

Smart Capacitor Bank

SFR-L

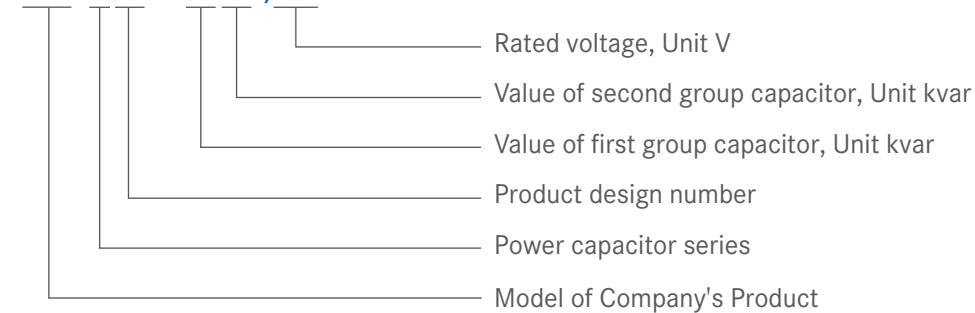
Overview

SFR-L series LV(low voltage) power capacitor module is designed for 0.4kV low voltage distribution power distribution system. It is used as a new generation of compensation module with functions of energy saving, reduction of line loss, power factor enhancement and improvement of power quality. This module is mainly used in the occasions where the harmonic distortion is not that serious. SFR-L series low voltage power capacitor modules take two type compensation capacitors or one Y type compensation capacitor as main body and are highly integrated with compound switch, microprocessor and other function modules.



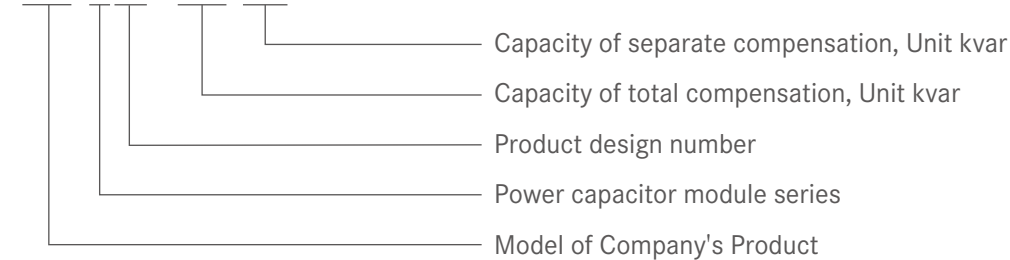
Model Description

SFR-L XD - 20 20/450



Total compensation and separate compensation combined type

SFR-L XD- 20G 20F



Technical Parameter

Function		Specification
Measurement Accuracy	Current	≤1.0% (5%~120%In)
	Voltage	≤0.5%(80%~120%Un)
	Power	≤2%
	Power Factor	≤±0.01
Switching Mode	Zero cross switching	
Compensation Operation	Working Voltage	AC 380V ± 20%,distortion rates≤5%
	Consumption	≤5VA
	Max.working Current	1.35×In
	Switching Inrush Current	≤2√2×In
Host Protection	Over Voltage	430V (Adjustable)
	Under Voltage	300V (Adjustable)
	Harmonic Exceeding	0%~100% (Adjustable)
Local Protection	Over Current	0~100A (Adjustable)
	Over Temperature	55 C (Adjustable)
	Unbalance	50%(Adjustable)
Control Setting	Control Parameter	Plug-in data line with RJ45 interface
	Peripheral Unit Parameters	Current transformer ratio
Network Interface	Pluggable data line, internal network protocol	
Mechanical Installation	Outline Dimension	As the capacities of different specifications are slightly different, please refer to the detailed table of outline dimensions.
	Installation Dimension	Installation and fixing hole distance: W-70mm * L-372mm or W-85mm * L-315mm,as the capacities of different specifications are slightly different, please consult us for specific installation and fixing hole distance.
	Weight	≤6.5kg
Environment Temperature	Working Temperature	-15 C ~ 45 C
	Storage Temperature	-25 C ~ 55 C
Altitude	≤2000m	
Standard	IEC 831-1,2(2000)	

Model Selection

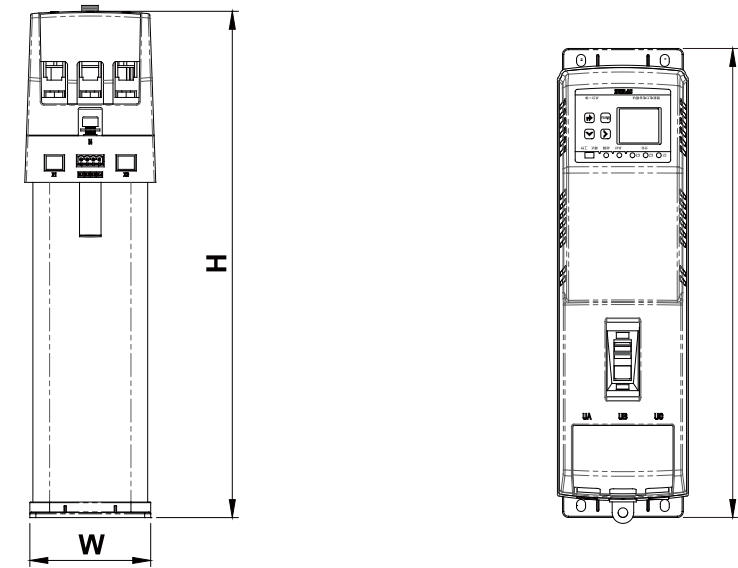
Compensation Mode	Capacity (Kvar)	Model	Application Field
Three-phase Total Compensation	40+40	SFR-LXD-4040/450	It is used in the fields where the power quality meets the national standard, the requirement for power quality is not very high and no harmonic sensitive equipment. Phase separation compensation is used in the case of a three-phase load imbalance greater than 30%.
	40+20	SFR-LXD-4020/450	
	30+30	SFR-LXD-3030/450	
	20+20	SFR-LXD-2020/450	
	20+10	SFR-LXD-2010/450	
	10+10	SFR-LXD-1010/450	
Phase Separation Compensation	10+5	SFR-LXD-1005/450	
	30	SFR-LXD-30/250	
	20	SFR-LXD-20/250	
	10	SFR-LXD-10/250	
Total and Separation Combined Compensation	5	SFR-LXD-05/250	
	40+20	SFR-LXD-40G20F	
	40+15	SFR-LXD-40G15F	
	40+10	SFR-LXD-40G10F	
	30+20	SFR-LXD-30G20F	
	30+10	SFR-LXD-30G10F	
	20+20	SFR-LXD-20G20F	

Configuration List

Name	Model	Quantity
Knife fuse switch	630A	1
Controller	WGK-31-201-G	1
Status indicator	WGK-31-ZTA	1
Ammeter	PA194I-9X4	1
Current transformer	SHI 500/5	3
Micro circuit breaker	160A	1
Surge protection device	SDX54/4P	1
Total compensation module	SFR-LXD-2020/450	6
Cabinet (GCJ)	800×800×2200(mm)	1

The upper example adopts low voltage power capacitor module. The compensation capacity is determined according to the transformer and load capacity, and the general compensation transformer capacity is about 30-40% of transformer. If you need separate compensation, please select separate compensation module. The low voltage power capacitor module can improve the power factor of the system, realize the zero crossing switching of the capacitor, and can communicate through RS485 interface via RJ45 data plugged line. When the compensation capacity should be added, please add the quantity of modules and change the specification of knife fuse switch.

Dimensions



Outline Dimension	Length (L)mm	Width (W)mm	Height (H)mm	Distance between fixing poles mm
Total and Separate Compensation Series				
SFR-LXD-40G20F/40G15F	392	110	423	70×372
SFR-LXD-30G20F/20G20F	392	110	383	
SFR-LXD-40G10F/30G10F	392	110	363	
SFR-LXD-20G15F/20G10F	392	110	363	
Total Compensation Series				
SFR-LXD-4040	392	110	423	70×372
SFR-LXD-4020	392	110	363	
SFR-LXD-3030	392	110	363	
SFR-LXD-2525	392	110	363	85×315
SFR-LXD-2020/SFR-LXD-2010	370	71.5	332	
SFR-LXD-1515/SFR-LXD-1510	370	71.5	332	
SFR-LXD-1010/SFR-LXD-1005	370	71.5	267	
SFR-LXD-0505	370	71.5	227	
SFR-LXD-05025	370	71.5	227	
Separate Compensation Series				
SFR-LXD-30/250	370	71.5	332	85×315
SFR-LXD-20/250	370	71.5	267	
SFR-LXD-15/250	370	71.5	267	
SFR-LXD-10/250	370	71.5	227	
SFR-LXD-05/250	370	71.5	227	
SFR-LXD-025/250	370	71.5	130	

Typical Design

Solution Component	Three-phase total compensation, zero-cross switching
Primary Wiring Diagram	
Compensation Capacity(kvar)	Total capacity 240kvar

Configuration List

Name	Model	Quantity
Knife Fuse Switch	630A	1
Controller	WGK-31-201-G	1
Status Indicator	WGK-31-ZTA	1
Ammeter	PA194I-9X4	1
Current Transformer	SHI 500/5	3
Micro Circuit Breaker	160A	1
Surge Protection Device	SDX54/4P	1
Total Compensation Module	SFR-LXD-2020/450	6
Cabinet (GC)	800×800×2200(mm)	1

The upper example adopts low voltage power capacitor module. The compensation capacity is determined according to the transformer and load capacity, and the general compensation transformer capacity is about 30-40% of transformer. If you need separate compensation, please select separate compensation module. The low voltage power capacitor module can improve the power factor of the system, realize the zero crossing switching of the capacitor, and can communicate through RS485 interface via RJ45 data plugged line. When the compensation capacity should be added, please add the quantity of modules and change the specification of knife fuse switch.

PF Controller

WGK-31-201-G

Compensation mode:
G indicates three-phase total compensation
F indicates combined compensation

Product model

Product code



Items	Parameters	
Voltage	Range	Phase voltage 20 ~ 220V or line voltage 20 ~ 480V
	Overload	Continuous: 1.2 Un; instantaneous: 2Un
	Power Consumption	<1VA
	Current	Range
Signal Input	Overload	Continuous: 1.2 In; instantaneous: 2In
	Power Consumption	<1VA
	Frequency	45 ~ 65 Hz
Power Supply	AC/DC 80 ~ 270V	
Communication	Internal	RJ45 interface, connect up to 32 SFR series modules
	External	Support MODBUS-RTU protocol
Relay Outputs	2 programmable alarm relay outputs Capacity 3A/250VAC (3A/30VDC)	
Accuracy	Current: 0.5(20% ~ 120%), 1.0 (5% ~ 20%)	
	Voltage: 0.5 (50% ~ 120%), 1.0 (5% ~ 50%)	
	Power : 1.0	
	Frequency: +0.1Hz	
Display Mode	Harmonic measurement: B	
	128*64 LCD, contrast can be set	
Protection Degree	Panel IP65, case IP30	
Environment	Working temperature: -15 ~ 55 °C	
	Storage temperature: -20 ~ 75 °C	
Safety	Insulation between signal, power supply, output terminal and case resistor > 100MQ	
	Withstand voltage between signal input, power supply and output > AC 2kV	
Outline Dimension	Outline dimension: 120×120×114mm	
	Weight: 0.6kg	