

Power Factor Correction Systems

Power Factor Correction Systems – detuned



LSFC-P

Power Factor Correction Systems – detuned

- Power Range: 75 to 500 kvar
- Modular construction in freestanding sheet steel cabinet
- Ready for connection
- Fully automatic and intelligent Power Factor Control Relay
- Power Factor Correction Capacitors LKT dry-type with triple safety feature

// Application Recommendations

Power Factor Correction Systems, type LSFC-P are suitable for compensation in networks with harmonic distortion according to EN 61000 class 2.

They are available as follows:

Version	Detuning factor	Resonance frequency
P1	$p = 14 \%$	134 Hz
P7	$p = 7 \%$	189 Hz
P8	$p = 8 \%$	177 Hz

// Power Range

Power Factor Correction System in sheet steel cabinet:

- 75 to 500 kvar

// Design

The ready-for-connection Power Factor Correction System consists of pre-assembled capacitor-reactor modules, type C6XD... or C8XD... and the suitable sheet steel cabinet.

The cabinet contains:

- Self-healing LKT type power capacitors with low-loss self-healing dielectric made from segmented metallised polypropylene film. Filled with a PCB-free filler. With discharge resistors, as per EN 60831-1 and -2 as well as IEC 60831-1 and -2
- Heavy duty Capacitor Switching Contactors
- Harmonic Filter Reactors with overtemperature switch
- Fuse links, 3-pole, size NH00
- Control terminal strip with control fuse and thermal trip contact for safety shutdown
- Intelligent Power Factor Control Relay RM 9606 or EMR 1100 S
- Thermostatically controlled motor fan

// Installation Site

The place of installation must comply with the requirements of the ingress protection and ambient temperature concerned.

// Regulations

For installation and connection of Power Factor Correction Capacitors in Germany the following regulations must be complied with: VDE 0100, VDE 0105, VDE 0560 Part 46 and VDE 0106 Part 100 (German Association of Electrical Engineers). In other countries the equivalent local regulations must be followed.

// Connection

The power supply cable and the current transformer cable enter the bottom of the cabinet through a sliding gland plate and a cable clamp rail, the power supply being connected to the busbar system and the current transformer cable to the terminal strip provided.

// System Expansion

An extension of the system is possible by adding LSFCZ-P extension units. This extension unit will be integrated in the existing control circuit via the control cable (supplied with the extension unit).

// Technical Data

Design	Sheet steel cabinet with door right hinged
Rated voltage	400 V/50 Hz
Rated voltage of capacitors	440 V/50 Hz
Ambient temperature	-5 °C to +40 °C
Humidity	Max. 90 %, no condensation
Cabinet colour	RAL 7035
Standards	EN 60831-1 and -2 IEC 60831-1 and -2 EN 61921 VDE 0660 Part 600-1 and -2 EN 61439-1 and -2

// Important Notes

For further information on power factor correction and harmonics please refer to our „Manual of Power Factor Corrections“.

FRAKO systems are designed for connecting 5 core cables. If a 4-core cable is used, a jumper must be fitted to connect PE and N, or a control transformer must be installed.

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Version: P1 (Detuning factor $p = 14\%$)

Article-No.	Type	Rated power [kvar]	Stage power [kvar]	Switching sequence	Dimensions			Weight (gross) approx. [kg]	Protection IP
					Width [mm]	Height [mm]	Depth [mm]		

Power Factor Correction Systems in sheet steel cabinets (width = 600 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFC ...-P1

34-19409	LSFC 75-6,25-212-400-64-606-P1	75	6.25	1:1:2:4	600	2000	400	189	20
34-21484	LSFC 75-12,5-11A-400-64-606-P1	75	12.5	1:2:3	600	2000	400	198	20
34-19410	LSFC 75-12,5-22-400-64-606-P1	75	12.5	1:1:2	600	2000	400		20
34-22300	LSFC 87,5-6,25-211A-400-64-606-P1	87.5	6.25	1:1:2:4:6	600	2000	400		20
34-22301	LSFC 87,5-12,5-21A-400-64-606-P1	87.5	12.5	1:1:2:3	600	2000	400		20
34-22302	LSFC 100-6,25-213-400-64-606-P1	100	6.25	1:1:2:4	600	2000	400		20
34-22291	LSFC 100-12,5-23-400-64-606-P1	100	12.5	1:1:2	600	2000	400		20
34-22295	LSFC 100-25-4-400-64-606-P1	100	25	1:1:1	600	2000	400		20
34-22296	LSFC 112,5-12,5-11B-400-64-606-P1	112.5	12.5	1:2:3	600	2000	400		20
34-22297	LSFC 125-12,5-21B-400-64-606-P1	125	12.5	1:1:2:3	600	2000	400		20
34-22298	LSFC 150-37,5-4-400-64-606-P1	150	37.5	1:1:1	600	2000	400		20
34-22294	LSFC 150-25-22-400-66-606-P1	150	25	1:1:2	600	2000	400		20
34-22293	LSFC 175-25-13-400-66-606-P1	175	25	1:2:2	600	2000	600		20
34-22292	LSFC 200-50-4-400-66-606-P1	200	50	1:1:1	600	2000	600		20

Power Factor Correction Systems, extension units in sheet steel cabinets (width = 600 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFCZ ...-P1

34-16224	LSFCZ 100-50-2-400-64-P1	100	50	1:1	600	2000	400	175	20
34-16225	LSFCZ 150-50-3-400-64-P1	150	50	1:1:1	600	2000	400	208	20
34-16226	LSFCZ 200-50-4-400-64-P1	200	50	1:1:1:1	600	2000	400	213	20

Power Factor Correction Systems in sheet steel cabinets (width = 800 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFC ...-P1

34-19103	LSFC 100-12,5-211-400-85-606-P1	100	12.5	1:1:2:4	800	2110	500	257	41
34-19104	LSFC 100-25-21-400-85-606-P1	100	25	1:1:2	800	2110	500	251	41
34-19105	LSFC 125-12,5-221-400-85-606-P1	125	12.5	1:1:2:2:4	800	2110	500	282	41
34-19106	LSFC 125-25-12-400-85-606-P1	125	25	1:2:2	800	2110	500	264	41
34-19107	LSFC 150-12,5-212-400-85-606-P1	150	12.5	1:1:2:4	800	2110	500	309	41
34-19108	LSFC 150-25-22-400-85-606-P1	150	25	1:1:2:2	800	2110	500	301	41
34-19109	LSFC 175-25-13-400-85-606-P1	175	25	1:2:2:2	800	2110	500	328	41
34-19304	LSFC 200-12,5-213-400-85-606-P1	200	12.5	1:1:2:4	800	2110	500	340	41
34-19110	LSFC 200-25-23-400-85-606-P1	200	25	1:1:2:2	800	2110	500	371	41
34-19111	LSFC 225-25-14-400-85-606-P1	225	25	1:2:2:2	800	2110	500	382	41
34-19112	LSFC 250-25-24-400-85-606-P1	250	25	1:1:2:2	800	2110	500	416	41
34-19113	LSFC 250-50-5-400-85-606-P1	250	50	1:1:1:1	800	2110	500	403	41
34-19114	LSFC 275-25-15-400-85-606-P1	275	25	1:2:2:2	800	2110	500	427	41
34-19115	LSFC 300-25-25-400-85-111-P1	300	25	1:1:2:2	800	2110	500	470	41
34-19116	LSFC 300-50-6-400-85-606-P1	300	50	1:1:1:1	800	2110	500	466	41
34-19117	LSFC 325-25-16-400-85-111-P1	325	25	1:2:2:2	800	2110	500	444	41
34-19118	LSFC 350-25-26-400-85-111-P1	350	25	1:1:2:2	800	2110	500	533	41
34-19119	LSFC 350-50-7-400-85-111-P1	350	50	1:1:1:1	800	2110	500	516	41
34-19120	LSFC 375-25-17-400-85-111-P1	375	25	1:2:2:2	800	2110	500	534	41
34-19121	LSFC 400-50-8-400-85-111-P1	400	50	1:1:1:1	800	2110	500	573	41
34-21844	LSFC 500-50-0-400-86-111-P1	500	50	1:1:1:1	800	2110	600	670	41

Article-No.	Type	Rated power [kvar]	Stage power [kvar]	Switching sequence	Dimensions			Weight (gross) approx. [kg]	Protection IP
					Width [mm]	Height [mm]	Depth [mm]		

Power Factor Correction Systems, extension units in sheet steel cabinets (width = 800 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFCZ ...-P1

34-16209	LSFCZ 100-50-2-400-85-P1	100	50	1:1	800	2110	500	230	41
34-16210	LSFCZ 150-50-3-400-85-P1	150	50	1:1:1	800	2110	500	338	41
34-16211	LSFCZ 200-50-4-400-85-P1	200	50	1:1:1:1	800	2110	500	354	41
34-16212	LSFCZ 250-50-5-400-85-P1	250	50	1:1:1:1	800	2110	500	397	41
34-16213	LSFCZ 300-50-6-400-85-P1	300	50	1:1:1:1	800	2110	500	460	41
34-16214	LSFCZ 350-50-7-400-85-P1	350	50	1:1:1:1	800	2110	500	503	41
34-16215	LSFCZ 400-50-8-400-85-P1	400	50	1:1:1:1	800	2110	500	579	41

Other rated voltages, frequencies and power ratings on request

Recommended supply lead cross sections: please refer to the technical annex (page 145 ff.)

Version: P7 (Detuning factor p = 7 %)

Article-No.	Type	Rated power [kvar]	Stage power [kvar]	Switching sequence	Dimensions			Weight (gross) approx. [kg]	Protection IP
					Width [mm]	Height [mm]	Depth [mm]		

Power Factor Correction Systems in sheet steel cabinets (width = 600 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFC ...-P7

34-19396	LSFC 75-6,25-212-400-64-606-P7	75	6.25	1:1:2:4	600	2000	400	174	20
34-21485	LSFC 75-12,5-11A-400-64-606-P7	75	12.5	1:2:3	600	2000	400	174	20
34-19397	LSFC 75-12,5-22-400-64-606-P7	75	12.5	1:1:2:2	600	2000	400	181	20
34-19398	LSFC 93,75-6,25-1111-400-64-606-P7	93.75	6.25	1:2:4:8	600	2000	400	184	20
34-19399	LSFC 100-12,5-211-400-64-606-P7	100	12.5	1:1:2:4	600	2000	400	188	20
34-19400	LSFC 100-25-21-400-64-606-P7	100	25	1:1:2	600	2000	400	191	20
34-19401	LSFC 125-12,5-221-400-64-606-P7	125	12.5	1:1:2:2:4	600	2000	400	216	20
34-19402	LSFC 125-25-12-400-64-606-P7	125	25	1:2:2	600	2000	400	204	20
34-19403	LSFC 150-12,5-212-400-64-606-P7	150	12.5	1:1:2:4	600	2000	400	233	20
34-19404	LSFC 150-25-22-400-64-606-P7	150	25	1:1:2:2	600	2000	400	228	20
34-19405	LSFC 175-25-13-400-64-606-P7	175	25	1:2:2:2	600	2000	400	243	20
34-19406	LSFC 200-12,5-213-400-64-606-P7	200	12.5	1:1:2:4	600	2000	400	274	20
34-19407	LSFC 200-25-23-400-64-606-P7	200	25	1:1:2:2	600	2000	400	268	20
34-19408	LSFC 200-50-4-400-64-606-P7	200	50	1:1:1:1	600	2000	400	268	20

Power Factor Correction Systems, extension units in sheet steel cabinets (width = 600 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFCZ ...-P7

34-16221	LSFCZ 100-50-2-400-64-P7	100	50	1:1	600	2000	400	181	20
34-16222	LSFCZ 150-50-3-400-64-P7	150	50	1:1:1	600	2000	400	226	20
34-16223	LSFCZ 200-50-4-400-64-P7	200	50	1:1:1:1	600	2000	400	193	20

Power Factor Correction Systems in sheet steel cabinets (width = 800 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFC ...-P7

34-19077	LSFC 100-12,5-211-400-84-606-P7	100	12.5	1:1:2:4	800	2000	400	213	20
34-20482	LSFC 100-12,5-211-400-85-606-P7	100	12.5	1:1:2:4	800	2000	500	202	20
34-19078	LSFC 100-25-21-400-84-606-P7	100	25	1:1:2	800	2000	400	189	20
34-19079	LSFC 125-12,5-221-400-84-606-P7	125	12.5	1:1:2:2:4	800	2000	400	218	20
34-19080	LSFC 125-25-12-400-84-606-P7	125	25	1:2:2	800	2000	400	214	20
34-19081	LSFC 150-12,5-212-400-84-606-P7	150	12.5	1:1:2:4	800	2000	400	234	20
34-19082	LSFC 150-25-22-400-84-606-P7	150	25	1:1:2:2	800	2000	400	234	20
34-19083	LSFC 175-25-13-400-84-606-P7	175	25	1:2:2:2	800	2000	400	247	20
34-19084	LSFC 187,5-12,5-113-400-84-606-P7	187.5	12.5	1:2:4:4	800	2000	400	260	20
34-20483	LSFC 200-12,5-213-400-85-606-P7	200	12.5	1:1:2:4	800	2000	500	288	20
34-19085	LSFC 200-25-23-400-84-606-P7	200	25	1:1:2:2	800	2000	400	263	20
34-19086	LSFC 225-25-14-400-84-606-P7	225	25	1:2:2:2	800	2000	400	294	20
34-19087	LSFC 250-25-24-400-84-606-P7	250	25	1:1:2:2	800	2000	400	314	20
34-19088	LSFC 250-50-5-400-84-606-P7	250	50	1:1:1:1	800	2000	400	308	20

Power Factor Correction Systems

Power Factor Correction Systems – detuned



Article-No.	Type	Rated power [kvar]	Stage power [kvar]	Switching sequence	Dimensions			Weight (gross) approx. [kg]	Protection IP
					Width [mm]	Height [mm]	Depth [mm]		
34-19089	LSFC 275-25-15-400-84-606-P7	275	25	1:2:2:2	800	2000	400	326	20
34-19090	LSFC 300-25-25-400-84-111-P7	300	25	1:1:2:2	800	2000	400	347	20
34-19091	LSFC 300-50-6-400-84-606-P7	300	50	1:1:1:1	800	2000	400	343	20
34-19092	LSFC 325-25-16-400-84-111-P7	325	25	1:2:2:2	800	2000	400	369	20
34-19093	LSFC 350-25-26-400-84-111-P7	350	25	1:1:2:2	800	2000	400	384	20
34-19072	LSFC 350-50-7-400-84-111-P7	350	50	1:1:1:1	800	2000	400	384	20
34-19094	LSFC 375-25-17-400-84-111-P7	375	25	1:2:2:2	800	2000	400	404	20
34-19095	LSFC 400-25-27-400-84-111-P7	400	25	1:1:2:2:2:2:2	800	2000	400	420	20
34-19096	LSFC 400-50-8-400-84-111-P7	400	50	1:1:1:1:1:1:1	800	2000	400	417	20
34-20757	LSFC 500-50-0-400-85-111-P7	500	50	1:1:1:1:1:1:1:1	800	2110	500	509	41

Power Factor Correction Systems, extension units in sheet steel cabinets (width = 800 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFCZ ...-P7

34-16202	LSFCZ 100-50-2-400-84-P7	100	50	1:1	800	2000	400	187	20
34-16203	LSFCZ 150-50-3-400-84-P7	150	50	1:1:1	800	2000	400	229	20
34-16204	LSFCZ 200-50-4-400-84-P7	200	50	1:1:1:1	800	2000	400	261	20
34-16205	LSFCZ 250-50-5-400-84-P7	250	50	1:1:1:1	800	2000	400	279	20
34-16206	LSFCZ 300-50-6-400-84-P7	300	50	1:1:1:1	800	2000	400	345	20
34-16207	LSFCZ 350-50-7-400-84-P7	350	50	1:1:1:1	800	2000	400	387	20
34-16208	LSFCZ 400-50-8-400-84-P7	400	50	1:1:1:1	800	2000	400	418	20

Other rated voltages, frequencies and power ratings on request

Recommended supply lead cross sections: please refer to the technical annex (page 145 ff.)

Version: P8 (Detuning factor p = 8 %)

Article-No.	Type	Rated power [kvar]	Stage power [kvar]	Switching sequence	Dimensions			Weight (gross) approx. [kg]	Protection IP
					Width [mm]	Height [mm]	Depth [mm]		

Power Factor Correction Systems in sheet steel cabinets (width = 600 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFC ...-P8

34-20489	LSFC 75-6,25-212-400-64-606-P8	75	6.25	1:1:2:4	600	2000	400	163	20
34-21486	LSFC 75-12,5-11A-400-64-606-P8	75	12.5	1:1:3	600	2000	400		20
34-20063	LSFC 75-12,5-22-400-64-606-P8	75	12.5	1:1:2:2	600	2000	400	171	30
34-20490	LSFC 93,75-6,25-1111-400-64-606-P8	93.75	6.25	1:2:4:8	600	2000	400	175	20
34-19573	LSFC 100-12,5-211-400-64-606-P8	100	12.5	1:1:2:4	600	2000	400	182	20
34-20491	LSFC 100-25-21-400-64-606-P8	100	25	1:1:2	600	2000	400	184	20
34-20492	LSFC 125-12,5-221-400-64-606-P8	125	12.5	1:1:2:2:4	600	2000	400	206	20
34-20210	LSFC 125-25-12-400-64-606-P8	125	25	1:2:2	600	2000	400	197	20
34-19578	LSFC 150-12,5-212-400-64-606-P8	150	12.5	1:1:2:4	600	2000	400	235	20
34-20380	LSFC 150-25-22-400-64-606-P8	150	25	1:1:2:2	600	2000	400	226	20
34-20493	LSFC 175-25-13-400-64-606-P8	175	25	1:2:2:2	600	2000	400	240	20
34-19579	LSFC 200-12,5-213-400-64-606-P8	200	12.5	1:1:2:4	600	2000	400	271	20
34-20402	LSFC 200-25-23-400-64-606-P8	200	25	1:1:2:2	600	2000	400	265	20
34-20494	LSFC 200-50-4-400-64-606-P8	200	50	1:1:1:1	600	2000	400	256	20

Power Factor Correction Systems, extension units in sheet steel cabinets (width = 600 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFCZ ...-P8

34-16309	LSFCZ 100-50-2-400-64-P8	100	50	1:1	600	2000	400	184	20
34-16392	LSFCZ 150-50-3-400-64-P8	150	50	1:1:1	600	2000	400	167	20
34-16276	LSFCZ 200-50-4-400-64-P8	200	50	1:1:1:1	600	2000	400	189	20

Article-No.	Type	Rated power [kvar]	Stage power [kvar]	Switching sequence	Dimensions			Weight (gross) approx. [kg]	Protection IP
					Width [mm]	Height [mm]	Depth [mm]		

Power Factor Correction Systems in sheet steel cabinets (width = 800 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFC ...-P8

34-20503	LSFC 100-12,5-211-400-84-606-P8	100	12.5	1:1:2:4	800	2000	400	215	20
34-20745	LSFC 100-12,5-211-400-85-606-P8	100	12.5	1:1:2:4	800	2000	500	202	20
34-20170	LSFC 100-25-21-400-84-606-P8	100	25	1:1:2	800	2000	400	189	20
34-19590	LSFC 125-12,5-221-400-84-606-P8	125	12.5	1:1:2:2:4	800	2000	400	220	20
34-19559	LSFC 125-25-12-400-84-606-P8	125	25	1:2:2	800	2000	400	222	20
34-19768	LSFC 150-12,5-212-400-84-606-P8	150	12.5	1:1:2:4	800	2000	400	233	20
34-19123	LSFC 150-25-22-400-84-606-P8	150	25	1:1:2:2	800	2000	400	230	20
34-19238	LSFC 175-25-13-400-84-606-P8	175	25	1:2:2:2	800	2000	400	251	20
34-19911	LSFC 187,5-12,5-113-400-84-606-P8	187.5	12.5	1:2:4:4	800	2000	400	256	20
34-20545	LSFC 200-12,5-213-400-85-606-P8	200	12.5	1:1:2:4	800	2000	500	275	20
34-19248	LSFC 200-25-23-400-84-606-P8	200	25	1:1:2:2	800	2000	400	272	20
34-19261	LSFC 225-25-14-400-84-606-P8	225	25	1:2:2:2	800	2000	400	295	20
34-19864	LSFC 250-25-24-400-84-606-P8	250	25	1:1:2:2	800	2000	400	309	20
34-20383	LSFC 250-50-5-400-84-606-P8	250	50	1:1:1:1	800	2000	400	318	20
34-19458	LSFC 275-25-15-400-84-606-P8	275	25	1:2:2:2	800	2000	400	323	20
34-19264	LSFC 300-25-25-400-84-111-P8	300	25	1:1:2:2	800	2000	400	360	20
34-19203	LSFC 300-50-6-400-84-606-P8	300	50	1:1:1:1	800	2000	400	340	20
34-20495	LSFC 325-25-16-400-84-111-P8	325	25	1:2:2:2	800	2000	400	374	20
34-19639	LSFC 350-25-26-400-84-111-P8	350	25	1:1:2:2	800	2000	400	391	20
34-20496	LSFC 350-50-7-400-84-111-P8	350	50	1:1:1:1	800	2000	400	387	20
34-20179	LSFC 375-25-17-400-84-111-P8	375	25	1:2:2:2	800	2000	400	418	20
34-19257	LSFC 400-25-27-400-84-111-P8	400	25	1:1:2:2	800	2000	400	421	20
34-19204	LSFC 400-50-8-400-84-111-P8	400	50	1:1:1:1	800	2000	400	417	20
34-20935	LSFC 500-50-0-400-85-111-P8	500	50	1:1:1:1	800	2110	500	530	41

Power Factor Correction Systems, extension units in sheet steel cabinets (width = 800 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFCZ ...-P8

34-16277	LSFCZ 100-50-2-400-84-P8	100	50	1:1	800	2000	400	183	20
34-16380	LSFCZ 150-50-3-400-84-P8	150	50	1:1:1	800	2000	400	235	20
34-16338	LSFCZ 200-50-4-400-84-P8	200	50	1:1:1:1	800	2000	400	268	20
34-16285	LSFCZ 250-50-5-400-84-P8	250	50	1:1:1:1	800	2000	400	275	20
34-16301	LSFCZ 300-50-6-400-84-P8	300	50	1:1:1:1	800	2000	400	350	20
34-16393	LSFCZ 350-50-7-400-84-P8	350	50	1:1:1:1	800	2000	400	399	20
34-16374	LSFCZ 400-50-8-400-84-P8	400	50	1:1:1:1	800	2000	400	429	20

Other rated voltages, frequencies and power ratings on request

Recommended supply lead cross sections: please refer to the technical annex (page 145 ff.)

Power Factor Correction Systems

Power Factor Correction Systems – detuned

// Options and accessories for Power Factor Correction Systems type LSFC-P 400 V, 50 Hz

Options, mounted and wired ready for operation

Article-No.	Type	Description	for system type
S34-5502	-111- (instead of -606)	Power Factor Control Relay EMR 1100 S instead of RM 9606	all
S34-5500	-112- (instead of -606)	Power Factor Control Relay EMR 1100 instead of RM 9606	all
S34-5519	-66- (instead of -64-)	FRAKO LSFC-66, WxHxD: 600x2000x600 mm (without floor standing base and roof)	LSFC-64
S34-5528	-66- (instead of -84-)	FRAKO LSFC-66, WxHxD: 600x2000x600 mm (without floor standing base and roof)	LSFC-84
S34-5503	-84- (instead of -64-)	FRAKO LSFC-84, WxHxD: 800x2000x400 mm (without floor standing base and roof)	LSFC-64
S34-5524	-85- (instead of -84-)	FRAKO LSFC-85, WxHxD: 800x2000x500 mm (without floor standing base and roof)	LSFC-84
S34-5517	-86- (instead of -84/85-)	FRAKO LSFC-86, WxHxD: 800x2000x600 mm (without floor standing base and roof)	LSFC-84/-85
S34-5504	-27- (instead of -64-)	Rittal TS 8604, WxHxD: 600x2000x400 mm (without floor standing base and roof)	LSFC-64
S34-5518	-43- (instead of -84/85-)	Rittal TS 8606 WxHxD: 600x2000x600 mm (without floor standing base and roof)	LSFC-84/-85
S34-5505	-29- (instead of -84-)	Rittal TS 8804, WxHxD: 800x2000x400 mm (without floor standing base and roof)	LSFC-84
S34-5506	-24- (instead of -85-)	Rittal TS 8805, WxHxD: 800x2000x500 mm (without floor standing base and roof)	LSFC-85
S34-5527	-10- (instead of -84-)	Rittal TS 8806, WxHxD: 800x2000x600 mm (without floor standing base and roof)	LSFC-84
S34-5507	-10- (instead of -85-)	Rittal TS 8806, WxHxD: 800x2000x600 mm (without floor standing base and roof)	LSFC-85
S34-5509	-Li	Cabinet door with door left hinged	all type FRAKO LSFC
S34-5510	-Li	Cabinet door with door left hinged	all type Rittal TS
S34-5023	-S60	Pivoting lever closure for mounting a semiprofile cylinder	all
S34-0060	-SO (+ Description)	Special painting outside (RAL-Scale)	all
S34-0010	-S1	Cable entry through the switch cabinet roof with connection at the top	up to 400 kvar/Cabinet
S34-5512	-54	Ingress protection IP54	≤ 300 kvar/Cabinet
S34-5513	-54	Ingress protection IP54	> 300 ≤ 400 kvar/ Cabinet
S34-0054	-S80	Ingress protection IP31 with dust cover roof W x H x D (mm) 520 x 300 x 50; RAL 7035	all FRAKO LSFC
S34-5523	S34-5523	Ingress protection IP41, roof vent installation on cabinet instead of a roof vent installation in cabinet	> 300 ≤ 400 kvar/ Cabinet
S34-5511	-SLT	Fuse switch disconnecter instead of fuse base per 50 kvar	all
S34-5514	-SLA	Fuse switch disconnecter in cable entry compartment	≤ 200 kvar/Cabinet
S34-5515	-SLA	Fuse switch disconnecter in cable entry compartment	≤ 300 kvar/Cabinet
S34-0109	-LTA	Switch disconnecter* 400 A in cable entry compartment, for cabinet width 600 mm	≤ 200 kvar/Cabinet
S34-0108	-LTA	Switch disconnecter* 400 A in cable entry compartment, for cabinet width 800 mm	≤ 200 kvar/Cabinet
S34-0107	-LTA	Switch disconnecter* 630 A in cable entry compartment, for cabinet width 600 mm	≤ 300 kvar/Cabinet
S34-0106	-LTA	Switch disconnecter* 630 A in cable entry compartment, for cabinet width 800 mm	≤ 300 kvar/Cabinet
34-90011	-S56	Circuit breaker and control switch (On/Off) (option for Switzerland)	all
S34-5535	-S19	Control phase + N via a protective motor switch (option for France)	all
S34-5536	-S119	Control transformer set 500 VA primary and secondary fuses	≤ 500 kvar
S34-5526	-S119	Control transformer set 800 VA incl. primary and secondary fuses	> 500 ≤ 900 kvar
S34-5069	-S53	3 ammeter incl. current transformer	all
S34-5073	-SO (+ Description)	Voltage meter with switch	all
S34-5077	-SO (+ Description)	kvar-Meter incl. current transformer; measuring range up to 300 kvar, 400 V	all
S34-5057	-SO (+ Description)	Measuring transducer 4-20 mA or power factor	all
S34-0067	-S255	EM-PQ 1500 with current transformer, without EM-FD 1500	all
S34-0066	-S255	EM-PQ 1500 with current transformer, with EM-FD 1500	all
S34-5050	-S255	EMA 1101 with current transformer	all
S34-0040	-S66	Summation current transformer 5+5/5A	all
S34-0081	-S66	Summation current transformer 5+5+5/5A	all
S34-5049	-S145	Switch cabinet lighting with power outlet and position switch	all

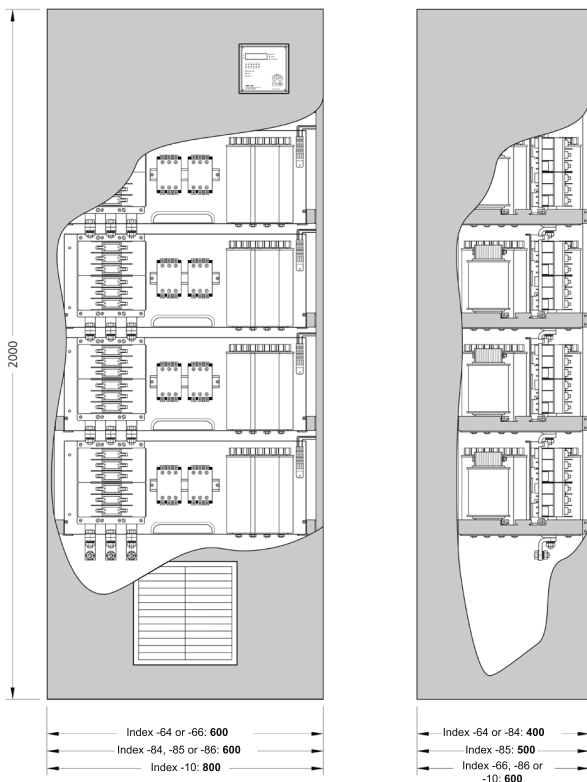
*) Switch disconnecter can be operated from the outside

Accessories

Article-No.	Type	Description	for system type
34-80090	KR-LSFC-64-100	Floor standing base (h = 100 mm)	LSFC-64
34-80175	KR-LSFC-64-200	Floor standing base (h = 200 mm)	LSFC-64
34-80122	KR-LSFC-66-100	Floor standing base (h = 100 mm)	LSFC-66
34-80125	KR-LSFC-66-200	Floor standing base (h = 200 mm)	LSFC-66
34-80091	KR-LSFC-84-100	Floor standing base (h = 100 mm)	LSFC-84
34-80113	KR-LSFC-84-200	Floor standing base (h = 200 mm)	LSFC-84
34-80079	KR-LSFC-85-100	Floor standing base (h = 100 mm)	LSFC-85
34-80075	KR-LSFC-85-200	Floor standing base (h = 200 mm)	LSFC-85
34-80092	KR-LSFC-86-100	Floor standing base (h = 100 mm)	LSFC-86
34-80112	KR-LSFC-86-200	Floor standing base (h = 200 mm)	LSFC-86

Other options and accessories on request

/ Dimensions



Dimensional drawing LSFC-P (100 bis 500 kvar)

All dimensions in mm



LSFC-P5 Passive Filters

- Power Range: 100 to 500 kvar
- Modular construction in freestanding sheet steel cabinet
- Ready for connection
- Fully automatic and intelligent Power Factor Control Relay
- Power Factor Correction Capacitors LKT dry-type with triple safety feature

// Application Recommendations

Power Factor Correction Systems, type LSFC-P5 are suitable for compensation in networks with harmonic distortion according to EN 61000 class 2.

They are available as follows:

Version	Detuning factor	Resonance frequency
P5	$p = 5.67 \%$	210 Hz

Further series resonance frequencies are available on request.

// Power Range

Power Factor Correction System in sheet steel cabinet:

- 100 to 500 kvar

// Design

The ready-for-connection Power Factor Correction System consists of pre-assembled capacitor-reactor modules, type C6XD... or C8XD... and the suitable sheet steel cabinet.

The cabinet contains:

- Self-healing LKT type power capacitors with low-loss self-healing dielectric made from segmented metallised polypropylene film. Filled with a PCB-free filler. With discharge resistors, as per EN 60831-1 and -2 as well as IEC 60831-1 and -2
- Heavy duty Capacitor Switching Contactors
- Harmonic Filter Reactors with overtemperature switch
- Fuse links, 3-pole, size NH00
- Control terminal strip with control fuse and thermal trip contact for safety shutdown
- Intelligent Power Factor Control Relay RM 9606 or EMR 1100 S
- Thermostatically controlled motor fan

// Installation Site

The place of installation must comply with the requirements of the ingress protection and ambient temperature concerned.

// Regulations

For installation and connection of Power Factor Correction Capacitors in Germany the following regulations must be complied with: VDE 0100, VDE 0105, VDE 0560 Part 46 and VDE 0106 Part 100 (German Association of Electrical Engineers). In other countries the equivalent local regulations must be followed.

// Connection

The power supply cable and the current transformer cable enter the bottom of the cabinet through a sliding gland plate and a cable clamp rail, the power supply being connected to the busbar system and the current transformer cable to the terminal strip provided.

// System Expansion

An extension of the system is possible by adding LSFCZ-P extension units. This extension unit will be integrated in the existing control circuit via the control cable (supplied with the extension unit).

// Technical Data

Design	Sheet steel cabinet with door right hinged
Rated voltage	400 V/50 Hz
Rated voltage of capacitors	440 V/50 Hz
Ambient temperature	-5 °C to +40 °C
Humidity	Max. 90 %, no condensation
Cabinet colour	RAL 7035
Standards	EN 60831-1 and -2 IEC 60831-1 and -2 EN 61921 VDE 0660 Part 600-1 and -2 EN 61439-1 and -2

// Important Notes

For further information on power factor correction and harmonics please refer to our „Manual of Power Factor Corrections“.

Version: P5 (Detuning factor $p = 5.67\%$)

Article-No.	Type	Rated power [kvar]	Stage power [kvar]	Switching sequence	Dimensions			Weight (gross) approx. [kg]	Protection IP
					Width [mm]	Height [mm]	Depth [mm]		

Power Factor Correction Systems in sheet steel cabinets (width = 600 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFC ...-P5

34-22157	LSFC 100-25-21-400-64-111-P5	100	25	1:1:2	600	2000	400	210	20
34-22158	LSFC 125-25-12-400-64-111-P5	125	25	1:2:2	600	2000	400	240	20
34-22159	LSFC 150-25-22-400-64-111-P5	150	25	1:1:2:2	600	2000	400	280	20
34-22160	LSFC 175-25-13-400-64-111-P5	175	25	1:2:2:2	600	2000	400	303	20
34-22161	LSFC 200-50-4-400-64-111-P5	200	50	1:1:1:1	600	2000	400	318	20

Power Factor Correction Systems, extension units in sheet steel cabinets (width = 600 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFCZ ...-P5

34-16641	LSFCZ 100-50-2-400-64-P5	100	50	1:1	600	2000	400	185	20
34-16642	LSFCZ 150-50-3-400-64-P5	150	50	1:1:1	600	2000	400	248	20
34-16643	LSFCZ 200-50-4-400-64-P5	200	50	1:1:1:1	600	2000	400	310	20

Power Factor Correction Systems in sheet steel cabinets (width = 800 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFC ...-P5

34-22140	LSFC 100-25-21-400-85-111-P5	100	25	1:1:2	800	2110	500	195	41
34-22141	LSFC 125-25-12-400-85-111-P5	125	25	1:2:2	800	2110	500	230	41
34-22142	LSFC 150-25-22-400-85-111-P5	150	25	1:1:2:2	800	2110	500	250	41
34-22143	LSFC 175-25-13-400-85-111-P5	175	25	1:2:2:2	800	2110	500	285	41
34-22144	LSFC 200-25-23-400-85-111-P5	200	25	1:1:2:2	800	2110	500	305	41
34-22145	LSFC 225-25-14-400-85-111-P5	225	25	1:2:2:2	800	2110	500	330	41
34-22146	LSFC 250-25-24-400-85-111-P5	250	25	1:1:2:2	800	2110	500	344	41
34-22147	LSFC 250-50-5-400-85-111-P5	250	50	1:1:1:1	800	2110	500	396	41
34-22148	LSFC 275-25-15-400-85-111-P5	275	25	1:2:2:2	800	2110	500	422	41
34-22149	LSFC 300-25-25-400-85-111-P5	300	25	1:1:2:2	800	2110	500	435	41
34-22150	LSFC 300-50-6-400-85-111-P5	300	50	1:1:1:1	800	2110	500	422	41
34-22151	LSFC 325-25-16-400-85-111-P5	325	25	1:2:2:2	800	2110	500	460	41
34-22152	LSFC 350-25-26-400-85-111-P5	350	25	1:1:2:2	800	2110	500	520	41
34-22153	LSFC 350-50-7-400-85-111-P5	350	50	1:1:1:1	800	2110	500	526	41
34-22154	LSFC 375-25-17-400-85-111-P5	375	25	1:2:2:2	800	2110	500	555	41
34-22155	LSFC 400-50-8-400-85-111-P5	400	50	1:1:1:1	800	2110	500	565	41
34-22156	LSFC 500-50-0-400-86-111-P5	500	50	1:1:1:1	800	2110	600	640	41

Power Factor Correction Systems, extension units in sheet steel cabinets (width = 800 mm), rated mains voltage: 400 V / 50 Hz

Type series: LSFCZ ...-P5

34-16634	LSFCZ 100-50-2-400-85-P5	100	50	1:1	800	2110	500	220	41
34-16635	LSFCZ 150-50-3-400-85-P5	150	50	1:1:1	800	2110	500	260	41
34-16636	LSFCZ 200-50-4-400-85-P5	200	50	1:1:1:1	800	2110	500	300	41
34-16637	LSFCZ 250-50-5-400-85-P5	250	50	1:1:1:1	800	2110	500	350	41
34-16638	LSFCZ 300-50-6-400-85-P5	300	50	1:1:1:1	800	2110	500	410	41
34-16639	LSFCZ 350-50-7-400-85-P5	350	50	1:1:1:1	800	2110	500	460	41
34-16640	LSFCZ 400-50-8-400-85-P5	400	50	1:1:1:1	800	2110	500	510	41

Other rated voltages, frequencies and power ratings on request

Recommended supply lead cross sections: please refer to the technical annex (page 145 ff.)

// Options and accessories for Power Factor Correction Systems type LSFC-P 400 V, 50 Hz

Options, mounted and wired ready for operation

Article-No.	Type	Description	for system type
S34-5502	-111- (instead of -606)	Power Factor Control Relay EMR 1100 S instead of RM 9606	all
S34-5500	-112- (instead of -606)	Power Factor Control Relay EMR 1100 instead of RM 9606	all
S34-5519	-66- (instead of -64-)	FRAKO LSFC-66, WxHxD: 600x2000x600 mm (without floor standing base and roof)	LSFC-64
S34-5528	-66- (instead of -84-)	FRAKO LSFC-66, WxHxD: 600x2000x600 mm (without floor standing base and roof)	LSFC-84
S34-5503	-84- (instead of -64-)	FRAKO LSFC-84, WxHxD: 800x2000x400 mm (without floor standing base and roof)	LSFC-64
S34-5524	-85- (instead of -84-)	FRAKO LSFC-85, WxHxD: 800x2000x500 mm (without floor standing base and roof)	LSFC-84
S34-5517	-86- (instead of -84/85-)	FRAKO LSFC-86, WxHxD: 800x2000x600 mm (without floor standing base and roof)	LSFC-84/-85
S34-5504	-27- (instead of -64-)	Rittal TS 8604, WxHxD: 600x2000x400 mm (without floor standing base and roof)	LSFC-64
S34-5518	-43- (instead of -84/85-)	Rittal TS 8606 WxHxD: 600x2000x600 mm (without floor standing base and roof)	LSFC-84/-85
S34-5505	-29- (instead of -84-)	Rittal TS 8804, WxHxD: 800x2000x400 mm (without floor standing base and roof)	LSFC-84
S34-5506	-24- (instead of -85-)	Rittal TS 8805, WxHxD: 800x2000x500 mm (without floor standing base and roof)	LSFC-85
S34-5527	-10- (instead of -84-)	Rittal TS 8806, WxHxD: 800x2000x600 mm (without floor standing base and roof)	LSFC-84
S34-5507	-10- (instead of -85-)	Rittal TS 8806, WxHxD: 800x2000x600 mm (without floor standing base and roof)	LSFC-85
S34-5509	-Li	Cabinet door with door left hinged	all type FRAKO LSFC
S34-5510	-Li	Cabinet door with door left hinged	all type Rittal TS
S34-5023	-S60	Pivoting lever closure for mounting a semiprofile cylinder	all
S34-0060	-SO (+ Description)	Special painting outside (RAL-Scale)	all
S34-0010	-S1	Cable entry through the switch cabinet roof with connection at the top	up to 400 kvar/Cabinet
S34-5512	-54	Ingress protection IP54	≤ 300 kvar/Cabinet
S34-5513	-54	Ingress protection IP54	> 300 ≤ 400 kvar/ Cabinet
S34-0054	-S80	Ingress protection IP31 with dust cover roof W x H x D (mm) 520 x 300 x 50; RAL 7035	all FRAKO LSFC
S34-5523	S34-5523	Ingress protection IP41, roof vent installation on cabinet instead of a roof vent installation in cabinet	> 300 ≤ 400 kvar/ Cabinet
S34-5511	-SLT	Fuse switch disconnecter instead of fuse base per 50 kvar	all
S34-5514	-SLA	Fuse switch disconnecter in cable entry compartment	≤ 200 kvar/Cabinet
S34-5515	-SLA	Fuse switch disconnecter in cable entry compartment	≤ 300 kvar/Cabinet
S34-0109	-LTA	Switch disconnecter* 400 A in cable entry compartment, for cabinet width 600 mm	≤ 200 kvar/Cabinet
S34-0108	-LTA	Switch disconnecter* 400 A in cable entry compartment, for cabinet width 800 mm	≤ 200 kvar/Cabinet
S34-0107	-LTA	Switch disconnecter* 630 A in cable entry compartment, for cabinet width 600 mm	≤ 300 kvar/Cabinet
S34-0106	-LTA	Switch disconnecter* 630 A in cable entry compartment, for cabinet width 800 mm	≤ 300 kvar/Cabinet
34-90011	-S56	Circuit breaker and control switch (On/Off) (option for Switzerland)	all
S34-5535	-S19	Control phase + N via a protective motor switch (option for France)	all
S34-5536	-S119	Control transformer set 500 VA primary and secondary fuses	≤ 500 kvar
S34-5526	-S119	Control transformer set 800 VA incl. primary and secondary fuses	> 500 ≤ 900 kvar
S34-5069	-S53	3 ammeter incl. current transformer	all
S34-5073	-SO (+ Description)	Voltage meter with switch	all
S34-5077	-SO (+ Description)	kvar-Meter incl. current transformer; measuring range up to 300 kvar, 400 V	all
S34-5057	-SO (+ Description)	Measuring transducer 4-20 mA or power factor	all
S34-5067	-S255	EM-PQ 1500 with current transformer, without EM-FD 1500	all
S34-5066	-S255	EM-PQ 1500 with current transformer, with EM-FD 1500	all
S34-5050	-S255	EMA 1101 with current transformer	all
S34-0040	-S66	Summation current transformer 5+5/5A	all
S34-0081	-S66	Summation current transformer 5+5+5/5A	all
S34-5049	-S145	Switch cabinet lighting with power outlet and position switch	all

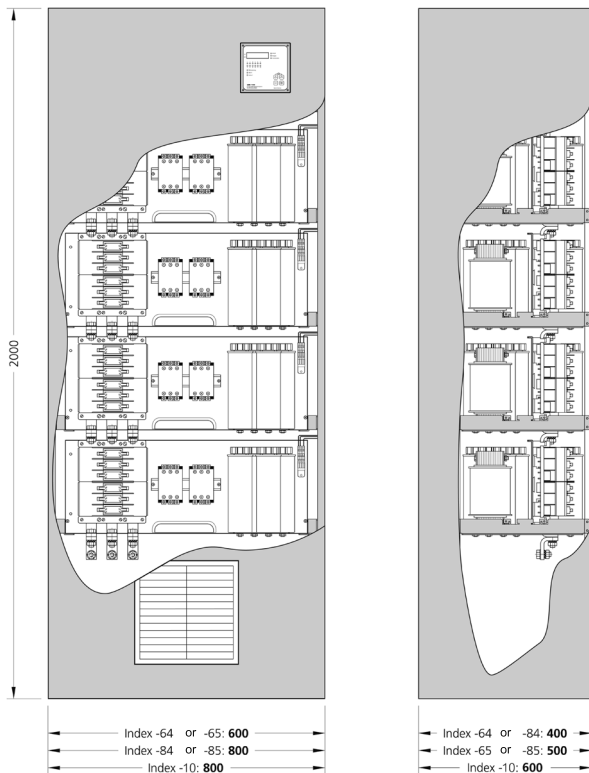
*) Switch disconnecter can be operated from the outside

Accessories

Article-No.	Type	Description	for system type
34-80090	KR-LSFC-64-100	Floor standing base (h = 100 mm)	LSFC-64
34-80175	KR-LSFC-64-200	Floor standing base (h = 200 mm)	LSFC-64
34-80122	KR-LSFC-66-100	Floor standing base (h = 100 mm)	LSFC-66
34-80125	KR-LSFC-66-200	Floor standing base (h = 200 mm)	LSFC-66
34-80091	KR-LSFC-84-100	Floor standing base (h = 100 mm)	LSFC-84
34-80113	KR-LSFC-84-200	Floor standing base (h = 200 mm)	LSFC-84
34-80079	KR-LSFC-85-100	Floor standing base (h = 100 mm)	LSFC-85
34-80075	KR-LSFC-85-200	Floor standing base (h = 200 mm)	LSFC-85
34-80092	KR-LSFC-86-100	Floor standing base (h = 100 mm)	LSFC-86
34-80112	KR-LSFC-86-200	Floor standing base (h = 200 mm)	LSFC-86

Other options and accessories on request

// Dimensions



Dimensional drawing LSFC-P (100 bis 500 kvar)

All dimensions in mm