200	90	50	68	1,1
FUBJS 02 - 1,8/0,044/200	1,8	0,044	200	180	100	68	1,1
FUBJS 02 - 1,8/0,064/200	1,8	0,064	200	260	145	68	1,1

Other voltage, power and frequency on request.



FUJJS 0.. - $U_n/C_n/f_n$ - COAX

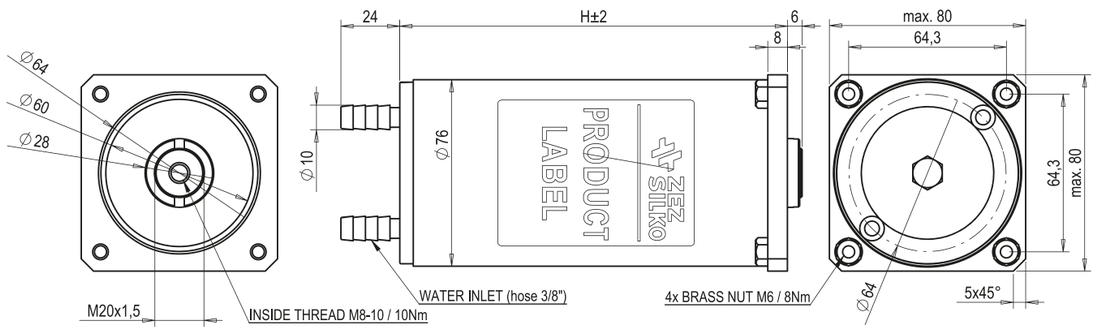
Maximum single parameters of product line

Max output	Q_{Nmax}	1 000 kvar
Max voltage	U_{Nmax}	2 000 V
Max current	I_{Nmax}	560 A
Max frequency	f_{Nmax}	70 000 Hz
Design	LIVE CASE	

Standards	IEC 60110-1:1998; EN 60110-1:1998
Capacitance tolerance	-5 / +10%
Ambient temperature	1°C ... 50°C
Power losses	< 0,3 W/kvar
Water-cooling and cooled busbars	WF
Max. outlet water temperature	35°C
Water flow rate	> 5 l/min
Presure drop at 5 l/min	< 0,05 bar
Water pressure	6 bar
Over-voltage	1,05 x U_N; 12 hours/day
Over-current	1,15 x I_N
Voltage test between terminals	2,0x U_N AC / 10s or 4,0x U_N DC / 10s
Operation	only at cooled busbar <50°C
Case	copper
Dielectric system	all-film
Impregnant	Jarylec (non-toxic, non-PCB)
Instalation	indoor
Protection degree	IP 00

Type	U_N (kV)	C_N (µF)	f_N (kHz)	Q_N (kvar)	I_N (A)	Case height H (mm)	Weight (kg)
FUJJS 01 - 0,5/10/15	0,5	10,0	15	236	472	158	1,9
FUJJS 01 - 0,8/11,5/8	0,8	11,5	8	370	462	158	1,9
FUJJS 01 - 0,8/9,0/10	0,8	9,0	10	362	453	158	1,9
FUJJS 01 - 1,0/6,7/12	1,0	6,7	12	505	505	158	1,9
FUJJS 01 - 1,3/4,5/12	1,3	4,5	12	573	441	158	1,9
FUJJS 01 - 1,6/3,5/15,5	1,6	3,5	15,5	872	545	158	1,9
FUJJS 01 - 1,8/2,4/16,5	1,8	2,4	16,5	810	448	158	1,9
FUJJS 05 - 0,4/6/25	0,4	6,0	25	151	377	113	1,6
FUJJS 05 - 0,6/4/25	0,6	4,0	25	225	375	113	1,6
FUJJS 05 - 0,6/5,6/20	0,6	5,6	20	250	420	113	1,6
FUJJS 05 - 0,8/4,4/20	0,8	4,4	20	354	442	113	1,6
FUJJS 05 - 1,4/1,4/30	1,4	1,4	30	517	370	113	1,6
FUJJS 06 - 1,325/0,9/40	1,325	0,9	40	397	300	98	1,3
FUJJS 06 - 1,7/0,47/50	1,7	0,47	50	423	251	98	1,3
FUJJS 06 - 1,7/0,6/40	1,7	0,6	40	435	256	98	1,3
FUJJS 06 - 1,7/0,8/35	1,7	0,8	35	508	299	98	1,3
FUJJS 06 - 1,8/1,2/20	1,8	1,2	20	488	271	98	1,3
FUJJS 06 - 1,8/1,2/25	1,8	1,2	25	610	340	98	1,3
FUJJS 07 - 0,6/1,0/70	0,6	1,0	70	158	264	76	1,15
FUJJS 07 - 1,7/0,33/70	1,7	0,33	70	420	247	76	1,15

Other voltage, power and frequency on request.



FZOJP ... - $U_n/C_n/f_n$

Maximum single parameters of product line

Max output	Q_{Nmax}	360 kvar
Max voltage	U_{Nmax}	800 V
Max current	I_{Nmax}	3x 220 A
Max frequency	f_N	50/60 Hz
Design	DEAD CASE	

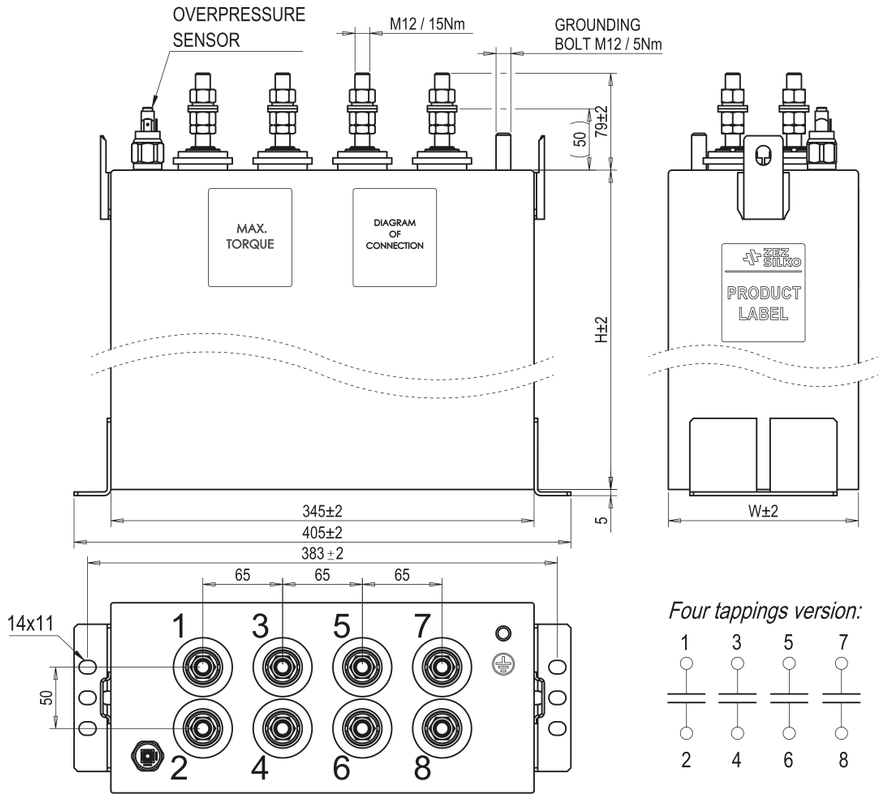
Standards	EN 60831-1 *)
Capacitance tolerance	-5 / +10%
Power losses	< 0,3 W/kvar
Air-cooling (self ventilated)	AN
Maximum ambient temperature	40°C
Temperature category	-25/A
Min. distance between units	20 mm
Over-voltage	1,05 x U_N; 12 hours/day
Over-current	1,15 x I_N
Voltage test between terminals	2,15x U_N AC / 2s or 3,0x U_N DC / 10s
Voltage test between terminals and case	2xU_N AC + 2kV (min. 3kV) / 10s
Case	aluminium
Dielectric system	MKP type, dry type, selfhealing
Instalation	indoor
Protection degree	IP 00

*) Operation only with connected overpressure sensor.
*) Operating with the resistance switching contactors.

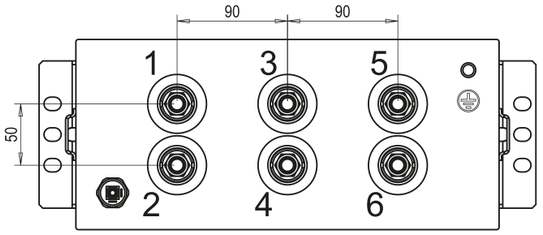
Type	U_N (kV)	C_N (µF)	f_N (kHz)	Q_N (kvar)	I_N (A)	Dimensions W x L x H (mm)	Weight (kg)	Number of tappings
FZOJP 31361-0,4/3x1382/0,06	400	3x 1 382	60	3x 83,3	3x 208	130 x 345 x 610	33	3
FZOJP 31362-0,44/3x1292/0,06	440	3x 1 292	60	3x 94,3	3x 214	130 x 345 x 620	33	3
FZOJP 31374-0,5/3x1235/0,055	500	3x 1 235	55	3x 106,7	3x 213	130 x 345 x 740	40	3
FZOJP 31562-0,6/2x1326/0,05	600	2x 1 326,3	50	2x 150	2x 250	155 x 345 x 620	40	2
FZOJP 31562-0,6/3x884/0,05	600	3x 884	50	3x 100	3x 167	155 x 345 x 620	40	3
FZOJP 31564-0,5/3x1082/0,06	500	3x 1 082	60	3x 102	3x 204	155 x 345 x 640	41	3
FZOJP 31564-0,6/3x754/0,06	600	3x 754	60	3x 102	3x 171	155 x 345 x 640	41	3
FZOJP 31567-0,5/3x1118/0,06	500	3x 1 118	60	3x 105	3x 211	155 x 345 x 670	43	3
FZOJP 31574-0,6/3x904/0,06	600	3x 904	60	3x 123	3x 204	155 x 345 x 740	47	3
FZOJP 31574-0,65/3x904/0,05	650	3x 904	50	3x 120	3x 185	155 x 345 x 740	47	3
FZOJP 31554-0,38/4x1378/0,06	380	4x 1 378	60	4x 75	4x 197	155 x 345 x 540	35	4
FZOJP 31572-0,6/4x737/0,06	600	4x 737	60	4x 100	4x 167	155 x 345 x 720	46	4
FZOJP 31572-0,72/4x614/0,05	720	4x 614	50	4x 100	4x 139	155 x 345 x 720	46	4

Other voltage, power and frequency on request.

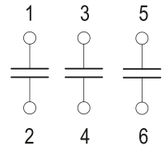
AIR COOLED, LOW FREQUENCY CAPACITORS

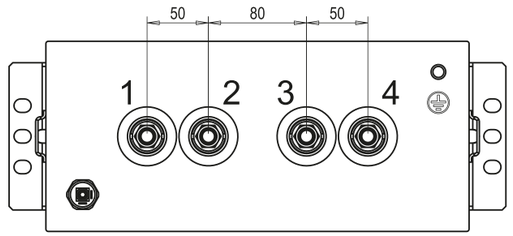


Four tappings version:

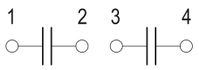


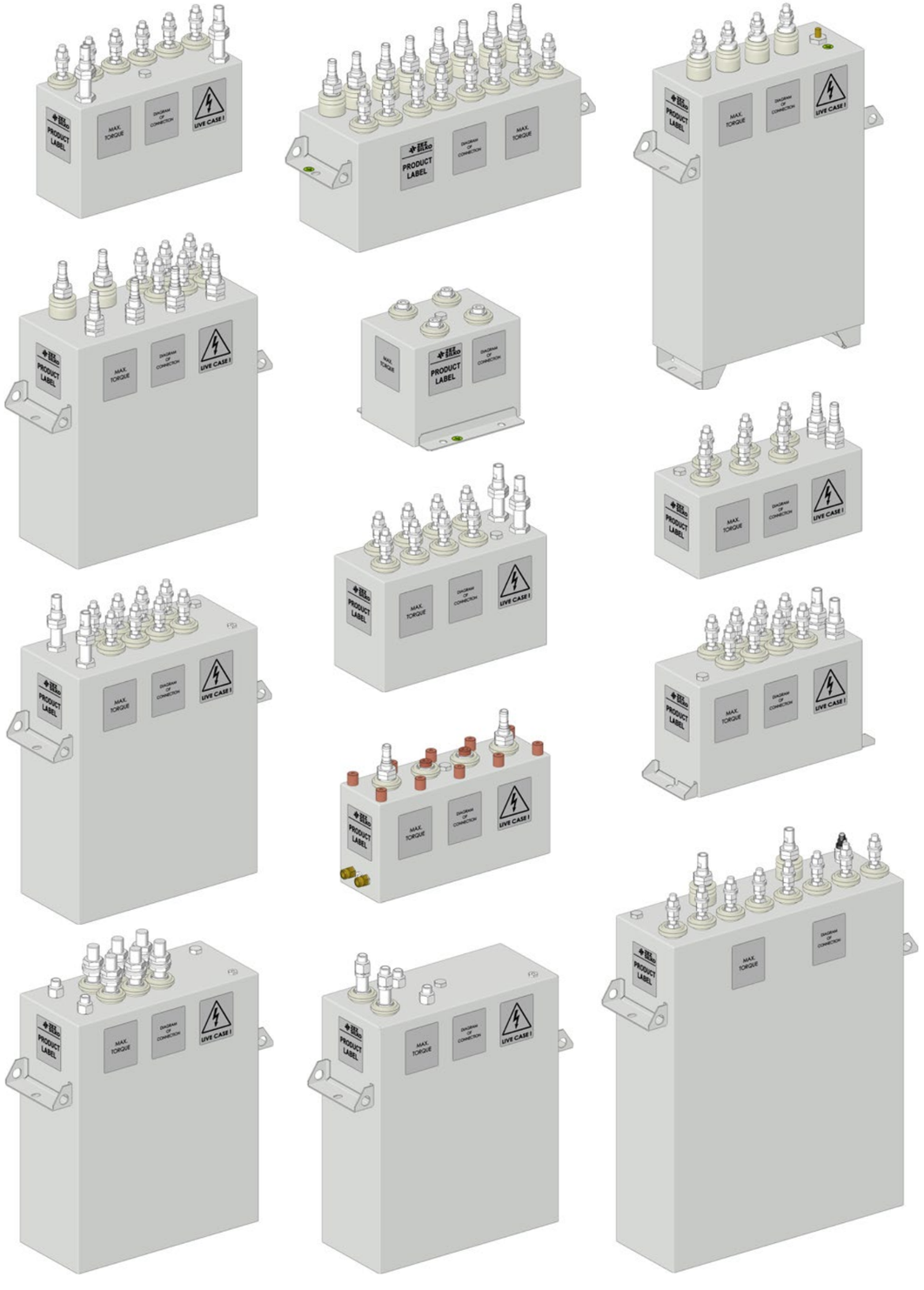
Three tappings version:





Two tappings version:





Order information

Standards:	IEC 60110-1:1998; EN60110-1:1998
Rated voltage:	U_N. V
Rated frequency:	f_N . . . . . .Hz
Rated capacitance:	C_N. . . . . .µF or **Rated power:** Q_N. . . . . .kvar
Case design:	Live or Dead case
Tappings:	Number of tappings, capacitance for tappings (different capacitance for each individual tapping is possible)
Cooling:	WF - water cooling AF – forced air cooling AN – natural air cooling
Customer design:	In case of request of different dimensions or differrent number of tappings, you may provide us a drawing or sketch with requested modification of case, brackets, tappings, etc.

Formula for calculation

$$Q_N = U_N^2 \times C_N \times 2\pi \times f_N \times 10^{-9} \left[\text{kvar}\right]$$

$$I_N = U_N \times C_N \times 2\pi \times f_N \times 10^{-6} \left[A\right]$$

$$I_N = \frac{Q_N}{U_N} \times 10^3 \left[A\right]$$

Used units

$U_N \left[V\right]$

$C_N \left[\mu F\right]$

$f_N \left[Hz\right]$

$Q_N \left[\text{kvar}\right]$

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