DATASHEET

FILM CAPACITORS – Power Factor Correction

PART NO.: YHD4511356J002HW

YUHUA ELECTRICAL

YHD Series, 450VAC, 3×135µF, ±5 %, -40℃~70℃ , Radial, D136*H225mm, Clamp Terminals

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AUTHORIZED DISTRIBUTOR

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■ PART NUMBER GUIDE

The 14 digits part number is formed as follow:

Series Code
YHD type

Rated Phase Capacitance
135×10^6 pF = 135 μF

Internal Distinguishing Code
for different design

Y	H	D	4	5	1	1	3	5	6	J	0	0	2	H	W

Rated Voltage
45×10^1=450 Vdc

Capacitance Tolerance
J: ±5 % or 0 %～+5 %
K: ±10 % or -5 %～+10 %

Terminals Type
0: cap terminals
1: bolt terminals

■ PRODUCT PICTURE

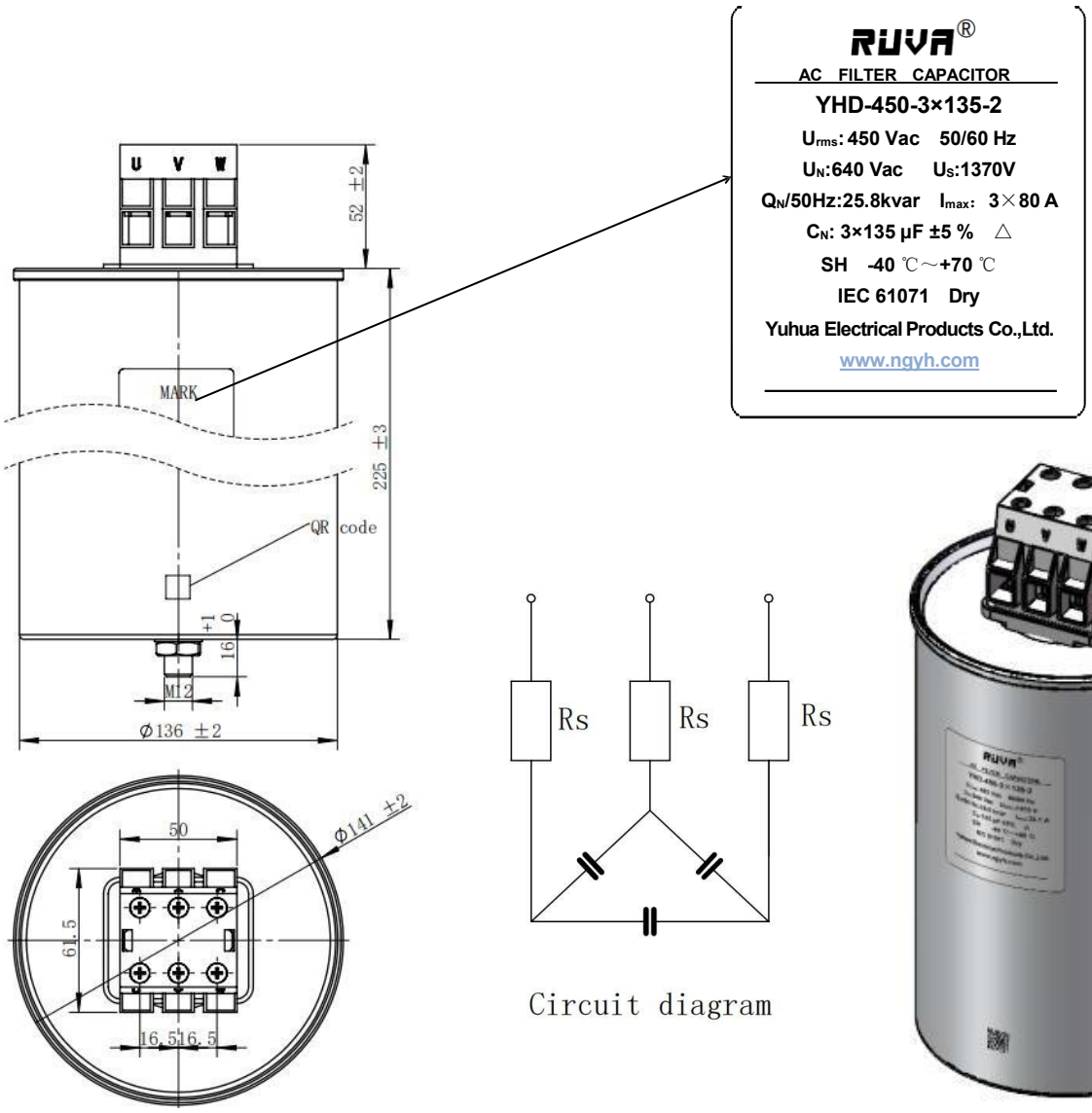
■ Typical Application

For reactive power compensation or AC filter circuit, to increase power factor and harmonic filtering.

■ Features

1. Metallized Polypropylene, good self-healing property.
2. Cylindrical Al. case, dry construction, clamp terminals.
3. Overpressure disconnector, more safety.

■ Outline Drawing



■ Specifications

No.	Item	Requirements
1	Reference standards	GB/T 17702-2021 (idt IEC 61071-2017)
2	Rated capacitance	C_N=3×135 μF
3	Capacitance tolerance	±5 %
4	Operating voltage	U_{rms}=450 Vac 50/60 Hz, U_N=640 Vac
5	rated current	I_N=33.1 A 50Hz
6	Max. line current of capacitor	I_{max} =3×80 A （@θ_{amb}=45℃，Line current）
7	Maximum peak current	$\hat{I}$=5.9 kA
8	Maximum surge current	$\hat{I}_S$=17.7 kA
9	Thermal resistance (typical)	R_{th}=2.4 K/W
10	Equivalent series resistance @ 1kHz	3×0.7 mΩ
11	self-inductance L_S	≤130 nH
12	Dielectric dissipation factor	$Tan\delta_0=2\times10^{-4}$
13	Dissipation factor @ 100Hz	$Tan\ \delta_{(100Hz)} \leq 1.5\times10^{-3}$
14	Time constant	τ ≥10,000 s
15	Test voltage between terminals	U_{T-T}=675 Vac/50 Hz 10 s
16	Test voltage between terminal and case	U_{T-C}=3600 Vac/50 Hz 10 s
17	Permissible voltage overload	1. U_N: ≤8h/day 1.15U_N: ≤30min/day 2. U_N: ≤5min/day 1.3U_N: ≤1min/day 1.5U_N: 30 ms, 1000 times
18	Working temperature range	-40 ℃～+70 ℃
19	Maximum hot spot temperature	+70 ℃
20	Storage temperature	-40 ℃～+70 ℃
21	Cooling method	forced cooling
22	Life Expectancy	120,000 h (U_{rms}，θ_{hs}≤55 ℃)
23	Failure rate	≤300 fit
24	Climatic Category (IEC60068-1)	40/70/21
25	Discharge method	On demand，default without resistor
26	Assembling construction	Al. case, PU resin filled
27	Weight	About 3.6 kg
28	Explosion-proof method	Overpressure disconnector
29	Mounting method	Vertically, M12 bolt, max torque 10 N·m
30	Connection method，Max. Torque	△, 3 N·m
31	Maximum altitude	2,000 m

■ Installation requirements

1. The capacitor should be installed in a cool and ventilated place, avoid direct sunlight or close to other heating objects.
2. The capacitor must be mounted vertically with the terminals upwards. The bottom stud should be well grounded.
3. During installation, a gap of at least 10 mm should be left at the side of each product to facilitate the heat dissipation of the product. A gap of at least 20 mm should be left on the upper of the terminal too, and the connection cable shall be of flexible type and keep slack , do not use hard core cable, so as to ensure the explosion-proof function of the product.
4. When multiple capacitors are used in parallel, the current carrying capacity of terminals and wires should be considered. We recommended that each capacitor use independent lead wires, if you have any other connection way please contact us.
5. For the clamp type design, recommend to using a slotted screwdriver to install the terminals. For the bolt type design, recommended to connect wires between two nuts, the lower torque wrench is used to ensure the ontology is not passed to the capacitor.
6. Installation & commissioning procedures
   (1) Unpack Capacitor, don't touch capacitor terminals by hand directly.
   (2) Check Physically.
   (3) Fixed capacitors.
   (4) Ensure for correctness of supply voltage, frequency, temperature, etc.
   (5) Connect Capacitor.
   (6) Switch on supply.
   (7) Check main supply voltage and current.
7. Before operating the capacitors (installation, disassemble, etc.), the capacitor must be fully discharged (discharge through resistance, and then short-circuit discharge and grounding).

■ Operation and Maintenance Requirements

1. The maximum service life of capacitor depends on its working conditions (such as working voltage, hot spot temperature, etc.).

2. It is recommended that the grounding point of capacitor should be kept reliable through the bolt.
3. Current limiting fuse or moulded case circuit breaker must be used for short-circuit protection. Short circuit protection devices and cables must be able to withstand minimum 96 A current for a long time.
4. Check tightness of Connections and terminals periodically, check short circuit protection fuses and the discharge resistance whether normal work. Clean the terminals periodically to avoid dust or other conductive garbage can cause a short-circuit.
5. Use current clamp table or other on-line measuring tools of current measurement capacitor current every six mouth.