

LV POWER FACTOR CORRECTION CAPACITORS ,COMPONENTS





Westinghouse

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- A Global Heritage Brand with 130 Years of Product Innovation
- Perfect Products, Creative Services, and Competitive Price

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Westinghouse remains a trusted name globally in consumer and industrial products. Built on a heritage of innovation and entrepreneurial spirit, Westinghouse products were the first to supply the United States with AC electric power, transmit a commercial radio broadcast and capture man's first step on the moon. Today, Westinghouse continues to grow its diverse portfolio with a wide range of product categories that include home appliances, consumer electronics, lighting and power generation.



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Power Quality Cabinet Series

- WHAPF active power filter cabinet/ WHSVG static Var generator cabinet
- Dynamic comprehensive compensation device APF/SVG module + RTBAGK anti-harmonic capacitor

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Intelligent Capacitor & Module Series



WHAPF active power filter cabinet WHSVG static Var generator cabinet



Overview

WHAPF / WHSVG detects the load current in real time through the external current transformer (CT), calculates the harmonic/reactive component of the load current through the internal DSP, and sends it to the internal IGBT through the PWM signal, then generate a compensating current with the same amplitude but opposite phase angles to the detected harmonics / reactive power to achieve the filtering/ compensation function.

- Harmonic compensation: APF can filter 250 times random harmonics at the same time
- Reactive power compensation: Capacitive & Inductive (-1—1) stepless compensation
- Fast response
- Design life is more than 100,000 hours (more than ten years)

Model and Meaning

No.	Name	Meaning
1	Enterprise code	WH
2	Product type	APF: active power filter SVG: static var generator
3	Voltage level	400V
4	Capacity	300A(200kvar)
5	Wiring Type	4L: 3P4W 3L: 3P3W
6	Mounting type	No mark: drawer type A: cabinet type B: Wall-mounted type (Three options)

Technical parameters

Normal working and installation conditions	
Ambient temperature	-20°C~+45°C
Relative humidity	5%~ 95%, no condensation
Altitude	≤1500m, 1500~3000m (derating 1% per 100m) according to GB / T3859.2
Environmental conditions	No harmful gas and steam, no conductive or explosive dust, no severe mechanical vibration

* Note: For other parameters, please refer to P25 module parameters

RTAPF cabinet series model selection

Dimension and structure	WHAPF-400V-	current	unit	Voltage(V)	Dimension(W×D×H)
	100A/4L	100A	set	400	800×800×2200
	150A/4L	150A	set	400	800×800×2200
	200A/4L	200A	set	400	800×800×2200
	250A/4L	250A	set	400	800×800×2200
	300A/4L	300A	set	400	800×800×2200
	400A/4L	400A	set	400	800×800×2200
	500A/4L	500A	set	400	800×800×2200

* Note: The cabinet color is light gray (RAL7035). Other colors, capacities and cabinet sizes can be customized.

SVG cabinet series model selection

Dimension and structure	WHSVG-400V-	current	unit	Voltage(V)	Dimension(W×D×H)
	100A/4L	100A	set	400	800×800×2200
	200A/4L	200A	set	400	800×800×2200
	300A/4L	300A	set	400	800×800×2200
	400A/4L	400A	set	400	800×800×2200

* Note: The cabinet color is light gray (RAL7035). Other colors, capacities and cabinet sizes can be customized.

Dynamic comprehensive compensation device APF /SVG module + RTBAGK anti-harmonic capacitor



Overview

APF /SVG module + RTBAGK anti-harmonic capacitor (combined set). The APF or SVG module is installed in the cabinet and equipped with incoming circuit breakers and quick-fuse. The capacity of RTBAGK capacitor module is any combination of 5kvar ~ 60kvar; the capacity of APF or SVG module is 50A (35kvar), 100A (70kvar). 100kvar optional.

Ventilation design on the back, with ventilation filter holes. Capacitor switching is controlled by APF / SVG, which is more intelligent. The advantages are cost-effective, simple structure, easy maintenance, easy expansion, and low operating noise.

The traditional power factor compensation (capacitor bank) has the advantages of cost-effective and large capacity; the disadvantages are slow response and switching speed, single function; no capacitive compensation, and the compensation capacity can not be continuously

adjustable, so it is difficult to achieve complete balance with the reactive power required by the system, which is easy to cause over compensation or under compensation.

Hybrid filtering and compensation (APF or SVG) is a combination of traditional reactive power compensation and APF or SVG modules. While eliminating system harmonic currents, it compensates for the shortcomings of traditional reactive power compensation, and the power factor after compensation is generally above 0.95. Mainly used in power distribution substation and industrial field, large capacity compensation.

Model and Meaning

WH	SVG	C
1	2	3
No.	Name	Meaning
1	Enterprise code	WH
2		SVG: SVG module APF: APF module
3		Capacity compensation

Technical parameters

Example of collocation	Single module capacity	Intelligent anti -harmonic capacitor combination			
APFC scheme 1	APF single module 150A	(10kvar~50kvar)×(1-32)			
APFC scheme 2	APF single module 100A	(10kvar~50kvar)×(1-32)			
APFC scheme 3	APF single module 70A	(10kvar~50kvar)×(1-32)			
APFC scheme 4	APF single module 50A	(10kvar~50kvar)×(1-32)			
SVGC scheme 1	SVG single module 100kvar	(10kvar~50kvar)×(1-32)			
SVGC scheme 2	SVG single module 70kvar	(10kvar~50kvar)×(1-32)			
SVGC scheme 3	SVG single module 50kvar	(10kvar~50kvar)×(1-32)			
SVGC scheme 4	SVG single module 35kvar	(10kvar~50kvar)×(1-32)			
Composition of compensation	Combination of single module + anti-harmonic capacitor (maximum 32 sets)				
WHAPF/WHSVG (single module capacity)	50A(35kvar),75A(50kvar),100A(70kvar),150A(100kvar)				
Anti- harmonic capacitor (single capacity)	(10kvar~50kvar) up to 16 sets of three phase and 16 sets of split phase compensation type capacitor				
Dimension(W×D×H)	800×800×2200,800×1000×2200 ,1000×1000×2200				
Filtering range	2~50th times harmonic (selective filtering, each harmonic compensation can be set separately)				
Filtering harmonic capacity WHAPF	50A,75A,100A,150A				
Reactive compensation capacity	100KVAR+(10-50) kvar ×32				
Normal working and installation conditions					
Ambient temperature	-20°C~+45°C				
Relative humidity	5%~ 95%, no condensation				
Altitude	≤1500m,1500~3000m (derating 1% per 100m) according to GB / T3859.2				
Environmental conditions	No harmful gas and steam, no conductive or explosive dust, no severe mechanical vibration				
System parameters					
Rated input line voltage	400V±10%				
Rated frequency	50Hz (45Hz ~ 55Hz)				
Power grid structure	3P4W (400V)				
Current transformer	100/5 ~ 5,000/5				
Circuit topology	Three-level				
Overall efficiency	≥97%				
Standard	DL/T1216-2019,JB/T11067-2011,GB/T15576				
Communication monitoring capability					
Communication interface	RS485, CAN interface				
Communication protocol	Modbus protocol				
Module display interface	7"HMI panel, external dimension(W226.5XH163XD36)mm, hole size(W215XH152)				
Protective function	Over-voltage protection, under-voltage protection, short-circuit protection, over-current protection, over-temperature protection, drive fault protection				
Error alarm	Support independent monitoring or centralized monitoring				
Dimension and structure	Rated capacity	Total capacity	Unit	Voltage(V)	Dimension (WxDxH)
	100kvar(SVG)+240kvar	340kvar	Set	400	800×800×2200
	100kvar(SVG)+320kvar	420kvar	Set	400	800×800×2200
	100kvar(SVG)+500kvar	600kvar	Set	400	1000×1000×2200

* Note: The cabinet color is light gray (RAL7035). Other colors, capacities and cabinet sizes can be customized.

Power Quality Module Series

WHAPF Active power filter

WHSVG static var generator

WHSPC Three-phase imbalance control module

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Intelligent Capacitor & Module Series



WHAPF Active power filter / WHSVG static var generator
 WHSPC Three-phase imbalance control module

Overview



WHAPF active power filter detects the load current in real-time through the external current transformer (CT), calculates the harmonic of the load current through the internal DSP, and sends it to the internal IGBT through the PWM signal, then generate a compensating current with the same amplitude but opposite phase angles to the detected harmonics to achieve the filtering function.

- Harmonic compensation: APF can filter 2-50 times random harmonics at the same time
- Reactive power compensation: Capacitive& compensation
- Fast response
- Design life is more than 100,000 hours (more than ten years)

The WHSVG static var generator detects the load current in real-time through the external current transformer (CT), calculates the reactive power of the load current through the internal DSP, and sends it to the internal IGBT through the PWM signal according to the set value , then generate the required reactive compensation current to achieve the dynamic reactive compensation function.

- Capacitive & inductive load -1 1 compensation.
- Three-phase imbalance compensation.
- Working switching frequency is 10K, extremely fast response dynamic compensation.

Model and Meaning

No.	Name	Meaning
1	Enterprise code	WH
2	Product type	APF: active power filter SVG: static var generator WHSPC Three- phase imbalance control module
3	Voltage level	400V
4	Capacity	300A(200kvar)
5	Wiring Type	4L: 3P4W 3L: 3P3W
6	Mounting type	No mark: drawer type A: cabinet type B: Wall-mounted type (Three options)

Technical parameters

Normal working and installation conditions						
Ambient temperature	-20°C~+45°C					
Relative humidity	5%~ 95%, no condensation					
Altitude	≤1500m,1500~3000m (derating 1% per 100m) according to GB / T3859.2					
Environmental conditions	No harmful gas and steam, no conductive or explosive dust, no severe mechanical vibration					
Outdoor installation	At least 15cm space should be reserved for the upper and lower air outlets of the module, and at least At least 15cm space should be reserved for the upper and lower air outlets of the module, and at least					
System parameters						
Rated input line voltage	400V±10%					
Rated frequency	50Hz (45Hz ~ 55Hz)					
Power grid structure	3P4W (400V)					
Current transformer	100/5 ~ 5,000/5					
Circuit topology	Three-level					
Overall efficiency	≥97%					
Standard	DL/T1216-2019, JB/T11067-2011,CQC1311-2017					
Performance						
Response time	≤5ms					
Target power factor	1					
Intelligent air cooling	Excellent ventilation					
Noise Level	< 65dB					
Communication monitoring capability						
Communication interface	RS485, CAN interface					
Communication protocol	Modbus protocol					
Module display interface	4.3"HMI panel(optional)					
Protective function	Over-voltage protection, under-voltage protection, short-circuit protection, over-current protection, over-temperature protection, drive fault protection					
Error alarm	Support independent monitoring or centralized monitoring					
APF/SVG Dimension and structure	Capacity	Dimension(W×H×D)		Mounting dimension(W×H)		
		Drawer type	Wall-mounted type	Drawer type	Wall-mounted type	Drawer type Hole
	50A(35kvar)/4L	500×160×567	500×160×567	478×130	480×250	445×162
	75A(50kvar)/4L	500×160×567	555×260×629	478×130	480×250	445×162
	100A(70kvar)/4L	555×260×629	555×260×629	531×150	535×350	512×262
	150A(100kvar)/4L	555×260×629	555×260×629	531×150	535×350	512×262



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Intelligent Capacitor & Module Series

- RT series intelligent combined low voltage power capacitor
- RT series intelligent combined anti-harmonic low voltage power capacitor



RT series intelligent combined low voltage power capacitor

Overview

RT intelligent combined low voltage power capacitor compensation device (intelligent power capacitor) is an intelligent reactive power compensation device applied to 0.4kV low voltage distribution network to reduce line loss, improve power factor and power quality.

Integrated with modern measurement and control, power electronics, network communication, automation control, power capacitor and other advanced technologies. It has the characteristics of better compensation effect, smaller volume, lower power consumption, more cost-saving, more flexible application, easy maintenance, long span life, to meet the higher requirements of the modern power grid for reactive power compensation.



Model and Meaning

RT B A - ** - ** / * / * (* + *)

RT								
1	2	3	4	5	6	7	8	9

No.	Name	Meaning
1	Enterprise code	RT
2	Design No.	B
3	Automatic control	A
4	Compensation method	FB: split phase compensation GB: three phase compensation GB-H: mixed compensation
5	Procedure category	
6	Capacitor rated voltage	Three phase compensation: 450V, split phase compensation: 250V
7	Rated capacity	
8	First capacitor capacity	
9	Second capacitor capacity	

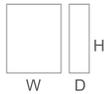
Technical parameters

Normal working and installation conditions	
Ambient temperature	-25°C~+55°C
Relative humidity	Relative humidity ≤50% at 40°C , ≤90% at 20°C
Altitude	≤2000m
Environmental conditions	No harmful gas and steam, no conductive or explosive dust, no severe mechanical vibration
Power condition	
Rated voltage	380V±20%
Rated frequency	50Hz (45Hz ~ 55Hz)
THDv	THDv ≤5%
THDi	THDi ≤20%
Performance	
Measurement tolerance	Voltage: ≤±0.5%(0.8~1.2Un) □ current: ≤±0.5%(0.2~1.2In, active power: ≤±2%, power factor: ≤±1%°C
Protection tolerance	Voltage: ≤±1%, current: ≤±1%, temperature: ±1°C, time: ±0.1s
Reactive compensation parameters	Reactive power compensation tolerance: ≤ 50% of the min. capacitor capacity, capacitor switching time: ≥ 10s, can be set between 10s and 180s
Reliability parameter	Control accuracy: 100%, allowable switching times: 1 million times, capacitor capacity running time attenuation rate: ≤1% / year, capacitor capacity switching attenuation rate: ≤0.1% / 10,000 times
Protective function	Over-voltage protection, under-voltage protection, short-circuit protection, over-current protection, over-harmonic protection, over-temperature protection, drive failure protection
Standard	GB/T15576-2008
Communication monitoring capability	
Communication interface	RS485
Communication protocol	Modbus / DL645 protocol

Specifications and data sheets

Breaking capacity 6kA, 15kA main product specifications and data sheets

Compensation method	Specification	Ref.No	Capacitor rated voltage(V)	Rated capacity (kvar)	Dimension (W×D×H)mm	Mounting dimension (W1×D 1)mm
Three phase compensation complete with MCB + Contactor+ Controller	RTBAGB-/450/10(5+5)	W613643	450	10	80×395×215	50×375
	RTBAGB-/450/15(10+5)	W613644	450	15	80×395×235	50×375
	RTBAGB-/450/20(10+10)	W613645	450	20	80×395×235	50×375
	RTBAGB-/450/30(15+15)	W613646	450	30	80×395×270	50×375
	RTBAGB-/450/30(20+10)	W613647	450	30	80×395×270	50×375
	RTBAGB-/450/40(20+20)	W613648	450	40	80×395×270	50×375
	RTBAGB-/450/50(25+25)*	W613649	450	50	80×395×345	50×375
	RTBAGB-/450/60(30+30)*	W613650	450	60	80×395×345	50×375
Split phase(single phase) compensation complete with MCB + Contactor+ Controller	RTBAFB-/250/5	W613651	250	5	80×395×215	50×375
	RTBAFB-/250/10	W613652	250	10	80×395×215	50×375
	RTBAFB-/250/15	W613653	250	15	80×395×235	50×375
	RTBAFB-/250/20	W613654	250	20	80×395×270	50×375
	RTBAFB-/250/25	W613655	250	25	80×395×315	50×375
	RTBAFB-/250/30	W613656	250	30	80×395×315	50×375
Mixed compensation (Three phase & Single phase) complete with MCB + Contactor+ Controller	RTBAGB-H-/450/5+250/5	W613657	450/250	5+YN586	86×395×248	50×375
	RTBAGB-H-/450/10+250/5	W613658	450/250	10+YN586	86×395×278	50×375
	RTBAGB-H-/450/10+250/10	W613659	450/250	10+YN1086	86×395×278	50×375
	RTBAGB-H-/450/15+250/15	W613660	450/250	15+YN1586	86×395×358	50×375
	RTBAGB-H-/450/20+250/20*	W613661	450/250	20+YN2086	86×395×358	50×375
	RTBAGB-H-/450/25+250/25*	W613662	450/250	25+YN2586	86×395×438	50×375
	RTBAGB-H-/450/30+250/30*	W613663	450/250	30+YN3086	86×395×438	50×375



Ex: RTBAGB-00 / 450/10 (5 + 5), 00 -means program category.
 Mixed compensation RTBAGB-H series, when equipped with controller , can be only used WHGRT-Z controller.
 * Note: * Breaking capacity 6kA

Breaking capacity 35kA main product specifications and data sheets

Compensation method	Specification	Ref.No	Capacitor rated voltage(V)	Rated capacity (kvar)	Dimension (W×D×H)mm	Mounting dimension (W1×D 1)mm
Three phase compensation complete with MCCB + Contactor+ Controller	RTBAGB-35H/450/30(20+10)	W613664	450	30	88×391×345	50×375
	RTBAGB-35H/450/40(20+20)	W613665	450	40	88×391×345	50×375
	RTBAGB-35H/450/50(30+20)	W613666	450	50	88×391×375	50×375
	RTBAGB-35H/450/60(30+30)	W613667	450	60	88×391×375	50×375
	RTBAGB-35H/450/60(40+20)	W613668	450	60	103×398×365	70×375
	RTBAGB-35H/450/70(40+30)	W613669	450	70	103×398×405	70×375
	RTBAFB-35H/250/10	W613670	250	10	88×391×245	50×375
	RTBAFB-35H/250/20	W613671	250	20	88×391×300	50×375
Split phase (Single Phase) compensation complete with MCCB + Contactor+ Controller	RTBAFB-35H/250/30	W613672	250	30	88×391×345	50×375
	RTBAFB-35H/250/10+5	W613673	250	15	103×398×305	70×375
	RTBAFB-35H/250/10+10	W613674	250	20	103×398×305	70×375
	RTBAFB-35H/250/20+10	W613675	250	30	103×398×365	70×375
	RTBAFB-35H/250/20+20	W613676	250	40	103×398×365	70×375



* Note: Split phase compensation series (built-in 2 sets of capacitors).
 When equipped with controller , can be only used WHGRT-Z controller.

Accessories (additional purchased)



three phase compensation type Secondary current transformer

Secondary current transformer

Name	type	Corresponding selection
Secondary current transformer	three phase compensation	Three phase compensation capacitor as master
	split phase (mixed) compensation type	Split phase compensation capacitor as master



split phase (mixed) compensation type Secondary current transformer

Communication cable

Specification	length	picture	usage
W20	20cm		Connection of two adjacent intelligent capacitors
W80	80cm		Connection of upper and lower layers of intelligent capacitors
W260	260cm		Connection of intelligent capacitors in main and sub cabinet
D300-W	300cm		Connection of intelligent capacitor and controller

Functional equivalence diagram



Ordering instruction(s)

rated voltage, rated capacity, three phase compensation /split phase compensation, application and other parameters need to be provided.

For example: RTBAGB- / 450/30 (20 + 10) 200 units

RTBAGB series, Capacitor rated voltage: 450V, rated capacity: 30kvar, quantity: 200 units

RT series intelligent combined anti-harmonic low voltage power capacitor



Overview

RT series intelligent combined anti-harmonic low voltage power capacitor is a new integrated module for reactive power compensation which is applied in 0.4kV low voltage distribution network to save energy, harmonic mitigation and improve power factor, instead of the traditional reactive power compensation equipment of controller, fuse, switch, filter reactor and power capacitor.

It is mainly designed for the situation where the power network has a high harmonic and the traditional capacitors cannot be operated. It can not only meet the reactive compensation, improve the power factor, but also restrain the influence of the corresponding harmonic on the capacitor and improve the power quality. In the electrical environment where the main harmonic is 5 times or more, 7% of reactors shall be equipped, and the main harmonic is 3 times or more, 14% of reactors shall be equipped.

1

Intelligent Capacitor & Module Series

Model and Meaning

RT	B	A	- □	K	- □ □	- A	/ □	/ □	/ □
1	2	3	4	5	6	7	8	9	10
No.	Name		Meaning						
1	Enterprise code		RT						
2	Design No.		B						
3	Automatic control		A						
4	Compensation method		F: split phase compensation			G: three phase compensation			
5	anti-harmonic		K						
6	Procedure category		three phase compensation: 525/480、split phase compensation: 300/280						
7	box type		No mark: vertical type						
8	Capacitor rated voltage(V)								
9	Rated capacity(kvar)								
10	Reactance ratio(%)		7%/14%						

*Note: RTBAGK series products must be equipped with JKGRTBA580-I reactive power compensation measurement and control device

Technical parameters

Normal working and installation conditions	
Ambient temperature	-25°C~ +55°C
Relative humidity	Relative humidity ≤ 50% at 40°C ; ≤ 90% at 20°C
Altitude	≤ 2000m
Environmental conditions	no harmful gas and steam, no conductive or explosive dust, no severe mechanical vibration
Power condition	
Rated voltage	380V±20%
Rated frequency	50Hz (45Hz ~ 55Hz)
THDv	THDv ≤ 5%
THDi	THDi ≤ 20%
Performance	
Measurement tolerance	Voltage: ≤ ±0.5%(0.8~1.2Un), current: ≤ ±0.5%(0.2~1.2In), active power: ≤ ±2%, power factor: ≤ ±1%, temperature:±1
Protection tolerance	Voltage: ≤ ±1%, current: ≤ ±1%, temperature:±1 , time:±0.1s
Reactive compensation parameters	Reactive power compensation tolerance: ≤ 50% of the min. capacitor capacity, capacitor switching time: ≥ 10s, can be set between 10s and 180s
Reliability parameter	Control accuracy: 100%, allowable switching times: 1 million times, capacitor capacity running time attenuation rate: ≤ 1% / year, capacitor capacity switching attenuation rate: ≤ 0.1% / 10,000 times
Protective function	Over-voltage protection, under-voltage protection, short-circuit protection, over-current protection, over-harmonic protection, over-temperature protection, drive failure protection
Standard	GB/T15576-2008
Communication monitoring capability	
Communication interface	RS485
Communication protocol	Modbus protocol / DL645

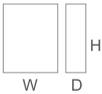
Specifications and data sheets

RTBAGK-A box type (5-40) kvar

Compensation method	Specification 7%	Ref.No	Specification 14%	Ref.No	Rated capacity (kvar)	Dimension (W×D×H) mm	Mounting dimension (W×D×H) mm
Three phase compensation complete with MCCB + Contactor+ Controller	RTBAGK-480/50/7%	W613677	RTBAGK-525/50/14%	W613677	50	150×533×447	100×515
	RTBAGK-480/40/7%	W613678	RTBAGK-525/40/14%	W613678	40	150×533×407	100×515
	RTBAGK-480/30/7%	W613679	RTBAGK-525/30/14%	W613679	30	150×533×407	100×515
	RTBAGK-480/20/7%	W613680	RTBAGK-525/20/14%	W613680	20	150×533×357	100×515
	RTBAGK-480/10/7%	W613681	RTBAGK-525/10/14%	W613681	10	150×533×357	100×515
Split phase (Single Phase) compensation complete with MCCB + Contactor+ Controller	RTBAGK-280/40/7%	W613682	RTBAGK-300/40/14%	W613682	40	150×533×447	100×515
	RTBAFK-280/30/7%	W613683	RTBAGK-300/40/14%	W613683	30	150×533×407	100×515
	RTBAFK-280/25/7%	W613684	RTBAGK-300/40/14%	W613684	25	150×533×407	100×515
	RTBAFK-280/20/7%	W613685	RTBAGK-300/40/14%	W613685	20	150×533×407	100×515
	RTBAFK-280/15/7%	W613686	RTBAGK-300/40/14%	W613686	15	150×533×357	100×515
	RTBAFK-280/10/7%	W613687	RTBAGK-300/40/14%	W613687	10	150×533×357	100×515
	RTBAFK-280/5/7%	W613688	RTBAGK-300/40/14%	W613688	5	150×533×357	100×515

RTBAGK-A box type (40-70) kvar

Compensation method	Specification 7%	Ref.No	Specification 14%	Ref.No	Rated capacity (kvar)	Dimension (W×D×H) mm	Mounting dimension (W×D×H) mm
Three phase compensation complete with Capacitor	RTBAGK-480/70/7%	W613725	RTBAGK-425/70/14%	W613728	70	150×533×447	100×515
	RTBAGK-480/60/7%	W613726	RTBAGK-425/60/14%	W613729	60	150×533×407	100×515
	RTBAGK-480/50/7%	W613727	RTBAGK-525/50/14%	W613730	50	150×533×407	100×515



* e.g.: RTBAGK ** - A / 480 / 40 / 7%, ** - is a customized program category, - A is box type, with two steps inside.

Functional equivalence diagram



Ordering instruction(s)

Split or compensation phase three ,capacity rated ,voltage rated products the provide must user The phase compensation etc. Users try to provide some characteristics of the place of use .

PFRC series reactive power Automatic compensation controller



1

Feature

- Calculate the switching capacitor capacity based on the fundamental reactive power, which can avoid any form of switching vibration,
- Correctly display the power factor of the power grid in the harmonic place
- High power factor Measurement accuracy and wide display range
- Real-time display total power factor (PF) and fundamental power factor (DPF)
- Real-time display THDv and THDi
- There are 12 output methods for users to choose
- HMI easy to operate
- Various control parameters are fully digital adjustable and intuitive to use
- With two working modes: automatic operation and manual operation
- With over-voltage and under-voltage protection
- With voltage harmonic protection function
- With data storage protection when power off
- Low current signal input impedance

Overview

PFRC series reactive power automatic compensation controller is suitable for automatic adjustment of capacitor compensation device of low voltage power distribution system, so that the power factor can reach the user's predetermined state, increase the utilization power of power transformers, reduce line losses, and improve the voltage quality of power supply.

- Standard: JB/T 9663-2013

Model and Meaning

PFRC	F	3	(C)	□	□
1	2	3	4	5	6
No.	Name		Meaning		
1	Reactive power compensation controller		PFRC		
2	Physical terms		F=G+W G: power factor W: reactive power		
3	Mixed compensation		3 : mixed compensation ; no mark: three phase compensation		
4	With communication function		C : with communication function ; no mark: without communication function		
5	Output steps		optional step: 4、6、8、10、12、16		
6	Output		J: static output D: dynamic output		

Technical parameters

Controller	
PFRC-16	Three phase compensation (PFRC-16J equipped with AC contactor, PFRC-16D equipped with composite switch or contactless switch)
PFRC3-16	mixed compensation (PFRC3-16J equipped with AC contactor, PFRC3-16D equipped with composite switch or contactless switch)
Normal working and installation conditions	
Ambient temperature	-25°C~ +55°C
Relative humidity	Relative humidity ≤ 50% at 40°C ; ≤ 90% at 20°C
Altitude	≤ 2500m
Environmental conditions	no harmful gas and steam, no conductive or explosive dust, no severe mechanical vibration
Power condition	
Rated voltage	AC 220V/380V
Rated working current	AC 0~5A
Rated frequency	45Hz~65Hz
Performance	
Control step	4, 6, 8, 10, 12, 16
Measure reactive power	0-9999 kvar
Sensitivity	100mA
Static Output contact capacity	AC 220V 5A
dynamic Output contact capacity	12V/10mA
Display power factor	Lag: 0.001~lead: 0.001
Dimension(W×H)	
	DimensionW×H×D(mm)
	Hole dimensionW×H(mm)
	144×144×87
	140×140

Ordering instruction(s)

The user must provide the steps of product, rated working voltage, and the equipped switch is contactor or composite switch
 PFRC3-16 reactive power automatic compensation controller should be selected for mixed compensation (three phase compensation and split phase compensation)



Westinghouse

Capacitor & Reactor Series

- RTSMK series self-healing low voltage shunt power capacitor
- RTMJ series self-healing low voltage shunt power capacitor
- Three phase series filter reactor



RTSMK Series Self-Healing Low Voltage Shunt Power Capacitor

Feature

- Advanced imported production equipment and excellent imported P film.
- The product has a smaller volume and more reliable quality.
- Unique design ensure that the product can adapt to higher environments.
- Places with significant temperature and system voltage fluctuations.
- New type of aluminum shell packaging, with better product sealing and no leakage.
- Newly designed installation feet, sturdy and convenient.
- Unique lead out terminals, convenient wiring, reliable and safe connection.
- The corrosion-resistant metal shell is sturdy, and no need to painting.

Model and Meaning

RT	SMK	*	-	*	-	*
RT						
1	2	3	4	5		
No.	Name		Meaning			
1	Enterprise code		RT			
2	Design No.		SMK			
3	Rated voltage		A			
4	Rated capacity		YN: Splitting phase			
5	Phase		1: Single phase, 3: Three phase			

Technical parameters

Normal working and installation conditions	
Ambient temperature	-25°C~+55°C
Relative humidity	95%
Altitude	≤2000m
Environmental conditions	It is free of harmful gases and vapors, conductive or explosive dust, and there is no severe mechanical vibration. It should be ensured to work under good ventilation conditions, and it is not allowed to work in a closed and non ventilated environment
Performance	
Rated voltage	(0.25~0.69)kV, AC
Rated frequency	50Hz or 60Hz
Rated capacity	(1~40)kvar
Capacity tolerance	-5%~+10%
AC withstand voltage	Withstand voltage between terminals: 2.15Un/AC is applied between the capacitor terminals for 10 seconds, and there should be no permanent breakdown or flash over
	Withstand voltage between terminals and shell: 3.5kV/AC is applied between the capacitor terminals and the shell for 10 seconds, and there should be no permanent breakdown or flash over
Loss tangent	≤0.001 under rated power frequency voltage at 20°C
Maximum allowable overvoltage	1.1Un; <8h per 24h
Maximum allowable overcurrent	1.3 In
Self-discharge characteristics	Applying a DC voltage of 2Un to the capacitor, after disconnecting the power supply for 3 mins, the remaining voltage drops below 75V or lower
Temperature	Class -25/D
Expected life	130000hrs minimum with proper maintenance



Overview

The RTSMK series self-healing low voltage parallel power capacitors (Soft Resin impregnated) are suitable for power frequency AC power systems with rated voltage of 1000V and below, used to improve power factor and voltage quality. Standard IEC 60831-1:2014 , IEC 60831-2:2014

Main Product Models, Specifications, And Data Sheets (50Hz)

Model No. RTSMK	Ref.No.	Rated voltage (V)	Rated capacity (kvar)	Rated capacity (μF)	Rated current (A)	Rated frequency (Hz)	"Dimension (Φ×H(mm))"	Installation screw size	Figure No.	Weight (kg)
CYLINDRICAL CAPACITOR RTSMK-0.25 Single phase 250V										
RTSMK-0.25-2.5-1	W613731	250	2.5	127.3	10	50	76×130	ΦM12×16	Figure 1	1.10
RTSMK-0.25-5-1	W613732	250	5	254.6	20	50	76×240	ΦM12×16		1.30
RTSMK-0.25-7.5-1	W613733	250	7.5	382.0	30	50	86×240	ΦM12×16	Figure 2	1.50
RTSMK-0.25-10-1	W613734	250	10	509.3	40	50	86×290	ΦM12×16		1.80
RTSMK-0.25-12.5-1	W613735	250	12	611.2	48	50	86×290	ΦM12×16	Figure 3	1.80
RTSMK-0.25-15-1	W613736	250	15	763.9	60	50	96×290	ΦM16×25		2.40
RTSMK-0.25-20-1	W613737	250	20	1018.6	80	50	106×290	ΦM16×25		3.00
CYLINDRICAL CAPACITOR RTSMK-0.4 Three phase 400V										
RTSMK-0.4-2.5-3	W613738	400	2.5	3x16.6	3.6	50	76×240	ΦM12×16	Figure 1	1.30
RTSMK-0.4-5-3	W613739	400	5	3x33.2	7.2	50	76×240	ΦM12×16		1.30
RTSMK-0.4-7.5-3	W613740	400	7.5	3x49.7	10.8	50	76×240	ΦM12×16		1.30
RTSMK-0.4-10-3	W613741	400	10	3x66.3	14.4	50	86×240	ΦM12×16	Figure 2	1.50
RTSMK-0.4-12.5-3	W613742	400	12.5	3x82.9	18	50	86×290	ΦM12×16		1.80
RTSMK-0.4-15-3	W613743	400	15	3x99.5	21.7	50	96×290	ΦM16×25	Figure 3	2.40
RTSMK-0.4-20-3	W613744	400	20	3x132.6	28.9	50	106×290	ΦM16×25		3.00
RTSMK-0.4-25-3	W613745	400	25	3x165.8	36.1	50	116×300	ΦM16×25		3.70
RTSMK-0.4-30-3	W613746	400	30	3x198.9	43.3	50	136×300	ΦM16×25		4.40
RTSMK-0.4-35-3	W613747	400	35	3x232.1	50.5	50	136×300	ΦM16×25	Figure 4	4.40
RTSMK-0.4-40-3	W613748	400	40	3x265.3	57.7	50	136×300	ΦM16×25		4.40
RTSMK-0.4-50-3	W614694	400	50	3x3361.6	72.2	50	136×360	ΦM16×25		5.50
CYLINDRICAL CAPACITOR RTSMK-0.415 Three phase 415V										
RTSMK-0.415-2.5-3	W613749	415	2.5	3x15.4	3.5	50	76×240	ΦM12×16	Figure 1	1.30
RTSMK-0.415-5-3	W613750	415	5	3x30.8	7	50	76×240	ΦM12×16		1.30
RTSMK-0.415-7.5-3	W613751	415	7.5	3x46.2	10.4	50	76×240	ΦM12×16		1.30
RTSMK-0.415-10-3	W613752	415	10	3x61.6	13.9	50	86×240	ΦM12×16	Figure 2	1.50
RTSMK-0.415-12.5-3	W613753	415	12.5	3x77	17.4	50	86×290	ΦM12×16		1.80
RTSMK-0.415-15-3	W613754	415	15	3x92.4	20.9	50	96×290	ΦM16×25	Figure 3	2.40
RTSMK-0.415-20-3	W613755	415	20	3x123.2	27.8	50	106×290	ΦM16×25		3.00
RTSMK-0.415-25-3	W613756	415	25	3x154	34.8	50	116×300	ΦM16×25		3.70
RTSMK-0.415-30-3	W613757	415	30	3x184.8	41.7	50	136×300	ΦM16×25		4.40
RTSMK-0.415-35-3	W613758	415	35	3x215.6	48.7	50	136×300	ΦM16×25	Figure 4	4.40
RTSMK-0.415-40-3	W613759	415	40	3x246.4	55.6	50	136×300	ΦM16×25		4.40
RTSMK-0.415-50-3	W613818	415	50	3x308	69.6	50	136×360	ΦM16×25		5.50
CYLINDRICAL CAPACITOR RTSMK-0.44 Three phase 440V										
RTSMK-0.44-2.5-3	W613760	440	2.5	3x13.7	3.3	50	76×240	ΦM12×16	Figure 1	1.30
RTSMK-0.44-5-3	W613761	440	5	3x27.4	6.6	50	76×240	ΦM12×16		1.30
RTSMK-0.44-7.5-3	W613762	440	7.5	3x41.1	9.8	50	76×240	ΦM12×16		1.30
RTSMK-0.44-10-3	W613763	440	10	3x54.8	13.1	50	86×240	ΦM12×16	Figure 2	1.50
RTSMK-0.44-12.5-3	W613764	440	12.5	3x68.5	16.4	50	86×240	ΦM12×16		1.80
RTSMK-0.44-15-3	W613765	440	15	3x82.2	19.7	50	86×290	ΦM12×16	Figure 3	2.40
RTSMK-0.44-20-3	W613766	440	20	3x109.6	26.2	50	96×290	ΦM16×25		3.00
RTSMK-0.44-25-3	W613767	440	25	3x137	32.8	50	106×290	ΦM16×25		3.70
RTSMK-0.44-30-3	W613768	440	30	3x164.4	39.4	50	116×300	ΦM16×25		3.70
RTSMK-0.44-35-3	W613769	440	35	3x191.8	45.9	50	116×300	ΦM16×25	Figure 4	3.70
RTSMK-0.44-40-3	W613770	440	40	3x219.2	52.5	50	136×300	ΦM16×25		4.40
RTSMK-0.44-50-3	W613771	440	50	3x274	65.6	50	136×300	ΦM16×25		4.40

Main Product Models, Specifications, And Data Sheets (50Hz)

Model No. RTSMK	Ref.No.	Rated voltage (V)	Rated capacity (kvar)	Rated capacity (μF)	Rated current (A)	Rated frequency (Hz)	"Dimension (Φ×H)(mm)"	Installation screw size	Figure No.	Weight (kg)
CYLINDRICAL CAPACITOR RTSMK-0.45 Three phase 450V										
RTSMK-0.45-2.5-3	W613772	450	2.5	3x13.1	3.2	50	76×240	ΦM12×16	Figure 1	1.30
RTSMK-0.45-5-3	W613773	450	5	3x26.2	6.4	50	76×240	ΦM12×16		1.30
RTSMK-0.45-7.5-3	W613774	450	7.5	3x39.3	9.6	50	76×240	ΦM12×16		1.30
RTSMK-0.45-10-3	W613775	450	10	3x52.4	12.8	50	86×240	ΦM12×16	Figure 2	1.50
RTSMK-0.45-12.5-3	W613776	450	12.5	3x65.5	16	50	86×240	ΦM12×16		1.80
RTSMK-0.45-15-3	W613777	450	15	3x78.6	19.2	50	86×290	ΦM12×16	Figure 3	2.40
RTSMK-0.45-20-3	W613778	450	20	3x104.8	25.7	50	96×290	ΦM16×25		3.00
RTSMK-0.45-25-3	W613779	450	25	3x131	32.1	50	106×290	ΦM16×25		3.70
RTSMK-0.45-30-3	W613780	450	30	3x157.2	38.5	50	116×300	ΦM16×25		3.70
RTSMK-0.45-35-3	W613781	450	35	3x183.4	44.9	50	116×300	ΦM16×25		3.70
RTSMK-0.45-40-3	W613782	450	40	3x209.6	51.3	50	136×300	ΦM16×25		4.40
RTSMK-0.45-50-3	W613783	450	50	3x262	64.2	50	136×300	ΦM16×25		Figure 4
CYLINDRICAL CAPACITOR RTSMK-0.48 Three phase 480V										
RTSMK-0.48-2.5-3	W613796	480	2.5	3x11.5	3	50	76×240	ΦM12×16	Figure 1	1.10
RTSMK-0.48-5-3	W613797	480	5	3x23	6	50	76×240	ΦM12×16		1.10
RTSMK-0.48-7.5-3	W613798	480	7.5	3x34.5	9	50	76×240	ΦM12×16		1.10
RTSMK-0.48-10-3	W613799	480	10	3x46.1	12	50	76×240	ΦM12×16	Figure 2	1.50
RTSMK-0.48-12.5-3	W613800	480	12.5	3x57.6	15	50	86×240	ΦM12×16		1.80
RTSMK-0.48-15-3	W613801	480	15	3x69.1	18	50	86×290	ΦM12×16	Figure 3	2.40
RTSMK-0.48-20-3	W613802	480	20	3x92.1	24	50	96×290	ΦM12×16		3.00
RTSMK-0.48-25-3	W613803	480	25	3x115.1	30	50	106×290	ΦM16×25		3.70
RTSMK-0.48-30-3	W613804	480	30	3x138.2	36.1	50	106×290	ΦM16×25		3.70
RTSMK-0.48-35-3	W613805	480	35	3x161.2	42.1	50	116×300	ΦM16×25		3.80
RTSMK-0.48-40-3	W613806	480	40	3x184.2	48.1	50	136×300	ΦM16×25		3.90
RTSMK-0.48-50-3	W613807	480	50	3x230.3	60.8	50	136×300	ΦM16×25		Figure 4
CYLINDRICAL CAPACITOR RTSMK-0.525 Three phase 525V										
RTSMK-0.525-2.5-3	W613808	525	2.5	3x9.6	2.7	50	76×240	ΦM12×16	Figure 1	1.10
RTSMK-0.525-5-3	W613809	525	5	3x19.2	5.5	50	76×240	ΦM12×16		1.10
RTSMK-0.525-7.5-3	W613810	525	7.5	3x28.9	8.2	50	76×240	ΦM12×16		1.10
RTSMK-0.525-10-3	W613811	525	10	3x38.5	11	50	86×240	ΦM12×16	Figure 2	1.50
RTSMK-0.525-12.5-3	W613812	525	12.5	3x48.1	13.7	50	86×290	ΦM12×16		1.80
RTSMK-0.525-15-3	W613813	525	15	3x57.7	16.5	50	86×290	ΦM16×25	Figure 3	2.10
RTSMK-0.525-20-3	W613814	525	20	3x77	22	50	106×290	ΦM16×25		2.40
RTSMK-0.525-25-3	W613815	525	25	3x96.2	27.5	50	116×300	ΦM16×25		3.70
RTSMK-0.525-30-3	W613816	525	30	3x115.5	33	50	116×300	ΦM16×25		3.70
RTSMK-0.525-35-3	W613817	525	35	3x134.7	38.5	50	136×300	ΦM16×25		4.40
RTSMK-0.525-40-3	W613456	525	40	3x154	44	50	136×360	ΦM16×25		5.50
RTSMK-0.525-50-3	W613819	525	50	3x192.5	55	50	136×360	ΦM16×25		Figure 4

Main Product Models, Specifications, And Data Sheets (50Hz)

Model No. RTSMK	Ref.No.	Rated voltage (V)	Rated capacity (kvar)	Rated capacity (μF)	Rated current (A)	Rated frequency (Hz)	"Dimension (Φ×H(mm))"	Installation screw size	Figure No.	Weight (kg)
CYLINDRICAL CAPACITOR RTSMK-0.69 Three phase 690V										
RTSMK-0.69-2.5-3	W613820	690	2.5	3x5.6	2	50	76×240	ΦM12×16	Figure 1	1.30
RTSMK-0.69-5-3	W613821	690	5	3x11.1	4.2	50	76×240	ΦM12×16		1.30
RTSMK-0.69-7.5-3	W613822	690	7.5	3x16.7	6.3	50	76×240	ΦM12×16		1.30
RTSMK-0.69-10-3	W613823	690	10	3x22.3	8.4	50	86×240	ΦM12×16	Figure 2	1.50
RTSMK-0.69-12.5-3	W613824	690	12.5	3x27.9	10.5	50	86×290	ΦM12×16	Figure 3	1.8
RTSMK-0.69-15-3	W613825	690	15	3x33.4	12.6	50	96×290	ΦM12×16		2.1
RTSMK-0.69-20-3	W613826	690	20	3x44.6	16.7	50	106×290	ΦM16×25		2.4
RTSMK-0.69-25-3	W613827	690	25	3x55.7	20.9	50	116×300	ΦM16×25		3.7
RTSMK-0.69-30-3	W613828	690	30	3x66.9	25.1	50	136×300	ΦM16×25		4.4
RTSMK-0.69-35-3	W613829	690	35	3x78	29.3	50	136×300	ΦM16×25		4.4
RTSMK-0.69-40-3	W613830	690	40	3x89.1	33.5	50	136×360	ΦM16×25		5.5

Main Product Models, Specifications, And Data Sheets (60Hz)

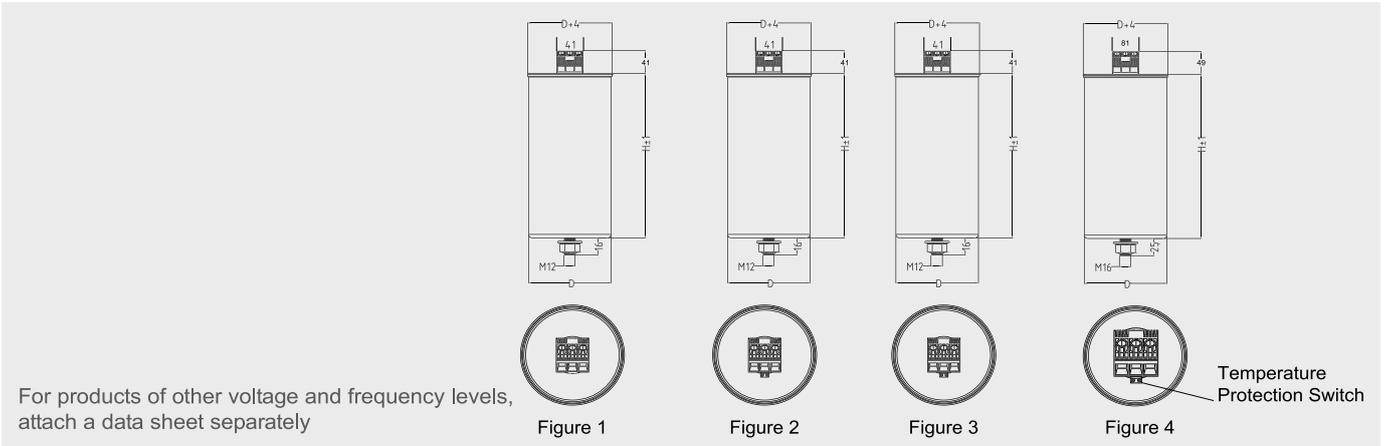
Model No. RTSMK	Ref.No.	Rated voltage (V)	Rated capacity (kvar)	Rated capacity (μF)	Rated current (A)	Rated frequency (Hz)	"Dimension (Φ×H(mm))"	Installation screw size	Figure No.	Weight (kg)
CYLINDRICAL CAPACITOR RTSMK-0.25 Single phase 250V										
RTSMK-0.25-2.5-1	W613831	250	2.5	106.1	10	60	76×130	ΦM12×16	Figure 1	1.10
RTSMK-0.25-5-1	W613832	250	5	212.2	20	60	76×240	ΦM12×16		1.30
RTSMK-0.25-7.5-1	W613833	250	7.5	318.3	30	60	86×240	ΦM12×16	Figure 2	1.50
RTSMK-0.25-10-1	W613834	250	10	424.4	40	60	86×290	ΦM12×16		1.80
RTSMK-0.25-12.5-1	W613835	250	12	509.3	48	60	86×290	ΦM12×16	Figure 3	1.80
RTSMK-0.25-15-1	W613836	250	15	636.6	60	60	96×290	ΦM16×25		2.40
RTSMK-0.25-20-1	W613837	250	20	848.8	80	60	106×290	ΦM16×25		3.00
CYLINDRICAL CAPACITOR RTSMK-0.40 Three phase 400V										
RTSMK-0.4-2.5-3	W613838	400	2.5	3x13.8	3.6	60	76×240	ΦM12×16	Figure 1	1.30
RTSMK-0.4-5-3	W613839	400	5	3x27.6	7.2	60	76×240	ΦM12×16		1.30
RTSMK-0.4-7.5-3	W613840	400	7.5	3x41.4	10.8	60	76×240	ΦM12×16		1.30
RTSMK-0.4-10-3	W613841	400	10	3x55.3	14.4	60	86×240	ΦM12×16	Figure 2	1.50
RTSMK-0.4-12.5-3	W613842	400	12.5	3x69.1	18	60	86×290	ΦM12×16		1.80
RTSMK-0.4-15-3	W613843	400	15	3x82.9	21.7	60	96×290	ΦM16×25	Figure 3	2.40
RTSMK-0.4-20-3	W613844	400	20	3x110.5	28.9	60	106×290	ΦM16×25		3.00
RTSMK-0.4-25-3	W613845	400	25	3x138.2	36.1	60	116×300	ΦM16×25		3.70
RTSMK-0.4-30-3	W613846	400	30	3x165.8	43.3	60	136×300	ΦM16×25		4.40
RTSMK-0.4-35-3	W613847	400	35	3x193.4	50.5	60	136×300	ΦM16×25		4.40
RTSMK-0.4-40-3	W613848	400	40	3x221	57.7	60	136×300	ΦM16×25		4.40
RTSMK-0.4-50-3	W614694	415	50	3x308	69.6	50	136×360	ΦM16×25		5.50
CYLINDRICAL CAPACITOR RTSMK-0.415 Three phase 415V										
RTSMK-0.415-2.5-3	W613849	415	2.5	3x13.8	3.5	60	76×240	ΦM12×16	Figure 1	1.30
RTSMK-0.415-5-3	W613850	415	5	3x27.6	7	60	76×240	ΦM12×16		1.30
RTSMK-0.415-7.5-3	W613851	415	7.5	3x41.4	10.4	60	76×240	ΦM12×16		1.30
RTSMK-0.415-10-3	W613852	415	10	3x55.3	13.9	60	86×240	ΦM12×16	Figure 2	1.50
RTSMK-0.415-12.5-3	W613853	415	12.5	3x69.1	17.4	60	86×290	ΦM12×16		1.80
RTSMK-0.415-15-3	W613854	415	15	3x82.9	20.9	60	96×290	ΦM16×25	Figure 3	2.40
RTSMK-0.415-20-3	W613855	415	20	3x110.5	27.8	60	106×290	ΦM16×25		3.00
RTSMK-0.415-25-3	W613856	415	25	3x138.2	34.8	60	116×300	ΦM16×25		3.70
RTSMK-0.415-30-3	W613857	415	30	3x165.8	41.7	60	136×300	ΦM16×25		4.40
RTSMK-0.415-35-3	W613858	415	35	3x193.4	48.7	60	136×300	ΦM16×25		4.40
RTSMK-0.415-40-3	W613859	415	40	3x221	55.6	60	136×300	ΦM16×25		4.40

Main Product Models, Specifications, And Data Sheets (60Hz)

Model No. RTSMK	Ref.No.	Rated voltage (V)	Rated capacity (kvar)	Rated capacity (μF)	Rated current (A)	Rated frequency (Hz)	"Dimension (Φ×H)(mm)"	Installation screw size	Figure No.	Weight (kg)
RTSMK-0.415-50-3	W613818	415	50	3x308	69.6	50	136×360	ΦM16×25	Figure 4	5.50
CYLINDRICAL CAPACITOR RTSMK-0.44 Three phase 440V										
RTSMK-0.44-2.5-3	W613860	440	2.5	3x11.4	3.3	60	76×240	ΦM12×16	Figure 1	1.30
RTSMK-0.44-5-3	W613861	440	5	3x22.8	6.6	60	76×240	ΦM12×16		1.30
RTSMK-0.44-7.5-3	W613862	440	7.5	3x34.3	9.8	60	76×240	ΦM12×16		1.30
RTSMK-0.44-10-3	W613863	440	10	3x45.7	13.1	60	86×240	ΦM12×16	Figure 2	1.50
RTSMK-0.44-12.5-3	W613864	440	12.5	3x57.1	16.4	60	86×240	ΦM12×16		1.80
RTSMK-0.44-15-3	W613865	440	15	3x68.5	19.7	60	86×290	ΦM12×16	Figure 3	2.40
RTSMK-0.44-20-3	W613866	440	20	3x91.3	26.2	60	96×290	ΦM16×25		3.00
RTSMK-0.44-25-3	W613867	440	25	3x114.2	32.8	60	106×290	ΦM16×25		3.70
RTSMK-0.44-30-3	W613868	440	30	3x137	39.4	60	116×300	ΦM16×25		3.70
RTSMK-0.44-35-3	W613869	440	35	3x159.8	45.9	60	116×300	ΦM16×25		3.70
RTSMK-0.44-40-3	W613870	440	40	3x182.7	52.5	60	136×300	ΦM16×25		4.40
RTSMK-0.44-50-3	W613871	440	50	3x228.4	65.6	60	136×300	ΦM16×25		Figure 4
CYLINDRICAL CAPACITOR RTSMK-0.45 Three phase 450V										
RTSMK-0.45-2.5-3	W613872	450	2.5	3x10.9	3.2	60	76×240	ΦM12×16	Figure 1	1.30
RTSMK-0.45-5-3	W613873	450	5	3x21.8	6.4	60	76×240	ΦM12×16		1.30
RTSMK-0.45-7.5-3	W613874	450	7.5	3x32.7	9.6	60	76×240	ΦM12×16		1.30
RTSMK-0.45-10-3	W613875	450	10	3x43.7	12.8	60	86×240	ΦM12×16	Figure 2	1.50
RTSMK-0.45-12.5-3	W613876	450	12.5	3x54.6	16	60	86×240	ΦM12×16		1.80
RTSMK-0.45-15-3	W613877	450	15	3x65.5	19.2	60	86×290	ΦM12×16	Figure 3	2.40
RTSMK-0.45-20-3	W613878	450	20	3x87.3	25.7	60	96×290	ΦM16×25		3.00
RTSMK-0.45-25-3	W613879	450	25	3x109.2	32.1	60	106×290	ΦM16×25		3.70
RTSMK-0.45-30-3	W613880	450	30	3x131	38.5	60	116×300	ΦM16×25		3.70
RTSMK-0.45-35-3	W613881	450	35	3x152.8	44.9	60	116×300	ΦM16×25		3.70
RTSMK-0.45-40-3	W613882	450	40	3x174.7	51.3	60	136×300	ΦM16×25		4.40
RTSMK-0.45-50-3	W613883	450	50	3x218.3	64.2	60	136×300	ΦM16×25		Figure 4
CYLINDRICAL CAPACITOR RTSMK-0.48 Three phase 480V										
RTSMK-0.48-2.5-3	W613884	480	2.5	3x9.6	3	60	76×240	ΦM12×16	Figure 1	1.10
RTSMK-0.48-5-3	W613885	480	5	3x19.2	6	60	76×240	ΦM12×16		1.10
RTSMK-0.48-7.5-3	W613886	480	7.5	3x28.8	9	60	76×240	ΦM12×16		1.10
RTSMK-0.48-10-3	W613887	480	10	3x38.4	12	60	76×240	ΦM12×16	Figure 2	1.50
RTSMK-0.48-12.5-3	W613888	480	12.5	3x48	15	60	86×240	ΦM12×16		1.80
RTSMK-0.48-15-3	W613889	480	15	3x57.6	18	60	86×240	ΦM12×16	Figure 3	2.40
RTSMK-0.48-20-3	W613890	480	20	3x76.8	24	60	86×290	ΦM12×16		3.00
RTSMK-0.48-25-3	W613891	480	25	3x95.9	30	60	96×290	ΦM16×25		3.70
RTSMK-0.48-30-3	W613892	480	30	3x115.1	36.1	60	106×290	ΦM16×25		3.70
RTSMK-0.48-35-3	W613893	480	35	3x134.3	42.1	60	116×300	ΦM16×25		3.80
RTSMK-0.48-40-3	W613894	480	40	3x153.5	48.1	60	136×300	ΦM16×25		3.90
RTSMK-0.48-50-3	W613895	480	50	3x191.9	60.8	60	136×300	ΦM16×25		Figure 4
CYLINDRICAL CAPACITOR RTSMK-0.525 Three phase 525V										
RTSMK-0.525-2.5-3	W613896	525	2.5	3x8	2.7	60	76×240	ΦM12×16	Figure 1	1.10
RTSMK-0.525-5-3	W613897	525	5	3x16	5.5	60	76×240	ΦM12×16		1.10
RTSMK-0.525-7.5-3	W613898	525	7.5	3x24.1	8.2	60	76×240	ΦM12×16		1.10
RTSMK-0.525-10-3	W613899	525	10	3x32.1	11	60	76×240	ΦM12×16	Figure 2	1.50
RTSMK-0.525-12.5-3	W613900	525	12.5	3x40.1	13.7	60	86×240	ΦM12×16		1.80
RTSMK-0.525-15-3	W613901	525	15	3x48.1	16.5	60	86×240	ΦM12×16	Figure 3	2.10
RTSMK-0.525-20-3	W613902	525	20	3x64.2	22	60	86×290	ΦM12×16		2.40

Main Product Models, Specifications, And Data Sheets (60Hz)

Model No. RTSMK	Ref.No.	Rated voltage (V)	Rated capacity (kvar)	Rated capacity (μF)	Rated current (A)	Rated frequency (Hz)	"Dimension (Φ×H)(mm)"	Installation screw size	Figure No.	Weight (kg)
RTSMK-0.525-25-3	W613903	525	25	3x80.2	27.5	60	96×290	ΦM16×25	Figure 3	3.70
RTSMK-0.525-30-3	W613904	525	30	3x96.2	33	60	106×290	ΦM16×25		3.70
RTSMK-0.525-35-3	W613905	525	35	3x112.3	38.5	60	116×300	ΦM16×25		4.40
RTSMK-0.525-40-3	W613906	525	40	3x128.3	44	60	136×300	ΦM16×25		5.50
RTSMK-0.525-50-3	W613907	525	50	3x160.4	55	60	136×360	ΦM16×25	Figure 4	5.50
CYLINDRICAL CAPACITOR RTSMK-0.69 Three phase 690V										
RTSMK-0.69-2.5-3	W613908	690	2.5	3x4.6	2	60	76×240	ΦM12×16	Figure 1	1.30
RTSMK-0.69-5-3	W613909	690	5	3x9.3	4.2	60	76×240	ΦM12×16		1.30
RTSMK-0.69-7.5-3	W613910	690	7.5	3x13.9	6.3	60	76×240	ΦM12×16		1.30
RTSMK-0.69-10-3	W613911	690	10	3x18.6	8.4	60	76×240	ΦM12×16		1.50
RTSMK-0.69-12.5-3	W613912	690	12.5	3x23.2	10.5	60	86×240	ΦM12×16	Figure 2	1.8
RTSMK-0.69-15-3	W613913	690	15	3x27.9	12.6	60	86×290	ΦM12×16		2.1
RTSMK-0.69-20-3	W613914	690	20	3x37.1	16.7	60	96×290	ΦM16×25	Figure 3	2.4
RTSMK-0.69-25-3	W613915	690	25	3x46.4	20.9	60	106×290	ΦM16×25		3.7
RTSMK-0.69-30-3	W613916	690	30	3x55.7	25.1	60	116×300	ΦM16×25		4.4
RTSMK-0.69-35-3	W613917	690	35	3x65	29.3	60	116×300	ΦM16×25		4.4
RTSMK-0.69-40-3	W613918	690	40	3x74.3	33.5	60	136×360	ΦM16×25		5.5



RTMJ series self-healing low voltage shunt power capacitor



Feature

- Advanced imported production equipment, excellent polypropylene film
- Smaller size, more reliable quality
- Unique design and technology
- Suitable for Places with large temperature and system voltage fluctuations
- New sealing equipment, no leakage
- Novel design of mounting feet, firm, convenient and beautiful
- Unique lead-out terminal, convenient wiring, reliable and safe connection
- Corrosion-resistant metal shell, beautiful and strong, no painting required

Overview

RTMJ series self-healing low voltage shunt power capacitors (Soft Resin impregnated) are suitable for power frequency AC power systems with rated voltage of 1000V and below, to improve power factor and voltage quality

- Standard: Standard IEC 60831-1:2014 , IEC 60831-2:2014

Model and Meaning

R	T	MJ	*	-	*	-	*	-	*
RT									
1	2	3	4	5	6	7			
No.	Name	Meaning							
1	Series code	R-Shunt Capacitor							
2	Impregnation	T - Micro crystalline wax, K-dry type							
3	Medium code	Metalized polypropylene film(MPP film)							
4	Rated Voltage (kv)	YN: Splitting phase							
5	Rated capacity (kvar)								
6	Phase	1: Single phase, 3: Three phase							
7	YN	split phase compensation							

Technical parameters

Normal working and installation conditions	
Ambient temperature	-25°C~+55°C
Relative humidity	Relative humidity ≤ 50% at 40°C ≤ 90% at 20°C
Altitude	≤2000m
Environmental conditions	No harmful gas and steam, no conductive or explosive dust, no severe mechanical vibration , Guaranteed to work in good ventilation conditions, not allowed to work in a closed and unventilated environment
Performance	
Rated voltage	(0.23~1.2)kV, AC
Rated frequency	50Hz or 60Hz
Rated capacity	(1~60)kvar
Capacity tolerance	-5%~+10%
AC withstand voltage	Withstand voltage between terminals: 2.15Un/AC is applied between the capacitor terminals for 10 seconds, and there should be no permanent breakdown or flash over
	Withstand Voltage: 3.5kV/AC is applied between terminal and shell for 10S, no permanent breakdown and flash over
Loss tangent	Maximum allowable overvoltage 1.1Un; < 8h per 24h
Maximum allowable overvoltage	1.1Un; <8h per 24h
Maximum allowable overcurrent	1.3 In
Self-discharge characteristics	The capacitor is applied with $\sqrt{2}$ Un DC voltage. After power off for 3 minutes, the residual voltage drops below 75V or lower.

Main Product Models, Specifications, And Data Sheets

Model No. RTMJ	Ref.No.	Rated voltage (V)	Rated capacity (kvar)	Rated capacity (µF)	Rated current (A)	Rated frequency (Hz)	Height(H) mm	Figure No.	Weight (kg)
RECTANGULAR MODULAR CAPACITOR RTMJ-0.4 Three phase 400V									
RTMJ-0.4-2.5-3	W613919	400	2.5	3x16.6	3.6	50	110	Figure 1	1.0
RTMJ-0.4-5-3	W613920	400	5	3x33.2	7.2	50	110		1.0
RTMJ-0.4-7.5-3	W613921	400	7.5	3x49.7	10.8	50	130		1.1
RTMJ-0.4-10-3	W613922	400	10	3x66.3	14.4	50	180		1.6
RTMJ-0.4-12.5-3	W613923	400	12.5	3x82.9	18	50	210		1.8
RTMJ-0.4-15-3	W613924	400	15	3x99.5	21.7	50	210		1.8
RTMJ-0.4-20-3	W613925	400	20	3x132.6	28.9	50	210	1.8	
RTMJ-0.4-25-3	W613926	400	25	3x165.8	36.1	50	250	Figure 2	3.4
RTMJ-0.4-30-3	W613927	400	30	3x198.9	43.3	50	250		3.4
RTMJ-0.4-40-3	W613928	400	40	3x265.3	57.7	50	210	Figure 3	5.6
RTMJ-0.4-50-3	W613929	400	50	3x331.6	72.1	50	260		6.8
RECTANGULAR MODULAR CAPACITOR RTMJ-0.415 Three phase 415V									
RTMJ-0.415-2.5-3	W613930	415	2.5	3x15.4	3.5	50	110	Figure 1	1.0
RTMJ-0.415-5-3	W613931	415	5	3x30.8	7	50	110		1.0
RTMJ-0.415-7.5-3	W613932	415	7.5	3x46.2	10.4	50	130		1.1
RTMJ-0.415-10-3	W613933	415	10	3x61.6	13.9	50	180		1.6
RTMJ-0.415-12.5-3	W613934	415	12.5	3x77	17.4	50	210		1.8
RTMJ-0.415-15-3	W613935	415	15	3x92.4	20.9	50	210		1.8
RTMJ-0.415-20-3	W613936	415	20	3x123.2	27.8	50	210	1.8	
RTMJ-0.415-25-3	W613937	415	25	3x154	34.8	50	250	Figure 2	3.4
RTMJ-0.415-30-3	W613938	415	30	3x184.8	41.7	50	250		3.4
RTMJ-0.415-40-3	W613939	415	40	3x246.4	55.7	50	210	Figure 3	5.6
RTMJ-0.415-50-3	W613940	415	50	3x308	69.6	50	260		6.8
RECTANGULAR MODULAR CAPACITOR RTMJ-0.44 Three phase 440V									
RTMJ-0.44-2.5-3	W613941	440	2.5	3x13.7	3.3	50	110	Figure 1	1.0
RTMJ-0.44-5-3	W613942	440	5	3x27.4	6.6	50	110		1.0
RTMJ-0.44-7.5-3	W613943	440	7.5	3x41.1	9.8	50	130		1.1
RTMJ-0.44-10-3	W613944	440	10	3x54.8	13.1	50	180		1.6
RTMJ-0.44-12.5-3	W613945	440	12.5	3x68.5	16.4	50	180		1.6
RTMJ-0.44-15-3	W613946	440	15	3x82.2	19.7	50	210		1.8
RTMJ-0.44-20-3	W613947	440	20	3x109.6	26.2	50	255	2.2	
RTMJ-0.44-25-3	W613948	440	25	3x137	32.8	50	210	Figure 2	1.8
RTMJ-0.44-30-3	W613949	440	30	3x164.4	39.4	50	250		3.4
RTMJ-0.44-40-3	W613950	440	40	3x219.2	52.5	50	300	Figure 3	4.1
RTMJ-0.44-50-3	W613951	440	50	3x274	65.6	50	210		5.6
RECTANGULAR MODULAR CAPACITOR RTMJ-0.450 Three phase 450V									
RTMJ-0.45-2.5-3	W613952	450	2.5	3x13.1	3.2	50	110	Figure 1	1.0
RTMJ-0.45-5-3	W613953	450	5	3x26.2	6.4	50	110		1.0
RTMJ-0.45-7.5-3	W613954	450	7.5	3x39.3	9.6	50	130		1.1
RTMJ-0.45-10-3	W613955	450	10	3x52.4	12.8	50	180		1.6
RTMJ-0.45-12.5-3	W613956	450	12.5	3x65.5	16	50	180		1.6
RTMJ-0.45-15-3	W613957	450	15	3x78.6	19.2	50	210		1.8
RTMJ-0.45-20-3	W613958	450	20	3x104.8	25.7	50	255	2.2	
RTMJ-0.45-25-3	W613959	450	25	3x131	32.1	50	210	Figure 2	1.8
RTMJ-0.45-30-3	W613960	450	30	3x157.2	38.5	50	250		3.4
RTMJ-0.45-40-3	W613961	450	40	3x209.6	51.3	50	300	Figure 3	4.1
RTMJ-0.45-50-3	W613962	450	50	3x262	64.1	50	210		5.6

Main Product Models, Specifications, And Data Sheets

Model No. RTMJ	Ref.No.	Rated voltage (V)	Rated capacity (kvar)	Rated capacity (μF)	Rated current (A)	Rated frequency (Hz)	Height(H) mm	Figure No.	Weight (kg)
RECTANGULAR MODULAR CAPACITOR RTMJ-0.480 Three phase 480V									
RTMJ-0.48-2.5-3	W613963	480	2.5	3x11.5	3	50	110	Figure 1	1.0
RTMJ-0.48-5-3	W613964	480	5	3x23	6	50	110		1.0
RTMJ-0.48-7.5-3	W613965	480	7.5	3x34.5	9	50	110		1.0
RTMJ-0.48-10-3	W613966	480	10	3x46.1	12	50	130		1.1
RTMJ-0.48-12.5-3	W613967	480	12.5	3x57.6	15	50	180		1.6
RTMJ-0.48-15-3	W613968	480	15	3x69.1	18	50	180		1.6
RTMJ-0.48-20-3	W613969	480	20	3x92.1	24	50	210	Figure 2	1.8
RTMJ-0.48-25-3	W613970	480	25	3x115.1	30	50	255		2.2
RTMJ-0.48-30-3	W613971	480	30	3x138.2	36.1	50	210	Figure 3	1.8
RTMJ-0.48-40-3	W613972	480	40	3x184.2	48.1	50	250		3.4
RTMJ-0.48-50-3	W613973	480	50	3x230.3	60.1	50	300		4.1
RECTANGULAR MODULAR CAPACITOR RTMJ-0.525 Three phase 525V									
RTMJ-0.525-2.5-3	W613974	525	2.5	3x9.6	2.7	50	110	Figure 1	1.0
RTMJ-0.525-5-3	W613975	525	5	3x19.2	5.5	50	110		1.0
RTMJ-0.525-7.5-3	W613976	525	7.5	3x28.9	8.2	50	130		1.1
RTMJ-0.525-10-3	W613977	525	10	3x38.5	11	50	180		1.6
RTMJ-0.525-12.5-3	W613978	525	12.5	3x48.1	13.7	50	180		1.6
RTMJ-0.525-15-3	W613979	525	15	3x57.7	16.5	50	210		1.8
RTMJ-0.525-20-3	W613980	525	20	3x77	22	50	255	Figure 2	2.2
RTMJ-0.525-25-3	W613981	525	25	3x96.2	27.5	50	210		1.8
RTMJ-0.525-30-3	W613982	525	30	3x115.5	33	50	250	Figure 3	3.4
RTMJ-0.525-40-3	W613983	525	40	3x154	44	50	300		4.1
RTMJ-0.525-50-3	W613984	525	50	3x192.5	55	50	260		6.8

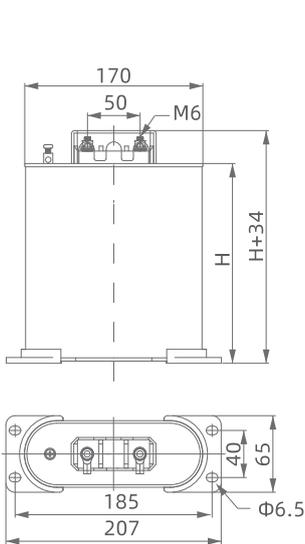


Figure 1

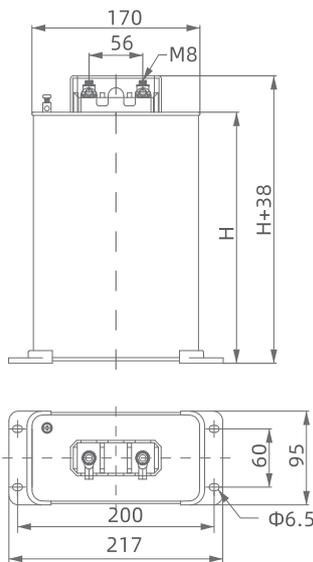


Figure 2

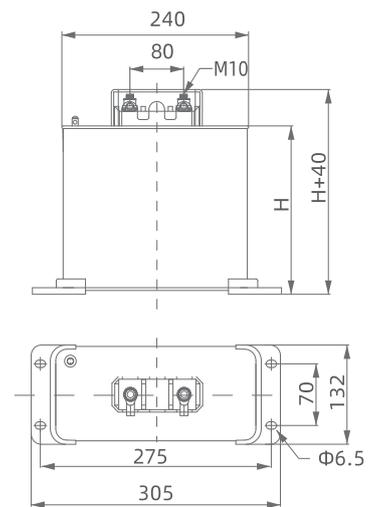


Figure 3

Three phase series filter reactor

Overview

Three phase series filter reactors are often affected by harmonic current, switching inrush current and operating overvoltage when compensating capacitive reactive power, which will cause capacitor damage and power factor reduction. Install three phase filter reactors to suppress and absorb harmonics, protect capacitors, avoid the effects of harmonic voltage current and impulse voltage current, improve power quality, increase system power factor, and extend capacitor life

Standard :
• IEC60076-6:2007

Feature

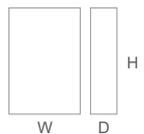
- Designed with secondary thermal sensitive temperature protection switch
- Full vacuum dipping process, low noise during operation
- Winding frame is reinforced environmental protection flame retardant plastic



Model and Meaning

RTSG	-□	-□	-	7%	P	K
1	2	3	4	5	6	
No.	Name	Meaning				
1	Series code	Dry air-cooled three phase series filter reactor				
2	Matching Capacitor rated voltage (kV)					
3	Rated capacity of matched capacitor (kvar)					
4	Rated reactance rate XL / Xc (%)					
5	P: terminal block					
6	K: with temperature protection switch	No mark: without temperature protection switch				

Technical parameters

Normal working and installation conditions				
Ambient temperature	-25°C ~ +50°C			
Relative humidity	≤ 50% at 40°C ; ≤ 90% at 20°C			
Altitude	≤ 1000m			
Performance				
Rated voltage of capacitor	0.4 kV、0.45 kV、0.48 kV、0.525 kV、0.66kV、0.69 kV ;			
Reactance ratio	Reactance rate 4.5%,5%,6%,7% used to limit switching inrush current and suppress 5th and above harmonics			
Reactance ratio	Reactance rate 12%, 14%, used to limit switching inrush current and suppress 3rd and above harmonics			
Withstand voltage level 3.5kV/min	5kV/min			
Insulation class	B, F, H; Noise ≤ 45dB, continuous operation under overload capacity ≤ 1.35In			
Product category	Specification	Dimension W×D×H(mm)	Mounting dimension W×D (mm)	Dimension and structure
RTSG 7% copper wire	5~10kvar	210×135×175	110×85	
	15~25kvar	210×135×195	110×85	
	30~40kvar	240×170×225	135×110	
	50~60kvar	240×170×240	135×110	
RTSG 7% Aluminum wire	5~8kvar	210×135×175	110×85	
	10~15kvar	210×135×195	110×85	
	20~25kvar	240×170×225	135×110	
	30~35kvar	240×170×240	135×110	
RTSG 14% copper wire	40~50kvar	262×190×240	150×120	
RTSG 14% copper wire	25~30kvar	240×175×225	135×110	
RTSG 14% Aluminum wire	40~50kvar	262×190×240	150×120	
RTSG 14% Aluminum wire	25~30kvar	262×190×240	150×120	
RTSG 14% Aluminum wire	40~50kvar	290×200×240	180×120	

Ordering instruction(s)

The user must provide the product's rated voltage, rated capacity, and phase
The user tries to provide some technical Parameters of application



Worldwide



OUR PROMISE

Westinghouse is built upon a tradition of dependability and innovation.

Today, we strive to make everyday life a little better by offering a wide range of quality products and services you can trust.



WHY WESTINGHOUSE ?

Since 1886, Westinghouse has brought the best to life. Today, Westinghouse Electric Corporation remains a trusted name globally in consumer and industrial products. Built on a heritage of innovation and entrepreneurial spirit. Today, Westinghouse continues to grow its diverse portfolio, which includes a wide range of product categories, including home appliances, consumer electronics, power generation, Transmission & distribution and lighting.





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