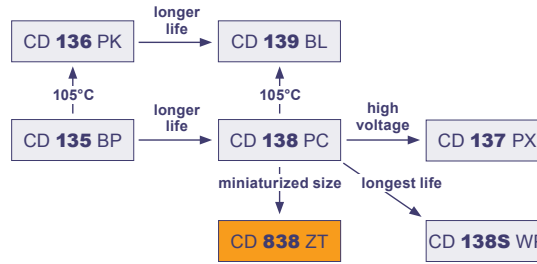


10000h at 85°C

- Long Life
- High Reliability
- High Currents for High Professional Applications and High Power Inverter
- Miniaturized



Item	Characteristics
Operating Temperature Range (°C)	-40 ~ +85
Voltage Range (V)	350 ~ 450
Capacitance Range (µF)	470 ~ 15000
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	<b>10000h</b>	>100000h	5000h	5000h	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

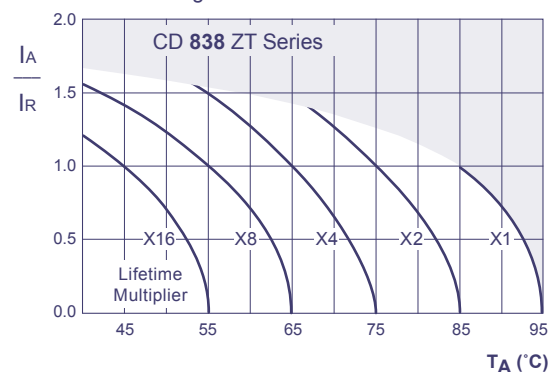
## Multiplier for Ripple Current

Frequency Coefficient

Frequency	50Hz	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 838 ZT Series

U <sub>R,DC</sub> (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)
<b>350 (400) 2V</b>	1000	300	120	5,6	51 x 80
	1500	172	55	8,5	64 x 105
	2200	117	30	9,1	51 x 96
		117	30	9,4	64 x 105
	3300	78	23	11,0	77 x 105
	4700	55	16	14,0	77 x 105
		55	16	18,0	77 x 143
	6800	38	13	20,0	77 x 143
10000	26	10	21,4	77 x 143	
	26	10	27,0	77 x 220	
15000	17	6	35,0	90 x 220	
<b>400 (450) 2G</b>	1000	215	82	5,0	51 x 80
	1500	143	50	6,7	51 x 80
	2200	98	28	8,0	51 x 105
		98	28	8,5	64 x 96
		98	28	10,0	77 x 105
	3300	65	21	11,0	64 x 105
		65	21	13,5	77 x 105
		65	21	11,8	77 x 100
	4700	46	15	14,5	77 x 105
		46	15	18,4	77 x 143
	6800	32	13	19,4	77 x 143
		32	13	29,0	90 x 145
	8200	26	12	20,0	77 x 143
		22	10	26,7	77 x 220
10000	22	10	35,7	90 x 220	
	14	6	35,0	90 x 200	
<b>420 (470) 2X</b>	3300	65	21	12,4	64 x 105
	65	21	13,5	77 x 105	
	4700	46	16	18,0	77 x 143
10000	22	10	28,0	77 x 220	
<b>450 (500) 2W</b>	470	425	250	4,5	51 x 75
	680	360	185	4,9	51 x 80
	1000	215	93	6,4	51 x 105
	1500	143	56	7,1	51 x 105
		143	56	10,0	51 x 115
	1800	119	45	8,5	64 x 105
	2200	98	35	12,0	64 x 130
		98	35	13,1	77 x 143
	2700	80	30	12,7	64 x 130
	3300	65	24	14,0	64 x 130
		65	24	13,2	77 x 105
		65	24	13,8	77 x 115
		65	24	15,6	77 x 143
	3900	55	20	13,3	64 x 140
	4700	46	16	14,0	64 x 143
		46	16	15,0	77 x 115
		46	16	16,0	77 x 143
	5600	38	13	17,5	77 x 143
	6800	32	11	19,1	77 x 155
		32	11	21,0	77 x 220
32		11	20,0	90 x 145	
10000	22	9	26,0	77 x 220	
	22	9	27,0	90 x 220	
12000	18	8	30,0	90 x 220	
15000	14	6	36,0	90 x 236	

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 <b>135</b> = BP CD <b>136</b> = PK CD <b>137</b> = PX CD <b>138</b> = PC CD <b>139</b> = BL CD <b>13H</b> = BH CD <b>138S</b> = WP CD <b>838</b> = ZT	100 = 101 1000 = 102 10000 = 103	<b>±20%</b> = 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

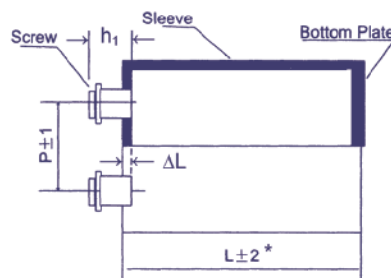
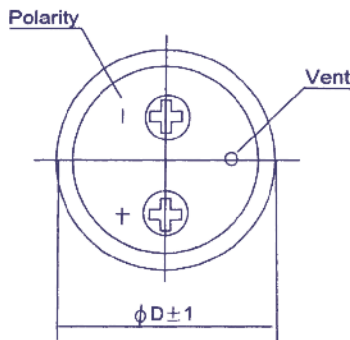
#### Bolt Housing

Order Code: B

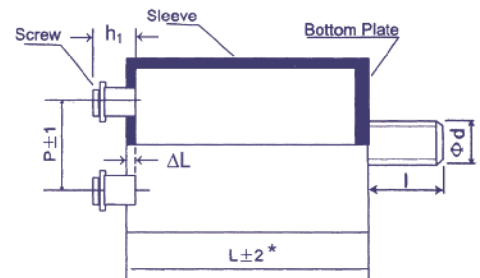
#### Bolt:

∅ 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)



∆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

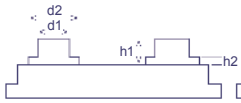
B778 and B903 have different lengths h1 of each terminal.

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

## Terminal Form

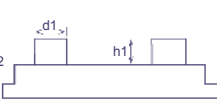
### Terminal A

Order Code: AXXX



### Terminal B

Order Code: BXXX



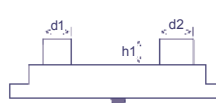
### Terminal C

Order Code: CXXX



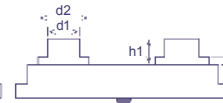
### Terminal D

Order Code: DXXX



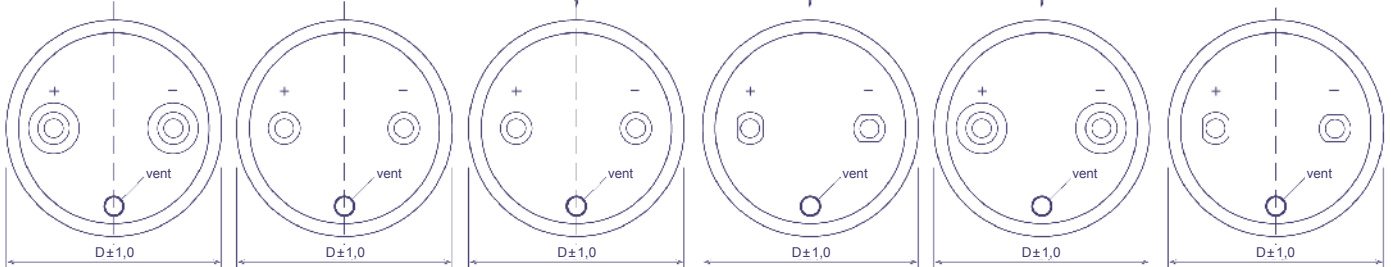
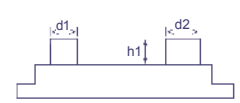
### Terminal E

Order Code: EXXX



### Terminal F

Order Code: FXXX

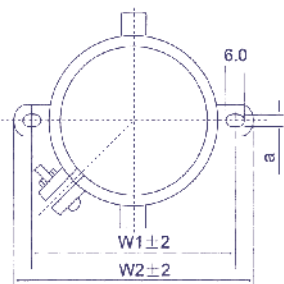


Tolerances of d1, d2, h1, h2 : +/- 0,3 mm, CD 138S WP and CD 139 BL only available with terminal C, D and E

## Bracket Mounting

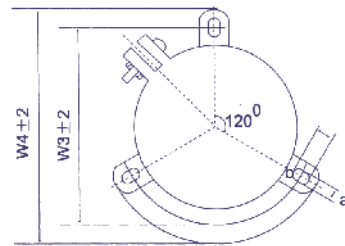
### I-Type

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

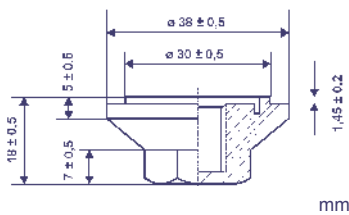
in mm

h = Height of brackets

## Accessories for Bolt Mounting

### Cap Nut

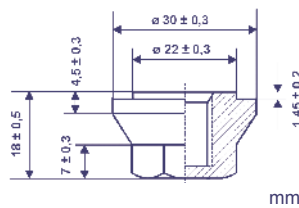
Order Code: ACCNUT3038M12  
For Screw Capacitors with M12 Bolt



mm

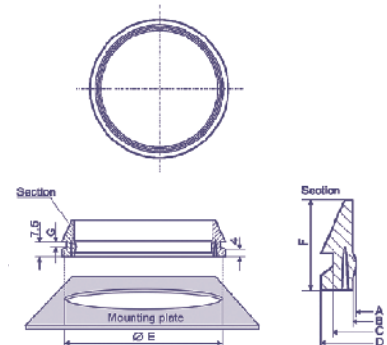
### Cap Nut

Order Code: ACCNUT2230M12  
For Screw Capacitors with M12 Bolt



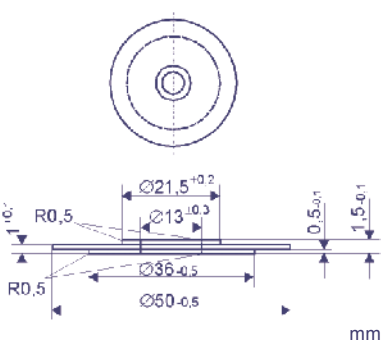
mm

### Press Ring



### Insulation Washer

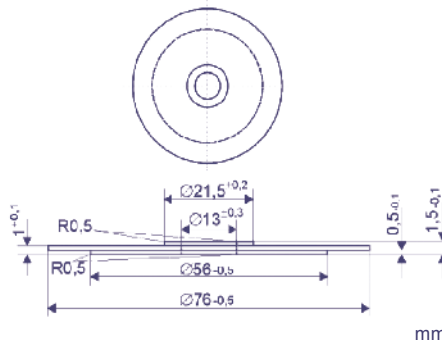
Order Code: ACCISO5113  
For Screw Capacitors with Diameter 51 und 64



mm

### Insulation Washer

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



mm

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

All dimensions in mm