



## DC 85 C series

### High Density, Low Inductance DC-Link Capacitors Cylindrical Aluminium Case

Powered by the tried and proven Ducati Energia PPMh technology DC 85 C is a competitive and reliable solution to all common DC-Link applications. When coupled with the exclusive Ducati Energia High Crystallinity Film the DC 85 C construction provides superior temperature performance with 100khrs life @ 90°C HotSpot or extended life of 400khrs @70°C HotSpot.

The exclusive Ducati Energia metallization profiles guarantee high capacity stability and a controlled, open-circuit condition at the end of DC 85 C operational life, while maximizing the current capability.

#### Main characteristics:

- High Capacity Density
- Self-Healing Metallized Polypropylene Film
- UL-Approved Overpressure Safety Device
- Aluminium Case
- DRY Resin filling
- Low ESL

#### Main applications:



- DC-Link
- Energy Storage / Pulse Generation

#### DC 85 C Versions with Ducati Energia High Crystallinity Film:

- Standard Life expectancy 100.000hrs at 90°C HotSpot
- Extended Life expectancy 400.000hrs at 70°C HotSpot



#### General Characteristics

DC Voltage range	550÷1800 V
Maximum ripple voltage	1150 V
Maximum ripple current	100 A
Capacitance range	Up to 4450 µF
Capacitance tolerance	standard: +0%/-15%; others on request
Series resistance (RS)	< 4.5 mΩ
Maximum Voltage rate of rise (dV/dT)	≤ 40 V/µs
Terminals	M6 internal threads M8 screw types bolts
Voltage test	$U_{tc} = 3.5 \text{ kVac @} 50 \text{ Hz } 10 \text{ s}$ $U_{tt} = 1.5 \times U_{nDC} 10 \text{ s}$
Working temperature ( $\theta_{MIN} - \theta_{MAX}$ )	-25 / +85 °C
Storage temperature	-25 / +85 °C
Filling	Dry polyurethane resin
Dielectric	Self healing PPMd film
Cylindrical case	Aluminum
Failure quota	50 /10E9
Life expectancy	100.000 h(*)
Maximum altitude	2000 m a.s.l.
Reference standard	IEC 1071-1/2 - IEC 1881 - UL 810
Internal thread terminals	Max 5 Nm
M8 screw terminals	Max 6 Nm
M12 fixing bolt	Max 12 Nm
UL - CSA approved (  )	File n. E192559
In according to fire protection standard 	EN 45545-2 (only for 85 and 100mm diameters)

**Safety system:** These capacitors are designed with a particular type of polypropylene metallized film (PPMd film) that assures an open circuit at the end of life, if the operation is within the specification.

(\*) For details please refer to page 75.

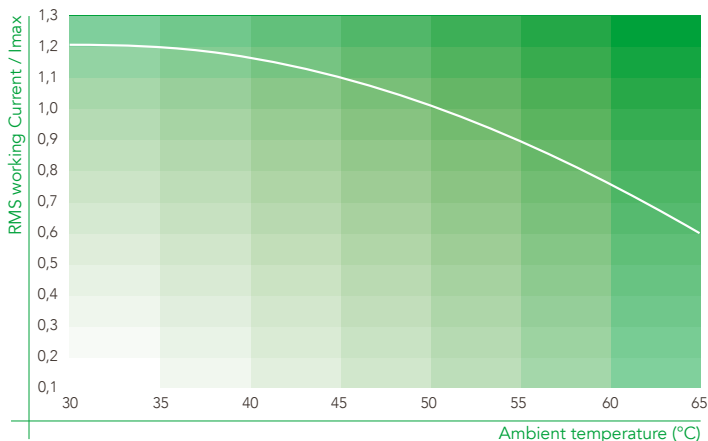
**For Mechanical drawings, check page 30.**

Capacitance Cn [μF]	Diameter Ø [mm]	Height H [mm]	Max. RMS Current I <sub>MAX</sub> [A]	Repet Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance Rs [mΩ]	Thermal Resistance R <sub>THC</sub> [°C/W]	Series Inductance Lesr [nH]	Weight [kg]	Pcs./box - Box type	Part n. 416.85
<b>Un [V]= 550 V<sub>DC</sub> Ur [V]= 230 V Up [V]= 850 V Us [V]= 1160 V</b>											
500	75	105	25	1500	5.0	3.8	5.4	< 45	0.6	12 - A	L09.x
760	75	140	30	2200	6.5	3.6	4.8	< 50	0.8	6 - B	L19.x
870	75	155	35	2200	7.0	3.0	4.6	< 60	0.9	6 - B	L29.x
1000	85	140	35	3000	7.5	2.9	4.2	< 50	1.0	6 - B	L39.x
1150	85	155	40	3000	9.0	2.7	3.6	< 60	1.1	6 - B	L49.x
1850	100	185	65	3700	11.0	1.6	2.6	< 60	1.8	6 - C	L55.x
2550	116	185	70	4000	12.0	1.4	2.3	< 60	2.3	4 - G	L59.X
2800	100	255	70	4200	13.0	1.2	2.3	< 75	2.4	6 - D	L69.x
3900	116	255	75	5800	15.0	1.0	2.1	< 75	3.2	4 - G	L79.x
4000	116	285	80	6700	18.0	0.8	1.7	< 80	3.6	4 - G	L89.x
<b>Un [V]= 700 V<sub>DC</sub> Ur [V]= 320 V Up [V]= 1050 V Us [V]= 1470 V</b>											
370	75	105	28	2200	6.6	3.9	5.4	< 45	0.6	12 - A	009.x
560	75	140	30	2800	8.4	3.7	4.8	< 50	0.8	6 - B	019.x
640	75	155	35	3200	9.6	3.2	4.6	< 60	0.9	6 - B	029.x
740	85	140	35	3300	10.0	3.1	4.2	< 50	1.0	6 - B	039.x
830	90	140	40	3500	10.0	3.0	4.0	< 50	1.1	6 - B	039.x
850	85	155	40	3800	11.5	2.9	3.6	< 60	1.1	6 - B	049.x
1350	100	185	65	5400	16.0	1.8	2.6	< 60	1.8	6 - C	055.x
1900	116	185	70	6600	20.0	1.7	2.3	< 60	2.3	4 - G	059.x
2350	100	255	70	7000	21.0	1.6	2.3	< 75	2.4	6 - D	069.x
2850	116	255	75	7100	21.0	1.3	2.1	< 75	3.2	4 - G	079.x
3300	116	285	85	8200	24.5	1.2	1.7	< 80	3.5	4 - G	089.x
<b>Un [V]= 900 V<sub>DC</sub> Ur [V]= 550 V Up [V]= 1350 V Us [V]= 1900 V</b>											
280	75	105	30	2200	6.7	4.1	5.4	< 45	0.7	12 - A	119.x
430	75	140	35	2400	7.1	3.8	4.8	< 50	0.8	6 - B	139.x
570	85	140	35	3400	10.3	3.6	4.2	< 50	1.0	6 - B	149.x
620	90	140	40	3600	10.3	3.5	4.0	< 50	1.1	6 - B	159.x
650	85	155	40	3900	11.7	3.5	3.6	< 60	1.1	6 - B	169.x
1050	100	185	65	5300	15.8	2.2	2.6	< 70	1.8	6 - C	179.x
1450	116	185	70	7300	21.8	2.0	2.3	< 70	2.3	4 - G	185.x
1550	100	255	70	7800	23.3	1.9	2.3	< 75	2.4	6 - D	189.x
1800	100	285	75	8100	24.3	1.8	2.2	< 80	2.6	6 - E	191.x
2200	116	255	75	9900	29.7	1.4	2.1	< 75	3.1	4 - G	193.x
2350	100	373	100	10500	31.7	1.2	1.8	< 90	3.4	6 - F	195.x
2500	116	285	85	10000	30.0	1.5	1.7	< 80	3.5	4 - G	197.x
3300	116	373	100	11550	30.0	1.1	1.6	< 90	4.6	4 - H	199.x

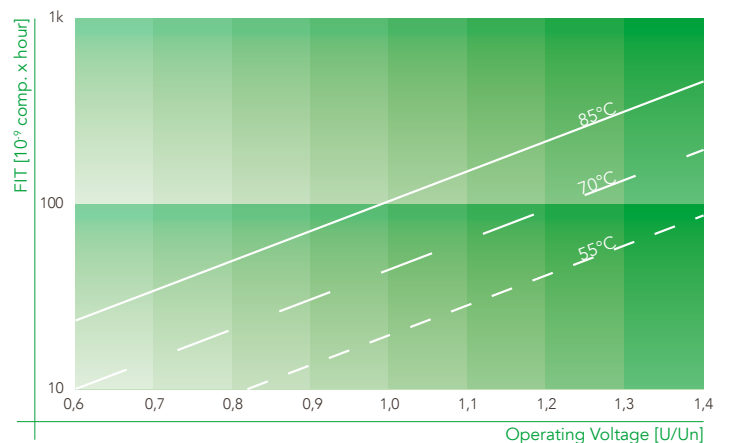


Capacitance Cn [μF]	Diameter Ø [mm]	Height H [mm]	Max. RMS Current I <sub>MAX</sub> [A]	Repet Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance Rs [mΩ]	Thermal Resistance R <sub>THC</sub> [°C/W]	Series Inductance Lesr [nH]	Weight [g]	Pcs./box - Box type	Part n. 416.85
<b>Un [V]= 1100 V<sub>DC</sub> Ur [V]= 700 V Up [V]= 1650 V Us [V]= 2300 V</b>											
180	75	105	30	2160	6.5	4.2	5.4	< 45	0.6	12 - A	219.x
270	75	140	35	3240	9.7	3.9	4.8	< 50	0.8	6 - B	229.x
370	85	140	35	3960	11.9	3.7	4.2	< 50	1.0	6 - B	239.x
420	85	155	40	4200	12.6	3.6	3.6	< 60	1.1	6 - B	250.x
510	90	185	65	5200	16.0	3.1	2.8	< 70	1.6	6 - C	255.x
650	100	185	65	5850	17.6	2.3	2.6	< 70	1.8	6 - C	260.x
900	116	185	70	8100	24.3	2.1	2.3	< 70	2.3	4 - G	265.X
1000	100	255	70	8500	25.5	2.0	2.3	< 75	2.4	6 - D	270.x
1200	100	285	75	9200	27.6	1.9	2.2	< 80	2.6	6 - E	280.x
1400	116	255	75	11900	30.0	1.7	2.1	< 75	3.2	4 - G	285.x
1500	100	373	100	13500	32.0	1.3	1.8	< 90	3.4	6 - F	289.x
1600	116	285	85	12800	32.0	1.7	1.7	< 80	3.5	4 - G	293.x
2100	116	373	100	14400	32.0	1.3	1.7	< 90	4.4	4 - H	298.x
<b>Un [V]= 1300 V<sub>DC</sub> Ur [V]= 850 V Up [V]= 1950 V Us [V]= 2700 V</b>											
120	75	105	30	2160	6.5	4.3	5.4	< 45	0.6	12 - A	319.x
180	75	140	35	3240	9.7	4.0	4.8	< 50	0.8	6 - B	320.x
250	85	140	35	4000	12.0	3.9	4.2	< 50	1.0	6 - B	330.x
270	90	140	40	4200	12.0	3.8	4.0	< 50	1.1	6 - B	335.x
300	85	155	40	4480	13.5	3.7	3.6	< 60	1.1	6 - B	340.x
470	100	185	65	7200	21.6	2.3	2.6	< 70	1.8	6 - C	350.x
550	90	255	70	8500	25.0	2.2	2.4	< 70	2.3	6 - D	353.x
650	116	185	70	9750	29.5	2.2	2.3	< 70	2.3	4 - G	355.x
700	100	255	70	9800	30.0	2.1	2.3	< 75	2.4	6 - D	360.x
800	100	285	75	11200	32.0	2.0	2.2	< 80	3.1	6 - E	370.x
980	116	255	75	12740	32.0	1.8	2.1	< 75	3.2	4 - G	375.x
1000	100	373	100	12600	32.0	1.3	1.8	< 90	3.5	6 - F	399.x
1150	116	285	85	13800	32.0	1.8	1.7	< 80	3.6	4 - G	385.x
1450	116	373	100	14500	32.0	1.4	1.6	< 90	4.6	4 - H	388.x

**RMS working current vs Ambient temperature**



**FIT vs Hot Spot Temperature**



Capacitance Cn [µF]	Diameter Ø [mm]	Height H [mm]	Max. RMS Current I <sub>MAX</sub> [A]	Repet Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance Rs [mΩ]	Thermal Resistance R <sub>THC</sub> [°C/W]	Series Inductance Lesr [nH]	Weight [Kg]	Pcs./box - Box type	Part n. 416.85
<b>Un [V]= 1550 V<sub>DC</sub> Ur [V]= 990 V Up [V]= 2300 V Us [V]= 3000 V</b>											
90	75	105	30	2250	6.5	4.4	5.4	< 45	0.6	12 - A	419.x
140	75	140	35	2940	9.7	4.1	4.8	< 50	0.8	6 - B	420.x
180	85	140	35	3600	12.0	4.0	4.2	< 50	1.0	6 - B	430.x
200	85	155	40	4200	13.5	3.8	3.6	< 60	1.1	6 - B	440.x
250	90	155	45	5000	15.0	3.4	3.3	< 60	1.3	6 - B	445.x
350	100	185	65	7000	21.6	2.3	2.6	< 70	2.2	6 - C	450.x
400	90	255	70	7500	25.0	2.2	2.4	< 70	2.3	6 - D	457.x
470	116	185	70	8460	29.5	2.3	2.3	< 70	2.3	4 - G	455.x
500	100	255	70	9000	30.0	2.2	2.3	< 75	2.4	6 - D	460.x
600	100	285	75	9600	32.0	2.0	2.2	< 80	2.6	6 - E	470.x
700	116	255	75	11200	32.0	1.9	2.1	< 75	3.2	4 - G	475.x
750	100	373	100	12000	32.0	1.4	1.8	< 90	3.3	6 - F	480.x
820	116	285	85	13120	32.0	1.9	1.7	< 80	3.7	4 - G	485.x
1050	116	373	100	14700	32.0	1.4	1.6	< 90	4.6	4 - H	498.x
<b>Un [V] = 1800 V<sub>DC</sub> Ur [V] = 1150 V Up [V] = 2700 V Us [V] = 300 V</b>											
60	75	105	30	2100	6.5	4.5	5.4	< 45	0.6	12 - A	510.x
100	75	140	35	3000	9.7	4.2	4.8	< 50	0.8	6 - B	520.x
135	85	140	35	3375	12.0	4.1	4.2	< 50	1.0	6 - B	530.x
150	85	155	40	3450	13.5	3.9	3.6	< 60	1.1	6 - B	540.x
190	90	155	45	3900	15.0	3.4	3.3	< 60	1.3	6 - B	545.x
240	100	185	65	4800	21.6	2.3	2.6	< 70	1.8	6 - C	550.x
310	90	255	70	6500	25.0	2.1	2.4	< 70	2.2	6 - D	553.x
340	116	185	70	6800	29.5	2.2	2.3	< 70	2.2	4 - G	555.x
370	100	255	70	7400	30.0	2.1	2.3	< 75	2.3	6 - D	560.x
430	100	285	75	9600	32.0	2.0	2.2	< 80	2.6	6 - E	570.x
530	116	255	75	10750	32.0	2.0	2.1	< 75	3.3	4 - G	575.x
560	100	373	100	11500	32.0	1.4	1.8	< 90	3.5	6 - F	580.x
610	116	285	85	12500	32.0	1.9	1.7	< 80	3.6	4 - G	585.x
800	116	373	100	14400	32.0	1.5	1.6	< 90	4.6	4 - H	598.x

**NOTES:**

(Cn) Tolerance standard value: -15 ... +0%. Other tolerance values on request.

(Cn) - (Un) Capacitance and rated voltage standard values, other values on request.

(Ur) Maximum peak to peak alternating voltage component on the DC working voltage.

(Rs) Releated at 1 KHz.

(R<sub>THC</sub>) Thermal registance CASE TO AMBIENT in natural cooling environment.

(I<sub>MAX</sub>) Maximum RMS current, refered to an ambient temperature of 50 °C (natural cooling) and working frequency of 1 KHz.

(x code) According to the terminal type: x=0--> A SOLUTION (internal thread M6) / x=1 B SOLUTION (M8 screw type bolts).