YCZN Intelligent Capacitor

General

YCZN Intelligent Capacitor is an integrated reactive power compensation device designed for 0.4kV power grids. It consists of measurement and control module, capacitor switching and composite switch, capacitor protection module, and two (▲ type) or one (Y type) low-voltage self-healing capacitor, forming an independent and complete intelligent compensation unit.

The low-voltage reactive power compensation device composed of intelligent capacitors offers several advantages, including flexible compensation modes, easy installation and maintenance, strong protection functions, compact size, excellent compensation effectiveness, low power consumption, and high reliability. It meets the fine requirements of users for improving power factor, enhancing power quality, and reducing energy losses through reactive power compensation.

When applied in industrial and mining enterprises with harmonic currents, it is recommended to use intelligent capacitors with reactive impedance to mitigate harmonics.

Selection

YCZN	-	K	S	480	/	10+10	7%

Product name	-	Functions	Compensation modes	Rated voltage	/	Rated capacity	Reactor reactance rate
YCZN	-	No code: Standard model K: Anti-harmonic function	Three-phase compensation	450: AC450V 480: AC480V (with function K)	/	5+5:(5+5)Kvar 10+5:(10+5)Kvar 10+10:(10+10)Kvar 20+10:(20+10)Kvar 20+20:(20+20)Kvar 25+25:(25+25)Kvar 30+30:(30+30)Kvar	7% 14%
			Phase-splitting compensation	250: AC250V 280: AC280V (with function K)		5:5Kvar 10:10Kvar 15:15Kvar 20:20Kvar 25:25Kvar 30:30Kvar 40:40Kvar	

Use environment

Ambient temperature: -20°C~+55°C

Relative humidity: ≤20% at 40°C; ≤90% at 20°C

Altitude: ≤2500m

Environmental conditions: no harmful gases and vapors, no conductive or explosive dust, no severe mechanical vibration

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Techniacal data

Power conditions		
Working voltage		Shared compensation: AC 450V ± 20% Phase-splitting compensation: AC 250V ± 20%
Harmonic voltage		Sinusoidal wave, total harmonic distortion ≤ 5%"\
Rated frequency		50/60HZ
Power consumption		≤3VA
Reactive power compensation parameters		
Reactive power compensation error		≤50% of the minimum capacitor capacity
Capacitor switching time		≥ 10s, adjustable from 10s to 180s
Measurement error		
Voltage		±0.5%
Current		±0.5%
Power factor		±1%
Temperature		±1℃
Protection error		
Voltage		±0.5%
Current		±0.5%
Temperature		±1℃
Time		±0.1s
Reliability parameters		
Permissible switching times		100 1 million times
Capacitor capacity	Run time decay rate	≤1%/ year
	Switching decay rate	≤1%/ million times

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Compensation modes	Model	Capacitor rated voltage (V)	Rated capacity (Kvar)	Reactance rate
Conventional three-phase shared compensation	YCZN-S 450/5+5	450	10	/
	YCZN-S 450/10+5	450	15	
	YCZN-S 450/10+10	450	20	
	YCZN-S 450/20+10	450	30	
	YCZN-S 450/20+20	450	40	
	YCZN-S 450/25+25	450	50	
	YCZN-S 450/30+30	450	60	
Conventional phase-splitting compensation	YCZN-F 250/5	250	5	
	YCZN-F 250/10	250	10	
	YCZN-F 250/15	250	15	
	YCZN-F 250/20	250	20	
	YCZN-F 250/25	250	25	
	YCZN-F 250/30	250	30	
	YCZN-F 250/40	250	40	
Anti-harmonic three-phase shared compensation	YCZN-KS 480/10	480	10	7%/14%
	YCZN-KS 480/20	480	20	7%/14%
	YCZN-KS 480/30	480	30	7%/14%
	YCZN-KS 480/40	480	40	7%/14%
	YCZN-KS 480/50	480	50	7%/14%
Anti-harmonic phase-splitting compensation"	YCZN-KF 280/5	280	5	7%/14%
	YCZN-KF 280/10	280	10	7%/14%
	YCZN-KF 280/15	280	15	7%/14%
	YCZN-KF 280/20	280	20	7%/14%
	YCZN-KF 280/25	280	25	7%/14%
	YCZN-KF 280/30	280	30	7%/14%

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Product functional equivalence diagram

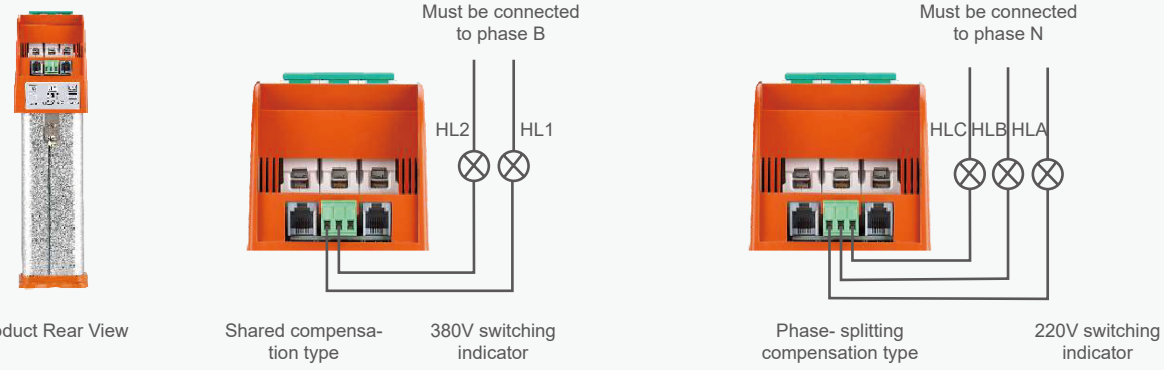
Conventional shared compensation

6kA,15kA breaking type | 1 controller | 2 circuit breaker | 2 composite switch | 2 reactor | 2 capacitor

YCZN-K anti-harmonic integrated intelligent capacitor | 1 controller | 1 circuit breaker | 1 composite switch | 1 reactor | 1 capacitor

Wiring diagram

Standard model



Product Rear View | Shared compensation type | 380V switching indicator | Phase- splitting compensation type | 220V switching indicator

Note: The indicator lights are connected using multicore copper wires with a cross-sectional area of 0.75 mm2.

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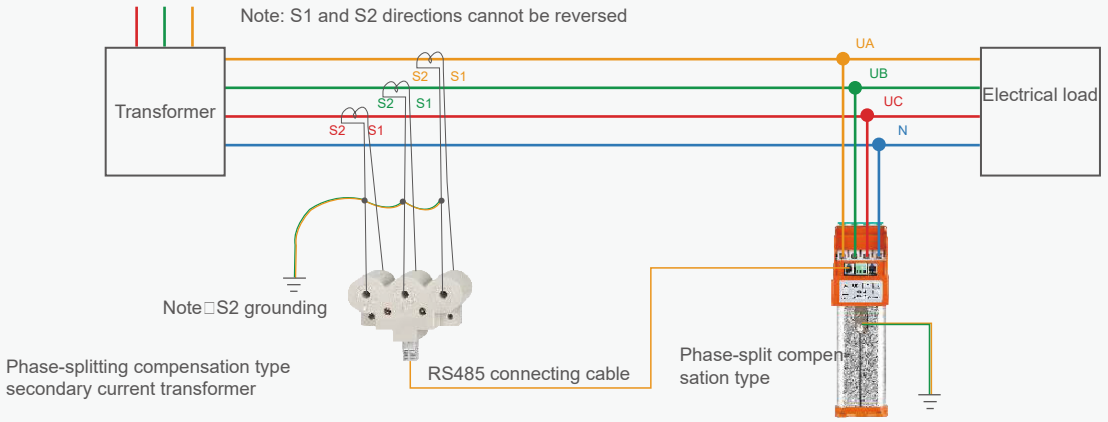
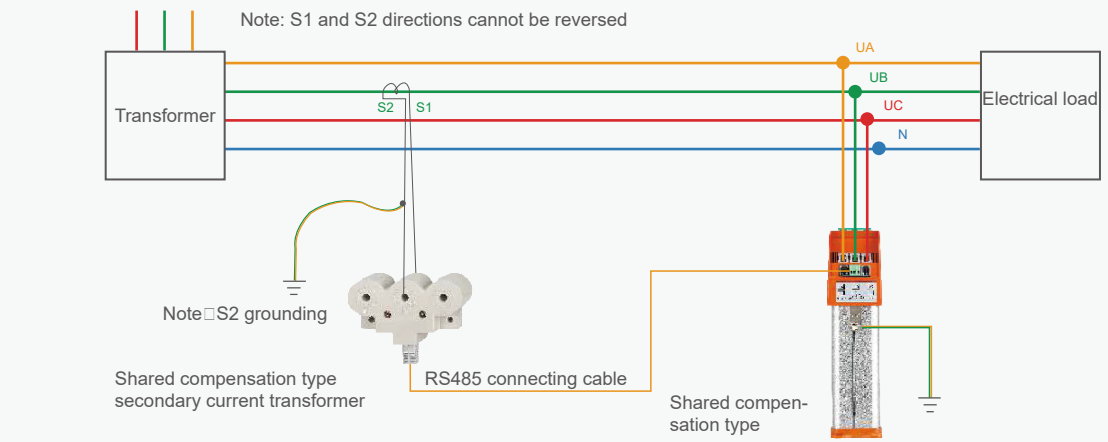
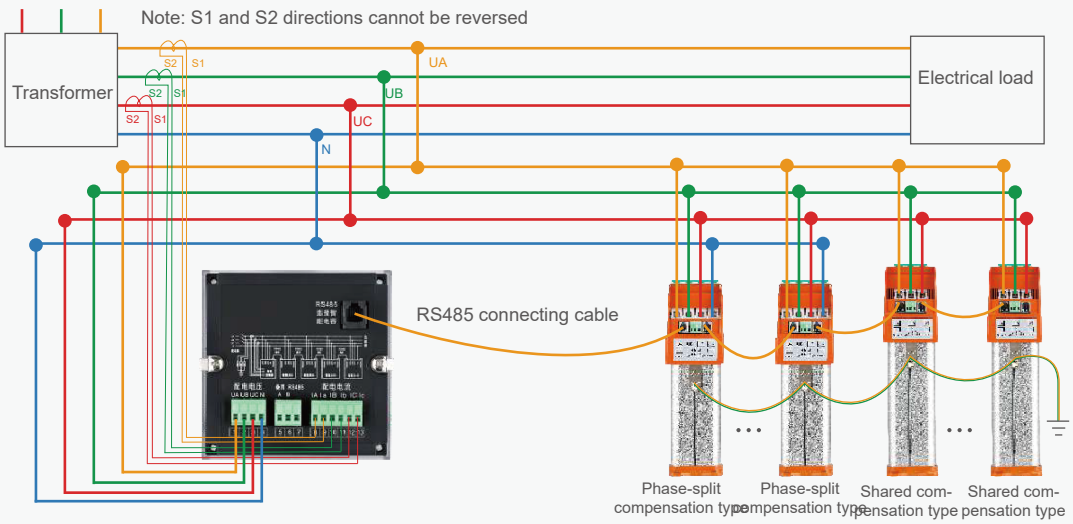
Single phase-splitting compensation wiring diagram (without controller)



Single phase shared compensation wiring diagram (without controller)



Three-phase mixed compensation wiring diagram (with controller)



Note: Phase-splitting + Shared phase compensation Total number of capacitor≤32 units

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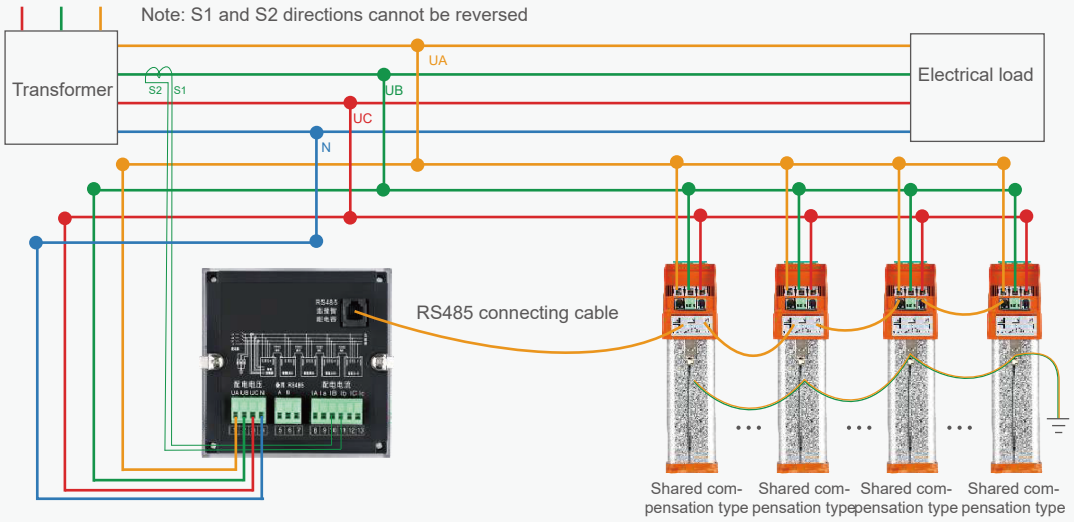
Three-phase shared compensation wiring diagram (with controller)



Note: Shared phase compensation Total number of capacitor≤32 units

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