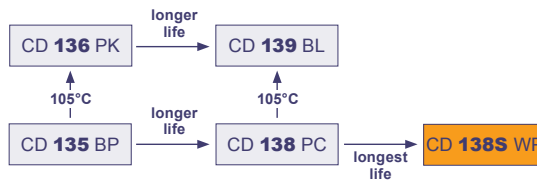


15000h at 85°C

- Longest Life
- High Reliability
- High Ripple Current
- For High Power Inverter



Item	Characteristics
Operating Temperature Range (°C)	-40 ~ +85
Voltage Range (V)	350 ~ 500
Capacitance Range (µF)	1500 ~ 12000
Capacitance Tolerance (20°C, 120Hz)	± 20%
Leakage Current (µA)	After 5 minutes at 20°C application of rated voltage, leakage current is not more than 0,01CV or 5mA, whichever is smaller C: Nominal Capacitance (µF) V: Rated Voltage (V)
Dissipation Factor (20°C, 120Hz)	Less than 0,15

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	15000h	>150000h	5000h	10000h	1000h
Leakage Current	Not more than specified value		Not more than specified value	Not more than specified value	Not more than specified value
Capacitance Change	Within ± 30% of initial value		Within ± 20% of initial value	Within ± 10% of initial value	Within ± 20% of initial value
Dissipation Factor	Not more than 300% of specified value		Not more than 200% of specified value	Not more than 130% of specified value	Not more than 200% of specified value
Condition:					
Applied Voltage	U_R	U_R	U_R	U_R	$U_R = 0$
Applied Current	I_R	$1,4 \times I_R$	I_R	$I_R = 0$	$I_R = 0$
Applied Temperature	85°C	40°C	85°C	85°C	85°C
Outlier Percentage	≤ 1%	≤ 1%	0%, guaranteed	IEC 60384	0%

After test:
 U_R to be applied for 30min
 >24h before measurement

Screw

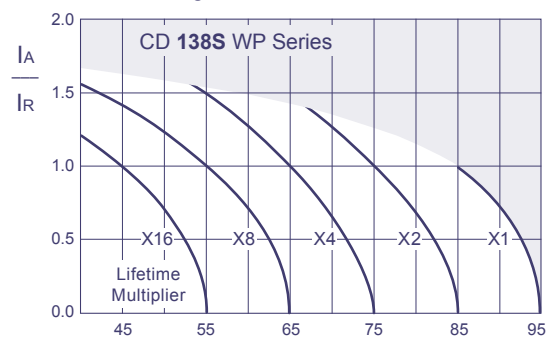
Multiplier for Ripple Current

Frequency Coefficient

Frequency	50/60Hz	120Hz	300Hz	1kHz	≥10kHz
Coefficient	0,70	1,00	1,10	1,30	1,40

Multiplier for Lifetime

Lifetime Diagram



I_A = actual ripple current at 120Hz, I_R = rated ripple current at 120Hz, 85°C
 Multiplier of Useful Life as a function of ambient temperature and ripple current load



Ratings for CD 138S WP Series

U _{R,DC} (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Max Ripple Current 85°C, 120Hz	Size Ø D x L
(V)	(µF)	(mΩ)	(mΩ)	(Arms)	(mm)
350 (400) 2V	3900	38	19	16,8	64 x 115
	4700	32	16	19,4	64 x 131
	5600	28	14	22,8	64 x 155
		24	12	24,8	77 x 121
	6800	26	13	25,6	90 x 106
		20	10	28,8	77 x 137
	8200	22	11	30,1	90 x 121
		20	10	33,7	77 x 161
		24	12	34,6	90 x 137
	10000	18	9	41,1	90 x 161
12000	16	8	45,0	90 x 161	
400 (450) 2G	2700	48	24	13,2	64 x 100
	3300	42	21	16,3	64 x 131
	3900	36	18	19,0	64 x 155
		40	20	20,7	77 x 121
	4700	30	15	20,8	64 x 155
		30	15	23,6	90 x 106
	5600	28	14	23,9	77 x 137
		24	12	26,1	77 x 137
	6800	26	13	27,4	90 x 121
		20	10	30,6	77 x 161
	8200	22	11	31,5	90 x 137
		20	10	37,0	90 x 161
	10000	18	9	41,1	90 x 161
	450 (500) 2W	2200	84	42	12,0
2700		92	46	14,4	77 x 96
		76	38	14,7	64 x 131
3300		60	30	17,5	64 x 155
		60	30	17,7	77 x 121
3900		54	27	19,0	64 x 155
		50	25	20,7	77 x 121
		54	27	21,4	90 x 106
4700		36	18	23,9	77 x 137
		40	20	25,1	90 x 121
5600		30	15	27,8	77 x 161
		34	17	28,6	90 x 137
6800		28	14	33,8	90 x 161
8200		20	10	37,0	90 x 161
10000		18	9	42,4	90 x 178
500 (550) 2H		1500	148	74	9,9
	1800	148	74	11,5	64 x 131
	2200	106	53	13,5	64 x 155
	2700	66	33	17,2	77 x 121
	3300	62	31	16,9	90 x 106
		60	30	21,3	77 x 161
	3900	52	26	21,8	90 x 121
		50	25	23,2	77 x 161
	4200	56	28	23,6	77 x 178
	4700	40	20	25,1	90 x 137
	5600	36	18	29,1	90 x 161
	6800	32	16	33,4	90 x 178

Screw

Customer specific products and adaptations on request.

Order Code **Screw Type**

EC	G	1C	BP	101	M	B	E	160	A361	JExxxxx
Technology	Terminal Type	Rated Voltage Code	Series Code	Capacitance Code	Capacitance Tolerance	Mounting	Diameter	Length	For Terminal Code see tables below	for Specials only
EC = Electrolytic Capacitor	Screw = G	For coding please refer to the pages of ratings	CD 135 = BP CD 136 = PK CD 137 = PX CD 138 = PC CD 139 = BL CD 13H = BH CD 138S = WP CD 838 = ZT	100 = 101 1000 = 102 10000 = 103	±20% = M ±10% = K +30 / -10% = Q +20 / -0% = R +20 / -10% = V +50 / -10% = T	Bolt = B No double sleeve = N 2 stoppers bracket+double sleeve* = I 3 stoppers bracket+double sleeve* = Y No bracket, but double sleeve* = D * Double sleeve for diameter ≥ 51 only	36 = A 40 = B 51 = C 64 = D 77 = E 90 = F 101 = G	53 = 053 65 = 065 96 = 096 100 = 100 115 = 115 236 = 236		

Technical Specification **Screw Type**

Dimensions

Standard Housing

Order Code: I, Y, D, N

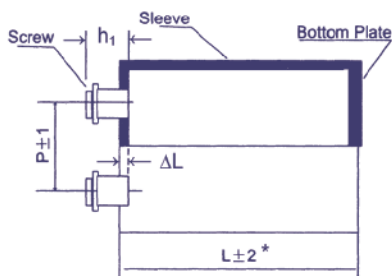
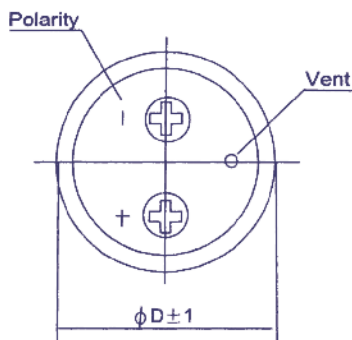
Bolt Housing

Order Code: B

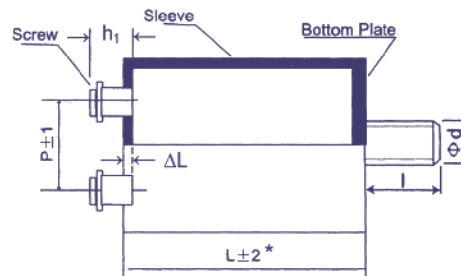
Bolt:

∅ D	∅ d	l
∅ 36	M8	12
≥ ∅ 51	M12	16

in mm



* add 0,5 mm for Double Sleeve (½ length)
order code: (Y, I, D)



Δ L = 0,6 mm
h1 see Terminal Table below

Terminal Detail



Screw Definition

Hexagon-Head	M5x10
Hexagon-Head	M6x12
Hexagon-Head	M8x16

Code	∅D	Screw	Pitch P	d1	d2	h1	h2
A361	36	M5	12,7	8	11	6,8	1,8
A362	36	10 - 32	12,7	8	11	6,8	1,8
A511	51	M5	21,8	10	14	6,8	1,8
A512	51	10-32	21,8	8	11	2,5	0,5
D511	51	M5	21,8	10	13	5,5	0
A641	64	M5	28,2	10	15,5	7,3	2,3
A642	64	M5	28,2	15	20	7,3	3,5
A643	64	1/4 - 28	28,2	15	20	7,3	3,5
A644	64	M5	26,0	10	15,5	7,3	2,3
B641	64	1/4 - 28	28,2	17,2	0	6,4	0
C641	64	M5	28,5	13	0	7,3	0
D641	64	M5	28,2	13	15	7,14	0
E641	64	M5	28,2	10	15,5	7,3	2,3
A771	77	M5	31,4	10	15,5	6,3	1,3
A772	77	M6	31,4	10	15,5	6,3	1,3
B771	77	M6	31,4	17,2	0	3,17	0
B772	77	M6	31,4	17,2	0	3,17	0
B773	77	M8	31,4	17,2	0	3,17	0
B774	77	M5	31,4	17,2	0	6,4	0
B775	77	1/4-28	31,4	17,2	0	6,4	0
B778	77	M5	31,4	17,2	0	10,4/6,4	0

Code	∅D	Screw	Pitch P	d1	d2	h1	h2
C771	77	M5	31,4	17,2	0	3,5	0
C772	77	M6	31,4	17,2	0	3,5	0
C773	77	M5	31,4	17,2	0	5,5	0
C774	77	M5	31,4	17,2	0	6,4	0
C775	77	M6	31,4	17,2	0	6,4	0
C777	77	M6	31,4	17,2	0	6,4	0
D771	77	M5	31,4	13	15	6,4	0
F771	77	M6	31,4	13	15	6,4	0
F772	77	M5	31,4	13	15	6,4	0
A901	90	M5	31,4	10	15,5	6,3	1,3
A902	90	M6	31,4	10	15,5	6,3	1,3
B901	90	M6	31,4	17,2	0	6,4	0
B902	90	M5	31,4	17,2	0	6,4	0
B903	90	M5	31,4	17,2	0	10,4/6,4	0
C901	90	M5	31,4	17,2	0	6,4	0
C902	90	M6	31,4	17,2	0	6,4	0
D901	90	M5	31,4	10	13	5,5	0
E901	90	M6	31,4	15	17	8,6	2,4
F901	90	M6	31,4	13	15	6,4	0
A101	101	M8	41,5	17,2	21,5	11,0	6,0

preferred, other forms on request

in mm

Terminal A101 = A991, B774 = B776

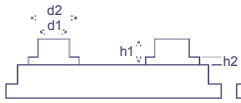
B778 and B903 have different lengths h1 of each terminal.

Terminal A, B and F include potting glue. Terminal C, D and E are without glue (middle pin).

Terminal Form

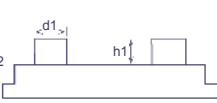
Terminal A

Order Code: AXXX



Terminal B

Order Code: BXXX



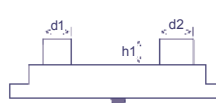
Terminal C

Order Code: CXXX



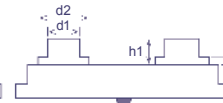
Terminal D

Order Code: DXXX



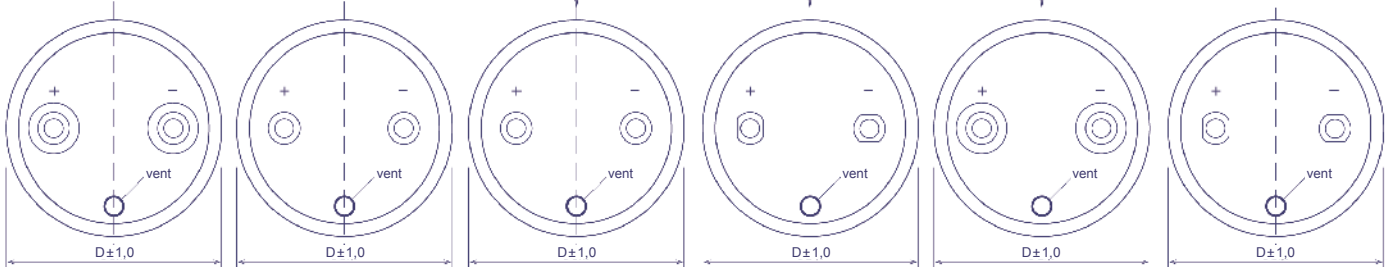
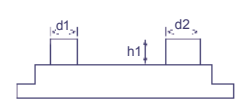
Terminal E

Order Code: EXXX



Terminal F

Order Code: FXXX

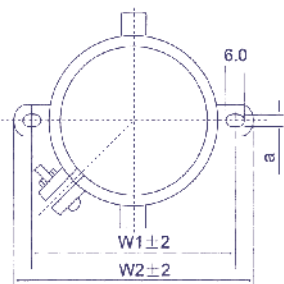


Tolerances of d1, d2, h1, h2 : +/- 0,3 mm, CD 138S WP and CD 139 BL only available with terminal C, D and E

Bracket Mounting

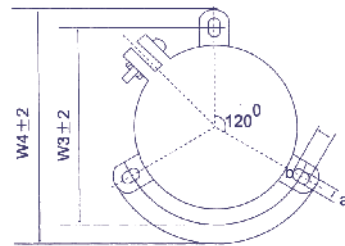
I-Type

Ø D 36-90



Y-Type

Ø D 51-101



Ø D	W1	W2	W3	W4	a	b	h
36	48,0	58,0	-	-	3,8	-	15
51	68,0	80,0	63,6	73,0	5	7,0	30
64	81,0	93,0	76,2	85,1	5	7,0	30
77	93,5	106,0	89	98,4	5	7,0	30
90	108,0	120,5	101,6	111,2	5	7,0	30
101	-	-	115,0	127,0	6	8,0	30

preferred

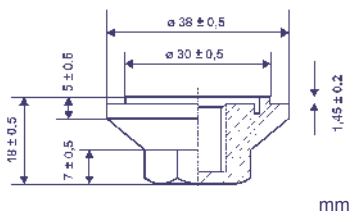
in mm

h = Height of brackets

Accessories for Bolt Mounting

Cap Nut

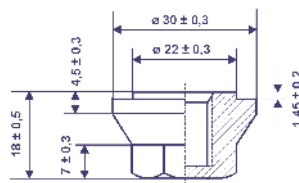
Order Code: ACCNUT3038M12
For Screw Capacitors with M12 Bolt



mm

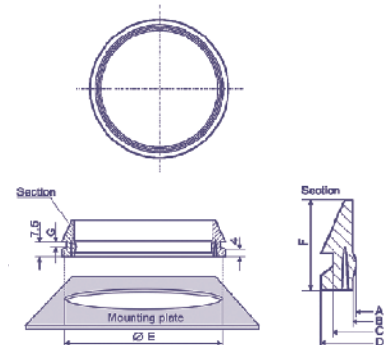
Cap Nut

Order Code: ACCNUT2230M12
For Screw Capacitors with M12 Bolt



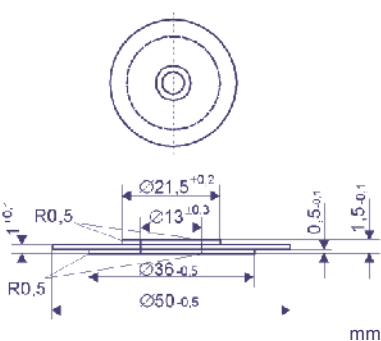
mm

Press Ring



Insulation Washer

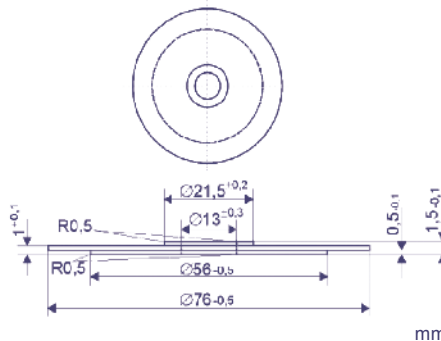
Order Code: ACCISO5113
For Screw Capacitors with Diameter 51 und 64



mm

Insulation Washer

Order Code: ACCISO7713
For Screw Capacitors with Diameter 77 und 90



mm

Ø Capacitor	64	77	90
A +0.3	62.3	74.8	88.0
B +0.3	64.1	77.0	90.0
C +0.3	70.5	84.5	97.9
D +0.3	74.5	88.6	102.0
E +0.2	71.2	85.5	98.6
F +0.2	18.0	20.0	23.5
G -0.25	3.0	2.4	3.0
Product Code Agree with RoHS	ACC PR164	ACC PR177	ACC PR190
Product Code Agree with RoHS and UL-94-V0	ACC PR464	ACC PR477	ACC PR490

All dimensions in mm