



## SPECIFICATION FOR APPROVAL

File No.: Q/FRK 0.GS.E.C69-F07

Product Name	AC filter capacitor(Dry-type)
Product Type	C69
Product Code	
Customer	
Customer Code	
Issue Date	2015-9



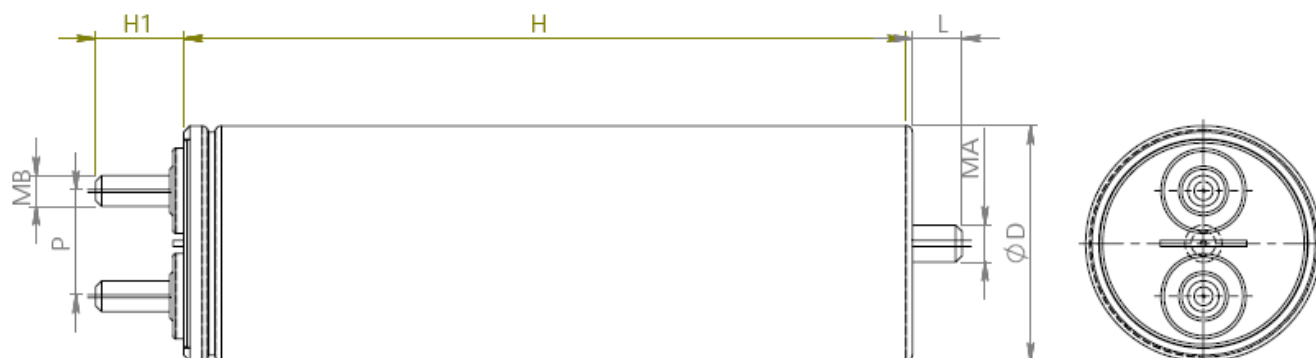
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## AC filter capacitor(Dry-type)

### ■ Outline Drawing



D	P±1.0	H1±1.0	MA	L±1.0
50	22.5	25	M8	10
55	22.5	25	M10	12
76	34	35	M12	16
86	34	35	M12	16

### ■ Features

- The capacitors particularly suit for AC filter circuit in power electric equipment and UPS power unit. They have ability to withstand high r.m.s current and high peak voltage.
- Self-healing property
- Excellent stable performance and reliability
- Dry type design, installation is more flexible

### ■ Specifications

Reference standards	GB/T 17702(IEC 61071)
Rated RMS Voltage ( $U_{rms}$ )	300Vac, 500Vac
Rated frequency( $f_N$ )	50/60Hz
Capacitance tolerance	±5%, ±10%, -5%~+10%
Inrush current ( $\hat{I}_s$ )	100 $I_N$
Test voltage between Terminals( $U_{T-T}$ )	2.15 $U_{rms}$ or 1.5 $U_N$ ,10s
Test voltage between terminals to case( $U_{T-C}$ )	3000Vac,10s
Dissipation factor ( $tg\delta$ ) @50Hz	≤0.0010
Climatic category	40/70/21
Operating temperature( $\theta_{hs}$ )	-25°C~70°C
Storage Temperature	-40°C~85°C
Degree of protection	IP00
Life Expectancy	After 60 000 hours at $U_{rms}$ , 50°C ΔC/C ≤5%
Mounting position	Any position
Cooling	Naturally air-cooled or force cooled
Max Torque of terminals	M6:3 Nm; M8:5Nm; M10:8Nm
Max. Torque of installation	M8: 5Nm; M10: 7Nm; M12: 10 Nm
Max Altitude	2000m

## ■ Part number system

The 18 digits part number is formed as follow:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
C	6	9															

Digit 1 to 3 Series code

C69

Digit 4 to 5 Rated RMS Voltage

Q1=300V H2=500V

Digit 6 to 8 Rated capacitance value

For example : 107=10×10<sup>7</sup> pF= 100μF

Digit 9 Capacitance tolerance

J=± 5%,K=± 10%

Digit 10 Dimension code

D	H	Code	D	H	Code	D	H	Code
76	235	1	76	185	4	55	135	7
86	235	2	50	100	5	76	130	8
76	140	3	55	100	6	50	85	9

Digit 11 Internal use

Digit 12 to 15 Terminals code(refer to table1)

Digit 16 to 18 Internal use

**Table 1 Terminals code**

Digit 12		Digit 13		Digit 14		Digit 15	
Code	Terminal form	Code	Fixed style	Code	length of lead wire	Code	With or without discharge resistor
2	Bolt M10	7	Bottom-bolt M12	0	standard form	0	Without resistor
K	Bolt M8	6	Bottom-bolt M10				
J	Bolt M6	5	Bottom-bolt M8				

## ■ Technical data (mm)

U <sub>N</sub> =420Vac U <sub>rms</sub> =300Vac										
C <sub>N</sub> (μF)	D ± 1.0	H ± 3.0	MB	R <sub>s</sub> (mΩ)	R <sub>thhc</sub> (°C/W)	I <sub>max</sub> (A)	Î (kA)	Î <sub>s</sub> (kA)	M (kg)	Part number
20	50	85	M6	22.0	14.2	8	0.1	0.2	0.2	C69Q1206-90J500+++
40	50	100	M6	17.3	10.4	11	0.2	0.4	0.2	C69Q1406-50J500+++
50	55	100	M6	13.8	9.6	11	0.2	0.5	0.3	C69Q1506-60J600+++
60	55	135	M6	24.8	8.3	11	0.3	0.6	0.3	C69Q1606-70J600+++
100	76	140	M10	9.7	6.2	14	1.0	3	0.9	C69Q1107-322700+++
200	76	140	M6	4.8	6.3	28	2.0	6	0.9	C69Q1207-30J700+++
200	76	140	M10	4.8	6.3	28	2.0	6	0.9	C69Q1207-322700+++
200	76	235	M10	4.9	3.7	42	6.0	18	1.4	C69Q1207-102700+++

U <sub>N</sub> =700Vac U <sub>rms</sub> =500Vac										
C <sub>N</sub> (μF)	D ± 1.0	H ± 3.0	MB	R <sub>s</sub> (mΩ)	R <sub>thhc</sub> (°C/W)	I <sub>max</sub> (A)	Î (kA)	Î <sub>s</sub> (kA)	M (kg)	Part number
10	50	85	M6	16.0	14.0	9	0.2	0.5	0.2	C69H2106-90J500+++
20	50	100	M6	13.0	10.2	12	0.3	0.7	0.2	C69H2206-50J500+++
30	55	135	M6	16.0	7.4	13	0.5	0.7	0.4	C69H2306-70J600+++
50	76	130	M10	9.6	6.7	18	0.8	1.2	0.8	C69H2506-802700+++
80	76	185	M10	3.4	4.5	37	1.3	3.8	1.1	C69H2806-402700+++
100	76	235	M10	9.5	3.7	35	4.0	12	1.4	C69H2107-102700+++
133	86	235	M10	7.2	3.4	47	5.3	15.9	1.8	C69H2A00-202700+++
150	86	235	M10	6.4	3.2	53	6.0	18	1.7	C69H2157-202700+++

Note: 1. “-”=capacitance tolerance code K=±10%,J=±5%

2. “+++”= Internal use

3. Sizes above are normally used dimension, other dimension can be produced in pursuance of customer's request.

Sizes of terminals please refer to corresponding national standard.

4. “R<sub>thhc</sub>” = R<sub>thhc</sub> between hotspot and case on natural cooling condition.

## ■ Reliability

Item	Requirements
Damp heat loading test	After 800 hours at 1.25Urms, 85%RH, $f_N$ , Tolerating(max) $ \Delta C/C  \leq 3\%$
Corona discharge test	After 1 000 hours at Urms, $f_N$ , room temp $ \Delta C/C  \leq 3\%$ No corona effect

## ■ Temperature

Temperature is one of the main stress factors for polypropylene type capacitors, means it has a major influence on the life cycle of the capacitor.

## ■ Harmonics

Harmonics result from the operation of electrical loads with non-linear voltage-current characteristics.

They are caused by loads operated with modern power electronic, such as converters, electrical drives, welding machines and stand-by power supplies. Harmonics are sinusoidal voltages and currents with frequencies that are multiples of a 50Hz or 60Hz power supply frequency.

## ■ Safety

Maintain good and effective earthing for enclosures of capacitors.

Handle capacitor to ensure capacitor has discharge clean

Follow good engineering practices

## ■ Over current/short circuit protection

HRC-fuse or MCCB for short circuit protection have to be used. Short circuit protection equipment and connection cable should be selected so that the 1.5 times rated current of the capacitor can be managed permanently.

HRC-fuse rating has to be 1.6 to 1.8 times nominal capacitor current.

Use thermal magnetic overcurrent relays for overload protection.

## ■ Maintenance

Check tightness of Connections/terminals periodically.

Clean the terminals periodically to avoid dust or other conductive garbage can cause a short-circuit.

Check short circuit protection fuses.

Every half a year use current clamp table or other on-line measuring tools of current measurement capacitor current.