

Smart Harmonic Mitigation Capacitor Bank SFR-M



Intelligent



Zero-crossing



Harmonic mitigation



SFR-M series LV(low voltage) dynamic harmonic mitigation reactive compensation module is designed for solve the problem of harmonic and power factor in the situation of serious harmonic pollution in 0.4kV low voltage power distribution network. It is used as an integrated reactive power compensation module with functions of power factor enhancement, effective harmonic suppression, reduction of line loss and improvement of power quality.

Overview

Model Description



Annotation:

- 1 Model of the manufacturer Harmonic suppression module series
- 2 Product design number
- 3 Compensation capacity(kvar)
- 4 Reactance rate
- 5 Rated voltage, Unit V

Model Selection

Compensation Mode	Capacity (Kvar)	Model	Application Field
Three-phase Total Compensation	50	SFR-MXD-50-P7/480	It applies at the sites with great amount of non-linear loads such as VFD, UPS, LED lights and switching power supply etc.
	25+25	SFR-MXD-2525-P7/480	
	40	SFR-MXD-40-P7/480	
	20+20	SFR-MXD-2020-P7/480	
	30	SFR-MXD-30-P7/480	
	20+10	SFR-MXD-2010-P7/480	
	20	SFR-MXD-20-P7/480	
	10+10	SFR-MXD-1010-P7/480	
	15	SFR-MXD-15-P7/480	
	10+5	SFR-MXD-1005-P7/480	
Phase Separation Compensation	10	SFR-MXD-10-P7/480	
	30	SFR-MXD-30-P7/280	
	20	SFR-MXD-20-P7/280	
	10	SFR-MXD-10-P7/280	

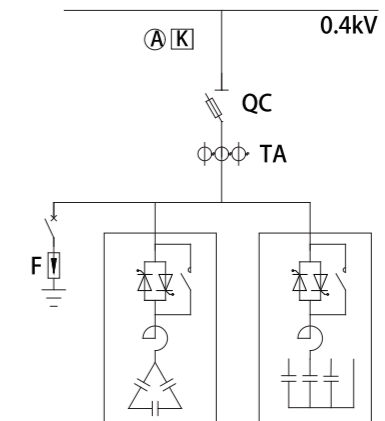
Technical Parameter

Function		Specification
Measurement Accuracy	Current	$\leq 1\%$
	Voltage	0.5% (80%~120%Un)
	Temperature	$\leq \pm 1^\circ\text{C}$
Switching Mode		Zero-crossing switch
Compensation Operation	Working voltage	AC 400V $\pm 20\%$
	Consumption	$\leq 5\text{VA}$
	Max.working current	$1.35 \times I_n$
	Switching inrush	$\leq 2\sqrt{2} \times I_n$
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 , only for total compensation)
Network Interface		Plug-in data line with RJ45 interface
Mechanical Installation	Outline dimension	W-280mm H-290mm, as the capacities of different specifications are slightly different, please consult us for specific product depth
	Installation dimension	W-295mm, as the capacities of different specifications are slightly different, please consult us for specific installation length
	Weight	$\leq 45\text{kg}$
Ambient Temperature	Working temperature	$-15^\circ\text{C} \sim 45^\circ\text{C}$
	Storage temperature	$-25^\circ\text{C} \sim 55^\circ\text{C}$
Altitude		$\leq 2000\text{m}$
Standard		IEC 831-1, 2(2000)

Typical Design

Content	Solution
	Combine compensation, zero-crossing switch,harmonic suppression

Primary Wiring Diagram



Compensation Capacity (kvar)	Total capacity 240kvar (Total compensation 150kvar+Separate compensation 90kvar)
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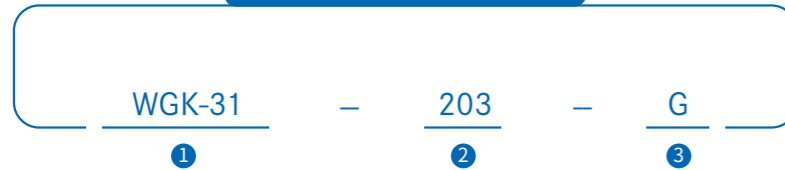
Configuration List

Name	Model	Quantity
Knife Fuse Switch	630A	1
Controller	WGK-31-203-F	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-MXD-30-P7/480	5
Separate Compensation Module	SFR-MXD-30-P7/280	3
Cabinet (GCJ)	1000×1000×2200(mm)	1

The above sample used the dynamic harmonic suppression reactive power compensation module configured with WGK-31-203 controller, determines the compensation capacity and reactance coefficient according to the requirement, improves the power factor of the system, and suppresses the harmonic component. The controller can control 32 total compensation modules and separate compensation modules. When the compensation capacity should be added, please add the quantity of dynamic compensation modules and change the specification of knife fuse switch and fuse.

Power Factor Controller

Model Description



Annotation:

- ① Model of the manufacturer
- ② Product design number
- ③ Compensation mode:
G indicates three-phase total compensation
F indicates combined compensation



Technical Parameter

Items		Parameters
Signal Input	Voltage	Range: Phase voltage 20~220V or line voltage 20~480V
		Overload: Continuous: 1.2 Un; instantaneous: 2Un
		Power Consumption: <1VA
	Current	Range: 5A
		Overload: Continuous: 1.2 In; instantaneous: 2In
		Power Consumption: <1VA
	Frequency	45~65 Hz
Power Supply		AC/DC 80~270V
Communication		Data line connection, physical layer isolation connect up to 32 SFR series modules
Relay Output		2 programmable alarm relay outputs Capacity 3A/250VAC (3A/30VDC)
Measurement 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 Harmonic measurement: B
Display Mode		128*64 LCD, contrast can be set
Protection Degree		Panel IP65, case IP30
Ambient Condition		Working temperature: -15~55 C Storage temperature: -20~75 C
Safety		Insulation between signal, power supply, output terminal and case resistor > 100MΩ Withstand voltage between signal input, power supply and output > AC 2kV
Outline		Outline dimension: 120×120×114mm Weight: 0.6kg

Smart Capacitor Bank SFR-L



Intelligent



Zero-crossing

SFR-L series LV(low voltage) power capacitor module is designed for 0.4kV LV 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 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.