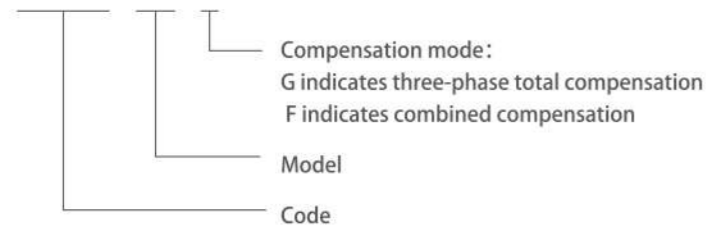


Matching controller

WGK-31 - 203 - G



Technical parameters

Items	Parameters
Signal input	Range Phase voltage 20~220V or line voltage 20~480V
	Overload Continuous: 1.2 Un; instantaneous: 2Un
	Power consumption < 1VA
	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
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	Outline dimension: 120×120×114mm Weight: 0.6kg

SFR-M Series LV Dynamic Harmonic Suppression

Reactive Compensation Module

Overview

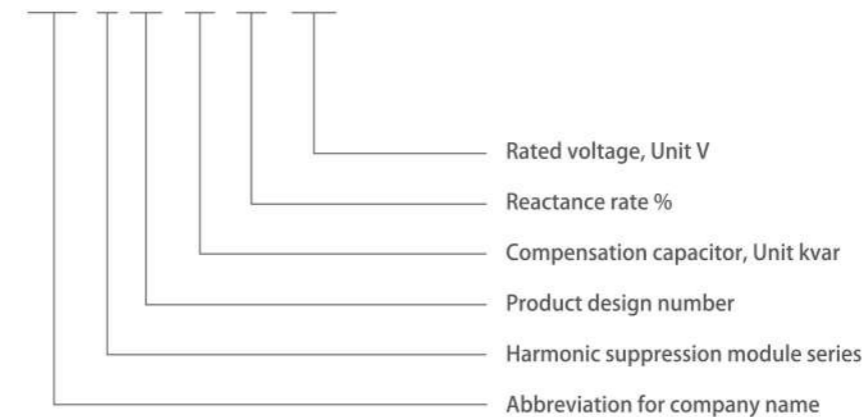
SFR-M series LV dynamic harmonic suppression reactive compensation module is designed for the problem of harmonic and power factor in the situation of serious harmonic pollution in 0.4kV low voltage distribution network. It is used as an integrated reactive power compensation module with functions of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

The components of dynamic harmonic suppression reactive compensation module include DSP digital processing circuit, highly integrated detection, control, protection, display unit, zero crossing switching module, discharge and air cooling unit, filter reactor, low-voltage filter power capacitor and function module operation status indicator circuit. This module is a new generation of dynamic reactive compensation equipment for 0.4kV low voltage distribution network which is suitable for frequent load change and high voltage qualification rate requirement situation. It is a typical dynamic tracking compensation integration module with switching time ≤ 20ms.



Naming Meaning

SFR - M XD - 30 - P7 / 480



Technical parameter

Function	Specification	
Measurement accuracy	Current	≤1%
	Voltage	≤0.5% (80%~120% Un)
	Temperature	≤±1℃
Switching mode	Zero-crossing switch	
Compensation operation	Working voltage	AC 380V±20%
	Consumption	≤5VA
	Max. working current	1.35×In
	Switching inrush current	≤2×In
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℃ (can be set)
	Unbalance	50% (can be set, only for total compensation)
Network interface	Pluggable data line, internal network protocol	
Mechanical installation	Outline dimension	280mm×290mm×370 (430) mm
	Installation dimension	295mm×350 (410) mm
Environment temperature	Weight	≤45kg
	Working temperature	-15℃~45℃
Storage temperature	-25℃~55℃	
Altitude	≤2000m	
Standard	GB/T 15576-2008	

Model selection

SFR-M series model selection (take reactance 7% as example)

Compensation mode	Capacity (kVar)	Model	Application field
Three-phase total compensation	50	SFR-MXD-50-P7/480	It is used for many occasions with nonlinear load, large harmonics and devices sensitive to harmonics, such as frequency converter, intermediate frequency furnace, UPS power supply, rolling mill and lighting and switching power supply.
	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	

Typical design

Content	Solution
Primary wiring diagram	Combine compensation, zero-crossing switch, harmonic suppression
Compensation capacity (kvar)	Total capacity 240kvar (Total compensation 150kvar+Separate compensation 90kvar)

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 upper example adopts 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.