# NWC5 Self-healing Shunt Capacitor

## 1. General

1.1 Edectric ratings: ≤AC1000V.

1.2 Application: Newly developed energy-saving product for improvement of power factor and power quality;

1.3 Standards: IEC/EN 60831-1:2014 IEC/EN 60831-2:2014

## 2. Type designation

N W C 5 □-□-□

- Number of phase: 3: 3-ph
- Rated capacity Qn (kVar)
- Rated voltage Un (kV)
- Capacitor series

## 3. Operating conditions

3.1 Ambient temperature: -25℃~+50℃

3.2 Relative humidity: ≤50% at 40℃, ≤90% at 20℃

3.3 Altitude: ≤2000m

3.4 Environmental conditions: without dangerous gas & steam, insulated and explosive dust and dramatic mechanical vibration.

## 4. Technical data

4.1 Rated voltage: 0.23, 0.4, 0.45, 0.525kV

4.2 Rated frequency: 50Hz or 60Hz.

4.3 Rated capacity: (1~40)kVar

4.4 Capacity error: -5~+10%;

4.5 Dielectric loss tangent value: ≤0.0012, at rated power frequency voltage

4.6 Max. allowed over-voltage: 1.1Un, not exceed 8h in 24h

4.7 Max. allowed over-current: 1.3In (1.6 In, 2h/24h; 2.0 In, 30min/24h )

4.8 Having Self-discharging property: power off, voltage reduces from $\sqrt{2}$ Un (DC) to 75V and below within 3min.

4.9 Model and Specifications

4.10 Inrush current: 200In

4.11 Withstand voltage: interelectrode, power frequency 2.15UN, 10s

4.12 Withstand voltage: pole-to-case, power frequency 3.6kV, 60s

4.13 Losses : ≤0.2W/kvar

4.14 Use safety : over-pressure protection device,self-healing

4.15 Fixing: Threaded bolt M12 and M16

4.16 Expected life : ≥170,000 h

Main product models and data sheet

| Serial number | Type and Specification | Rated voltage (kV) | Rated frequency (Hz) | Rated capacity (kVar) | Rated capacitor (μF) | Rated current (A) | Dimensions D×H(mm) | Mounting dimensions | figure number |
|---|---|---|---|---|---|---|---|---|---|
| 1 | NWC5-0.23-1-3 ( 60Hz ) | 0.23 | 60 | 1 | 50 | 2.5 | Φ60×190 | M10×10 | Figure 1 |
| 2 | NWC5-0.23-3-3 ( 60Hz ) | 0.23 | 60 | 3 | 151 | 7.5 | Φ60×240 | | |
| 3 | NWC5-0.23-5-3 ( 60Hz ) | 0.23 | 60 | 5 | 251 | 12.6 | φ76×240 | M12×16 | Figure 2 |
| 4 | NWC5-0.23-7.5-3 ( 60Hz ) | 0.23 | 60 | 7.5 | 376 | 18.8 | φ76×290 | | |
| 5 | NWC5-0.23-10-3 ( 60Hz ) | 0.23 | 60 | 10 | 502 | 25.1 | φ86×290 | | |
| 6 | NWC5-0.23-15-3 ( 60Hz ) | 0.23 | 60 | 15 | 753 | 37.7 | φ96×290 | M16×25 | |
| 7 | NWC5-0.23-20-3 ( 60Hz ) | 0.23 | 60 | 20 | 1003 | 50.2 | φ116×290 | | Figure 3 |
| 8 | NWC5-0.4-3-3 | 0.4 | 50 | 3 | 59.7 | 4.3 | Φ60×175 | M10×10 | Figure 1 |
| 9 | NWC5-0.4-5-3 | 0.4 | 50 | 5 | 99 | 7.2 | Φ60×175 | | |
| 10 | NWC5-0.4-7.5-3 | 0.4 | 50 | 7.5 | 149 | 10.8 | Φ60×240 | | |
| 11 | NWC5-0.4-10-3 | 0.4 | 50 | 10 | 199 | 14.4 | φ76×240 | M12×16 | Figure 2 |
| 12 | NWC5-0.4-15-3 | 0.4 | 50 | 15 | 298 | 21.7 | Φ76×290 | | |
| 13 | NWC5-0.4-16-3 | 0.4 | 50 | 16 | 318 | 23.1 | Φ76×290 | | |
| 14 | NWC5-0.4-20-3 | 0.4 | 50 | 20 | 398 | 28.9 | Φ86×290 | | |
| 15 | NWC5-0.4-25-3 | 0.4 | 50 | 25 | 497 | 36.1 | Φ96×290 | M16×25 | |
| 16 | NWC5-0.4-30-3 | 0.4 | 50 | 30 | 597 | 43.3 | φ106×290 | | Figure 3 |
| 17 | NWC5-0.4-40-3 | 0.4 | 50 | 40 | 796 | 57.7 | φ116×290 | | |
| 18 | NWC5-0.45-3-3 | 0.45 | 50 | 3 | 47.2 | 3.8 | Φ60×175 | M10×10 | Figure 1 |
| 19 | NWC5-0.45-5-3 | 0.45 | 50 | 5 | 79 | 6.4 | Φ60×175 | | |
| 20 | NWC5-0.45-7.5-3 | 0.45 | 50 | 7.5 | 118 | 9.6 | Φ60×240 | | |
| 21 | NWC5-0.45-10-3 | 0.45 | 50 | 10 | 157 | 12.8 | φ76×240 | M12×16 | Figure 2 |
| 22 | NWC5-0.45-15-3 | 0.45 | 50 | 15 | 236 | 19.2 | Φ76×290 | | |
| 23 | NWC5-0.45-16-3 | 0.45 | 50 | 16 | 252 | 20.5 | Φ76×290 | | |
| 24 | NWC5-0.45-20-3 | 0.45 | 50 | 20 | 314 | 25.7 | Φ86×290 | | |
| 25 | NWC5-0.45-25-3 | 0.45 | 50 | 25 | 393 | 32.1 | Φ96×290 | M16×25 | |
| 26 | NWC5-0.45-30-3 | 0.45 | 50 | 30 | 472 | 38.5 | φ106×290 | | Figure 3 |
| 27 | NWC5-0.45-40-3 | 0.45 | 50 | 40 | 629 | 51.3 | φ116×290 | | |
| 28 | NWC5-0.48-3-3 | 0.48 | 50 | 3 | 41.5 | 3.6 | Φ60×175 | M10×10 | Figure 1 |
| 29 | NWC5-0.48-5-3 | 0.48 | 50 | 5 | 69 | 6.0 | Φ60×175 | | |
| 30 | NWC5-0.48-7.5-3 | 0.48 | 50 | 7.5 | 104 | 9.0 | Φ60×240 | | |
| 31 | NWC5-0.48-10-3 | 0.48 | 50 | 10 | 138 | 12.0 | φ76×240 | M12×16 | Figure 2 |
| 32 | NWC5-0.48-15-3 | 0.48 | 50 | 15 | 207 | 18.0 | Φ76×290 | | |
| 33 | NWC5-0.48-16-3 | 0.48 | 50 | 16 | 221 | 19.2 | Φ76×290 | | |
| 34 | NWC5-0.48-20-3 | 0.48 | 50 | 20 | 277 | 24.0 | Φ86×290 | | |
| 35 | NWC5-0.48-25-3 | 0.48 | 50 | 25 | 346 | 30.0 | Φ96×290 | M16×25 | |
| 36 | NWC5-0.48-30-3 | 0.48 | 50 | 30 | 415 | 36.1 | φ106×290 | | Figure 3 |
| 37 | NWC5-0.48-40-3 | 0.48 | 50 | 40 | 553 | 48.1 | φ116×290 | | |
| 38 | NWC5-0.525-3-3 | 0.525 | 50 | 3 | 34.7 | 3.3 | Φ60×240 | M10×10 | Figure 1 |
| 39 | NWC5-0.525-5-3 | 0.525 | 50 | 5 | 58 | 5.5 | Φ60×240 | | |
| 40 | NWC5-0.525-7.5-3 | 0.525 | 50 | 7.5 | 86.7 | 8.2 | Φ60×240 | | |
| 41 | NWC5-0.525-10-3 | 0.525 | 50 | 10 | 115 | 11.0 | φ76×240 | M12×16 | Figure 2 |
| 42 | NWC5-0.525-15-3 | 0.525 | 50 | 15 | 173 | 16.5 | Φ76×290 | | |
| 43 | NWC5-0.525-16-3 | 0.525 | 50 | 16 | 185 | 17.6 | Φ76×290 | | |
| 44 | NWC5-0.525-20-3 | 0.525 | 50 | 20 | 231 | 22.0 | Φ86×290 | | |
| 45 | NWC5-0.525-25-3 | 0.525 | 50 | 25 | 289 | 27.5 | Φ96×290 | M16×25 | |
| 46 | NWC5-0.525-30-3 | 0.525 | 50 | 30 | 346 | 33.0 | φ106×290 | | Figure 3 |
| 47 | NWC5-0.525-40-3 | 0.525 | 50 | 40 | 346 | 33.0 | φ116×290 | | |
| 48 | NWC5-0.45-5-3YN | 0.45 | 50 | 5 | 79 | 6.4 | φ76×240 | M12×16 | Figure 4 |
| 49 | NWC5-0.45-7.5-3YN | 0.45 | 50 | 7.5 | 118 | 9.6 | φ76×240 | | |
| 50 | NWC5-0.45-10-3YN | 0.45 | 50 | 10 | 157 | 12.8 | φ76×290 | | |
| 51 | NWC5-0.45-15-3YN | 0.45 | 50 | 15 | 236 | 19.2 | φ86×290 | | |
| 52 | NWC5-0.45-16-3YN | 0.45 | 50 | 16 | 252 | 20.5 | φ96×290 | M16×25 | |
| 53 | NWC5-0.45-20-3YN | 0.45 | 50 | 20 | 314 | 25.7 | φ96×290 | | |
| 54 | NWC5-0.45-25-3YN | 0.45 | 50 | 25 | 393 | 32.1 | φ106×290 | | |
| 55 | NWC5-0.45-30-3YN | 0.45 | 50 | 30 | 472 | 38.5 | φ116×290 | | |

Note: All sizes are customizable with rated frequency 50Hz or 60Hz, single-phase or three-phase capacitor; the products of the same capacity have the same overall dimensions.

## 5. Features

5.1 Safe and reliable operation because of the independent protective enclosure;

5.2 With good sealing properties; and outgoing terminals for convenient wiring and reliable connection;

5.3 Available for use in the places with higher ambient temperature and voltage variation ;

5.4 Fixed type, convenient for mounting and elegant appearance due o to novel mounting pins.

## 6. Note

6.1 Please guarantee that the capacitors are operated under specified conditions, including the proper temperature, voltage and current, as over-voltage and over-current may shorten the life of the capacitor;

6.2 Please pay attention to the points following when the capacitor is shuntly connected in the system
a. For the system of current regulating system and the electric equipments system, the capacitor should not be directly connected;
b. Operational current of the capacitor should be less than the off-load current of the shuntly connected motor;
c. When the transformer is off-load, the capacitor should stop operating.

6.3 Specific switches, contactors and over-current relays should be adopted when the capacitor is shuntly connected in the system.

## 7. Mounting dimensions (mm)

Figure 1

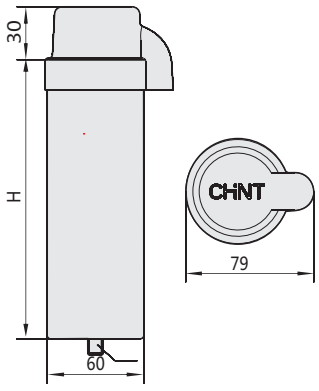



Figure 2

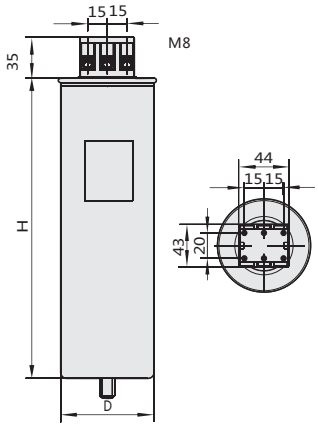



Figure 3

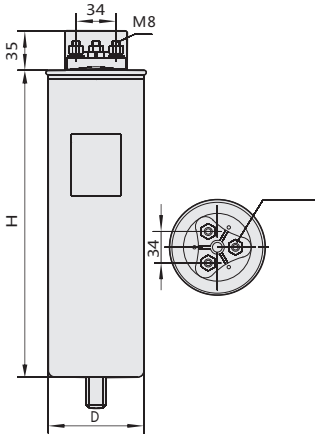
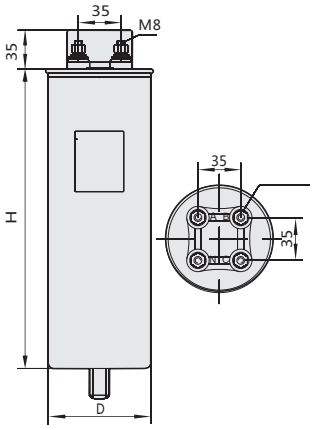



Figure 4




Note: The capacity of three-phase capacitor (1~8)kvar is seen in Fig.1; (10~25)kvar in Fig.2; (30~40)kvar in Fig.3;The split phase compensation capacitor has 4 connecting terminals with star connection and neutral line N lead-out, as shown in Fig.4.