

Matching 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: 2 Un
	Power consumption	< 1VA
	Range	5A
Signal input	Overload	Continuous: 1.2In; instantaneous: 2 In
	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℃
		Storage temperature: -20~75℃
Safety		Insulation between signal, power supply, output terminal and case resistor > 100MΩ
		Withstand voltage between signal input, power supply and output > AC 2kV
Outline dimension		Outline dimension: 120×120×114mm
		Weight: 0.6kg

SFR-L Series Low-voltage Power Capacitor Module

Overview

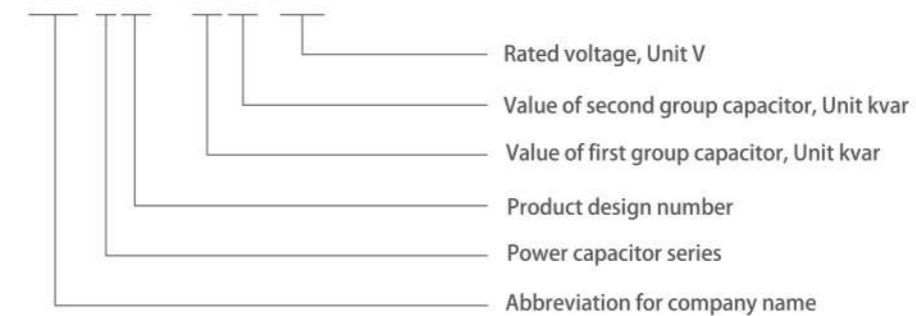
SFR-L series LV power capacitor module is designed for 0.4kV low voltage distribution network. It is used as a new generation of compensation module with functions of energy saving, reduction of line loss, power factor enhancement and improvement of power quality. This module is mainly used in the occasions where the harmonic pollution is not that serious.

SFR-L series low voltage power capacitor modules take two Δ type compensation capacitors or one Y type compensation capacitor as main body and are highly integrated with compound switch, microprocessor and other function modules.



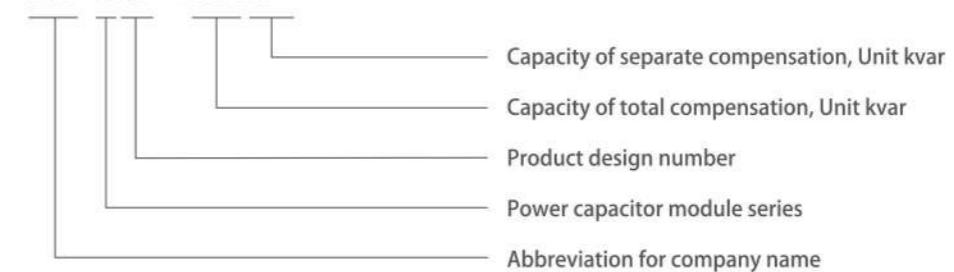
Model description

SFR - L XD - 20 20 / 450



Total compensation and separate compensation combined type

SFR - L XD - 20G 20F



Technical parameters

Function	Specification	
Measurement accuracy	Current	$\leq 1.0\%$ (5%~120%In)
	Voltage	$\leq 0.5\%$ (80%~120%Un)
	Power	$\leq 2\%$
	Power factor	$\leq \pm 0.01$
Switching mode	Zero cross switching	
Compensation operation	Working voltage	AC 380V $\pm 20\%$, distortion rate $\leq 5\%$
	Consumption	$\leq 5VA$
	Max. working current	$1.35 \times I_n$
	Switching inrush current	$\leq 3 \times I_n$
Host protection	Over voltage	430V (can be set)
	Under voltage	300V (can be set)
	Harmonic exceeding	0%~100% (can be set)
Local protection	Over current	0~100A (can be set)
	Over temperature	55°C (can be set)
	Unbalance	50% (can be set)
Control setting	Control parameter	Target power factor, switching threshold, delay time etc.
	Peripheral unit parameters	Current transformer ratio
Network interface	Pluggable data line, internal network protocol	
Mechanical installation	Outline dimension	W-71.5mm L-370mm, height is according to different capacity
	Installation dimension	Distance of installation fixing holes: W-85mm*L-315mm
	Weight	$\leq 6.5kg$
Environment temperature	Working temperature	-15°C~45°C
	Storage temperature	-25°C~55°C
Altitude	$\leq 2000m$	
Standard	GB/T 15576-2008	

Module selection

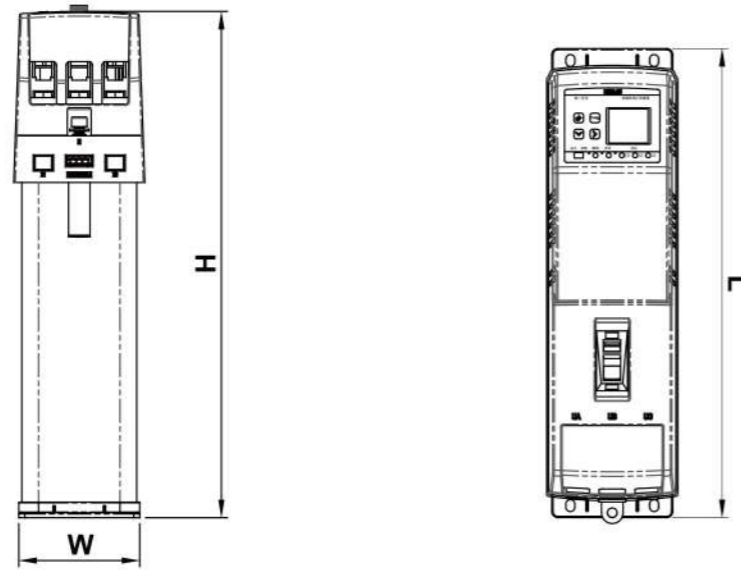
Compensation mode	Capacity (kvar)	Model	Application field
Three-phase total compensation	40+40	SFR-LXD-4040/450	It is used in the fields where the power quality meets the national standard, the requirement for power quality is not very high and no harmonic sensitive equipment. Phase separation compensation is used in the occasion that 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	
Total and separation combined compensation	10	SFR-LXD-10/250	
	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	

Typical design

Solution Component	Three-phase total compensation, zero-cross switching	Configuration list		
		Name	Model	Quantity
Primary wiring diagram		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
Compensation capacity (kvar)	Total capacity 240kvar	Cabinet (GCI)	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.

Overall 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	
SFR-LXD-4040/450	392	110	423	
SFR-LXD-4020/450	392	110	363	
SFR-LXD-3030/450	392	110	363	
Total compensation series				
SFR-LXD-2525/2010	370	71.5	332	85×315
SFR-LXD-2020/2010	370	71.5	332	
SFR-LXD-1510/1005	370	71.5	332	
SFR-LXD-1010/1005	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

Component	Solution
Primary wiring diagram	<p style="text-align: center;">Three-phase total compensation, zero-cross switching</p>
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 (GCJ)	800×800×2200(mm)	1

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