CAPACITORS FOR DC AND PULSE APPLICATION

IVD GmbH, Max-Eyth-Strasse 10, 74405 Gaildorf Tel. 07971/9789-0 info@ivdgmbh.de www.ivdgmbh.de

DCH 85 C series

Very High Density, Low Inductance DC-Link Capacitors
Cylindrical Aluminum Case

Thanks to the exclusive Ducati Energia High Crystallinity Film DCH 85 C DC-link Capacitors provide leading Capacity Density without any de-rating or limitation, respective to standard makes.

The very high capacity density allows substantial cost reductions due to the reduction of capacitor size and/or number, as well as particularly low inductance values.
The exclusive Ducati Energia metallization profiles guarantee high capacity stability and a controlled, open-circuit condition at the end of DCH 85 C operational life, while maximizing the current capability.

Main characteristics:

- Self-Healing Metallized Polypropylene Film
- UL-Approved Overpressure Safety Device
- Aluminum Case
- DRY Resin filling

Main applications:

- DC-Link
- Energy Storage / Pulse Generation

General Characteristics

DC Voltage range	700÷2100 V
Maximum ripple voltage	1150 V
Maximum ripple current	100 A
Capacitance range	Up to 5600 µF
Capacitance tolerance	standard: ±10% on request ±5%
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 kVac @50 Hz 10 s U_{tt}= 1.5 x UnDC 10 s
Working temperature ($\theta_{MIN} - \theta_{MAX}$)	–25 / +85 °C
Storage temperature	–25 / +85 °C
Filling	Dry polyurethane resin
New PP Dielectric	Self healing. PPMdh film
Cylindrical case	Aluminum
Failure quota	50/10 E9
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 3 Nm
M8 screw terminals	Max 6 Nm
M12 fixing bolt	Max 12 Nm
UL - CSA approved (c UL us)	File n. E192559
In according to fire protection standard	EN 45545-2 (only for 85 and 100mm diameters)

(*) For details please refer to page 75.

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

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Capacitance Cn [µF]	Diameter Ø [mm]	Height H [mm]	Max. RMS Current I_{MAX} [A]	Repet Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance Rs [mΩ]	Thermal Resistance R_{THC} [°C/W]	Series Inductance Lesr [nH]	Weight [kg]	Pcs./box - Box type	Part n. 416.85.V.
Un_{DC}= 700 V Ur= 320 V Up= 1050 V Us= 1470V											
480	75	105	25	1500	5.0	3.8	5.4	< 45	0.6	12 - A	009.x
750	75	140	30	2200	6.5	3.6	4.8	< 50	0.8	6 - B	019.x
840	75	155	35	2200	7.0	3.0	4.6	< 60	0.9	6 - B	029.x
980	85	140	35	3000	7.5	2.9	4.2	< 50	1.0	6 - B	039.x
1050	90	140	40	3000	8.0	2.8	4.0	< 50	1.1	6 - B	045.x
1100	85	155	40	3000	9.0	2.7	3.6	< 60	1.1	6 - B	049.x
1800	100	185	65	3700	11.0	1.6	2.6	< 60	1.8	6 - C	055.x
2500	116	185	70	4000	12.0	1.4	2.3	< 60	2.3	4 - G	059.x
2700	100	255	70	4200	13.0	1.2	2.3	< 75	2.4	6 - D	069.x
3700	116	255	75	5800	15.0	1.0	2.1	< 75	3.2	4 - G	079.x
4300	116	285	80	6700	18.0	0.8	1.7	< 80	3.6	4 - G	089.x
5600	116	373	100	10000	22.0	0.7	1.6	< 90	4.8	4 - G	095.x
Un_{DC}= 900 V Ur= 550 V Up= 1350 V Us= 1900 V											
340	75	105	28	2200	6.6	3.9	5.4	< 45	0.6	12 - A	109.x
500	75	140	30	2800	8.4	3.7	4.8	< 50	0.8	6 - B	119.x
600	75	155	35	3200	9.6	3.2	4.6	< 60	0.9	6 - B	129.x
680	85	140	35	3300	10.0	3.1	4.2	< 50	1.0	6 - B	135.x
780	90	140	40	3500	10.0	3.0	4.0	< 50	1.1	6 - B	139.x
800	85	155	40	3800	11.5	2.9	3.6	< 60	1.1	6 - B	149.x
1300	100	185	65	5400	16.0	1.8	2.6	< 60	1.8	6 - C	155.x
1850	116	185	70	6600	20.0	1.7	2.3	< 60	2.3	4 - G	159.x
2000	100	255	70	7000	21.0	1.6	2.3	< 75	2.4	6 - D	169.x
2700	116	255	75	7100	21.0	1.3	2.1	< 75	3.2	4 - G	179.x
3200	116	285	85	8200	24.5	1.2	1.7	< 80	3.5	4 - G	189.x
4500	116	373	100	10000	28.0	1.0	1.6	< 90	4.6	4 - G	195.x
Un_{DC}= 1100 V Ur= 700 V Up= 1650 V Us= 2300 V											
260	75	105	30	2200	6.7	4.1	5.4	< 45	0.7	12 - A	219.x
400	75	140	35	2400	7.1	3.8	4.8	< 50	0.8	6 - B	239.x
520	85	140	35	3400	10.3	3.6	4.2	< 50	1.0	6 - B	249.x
600	90	140	40	3600	10.3	3.5	4.0	< 50	1.1	6 - B	259.x
680	90	155	40	3900	11.7	3.5	3.6	< 60	1.3	6 - B	269.x
1000	100	185	65	5300	15.8	2.2	2.6	< 70	1.8	6 - C	279.x
1400	116	185	70	7300	21.8	2.0	2.3	< 70	2.3	4 - G	285.x
1500	100	255	70	7800	23.3	1.9	2.3	< 75	2.4	6 - D	289.x
1600	100	285	75	8100	24.3	1.8	2.2	< 80	2.6	6 - E	291.x
2100	116	255	75	9900	29.7	1.4	2.1	< 75	3.2	4 - G	293.x
2300	100	373	100	10500	31.7	1.2	1.8	< 90	3.5	6 - F	295.x
2400	116	285	85	10000	30.0	1.5	1.7	< 80	3.6	4 - G	297.x
3.200	116	373	100	11550	30.0	1.1	1.6	< 90	4.7	4 - H	299.x

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Cylindrical Aluminum Case

Capacitance Cn [µF]	Diameter Ø [mm]	Height H [mm]	Max. RMS Current I_{MAX} [A]	Repet Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance Rs [mΩ]	Thermal Resistance R_{THC} [°C/W]	Series Inductance Lesr [nH]	Weight [kg]	Pcs./box - Box type	Part n. 416.85.V.
Un_{DC}= 1350 V Ur= 850 V Up= 2000 V Us= 2800V											
170	75	105	30	2160	6.5	4.2	5.4	< 45	0.6	12 - A	319.x
250	75	140	35	3240	9.7	3.9	4.8	< 50	0.8	6 - B	329.x
340	85	140	35	3960	11.9	3.7	4.2	< 50	1.0	6 - B	339.x
380	85	155	40	4200	12.6	3.6	3.6	< 60	1.1	6 - B	350.x
500	90	185	65	5200	16.0	3.1	2.8	< 70	1.5	6 - C	355.x
640	100	185	65	5850	17.6	2.3	2.6	< 70	1.8	6 - C	360.x
880	116	185	70	8100	24.3	2.1	2.3	< 70	2.4	4 - G	365.x
960	100	255	70	8500	25.5	2.0	2.3	< 75	2.4	6 - D	370.x
1100	100	285	75	9200	27.6	1.9	2.2	< 80	2.6	6 - E	380.x
1350	116	255	75	11900	30.0	1.7	2.1	< 75	3.2	4 - G	385.x
1450	100	373	100	13500	32.0	1.3	1.8	< 90	3.5	6 - F	389.x
1550	116	285	85	12800	32.0	1.7	1.7	< 80	3.5	4 - G	393.x
2000	116	373	100	14400	32.0	1.3	1.6	< 90	4.4	4 - H	398.x
Un_{DC}= 1600 V Ur= 990 V Up= 2400 V Us= 3100 V											
120	75	105	30	2160	6.5	4.3	5.4	< 45	0.6	12 - A	419.x
180	75	140	35	3240	9.7	4.0	4.8	< 50	0.8	6 - B	420.x
230	85	140	35	4000	12.0	3.9	4.2	< 50	1.0	6 - B	430.x
260	85	155	40	4200	12.0	3.8	4.0	< 50	1.2	6 - B	435.x
350	90	185	40	4480	13.5	3.7	3.6	< 60	1.5	6 - B	440.x
450	100	185	65	7200	21.6	2.3	2.6	< 70	1.8	6 - C	450.x
530	90	255	70	8500	25.0	2.2	2.4	< 70	2.3	6 - D	453.x
620	116	185	70	9750	29.5	2.2	2.3	< 70	2.4	4 - G	455.x
680	100	255	70	9800	30.0	2.1	2.3	< 75	2.5	6 - D	460.x
780	100	285	75	11200	32.0	2.0	2.2	< 80	2.7	6 - E	470.x
930	116	255	75	12740	32.0	1.8	2.1	< 75	3.2	4 - G	475.x
1000	100	373	100	12600	32.0	1.3	1.8	< 90	3.5	6 - F	485.x
1100	116	285	85	13800	32.0	1.8	1.7	< 80	3.6	4 - G	489.x
1400	116	373	100	14500	32.0	1.4	1.6	< 90	4.7	4 - H	495.x

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Capacitance Cn [µF]	Diameter Ø [mm]	Height H [mm]	Max. RMS Current I_{MAX} [A]	Repet Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance Rs [mΩ]	Thermal Resistance R_{THC} [°C/W]	Series Inductance Lesr [nH]	Weight [kg]	Pcs./box - Box type	Part n. 416.85.V.
Un_{DC}= 1900 V Ur= 1150 V Up= 2700 V Us= 3100 V											
85	75	105	30	2250	6.5	4.4	5.4	< 45	0.6	12 - A	519.x
130	75	140	35	2940	9.7	4.1	4.8	< 50	0.8	6 - B	520.x
170	85	140	35	3600	12.0	4.0	4.2	< 50	1.0	6 - B	530.x
200	85	155	40	4200	13.5	3.8	3.6	< 60	1.1	6 - B	540.x
230	90	155	45	5000	15.0	3.4	3.3	< 60	1.2	6 - B	545.x
330	100	185	65	7000	21.6	2.3	2.6	< 70	1.9	6 - C	550.x
380	90	255	70	7500	25.0	2.2	2.4	< 70	2.1	6 - D	557.x
450	116	185	70	8460	29.5	2.3	2.3	< 70	2.4	4 - G	555.x
500	100	255	70	9000	30.0	2.2	2.3	< 75	2.4	6 - D	560.x
570	100	285	75	9600	32.0	2.0	2.2	< 80	2.6	6 - E	570.x
680	116	255	75	11200	32.0	1.9	2.1	< 75	3.2	4 - G	575.x
740	100	373	100	12000	32.0	1.4	1.8	< 90	3.3	6 - F	580.x
780	116	285	85	13120	32.0	1.9	1.7	< 80	3.6	4 - G	585.x
1030	116	373	100	14700	32.0	1.4	1.6	< 90	4.6	4 - H	598.x
Un_{DC}= 2100 V Ur= 1150 V Up= 2700 V Us= 3100 V											
60	75	105	30	2100	6.5	4.5	5.4	< 45	0.6	12 - A	610.x
90	75	140	35	3000	9.7	4.2	4.8	< 50	0.8	6 - B	620.x
125	85	140	35	3375	12.0	4.1	4.2	< 50	1.0	6 - B	630.x
145	85	155	40	3450	12.0	3.9	3.6	< 60	1.1	6 - B	640.x
160	90	155	45	3900	13.5	3.4	3.3	< 60	1.3	6 - B	645.x
210	100	185	65	4800	15.0	2.3	2.6	< 70	1.5	6 - C	650.x
290	90	255	70	6500	21.6	2.1	2.4	< 70	2.2	6 - D	653.x
320	116	185	70	6800	25.0	2.2	2.3	< 70	2.4	4 - G	655.x
360	100	255	70	7400	29.5	2.1	2.3	< 75	2.3	6 - D	660.x
420	100	285	75	9600	30.0	2.0	2.2	< 80	2.7	6 - E	670.x
510	116	255	75	10750	32.0	2.0	2.1	< 75	3.3	4 - G	675.x
540	100	373	100	11500	32.0	1.4	1.8	< 90	3.5	6 - F	680.x
580	116	285	85	12500	32.0	1.9	1.7	< 80	3.6	4 - G	685.x
760	116	373	100	14400	32.0	1.5	1.6	< 90	4.7	4 - H	698.x

NOTES:
(**Cn**) Tollerance standard value: ±10%. Other tollerance 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**) Releted at 1 kHz.
(R_{THC}) Thermal registance CASE TO AMBIENT in natural cooling environment.
(**Imax**) 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**).

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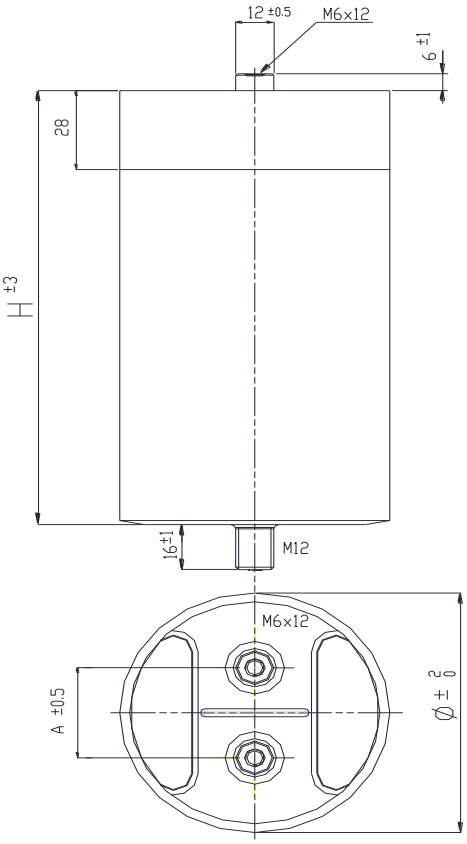
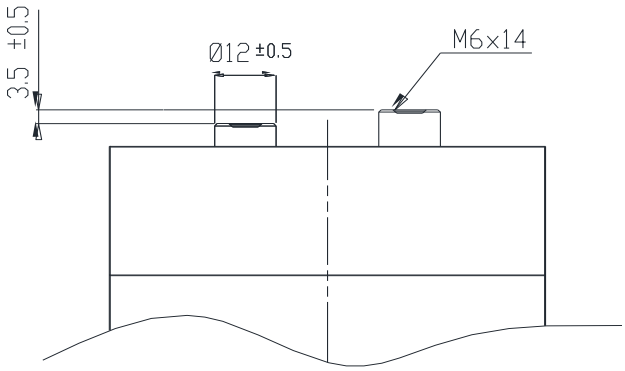
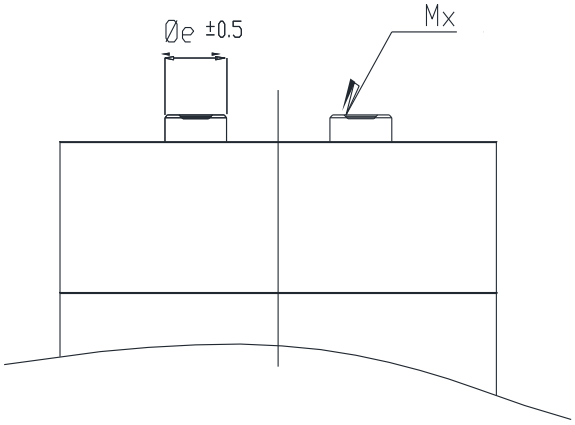
Mechanical Standard configuration:



Terminal variations on request:



Two different terminals height for special BUS BAR coupling.



For Capcictor diameter Ø 116 and Ø 136 mm are available these different terminals type:
- Øe : 12 - 14 - 16 mm
- Mx : M6 - M8

Diameter Ø	A spacing	Type of terminals	Insulating spacing	
(mm)	(mm)		Surface (mm)	Air (mm)
75, 85, 100	32	M6 female / M8 male	36	20
90	45 (*)	M6 female / M8 male	49	33
116, 136	50 (**)	M6 - M8 female / M8 male	54	38

(*) Available also in the dimensions: 32 - 50 mm
(**) Available also in the dimensions: 32 - 45 mm

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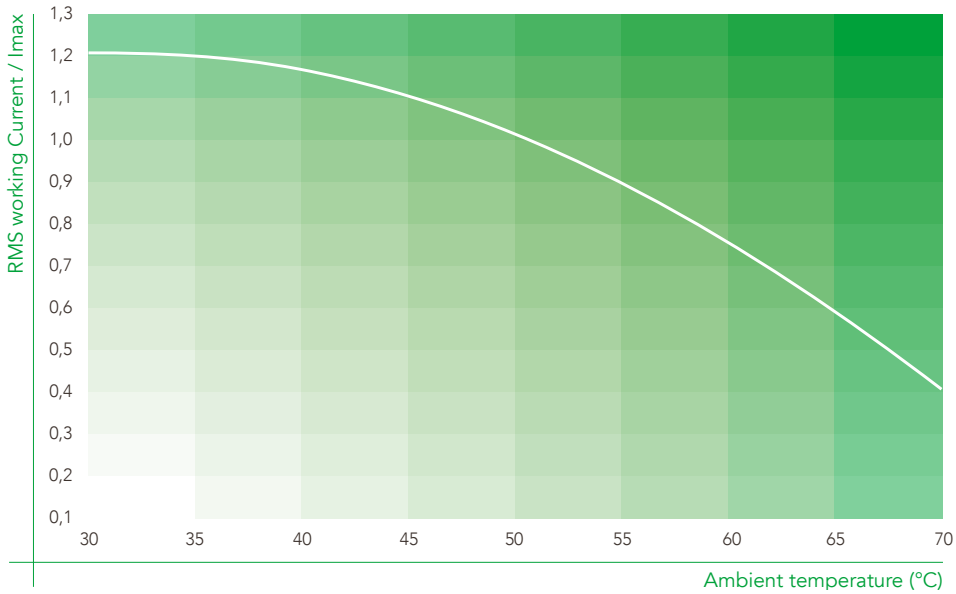
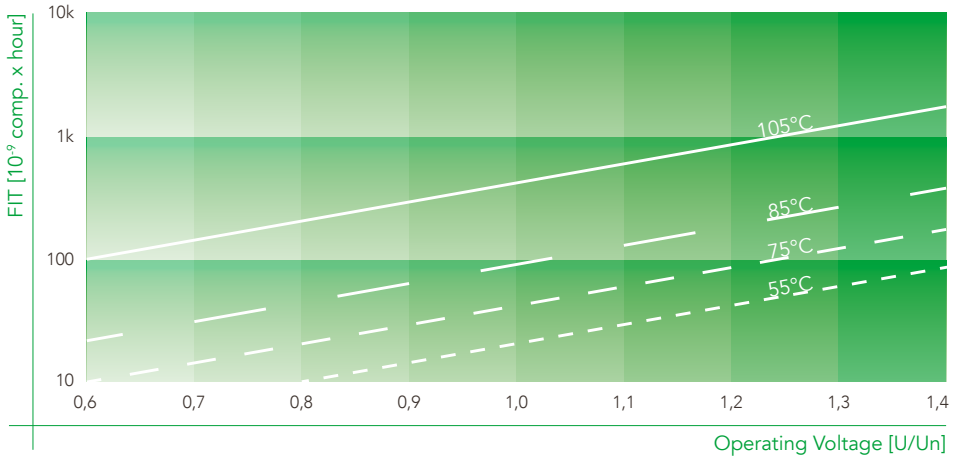
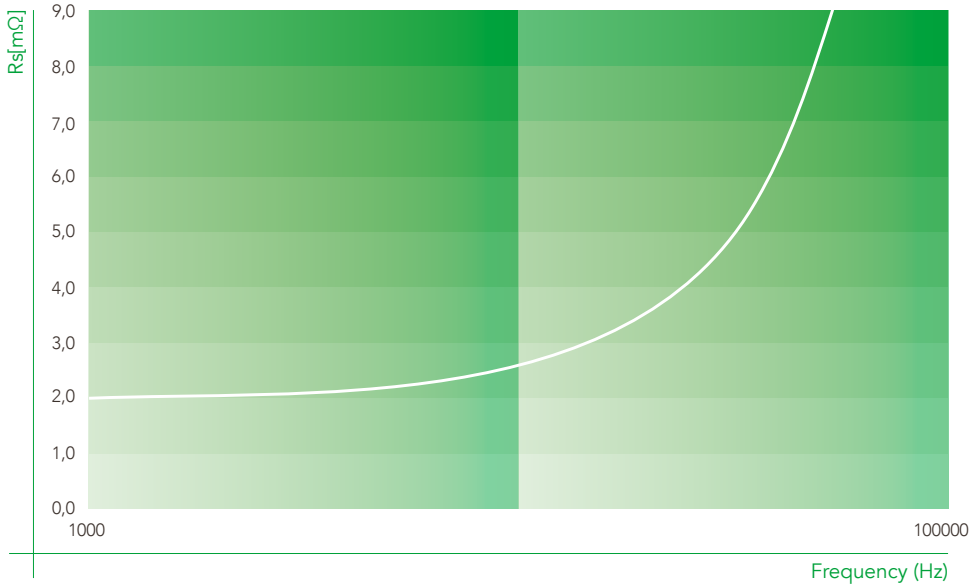
RMS working current vs Ambient temperature



FIT vs Hot Spot Temperature



DCH 85C Un=900V



Typical DCH85C Series Resistance at ambient temperature for a specific model. For the characterization of a different model, please contact R&D department.

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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 kVac @50 Hz 10 s U_{tt}= 1.5 x Un_{DC} 10 s
Working temperature (θ_{MIN} – θ_{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 (c UL us)	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 metalized 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.

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Capacitance Cn [µF]	Diameter Ø [mm]	Height H [mm]	Max. RMS Current I_{MAX} [A]	Repet Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance Rs [mΩ]	Thermal Resistance R_{THC} [°C/W]	Series Inductance Lesr [nH]	Weight [kg]	Pcs./box - Box type	Part n. 416.85
Un [V]= 550 V_{DC} Ur [V]= 230 V Up [V]= 850 V Us [V]= 1160 V											
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
Un [V]= 700 V_{DC} Ur [V]= 320 V Up [V]= 1050 V Us [V]= 1470 V											
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
Un [V]= 900 V_{DC} Ur [V]= 550 V Up [V]= 1350 V Us [V]= 1900 V											
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

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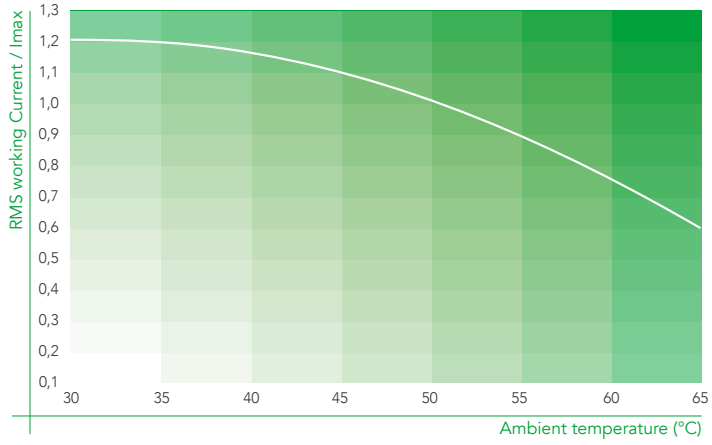
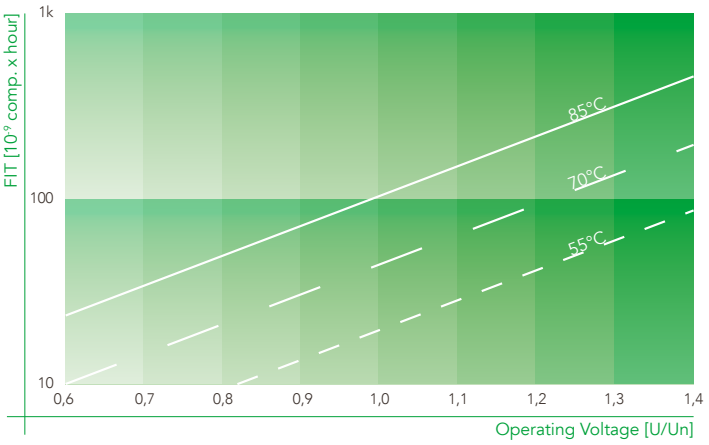
Capacitance Cn [µF]	Diameter Ø [mm]	Height H [mm]	Max. RMS Current I_{MAX} [A]	Repet Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance Rs [mΩ]	Thermal Resistance R_{THC} [°C/W]	Series Inductance Lesr [nH]	Weight [g]	Pcs./box - Box type	Part n. 416.85
Un [V]= 1100 V_{DC} Ur [V]= 700 V Up [V]= 1650 V Us [V]= 2300 V											
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
Un [V]= 1300 V_{DC} Ur [V]= 850 V Up [V]= 1950 V Us [V]= 2700 V											
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



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Capacitance Cn [µF]	Diameter Ø [mm]	Height H [mm]	Max. RMS Current I_{MAX} [A]	Repet Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance Rs [mΩ]	Thermal Resistance R_{THC} [°C/W]	Series Inductance Lesr [nH]	Weight [Kg]	Pcs./box - Box type	Part n. 416.85
Un [V]= 1550 V_{DC} Ur [V]= 990 V Up [V]= 2300 V Us [V]= 3000 V											
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
Un [V] = 1800 V_{DC} Ur [V] = 1150 V Up [V] = 2700 V Us [V] = 300 V											
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**) Tollerance standard value: -15 ... +0%. Other tollerance 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**) Releted at 1 KHz.
(R_{THC}) Thermal registance CASE TO AMBIENT in natural cooling environment.
(I_{MAX}) 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).

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DC 89 HC series

High Current, Very Low Inductance DC-link / Snubber Capacitors
Cylindrical Plastic Case, optimised for heatsink mounting

The special design of DC 89 HC provides very high RMS current capability and very low series inductance in a compact package. The exclusive metal bottom reduces thermal resistance for optimal heat-sink mounting.
The exclusive Ducati Energia metallization profiles guarantee high capacity stability and a controlled, open-circuit condition at the end of DC 89 HC operational life, while maximizing the current capability.
A special internal construction allows the minimization of field effects, thus guaranteeing real-life low ESL.

Main characteristics:

- Very High Capacity Density
- Self-Healing Metallized Polypropylene Film
- UL-Approved Construction
- V0 Plastic Case
- DRY Resin filling
- REAL Very Low ESL

Main applications:

- High Switching Frequency DC-Link

General Characteristics

DC Voltage range	500÷1450 V(*)
Maximum ripple current	100 A
Maximum working frequency	10 kHz
Capacitance range	Up to 220 µF (*)
Capacitance tolerance	standard: ±10% / on request: ±5%
Terminals	M8 screw-type bolts ur female M5
Test voltage	U_{tc}= 3.0 kVac @50 Hz 60 s U_{tt}= 1.5 x Un_{DC} 10 s
Working temperature (θ_{MIN} – θ_{MAX})	–25 / +85 °C
Storage temperature	–25 / +85 °C
Filling	Polyurethane resin
Dielectric	Self healing PPM film
Container	Self-extinguishing (UL94 V0) plastic box
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
Driving tourque for M8 screw-type	5 Nm
Driving tourque for fixing holes (MAX)	2.5 Nm
Number pieces for box	16
M8 screw terminals	Max 5 Nm
Fixing slots	Max 2.5 Nm
UL - CSA approved (c UL us)	File n. E192559
In according to fire protection standard	EN 45545-2

(*) Other values on request
(**) For details please refer to page 75.

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Capacitance Cn [µF]	Height H [mm]	Repet. Peak Voltage Up [kV]	Max. RMS Current I_{MAX} [A]	Repet. Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance R_{ESR} [mΩ]	Thermal Resistance R_{THC} [°C/W]	Series Inductance L_{ESR} [nH]	Weight [kg]	Part number 416.89.
Un_{DC}= 500 V Us= 1.0 kV										
70	40	0.75	100	9000	13.0	0.55	4.8	< 25	< 0.45	051x
100	40	0.75	100	8500	12.7	0.60	4.8	< 25	< 0.45	052x
130	51	0.75	85	8000	11.5	0.70	5.7	< 30	< 0.55	053x
160	51	0.75	85	7000	10.5	0.75	5.7	< 30	< 0.55	055x
190	64	0.75	70	6500	10.0	0.78	7.8	< 40	< 0.70	057x
220	64	0.75	70	6200	9.3	0.80	7.8	< 40	< 0.65	059x
Un_{DC}= 700 V Us= 1.4 kV										
60	40	1.05	90	8000	12.0	0.70	4.8	< 25	< 0.45	071x
80	40	1.05	90	7500	11.3	0.75	4.8	< 25	< 0.45	072x
100	51	1.05	80	7400	11.0	0.80	5.7	< 30	< 0.55	072x
130	51	1.05	80	7200	10.8	0.85	5.7	< 30	< 0.55	075x
150	64	1.05	65	6400	10.5	0.87	7.8	< 40	< 0.70	075x
180	64	1.05	65	6600	9.9	0.90	7.8	< 40	< 0.65	079x
Un_{DC}= 900 V Us= 1.8 kV										
45	40	1.35	85	5300	8.0	0.80	4.8	< 25	< 0.45	091x
70	40	1.35	85	5250	7.8	0.85	4.8	< 25	< 0.45	092x
100	51	1.35	75	4700	7.5	0.95	5.7	< 30	< 0.55	095x
110	51	1.35	75	4650	7.3	0.98	5.7	< 30	< 0.55	096x
125	64	1.35	60	4600	7.0	1.00	7.8	< 40	< 0.70	097x
150	64	1.35	60	4500	6.8	1.10	7.8	< 40	< 0.65	099x
Un_{DC}= 1100 V Us= 2.2 kV										
30	40	1.65	80	4800	7.8	0.90	4.8	< 25	< 0.45	111x
45	40	1.65	80	4750	7.2	0.95	4.8	< 25	< 0.45	112x
70	51	1.65	65	4600	7.0	1.00	5.7	< 30	< 0.55	114x
75	51	1.65	65	4550	6.8	1.10	5.7	< 30	< 0.55	115x
100	64	1.65	55	4500	6.7	1.20	7.8	< 40	< 0.70	118x
110	64	1.65	55	4400	6.6	1.25	7.8	< 40	< 0.65	119x
Un_{DC}= 1250 V Us= 2.5 kV										
20	40	1.90	75	4500	6.8	1.15	4.8	< 25	< 0.45	121x
35	40	1.90	75	4200	6.6	1.20	4.8	< 25	< 0.45	122x
45	51	1.90	65	4200	6.4	1.25	5.7	< 30	< 0.55	123x
55	51	1.90	65	4200	6.2	1.30	5.7	< 30	< 0.55	125x
70	64	1.90	55	4000	6.0	1.35	7.8	< 40	< 0.70	127x
80	64	1.90	55	4000	6.0	1.40	7.8	< 40	< 0.65	129x

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DC 89 HC series

High Current, Very Low Inductance DC-link / Snubber Capacitors
Cylindrical Plastic Case, optimised for heatsink mounting

Capacitance Cn [µF]	Height H [mm]	Repet. Peak Voltage Up [kV]	Max. RMS Current I_{MAX} [A]	Repet. Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance R_{ESR} [mΩ]	Thermal Resistance R_{THC} [°C/W]	Series Inductance L_{ESR} [nH]	Weight [kg]	Part number 416.89.
Un_{DC}= 1450 V Us= 2.9 kV										
15	40	2.20	70	3500	5.2	1.25	4.8	< 25	< 0.45	141x
25	40	2.20	70	3380	5.1	1.30	4.8	< 25	< 0.45	142x
30	51	2.20	60	3200	4.8	1.45	5.7	< 30	< 0.55	143x
40	51	2.20	60	3200	4.8	1.45	5.7	< 30	< 0.55	145x
50	64	2.20	50	3100	4.6	1.50	7.8	< 40	< 0.70	147x
55	64	2.20	50	3050	4.5	1.55	7.8	< 40	< 0.65	149x

NOTES:
(**Cn**) Tollerance standard value: ±10%. Other tollerance values on request.
(**Cn**) - (**Un**) Capacitance and rated voltage standard values, other values on request.
(**Rs**) Releted at 1 KHz.
(R_{THC}) Thermal registance CASE TO AMBIENT in natural cooling environment. In order to decrease the thermal resistance, install the capacitors on a heatsink (with conductive past) through the optimised bottom alyminum.
(I_{MAX}) Maximum RMS current, refered to an ambient temperature of 50 °C (natural cooling) and working frequency of 1 KHz.
(**x code**) According to mechanical solution: from Ø to 4 fot M8 screw type bolt, from 5 to 8, for female M5 internal threads.

Box TYPE	
Standard box dimensions:	mm 195 x 390 x 250
No. pieces per box:	16

Insulation spacing	
Surface (mm)	Air (mm)
37	27

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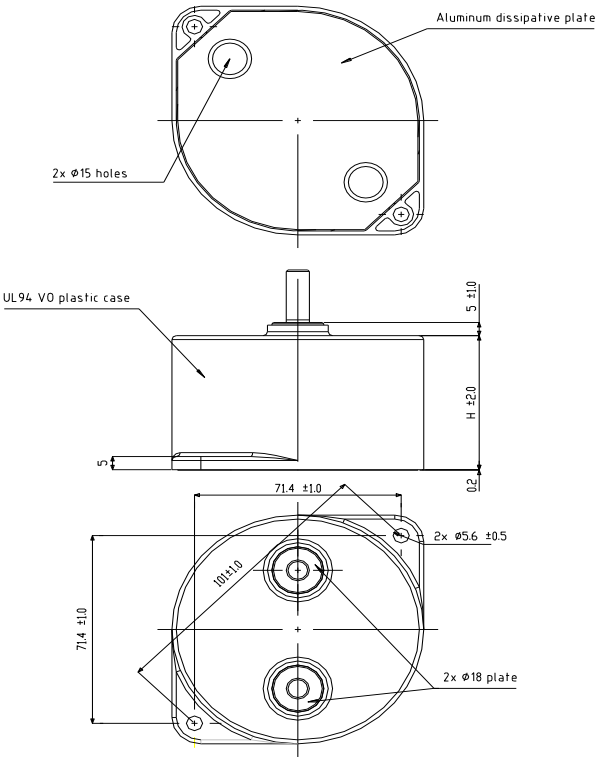
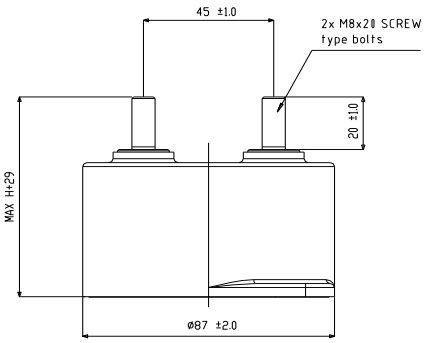


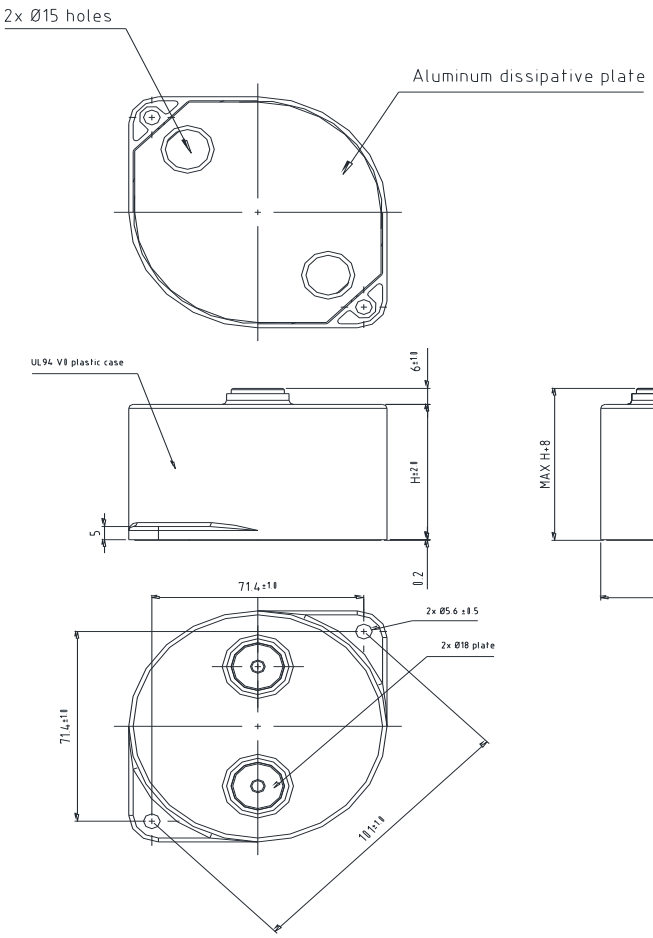


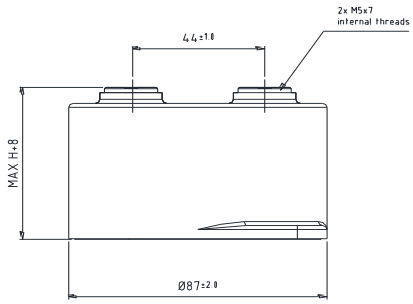
A SOLUTION

41689.YYY.X
Male M8 screw type bolts
(x) Code: from 0 to 4 for A solution

SOLUTION

H = 40 ± 2 mm
H = 51 ± 2 mm
H = 64 ± 2 mm





B SOLUTION

41689.YYY.X
Female M5 internal threads
(x) Code: : from 5 to 8 for B solution

SOLUTION

H = 40 ± 2 mm
H = 51 ± 2 mm
H = 64 ± 2 mm

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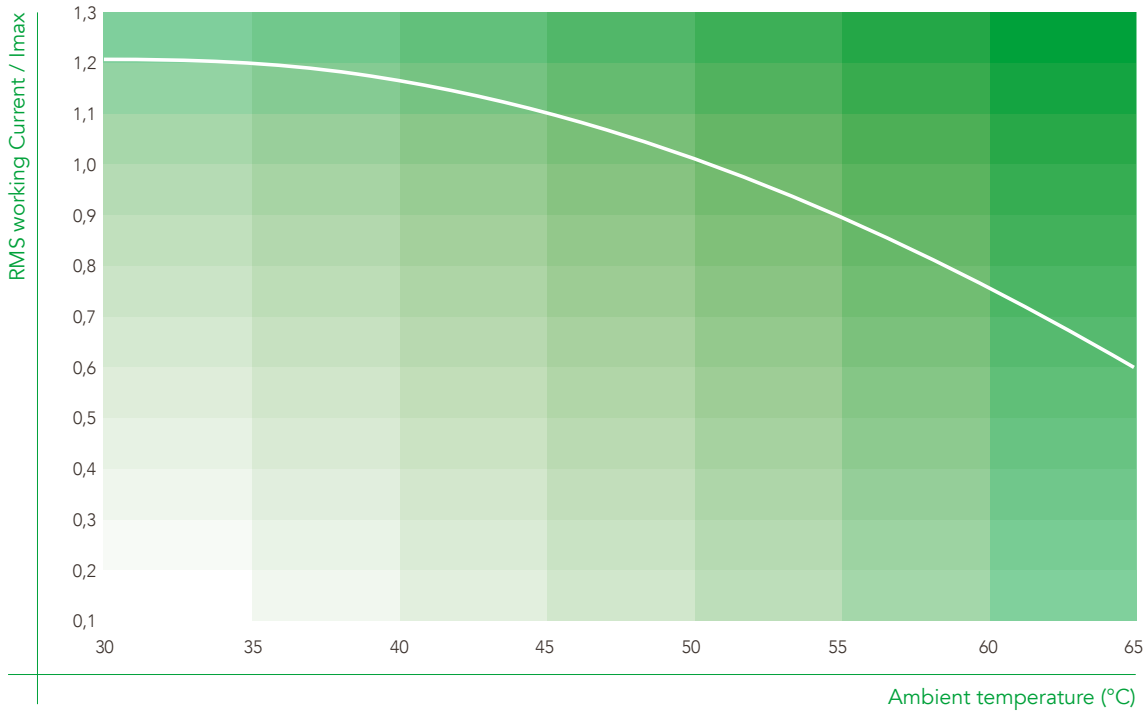
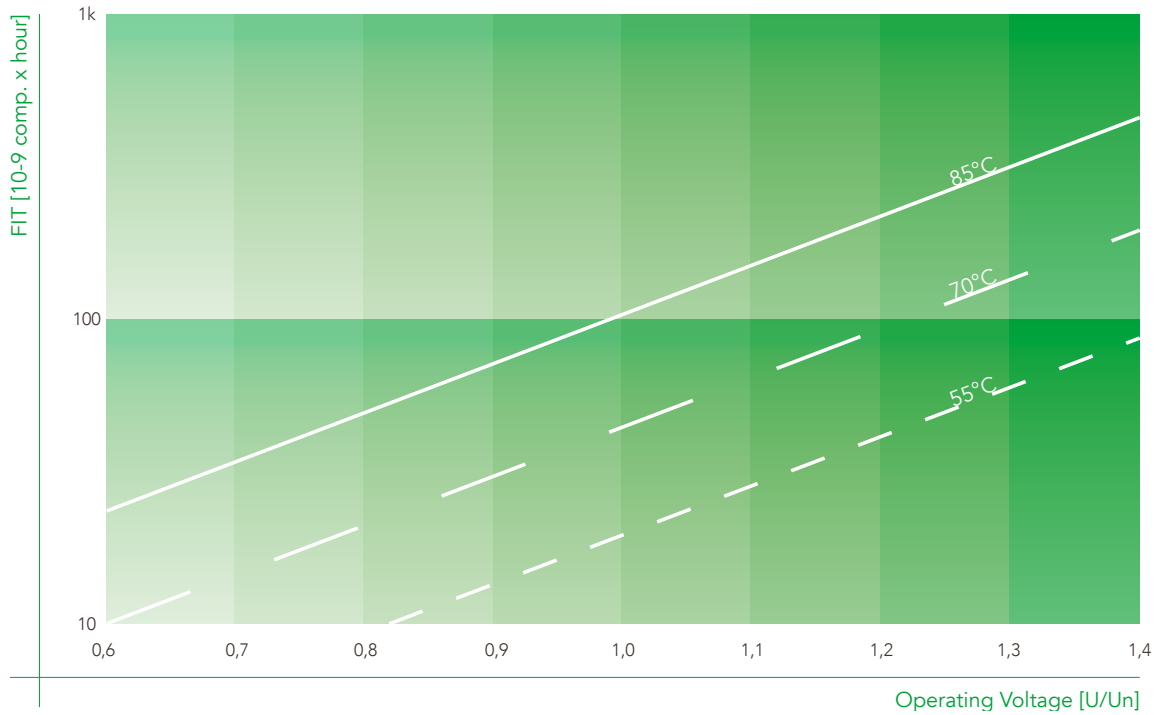
RMS working current vs Ambient temperature



FIT vs Hot Spot Temperature



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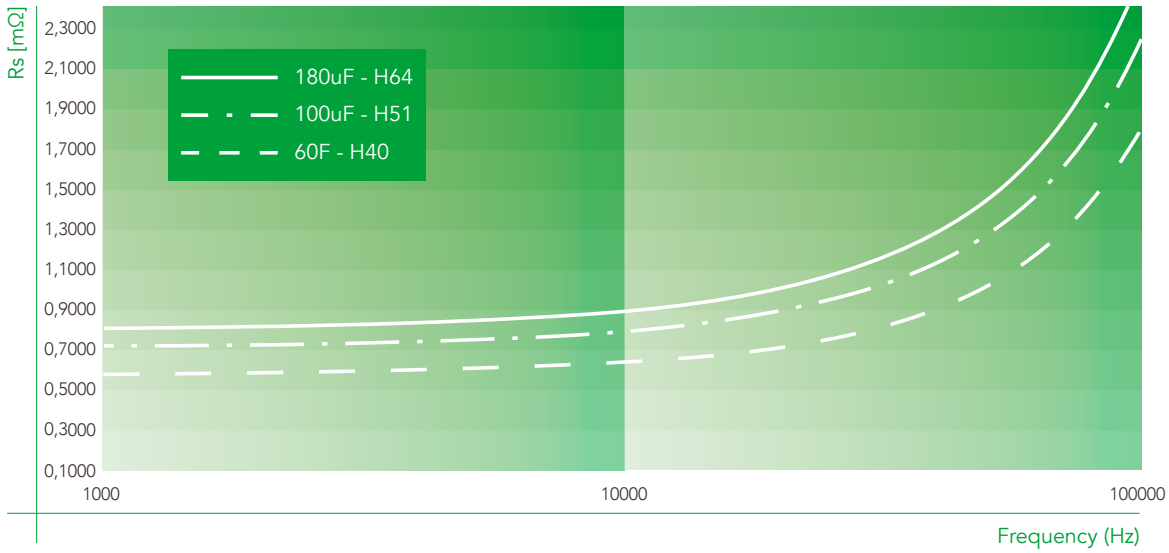
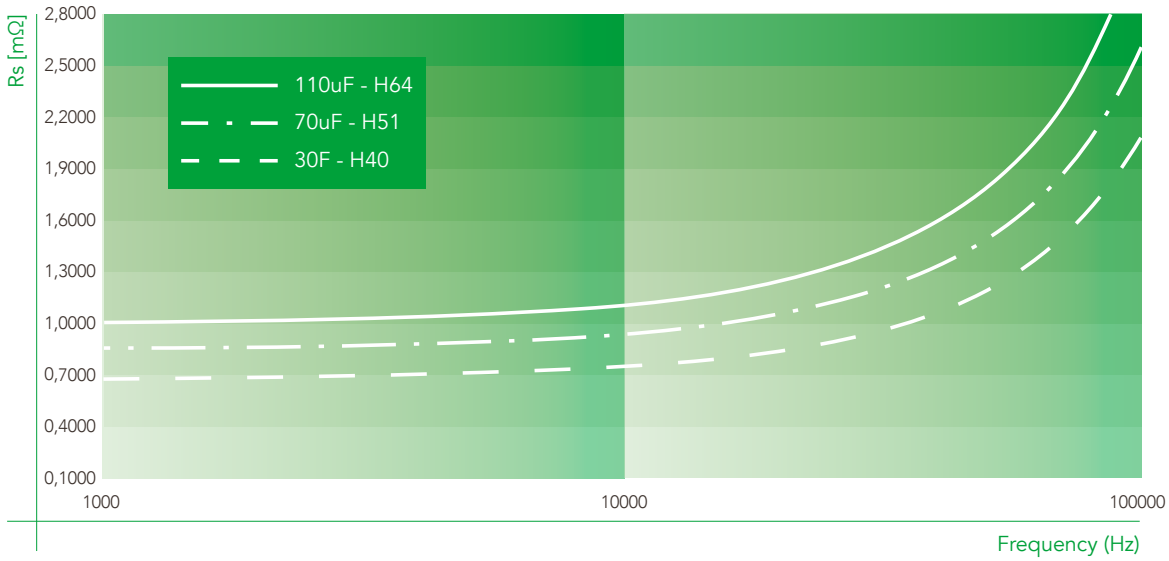
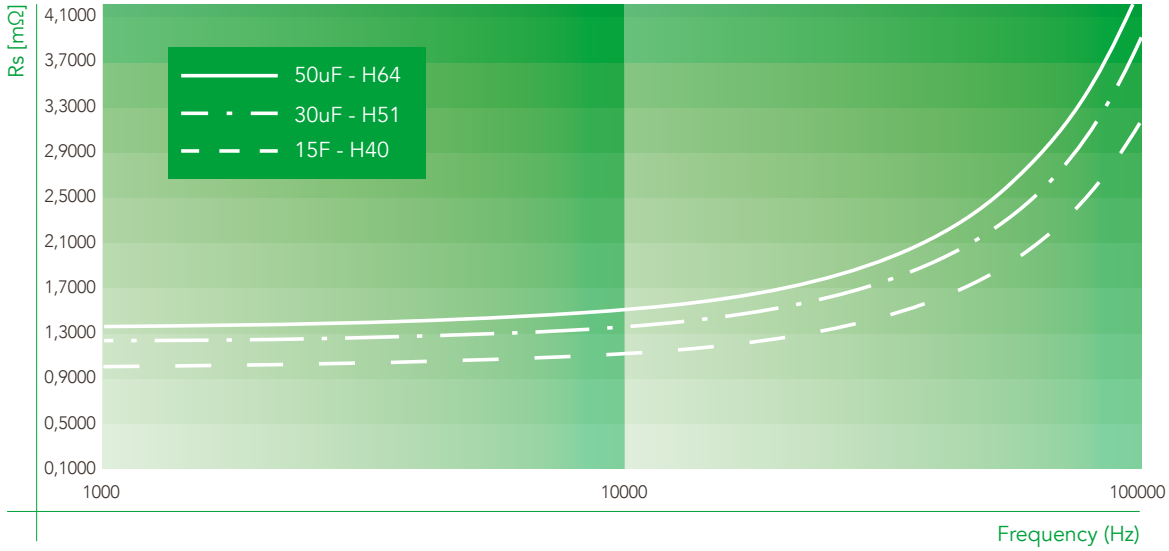
Typical Series Resistance | Un = 700V



Typical Series Resistance | Un = 1100V



Typical Series Resistance | Un = 1450V



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DCH 86 PS series

Very High Density, Very Low Inductance DC-Link Capacitors - Prismatic Plastic Case

Thanks to the exclusive Ducati Energia High Crystallinity Film DCH 86 PS Prismatic DC-link Capacitors provide leading Capacity Density without any de-rating or limitation, respective to standard makes.
The very high capacity density allows substantial cost reductions due to the reduction of capacitor size and/or number, as well as particularly low inductance values.
The exclusive Ducati Energia metallization profiles guarantee high capacity stability and a controlled, open-circuit condition at the end of DCH 86 PS operational life, while maximizing the current capability.
A special internal construction allows the minimization of field effects, thus guaranteeing real-life low ESL.

Main characteristics:

- Very High Capacity Density
- Self-Healing Metallized Polypropylene Film
- UL-Approved Construction
- Aluminum Case
- DRY Resin filling
- REAL Low ESL

Main applications:

- DC-Link
- Energy Storage / Pulse Generation

General Characteristics	
DC Voltage range	700÷2500 V
Maximum ripple current	165 A
Capacitance range	Up to 2100 µF
Capacitance tolerance	±10%
Thermal resistance natural cooling (RTHc)	2.60 °C/W
Equivalent series inductance (LESR)	< 30 nH
Terminals	M8 x 15 internal threads
Test voltage	U_{tc} = 4.5 kVac @50 Hz 60 s U_{tt} = 1.5 x Un_{DC} 10 s
Climatic Ambient Temperature	–25 / +45 °C
Working temperature (θ_{MIN} – θ_{MAX})	–25 / +85 °C
Storage temperature	–25 / +85 °C
Filling	Self-extinguishing (UL94 V0) polyurethane resin
Container	Self-extinguishing (UL94 V0) plastic box
Failure quota	50/10E9
Life expectancy	100.000 h
Maximum altitude	100.000 h
Maximum altitude	2000 m a.s.l.
Reference standard	IEC 1071-1/2 - IEC 1881 - UL 810
M8 internal thread terminals	Max 4 Nm
M8 screw terminals	Max 6 Nm
Fixing slots	Max 10 Nm
UL - CSA approved (c UL us)	File n. E192559
In according to fire protection standard	EN 45545-2

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

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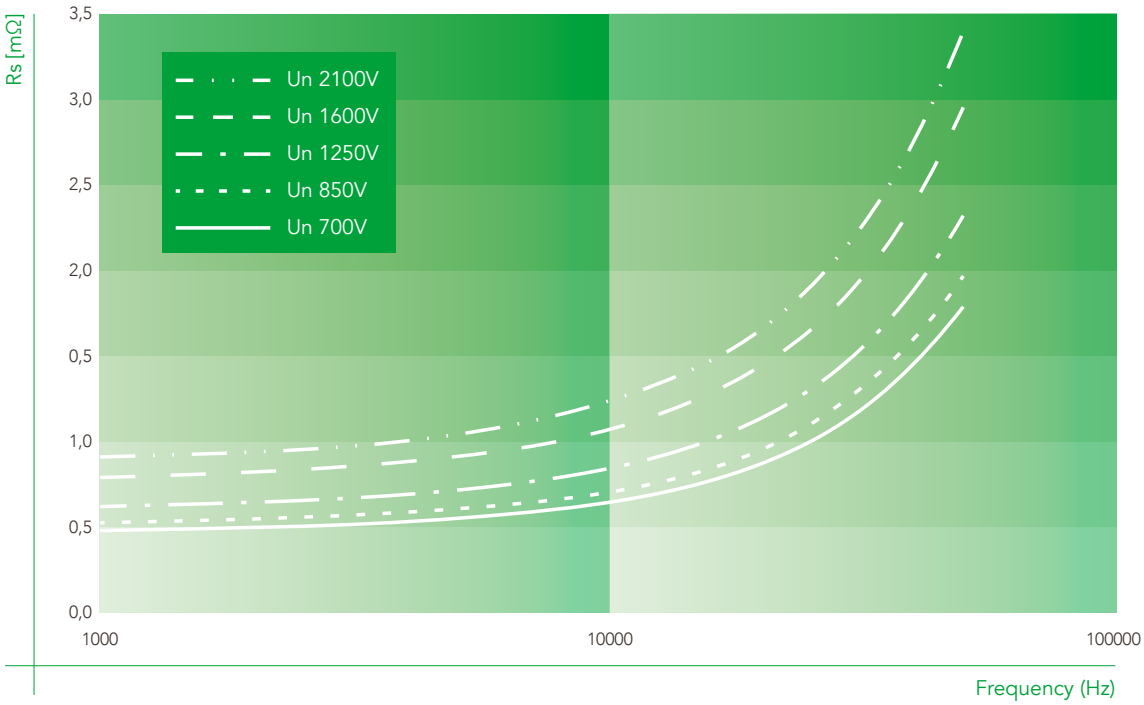
Capacitance Cn [µF]	Rated DC Voltage Un [V]	Repet. Peak Voltage Up [KV]	Surge Voltage Us [KV]	Max. RMS Current I_{MAX} [A]	Repet. Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance Rs [m Ω]	Thermal Resistance R_{THS} [°C/W]	Weight [kg]	Part number 416.86.V.xxxx
2.100	700	1.1	1.2	165	15.000	28.0	< 0.48	2.60	< 4.5	1095
1.500	850	1.0	1.5	155	13.800	26.0	< 0.50	2.60	< 4.5	1595
1.150	1100	1.7	2.3	150	12.000	25.0	< 0.55	2.60	< 4.5	2095
750	1250	1.9	2.625	140	11.400	23.0	< 0.59	2.60	< 4.5	2595
600	1400	2.1	2.9	130	11.000	21.5	< 0.66	2.60	< 4.5	3095
1100	1600	2.4	3.36	120	10.640	20.5	< 0.73	2.60	< 4.5	3595
380	1800	2.7	3.8	120	10.500	19.0	< 0.85	2.60	< 4.5	4095
300	2100	3.2	4.5	110	9.660	18.5	< 0.89	2.60	< 4.5	4595
230	2500	3.8	4.5	100	8.200	14.5	< 0.98	2.60	< 4.5	5095

NOTES:
(**Cn**) Tollerance standard value: ±10%. Other tollerance 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**) Releted at 1 KHz.
($\mathbf{R_{THS}}$) Thermal resistance AMBIENT - HOT SPOT (air forced cooling system).
(**Imax**) Maximum RMS @ 50 °C ambient temperature.

Insulation spacing	
Surface (mm)	Air (mm)
37	27

Box TYPE	
Standard box dimensions:	mm 195 x 390 x 250
No. pieces per box:	16

Typical Series Resistance at 23 °C



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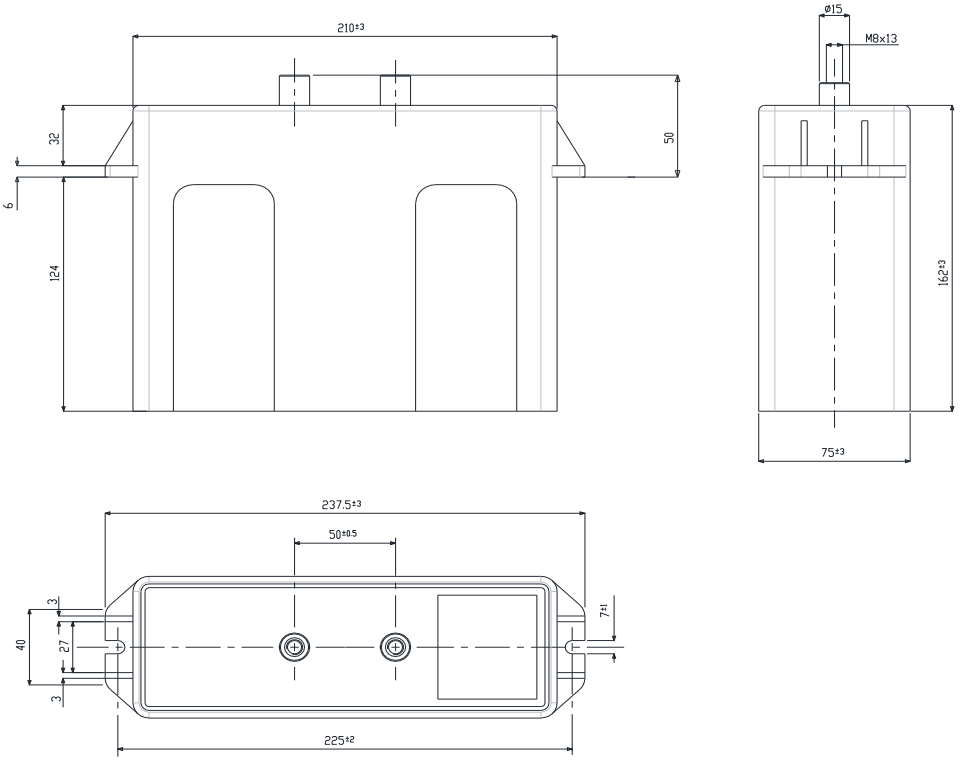
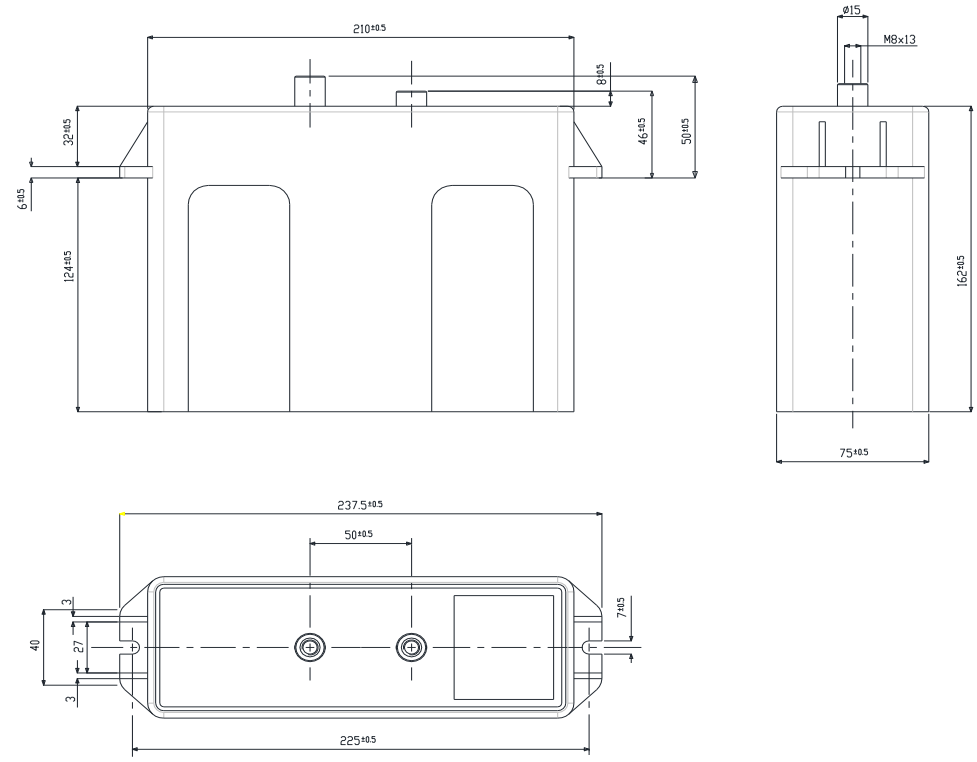
M8 standard terminals solution:



Available on request: M8 staggered terminals solution:



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DC 86 PS series

High Density, Very Low Inductance DC-Link Capacitors
Prismatic Plastic Case

This Prismatic Box variant is powered by the tried and proven Ducati Energia PPMh technology making it a competitive and reliable solution to all common DC-Link applications.
When coupled with the exclusive Ducati Energia High Crystallinity Film the DC 85 B 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 86 PS operational life, while maximizing the current capability.
A special internal construction allows the minimization of field effects, thus guaranteeing real-life low ESL

Main characteristics:

- High Capacity Density
- Self-Healing Metallized Polypropylene Film
- UL-Approved Construction
- V0 Plastic Case
- DRY Resin filling
- REAL Low ESL

Main applications:

- DC-Link
- Energy Storage / Pulse Generation

DC 86 PS 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÷2700 V
Maximum ripple current	165 A
Capacitance range	Up to 2100 µF
Capacitance tolerance	±10%
Thermal resistance natural cooling (R_{THc})	2.60 °C/W
Equivalent series inductance (ESL)	< 30 nH
Terminals	M8 x 15 internal threads
Test voltage	U_{tc}= 4.5 kVac @50 Hz 60 s U_{tt}= 1.5 x Un_{DC} 10 s
Working temperature (θ_{MIN} – θ_{MAX})	–25 / +85 °C
Storage temperature	–25 / +85 °C
Filling	Self-extinguishing (UL94 V0) polyurethane resin
Dielectric	Self healing PPMd film
Container	Self-extinguishing (UL94 V0) plastic box
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
M6 internal thread terminals	Max 4 Nm
Fixing slots	Max 10 Nm
UL - CSA approved (c UL us)	File n. E192559
In according to fire protection standard	EN 45545-2

Safety system: These capacitors are designed with a particular type of polypropylene metalized 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.

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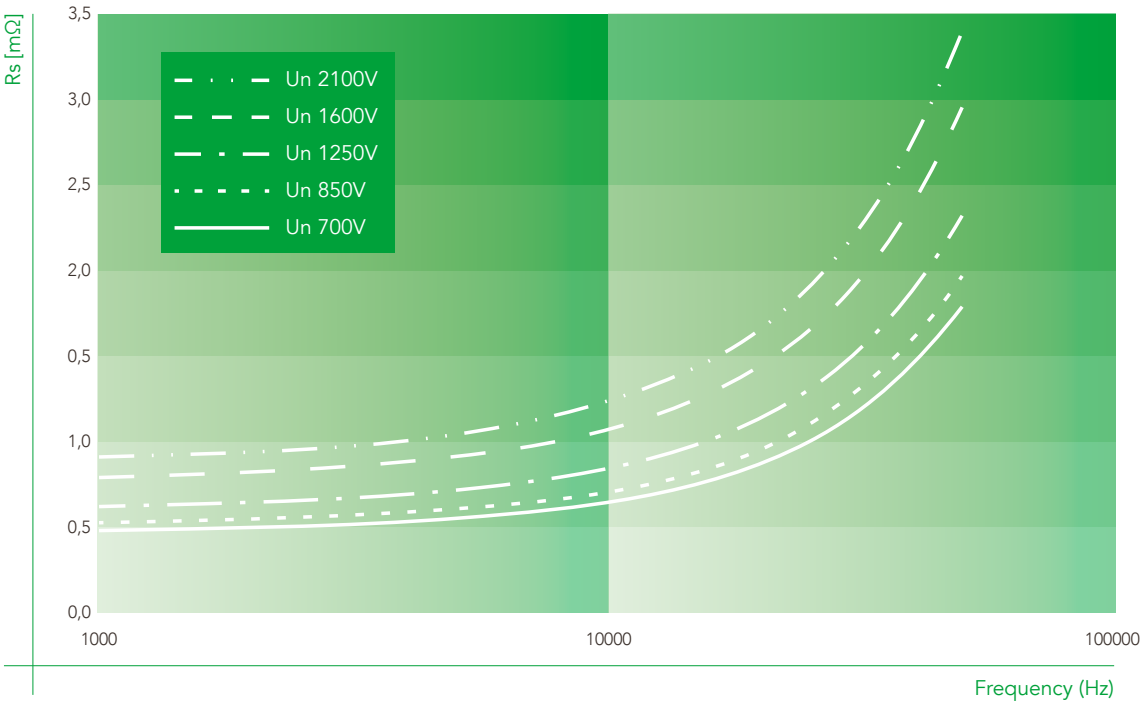
Capacitance Cn [µF]	Rated DC Voltage Un [V]	Repet. Peak Voltage Up [kV]	Surge Voltage Us [kV]	Max. RMS Current I_{MAX} [A]	Repet. Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance Rs [mΩ]	Thermal Resistance R_{THC} [°C/W]	Weight [kg]	Part number 416.86.xxxx
2100	550	0.8	1.2	165	16800	29.5	< 0.48	2.60	< 4.5	0095
1500	700	1.0	1.5	165	15000	28.0	< 0.50	2.60	< 4.5	1095
1150	850	1.3	1.8	155	13800	26.0	< 0.55	2.60	< 4.5	1595
750	1100	1.7	2.3	150	12000	25.0	< 0.59	2.60	< 4.5	2095
600	1250	1.9	2.6	140	11400	23.0	< 0.66	2.60	< 4.5	2595
500	1400	2.1	2.9	130	11000	21.5	< 0.73	2.60	< 4.5	3095
380	1600	2.4	3.4	120	10640	20.5	< 0.85	2.60	< 4.5	3595
300	1800	2.7	3.8	120	10500	19.0	< 0.89	2.60	< 4.5	4095
230	2100	3.2	4.4	110	9660	18.5	< 0.98	2.60	< 4.5	4595
120	2700	4.1	5.7	100	7800	14.5	< 1.15	2.60	< 4.5	5095

NOTES:
(**Cn**) Tollerance standard value: ±10%. Other tollerance values on request.
(**Cn**) - (**Un**) Capacitance and rated voltage standard values, other values on request.
(**Rs**) Releted at 1 KHz.
($\mathbf{R_{THS}}$) Thermal resistance AMBIENT - HOT SPOT (air forced cooling system).
($\mathbf{I_{MAX}}$) Maximum RMS @ 50 °C ambient temperature.

Insulation spacing	
Surface (mm)	Air (mm)
37	27

Box TYPE	
Standard box dimensions:	mm 195 x 390 x 250
No. pieces per box:	16

Typical Series Resistance at 23 °C



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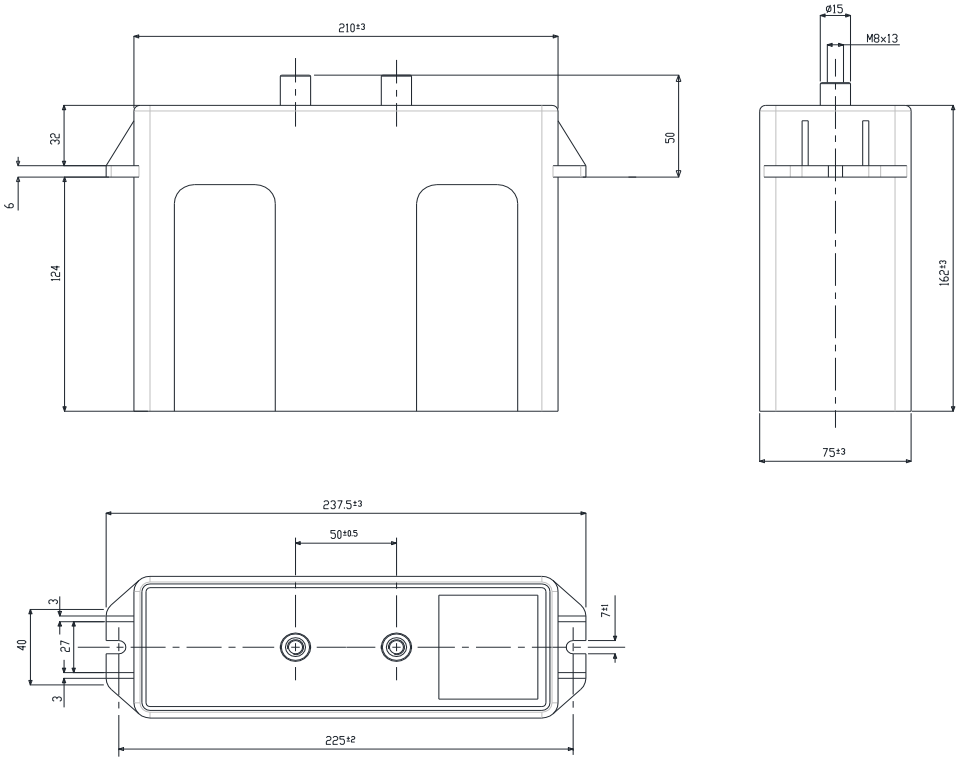
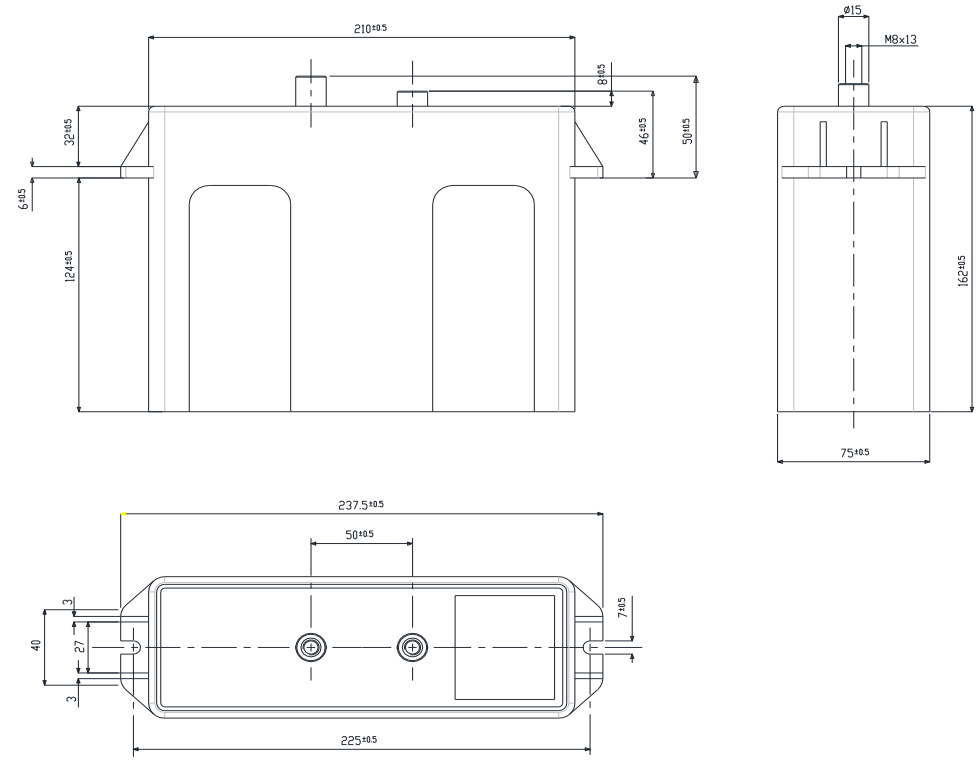
M8 standard terminals solution:



Available on request: M8 staggered terminals solution:



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DC 86 P series

High Density, Low Inductance DC-Link Capacitors
Prismatic Plastic Case

This very large Prismatic Box variant is particularly convenient for applications requiring very large capacity or high operating voltages; the tried and proven Ducati Energia PPMh technology provides competitive and reliable performances for all common DC-Link applications.
When coupled with the exclusive Ducati Energia High Crystallinity Film the DC 86 P 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 86 P operational life, while maximizing the current capability.

Main characteristics:

- Very High Capacity Density
- Self-Healing Metallized Polypropylene Film
- V0 Plastic Case
- DRY Resin filling
- Low ESL

Main applications:

- DC-Link
- Energy Storage / Pulse Generation

DC 86 B 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÷6800 V
Maximum ripple current	300 A
Capacitance range	Up to 15000 µF
Capacitance tolerance	standard: +0%/-15%; others on request
Thermal resistance natural cooling (R_{THc})	0.52 °C/W
Equivalent series inductance (ESL)	< 45 nH
Terminals	4 x M6 internal threads per pole or bus-bars
Test voltage	U_{tc}= 12 kVac @50 Hz 60 s U_{tt}= 1.5 x UnDC 10 s
Working temperature (θ_{MIN} – θ_{MAX})	–25 / +85 °C
Storage temperature	–25 / +85 °C
Filling	Self-extinguishing (UL94 V0) polyurethane resin
Dielectric	Self healing PPMd film
Container	Self-extinguishing (UL94 V0) plastic box
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
M6 internal thread terminals	Max 3 Nm
Fixing slots	Max 10 Nm
In according to fire protection standard	EN 45545-2

Safety system: These capacitors are designed with a particular type of polypropylene metalized 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.

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Capacitance Cn [µF]	Rated DC Voltage Un [V]	Repet. Peak Voltage Up [kV]	Surge Voltage Us [kV]	Max. RMS Current I_{MAX} [A]	Repet. Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance Rs [mΩ]	Thermal Resistance R_{THC} [°C/W]	Weight [kg]	Terminal solution A / B	Part n. 416.86.
15000	550	0.8	1.3	300	34500	45	< 0.30	0.52	< 19.0	A / B	009.x
11000	650	1.0	1.5	300	30800	45	< 0.30	0.52	< 19.0	A / B	109.x
8500	800	1.2	1.8	300	28050	45	< 0.30	0.52	< 19.0	A / B	159.x
5600	1000	1.5	2.3	250	26880	40	< 0.45	0.52	< 19.0	A / B	209.x
3800	1200	1.8	2.8	250	22800	40	< 0.50	0.52	< 19.0	A / B	259.x
2800	1350	2.0	3.1	250	22400	40	< 0.50	0.52	< 19.0	A / B	309.x
2100	1600	2.4	3.7	200	21000	40	< 0.65	0.52	< 19.0	A / B	359.x
1700	1800	2.7	4.1	200	20400	40	< 0.70	0.52	< 19.0	A / B	409.x
1050	2100	3.1	4.8	200	19950	40	< 0.70	0.52	< 19.0	A / B	459.x
650	2700	4.0	6.2	200	19500	35	< 0.75	0.52	< 19.0	A / B	508.x
500	3200	4.8	7.4	200	17500	35	< 0.75	0.52	< 19.0	A / B	559.x
300	3800	5.7	8.7	200	13500	35	< 0.75	0.52	< 19.0	A / B	609.x
200	4500	6.7	10.0	150	13000	30	< 1.20	0.52	< 19.0	A	659.0
160	5200	7.8	10.0	150	11200	30	< 1.20	0.52	< 19.0	A	709.0
120	6000	9.0	10.0	150	10800	25	< 1.40	0.52	< 19.0	A	759.0
80	6800	10.0	10.0	120	9600	20	< 1.50	0.52	< 19.0	A	809.0

NOTES:
(**Cn**) Tollerance standard value: -15 ... +0%. Other tollerance 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**) Releted at 1 KHz.
($\mathbf{R_{THC}}$) Thermal registance CASE TO AMBIENT in natural cooling environment.
(**A/B solut**) Due to the clearance distance, B SOLUTION (X code= 1) is available only up to Un= 3800 V (Rated Voltage).
(**X code)** According to terminal type. A SOLUTION X=0 / B SOLUTION X=1.

Box TYPE	
Standard box dimensions	mm 477 x 252 x 172
No. pieces x box:	1

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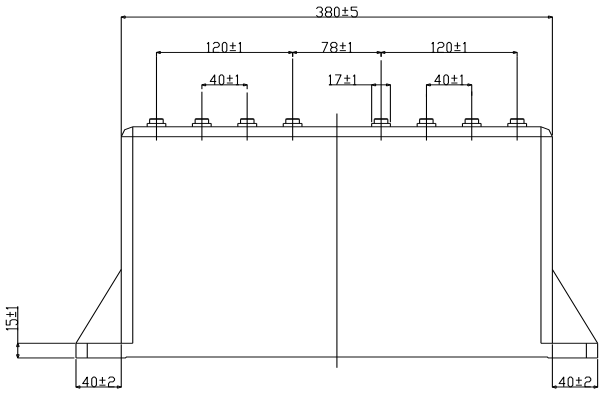
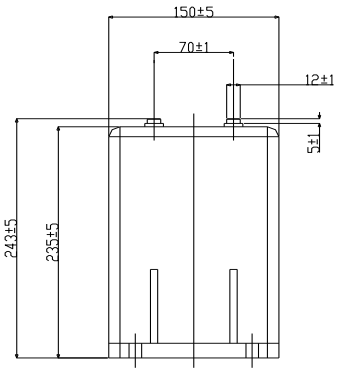
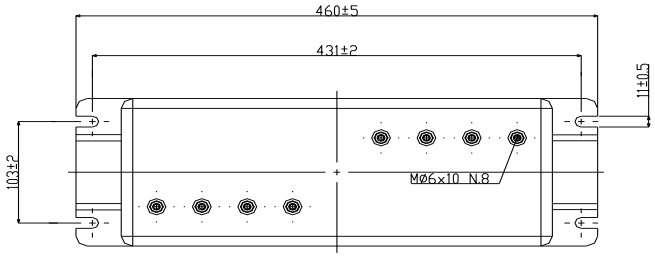
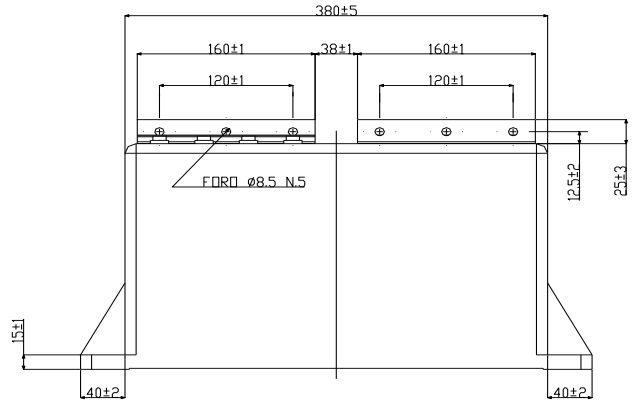


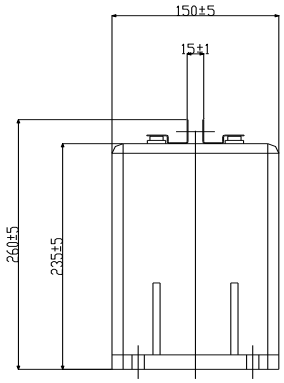


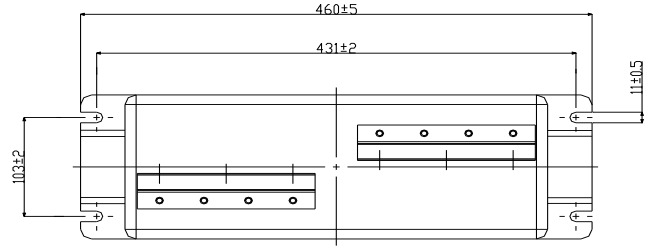


A SOLUTION

41686.XXX.0
M6 internal threads

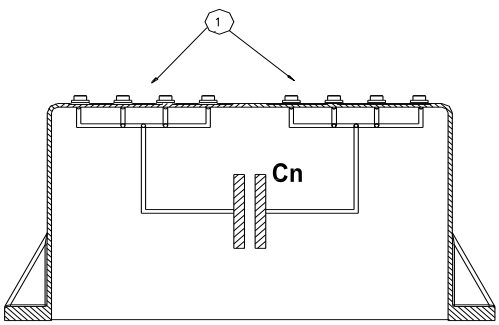






B SOLUTION

41686.XXX.1
Bus bar terminals



NOTES:
For A Solution: please, pay attention to connect all of the four M6 internal thread terminals for each polarity.

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DC 85 B series

High Density, Low Inductance DC-Link Capacitors
Cubic Plastic Case

his Cubic Box variant is powered by the tried and proven Ducati Energia PPMh technology making it a competitive and reliable solution to all common DC-Link applications.
When coupled with the exclusive Ducati Energia High Crystallinity Film the DC 85 B 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 B operational life, while maximizing the current capability.

Main characteristics:

- High Capacity Density
- Self-Healing Metallized Polypropylene Film
- V0 Plastic Case
- DRY Resin filling
- Low ESL

Main applications:

- DC-Link
- Energy Storage / Pulse Generation

DC 85 B 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÷6000 V
Maximum ripple current	120 A
Capacitance range	Up to 38000 µF
Capacitance tolerance	standard: +0%/-15%; others on request
Series resistance (RS)	< 5 mΩ
Thermal resistance natural cooling (R_{THc})	2.0 °C/W
Equivalent series inductance (ESL)	< 30 nH
Terminals	M10 screw-type bolts
Test voltage	U_{tt} = 1.5 x Un_{DC} 10 s
Working temperature (θ_{MIN} – θ_{MAX})	–25 / +85 °C
Storage temperature	–25 / +85 °C
Filling	Self-extinguishing (UL94 V0) polyurethane resin
Dielectric	Self healing PPMd film
Container	Self-extinguishing (UL94 V0) plastic box
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
M10 screw terminals	Max 10 Nm
Fixing slots	Max 10 Nm
In according to fire protection standard	EN 45545-2

Safety system: These capacitors are designed with a particular type of polypropylene metalized 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.

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Capacitance Cn [µF]	Rated DC Voltage Un [V]	Repet. Peak Voltage Up [kV]	Surge Voltage Us [kV]	Max. RMS Current I_{MAX} [A]	Repet. Peak Current Ip [A]	Surge Current Is [kA]	Series Resistance Rs [mΩ]	Thermal Resistance R_{THC} [°C/W]	Weight [kg]	Terminal solution A / B	Part n. 416.85.
3800	550	0.8	1.2	120	9800	25	< 0.80	1.65	< 5.0	A / B	001.x
2800	650	1.0	1.4	120	9300	25	< 0.80	1.65	< 5.0	A / B	005.x
2250	750	1.1	1.6	120	9500	25	< 0.80	1.65	< 5.0	A / B	090.x
1500	900	1.4	1.9	120	9500	25	< 0.80	1.65	< 5.0	A / B	190.x
1200	1100	1.7	2.3	120	9600	25	< 0.80	1.65	< 5.0	A / B	290.x
1000	1250	1.9	2.6	120	9000	20	< 0.85	1.65	< 5.0	A / B	390.x
800	1350	2.0	2.9	100	8800	20	< 1.20	1.65	< 5.0	A / B	405.X
750	1450	2.2	3.0	100	8500	20	< 1.20	1.65	< 5.0	A / B	490.x
420	1800	2.7	3.8	100	8200	15	< 1.20	1.65	< 5.0	A / B	590.x
280	2200	3.3	4.6	80	7000	15	< 1.80	1.65	< 5.0	A / B	690.x
180	2800	4.2	5.8	80	6300	15	< 1.90	1.65	< 5.0	A / B	790.x
80	4000	6.0	8.5	60	4000	10	< 3.20	1.65	< 5.0	A / B	890.x
50	5000	7.5	10.0	50	3500	10	< 4.60	1.65	< 5.0	A / B	990.x
40	5500	8.3	10.0	40	3200	8	< 7.50	1.65	< 5.0	A / B	A90.x
30	6000	9.0	10.0	35	2700	8	< 8.20	1.65	< 5.0	A / B	B90.x

NOTES:
(**Cn**) Tollerance standard value: -15 ... +0%. Other tollerance 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**) Releted at 1 KHz.
(**R_{THC}**) Thermal registance CASE TO AMBIENT in natural cooling environment.
(**A/B solut**) .X="5" for A SOLUTION (M10 terminals on surface without handles) / .x="6" for B SOLUTION (M10 terminals on handle surface).

Box TYPE	
Standard box dimensions	mm 450 x 470 x 220
No. pieces x box:	4

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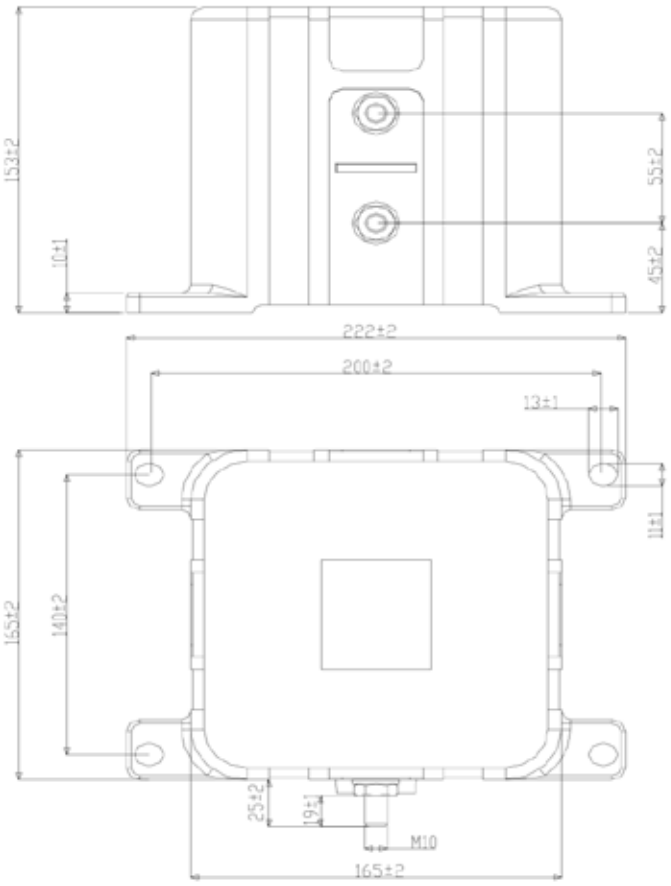
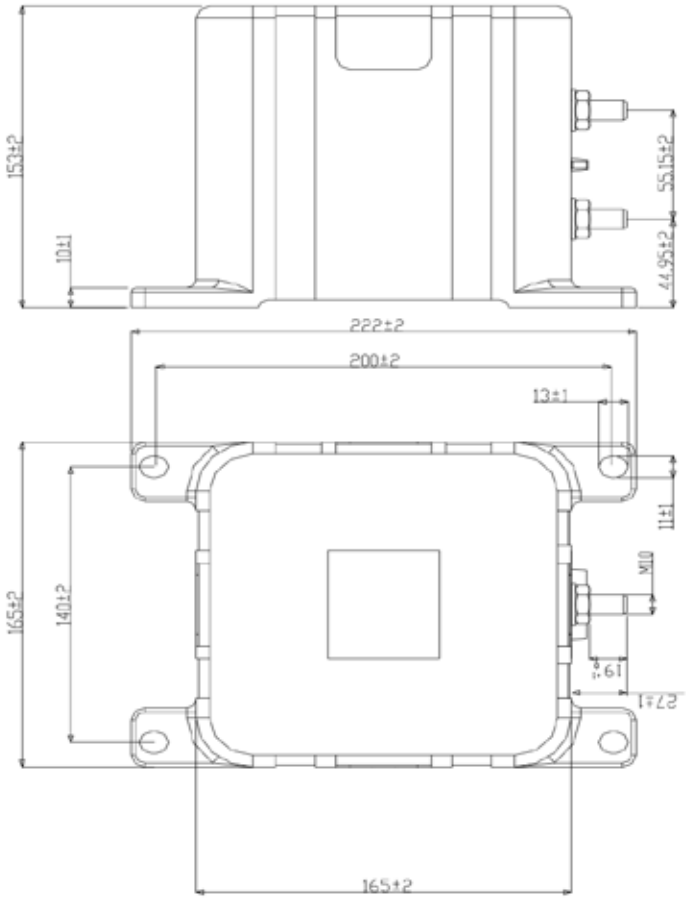


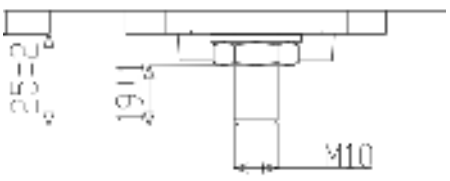


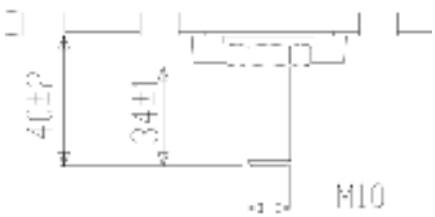
A SOLUTION

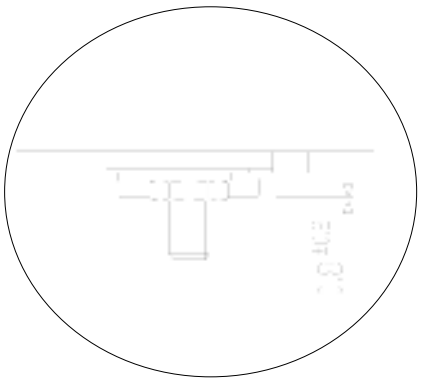
41685.xxx.5
M10 terminals on handless surface

B SOLUTION

41685.xxx.6
M10 terminals on handle surface







IVD GmbH, Max-Eyth-Strasse 10, 74405 Gaildorf Tel. 07971/9789-0 info@ivdgmbh.de www.ivdgmbh.de

DC 83 P and DCH 83 P series

DC-Link Capacitors, high density and low inductance, resin filled in box plastic case

This Cubic Box variant is powered by the tried and proven Ducati Energia PPMh technology making it a competitive and reliable solution to all common DC-Link applications.
When coupled with the exclusive Ducati Energia High Crystallinity Film the DC 85 B 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 B operational life, while maximizing the current capability.

Main characteristics:

- High Capacity Density
- Self-Healing Metallized Polypropylene Film
- V0 Plastic Case
- DRY Resin filling
- Low ESL

Main applications:

- DC-Link
- Energy Storage / Pulse Generation

DC 85 B 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

Crepage Distance (mm)	35
Crepage Distance (mm)	35

General Characteristics

DC Voltage range	550 - 2350 V
Maximum ripple current (Imax)	165 Arms
Capacitance range	0,1 - 2,0 µF
Equivalent series inductance (ESL) - typical	30 nH
Tinned copper terminals	M8x10 internal thread
Container	Self-extinguishing (UL94 V0) plastic box
Filling	Self-extinguishing (UL94 V0) Polyurethane resin
Film Dielectric type	PPMDh film (*)
Maximum altitude	2000 m a.s.l.
Mounting position	Any position
Maximum torque for fixing slots	10Nm
Maximum torque for M8 terminals	4 Nm
Working ambient temperature	-25 .. +50 °C
Operating temperature MAX/ MIN (case)	-25 .. +85 °C
Maximum Hotspot temperature	+85 °C
Storage temperature	-25 .. +85 °C
Humidity category class (DIN 40040)	F
Life expectancy (@Un / 70°C hot spot)	100.000 h
Failure quota	50FIT
Reference standards	IEC 61071-1/2 IEC 61881 UL810
Material and insulation distance designed according to:	UL 810
In according to fire protection standard	EN 45545-2

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

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DC 83 P

Capacitance Cn [µF]	Rated DC Voltage Un [V]	Repet. Peak Voltage Up [kV]	Surge Voltage Us [kV]	Max. RMS Current I_{MAX} [A]	Repet. Peak Current Ip [kA]	Surge Current Is [kA]	Series Resistance Rs [mΩ]	Thermal Resistance R_{THS} [°C/W]	Weight [kg]	Part n. 416.83.
1850	550	0.8	1.2	165	14.8	24	< 0.36	3,60	< 3	1900
1500	700	1.0	1.5	165	16.5	25	< 0.38	3,60	< 3	2900
1050	900	1.3	1.9	155	14.7	23	< 0.43	3,60	< 3	3900
700	1100	1.5	2.3	150	14.0	22	< 0.45	3,60	< 3	4900
580	1250	1.8	2.6	145	14.5	21.5	< 0.48	3,60	< 3	5900
460	1400	2.0	2.9	140	12.9	20.5	< 0.52	3,60	< 3	6900
340	1600	2.2	3.4	135	11.9	18	< 0.55	3,60	< 3	7900
240	1800	2.5	3.8	130	9.6	15	< 0.62	3,60	< 3	8900
190	2100	2.9	4.4	120	8.0	13	< 0.68	3,60	< 3	9900

DCH 83

Capacitance Cn [µF]	Rated DC Voltage Un [V]	Repet. Peak Voltage Up [kV]	Surge Voltage Us [kV]	Max. RMS Current I_{MAX} [A]	Repet. Peak Current Ip [kA]	Surge Current Is [kA]	Series Resistance Rs [mΩ]	Thermal Resistance R_{THS} [°C/W]	Weight [kg]	Part n. 416.83.
1850	650	0.9	1.4	155	16.7	25	< 0.41	3,60	< 3	1900
1350	850	1.2	1.8	150	14.9	25	< 0.43	3,60	< 3	2900
1050	1000	1.4	2.1	150	13.7	22	< 0.45	3,60	< 3	3900
670	1250	1.8	2.6	145	12.1	19.5	< 0.47	3,60	< 3	4900
550	1400	2.0	2.9	140	11.0	18	< 0.52	3,60	< 3	5900
460	1550	2.2	3.3	135	10.6	17	< 0.55	3,60	< 3	6900
340	1800	2.5	3.8	125	9.5	15	< 0.62	3,60	< 3	7900
240	2100	2.9	4.4	120	8.4	13	< 0.68	3,60	< 3	8900
190	2350	3.3	4.9	115	7.6	12	< 0.76	3,60	< 3	9900

NOTES:
(Cn) Tollerance standard value: -15 ... +0%. Other tollerance values on request.
(Cn) - (Un) Capacitance and rated voltage standard values, other values on request.
(Rs) Releted at 1 KHz.
(R_{THS}) Thermal resistance AMBIENT - HOT SPOT (air forced cooling system).
(I_{MAX}) Maximum RMS Current @ 50°C ambient temperature.

Box TYPE	
Standard box dimensions	mm 450 x 470 x 220
No. pieces x box:	8

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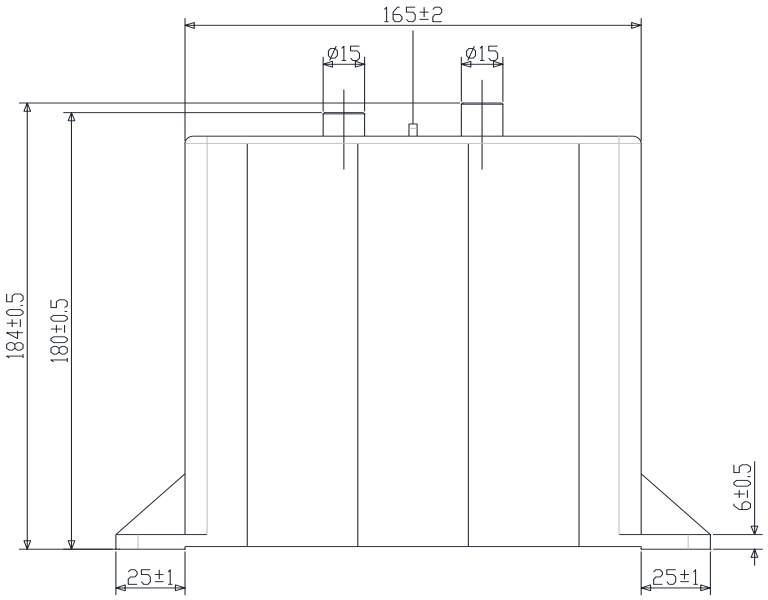

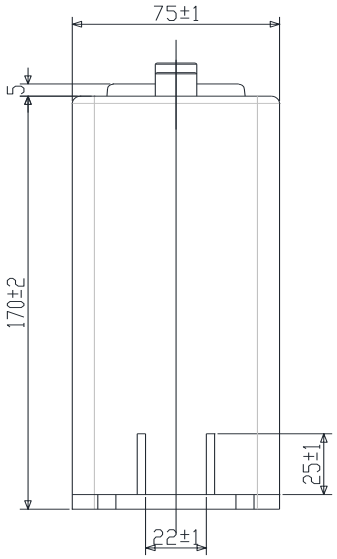

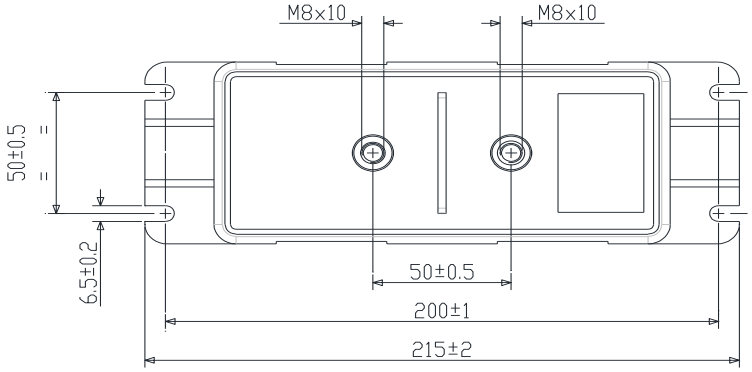

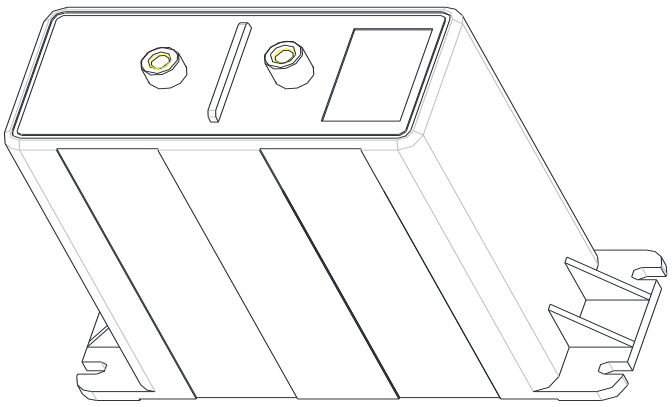

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