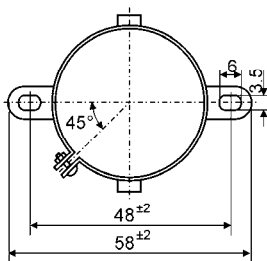
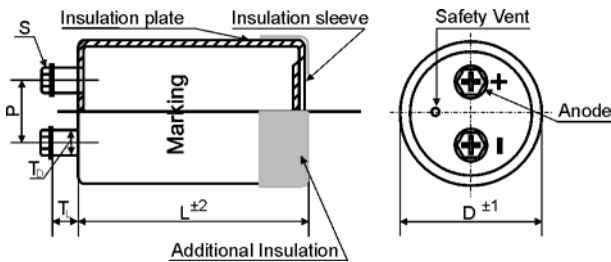


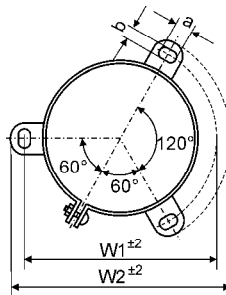
# Mounting / Befestigung

## ► Bracket mounting / Schellenbefestigung

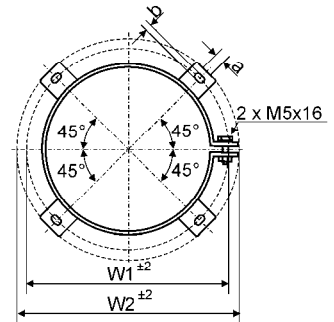
Capacitor fixing symbol code „Y“, „I“ or „X“



I-Type (for ØD = 36mm)



Y-Type (for ØD = 51 ~ 101mm)



X-Type (for ØD = 121mm)

For bracket mounting there is free of charge delivery of a metal bracket including capacitor.  
Bei Schellenbefestigung wird die Metallschelle kostenlos mit dem Kondensator geliefert.

## ► Case size & dimensions / Bauformen

Capacitor	Terminals (Standard)			Y / X - Bracket				Stud bolt
	ØD	P	S <sup>1)</sup>	I <sub>r max</sub>	W1	W2	a	
51	22.0	M5x10	60A	63.5	73.0	7	4.5	M12x16
64	28.6	M5x10	60A	76.2	85.1	7	4.5	M12x16
77	32.0	M5x10 <sup>2)</sup>	60A	88.9	98.4	7	4.5	M12x16
		M6x12 <sup>3)</sup>	100A					
90	32.0	M5x10 <sup>2)</sup>	60A	101.6	111.1	7	4.5	M12x16
		M6x12 <sup>3)</sup>	100A					
101	32.0	M6x12 <sup>4)</sup>	100A	115.0	127.0	8	5.5	M12x16
	41.5	M8x16 <sup>5)</sup>	120A					
121	41.5	M6x12	100A	145.0	158.0	8	6.0	-
	41.5	M8x16	120A					

All dimensions in mm

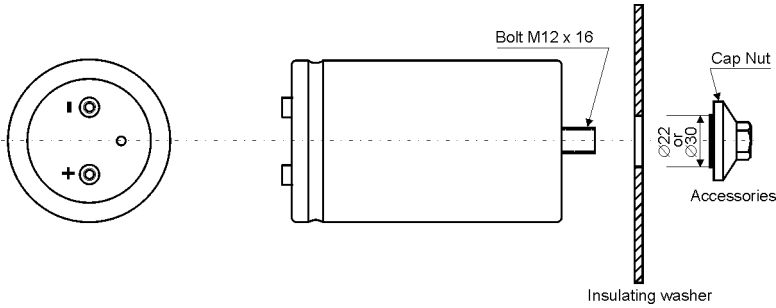
- <sup>1)</sup> If not mentioned in the product code
- <sup>2)</sup> All series except FXR and GXR
- <sup>3)</sup> FXR and GXR
- <sup>4)</sup> HCGF6 and HCGW
- <sup>5)</sup> FX2

# Mounting / Befestigung

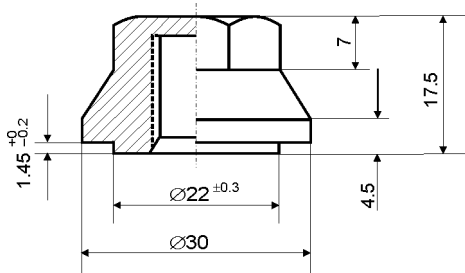


## ► Stud bolt mounting accessories Zubehör Bolzenbefestigung

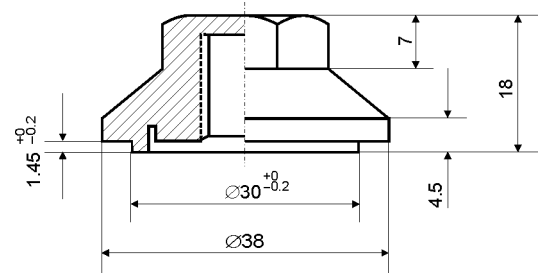
Capacitor fixing symbol code „B“



## ► Reinforced cap nut of nylon for screw-thread M12 Verstärkte Hutmutter aus Nylon für Gewinde M12

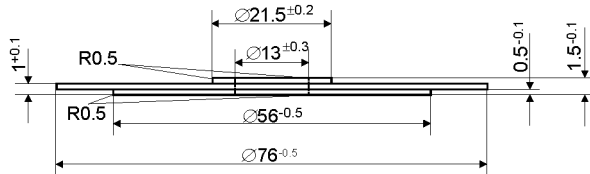
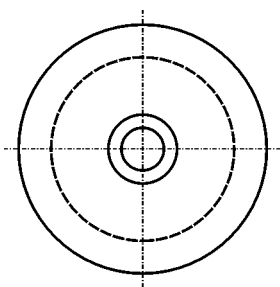


Product Code: CNN30M12 (Ø 30mm)

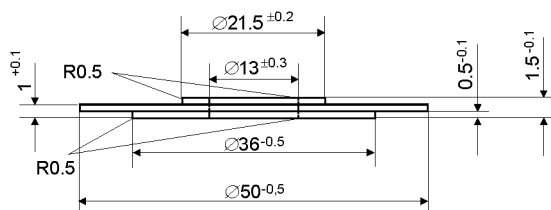
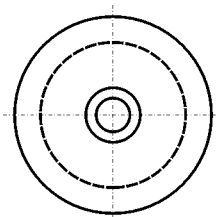


CNN38M12 (Ø 38mm)

## ► Insulating washer of Polypropylene PPH Isolierscheibe aus Polypropylene PPH



Product Code: K500 – ISO – 77 – 13 (for capacitor ØD = 77mm and ØD = 90mm)



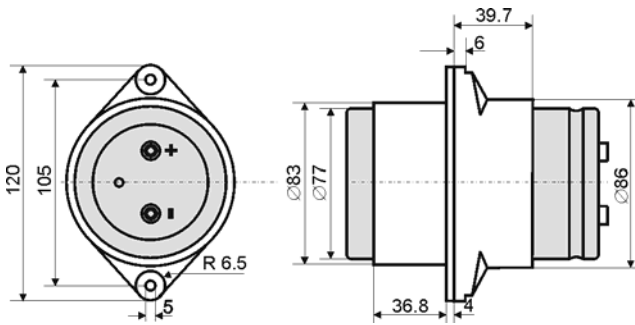
Product Code: K500 – ISO – 50 – 13 (for capacitor ØD = 51mm and ØD = 64mm)

# Mounting / Befestigung

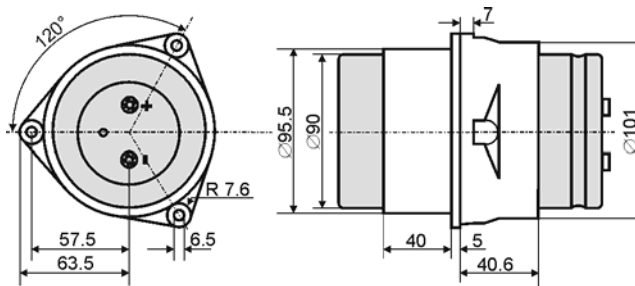


## ► Safety-Holder of PBT / Sicherheitshalter aus PBT

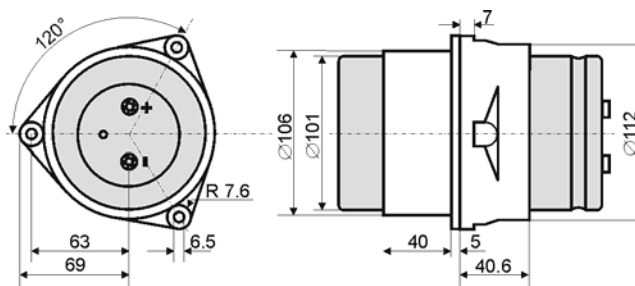
Capacitor fixing symbol code „N“



Product Code: PBT – 77 – BF (for capacitor ØD = 77mm)



Product Code: PBT – 90 – BF (for capacitor ØD = 90mm)



Product Code: PBT – 101 (for capacitor ØD = 101mm)

## ► Features of Safety-Holders

### Eigenschaften der Sicherheitshalter

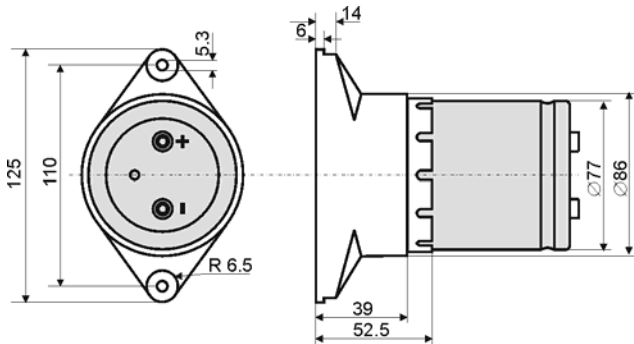
- Better insulation and vibration characteristics compared with metal brackets.
- Flammability: UL 94 V0
- Test insulation voltage: 5.4 kV AC.

- Bessere Isolations- und Vibrationsfestigkeit gegenüber Metallschellen.
- Entflammbarkeit gem. UL 94 V0.
- Prüfsolationsspannung: 5,4 kV AC.

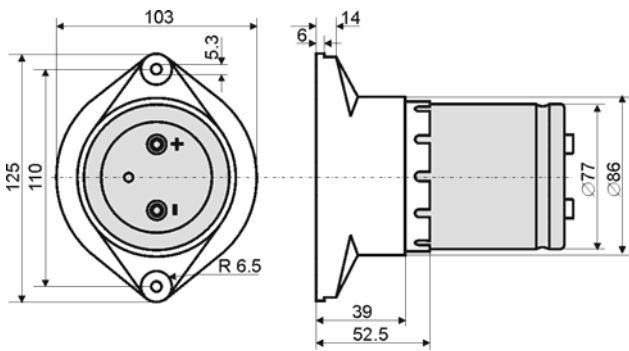
# Mounting / Befestigung

## ► Safety-Holder of PBT for bottom cooling Sicherheitshalter aus PBT für Bodenkühlung

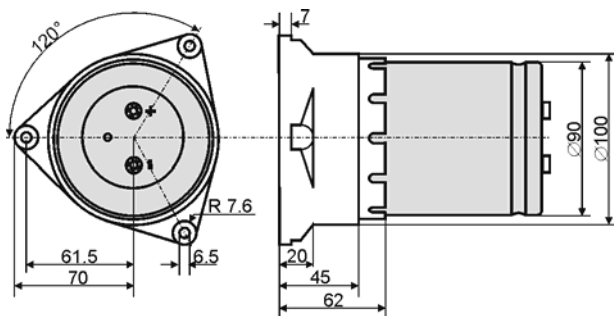
Capacitor fixing symbol code „N“ in addition with „WC“ for series FXR and GXR



Product Code: **PBT – 77 – BC** (for capacitor ØD = 77mm)

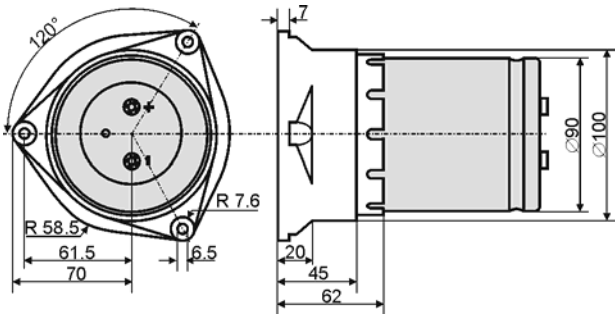


Product Code: **PBT – 77 – BC – UL** (for capacitor ØD = 77mm, meets creepage distance requirements according to UL)



Product Code: **PBT – 90 – BC** (for capacitor ØD = 90mm)

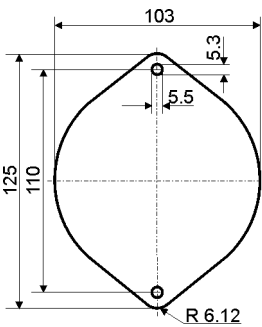
# Mounting / Befestigung



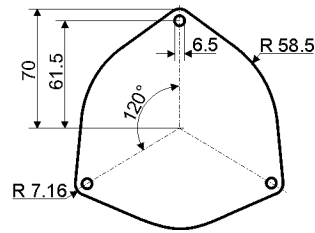
Product Code: PBT – 90 – BC – UL

(for capacitor ØD = 90mm, meets creepage distance requirements according to UL)

## ► Insulating heat conductive thermal pad for bottom cooling Isolierende Wärmeleitfolie für Bodenkühlung



Product Code: PBT – TCFOIL – 77  
(for capacitor ØD = 77mm)



Product Code: PBT – TCFOIL – 90  
(for capacitor ØD = 90mm)

## ► Features of thermal pad / Eigenschaften der Wärmeleitfolie

### Properties

Thickness (mm)	0.229
Hardness (Shore A)	92
Continuous Use Temperature (°C)	-60 to +180
Dielectric Breakdown Voltage (VAC)	5500
Thermal Conductivity (W/m-K)	1.6

### Thermal Performance vs Pressure

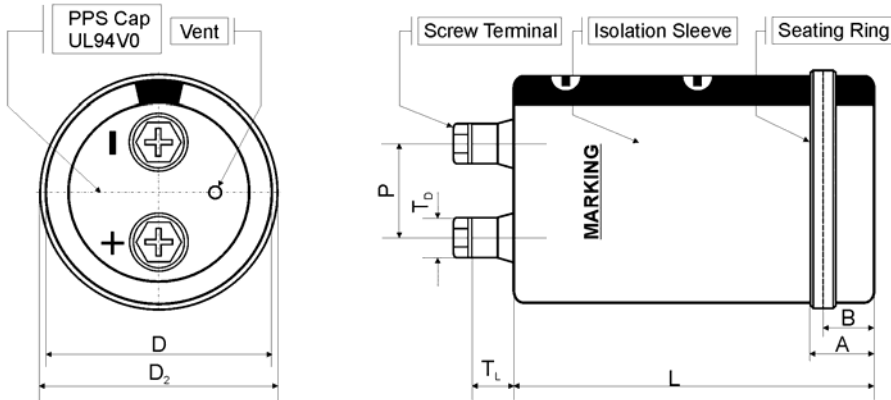
Pressure (psi)	10	25	50	100	200
TO-220 Thermal Performance	3.96	3.41	2.90	2.53	2.32
Thermal Impedance (°C-in <sup>2</sup> /W) (I)	0.95	0.75	0.61	0.47	0.41

Above data are values from material supplier.  
Diese Daten sind Werte des Materialherstellers.

# Mounting / Befestigung

## ► Dimensions of capacitor for bottom cooling Abmessungen für Kondensator mit Bodenkühlung

Capacitor fixing symbol code „N“ in addition with „WC“ for series FXR and GXR



Ø Capacitor	A	B
ØD = 77mm	24.5	20.0 <sup>±0.2</sup>
ØD = 90mm	24.3	20.0 <sup>±0.5</sup>

Size in mm. Other dimensions depending on capacitor.

## ► Ripple Current Multiplier depending on Forced Bottom Cooling Wechselstrommultiplikator in Anhängigkeit von Bodenkühlung

Capacitor series	Temperature of cooling base	Multiplier max.
FXR	≤ 60°C	1.75*)
	> 60°C	1.00
GXR	≤ 60°C	1.65*)
	> 60°C	1.00

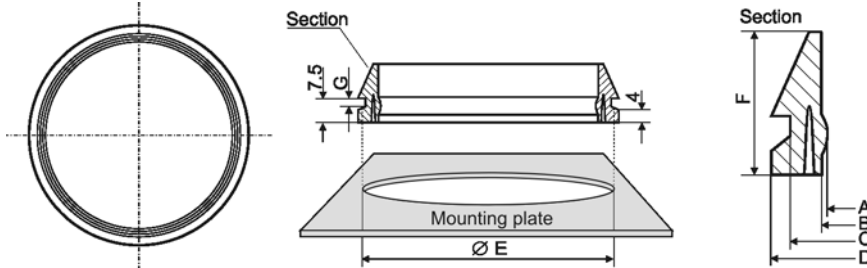
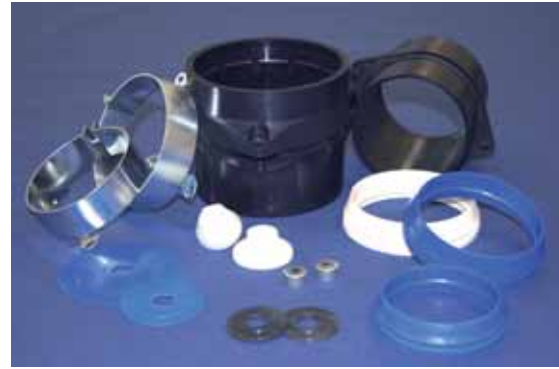
\*) I<sub>RMS</sub> depending on cooling capacity (0.5 °C/W)

Please contact us if you are interested in bottom cooling applications.  
Bitte kontaktieren Sie uns bei Interesse an einer Anwendung mit Bodenkühlung.

# Mounting / Befestigung

## ► Press ring of LDPE or TPE for mounting Einpressring aus LDPE oder TPE zur Befestigung

Capacitor fixing symbol code „N“



Ø Capacitor	A <sup>+0.3</sup>	B <sup>+0.3</sup>	C <sup>+0.3</sup>	D <sup>+0.3</sup>	E <sup>+0.2</sup>	F <sup>+0.2</sup>	G <sup>-0.25</sup>	Product Code Agree with RoHS	Product Code Agree with RoHS and UL-94-V0
64	62.3	64.1	70.5	74.5	71.2	18.0	3.0	K100 – 64 – BF	K400 – 64 – UL
77	74.8	77.0	84.5	88.6	85.5	20.0	2.4	K100 – 77	K400 – 77 – UL
90	88.0	90.0	97.9	102.0	98.6	23.5	3.0	K100 – 90 – BF	K400 – 90 – UL

All dimensions in mm

## ► Tightening torques for terminals and mounting options Anzugsdrehmomente für Anschlüsse und Befestigungen

Mounting option	Screw	Tightening torque		
		Recommended	Min	Max
M5		2.2 Nm	1.5 Nm	3.0 Nm
M6		3.5 Nm	3.0 Nm	4.0 Nm
M6 Screw-in depth	≥ 9 mm	3.5 Nm	3.0 Nm	6.0 Nm
M8		7.5 Nm	7.0 Nm	8.0 Nm

Screw-in-depth for M5 and M6: 10mm, for M8: 13mm max. / Einschraubtiefe für M5 und M6: 10mm, für M8: 13mm max.

Mounting option	Screw	Tightening torque	
		Recommended	Max
Bracket		2.2 Nm	3.0 Nm
PBT-77-BF PBT-77-BC / -UL	M4x20	1.7 Nm	1.9 Nm
PBT-90-BF PBT-90-BC / -UL	M5x25	3.2 Nm	3.4 Nm
PBT-101	M5x25	3.2 Nm	3.4 Nm
Stud bolt	M12x16	10.0 Nm	12.5 Nm*)

\*) This value signifies the strength of the bolt. The torque applied to the cap nuts of nylon (Product Code CNN30M12 or CNN38M12) depend on the size of the capnut and the thickness of mounting plate.

# Mounting / Befestigung

## Remarks / Hinweise

### Mounting

following mounting positions are recommended for screw type capacitors:

- upright (vertical), terminals side face upwards
- on the side (horizontal), anode above cathode terminal
- on the side (horizontal), vent faces upwards

The upside-down position (terminals face downwards) should not be used.

Screw type capacitors with stud bolt mounting must be fixed insulated.

### Befestigung

folgende Montagepositionen werden empfohlen für Kondensatoren mit Schraubanschlüssen:

- aufrecht (vertikal), Anschlüsse oben
- seitlich (horizontal), Anode oberhalb Kathodenanschluss
- seitlich (horizontal), Ventil oben

Die Einbaulage kopfüber sollte nicht angewendet werden.

Kondensatoren mit Bolzenbefestigung müssen isoliert befestigt werden.