



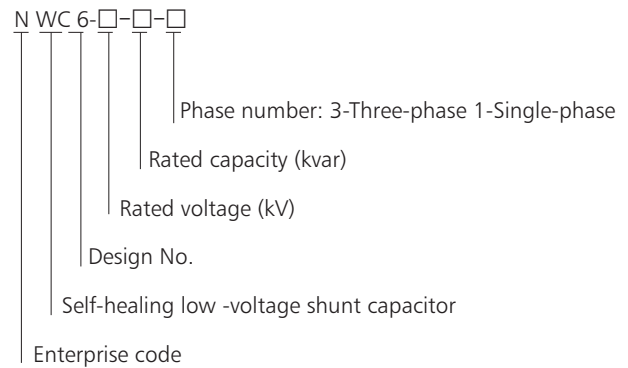
NWC6 series dry low-voltage shunt capacitor

1.Scope of application

NWC6 series dry low-voltage shunt capacitor is suitable for power frequency AC power system with nominal voltage of 1000V and below to raise power factor, reduce line loss and improve voltage quality. It is filled with dry flame-retardant materials internally.

Operative norm: IEC/EN 60831-1:2002

2. Model and its meaning



Note: The default rated frequency is 50Hz. For products with the rated frequency of 60Hz, mark 60Hz.

3. Normal working conditions and installation conditions

- 3.1 Ambient air temperature: $-25^{\circ}\text{C} \sim +50^{\circ}\text{C}$ (-25°C) ;
- 3.2 Relative humidity: $\leq 50\%$ at 40°C ; $\leq 90\%$ at 20°C ;
- 3.3 Altitude: $\leq 2000\text{m}$;
- 3.4 Environmental conditions: No harmful gases and vapor, conductive or explosive dust and severe mechanical vibration.

4. Main technical parameters and technical performance

- 4.1 Main technical parameters;
 - 4.1.1 Rated voltage: 0.23 kV, 0.4kV, 0.45kV, 0.525kV;
 - 4.1.2 Rated frequency: 50Hz or 60Hz;
 - 4.1.3 Rated capacity: (5~30)kvar;
 - 4.1.4 Capacitance deviation: $-5\% \sim +10\%$; the ratio of maximum and minimum measured of the capacitance between any two outlet terminals of the three-phase capacitor should not exceed 1.08;
 - 4.1.5 Tangent of the loss angle $\text{tg } \delta$: Lower than 0.0012 under rated power frequency voltage;
 - 4.1.6 Withstand voltage: interelectrode, power frequency $2.15U_N$, 2s; pole-to-case, power frequency 3.6kV, 5s;
 - 4.1.7 Maximum permissible overvoltage: $1.1 U_N$; no more than 8h every 24h;
 - 4.1.8 Maximum permissible current: $1.3I_N$;
 - 4.1.9 Self-discharge characteristic: After the capacitor is applied with $\sqrt{2} U_N$ DC voltage and the power is disconnected for 3min, the remaining voltage drops 75V or below;

4.2 Main product models and data sheet

Serial number	Specification and model	Rated voltage (kV)	Rated frequency (Hz)	Rated capacity (kvar)	Rated capacitor (μF)	Rated current (A)	Overall dimensions (D×H)mm	Installation dimensions
1	NWC6-0.23-3-3	0.23	50	3	180	7.5	φ 76×240	Figure 1
2	NWC6-0.23-5-3	0.23	50	5	301	12.5	φ 86×290	
3	NWC6-0.23-7.5-3	0.23	50	7.5	451	18.8	φ 96×290	
4	NWC6-0.23-10-3	0.23	50	10	602	25.1	φ 106×280	Figure 2
5	NWC6-0.4-5-3	0.4	50	5	99	7.2	φ 76×180	Figure 1
6	NWC6-0.4-7.5-3	0.4	50	7.5	149	10.8	φ 76×180	
7	NWC6-0.4-10-3	0.4	50	10	199	14.4	φ 76×240	
8	NWC6-0.4-15-3	0.4	50	15	298	21.7	φ 76×290	
9	NWC6-0.4-16-3	0.4	50	16	318	23.1	φ 76×290	
10	NWC6-0.4-20-3	0.4	50	20	398	28.9	φ 86×290	
11	NWC6-0.4-25-3	0.4	50	25	497	36.1	φ 96×290	Figure 2
12	NWC6-0.4-30-3	0.4	50	30	597	43.3	φ 106×290	
13	NWC6-0.45-5-3	0.45	50	5	79	6.4	φ 76×180	Figure 1
14	NWC6-0.45-7.5-3	0.45	50	7.5	118	9.6	φ 76×180	
15	NWC6-0.45-10-3	0.45	50	10	157	12.8	φ 76×240	
16	NWC6-0.45-15-3	0.45	50	15	236	19.2	φ 76×290	
17	NWC6-0.45-16-3	0.45	50	16	252	20.5	φ 76×290	
18	NWC6-0.45-20-3	0.45	50	20	314	25.7	φ 86×290	
19	NWC6-0.45-25-3	0.45	50	25	393	32.1	φ 96×290	Figure 2
20	NWC6-0.45-30-3	0.45	50	30	472	38.5	φ 106×290	
21	NWC6-0.525-5-3	0.525	50	5	58	5.5	φ 76×180	Figure 1
22	NWC6-0.525-7.5-3	0.525	50	7.5	87	8.2	φ 76×180	
23	NWC6-0.525-10-3	0.525	50	10	115	11.0	φ 76×240	
24	NWC6-0.525-15-3	0.525	50	15	173	16.5	φ 76×290	
25	NWC6-0.525-16-3	0.525	50	16	185	17.6	φ 76×290	
26	NWC6-0.525-20-3	0.525	50	20	231	22.0	φ 86×290	
27	NWC6-0.525-25-3	0.525	50	25	289	27.5	φ 96×290	Figure 2
28	NWC6-0.525-30-3	0.525	50	30	346	33.0	φ 106×290	

Notes: 1. Single-phase product can be customized; its physical dimensions are the same with the three-phase product with the same specification;
2. Product with the rated frequency of 60Hz can be customized.

5. Main technical parameters and technical performance

5.1 Main features

- 5.1.1 Use safety: This product is a dry product; it is filled with dry flame-retardant materials internally, such as: thermal conductivity silica gel. Cylindrical aluminum tensile shell is provided with the over-pressure protection device; it is characterized by oil-free, environmentally friendly, corrosion-resistant, anti-explosion etc. and it is safe and reliable.
- 5.1.2 Applicable environment: Suitable for places of higher fire rating.
- 5.1.3 Easy installation: The bottom is the M12/M16 stud fixedly installed; the product can be both mounted vertically and horizontally.
- 5.1.4 Using NWC6 dry capacitor can realize reactive power compensation cabinet modular design, reduce unit cost and make maintenance more convenient.

5.2 Notice for use

5.2.1 Capacitor selection:

Grid system voltage	Capacitor rated voltage	User grid frequency
127/220	0.23/0.25	Use 0.25kV-50 Hz or order 60Hz products
220/380	0.4/0.45/0.525	Use 0.45kV-50 Hz or order 60Hz products

5.2.2 Overvoltage and overheating will shorten the life of the capacitor. In tropical or high-altitude regions, recommend the users to choose products of higher rated voltage according to the voltage of power network system.

5.2.3 When the system is installed with the shunt capacitor, attention should be paid to the following circumstances:
a. Under the circumstance of severe harmonic content, do not directly install the shunt capacitor and connect the 7% /14% reactor in series for use. Under the circumstance of modest harmonic content, enhance the voltage level of the capacitor for derating, such as: 0.525kV. (Common harmonic sources are frequency converter, DC rectifier, inverter, electrolytic plating equipment, medium frequency furnace, electric arc furnace etc.).

- b. When the motor is fixedly connected with the shunt capacitor, operating current of the
c. When the transformer is in empty load, the capacitor should be guaranteed to exit from the operation to prevent excessive compensation.
- 5.2.4 To ensure proper use of the capacitor, there should be short circuit, over-voltage, over-current protection and limiting inrush device in the capacitor circuit (such as series reactor or CJ19 special switch contacts).
- 5.2.5 The capacitor is disconnected from the power supply and must be short-circuited discharged, and then can be touched or tested.
- 5.2.6 The capacitor terminals and conductors should be well connected. Current-carrying capacity of the connecting wire is 1.43 times higher than the rated current of the capacitor.

Product rated voltage	Capacity range	Wire cross-sectional area
0.4/0.45	≤ 10	4.0
0.4/0.45	12~20	6.0
0.4/0.45	24~30	10.0

- 5.2.7 A distance of 20mm or more between the top of the capacitor and other components should be kept to ensure reliable operation of over-pressure protection device. The installation space between capacitors should be considered for the cooling condition of the equipment.
- 5.2.8 When the capacitor malfunctions or the service life is terminated, over-pressure protection device inside the product will be broken, the upper cover slightly bulges and the capacitor failure occurs. Users are asked to periodically detect the operating current and surface temperature of the capacitor and timely maintain it.

6. Physical and installation dimensions:

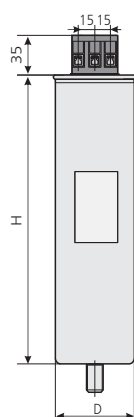


Figure 1

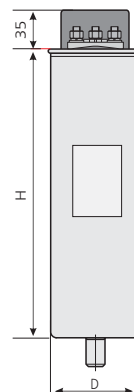


Figure 2

7. Ordering information

- 7.1 Users must provide product rated voltage, rated capacity, frequency, phase number and other parameters.
- 7.2 Users must provide some of the features of the places of use as far as possible, such as environmental conditions, power network quality.
- Such as: NWC6 0.4-30-3 10 sets
Ordering 10 NWC6 series three-phase capacitors with the rated voltage of 400V and rated capacity of 30kavr.