

Abbreviazioni

Abbreviations

2

	ABBREVIAZIONI Secondo norma EN 61071	ABBREVIATIONS According with EN 61071
Cn	Capacità nominale	Rated capacitance
Un	Tensione nominale in corrente alternata	Rated AC voltage
Undc	Tensione nominale in corrente continua	Rated DC voltage
Ur	Tensione sovrapposta (di ondulazione)	Ripple voltage
I _{max}	Corrente massima (I _{rms}) per funzionamento permanente	Maximum current (I _{rms}) for continuous operation
Us	Sovratensione non ricorrente	Non-recurrent surge voltage
ESR	Resistenza equivalente serie di un condensatore	Equivalent series resistance of a capacitor
dV/dt	Variazione massima ammissibile della tensione nel tempo	Maximum slope of the voltage waveshape
Ls	Induttanza serie	Self Inductance
Rs	Resistenza serie	Series Resistance

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I prodotti descritti in questo catalogo riflettono specifiche standard. Siamo a vostra disposizione per ulteriori informazioni.
The products described in this catalogue reflect standard specifications. Please, contact us for further information.

CAPACITORS IN METALLIZED POLYPROPYLENE FILM FOR POWER ELECTRONICS

SERIES CML

CML1 - Applications in alternated (for $I_{rms} > 15A$)

CML3 - Applications in alternated (for $I_{rms} \leq 15A$)

CML2 - Applications in direct - DC link-Box

CML4 - Applications in direct DC-link Cylindrical

POWER ELECTRONICS

The power electronics is the branch of electrotechnique with the objective to study the static conversion of electrical energy.

The power electronics handles, processes and modifies the electrical energy in static mode, therefore permitting:

- a more flexible and appropriate usage of electrical energy
- a considerable enhancement of handling, transportation and distribution of electrical energy with a view to energy saving.

The power electronics is the technology associated with conversion, control and efficient modification of the electrical power starting from the available input to transform it into the desired output.

Applications

MECO capacitors of the series CML for power electronics are divided into two groups.

GROUP 1

It is composed of capacitors belonging to the series CML 1 and CML 3. These capacitors are used in applications in alternated current but can also be used for applications in direct current according with the technical indications of each single capacitor.

GROUP 2

It is composed of the series CML 2 and CML 4 (DC-link) that are designed solely for applications in direct current with alternated current (ripple voltage) that must not exceed the values indicated in the respective specifications.

N.B. The capacitors for applications in direct current cannot be used in alternated current whereas it is possible the opposite within the limits declared by the manufacturer.

AC FILTERING

For the application "filtering in alternated" the capacitor is excited with a fundamental current that is usually at 50 or 60 Hz.

Besides the fundamental, there are one or more harmonics that generate high currents.

The values of these currents must be known and must not exceed the maximum values declared in the respective specifications. For this application, MECO capacitors from the series CML 1 and CML 3 are suitable.

Typical application of these capacitors is in filters at the output of uninterruptible power supplies (UPS) where there are several harmonics.

DC FILTERING

For the application "filtering in direct" the capacitor is excited by two voltages. One is the direct current that can arrive up to 10000 Vdc and the other is the alternated current (ripple voltage) that has limited values, (usually $\leq 300Vac$) but the frequencies can be in the region of kHz .

The very high frequency and the high values of the capacitances, up to thousands of μF , generate currents, that can also be hundreds of ampères.

MECO capacitors of the series CML 2 and CML 4 are recommended for this application (DC-link).

This type of MECO capacitors can replace, in some cases, the polarized electrolytic capacitors.

Typical application of these two MECO capacitors is in drivers for motors of various dimensions.

IN PROTECTION CIRCUITS

These are used to build RC circuits in parallel to semi-conductors to protect them from overvoltages.

In this application, the capacitors are submitted to very high, but short lasting, current peaks.



CML 1-3

Condensatori per elettronica di potenza Capacitors for power electronics **13**

SERIE CML 1-3 CONDENSATORI CON CUSTODIA IN ALLUMINIO TERMINALI A VITE O FASTON

APPLICAZIONI AC-DC

Questi condensatori sono utilizzabili per varie applicazioni AC e DC dove siano richieste alte correnti e frequenze. Le più importanti applicazioni dei condensatori nell'elettronica di potenza sono: filtraggi, protezione, commutazione, immagazzinamento di energia, circuiti risonanti e molte altre.

DATI TECNICI GENERALI CML 1

Tensione AC Vrms	da 250 a 550Vac
Tensione DC Vn	da 400 a 1000Vdc
Tensione di picco Vpk	da 600 a 1200Vdc
Temperatura di lavoro	-25°+70°C
Tolleranza	±5%
Norme di riferimento	EN 61071-1
Test di tensione fra i terminali	1,5Vrms 10''Vac
Test di tensione fra i terminali e la custodia	3000Vac 3''Vac
Custodia	Alluminio
Terminali a vite/Momento torcente	M6/4Nm; M10/8Nm
Codolo di fissaggio/Momento torcente	M8/6Nm; M12/10Nm
Aspettativa di vita	≥30000h

DATI TECNICI GENERALI CML 3

Tensione AC Vrms	da 250 a 450Vac
Tensione DC Vn	da 400 a 800Vdc
Corrente massima Irms	≤15A
Temperatura di lavoro	-25°+70°C
Tolleranza	±5%
Norme di riferimento	EN 61071-1
Test di tensione fra i terminali	1,5Vrms 10''Vac
Test di tensione fra i terminali e la custodia	3000Vac 3''Vac
Custodia	Alluminio
Terminali esecuzione faston	Dispositivo di sicurezza
Codolo di fissaggio/Momento torcente	M8/6Nm; M12/10Nm
Aspettativa di vita	≥30000h

CML 1-3 SERIES ALUMINIUM CASE CAPACITORS SCREW TERMINALS OR FASTON

AC-DC APPLICATIONS

These capacitors are intended for various AC and DC applications where high currents and frequencies are required. The most important applications of capacitors in the power electronics are filtering, protection, commutation, energy storage, resonant circuits and many others.

GENERAL TECHNICAL DATA CML 1

Rated AC voltage Vrms	from 250 to 550Vac
Rated DC voltage Vn	from 400 to 1000Vdc
Peak voltage Vpk	from 600 to 1200Vdc
Working temperature	-25°+70°C
Tolerance	±5%
Reference standards	EN 61071-1
Test voltage terminal to terminal	1,5Vrms 10''Vac
Test voltage terminal to case	3000Vac 3''Vac
Case	Aluminium
Screw terminals/Driving torque	M6/4Nm; M10/8Nm
Fixing stud/Driving torque	M8/6Nm; M12/10Nm
Life Expectancy	≥30000h

GENERAL TECHNICAL DATA CML 3

Rated AC voltage Vrms	from 250 to 450Vac
Rated DC voltage Vn	from 400 to 800Vdc
Max. Irms current	≤15A
Working temperature	-25°+70°C
Tolerance	±5%
Reference standards	EN 61071-1
Test voltage terminal to terminal	1,5Vrms 10''Vac
Test voltage terminal to case	3000Vac 3''Vac
Case	Aluminium
Faston execution	Safety device
Fixing stud/Driving torque	M8/6Nm; M12/10Nm
Life Expectancy	≥30000h

Note: Altri condensatori possono essere prodotti su richiesta. Per altre informazioni, contattateci: www.elektronordic.eu
Remarks: Other capacitors can be made on request. For more information please contact us: www.elektronordic.eu

Serie CML 1 250 Vac/400 Vdc 250 Vac/400 Vdc CML 1 Series

Urms	Un	Upk
250 Vac	400 Vdc	600 Vdc

Capacità C [μ F] Capacitance	Irms [A]	Dimensioni Dimensions		Custodia tipo Case type
		D [mm]	H [mm]	
40	25	50	100	1
60	25	60	100	1
75	30	60	100	1
100	30	60	121	1
150	30	75	126	2
200	30	75	136	2
250	30	85	136	2
300	60	85	185	2

Serie CML 1 330 Vac/600 Vdc 330 Vac/600 Vdc CML 1 Series

Urms	Un	Upk
330 Vac	600 Vdc	750 Vdc

Capacità C [μ F] Capacitance	Irms [A]	Dimensioni Dimensions		Custodia tipo Case type
		D [mm]	H [mm]	
30	25	50	100	1
40	25	60	100	1
60	30	60	134	1
80	30	75	135	2
100	30	75	135	2
120	60	85	138	2

Serie CML 1 400 Vac/700 Vdc 400 Vac/700 Vdc CML 1 Series

Urms	Un	Upk
400 Vac	700 Vdc	850 Vdc

Capacità C [μ F] Capacitance	Irms [A]	Dimensioni Dimensions		Custodia tipo Case type
		D [mm]	H [mm]	
20	25	50	100	1
25	25	60	100	1
60	30	75	138	2
75	30	85	138	2
100	50	85	185	2

Serie CML 1 450 Vac/800 Vdc 450 Vac/800 Vdc CML 1 Series

Urms	Un	Upk
450 Vac	800 Vdc	1000 Vdc

Capacità C [μ F] Capacitance	Irms [A]	Dimensioni Dimensions		Custodia tipo Case type
		D [mm]	H [mm]	
10	25	50	100	1
15	25	60	100	1
40	35	75	138	2
50	35	75	138	2
60	35	85	137	2
100	35	85	185	2
150	35	85	235	2
200	35	85	255	2

Serie CML 1 500 Vac/900 Vdc 500 Vac/900 Vdc CML 1 Series

Urms	Un	Upk
500 Vac	900 Vdc	1100 Vdc

Capacità C [μ F] Capacitance	Irms [A]	Dimensioni Dimensions		Custodia tipo Case type
		D [mm]	H [mm]	
50	30	75	135	2
75	30	85	135	2
100	35	75	235	2
133	35	85	235	2
150	35	85	235	2

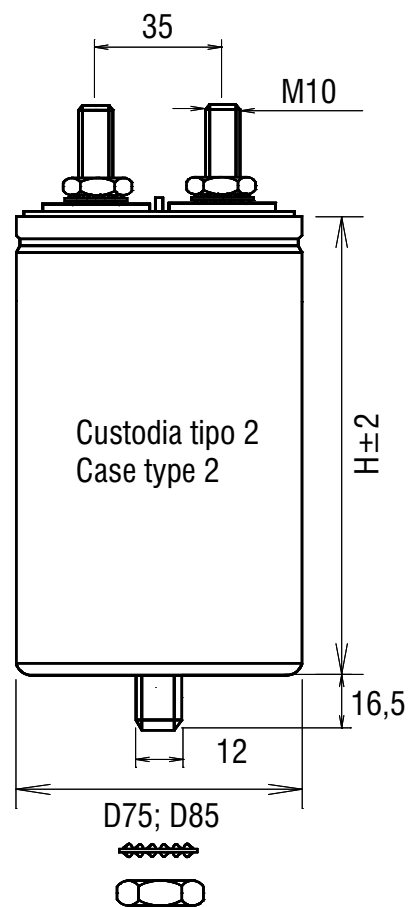
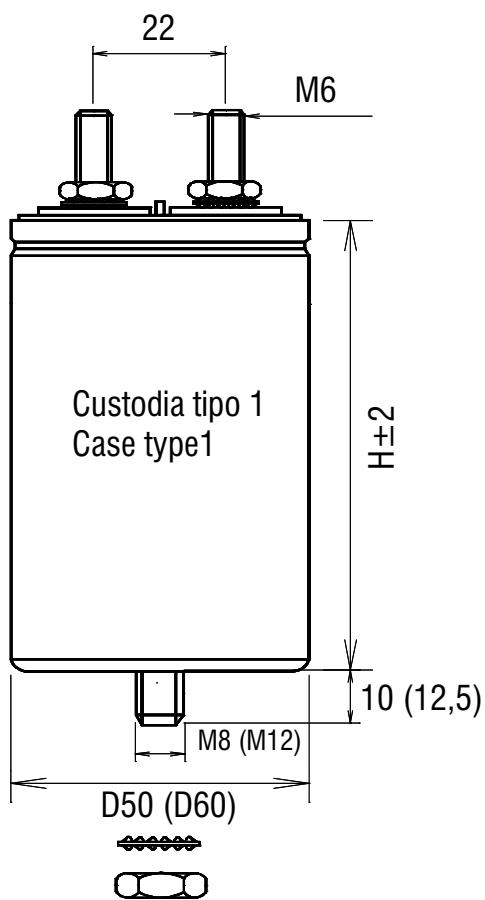
Serie CML 1 550 Vac/1000 Vdc 550 Vac/1000 Vdc CML 1 Series

Urms	Un	Upk
550 Vac	1000 Vdc	1200 Vdc

Capacità C [μ F] Capacitance	Irms [A]	Dimensioni Dimensions		Custodia tipo Case type
		D [mm]	H [mm]	
50	30	85	135	2
66,5	35	85	150	2
100	35	85	235	2
133	35	85	285	2

CML 1

Condensatori per elettronica di potenza Capacitors for power electronics **15**



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