Reactor Series

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Application

This series low voltage series connected reactor is used in low voltage reactive compensation device, and series connected with capacitor, when the low voltage power net have a great quantity of harmonic source such as rectifying and defector, which produce high harmonic will seriously damage the main transformer, and other electrical device. The reactor series connected with capacitor will restraint the harmonic blow up effectively, improve the voltage wave form and system's power factor, and restraint switch on inrush current and operation over voltage, protect the capacitor effectively.

Working condition

1. Altitude ≤2000m

2. Ambient temperature -25-+45 $^\circ C$ relative humidity $\leqslant 90\%$

No toxic gas arround, no tinderbox and explosives
Good atmospheric condition

Low Voltage series Connected Reactor Series

ative humidity ≤90% nd explosives

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Specification	Model	Capacitor output (kvar)	Reactor output (kvar)	Inductance (mH)	Rated current (A)
The specification	CKSG-0.3/0.4-6%	5	0.3	3×7.74	6.4
for 6% reactance ratio	CKSG-0.45/0.4-6%	7.5	0.45	3×5.16	9.6
auo	CKSG-0.6/0.4-6%	10	0.6	3×3.87	12.8
	CKSG-0.72/0.4-6%	12	0.72	3×3.22	15.4
	CKSG-0.84/0.4-6%	14	0.84	3×2.76	18.0
	CKSG-0.9/0.4-6%	15	0.9	3×2.58	19.2
	CKSG-0.96/0.4-6%	16	0.96	3×2.42	20.5
	CKSG-1.2/0.4-6%	20	1.2	3×1.93	25.7
	CKSG-1.44/0.4-6%	24	1.44	3×1.61	30.8
	CKSG-1.5/0.4-6%	25	1.5	3×1.55	32.1
	CKSG-1.8/0.4-6%	30	1.8	3×1.29	38.5
	CKSG-2.1/0.4-6%	35	2.1	3×1.11	44.9
	CKSG-2.4/0.4-6%	40	2.4	3×0.97	51.3
	CKSG-2.7/0.4-6%	45	2.7	3×0.86	57.7
	CKSG-3/0.4-6%	50	3	3×0.77	64.2
	CKSG-3.6/0.4-6%	60	3.6	3×0.64	77.0
	CKSG-4.8/0.4-6%	80	4.8	3×0.48	102.6

The specification for 12% reactance	Model	Capacitor output (kvar)	Reactor output (kvar)	Inductance (mH)	Rated current (A)
ratio	CKSG-0.6/0.4-12%	5	0.6	3×17.61	6.0
	CKSG-0.9/0.4-12%	7.5	0.9	3×11.74	9.0
	CKSG-1.2/0.4-12%	10	1.2	3×8.81	12.0
	CKSG-1.44/0.4-12%	12	1.44	3×7.34	14.4
	CKSG-1.68/0.4-12%	14	1.68	3×6.29	16.8
	CKSG-1.8/0.4-12%	15	1.8	3×5.87	18.0
	CKSG-1.92/0.4-12%	16	1.92	3×5.50	19.2
	CKSG-2.4/0.4-12%	20	2.4	3×4.40	24.1
	CKSG-2.88/0.4-12%	24	2.88	3×3.67	28.9
	CKSG-3/0.4-12%	25	3	3×3.52	30.1
	CKSG-3.6/0.4-12%	30	3.6	3×2.94	36.1
	CKSG-4.2/0.4-12%	35	4.2	3×2.52	42.1
	CKSG-4.8/0.4-12%	40	4.8	3×2.20	48.1
	CKSG-5.4/0.4-12%	45	5.4	3×1.96	54.1
	CKSG-6/0.4-12%	50	6	3×1.76	60.1
	CKSG-7.2/0.4-12%	60	7.2	3×1.47	72.2
	CKSG-9.6/0.4-12%	80	9.6	3×1.10	96.2

Order

instructions

The chosen of reactance ratio should according to the power net harmonic wave 1. reactance ratio, single or three phase, capacitor rated voltage 2.reactor output(should match with capacitor output) 3. can according to the customer's requirement make other specification

Low Voltage series **Connected Reactor Series**

Note: CKSG TYPE, 400V system, three phase, 6% reactance ratio, the capacitor voltage 450V

Note: CKSG TYPE, 400V system, three phase, 12% reactance ratio, the capacitor voltage 450V





General Description

Xd1 series current-limiting reactor adopts dry type reactor cast by uns-aturated polyesters resin. It is used to control the switch-on surge of low-voltage capacitor and to strength the breaking capability of switch-on switch in the low-voltage electric engineering integrated device.

Normal working and installing condition

1. Altitude of installing place not higher than 1000m.

- 2. When ambient air temperature is lower than +40°C, the average temperature within 24h should lower than $+35^{\circ}$, the lower limit of ambient air temperature is -5° .
- 3. When max temperature is +40°C, the air relative humidity doesn't exceed 50%, at the lower temperature. the higher relative humidity can be permitted to be higher, but the max relative can not exceed 80%.
- 4. There is no dangerous medium or explosive or inflammable substance, gas or dust (include conductive dust) that can erode the metal and destroy the insulation exist in the installation place.
- 5. No drastic vibration is allowed in the installation place, the installation obliquity can't exceed 5°.
- 6. Installation place should be far away from direct sunshine, rain or molds.

Model and meaning

XD 1 0.4 Rated working voltage Un V capacity and mated capacitor Design code Current-limiting reactor

Main Technical characteristics

1. Rated current, capacity and surge-limiting times of mated capacitor. 2. Power frequency testing voltage: AC 50Hz, voltage 3kv, no break-down or flash for 1min. 3. Temperature: Housing ≤65K, Coil ≤65K.

Specification The specification for 6% reactance	Model	Rated working voltage(V)	Capacitor output (kvar)	Rated working current(A)	Inductance (mH)	Current-limited ratio(n)	Insulation leve (KV/1min)
	XD1-12		12	22.5	0.0315		
ratio	XD1-14		14	26.3	0.026	50	2500
	XD1-16		16	30.02	0.0232		
	XD1-20	400	20	35.9	0.0204		
	XD1-25		25	46.9	0.0213		
	XD1-30		30	56.3	0.025		
	XD1-40		40	70.8	0.030		

Overall and installation size



Model	А	В	с	R	h	а
12-16 Type	51	70	106	45	92	32
18-25 Type	55	74	118	45	99	43
25-40 Type	65	84	132	45	112	51

Notice for order When you order, please state the product model, rated current (A), accuracy grade and rated load (VA).

XD1 series current-limiting reactor

CKSC Series Dry Type Iron-Core series connected Reactor



Application

This series low voltage series connected reactor is used in low voltage reactive compensation device, and series connected with capacitor, when the low voltage power net have a great quantity of harmonic source such as rectifying and deflectorm, which produce high harmonic will seriously damage the main transformer, and other electrical device. The reactor series connected with capacitor will restraint the harmonic blow up effectively, improve the voltage wave form and system's power factor, and restraint switch on inrush current and operation over voltage, protect the capacitor effectively.

Working	1. Altitude ≤2000m
condition	2. Ambient temperature -25-+45°C relative humidity \leq 90%
	3. No toxic gas arround, no tinderbox and explosives

No toxic gas arround, no tinderbox and explosives 4. Good atmospheric condition

CKSCD/DD

Model and meaning

Rated reactance ratio(%)
System voltage(kV)
Rated output(kvar)
C: epoxy-resin filled G: wind around type
S:three phase , D:single phase

Structure characteristic

- gap in the course of operation does not change.
- impact, will not broken.
- safely.
- shake when the coil works.

main technical parameter

1. Rated voltage: 6kv, 10kv,35kv

- 2. Rated frequency: 50Hz
- exceed 85K, and the coil can not exceed 95K;
- 4. The reactor can work in 1.35 times rated current for long time
- 5. Low noise

Specification	Model	Capacitor output (kvar)	capacitor voltage (kV)	Reactor output (kvar)	Inductance (mH)	Rated current (A)
	CKSC-1/10-1%	100	11/3	1	3×38.52	5.25
	CKSC-2/10-1%	200	11/3	2	3×19.26	10.50
	CKSC-3/10-1%	300	11/3	3	3×12.84	15.75
	CKSC-4.5/10-1%	450	11/3	4.5	3×8.569	23.62
	CKSC-6/10-1%	600	11/3	6	3×6.420	31.49
	CKSC-7.5/10-1%	750	11/3	7.5	3×5.133	39.37
	CKSC-9/10-1%	900	11/3	9	3×4.285	47.24
	CKSC-10/10-1%	1000	11/3	10	3×3.852	52.49
	CKSC-12/10-1%	1200	11/3	12	3×3.210	62.97
	CKSC-15/10-1%	1500	11/3	15	3×2.570	78.73
	CKSC-18/10-1%	1800	11/3	18	3×2.140	94.48
	CKSC-21/10-1%	2100	11/3	21	3×1.926	110.22
	CKSC-24/10-1%	2400	11/3	24	3×1.65	125.97
	CKSC-27/10-1%	2700	11/3	27	3×1.427	141.72
	CKSC-30/10-1%	3000	11/3	30	3×1.284	157.46

Note: For the specification of CKSC type, 10KV system, three phase, the reactance ratio is 1%

CKSC Series Dry Type Iron-Core series connected Reactor

1. Core is using imported quality low loss cold oriented silicon steel, the core columns from the air gap is divided into a number of uniform tomato, Gap used epoxy layer plate glass cloth for the interval to ensure the reactor

2. The surface of the core is use quality cold oriented silicon steel face glue, make the silicon combined hard, greatly reduce the operation noise, and have good anti-corosion function.

3. The coil is epoxy-resin filled type, inside and outside the coil, there is epoxy glass grid cloth to strengthen, and use H degree epoxy-resin filled system, and filled in the vacuum condition, the coil not only have good insulation performance, and also have good mechanical strength, and bear big current and heat or cold

4. The epoxy-resin filled coil is not water sucking, low discharge in part place, can operated in bad condition

5. In the top and botten of the coil, there are epoxy padand silicon rubber and antivibration pad, can reduce the

3. Service temperature range, H degree, higher than 180°C , in the normal working, the iron core can not

CKSC Series Dry Type Iron-Core series connected Reactor

pecification	Model	Capacitor output (kvar)	capacitor voltage (kV)	Reactor output (kvar)	Inductance (mH)	Rated current (A)
	CKSC-6/10-6%	100	11/3	6	3×233.223	5.25
	CKSC-9/10-6%	150	11/3	9	3×153.514	7.87
	CKSC-12/10-6%	200	11/3	12	3×115.501	10.50
	CKSC-18/10-6%	300	11/3	18	3×77.246	15.75
	CKSC-27/10-6%	450	11/3	27	3×51.388	23.62
	CKSC-30/10-6%	500	11/3	30	3×46.289	26.24
	CKSC-36/10-6%	600	11/3	36	3×38.500	31.49
	CKSC-45/10-6%	750	11/3	45	3×30.781	39.37
	CKSC-54/10-6%	900	11/3	54	3×25.694	47.24
	CKSC-60/10-6%	1000	11/3	60	3×23.100	52.49
	CKSC-72/10-6%	1200	11/3	72	3×19.250	62.97
	CKSC-90/10-6%	1500	11/3	90	3×15.410	78.73
	CKSC-108/10-6%	1800	11/3	108	3×12.833	94.48
	CKSC-126/10-6%	2100	11/3	126	3×11.005	110.22
	CKSC-144/10-6%	2400	11/3	144	3×9.625	125.97
	CKSC-162/10-6%	2700	11/3	162	3×8.559	141.72
	CKSC-180/10-6%	3000	11/3	180	3×7.700	157.46
	CKSC-198/10-6%	3300	11/3	198	3×7.002	173.21
	CKSC-216/10-6%	3600	11/3	216	3×6.420	188.96
	CKSC-240/10-6%	4000	11/3	240	3×5.778	209.95
	CKSC-252/10-6%	4200	11/3	252	3×5.503	220.45
	CKSC-288/10-6%	4800	11/3	288	3×4.814	251.94
	CKSC-300/10-6%	5000	11/3	300	3×4.622	262.44
	CKSC-360/10-6%	6000	11/3	360	3×3.851	314.93
	CKSC-480/10-6%	8000	11/3	480	3×2.888	419.90

Note: For the specificaton of CKSC type , 10KV system, three phase, the reactance ratio is 6%

Inductance Capacitor output capacitor Reactor output Rated current Specification Model voltage (kV) (kvar) (kvar) (mH) (A) CKSC-12/10-12% 100 12/3 12 3×551.074 5.25 12/3 18 CKSC-18/10-12% 150 3×367.383 7.87 12/3 CKSC-24/10-12% 200 24 3×275.537 10.50 12/3 CKSC-36/10-12% 300 36 3×183.691 15.75 12/3 450 54 CKSC-54/10-12% 3×121.897 23.62 CKSC-120/10-12% 1000 12/3 120 3×54.993 52.49 12/3 CKSC-144/10-12% 1200 144 3×45.843 62.97 12/3 180 1500 3×36.637 78.73 CKSC-180/10-12% CKSC-216/10-12% 1800 12/3 3×30.545 94.48 216 12/3 2100 252 110.22 CKSC-252/10-12% 3×26.190 12/3 CKSC-288/10-12% 2400 288 3×22.902 115.97 12/3 CKSC-324/10-12% 2700 324 3×20.363 141.72 12/3 CKSC-360/10-12% 3000 360 3×18.331 157.46 CKSC-396/10-12% 3300 12/3 396 3×16.657 173.21 12/3 432 CKSC-432/10-12% 3600 3×15.272 188.96 CKSC-480/10-12% 4000 12/3 480 3×13.748 209.95 CKSC-504/10-12% 4200 12/3 504 220.45 3×13.088 12/3 CKSC-576/10-12% 4800 576 251.94 3×11.456 CKSC-600/10-12% 5000 12/3 600 3×10.994 262.44

Note: For the specificaton of CKSC type, 10KV system, three phase, the reactance ratio is 12%



applicability

- limiting action and the shunt reactor is used for reactive compensation.
- and works as harmonic filtration.

Working condition

- 1. Indoor or outdoor
- 2. The ambient temperature: -40-+45 °C
- 3. Altitude: ≤1000m
- 4. No toxic gas arround, no tinderbox and explosives

Dry-type semi-core reactor

Application and The wiring of reactor contains series connection and shunt connection. Series reactor, in general, works as current-

1. Dry type semi core shunt reactor: in super high tension long range transmission system, it is connected to the tertiary coil of the transformer and used as the capacitive charging current of the compensating line to limit the system voltage rise and switching over voltage ensure the reliability of the line.

2. Dry type semi core series reactor: it is mounted in the capacitor return circuit and suppress the surge current during operating of the capacitor return circuit and form a harmonic circuit together with the capacitor group

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Specification CKGL Series	Model	Capacitor side voltage (kV)	Shunt capacitor group output (kvar)	Rated current (A)	Rated react (Ω)	External diameter (mm)	Coil height (mm)	Weight (kg)	Loss (kw)
dry type semi-core	CKGL-30/10-5	11√3	1800	94.5	3.36	460	400	115	0.72
eries connected	CKGL-36/10-6	11√3	1800	94.5	4.03	525	410	130	0.86
eactor	CKGL-72/10-12	12√3	1800	86.6	9.60	550	640	220	1.30
	CKGL-40/10-5	11√3	2400	126	2.52	320	300	142	0.96
	CKGL-48/10-6	11√3	2400	126	3.02	440	460	162	1.15
	CKGL-96/10-12	12√3	2400	115.5	7.20	560	650	273	1.73
	CKGL-45/10-5	11√3	2700	141.7	2.24	445	470	155	0.95
	CKGL-54/10-6	11√3	2700	141.7	2.69	510	470	177	1.13
	CKGL-108/10-12	12√3	2700	130	6.40	550	520	298	1.55
	CKGL-50/10-5	11√3	3000	157.5	2.02	530	470	168	1.05
	CKGL-60/10-6	11√3	3000	157.5	2.42	550	470	192	1.26
	CKGL-120/10-12	12√3	3000	144	5.70	620	660	323	1.73
	CKGL-55/10-5	11√3	3300	173	1.84	540	470	180	0.86
	CKGL-66/10-6	11√3	3300	173	2.20	550	520	206	1.25
	CKGL-132/10-12	12√3	3300	158.38	5.24	650	580	347	1.9
	CKGL-60/10-5	11√3	3600	189	1.68	510	460	192	1.20
	CKGL-72/10-6	11√3	3600	189	2.02	590	460	220	2.1
	CKGL-144/10-12	12√3	3600	173	4.81	640	780	370	2.0
	CKGL-70/10-5	11√3	4200	220	1.44	560	560	216	1.2
	CKGL-84/10-6	11√3	4200	220	1.78	560	560	247	1.5
	CKGL-168/10-12	12√3	4200	202.1	4.12	670	700	415	2.4
	CKGL-75/10-5	11√3	4500	236	1.35	560	470	227	1.3
	CKGL-90/10-6	11√3	4500	236	1.61	560	630	260	1.6
	CKGL-180/10-12	12√3	4500	216.5	3.84	590	640	437	2.5
	CKGL-80/10-5	11√3	4800	252	1.26	580	410	238	1.4
	CKGL-96/10-6	11√3	4800	252	1.51	570	630	273	1.7
	CKGL-192/10-12	12√3	4800	231	3.60	600	640	460	2.7
	CKGL-83/10-5	11√3	5000	262.4	1.21	540	540	245	1.5
	CKGL-100/10-6	11√3	5000	262.4	1.45	560	650	280	1.7
	CKGL-200/10-12	12√3	5000	240.6	3.46	610	820	474	2.8
	CKGL-90/10-5	11√3	5400	283	1.12	560	640	260	1.6
	CKGL-108/10-6	11√3	5400	283	1.35	640	650	298	1.5
	CKGL-216/10-12	12√3	5400	260	3.20	640	820	502	3.1
	CKGL-100/10-5	11√3	6000	315	1.01	560	650	280	1.8
	CKGL-120/10-6	11√3	6000	315	1.21	600	670	323	1.7
	CKGL-240/10-12	12√3	6000	289	2.88	610	690	543	3.4
	CKGL-110/10-5	11√3	6600	346	0.915	600	650	303	1.5
	CKGL-132/10-6	11√3	6600	346	1.10	625	700	347	1.9
	CKGL-264/10-12	12√3	6600	318	2.62	660	720	385	3.8
	CKGL-116/7/10-5	11√3	7000	367.4	0.865	600	670	316	1.6
	CKGL-140/10-6	11√3	7000	367.4	0.96	625	700	362	2.0
	CKGL-280/10-12	12√3	7000	336.4	2.47	670	730	609	4.0
	CKGL-120/10-5	11√3	7200	378	0.84	615	650	323	1.73
	CKGL-144/10-6	11√3	7200	378	0.99	635	670	370	2.0
	CKGL-288/10-12	12√3	7200	346.4	2.40	650	690	622	4.1
	CKGL-130/10-5	11√3	7800	409	0.775	615	660	343	2.8
	CKGL-156/10-6	11√3	7800	409	0.93	625	700	393	2.2
	CKGL-312/10-12	12√3	7800	375.3	2.22	675	700	660	3.7

CKGL-25/10-5

CKGL-30/10-6

CKGL-60/10-12

11/3

11/3

12/3

1500

1500

1500

78.7

78.7

72.2

4.04

4.84

11.55

430

460

550

400

400

460

100

0.60

115 0.72

192 1.26

Dry-type semi-core reactor



Specification

CKGL Series dry type semi-core series connected reactor

Model	Capacitor side voltage (kV)	Shunt capacitor group output (kvar)	Rated current (A)	Rated react (Ω)	External diameter (mm)	Coil height (mm)	Weight (kg)	Loss (kw)
CKGL-133/3/10-5	11√3	8000	420	0.775	615	660	350	1.92
CKGL-160/10-6	11√3	8000	420	0.91	650	700	400	2.30
CKGL-320/10-12	12√3	8000	384.9	2.16	720	720	673	3.84
CKGL-140/10-5	11√3	8400	441	0.72	635	700	362	2.02
CKGL-168/10-6	11√3	8400	441	0.86	660	720	415	2.42
CKGL-336/10-12	12√3	8400	404.2	2.06	740	720	698	4.03
CKGL-150/10-5	11√3	9000	472	0.67	660	480	382	2.16
CKGL-180/10-6	11√3	9000	472	0.81	670	720	483	2.59
CKGL-360/10-12	12√3	9000	433	1.92	740	780	735	4.32
CKGL-160/10-5	11√3	9600	504	0.63	410	500	400	2.30
CKGL-192/10-6	11√3	9600	504	0.76	670	720	460	2.77
CKGL-384/10-12	12√3	9600	462	1.80	780	780	772	4.61
CKGL-167/10-5	11√3	10000	526	0.61	550	600	413	2.41
CKGL-200.4/10-6	11√3	10000	526	0.725	560	800	474	2.89
CKGL-400.9/10-12	12√3	10000	481	1.73	870	820	798	4.80
CKGL-400/35-6	2×11	20000	275	5.29	790	1170	720	3.96
CKGL-561/35-6	2×11	28050	425	3.11	925	1100	870	5.01
CKGL-800/35-6	2×11	40000	606	2.18	970	1194	1165	6.04
CKGL-1200/35-6	2×11	60000	909	1.452	1205	1134	1435	7.45
CKGL-288/35-12	2×12	7200	100	29.4	820	1092	570	3.45
CKGL-400/35-12	2×12	10000	138	21.2	900	1144	700	4.36
CKGL-480/35-12	2×12	12000	166.7	17.26	930	1144	1060	4.66
CKGL-800/35-12	2×12	20000	278	10.38	10000	1129	1140	5.41
CKGL-1122/35-12	2×12	28050	390	7.4	1195	1079	1415	6.63
CKGL-1600/35-12	2×12	40000	556	5.2	1215	1300	1850	8.2
CKGL-2400/35-12	2×12	60000	835	3.45	1210	1514	2443	10

Specification BKGL series	Mode	System rated voltage (kV)	Rated output (kvar)	Rated loss (kW)	Coil external diameter ΦD(mm)	Coil height (mm)	Coil weight (kg)	Installation point	Installation foot ΦD (mm)
dry type semi-core	BKGL-2667/10	10	2667	10.3	1080	1865	2500	6	930
shunt reactor	BKGL-3333/10	10	3333	14	1400	1450	2750	8	1250
	BKGL-5000/10	10	5000	17	1500	1450	3700	8	1450
	BKGL-6700/10	10	67000	20.5	1650	1500	4400	8	1500
	BKGL-10000/10	10	10000	26	1800	1550	5800	8	1650
	BKGL-1000/35	35	1000	10	1220	2595	2600	6	1100
	BKGL-2667/35	35	2667	16	1310	2344	4400	6	1140
	BKGL-3333/35	35	3333	15	1450	2200	3100	8	1300
	BKGL-5000/35	35	5000	18.5	1590	2200	4000	8	1420
	BKGL-6700/35	35	6700	22	1700	2200	5000	8	1520
	BKGL-10000/35	35	10000	28	1860	2200	7400	8	1690
	BKGL-13333/35	35	13000	30	1860	2475	8300	8	1800
	BKGL-15000/35	35	15000	34	1990	2200	9600	8	1860
	BKGL-20000/35	35	20000	39	2150	2200	11100	8	1950