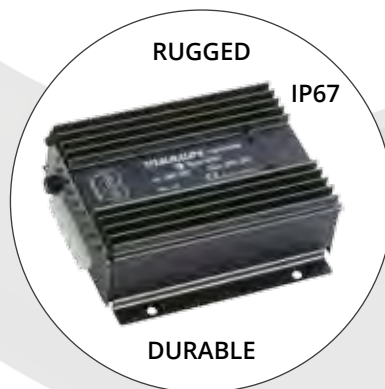




# POWER SUPPLIES BATTERY CHARGERS



AC/DC POWER SUPPLIES • DC/DC CONVERTERS  
LEAD-ACID, NIMH, LI-ION AND LIFEPO4 BATTERY CHARGERS  
DC/AC INVERTERS • CUSTOM DESIGN

Quality Since 1938



MASCOT FREDRIKSTAD



MASCOT TALLINN



MASCOT NINGBO

## INTRODUCING MASCOT

Founded in 1938, Mascot was one of the radio manufacturing pioneers in Norway. From day one, our focus has been on meeting our customers' demands, relentlessly finding ways to improve the quality of our products and develop innovative solutions for our customers.

### MARKET ADAPTABILITY

Our experience goes well beyond radios and manufacturing abroad, however. As the radio business became increasingly competitive throughout the 1960s, Mascot looked to utilize our development and manufacturing know-how in new ways, and found an exiting emerging market in telephone answering machines.

For over 35 years, Mascot manufactured these machines under the brand name Ekkofon, which for many businesses became synonymous with the name for an answering machine.

### MASCOT MILESTONES

- In 1953, Mascot was the first Norwegian manufacturer to introduce car radios in Norway.
- During the 1950s, Mascot radios became widely popular due to their superior reception, both in Norway and in mountainous regions in Europe and the Near and Middle East.
- In the early 1960s, Mascot even established a manufacturing joint venture in Turkey to meet the demand in this region.

### FROM RADIOS TO POWER SUPPLIES

In addition to our manufacturing base, Mascot started in the 1970s also to import stereo and video equipment from the Far East. These were sold under both the Mascot and Silver brand names, and this continued until 1989.

The power supply business came out of the need for battery eliminators for radios. These were promoted for the first time in 1964. The range of power supply products has grown considerably since then, reflecting changes in customer demands and technology.



MASCOT 491 PORTABLE RADIO



## MASCOT TODAY

Today, Mascot is a leading manufacturer of power supplies and battery chargers.

- Our main offices are located in Fredrikstad, Norway, and production can either take place in Fredrikstad or in our own facilities in Tallinn, Estonia. This flexibility is made to better serve our customers' needs for quality products at competitive prices and lead times.
- More recently we have expanded operations with our own facilities in Ningbo, China. Currently it serves as a local purchasing and logistics office as well as a production facility for selected components. We will keep you updated as we expand operations in Ningbo.

## CUSTOM DESIGN

- In addition to our standard product range, we have broad experience in developing and manufacturing power supplies designed from customers' own specifications.
- These can range from small modifications of existing standard models to entirely new models, encapsulated or open frame.
- Contact us for a quote, and experience the Mascot way of doing business!



CONTACT US FOR QUOTE!















## PRODUCT LINE

Mascot offers a wide range of power supplies, desktop or wall plug style:

- AC/AC
- AC/DC
- DC/DC Converters
- DC/AC Inverters
- Battery chargers for Li-Ion, NiMH and Lead Acid batteries



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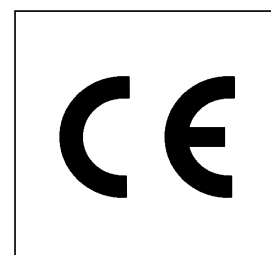
# ISO 9001

Our company has been certified according to ISO 9001 since 1993.

- For our customers this means security, high quality and cost effective products.
- All our products are CE-marked. The CE-mark guarantees that our products conform to all relevant European rules and regulations.
- Mascot is certified by Teknologisk Institutt, Norway, certificate no. 044, according to EN ISO 9001:2008. It also shows that Teknologisk Institutt is accredited for such certification by the Norwegian Accreditation authorities.
- Mascot has entered an agreement with Nemko called Testing by Manufacturer (TBM). This agreement allows trained Mascot staff to produce test results etc. based on established procedures.

MASCOT har vært sertifisert etter ISO 9001 siden 1993.

- For våre kunder betyr dette sikkerhet i alle ledd, fra første kontakt til endelig levering: pålitelige, kostnadseffektive og effektive produkter, levert til rett tid.
- Alle våre produkter er CE-merket. Denne merkingen er vår garanti for at produktet tilfredsstillende relevante normer og EU-forskrifter.
- Mascot er sertifisert av Teknologisk Institutt, sertifikat nr. 044, i h.h.t. EN ISO 9001:2008. Merket angir også at Teknologisk Institutt er akkreditert for slik sertifisering av Norsk Akkreditering.
- Mascot har en avtale med NEMKO om aksept av testresultater etc. utarbeidet på Mascot av Mascot-ansatte basert på avtalte rutiner og prosedyrer. Avtalen kalles Testing by Manufacturer (TBM).



# SAFETY MARKS • GODKJENNINGSMERKER



## CLASS II

Indicates that the product is double insulated, i.e., contains two layers of insulation between hazardous voltages and accessible parts.

## KLASSE II

Angir at apparatet er dobbeltisolert. Det betyr at produktet inneholder to lag isolasjon mellom farlige spenninger og berørbare deler.



## INDOOR USE

Indicates that the product is for indoor use only.

## INNENDØRS BRUK

Angir at produktet kun er beregnet for innendørs bruk.



## IP-CODE

The degree of protection against dust and water.

## IP-GRAD

Angir beskyttelsesgrad mot støv og vann.



## READ THE MANUAL

Indicates that the User Manual must be read prior to using the equipment.

## LES BRUKSANVISNINGEN

Angir at bruksanvisningen må leses før produktet tas i bruk.



## E-MARK

Indicates that the product is in accordance with the vehicle directive.

## E-MERKE

Angir at produktet er i overensstemmelse med kjøretøydirektivet.



## NEMKO

The equipment is certified by NEMKO and that NEMKO performs yearly audits on the production.

## NEMKO

Angir at NEMKO har sertifisert produktet og foretar oppfølging av produksjonen ved et besøk årlig.



## UL FOR «RECOGNIZED COMPONENT»

Indicates that UL have controlled the equipment according to relevant US standards, but that the equipment is to be considered as a component and that the end product also must be controlled by UL. "C" shows that Canadian standards have been controlled.

## UL-RECOGNIZED COMPONENT

Angir at Underwriters Laboratories (UL) har kontrollert produktet i h.h.t. relevante standarder, men at produktet er å betrakte som en komponent og at sluttproduktet også må kontrolleres av UL. "C" angir at kanadiske krav også er kontrollert.



## UL

The equipment is certified by UL according to American and Canadian standards and that UL performs four yearly audits on the production. "C" shows that Canadian standards have been controlled.

## UL

Angir at Underwriters Laboratories (UL) har sertifisert produktet etter amerikansk og kanadisk standard og foretar oppfølging av produksjonen ved 4 besøk årlig. "C" angir at kanadiske krav også er kontrollert.



## «WEEE» FOR SEPARATE COLLECTION

Shows that the product shall not be put into the municipal waste, but to be included in a separate collection, according to Directive 2002/96/EC on waste electrical and electronic equipment (WEEE).

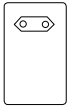
## «WEEE» FOR SÆRSKILT RETURORDNING

Angir at produktet ikke skal kastes i det kommunale avfallet, men omfattes av en særskilt innsamlingsordning for kasserte elektriske og elektroniske produkter, EU-direktiv 2002/96/EC.

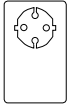
*With reservations against misprint and changes in product specifications. Current product specifications available at our web site.  
Med forbehold om trykkfeil og produktendringer. Oppdaterte datablad er tilgjengelige på våre nettsider.*

[www.mascot.no](http://www.mascot.no)

## ICONS AND HOUSINGS IKONER OG KABINETTER



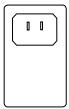
Europlug  
Europlugg



Europlug II  
Europlugg II



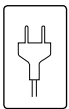
UK plug  
UK plugg



US plug  
US plugg



AU plug  
AU plugg



Mains cord  
Nettledning



Exchangeable AC plugs  
Utskiftbare AC plugger



Exchangeable DC plugs  
Utskiftbare DC plugger



Waterproof  
Vanntett



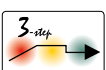
For medical use (EN/UL 60601-1)  
Til medisinsk bruk (EN/UL 60601-1)



On request (dotted line)  
På forespørsel (stiplet linje)



Computer Programmable  
Microprocessor



3-step charge control  
3-trinns ladekontroll

## STYLES • FORMER



Plug-in units / Plugg-inn enheter

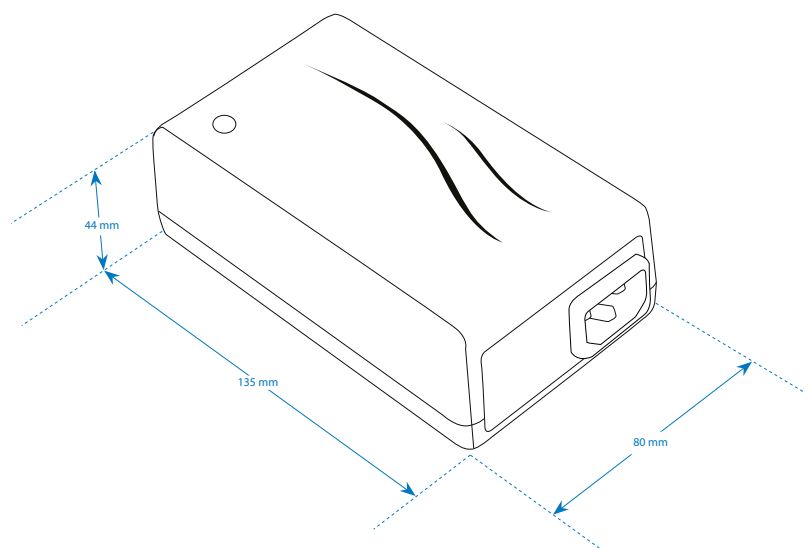


Heat sink / Kjøleprofil



Desktop versions / Bordmodeller

## TECHNICAL DRAWINGS TEKNISKE TEGNINGER



Technical drawings are available on our web site.  
Tekniske tegninger er tilgjengelige på våre nettsider.

[www.mascot.no](http://www.mascot.no)

## AC/AC MODELS

## AC/AC MODELLER

Max. power VA	Input voltage (VAC)	Style	Version - Versjon																	Model	Page	
			Maks. effekt	Inngangs- spenning	Form	3V	4.5V	5V	6V	7.5V	9V	10.5V	12V	13V	15V	16V	18V	21V	24V			28V
3,5	230	1	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓	✓	✓			✓	8310	14
8,5	230	1	✓	✓		✓	✓	✓		✓			✓		✓	✓	✓		✓		8510	14
10,5	230	1	✓	✓		✓	✓	✓		✓			✓		✓	✓	✓		✓		8610	14
15	230	1	✓	✓		✓	✓	✓	✓	✓			✓		✓	✓	✓	✓			8710	14
20	230	1				✓	✓	✓	✓	✓			✓		✓	✓	✓	✓			8810	14
25	230	2	✓	✓	✓	✓	✓	✓		✓			✓		✓	✓	✓				6820	web
31	230	2				✓	✓	✓		✓			✓		✓	✓	✓				8930	web

## AC/DC PLUG-IN MODELS

## AC/DC PLUGG-INN MODELLER

Max. power VA	Input voltage (VAC)	Style	Version - Output current (A) Versjon - Laststrøm (A)																	Model	Page					
			Maks. effekt (W)	Inngangs- spenning	Form	1,5V	2V	3V	4,5V	5V	6V	7,5V	9V	10,5V	12V	15V	16V	18V	21V			22V	24V	28V	30V	36V

### Linear adapters, unregulated / lineære, ustabiliserte

2,5	230	1		✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓		✓	✓		✓	8311	16	
6,5	230	1	✓		✓	✓		✓	✓	✓		✓	✓		✓	✓		✓	✓	✓		✓	8511	16
8	230	1			✓	✓		✓	✓	✓		✓	✓		✓	✓		✓	✓		✓	8611	16	
10	230	1			✓	✓		✓	✓	✓		✓	✓		✓	✓		✓	✓			8711	16	

### Linear adapters, regulated / lineære, stabiliserte

0,8	230	1		✓	✓		✓	✓	✓		✓	✓		✓		✓	✓					8312	web
1,8	230	1	1,5-9V adjustable/justerbar																	8313	web		
2,4	230	1	5-12V adjustable/justerbar																	8513	web		
4,8	230	1			✓	✓	✓	✓		✓	✓		✓		✓		✓					8613	web
7,5	230	1	5-15V adjustable/justerbar																	8713	web		
8	230	1			✓	✓	✓	✓		✓	✓		✓		✓		✓					8713	web
10	230	1	5-24V adjustable/justerbar																	8717	web		

### Switch mode

7,5	90-264	1			1A	1A	1A	0,72A	0,615A		0,6A	0,5A										9725	20
7,5	90-264	1			1A	1A	1A	0,73A	0,66A		0,6A	0,5A									0,16A	2725	20
8,4	230	1																			0,2A	9723	web
10	90-264	1				0,8A	0,8A	0,8A	0,8A		0,8A		0,62A				0,4A					9525	21
10	90-264	1					1A		1A		0,75A		0,6A				0,4A					2123	web
12	230	1				1,2A	1,2A	1,2A	1,2A	1,2A		1A		0,75A			0,5A					9923	22
15	230	1					1,45A	1,4A		1,1A	1A		0,7A				0,6A					9722	web
16	90-264	1					1,5A		1,5A		1,2A		1A				0,65A				0,33A	2126	web
16	90-264	1					1,5A		1,5A		1,2A		1A				0,65A				0,33A	2926	28
16	90-264	1				2,4A	2A	1,6A	1,33A			1,06A		0,88A		0,66A					0,33A	2221	29
19,5	230	1	4,5-12VDC / 12-30VDC adjustable/justerbar																	9829	23		
24	230	1				1,8A		1,8A	1,8A	1,6A		1,6	1,6A				0,9A					9827	24
28	90-264	1					3A	2,5A	2A	2,5A		2,33A	1,86A		1,55A		1,16A					3326	25
40	230	1							3A		3A		2,5A				1,5A					9118	web
40	90-264	1					3,5A			3A		3A		2,5A			1,6A				0,8A	9926	web
40	90-264	1					3,5A	5A		3A		3A		2,5A								2721	web
40,8	120/230	1					3A	2,8A		2,4A			1,7A				1,3A					9619	web
40,8	120/230	1								2,4A							1,3A					9819	web
60	90-264	1					8A	7A	6A		5A		3,75A				2,5A					3021	33

New!

New!



## AC/DC DESKTOP MODELS

## AC/DC BORDMODELLER

Max. power	Input voltage	Style	Version – Output current (A) Versjon – Laststrøm (A)																Model	Page
			5V	6V	7,5V	9V	10,5V	12V	15V	16V	18V	21V	22V	24V	28V	30V	36V	48V		

### Power supplies linear, regulated / Kraftaggregater lineære, stabiliserte

8	230	2	1,6A																	6823	17
12	230	2		6–12VDC/12/24VDC adjustable/justerbar													6823	17			
18	230	2		5–24VDC adjustable/justerbar													8937	18			
36	230	2		5–15VDC/12–30VDC adjustable/justerbar													8421	web			
45	230	2		0–15VDC/0–30VDC adjustable/justerbar													719	web			

### Power supplies switch mode / Kraftaggregater switch mode

10	90–264	2		1A		1A		0,75A		0,6A		0,4A					2121	web
10	90–264	2		1A		1A		0,75A		0,6A		0,4A					2122	web
16	90–264	2		1,5A		1,5A		1,2A		1A		0,65A		0,33A		2124	web	
16	90–264	2		1,5A		1,5A		1,2A		1A		0,65A		0,33A		2125	web	
16	90–264	2		1,5A		1,5A		1,2A		1A		0,65A		0,33A		2924	28	
16	90–264	2		1,5A		1,5A		1,2A		1A		0,65A		0,33A		2925	28	
16	90–264	2	2,4A	2A	1,6A	1,33A		1,33A	1,06A		0,88A		0,66A			3523	27 <b>New!</b>	
16	90–264	2	2,4A	2A	1,6A	1,33A		1,33A	1,06A		0,88A		0,66A	0,33A	0,27A	2220	29 <b>New!</b>	
40	90–264	2	3,5A			3A		3A		2,5A		1,6A		0,8A		9920	30	
40	90–264	2	3,5A			3A		3A		2,5A		1,6A		0,8A		9921	30	
40	90–264	2	3,5A			3A		3A		2,5A		1,6A		0,8A		9922	30	
40	90–264	2	3,5A	5A		3A		3A		2,5A						2720	web	
42	90–264	2	5A	4,16A	3,33A	4A		3,5A	2,8A		2,33A		1,75A			3321	31 <b>New!</b>	
46	230	2			3A	4,5A		3,5A		2,7A		2A					9120	web
60	90–264	2				4,5A		4,5A		3,75		2,5A					2020	32
60	90–264	2				4,5A		4,5A		3,75		2,5A					2021	32
60	90–264	2				4,5A		4,5A		3,75		2,5A					2022	32
60	90–264	2		8A	7A	6A		5A		3,75A		2,5A					3020	33
70	90–264	2	4,5A		4,5A		4,5A		4		2,5		2,05A			2420	34 <b>New!</b>	
70	230	2			5A		5A		4,4A		3A		2A			9320	35	
96	90–264	2					7A		6A		3,5A		2A			9726	36	
96	90–264	2					7A		6A		3,5A		2A			2026	web	
96	230	2					7A		6A		3,5A					9623	web	
96	230	2					7A		6A		3,5A		2A			2023	web	
100	230	2					7,5A				4,2A	3,8A		2,1A		2820	37	
106	95–264	2	8,5A		8,5A		8,5A		8,5A		7,5A	4,4A		3,6A		3220	37 <b>New!</b>	
135	90–264	2					10A				5A		2,5A			2025	38	
145	230	2	12A				10A		8 A		5A		2,5A			9522	web	
145	230	2	12A				11A		8 A		6A		3A			2922	39	
145	230	2					10A				5A		2,5A			2024	web	
145	230	2					10A				5A		2,5A			9527	web	
145	230	2	12A				11A				6A		3A			9521	web	
290	120/230	2					20A				12A		6A			8921	40	
588	230	3					40A				20A					2225	41	



## AC/DC MULTIPLE OUTPUT POWER SUPPLIES

## AC/DC FLERSPENNINGSSAGGREGATER

Max. power (W)	Input voltage (VAC)	Style	Output voltage	Model	Page
Maks. effekt (W)	Inngangsspenning	Form	Utgangsspenning	Modell	Side
12	230	2	+6 VDC ± 12 VDC	6823	web
50	90-264		+5 VDC ± 12 VDC	9221	web

## AC/DC 19" EURO RACK POWER

## AC/DC 19" EURO RACK POWER

Max. power (W)	Input voltage (VAC)	Style	Version – Output current (A)					Model	Page
Maks. effekt (W)	Inngangsspenning	Form	5V	9V	12V	15V	24V	Modell	Side
60W	120/230 VAC	3	12A	6,5A	5A	4A	2,5A	SEE-60-08 TE	web

## DC/DC CONVERTERS

## DC/DC CONVERTERE

Max. power	Style	Version - Output current (A) / Versjon - Laststrøm (A)																				Model	Page				
Maks. effekt (W)	Form	12/5	12/6	12/7,5	12/9	12/12	12/24	10-32/12	12/48	24/6	24/7,5	24/9	24/12	24/24	24/36	24/48	36/12	36/24	48/12	48/24	48/48	72/12	72/24	80/12	80/24	Modell	Side

### Linear – Regulated / lineære – stabiliserte

27	3	1A	3A	3A	3A					1,5A	1,6A	1,7A	2A														9061	43
40	3												3A														9062	web
40	3												3A														9063	web
80	3												6A														8662	44
110	3												8A														9261	web

### Switch mode – without el. separation – regulated / uten galvanisk skille – stabiliserte

41	3												3A														5060	45
75	3												6A														8860	web
106	2												8A														9460	46
276	3												20A														9970	47

### Switch mode – with el. separation – unregulated / med galvanisk skille – ustabiliserte

81	3												6A	3A		1,5A			6A	3A	1,5A						8861	web
100	3												8A	*4A													8660	48
160	3												12A														8661	web

\* 192 W 8A 12/12 version connected in series with input is excl el separation / 192 W 8A 12/12 versjon seriekoblet m. inngang er uten galvanisk skille

### Switch mode – with el. separation – regulated / med galvanisk skille – stabiliserte

81	3				3A	1,7A		0,7A					6A	3A	2,5A	1,5A	6A	3A	6A	3A	1,5A				6A	3A	8862	49
81	3												6A	3A					6A	3A			6A	3A	6A	3A	9262	50
158	2						6A						12A	7A				7A	12A	7A	3,5A				7A	9260	51	
158	2																		12A	7A				12A	7A	9660	52	

## CHARGERS FOR LEAD ACID BATTERIES

## LADERE FOR BLYBATTERIER

Max. charge current Maks. ladestrøm (A)	Input voltage (VAC) Inngangsspenning	Style Form	6V	12V	24V	36V	48V	Model Modell	Page Side
0,5	230	1	0,5A	0,5A				8614	web
0,65	230	1		0,65A				8714CV	web
0,8	230	2	0,8A	0,8A				7504	web
1	90-264	1	1A	0,7A	0,35A		0,18A	2740	56
1,3	90-264	2	1,3A	1,0A	0,5A		0,27A	2240	57
1,3	90-264	1	1,3A	1,0A	0,5A	0,35A	0,27A	2241	57
2,2	90-264	1-2		2,2A	1,2A		0,6A	2541-42	58
2,3	90-264	1-2		2,3A	1,3A	0,9A		9940-41	59
2,7	120/230	1	2,7A	2,7A	1,5A	1A		9640-41	60
4	90-264	2		4A	2A	1,4A	1A	2040-41-42	61
4	90-264	2		4A	2A			2140	62
4	90-264	2	4A	4A	2,5A	1,6A	1,2A	2440	63
5	230	3		5A	2,5A			9840	web
8,5	230 – 120/720	2	8,5A	7A	3,5A	2,3A	1,7A	2840-3240	64
7	95 – 264		8,5A	7A	3,5A		1,7A	3240	64
7	198-264			6,5A				3245	65
10	120/230	3		10A	5A	3,3A	2,5A	9740	66
10	230	2		10A	5A	3,3A	2,5A	2047	67
10	90-264	2		10A	5A	3,3A	2,5A	2043	68
20 (25)	120/230 – 230	2		20A (25A)	10A	6,7A	5A	2044-2944	69
20 (25)	230	2		20A (25A)	10A	6,7A	5A	2944	web
20	230	2		20A	10A	6,7A	5A	2045	70
20	120/230 (auto) – 230	2		20A	10A			2745-2945	71
40	230	2		40A	20A			2245	72
2,7	10-30VDC	2	2,7A	2A	1,2A			2544	73
4	90-264	2		2x2A	2x1A			2641 dual	74
5	90-264	2		2x5A				2841 dual	web
20	230	3		2x10A	10A			2640 dual	web
40	230	2		50A (2x25)	25A			9541 X2 dual	web

New!

## CHARGERS FOR NIMH/NICD BATTERIES

## LADERE FOR NIMH/NICD BATTERIER

Max. power Maks. effekt	Typical battery capacity Typisk batterikapasitet	Style Form	2	1-10	1-12	3-6	4-8	4-20	5-10	6-12	10-20	12-25	15-30	24-40	Model Modell	Page Side
100mA	1Ah	1			0,06A										8314	web
400mA	0,5-4Ah	1		0,4A											8714CC	web
800mA	8Ah	2			0,8A										7504	web
800W	5Ah	2						0,8A							2246	web
16W	Programmable	2	1,3A			1,3A	1A		0,8A	0,7A	0,4A				2115	76
16W	Programmable	1	1,3A			1,3A	1A		0,8A	0,7A	0,4A				2116	76
35W	Programmable	2	3,0A			3,0A	2,2A		1,8A	1,5A	0,9A				2215	77
35W	Programmable	1	3,0A			3,0A	2,2A		1,8A	1,5A	0,9A				2216	77
45W	Programmable	1				3,5A	2,8A		2,2A	1,8A	1,2A				2015	78
65W	Programmable	2				4,5A	4A		3,5A	3A	1,8A	1,5A	1,3A	0,9A	2415	79
32W	DC/DC programmable	2	3,0A			2,5A	2,2A		1,8A	1,5A	0,9A				2515	80

## CHARGERS FOR LI-ION BATTERIES

## LADERE FOR LI-ION BATTERIER

Max. output power Maks. utg. effekt (W)	Input voltage (VAC) Inngangsspenning	Style Form	Cells – Celler / Charge current – Ladestrøm (A)																Model Modell	Page Side
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	16			
10,5	90–264	1	1,0	1,0	0,7	0,6	0,5	0,4	0,35										2740LI	84
16,4	90–264	2	1,3	1,3	1,2	0,9	0,7	0,6	0,56										2240LI	85
16,4	90–264	1	1,3	1,3	1,2	0,9	0,7	0,6	0,56										2241LI	85
35	90–264	2-1	2,7	2,7	2,3	2	1,6	1,4	1,2	1			0,8				0,6		2541LI-42LI	86
40	90–264	2			2,3	2	1,3	1,3	1,3	1									9940LI-41LI	87
45	120/230	1		2,7	2,7	2,4	1,5	1,5	1,5	1,3									9641LI	88
60	90–264	2	4	4	4	3,5	2	2	2	1,7		1,4	1,3	1,2	1,1	1,0			2040-41-42LI	90
60	90–264	2	4	4	4	3,5	2	2	2	1,7		1,4	1,3	1,2	1,1	1,0			2140LI	web
74	90-264	2	4	4	4	3,5	3,3	2,8	2,5	2,1	1,9	1,8	1,6	1,45	1,35	1,3	1,0		2440LI	89
103	230/120-230 (auto)	2	8,5	8,0	7,0	6,0	4,5	3,9	3,5	3,0	2,7	2,4	2,2	2,0	1,8	1,7	1,5		2840LI-3240LI	91
35	10–30 VDC	2	3	2,7	2,3	2	1,6	1,4	1,2	1			0,8						2544LI	92

## CHARGERS FOR LIFEPO4 BATTERIES

## LADERE FOR LIFEPO4 BATTERIER

Max. output power Maks. utg. effekt (W)	Input voltage (VAC) Inngangsspenning	Style Form	Cells – Celler Charge current – Ladestrøm (A)																Model Modell	Page Side
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
16,4	90–264	1-2	1,3	1,3	1,2	0,9	0,7	0,6		0,56									2240-2241LiFe	96 <span>New!</span>
35	90–264	1-2	2,7	2,7	2,3	2	1,6			1,2									2541-2542LiFe	97 <span>New!</span>
60	90–264	1		4	4	4	2	2	2	2							0,6		2040-41-42LiFe	web
60	90–264	1		4	4	4	2	2	2	2							0,6		2140LiFe	web
72	90–264	2	4	4	4	4	3,9	3,3	2,8	2,5	2,2	1,95	0,8	1,65	1,5	1,4	1,3	1,2	2440 LiFe	98 <span>New!</span>
102	230/120-230 (Auto)	2	8,5	8,5	8	7	5,5	4,6	3,9	3,5	3,1	2,8	2,5	2,3	2,15	2	1,8	1,7	2840-3240LiFe	99 <span>New!</span>

For other LiFePO4 models, contact us for updates / For andre LiFePO4 modeller, kontakt oss for oppdateringer

## DC/AC INVERTERS

## DC/AC INVERTERE

Output waveform Kurvefasong	Max. power Maks. effekt (W)	Input voltage Inngangsspenning (V)	Style Form	Output voltage Utgangsspenning	Output socket Utgang stikkontakt	Model Modell	Page Side
Modified Sinewave Modifisert Sinus	110–140–140	12–24–48	2	230VAC	EU	9150	101
	150	12 or/eller 24	3			2984	102
	300	12 or/eller 24				2985	103
	600	12 or/eller 24				9986	104
	1000	12 or/eller 24				9987	105
	1500	12 or/eller 24				9988	106
Pure Sinewave Ren Sinus	150-300	12 or/eller 24				EU or UK	2284-85
	600-1000	12 or/eller 24	2286-87				108

## PRODUCTS WITH US/CANADIAN APPROVAL PRODUKTER M GODKJENNING FRA USA/CANADA

Max. output Maks. ut	Input voltage (VAC) Inngangsspenning	Style Form	Versions Versjoner	Model Modell	Page Side
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### AC/DC power supplies – strømforsynere

7,5 W	90–264	1	4,5/5/6/7,5/9/12/15 V	9725	20
10 W	90–264	1	5/7,5/12 V (fixed cord/fast ledning)	9525	21
40,8 W	120	1	13,2 (12) V	9619	web
16 W	90–264	2+1	12/16/24/48 V	2124-2126	web
40 W	90–264	2+1	5/9/12/16/24/48 V	9920-9921-9922	30

### Chargers – Ladere

2,3 A	90-264	2	12/24/36 V Lead Acid	9940	59
2,7 A	120	1	6/12/24/36 V Lead Acid	9641	60
10 A	90-264	2	12/24/36/48 V Lead Acid	2043	68
45 A	230	1	3–20 cells NiMH	2015	78
32 A	10-30VDC	2	2–20 cells NiMH	2515	80
45 A	190-264	1	2–8 cells NiMH	9641LI	88

PRODUCTS THAT ARE CERTIFIED ACCORDING  
TO STANDARD FOR ELECTROMEDICAL  
EQUIPMENT EN/UL 60601-1 3RD EDITION

PRODUKTER SOM ER SERTIFISERTE I HHT.  
STANDARD FOR ELEKTROMEDISINSK  
UTSTYR EN/UL 60601-1 3. UTGAVE

Max. output	Input voltage	Style	Output voltage	Model	Page
Maks. ut	Inngangsspenning (VAC)	Form	Utgangsspenning	Modell	Side

AC/DC power supplies – strømforsynere

16 W	90–264	2+1	6/12/16/24/36/48/60V	2220-21	29	New!
16 W	90–264	2	5/6/7,5/9/12/15/18/24V	3523	27	New!
28 W	90–264	2+1	5/6/7,5/9/12/15/18/24V	3326	25	New!
42 W	90–264	2+1	5/6/7,5/9/12/15/18/24V	3321	31	New!
70W	90–264	2	5/7/12/16/24/36/48/60/64V	2420	34	New!

Chargers for lead acid batteries – Ladere for blybatterier

1,3A	90–264	2+1	6/12/24/36V (36V: 2241 only)	2240-2241	57
2,2A	90–264	2+1	12/24/48 V	2541-2542	58
4A	90–264	2	12/24/36/48 V	2040-41-42	61
4A	90–264	2	12/24/36/48 V	2140	62
4A	90–264	2	6/12/24/36/48 V	2440	63
8,5A	230	2	5/13.2/24/36/48/60 V	2840	64
7A	120/130 (Auto)	2	6/12/24/36/48 V	3240	64

Chargers for NiMH/NiCd batteries – Ladere for NiMH/NiCd batterier

16W	90–264	2	2–20 cells	2115-2116	76
35W	90–264	2	2–20 cells	2215-2216	77

Chargers for Li-Ion batteries – Ladere for Li-Ion batterier

60W	90–264	2	1–14 cells	2140LI	web	
16,4W	90–264	2+1	1–7 cells	2240LI-2241LI	85	
35W	90–264	2	1–14 cells	2541LI-2542LI	86	
60W	90–264	2	1–14 cells	2040LI-41LI-42LI	90	
60W	90–264	2	1–14 cells	2440LI	89	New!
100W	230	2	1–16 cells	2840Li	91	
100W	120/230 (Auto)	2	1–16 cells	3240LI	91	

Chargers for LiFePO<sub>4</sub> batteries – Ladere for LiFePO<sub>4</sub> batterier

60W	90–264	2	1–14 cells	2140LiFe	web	
16,4W	90–264	2+1	1–7 cells	2240-2241LiFe	96	
35W	90–264	2	1–14 cells	2541-2542LiFe	97	
60W	90–264	2	1–14 cells	2040-41-42LiFe	web	
60W	90–264	2	1–14 cells	2440LiFe	98	New!
100W	230	2	1–16 cells	2840LiFe	99	New!
100W	120/230 (Auto)	2	1–16 cells	3240LiFe	99	New!

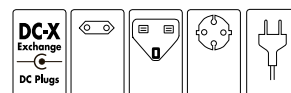


# AC/AC ADAPTERS AC/AC ADAPTERE



## 8310-8510-8610-8710-8810 Max. 3,5 - 20 VA

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Plug-in unit</li> <li>• Fixed output voltages</li> <li>• Thermal fuse in transformer</li> <li>• Exchangeable DC plugs</li> </ul>  | <ul style="list-style-type: none"> <li>• Plugg-inn enhet</li> <li>• Faste utgangsspenninger</li> <li>• Termosikring i transformator</li> <li>• Utskiftbare DC plugger</li> </ul>  |
| <p><b>8710 - 8810</b></p> <ul style="list-style-type: none"> <li>• Approvals:</li> <li>- Complies w. medical std EN 60601 (on request)</li> <li>- For updates: see <a href="http://www.mascot.no">www.mascot.no</a></li> </ul> | <p><b>8710 - 8810</b></p> <ul style="list-style-type: none"> <li>• Godkjenninger:</li> <li>- Tilfredsst. medisinsk std EN 60601 (på forespørsel)</li> <li>- For oppdat.: se <a href="http://www.mascot.no">www.mascot.no</a></li> </ul> |



8510 not  
8610 8310  
only

Technical specifications	Tekniske data		8310	8510	8610	8710	8810
Input voltage:	Inngangsspenning:	VAC	230 VAC +6/-10%, 50/60Hz				
Max. output power:	Maks. utgangseffekt:	VA	3,5	8,5	10,5	15	20
Insulation class:	Isolasjonsklasse:		II				
Electrical safety standard:	Elektrisk sikkerhetsstandard:		EN 60742	EN 60742 EN 60950	EN 60742	EN 60065, EN 60742 EN 60950	
EMC standards	EMC standarder		EN 61000-6-3 EN 61000-6-1				
• Emission:	• Emisjon:						
• Immunity:	• Immunitet:						
Dimensions excl. plug:	Mål uten plugg:	LxWxH mm	75x45x49	95x51x57		100x51x63	
Weight:	Vekt:	g	220	390	390	450	

### Voltage versions - Spenningsversjoner

VAC	Max. load (mA) / Maks. last (mA)				
	8310	8510	8610	8710	8810
3	1100	1500	2000	4000	
4,5	600	1000	1800	3200	
6	400	1300	1300	2300	3200
7,5	400	1300	1300	2300	3200
9	340	780	970	1600	2100
10,5	330			1400	1900
12		710	600	1100	1600
13	250				
15		510	640	1000	1300
16	220				
18	190	470	560	800	1100
21	160	340	340	700	950
24	140	310	380	500	850
28				490	700
35		140	260		
42	20			330	430

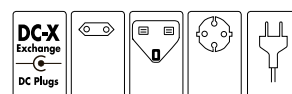
Individual data sheets are available at [www.mascot.com](http://www.mascot.com) / Individuelle dataark er tilgjengelige på [www.mascot.com](http://www.mascot.com)

# AC/DC LINEAR AC/DC LINEÆRE



## 8311-8511-8611-8711 Max. 1,2 - 10 W

- Plug-in unit
  - Fixed output voltages
  - Thermal fuse in transformer
  - Standard version has bridge rectifier and capacitor
  - Exchangeable DC plugs
- 8711**
- Approvals:
    - Complies w. medical std EN 60601 (on request)
    - For updates: see [www.mascot.no](http://www.mascot.no)
- Plugg-inn enhet
  - Faste utgangsspenninger
  - Termosikring i transformator
  - Standardversjonen leveres med brolikeretter og kondensator
  - Utskiftbare DC plugger
- 8711**
- Godkjenninger:
    - Tilfredsst. medisinsk std EN 60601 (på forespørsel)
    - For oppdat.: se [www.mascot.no](http://www.mascot.no)



8511 not  
8611 8311  
only

Technical specifications	Tekniske data		8311	8511	8611	8711
Input voltage:	Inngangsspenning:	VAC	230 VAC +6/-10%, 50/60Hz			
Max. output power:	Maks. utgangseffekt:	W	2,5	6,5	8	10
Insulation class:	Isolasjonsklasse:		II			
Electrical safety standard:	Elektrisk sikkerhetsstandard:		EN 60950			
EMC standards	EMC standarder		EN 60065	EN 60065	EN 60065	EN 60065
• Emission:	• Emisjon:		EN 61000-6-3			
• Immunity:	• Immunitet:		EN 61000-6-1			
Dimensions excl. plug	Mål uten plugg:	LxWxH mm	75x45x49	95x51x57		100x51x63
Weight:	Vekt:	g	220	390	390	450

### Voltage versions - Spenningsversjoner

VDC	Max. power (W) / Maks. effekt			
	8311	8511	8611	8711
1,5		1,9		
2	1,2			
3	1,5	3,5	2,0	6,0
4,5	2	4,5	4,0	7,0
6	2,5	5,5	6,0	8,0
7,5	2,5	5,5	6,5	8,5
9	2,5	6	7	10,0
10,5	2,5			10,0
12	2,5	6,5	7,5	10,0
15	2,5	6,5	8,0	10,0
18	2,5	6,5	7,5	10,0
21	2,5	6,5	8,0	10,0
24	2,5	6,5	8,0	10,0
28		6,5		10,0
30	2,5	6,5	8,0	
42		6,5	8,0	
48	2,5			

Individual data sheets are available at [www.mascot.com](http://www.mascot.com) / Individuelle dataark er tilgjengelige på [www.mascot.com](http://www.mascot.com)



**6823** Max. 12 WAlso available as multiple output power supply  $+5 \pm 12$  V

6 - 12 V

12 - 24 V

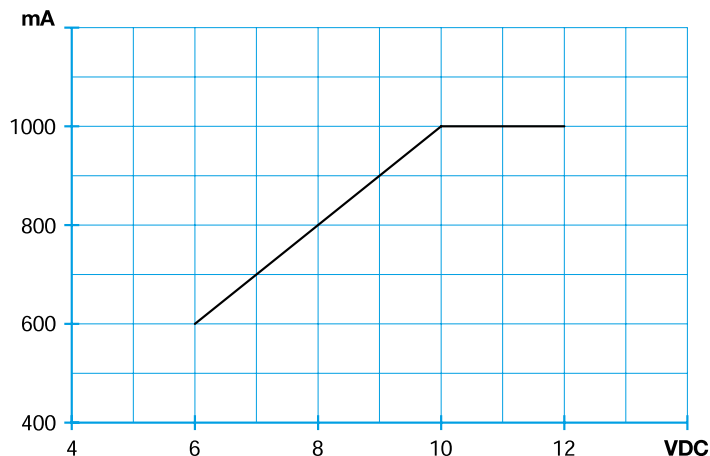
5 V Max. 8 W

- Stepless adjustable output voltage
- Thermal fuse in transformer
- Mains cord
- Cord or snap terminals
- Mounting bracket available
- Trinnløs justerbar utgangsspenning
- Termosikring i transformator
- Nettledning
- Sekundærledning eller snappkontakt
- Kan leveres med festebrakett



Technical specifications	Tekniske data	6-12 V*
Input voltage:	Inngangsspenning:	230 VAC $+6/-10\%$ , 50/60Hz
Output voltage:	Utgangsspenning:	6-12 VDC
Max. output power:	Maks. utgangseffekt:	12 W
Max. load current	Maks. laststrøm	
• 6-12 V:	• 6-12 V:	6 V / 0,6 A - 12 V / 1,0 A
• 12-24 V:	• 12-24 V:	0,5 A
Load regulation:	Lastregulering:	130 mV
Temperature range:	Temperaturområde:	$-10^{\circ}\text{C} - +40^{\circ}\text{C}$
Ripple:	Rippel:	3 mV RMS
Insulation class:	Isolasjonsklasse:	II
Insulation class:	Isolasjonsspenning:	3000 VAC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Dimensions (LxWxH):	Mål (LxBxH):	98 x 108 x 55 mm
Weight:	Vekt:	920 g

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

Diagram 6-12 V version  
Diagram 6-12 V versjon

## 8937 Max. 18 W

- Stepless adjustable output voltage
- Secondary switch
- Thermal fuse in transformer
- Mains cord
- Cable or snap terminals
- Mounting bracket available
- Trinnløs justerbar utgangsspenning
- Sekundærsvitsjet
- Termosikring i transformator
- Nettledning
- Sekundærledning eller snappkontakt
- Kan leveres med festebrakett



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	230 VAC +6/-10%, 50/60Hz
Output voltage:	Utgangsspenning:	5-24 VDC
Max. output power:	Maks. utgangseffekt:	18 W
Max. load current:	Maks. laststrøm	2,0 A
Load regulation:	Lastregulering:	2,0%
Line regulation:	Linjeregulering:	0,1%
Switch frequency:	Svitsjefrekvens:	33 kHz
Temperature range:	Temperaturområde:	-10°C - +40°C
Ripple:	Rippel:	10 mV RMS
Current limiting:	Strømbegrensning:	2,5 A *
Insulation class:	Isolasjonsklasse:	II
Insulation voltage:	Isolasjonsspenning:	3000 VAC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60065, EN 60950
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3, EN 60555
• Immunity:	• Immunitet:	EN 61000-6-1
Dimensions (LxWxH):	Mål (LxBxH):	98 x 108 x 55 mm
Weight:	Vekt:	1,0 kg

\* Current limiting is internally adjustable. / Strømbegrensning er innvendig justerbar.

# AC/DC PLUG-IN SWITCH MODE AC/DC PLUGG-INN SWITCH MODE



The switch mode technology makes our adapters compact and more efficient, and lower their stand-by power consumption.

From the introduction of the first models in the early 1990s, our range has expanded to include models with output power from 7,5W to 60W and with voltage versions from 4.5V to 48V. Choose a unit with exchangeable AC or DC plugs, universal input voltage – or ask for a quote for a unit with your own specifications.

NOTE: see also models next chapter AC/DC power supplies with exch. AC plugs for more plug-in options.

Svitsj-teknologien gjør våre adaptere svært kompakte, samtidig som de oppnår høyere virkningsgrad og lavere strømforbruk på tomgang.

Fra de første modellene på 1990-tallet har vårt utvalg i dag vokst til å omfatte utgangseffekter fra 7,5W til 60W og med spenningsversjoner fra 4,5V til 48V. Velg mellom modeller med utskiftbare AC DC-plugger og universal inngangsspenning – eller be om et tilbud på en modell tilpasset egne spesifikasjoner.

NB: se også modellene i neste kapittel AC/DC strømforsyninger med utskiftbare AC plugger for flere plugg-inn alternativer.

## 9725-2725 Max. 7,5 W

- Fixed output voltages
- Universal input voltage
- Short circuit proof
- Overvoltage protection
- Available with EU, UK, US or AUS plug-in terminals
- Other voltage versions on request
- Modular connector
- Approvals:
  - UL-approved (9725)
  - Complies w. medical std EN 60601 (2725)
  - For updates: see [www.mascot.no](http://www.mascot.no)
- Faste utgangsspenninger
- Universal inngangsspenning
- Kortslutningssikker
- Overspenningsbeskyttet
- Leveres med EU, UK, US eller AUS nettilkobling
- Andre spenningsversjoner på forespørsel
- Modulærkontakt
- Godkjenninger:
  - UL-godkjent (9725)
  - Tilfredsst. medisinsk std EN 60601 (2725)
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications\*

### Tekniske data\*

Input voltage:	Inngangsspenning:	90-264 VAC
Load regulation:	Lastregulering:	< 1% for 0 to full load
Line regulation:	Linjeregulering:	< 0,1%
Switch frequency (self oscillating):	Svitsjefrekvens (selvsvingende):	25-100 kHz
Temperature range:	Temperaturområde:	-10°C - +40°C
Ripple:	Rippel:	< 150 mV p-p 100 Hz
Efficiency:	Virkningsgrad:	> 70%
Current limiting, typical:	Strømbegrensning, typisk:	110%
Insulation class:	Isolasjonsklasse:	II
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950, UL 60950 (9725), EN 60601 (2725)
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3, FCC15B
• Immunity:	• Immunitet:	EN 61000-6-1
Reliability (MIL-HDBK-217F):	Pålitelighet (MIL-HDBK-217F):	MTBF > 300.000h at 230 VAC, 300 mA
Output terminals	Utgangsterminaler	
• Modular connector: (sec. cable optional)	• Modulærkontakt: (kan leveres med sek. ledning)	
Dimensions without plug (LxWxH):	Mål uten plugg (LxBxH):	75x32x40 mm
Weight:	Vekt:	65 g

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

### Voltage versions - Spenningsversjoner

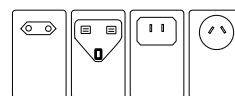
Output (VDC) Utgang (VDC)	Max. load (mA) Maks. last (mA) 9725	Max. load (mA) Maks. last (mA) 2725	Output power (W) Utgangseffekt (W)
4,5 ± 0,2 *	1000	1000	4,5
5,0 ± 0,2 *	1000	1000	5
6,0 ± 0,2 *	1000	1000	6
7,5 ± 0,3 *	720	730	5,5
9,0 ± 0,3 *	615	660	6
12 ± 0,5 *	600	600	7,2
15 ± 0,6 *	500	500	7,5
48 ± 2,5 *	-	160	7,5

\* Measured on the PCB / Målt på PCB



**9525** Max. 10 W

- Universal input voltage
- Short circuit proof
- Compact design
- Available with EU, UK, US or AUS plug-in terminals
- Other voltage versions on request
- Modular connector
- Cord not included
- Approvals:
  - Complies w. medical std EN 60601 (not certified)
  - UL approved (UL-60950-1)
  - For updates: see [www.mascot.no](http://www.mascot.no)
- Universal inngangsspenning
- Kortslutningssikker
- Kompakt design
- Leveres med EU, UK, US eller AUS nettilkobling
- Andre spenningsversjoner på forespørsel
- Modulærkontakt
- Leveres uten sekundærledning
- Godkjenninger:
  - Tilfredsst. medisinsk std EN 60601 (ikke sertifisert)
  - UL godkjent (UL-60950-1)
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)

**Technical specifications\*****Tekniske data\***

Input voltage:	Inngangsspenning:	90-264 VAC, 50/60 Hz
Load regulation - voltage:	Lastregulering - spenning:	<10mV
Line regulation - voltage:	Linjeregulering - spenning:	<10mV
Switch frequency (self oscillating):	Svitsjefrekvens (selvsvingende):	25-280 kHz
Max. inrush current:	Maks. inrush strøm:	20 A / 10 ms
Temperature range:	Temperaturområde:	-10°C - +40°C
Ripple:	Rippel:	100 mV p-p
Efficiency, typical:	Virkningsgrad, typisk:	> 70%
Current limiting, typical:	Strømbegrensning, typisk:	110%
Overvoltage protection:	Over spenningsbeskyttelse:	zener diode
Insulation class:	Isolasjonsklasse:	II
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950-1, EN60601-1
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Reliability (MIL-HDBK-217F):	Pålitelighet (MIL-HDBK-217F):	MTBF > 100.000h at 230 VAC/ 0,8 A/25°C
Output terminals	Utgangsterminaler	
• Modular connector: (sec. cable optional)	• Modulærkontakt: (kan leveres med sek. ledning)	
Dimensions without plug (LxWxH):	Mål uten plugg (LxBxH):	75x32x50 mm
Weight:	Vekt:	80 g

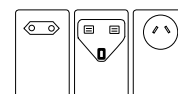
\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

**Voltage versions 9525 - Spenningsversjoner 9525**

Output (VDC) Utgang (VDC)	Max. load (mA) Maks. last (mA)	Outp. power (W) Utgangseffekt (W)
5	800	4,0
6	800	4,8
7,5	800	6,0
9	800	7,2
12	800	10
16	620	10
24	400	10

## 9923 Max. 12 W

- 8 fixed voltage versions from 4,5 to 24V
- 8 faste utgangsspenninger fra 4,5 til 24V
- Modular connector
- Modulærkontakt
- Available with EU, UK or AUS plug-in terminals
- Leveres med EU, UK eller AUS nettilkobling
- Other output voltages on request
- Andre spenningsversjoner leveres på forespørsel
- Cord not included
- Leveres uten sekundærledning



### Technical specifications\* Tekniske data\*

Input voltage:	Inngangsspenning:	190-264 VAC or 240-360 VDC
Load regulation:	Lastregulering:	<1%
Line regulation:	Linjeregulering:	<0.1%
Ripple:	Rippel:	<30mVp-p at max. load and 230VAC mains <30mV p-p ved maks. last og 230VAC nett
Efficiency (typical):	Virkningsgrad (typisk):	72%
Switch frequency:	Svitsjefrekvens:	38-45 kHz
Temperature range:	Temperaturområde:	-10°C - +40°C
Insulation class:	Isolasjonsklasse:	II
Insulation voltage:	Isolasjonsspenning:	3000 VAC / 4300 VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Mains connection:	Nettilkobling:	EU, UK, AUS plug-in
Output terminals:	Utgangsterminaler:	Modular connector Modulærkontakt
Dimensions (LxWxH):	Mål (LxBxH):	75x32x50 mm (without plug)
Weight:	Vekt:	80 g (without output cable)

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

#### Voltage versions 9923 - Spenningsversjoner 9923

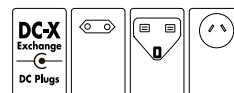
Output Utgang (VDC)	Max. load Maks. last (A)	Output power Utgangseffekt (W)
4,5	1,2	5,4
5	1,2	6,0
6	1,2	7,2
7,5	1,2	9,0
9	1,2	10,8
12	1	12,0
16	0,75	12,0
24	0,5	12,0

#### Adjustable voltage versions 9923 - Justerbare spenningsversjoner 9923

Output Utgang (VDC)	Max. load Maks. last (A)	Output power Utgangseffekt (W)
4,5-10	1,2	10,8
10-15	1	12
15-20	0,8	12
23-29	0,5	12

## 9829 Max. 19,5 W

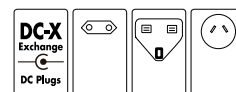
- 4,5-12 V or 12-30 V adjustable output voltage
- Compact design and light weight (135 g)
- Fixed cord, exchangeable DC plugs available
- Available with EU, UK or AUS plug-in terminals
- 4,5-12 V eller 12-30 V justerbar utgangsspenning
- Kompakt enhet, lett vekt (135 g)
- Fast ledning, kan leveres med utskiftbare DC plugger
- Leveres med EU, UK eller AUS nettilkobling



Technical specifications	Tekniske data	4,5-12 V	12-30 V
Input voltage:	Inngangsspenning:	200-250 VAC	
Output voltage – adjustable:	Utgangsspenning – justerbar:	4,5-12 V	12-30 V
Output power:	Utg. effekt:	Max 14,4W	Max 19,5W
Load current:	Laststrøm:	Max. 1,2A	Max. 0,65A
Load regulation:	Lastregulering:	0,5%	
Line regulation:	Linjeregulering:	0,1%	
Switchfrequency, approx.:	Svitsjefrekvens, ca:	47kHz	
Power consumption at idle, approx.:	Effektforbruk, tomgang, ca:	500mW	
Temperature range:	Temperaturområde:	-10°C - +40°C	
Ripple (typical):	Rippel (typisk):	100mVp-p	
Efficiency:	Virkningsgrad:	>80% at max output power	
Current limiting:	Strømbegrensning:	1,4A ± 0,2A	0,8A ± 0,15A
Insulation class:	Isolasjonsklasse:	II	
Insulation voltage:	Isolasjonsspenning:	3000 VAC / 4242 VDC	
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950	
EMC standards	EMC standarder		
• Emission:	• Emisjon:	EN 61000-6-3	
• Immunity:	• Immunitet:	EN 61000-6-1	
Mains connection:	Nettilkobling:	EU, UK, AUS plug-in	
Output terminals:	Utgangsterminaler:	Secondary cable Sekundærkabel	
Dimensions (LxWxH):	Mål (LxBxH):	75x32x50 mm (excl. plug)	
Weight:	Vekt:	135 g	

## 9827 Max. 24 W

- Compact design and light weight (135 g)
- 7 fixed standard output voltages from 4,5 - 24V
- Other output voltages on request
- Fixed cord, exchangeable DC plugs available
- Available with EU, UK or AUS plug-in terminals
- Kompakt enhet, bare 135g
- 7 faste utgangsspenninger fra 4,5 - 24V
- Andre spenningsversjoner på forespørsel
- Fast ledning, kan leveres med utskiftbare DC plugger
- Leveres med EU, UK eller AUS nettilkobling



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	200-250 VAC
Load regulation:	Lastregulering:	0.5%
Line regulation:	Linjeregulering:	0.1%
Ripple (typical) at nominal input voltage and full load:	Rippel (typisk) ved nom. nettspenning og maks uteffekt:	170mVp-p
Temperature range:	Temperaturområde:	-10°C - +40°C.
Insulation class:	Isolasjonsklasse:	II
Insulation voltage:	Isolasjonsspenning:	3000 VAC / 4242 VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Mains connection:	Nettilkobling:	EU, UK, AUS plug-in
Output terminals:	Utgangsterminaler:	Secondary cable / sekundærkabel
Dimensions (LxWxH):	Mål (LxBxH):	75 x 32 x 50 mm (excl. plug)
Weight:	Vekt:	135 g

### Voltage versions 9827 - Spenningsversjoner 9827

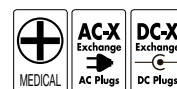
Output / Utgang (VDC)	Max. load / Maks. strøm (A)	Output power / Utgangseffekt (W)
4,5	1,8	8,0
6	1,8	11,0
7,5	1,8	13,5
9	1,6	14,0
12	1,6	19,0
15	1,6	24,0
24	0,9	21,5

### Adjustable voltage versions 9827 - Justerbare spenningsversjoner 9827

Output / Utgang (VDC)	Max. load / Maks. strøm (A)	Output power / Utgangseffekt (W)
4,5-8	1,8	14,4
8-15	1,6	24
15-22	0,9	19,8
22-30	0,7	21

**3326** Max. 28 W

- Universal input voltage
- Short circuit proof
- Exchangeable AC and DC plugs
- Eco-design (ERP-directive) compliant
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- Universal inngangsspenning
- Kortslutningssikker
- Utskiftbare AC og DC plugger
- Møter kravene i Øko-design direktivet (ERP)
- Godkjenninger:
  - Medisinsk sertifisert 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)

**Preliminary Technical specifications****Foreløpige Tekniske data****12 V\***

Input voltage:	Inngangsspenning:	90-264 VAC, 47-63 Hz
Line frequency:	Frekvensområde:	47 - 63 Hz
Load regulation:	Lastregulering:	< 1%
Mains regulation:	Linjeregulering:	< 0,5%
Switch frequency approx.:	Svitsjefrekvens ca.:	45 kHz
Overshoot: (90 - 10% load variation)	Oversving (90-10% lastvariasjon):	<200 mV
Undershoot: (10 - 90% load variation)	Undersving (10-90% lastvariasjon):	<250 mV
Temperature range	Temperaturområde	
• Operating:	• Drift:	-20 - +40°C
• With derating:	• Med derating:	+ 60°C
• Storage:	• Lagring:	-25 - +85°C
Derating:	Derating:	0.38W/°C over 40°C
Ripple:	Rippel:	< 120 mV p-p
Efficiency:	Virkningsgrad:	> 82 % at full load
Standby power:	Strømforkbruk på tomgang:	≤ 0,3 W
Insulation class:	Isolasjonsklasse:	II
Insulation voltage	Isolasjonsspenning	
• Primary - secondary:	• Primær - sekundær:	4000 VAC / 5700 VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN/IEC/ANSI 60601-1 3ed
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Output terminals:	Utgangsterminaler:	Cord with/without plug, exch. plugs available Sek.ledn. m/u plugg, tilgj. med utskiftb. plugger
Dimensions (LxWxH):	Ytre mål (LxBxH):	103.5 × 46.8 × 38.7mm
Weight:	Vekt:	200g

\* Some technical specifications may differ for other models and voltage versions. / Visse tekniske data kan variere for de forskjellige modeller og spenningsversjoner.

**Voltage versions - Spenningsversjoner**

Output (V) +/- 2,5% Utgang (V) +/- 2,5%	Max. current (A) Maks. strøm (A)	Max. output power (W) Maks. utgangseffekt (W)
5	3	15
6	2.5	15
7.5	2	15
9	2.5	22.5
12	2.33	28
15	1.86	28
18	1.55	28
24	1.16	28



# AC/DC POWER SUPPLIES, SWITCH MODE AC/DC KRAFTAGGREGATER, SWITCH MODE



The switch mode technology makes our power supplies compact and more efficient, and lower their stand-by power consumption.

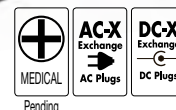
From the introduction of the first models in the 1970s, our range has expanded to include models with output power from 10W to 588W. Choose a unit with exchangeable AC or DC plugs, universal input voltage – or ask for a quote for a unit with your own specifications.

Svitsj-teknologien gjør våre strømforsynere kompakte, samtidig som de oppnår høyere virkningsgrad og lavere strømforbruk på tomgang.

Fra de første modellene på 1970-tallet har vårt utvalg i dag vokst til å omfatte utgangseffekter fra 10W til 588W. Velg mellom modeller med utskiftbare AC DC-plugger, universal inngangsspenning – eller be om et tilbud på en modell tilpasset egne spesifikasjoner.

## 3523 Max. 16 W

- Universal input voltage (90-264VAC)
- Fixed output voltages
- 2 pin IEC 320 connector
- Order mains cord separately
- Short circuit proof
- Exchangeable AC and DC plugs
- Eco-design (ERP-directive) compliant
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- Universal inngangsspenning (90-264VAC)
- Faste utgangsspenninger
- 2 pin IEC 320 kontakt
- Nettleddning bestilles separat
- Kortslutningssikker
- Utskiftbare AC og DC plugger
- Møter kravene i Øko-design direktivet (ERP)
- Godkjenninger:
  - Medisinsk sertifisert 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Preliminary Technical specifications

### Foreløpige Tekniske data

12 V\*

Input voltage:	Inngangsspenning:	90-264 VAC, 47-63 Hz
Line frequency:	Frekvensområde:	47 - 63 Hz
Load regulation:	Lastregulering:	< 1%
Mains regulation:	Linjeregulering:	< 0,5%
Switch frequency approx.:	Svitsjefrekvens ca.:	65 kHz
Overshoot: (90 - 10% load variation)	Oversving (90-10% lastvariasjon):	<200 mV
Undershoot: (10 - 90% load variation)	Undersving (10-90% lastvariasjon):	<250 mV
Temperature range	Temperaturområde	
• Operating:	• Drift:	-20 - +40°C
• With derating:	• Med derating:	+ 60°C
• Storage:	• Lagring:	-25 - +85°C
Derating:	Derating:	0,38W/°C over 40°C
Ripple:	Rippel:	< 100 mV p-p
Efficiency:	Virkningsgrad:	approx. 83 % at full load
Standby power:	Strømforbruk på tomgang:	≤ 0,3 W
Insulation class:	Isolasjonsklasse:	II
Insulation voltage	Isolasjonsspenning	
• Primary - secondary:	• Primær - sekundær:	4000 VAC / 5700 VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN/UL 60601-1 3ed
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Output terminals:	Utgangsterminaler:	Cord with/without plug, exch. plugs available Sek.ledn. m/u plugg, tilgj. med utskiftb. plugger
Dimensions (L×W×H):	Ytre mål (L×B×H):	86 × 50 × 29mm
Weight:	Vekt:	130g

\* Some technical specifications may differ for other models and voltage versions. / Visse tekniske data kan variere for de forskjellige modeller og spenningsversjoner.

### Voltage versions - Spenningsversjoner

Output (V) +/- 2,5% Utgang (V) +/- 2,5%	Max. current (A) Maks. strøm (A)	Max. output power (W) Maks. utgangseffekt (W)
5	2.4	12
6	2	12
7.5	1.6	12
9	1.33	12
12	1.33	16
15	1.06	16
18	0.88	16
24	0.66	16

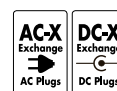
## 2924-2925-2926 Max. 16 W

2924 - 2-pin IEC 320

2925 - fixed mains cord/fast netledning

2926 - exchangeable AC plugs/utskiftbare

- Universal input voltage
  - Short circuit proof
  - Overvoltage protection
  - Exchangeable AC and DC plugs
  - Eco-design (ERP-directive) compliant
  - Mounting brackets available
  - Mains cord not included
  - Waterproof (IP67) version available
  - Approvals:
    - Complies w. medical std EN 60601
    - For updates: see [www.mascot.no](http://www.mascot.no)
- Universal inngangsspenning
  - Kortslutningssikker
  - Overspenningsbeskyttet
  - Utskiftbare AC og DC plugger
  - Møter kravene i Øko-design direktivet (ERP)
  - Festebraketter kan leveres
  - Nettledning ikke inkludert
  - Vanntett (IP67) versjon kan leveres
  - Godkjenninger:
    - Tilfredsst. medisinsk std EN 60601
    - For oppdat.: se [www.mascot.no](http://www.mascot.no)



2926

Preliminary Technical specifications	Foreløpige Tekniske data	13,2 V*
Input voltage:	Inngangsspenning:	90-264 VAC, 50/60 Hz
Line frequency:	Frekvensområde:	47 - 63 Hz
Load regulation:	Lastregulering:	< 1%
Mains regulation:	Linjeregulering:	< 0,5%
Switch frequency approx.:	Svitsjefrekvens ca.:	40 kHz
Overshoot: (90 - 10% load variation)	Oversving (90-10% lastvariasjon):	<300 mV
Undershoot: (10 - 90% load variation)	Undersving (10-90% lastvariasjon):	>500 mV
Temperature range	Temperaturområde	
• Operating:	• Drift:	-20 - +40°C
• With derating:	• Med derating:	+ 60°C
• Storage:	• Lagring:	-25 - +85°C
Derating:	Derating:	0,38W/°C over 40°C
Ripple:	Rippel:	< 100 mV p-p
Efficiency:	Virkningsgrad:	> 80 % at full load
Standby power:	Strømforsbruk på tomgang:	≤ 0,3 W
Insulation class:	Isolasjonsklasse:	II
Insulation voltage	Isolasjonsspenning	
• Primary - secondary:	• Primær - sekundær:	4000 VAC / 5700 VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950-1
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Output terminals:	Utgangsterminaler:	Cable with/without plug, exch. plugs available Sek.ledn. m/u plugg, tilgj. med utskiftb. plugger
Dimensions (LxWxH):	Ytre mål (LxBxH):	90 × 45 × 32mm
Weight:	Vekt:	115g (215g IP67 vers.)

\* Some technical specifications may differ for other models and voltage versions. / Visse tekniske data kan variere for de forskjellige modeller og spenningsversjoner.

### Voltage versions - Spenningsversjoner

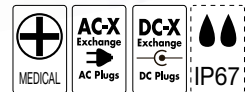
Output (V) +/- 2,5% Utgang (V) +/- 2,5%	Max. current (A) Maks. strøm (A)	Max. output power (W) Maks. utgangseffekt (W)
6	1,5	9
9	1,5	13,5
13,2	1,2	15
16	1,0	16
24	0,65	16
48	0,33	16

## 2220-2221 Max. 16 W

2220 - 2-pin IEC 320

2221 - with exch. / utskiftbare AC plugs

- Universal input voltage (90-264 VAC)
- Fixed output voltages
- 2-pin IEC 320 connector
- Order mains cord separately
- Mounting bracket available
- Exchangeable AC and DC plugs
- Waterproof (IP67) version available
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- Universal inngangsspenning (90-264 VAC)
- Faste utgangsspenninger
- 2-pin IEC 320 nettkontakt
- Nettleidning best. separat
- Festebrakett som tilbehør
- Utskiftbare AC og DC plugger
- Vanntett (IP67) versjon kan leveres
- Godkjenninger:
  - Medisinsk sertifisert 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



Technical specifications	Tekniske data	12 V*
Input voltage:	Inngangsspenning:	90-264 VAC
Line frequency:	Frekvensområde:	47 - 63Hz
Min. output current:	Min laststrøm:	0A
Load regulation:	Lastregulering:	<1 %
Mains regulation:	Linjeregulering:	<0,5%
Ripple:	Rippel:	< 100mV p-p
Efficiency (100% load):	Virkningsgrad (100% last):	> 81%
Switch frequency approx.:	Switchefrekvens ca.:	40 kHz
Hold up time:	Hold up time:	> 20ms
Temperature range:	Temperaturområde:	
• Operating:	• Drift:	-25 °C - +40 °C
• With derating:	• Med derating:	+60 °C
• Storage:	• Lagring:	-25 °C - +85 °C
Derating:	Derating:	0.38W/ °C over 40 °C
Safety:	Sikkerhet:	EN 60950-1, EN 60601-1, EN 60601-1-11
Insulation class:	Isolasjonsklasse:	Class II
Insulation voltage	Isolasjonsspenning	
• Primary - secondary:	• Primær - sekundær:	4000VAC / 5700VDC
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Reliability (MIL-HDBK-217F):	Pålitelighet (MIL-HDBK-217F):	MTBF > 250.000hrs at 30°C and full load
Input terminal:	Inngangsterminal:	2-pin IEC 320
Output terminals:	Utgangsterminal:	Cable with / without plug Sekundærled. m/u. plugg
Dimensions(LxWxH):	Ytre mål (LxBxH):	90 x 45 x 32mm
Weight:	Vekt:	2220: 115 g (215 g IP 67) / 2221: 140 g

\* Some technical specifications may differ for other models and voltage versions. / Visse tekniske data kan variere for de forskjellige modeller og spenningsversjoner.

### Voltage versions - Spenningsversjoner

Output (V) Utgangsspenning	Max. Current (A) Maks. strøm	Max. output power (W) Maks. utgangseffekt	On request: Output (V)	On request: Max. current (A)
6	1,3	9,5	4-8	1.3
12	1,3	15,6	8-15	1.3-1.05
16	1	16	12-20	1.3-0.8
24	0,67	16	20-28	0.8-0.58
36	0,44	16	28-40	0.58-0.41
48	0,33	16	40-52	0.41-0.31
60	0,27	16	52-64	0.31-0.25



## 9920-21-22-26 Max. 40 W

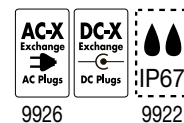
9920 - 3-pin IEC 320

9921 - 2-pin IEC 320

9922 - fixed mains cord / fast nettleledning

9926 - exchangeable AC plugs / utskiftbare

- Universal input voltage (90-264 VAC)
- Mounting bracket available
- Order mains cord separately
- Approvals:
  - Complies w. medical std. (EN 60601)
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- Universal inngangsspenning (90-264 VAC)
- Kan leveres med festebrakett
- Nettleledning best. separat
- Godkjenninger:
  - Tilfredst. medisinsk std. (EN 60601)
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

### 13,2 V\*

Input voltage:	Inngangsspenning:	90-264 VAC
Line frequency:	Frekvensområde:	47-63 Hz
Min. output current:	Min. laststrøm:	0A
Load regulation:	Lastregulering:	< 1%
Mains regulation:	Linjeregulering:	< 0,5%
Switch frequency approx.:	Svitsjefrekvens ca.:	40 kHz
Overshoot (90-10% load variation):	Oversving (90-10% lastvariasjon):	< 300 mV
Undershoot (10-90% load variation):	Undersving (10-90% lastvariasjon):	< 300 mV
Hold-up time:	Hold-up time:	> 20 ms
Temperature range	Temperaturområde	
• Operating:	• Drift:	-20 - +40°C
• With derating:	• Med derating:	+60°C
• Storage:	• Lagring:	-25 - +85°C
Derating:	Derating:	1W/°C over 40°C
Derating UL-version:	Derating UL-versjon:	TA from 30 to 40°C : 32W
Ripple:	Rippel:	50 mV p-p
Efficiency (at 100% load, 230 V):	Virkningsgrad (v. 100% last, 230 V):	ca 85 %
Current limiting:	Strømbegrensning:	Yes / Ja
Insulation class:	Isolasjonsklasse:	I
Insulation voltage	Isolasjonsspenning	
• Primary - secondary:	• Primær - sekundær:	4000 VAC / 5640 VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950, UL 60601-1
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Reliability (MIL-HDBK-217F):	Pålitelighet (MIL-HDBK-217F):	MTBF > 100.000hrs at 25°C and full load
Output terminals:	Utgangsterminaler:	Cable / Kabel incl. / excl. plug
Dimensions (LxWxH):	Ytre mål (LxBxH):	107 x 67 x 36,5mm (9920-21-22)
Weight:	Vekt:	250g (450g IP67 vers.)

\* Some technical specifications may differ for other models and voltage versions. / Visse tekniske data kan variere for de forskjellige modeller og spenningsversjoner.

### Voltage versions - Spenningsversjoner

Output / Utgang (V)	Max. current / Maks. strøm (A)	Max. output power / Maks. utgangseffekt (W)
5 *	3,5	17,5
9 *	3	27
13,2	3	40
16	2,5	40
24	1,6	40
48	0,8	40

\* UL-approval pending/  
Avventer UL-godkjenning



## 3321 Max. 42 W

- Universal input voltage (90-264VAC)
- Fixed output voltages
- 2 pin IEC 320 connector
- Order mains cord separately
- Short circuit proof
- Exchangeable DC plugs
- Eco-design (ERP-directive) compliant
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- Universal inngangsspenning (90-264VAC)
- Faste utgangsspenninger
- 2 pin IEC 320 kontakt
- Nettledning bestilles separat
- Kortslutningssikker
- Utskiftbare DC plugger
- Møter kravene i Øko-design direktivet (ERP)
- Godkjenninger:
  - Medisinsk sertifisert EN 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Preliminary Technical specifications

Input voltage:	Inngangsspenning:	90-264 VAC, 47-63 Hz
Line frequency:	Frekvensområde:	47 - 63 Hz
Load regulation:	Lastregulering:	< 1%
Mains regulation:	Linjeregulering:	< 0,5%
Switch frequency approx.:	Svitsjefrekvens ca.:	52 kHz
Overshoot: (90 - 10% load variation):	Oversving (90-10% lastvariasjon):	<200 mV
Undershoot: (10 - 90% load variation):	Undersving (10-90% lastvariasjon):	<250 mV
Temperature range	Temperaturområde	
• Operating:	• Drift:	-20 - +40°C
• With derating:	• Med derating:	+ 60°C
• Storage:	• Lagring:	-25 - +85°C
Derating:	Derating:	1W/°C over 40°C
Ripple:	Rippel:	< 100 mV p-p
Efficiency:	Virkningsgrad:	Approx. 84 % at full load
Standby power:	Strømførbud på tomgang:	≤ 0,3 W
Insulation class:	Isolasjonsklasse:	II
Insulation voltage	Isolasjonsspenning	
• Primary - secondary:	• Primær - sekundær:	4000 VAC / 5700 VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN/UL 60601-1 3ed
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Output terminals:	Utgangsterminaler:	Cord with/without plug, exch. plugs available Sek.ledn. m/u plugg, tilgj. med utskiftb. plugger
Dimensions (L×W×H):	Ytre mål (L×B×H):	112 × 58 × 35mm
Weight:	Vekt:	260g

### Foreløpige Tekniske data

12 V\*

\* Some technical specifications may differ for other models and voltage versions. / Visse tekniske data kan variere for de forskjellige modeller og spenningsversjoner.

### Voltage versions - Spenningsversjoner

Output (V) +/- 2,5% Utgang (V) +/- 2,5%	Max. current (A) Maks. strøm (A)	Max. output power (W) Maks. utgangseffekt (W)
5	5	25
6	4.16	25
7.5	3.33	25
9	4	36
12	3.5	42
15	2.8	42
18	2.33	42
24	1.75	42

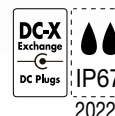
## 2020-2021-2022 Max. 60 W

2020 - 3-pin IEC 320

2021 - 2-pin IEC 320

2022 - fixed mains cord / fast nettleddning

- Universal input voltage
- Compact and light weight
- High efficiency
- Mounting bracket available
- Order mains cord separately
- Exchangeable DC plugs
- Waterproof (IP67) version available
- Approvals:
  - Complies w. medical std EN 60601
  - For updates: see [www.mascot.no](http://www.mascot.no)
- Universal inngangsspenning
- Kompakt enhet, lett vekt
- Høy virkningsgrad
- Kan leveres med festebrakett
- Nettleddning best. separat
- Utskiftbare DC plugger
- Vanntett (IP67) versjon kan leveres
- Godkjenninger:
  - Tilfredsst. medisinsk std EN 60601
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications\*

### Tekniske data\*

Input voltage:	Inngangsspenning:	90-264 VAC, 50/60 Hz
Line frequency:	Frekvensområde:	47-63 Hz
Max. output power:	Maks. utgangseffekt:	60 W
Min. output current:	Min. laststrøm:	0 A
Load regulation:	Lastregulering:	< 0,5%
Mains regulation:	Linjeregulering:	< 0,5%
Ripple:	Rippel:	<100 mV p-p
Efficiency, approx.:	Virkningsgrad, ca.:	80 %
Switch frequency approx.:	Svitsjefrekvens ca.:	40 kHz
Overshoot (90-10% load variation):	Oversving (90-10% lastvariasjon):	< 300 mV
Undershoot (10-90% load variation):	Undersving (10-90% lastvariasjon):	< 300 mV
Hold up time:	Hold up time:	> 20 ms
Temperature range	Temperaturområde	
• Operating:	• Drift:	-20°C - +40°C
• With derating:	• Med derating:	+60°C
• Storage:	• Lagring:	-25°C - +85°C
Derating:	Derating:	1W/°C over 40°C
Insulation class:	Isolasjonsklasse:	I (2020) - II (2021,2022)
Insulation voltage	Isolasjonsspenning	
• Primary - secondary:	• Primær - sekundær:	4000 VAC / 5640 VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60601-1, EN 60950
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Output terminals:	Utgangsterminaler:	Cable with/without plug Sekundærledning med/uten plugg
Dimensions (LxWxH):	Ytre mål (LxBxH):	135 x 80 x 44 mm
Weight:	Vekt:	350 g (850g IP67 vers.)

\* Some technical specifications may differ for other models and voltage versions. / Visse tekniske data kan variere for de forskjellige modeller og spenningsversjoner.

### Voltage versions - Spenningsversjoner

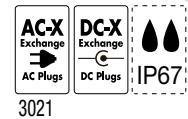
Output Utgang (V)	Max. current Maks. strøm (A)	Max. output power Maks. utgangseffekt (W)
9	4,5	40
13,2	4,5	60
16	3,75	60
24	2,5	60

## 3020-3021 Max. 60 W

### 3020 - 2-pin IEC 320

### 3021 - exchangeable AC plugs

- Universal input voltage
- Compact and light weight
- High efficiency >87%
- Low standby power <0,5W
- Complies w. medical std EN 60601 (not certified)
- Mounting bracket available
- Mains cord not included
- Exchangeable DC plugs
- Waterproof (IP67) version available
- Universal inngangsspenning
- Kompakt enhet, lett vekt
- Høy virkningsgrad >87%
- Lav tomgangseffekt <0,5W
- Tilfredsst. medisinsk std EN 60601 (ikke sertifisert)
- Kan leveres med festebrakett
- Nettleddning ikke inkludert
- Utskiftbare DC plugger
- Vanntett (IP67) versjon kan leveres



3021

#### Technical specifications\*

#### Tekniske data\*

Input voltage:	Inngangsspenning:	90-264 VAC, 50/60 Hz
Line frequency:	Frekvensområde:	47-63 Hz
Max. output power:	Maks. utgangseffekt:	60 W
Load regulation:	Lastregulering:	< 0,5%
Mains regulation:	Linjeregulering:	< 0,5%
Ripple:	Rippel:	<100 mV p-p
Efficiency, approx.:	Virkningsgrad, ca.:	>87% (avg. of 25,50,75 and 100% load)
Standby power:	Strømforbruk på tomgang:	≤ 0,5 W
Switch frequency approx.:	Svitsjefrekvens ca.:	65 kHz
Overshoot (90-10% load variation):	Oversving (90-10% lastvariasjon):	< 350 mV
Undershoot (10-90% load variation):	Undersving (10-90% lastvariasjon):	< 400 mV
Hold up time:	Hold up time:	> 20 ms
Temperature range	Temperaturområde	
• Operating:	• Drift:	-20°C - +40°C
• With derating:	• Med derating:	+60°C
• Storage:	• Lagring:	-25°C - +85°C
Derating:	Derating:	1W/°C over 40°C
Insulation class:	Isolasjonsklasse:	II
Insulation voltage	Isolasjonsspenning	
• Primary - secondary:	• Primær - sekundær:	4000 VAC / 5700 VDC
Electrical safety standards:	Elektrisk sikkerhetsstandarder:	EN 60601-1, EN 60950
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Output terminals:	Utgangsterminaler:	Cable with/without plug Sekundærledning med/uten plugg
Dimensions (LxWxH):	Ytre mål (LxBxH):	107 × 67 × 36,5 mm 3021: 117 × 75 × 44 mm
Weight:	Vekt:	280 g (480 g IP67 vers.)

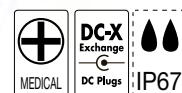
\* Some technical specifications may differ for other models and voltage versions. / Visse tekniske data kan variere for de forskjellige modeller og spenningsversjoner.

#### Voltage versions - Spenningsversjoner

Output (V) Utgang (V)	Max. current (A) Maks. strøm (A)	Max. output power (W) Maks. utgangseffekt (W)
6	8	48
7,5	7	52,5
9	6	54
12	5	60
16	3,75	60
24	2,5	60

## 2420 Max. 70 W

- Universal input voltage (90-264 VAC)
- Fixed output voltages
- 2-pin IEC 320 connector
- Order mains cord separately
- Mounting bracket available
- Exchangeable DC plugs
- Waterproof (IP67) version available
- Approvals:
  - Medically certified EN 60601-1 3ed
  - Home Healthcare EN 60601-1-11
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- Universal inngangsspenning (90-264 VAC)
- Faste utgangsspenninger
- 2-pin IEC 320 nettkontakt
- Nettledning best. separat
- Festebrakett som tilbehør
- Utskiftbare DC plugger
- Vanntett (IP67) versjon kan leveres
- Godkjenninger:
  - Medisinsk sertifisert EN 60601-1 3ed
  - Med. hjemmebruk EN 60601-1-11
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

12V\*

Input voltage:	Inngangsspenning:	90-264 VAC
Line frequency:	Frekvensområde:	47 - 63Hz
Min. output current:	Min laststrøm:	0A
Load regulation:	Lastregulering:	<1%
Mains regulation:	Linjeregulering:	<0,5%
Ripple:	Rippel:	< 100mV p-p
Efficiency (100% load):	Virkningsgrad (100% last):	> 81%
Switch frequency approx.:	Switchfrekvens ca.:	40 kHz
Hold up time:	Hold up time:	> 20ms
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25 °C - +40 °C
• With derating:	• Med derating:	+60 °C
• Storage:	• Lagring:	-25 °C - +85 °C
Derating:	Derating:	1.2W/ °C over 40 °C
Electrical safety standards:	Elektrisk sikkerhetsstandarder:	EN 60950-1, EN 60601-1, EN 60601-1-11
Insulation class:	Isolasjonsklasse:	Class II (Class I on request)
Insulation voltage	Isolasjonsspenning	
• Primary - secondary:	• Primær - sekundær:	4000VAC / 5700VDC
EMC standards	EMC standarder	
• Medical	• Medisinsk	EN 60601-1-2
• Emission	• Emisjon	EN 61000-6-3
• Immunity	• Immunitet	EN 61000-6-1
Reliability (MIL-HDBK-217F):	Pålitelighet (MIL-HDBK-217F):	MTBF > 100.000hrs at 25°C and full load
Input terminal:	Inngangsterminal:	2-pin IEC 320 (3-pin or fixed cord on request)
Output terminal:	Utgangsterminal:	Cable with / without plug Sekundærled. m/u. plugg
Dimensions (LxWxH):	Ytre mål (LxBxH):	135 x 80 x 44mm
Weight:	Vekt:	390 g (890 g IP 67)

\* Some technical specifications may differ for other models and voltage versions. / Visse tekniske data kan variere for de forskjellige modeller og spenningsversjoner.

### Voltage versions - Spenningsversjoner

Output (V) Utgangsspenning	Max. output power (W) Maks. utgangseffekt	On request Output (V)	On request Max. current (A)
5	27	4 - 6	4.5
7	41	6 - 9	4.5
12	55	9 - 14.5	4.5
16	69	14.5 - 21	4.0 - 3.8
24	70	21 - 34	2.5 - 2.3
36	70	34 - 44	2.05 - 1.8
48	72	44 - 55	1.6 - 1.4
60	69	55 - 63	1.25 - 1.15
64	67	63 - 67	1.1 - 1.05

## 9320 Max. 70 W

- Fixed output voltages
- Short circuit proof
- Mains cord
- Cord, Hella jack or cigarette lighter plug
- LED on front
- Mounting brackets available
- Faste utgangsspenninger
- Kortslutningssikker
- Nettledning
- Sekundærledning, Hellakontakt eller sigarettlighter plugg
- Lysdiode på front
- Festebraketter kan leveres



### Technical specifications

### Tekniske data

### 13,2 V\*

Input voltage:	Inngangsspenning:	198-264 VAC / 260-340 VDC
Output voltage:	Utgangsspenning:	13,2 VDC
• Internally adjustable:	• Innvendig justerbar:	12,0 - 14,5 VDC
Max. output power:	Maks. utgangseffekt:	70 W
Max. load current:	Maks. laststrøm:	5 A
Load regulation:	Lastregulering:	< 3,0%
Line regulation:	Linjeregulering:	< 0,6%
Switch frequency:	Svitsjefrekvens:	35 kHz
Temperature range:	Temperaturområde:	-10°C - +40°C
Ripple:	Rippel:	< 50 mV p-p 100 Hz < 50 mV p-p 35 kHz
Efficiency:	Virkningsgrad:	> 80%
Current limiting:	Strømbegrensning:	Yes / Ja
Overvoltage protection:	Overspenningsbeskyttelse:	zener
Insulation class:	Isolasjonsklasse:	II
Insulation voltage:	Isolasjonsspenning:	3000 V
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Dimensions (LxWxH):	Mål (LxBxH):	130 × 87 × 46 mm
Weight:	Vekt:	400 g

\* Some technical specifications may differ for other models and voltage versions. / Visse tekniske data kan variere for de forskjellige modeller og spenningsversjoner.

### Voltage versions 9320 - Spenningsversjoner 9320

Input (VAC) Inngang (VAC)	Output (VDC) / Utgang (VDC)		Max. current (A) Maks. strøm (A)	Max. output power (W) Maks. utgangseffekt (W)
	Nom. / Nom.	Adjustable / Justerbar		
230	9	8,5 - 10,0	5	50
230	13,2	12,0 - 14,5	5	70
230	16	15,5 - 18,0	4,4	70
230	24 *	23,5 - 27,0	3	70
230	36	33,0 - 38,0	2	70

\* Available with bracket for DIN-rail montage / Tilgjengelig med ferdig monterte braketter for DIN-skinne montering



## 9726 Max. 96 W

- Universal input voltage
- 3-pin IEC 320 connector
- Short circuit proof
- Cord or Hella jack
- Mounting brackets available
- Mains cord
- Approvals:
  - Complies w. medical std. (EN 60601)
  - For updates: see [www.mascot.no](http://www.mascot.no)
- Universal inngangsspenning
- 3-pin IEC 320 kontakt
- Kortslutningssikker
- Sekundærledning eller Hellakontakt
- Festebraketter kan leveres
- Nettledning
- Godkjenninger:
  - Tilfredst. medisinsk std. (EN 60601)
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

13,2 V\*

Input voltage:	Inngangsspenning:	90-264 VAC
Output voltage:	Utgangsspenning:	13,2 VDC
• Internally adjustable	• Innvendig justerbar:	12,0 - 14,5 VDC
Max. output power	Maks. utgangseffekt	
• 230 V mains:	• 230 V nettspenning:	95 W
• 115 V mains:	• 115 V nettspenning:	70 W
Max. load current	Maks laststrøm	
• 230 V mains:	• 230 V nettspenning:	7 A
• 115 V mains:	• 115 V nettspenning:	5 A
Load regulation:	Lastregulering:	< 3,0%
Line regulation:	Linjeregulering:	< 0,6%
Switch frequency:	Svitsjefrekvens:	40 kHz
Overshoot:	Oversving:	< 200 mV
Undershoot:	Undersving:	< 200 mV
Inrush current:	Påslagsstrøm:	< 30 A
Hold up time:	Hold up time:	> 20 ms
Temperature range:	Temperaturområde:	-20°C - +40°C
Derating:	Derating:	3 W/°C over 40°C
Ripple:	Rippel:	< 50 mV p-p
Efficiency:	Virkningsgrad:	83%
Current limiting:	Strømbegrensning:	Yes / Ja
Overvoltage protection:	Overspenningsbeskyttelse:	zener
Insulation class:	Isolasjonsklasse:	I
Insulation voltage	Isolasjonsspenning	
• Primary-secondary:	• Primær-sekundær:	4000 VAC / 5640 VDC
• Primary-chassis:	• Primær-chassis:	1500 VAC / 2200 VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950, UL 1950, UL 2601-1
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Reliability (MIL-HDBK-217F):	Pålitelighet (MIL-HDBK-217F):	MTBF > 185.000h at 25°C, 95 W
Dimensions (LxWxH):	Mål (LxBxH):	168 x 100 x 52 mm
Weight:	Vekt:	600 g

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

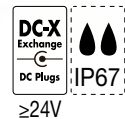
### Voltage versions 9726 - Spenningsversjoner 9726

Input (VAC) Inngang (VAC)	Output (VDC) / Utgang (VDC)		Max. current (A) / Maks. strøm (A)		Max. output power (W) / Maks. utgangseffekt (W)	
	Nom. / Nom.	Adjustable Justerbar	230 V	115V	230V	115V
90-264	13,2	12,0 - 14,5	7	5	95	70
90-264	16	15,0 - 18,0	6	4	95	70
90-264	24	22,0 - 28,0	3,5	3	95	72
90-264	48	45,0 - 50,0	2,0	1,5	96	72

## 2820-3220 Max. 100 W

### 3220: Autodetect 115/230 VAC

- Fixed output voltages
- High efficiency and low standby power (ErP Directive)
- 2-pin IEC 320 connector
- Order mains cord separately
- Mounting bracket available
- Exchangeable DC plugs ( $\geq 24V$ )
- Waterproof (IP67) version available
- Approvals:
  - Medically certified std EN 60601 3ed
  - For updates: see [www.mascot.no](http://www.mascot.no)
- Faste utgangsspenninger
- Høy virkningsgrad og lav tomgangsstrøm (ErP Direktivet)
- 2-pin IEC 320 nettkontakt
- Nettledning best. separat
- Festebrakett som tilbehør
- Utskiftbare DC plugger ( $\geq 24V$ )
- Vanntett (IP67) versjon kan leveres
- Godkjenninger:
  - Medisinsk sertifisert EN 60601 3ed
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	198-264VAC
Line frequency:	Frekvensområde:	47 - 63Hz
Min. output current:	Min laststrøm:	0A
Load regulation:	Lastregulering:	<1%
Mains regulation:	Linjeregulering:	<0.5%
Ripple:	Rippel:	< 50mV p-p
Efficiency (100% load):	Virkningsgrad (100% last):	> 90%
Standby power:	Strømforbruk, tomgang:	< 0,5 W
Switch frequency approx.:	Switchfrekvens ca.:	60-65 kHz
Hold up time:	Hold up time:	> 20ms
Temperature range	Temperaturområde	
• Operating:	• Drift:	-20 °C - +40 °C
• With derating:	• Med derating:	+60 °C
• Storage:	• Lagring:	-25 °C - +85 °C
Derating:	Derating:	2.5W/ °C over 40 °C
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950, EN 60601-1
Insulation class:	Isolasjonsklasse:	Class II
Insulation voltage	Isolasjonsspenning	
• Primary - secondary:	• Primær - sekundær:	4000VAC / 5700VDC
EMC standards	EMC standarder	
• Medical	• Medisinsk	EN 60601-1-2
• Emission	• Emisjon	EN 61000-6-3
• Immunity	• Immunitet	EN 61000-6-1
Reliability (MIL-HDBK-217F):	Pålitelighet (MIL-HDBK-217F):	MTBF > 100.000hrs at 25°C and full load
Input terminal:	Inngangsterminal:	2-pin IEC 320
Output terminal:	Utgangsterminal:	Cable with / without plug Sekundærled. m/u. plugg
Dimensions (LxWxH):	Ytre mål (LxBxH):	2820: 135 x 80 x 44mm / 3220: 160 x 81 x 44,3mm
Weight:	Vekt:	2820: 485 g / 3220: 590 g

### Selected versions - see web for complete list

Voltage versions Spenningsversjoner	Output voltage Utgangsspenning	Max. current Maks. strøm	Max. output power Maks. utgangseffekt
5V	4 - 6V	8,5A	51W
13.2V	9 - 13.2V	8.5A-7.8A	103W
24V	13.2 - 24V	7.5A-4.2A	101W
36V	28 - 38V	3.6A-2.7A	103W
48V	38 - 48V	2.7A-2.1A	101W
60V	55 -63V	1.8A-1.6A	101W

## 2025 Max. 135 W

- Universal input voltage
- PFC - Power Factor Correction
- Short circuit proof
- 3-pin IEC 320 mains connector
- Order mains cord separately
- Universal inngangsspenning
- PFC - Power Factor Correction
- Kortslutningssikker
- 3-pin IEC 320 nettkontakt
- Nettledning best. separat



Technical specifications	Tekniske data	12V	24V	48V
Input voltage:	Inngangsspenning:	90 – 264VAC		
Line frequency:	Frekvensområde:	47 – 63Hz		
Power factor, typical:	Effekt faktor, typisk:	0,93		
Output voltage, nom.:	Utgangsspenning, nom.:	13,2V	24V	48V
Adjustable:	Justerbar i området:	12-14,5V	22-28V	45-50V
Max. output power	Maks. utgangseffekt:	135W		
Max. output current:	Max laststrøm:	10A	5A	2,5A
Min. output current:	Min. laststrøm:	0A		
Load regulation	Lastregulering	<1%	<0.5%	<0.2%
Mains regulation:	Linjeregulering:	<0.1%		
Ripple:	Rippel:	< 150mV p-p		
Efficiency (at 100% charge):	Virkningsgrad (v. 100% last):	> 80%	> 82%	>85%
Switch frequency approx.:	Svitsjefrekvens ca.:	65kHz		
Current limitation at approx.:	Strømbegrensning ved ca.:	11A	6A	2.8A
Input surge current limitation:	Påslagstrøm:	< 30A		
Hold up time:	Hold up time:	> 20 ms		
Temperature range	Temperaturområde			
• Operating:	• Drift:	-25 - +40°C		
• With derating:	• Med derating:	+60°C		
• Storage:	• Lagring:	-25 - +85°C		
Derating:	Derating:	3W/ °C over 40°C		
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950		
Insulation class:	Isolasjonsklasse:	I		
Insulation voltage	Isolasjonsspenning			
• Primary - ground:	• Primær - jord:	3000V AC		
• Primary - secondary:	• Primær - sekundær:	1500V AC		
• Secondary - ground:	• Sekundær - jord:	500V AC		
EMC standards	EMC standarder			
• PFC:	• PFC:	EN 61000-3-2 class D,		
• Emission:	• Emisjon:	EN 61000-6-3		
• Immunity:	• Immunitet:	EN 61000-6-1		
Indication:	Indikasjon:	Green LED in front Grønn lysdiode i front		
Terminals:	Terminaler:	Secondary cable/Sekundærledning		
Dimensions (LxWxH):	Ytre mål (LxBxH):	210 x 148 x 58mm		
Weight:	Vekt:	1,4 kg		

## 2922 Max. 145 W

- Fixed output voltages
- Complies w. medical std EN 60601 (not certified)
- High efficiency
- Low standby power
- Short circuit proof
- Mains cord
- 6,3 mm push-on terminals. Also available with cable
- Mounting brackets available
- Faste utgangsspenninger
- Tilfredsst. medisinsk std EN 60601 (ikke sertifisert)
- Høy virkningsgrad
- Lav tomgangseffekt
- Kortslutningssikker
- Nettledning
- 6,3 mm flatstiftkontakter. Også tilgjengelig med sekundærledning
- Festebraketter kan leveres



### Technical specifications

### Tekniske data

### 13,2 V\*

Input voltage:	Inngangsspenning:	198-264 VAC / 260-340 VDC
Load regulation:	Lastregulering:	< 1,2%
Line regulation:	Linjeregulering:	< 0,1%
Switch frequency:	Svitsjefrekvens:	65 kHz
Overshoot:	Oversving:	< 250 mV
Undershoot:	Undersving:	< 450 mV
Inrush current:	Påslagsstrøm:	< 30 A
Hold-up time:	Hold-up time:	> 20 ms
Temperature range:	Temperaturområde:	-20°C - +40°C
Derating:	Derating:	3 W/°C over 40°C
Ripple:	Rippel:	< 10 mV p-p
Efficiency:	Virkningsgrad:	89% at full load
Standby power:	Strømforbruk på tomgang:	< 0,5 W
Current limitation at approx:	Strømbegrensning ved ca.:	12 A (12V version)
Overvoltage protection:	Overspenningsbeskyttelse:	Tranzorb
Insulation class:	Isolasjonsklasse:	II
Insulation voltage:	Isolasjonsspenning:	4000 VAC / 5700 VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60065, EN 60601-1, EN 60950-1
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Dimensions (L×W×H):	Mål (L×B×H):	168 × 100 × 52 mm
Weight:	Vekt:	690 g

\* Some technical specifications may differ for other models and voltage versions. / Visse tekniske data kan variere for de forskjellige modeller og spenningsversjoner.

### Voltage versions - Spenningsversjoner

Input (VAC) Inngang (VAC)	Output (VDC) / Utgang (VDC)		Max. current (A) Maks. strøm (A)	Max. output power (W) Maks. utgangseffekt (W)
	Nom. / Nom.	Adjustable / Justerbar		
230	5	5,0 - 6,5	12	78
230	13,2	12,0 - 14,5	11	145
230	16	14 - 18	8	140
230	24	22,0 - 28,0	6	145
230	48	45,0 - 50,0	3	145

## 8921 Max. 290 W

- Fixed output voltages
- Short circuit proof and thermal protection
- 6,3 mm push-on terminal, grounded
- LED on front
- Fixed mains cord with grounded Europlug
- Available in 120 VAC version
- Available on request with dual outputs separated with blocking diodes
- Faste utgangsspenninger
- Kortslutnings- og termisk sikret
- 6,3 mm flatstiftkontakter, inkl. jord
- Lysdiode på front
- Fast nettledding med jordet Europlugg
- Tilgjengelig i 120 VAC versjon
- Tilgj. på forespørsel med to utganger adskilt med sperredioder



### Technical specifications

### Tekniske data

### 13,5 V\*

Input voltage:	Inngangsspenning:	190-264 VAC (100-130 VAC)
Output voltage:	Utgangsspenning:	13,5 VDC
• Internally adjustable:	• Innvendig trimbar:	11,5 - 15,5 VDC
Max. output power:	Maks. utgangseffekt:	270 W
Max. load current:	Maks. laststrøm:	20 A
Load regulation:	Lastregulering:	0,15%
Line regulation:	Linjeregulering:	0,05%
Switch frequency:	Svitsjefrekvens:	67 kHz
Temperature range:	Temperaturområde:	-10°C - +30°C
Ripple:	Rippel:	20 mV p-p / 67 kHz
Efficiency:	Virkningsgrad:	86%
Insulation class:	Isolasjonsklasse:	I
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Dimensions (LxWxH):	Mål (LxBxH):	210 x 148 x 58mm
Weight:	Vekt:	1,55 kg

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

### Voltage versions 8921 - Spenningsversjoner 8921

Input (VAC) Inngang (VAC)	Output (VDC) / Utgang (VDC)		Max. current (A) Maks. strøm (A)	Max. output power (W) Maks. utgangseffekt (W)
	Nom. / Nom.	Adjustable / Justerbar		
120 / 230	13,5	11,5 - 15,5	20	270
120 / 230	24*	22,0 - 30,0	12	290
120 / 230	48	40,0 - 60,0	6	290

\* Available with bracket for DIN-rail montage / Tilgjengelig med ferdig montert brakett for DIN-skinne montering



## 2225 Max. 588 W

- Fixed output voltages
- Switch mode
- High efficiency (>85%)
- PFC - Power Factor Correction
- Short circuit proof
- 3-pin IEC 320 mains connector
- Screw terminals
- Custom design on request
- Faste utgangsspenninger
- Switch mode
- Høy virkningsgrad (>85%)
- PFC - Power Factor Correction
- Kortslutningssikker
- 3-pin IEC 320 nettkontakt
- Leveres med skruterminaler
- Tilpasninger på forespørsel



Technical specifications	Tekniske data	13,2V	24V
Input voltage:	Inngangsspenning:	198 - 264V AC	
Line frequency:	Frekvensområde:	47 - 63Hz	
Power factor:	Effekt faktor:	0,95 typ.	
Output voltage, nominal:	Utgangsspenning:	13,2V	24V
Output voltage, adjustable:	Justerbar i området:	12 - 14,7V	22 - 28V
Max. output power:	Maks. utgangseffekt:	588W	
Max. output current:	Maks. laststrøm:	40A	20A
Min. output current:	Min. laststrøm:	0A	
Load regulation	Lastregulering	<0.5%	
Mains regulation (100% load):	Linjeregulering (100% belast.):	<0,1%	
Ripple:	Rippel:	< 150mV p-p	
Efficiency (100% load):	Virkningsgrad (100% last):	> 85%	
Switch frequency approx.:	Svitsjefrekvens ca.:	67kHz	
Current limitation at approx.:	Strømbegrensning ved ca.:	42A	22A
Input surge current limitation:	Påslagstrøm:	< 30A	
Hold-up time:	Hold-up time:	> 20ms	
Temperature range	Temperaturområde		
• Operating:	• Drift:	-20 - +40 °C	
• With derating:	• Med derating:	+60 °C	
• Storage:	• Lagring:	-25 - +85 °C	
Derating:	Derating:	15W/ °C over 40 °C	
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950-1	
Insulation class:	Isolasjonsklasse:	I	
Insulation voltage	Isolasjonsspenning		
• Primary - ground:	• Primær - jord:	1500V AC	
• Primary - secondary:	• Primær - sekundær:	3000V AC	
• Secondary - ground:	• Sekundær - jord:	500V AC	
EMC standards	EMC standarder	PFC: EN 61000-3-2 class D	
• Emission	• Emisjon	EN 61000-6-3	
• Immunity	• Immunitet	EN 61000-6-1	
Indication:	Indikasjon:		
Green LED indicator:	Grønn LED indikator:	Power On	Nett tilkoblet
Yellow LED indicator:	Gul LED indikator:	Overload	Overlast
Terminals:	Terminaler:	Screw terminal Skruterminaler	
Dimensions (LxWxH):	Ytre mål (LxBxH):	330 x 186 x 63,5mm	
Weight:	Vekt:	3,15kg	

# DC/DC CONVERTERS DC/DC CONVERTERE



## THE COMMON REQUIREMENT...

**...for DC/DC converters is transforming a battery voltage into another, more useful and well regulated voltage.**

A typical battery voltage may be 12, 24, or 48V DC, but the output voltage of the battery can vary over a wide range during loading or charging.

In such an application for an electronic system, the DC/DC converter is required to accept this wide input voltage range and produce a stable, well regulated output voltage to run the electronic system.

## DET GRUNNLEGGENDE KRAVET...

**...til DC/DC convertere er å omforme en batterispenning til en annen, mer egnet og stabilisert spenning.**

En typisk batterispenning kan være 12, 24 eller 48 V DC, men utgangsspenningen på et batteri kan variere over et vidt område under belastning eller lading.

I slike elektriske installasjoner er det nødvendig at DC/DC converteren kan klare et så vidt inngangsspenningsområde og likevel produsere en stabil utgangsspenning til drift av det elektroniske utstyret.

## 9061 Max. 27 W

- Protected against reversed polarity (input)
- Protected against overvoltage (output)
- 6,3 mm push-on terminals (input and output)
- Common negative connection for input and output
- CE and "E"-marked
- Sikret mot polvendning (inngang)
- Overspenningsbeskyttet (utgang)
- 6,3 mm flatstiftkontakter (inn- og utgang)
- Felles minus for inn- og utgang
- CE og "E"-merket



Technical specifications	Tekniske data	24/12 V*
Input voltage:	Inngangsspenning:	20-32 VDC
Output voltage:	Utgangsspenning:	13,5 VDC
Max. output power	Maks. utgangseffekt	
• Continuous:	• Kontinuerlig:	27 W
• Intermittent:	• Kortvarig:	40 W
Load current	Laststrøm	
• Continuous (-20°C - +25°C):	• Kontinuerlig (-20°C - +25°C):	2,0 A
• Intermittent:	• Kortvarig:	3,0 A
• Linearly derating to (at +60°C):	• Lineært avtagende til (ved +60°C):	1,0 A
Load regulation (0-2,0 A load and 24 VDC input voltage):	Lastregulering (0-2,0 A last og 24 VDC inngangsspenning):	< 5,0%
Line regulation (20-32 V input voltage and 2 A load):	Linjeregulering (20-32 V inngangsspenning og 2 A last):	< 5,0%
No load current approx.:	Tomgangsstrøm ca.:	8 mA
Temperature range:	Temperaturområde:	-20°C - +25°C
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Dimensions (LxWxH):	Mål (LxBxH):	70,5 × 105 × 46 mm
Weight:	Vekt:	250 g

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

### Voltage versions 9061 - Spenningsversjoner 9061

Version Versjon	Input (VDC) Inngang (VDC)	Output (VDC) Utgang (VDC)	Max. current (A) / Maks. strøm (A)	
			Continuous Kontinuerlig	Intermittent Kortvarig
12 / 5	8-16	5	1	1,4
12 / 6	10-16	6	3	4
12 / 7,5	10-16	7,5	3	4
12 / 9	10-16	9	3	4
24 / 6	20-32	6	1,5	3
24 / 7,5	20-32	7,5	1,6	3
24 / 9	20-32	9	1,7	3
24 / 12	20-32	13,5	2	3
24 / 12 (backup)	20-32	13,5 (14,5 backup)	2	3 (1 A backup)

## 8662 Max. 80 W

- Protected against reversed polarity 8 A fuse (input)
- Protected against overvoltage at approx. 16 V (output)
- 6,3 mm push-on terminals (input and output)
- Common negative connection for input and output
- Specially designed for car stereo equipment
- CE and "E"-marked
- Sikret mot polvending, 8 A sikring (inngang)
- Overspenningsbeskyttet ved ca. 16 V (utgang)
- 6,3 mm flatstiftkontakter (inn- og utgang)
- Felles minus for inn- og utgang
- Spesielt beregnet for bilstereo utstyr
- CE og "E"-merket



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	20-32 VDC
Output voltage:	Utgangsspenning:	13,5 VDC
Max. output power	Maks. utgangseffekt	
• Continuous:	• Kontinuerlig:	80 W
• Intermittent:	• Kortvarig:	100 W
Load current	Laststrøm	
• Continuous (-20°C - +25°C):	• Kontinuerlig (-20°C - +25°C):	6,0 A
• Intermittent:	• Kortvarig:	8,0 A
• Linearly derating to (at +60°C):	• Lineært avtagende til (ved +60°C):	3,0 A
Load regulation (0-6,0 A load and 24 VDC input voltage):	Lastregulering (0-6,0 A last og 24 VDC inngangsspenning):	< 15,0%
Line regulation (20-30 V input voltage and 6 A load):	Linjeregulering (20-30 V inngangsspenning og 6 A last):	< 5,0%
No load current approx.:	Tomgangsstrøm ca.:	5 mA
Temperature range:	Temperaturområde:	-20°C - +25°C
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Dimensions (LxWxH):	Mål (LxBxH):	129 x 115 x 62 mm
Weight:	Vekt:	500 g

## 5060 Max. 41 W

- Compact design
- Light weight (200 g)
- High efficiency
- Short circuit proof
- Terminal blocks (screw terminals)
- Kompakt enhet
- Lett vekt (200 g)
- Høy virkningsgrad
- Kortslutningssikker
- Skruterminaler



Technical specifications	Tekniske data	
Input voltage:	Inngangsspenning:	18-32 VDC.
Output voltage:	Utgangsspenning:	13,6 VDC $\pm$ 2,5%
Max. output power	Maks. utgangseffekt:	
• Continuous:	• Kontinuerlig:	41W
• Intermittent:	• Kortvarig:	81W
Load current	Laststrøm	
• Continuous:	• Kontinuerlig:	3 A
• Intermittent:	• Kortvarig:	6 A
Load regulation:	Lastregulering:	2%
Line regulation:	Linjeregulering:	2%
Efficiency:	Virkningsgrad:	90 %
No load current:	Tomgangsstrøm:	Approx 12 mA at 24V input voltage
Temperature range:	Temperaturomr.:	-20 °C to + 60 °C
Switch frequency:	Svitsjefrekvens:	1-80kHz
Current limit:	Strømbegrensning:	24 A $\pm$ 0,5 A
Ripple:	Rippel:	110 mV p-p
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Protection:	Sikring:	10 A
The converter is protected against reversed input polarity. The 10A fuse is in series with input.	Sikret mot feil polaritet på inngang. Sikringen på 10A er koblet i serie med inngang.	
Short circuit protected.	Kortslutningssikret.	
Input:	Inngangsterminal:	Terminal blocks (screw terminals) Skruterminaler
Output:	Utgangsterminal:	Terminal blocks (screw terminals) Skruterminaler
Dimensions (LxWxH):	Mål (LxBxH):	64 x 98 x 48 mm
Weight:	Vekt:	200 g



## 9460 Max. 106 W

- Protected against reversed polarity and overvoltage (transorb diode against transients > 51 V). 8 A fuse (input)
- Thermal protection, short circuit proof and overvoltage protection at approx. 16 V (output)
- Common negative connection for input and output
- 6,3 mm push-on terminals (input and output)
- CE and "E"-marked
- Sikret mot polvendning og overspenning (transorb diode mot transienter > 51 V). 8 A sikring (inngang)
- Termisk sikret, kortslutningssikker og overspenningsbeskyttet ved ca. 16 V (utgang)
- Felles minus for inn- og utgang
- 6,3 mm flatstiftkontakter (inngang og utgang)
- CE og "E"-merket



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	18-32 VDC
Output voltage:	Utgangsspenning:	13,2 VDC
• Internally adjustable:	• Innvendig justerbar:	9,0-14,5 VDC
Max. output power	Maks. utgangseffekt	
• Continuous:	• Kontinuerlig:	106 W
• Intermittent:	• Kortvarig:	145 W
Load current	Laststrøm	
• Continuous (-20°C - +30°C):	• Kontinuerlig (-20°C - +30°C):	8,0 A
• Intermittent:	• Kortvarig:	11,0 A
• Linearly derating to (at +60°C):	• Lineært avtagende til (ved +60°C):	6,0 A
Load regulation (0-8,0 A load and 24 V input voltage):	Lastregulering (0-8,0 A last og 24 V inngangsspenning):	3%
Line regulation (21-32 V input voltage and 8 A load):	Linjeregulering (21-32 V inngangsspenning og 8 A last):	2%
Switch frequency approx.:	Svitsjefrekvens ca.:	55 kHz
No load current approx.:	Tomgangsstrøm ca.:	50 mA
Temperature range:	Temperaturområde:	-20°C - +30°C
Ripple (8 A load and 28 V input voltage):	Rippel (8 A last og 28 V inngangsspenning):	50 mV p-p
Efficiency (8 A load and 28 V input voltage):	Virkningsgrad (8 A last og 28 V inngangsspenning):	86%
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Dimensions (LxWxH):	Mål (LxBxH):	155 x 107 x 47 mm
Weight:	Vekt:	400 g

**9970** Max. 276 W

- Switch mode
- Compact design
- Over 90% efficiency
- Short circuit proof
- Terminal blocks (screw terminals)
- CE and "E"-marked
- Switch mode
- Kompakt enhet
- Høy virkningsgrad > 90%
- Kortslutningssikker
- Skruterminaler
- CE og "E"-merket



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	20 - 30 VDC
Output voltage:	Utgangsspenning:	13,8 VDC ± 0,1%
Max. output power	Maks. utgangseffekt	
• Continuous:	• Kontinuerlig:	276W
• Intermittent:	• Kortvarig:	317W
Load current	Laststrøm	
• Continuous:	• Kontinuerlig:	20 A
• Intermittent:	• Kortvarig:	23 A
Load regulation:	Lastregulering:	1%
Line regulation:	Linjeregulering:	<0,1%
Efficiency:	Virkningsgrad:	>90 %
No load current:	Tomgangsstrøm:	0,15A
Temperature range:	Temperaturområde:	0° to + 40° C
Switch frequency:	Svitsjefrekvens:	33 kHz
Current limiting:	Strømbegrensning:	24 A ± 0,5 A
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Protection:	Sikring:	15 A
The converter is protected against reversed input polarity.	Sikret mot feil polaritet på inngang. Sikringen på 15 A er koblet i serie med inngang.	
Short circuit protected.	Kortslutningssikret.	
Input:	Inngangsterminal:	Terminal blocks (screw terminals) Skruterminaler
Output:	Utgangsterminal:	Terminal blocks (screw terminals) Skruterminaler
Dimensions (LxWxH):	Mål (LxBxH):	203 x 102 x 63 mm
Weight:	Vekt:	0,9 kg

## 8660 Max. 100 W

- Protected against reversed polarity and overvoltage. Fuse at input
- Thermal protection, and short circuit proof (output)
- Input and output are electrically separated from chassis. The input is electrically separated from output.
- 6,3 mm push-on terminals (input and output)
- CE and "E"-marked
- Sikret mot polvendning og overspenning. Sikring på inngang
- Termisk sikret, og kortslutnings-sikker (utgang)
- Inn- og utgang er galvanisk skilt fra chassis. Inngang er galvanisk skilt fra utgang.
- 6,3 mm flatstiftkontakter (inngang og utgang)
- CE og "E"-merket



Technical specifications	Tekniske data	12/24 V*
Input voltage:	Inngangsspenning:	10-16 VDC
Output voltage:	Utgangsspenning:	24 VDC
Max. output power	Maks. utgangseffekt	
• Continuous:	• Kontinuerlig:	100 W
• Intermittent:	• Kortvarig:	120 W
Load current	Laststrøm	
• Continuous (-20°C - +25°C):	• Kontinuerlig (-20°C - +25°C):	4,0 A
• Intermittent:	• Kortvarig:	5,0 A
• Linearly derating to (at +60°C):	• Lineært avtagende til (ved +60°C):	0,8 A
Switch frequency approx.:	Svitsjefrekvens ca.:	33 kHz
No load current approx.:	Tomgangsstrøm ca.:	300 mA
Temperature range:	Temperaturområde:	-20°C - +25°C
Ripple (4 A load and 12 V input voltage):	Rippel (4 A last og 12 V inngangsspenning):	5 mV RMS
Efficiency (4 A load and 15 V input voltage):	Virkningsgrad (4 A last og 15 V inngangsspenning):	81%
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Dimensions (L×W×H):	Mål (L×B×H):	220 × 105 × 70 mm
Weight:	Vekt:	1 kg

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

### Voltage versions 8660 - Spenningsversjoner 8660

Version versjon	Input (VDC) Inngang (VDC)	Output (VDC) Utgang (VDC)	Max. current (A) Maks. strøm (A)	
			Continuous Kontinuerlig	Intermittent Kortvarig
12 / 12	10-16	12	8	10
12 / 24	10-16	24	4	5
12 / 12 used as / benyttet som 12 / 24	It is also possible to make a 12 V to 24 V converter with a 8 A current capability by using the 12/12 V version to connect the input voltage in series with the output. Note that there will then be no galvanic separation between input and output. Ved å benytte 12/12 V versjon kan det lages 12 / 24 V (8 A) ved å koble inngangsspenningen i serie med utgangen. Det galvaniske skillet blir borte.			

See [www.mascot.com](http://www.mascot.com) for voltage /load graph, graf for spenning / last

## 8862 Max. 81 W

- Protected against reversed polarity and overvoltage (transorb diode against transients). Switches off automatically at input voltages over or under the specified range. Fuse at input.
- Thermal protection, short circuit proof and overvoltage protection (output)
- Input and output are electrically separated from chassis. The input is electrically separated from output.
- 6,3 mm push-on terminals (input and output)
- CE and "E"-marked
- Sikret mot polvendning og overspenning (transorb diode mot transienter). Automatisk utkobling v/spenninger over eller under det spesifiserte området. Sikring på inngang.
- Termisk sikret, kortslutningssikker og overspenningsbeskyttet (utgang)
- Inn- og utgang er galvanisk skilt fra chassis. Inngang er galvanisk skilt fra utgang.
- 6,3 mm flatstiftkontakter (inngang og utgang)
- CE og "E"-merket



Technical specifications	Tekniske data	24/12 V*
Input voltage:	Inngangsspenning:	18-32 VDC
Output voltage:	Utgangsspenning:	13,2 VDC
Max. output power	Maks. utgangseffekt	
• Continuous:	• Kontinuerlig:	81 W
• Intermittent:	• Kortvarig:	132 W
Load current	Laststrøm	
• Continuous (-20°C - +30°C):	• Kontinuerlig (-20°C - +30°C):	6,0 A
• Intermittent:	• Kortvarig:	10,0 A
• Linearly derating to (at +60°C):	• Lineært avtagende til (ved +60°C):	4,0 A
Load regulation (0-6,0 A load and 24 VDC input voltage):	Lastregulering (0-6,0 A last og 24 VDC inngangsspenning):	5%
Line regulation (20-32 V input voltage and 6 A load):	Linjeregulering (20-32 V inngangsspenning og 6 A last):	5%
Switch frequency approx.:	Svitsjefrekvens ca.:	50 kHz
No load current approx.:	Tomgangsstrøm ca.:	90 mA
Temperature range:	Temperaturområde:	-20°C - +30°C
Ripple (6 A load and 28 V input voltage):	Rippel (6 A last og 28 V inngangsspenning):	10 mV RMS
Efficiency (6 A load and 28 V input voltage):	Virkningsgrad (6 A last og 28 V inngangsspenning):	85%
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Dimensions (LxWxH):	Mål (LxBxH):	135 x 119 x 46 mm
Weight:	Vekt:	600 g

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

### Selected versions – see web for complete list

Version Versjon	Input (VDC) Inngang (VDC)	Output (VDC) Utgang (VDC)	Max. current (A) Maks. strøm (A)	
			Continuous Kontinuerlig	Intermittent Kortvarig
12 / 24	10-16	24	1,7	2,2
24 / 12*	18-32	13,2	6	10
24 / 24	18-32	24	3	4
48 / 24	40-64	24	3	4
48 / 48	40-64	48	1,5	2

\* 24/12 and 24/24 V versions are over- and undervoltage protected. / 24/12 og 24/24 V versjonene er over- og underspenningsbeskyttet.

## 9262 Max. 81 W

- Designed for electrical forklift trucks and other electromotive applications where high voltage transients may occur
- Protected against reversed polarity and overvoltage (transorb diode against transients). 6,3 A fuse (input)
- Thermal protection, short circuit proof and overvoltage protection (output)
- Input and output are electrically separated from chassis. The input is electrically separated from output
- 6,3 mm push-on terminals (input and output)
- Waterproof (IP67) version available
- CE and "E"-marked
- Beregnet for elektriske gaffeltrucker og annet elektrisk utstyr med store spenningstransienter
- Sikret mot polvending og overspenning (transorb diode mot transienter). 6,3 A sikring (inngang)
- Termisk sikret, kortslutningssikker og overspenningsbeskyttet (utgang)
- Inn- og utgang er galvanisk skilt fra chassis. Inngang er galvanisk skilt fra utgang
- 6,3 mm flatstiftkontakter (inngang og utgang)
- Vannrett (IP67) versjon kan leveres
- CE og "E"-merket



Technical specifications	Tekniske data	48/12 V*
Input voltage (transients up to 150 V):	Inng.spennning (transienter opp til 150 V):	40-64 VDC
Input voltage without transients:	Inng.spennning uten transienter:	40-100 VDC
Output voltage:	Utgangsspenning:	13,2 VDC
Max. output power	Maks. utgangseffekt	
• Continuous:	• Kontinuerlig:	81 W
• Intermittent:	• Kortvarig:	110 W
Load current	Laststrøm	
• Continuous (-20°C - +30°C):	• Kontinuerlig (-20°C - +30°C):	6,0 A
• Intermittent:	• Kortvarig:	8,0 A
• Linearly derating to (at +60°C):	• Lineært avtagende til (ved +60°C):	3,0 A
Load regulation (0-6,0 A load):	Lastregulering (0-6,0 A last):	5%
Line regulation (6 A load):	Linjeregulering (6 A last):	5%
Switch frequency approx.:	Svitsjefrekvens ca.:	50 kHz
No load current approx.:	Tomgangsstrøm ca.:	50 mA
Temperature range:	Temperaturområde:	-20°C - +30°C
Ripple (6 A load):	Rippel (6 A last):	10 mV RMS
Efficiency (6 A load):	Virkningsgrad (6 A last):	83%
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Dimensions (LxWxH):	Mål (LxBxH):	135 x 119 x 46 mm
Weight:	Vekt:	600 g (950g IP67 vers.)

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

### Voltage versions 9262 - Spenningsversjoner 9262

Version Versjon	Input (VDC) Inngang (VDC)		Output (VDC) Utgang (VDC)	Max. current (A) Maks. strøm (A)	
	With transients Med transienter	Without transients Uten transienter		Continuous Kontinuerlig	Intermittent Kortvarig
24 / 12*	21-32	21-40	13,2	6	8
24 / 24	21-32	21-40	24	3	4
48 / 12	40-64	40-100	13,2	6	8
48 / 24	40-64	40-100	24	3	4
72 / 12	60-96	60-120	13,2	6	8
72 / 24	60-96	60-120	24	3	4
80 / 12	72-110	72-160	13,2	6	8
80 / 24	70-110	72-160	24	3	4

\* 24/12 version are over- and undervoltage protected. / 24/12 versjonen er over- og underspenningsbeskyttet.



## 9260 Max. 158 W

- Protected against reversed polarity and over-voltage (transorb diode against transients). Switches off automatically at input voltages over or under the specified range
- Thermal protection, short circuit proof and overvoltage protection (output)
- Input and output are electrically separated from chassis. The input is electrically separated from output
- 6,3 mm push-on terminals (input and output)
- Mounting brackets available
- CE and "E"-marked
- Sikret mot polvending og overspenning (transorb diode mot transienter) Automatisk utkobling v/spenninger over eller under det spesifiserte området
- Termisk sikret, kortslutningssikker og overspenningsbeskyttet (utgang)
- Inn- og utgang er galvanisk skilt fra chassis. Inngang er galvanisk skilt fra utgang
- 6,3 mm flatsstiftkontakter (inngang og utgang)
- Festebraketter kan leveres
- CE og "E"-merket



Technical specifications	Tekniske data	24/12 V*
Input voltage:	Inngangsspenning:	18-32 VDC
Output voltage:	Utgangsspenning:	13,2 VDC
• Internally adjustable:	• Innvendig justerbar:	11,5-14,5 VDC
Max. output power	Maks. utgangseffekt	
• Continuous:	• Kontinuerlig:	158 W
• Intermittent:	• Kortvarig:	210 W
Load current	Laststrøm	
• Continuous (-20°C - +25°C):	• Kontinuerlig (-20°C - +25°C):	12,0 A
• Intermittent:	• Kortvarig:	16,0 A
• Linearly derating to (at +60°C):	• Lineært avtagende til (ved +60°C):	6,5 A
Load regulation (0-12,0 A load):	Lastregulering (0-12,0 A last):	2%
Line regulation (12 A load):	Linjeregulering (12 A last):	5%
Switch frequency approx.:	Svitsjefrekvens ca.:	55 kHz
No load current approx.:	Tomgangsstrøm ca.:	60 mA
Temperature range:	Temperaturområde:	-20°C - +25°C
Ripple (12 A load):	Rippel (12 A last):	50 mV p-p
Efficiency (12 A load):	Virkningsgrad (12 A last):	82%
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Dimensions (L×W×H):	Mål (L×B×H):	210× 148 × 58 mm
Weight:	Vekt:	1,1 kg

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

### Voltage versions 9260 - Spenningsversjoner 9260

Version Versjon	Input (VDC) Inngang (VDC)	Output (VDC) / Utgang (VDC)		Max. current (A) / Maks. strøm (A)		Max. output power (W) / Maks. utgangseffekt (W)	
		Nom. Nom.	Adjustable Justerbar	Continuous Kontinuerlig	Intermittent Kortvarig	Continuous Kontinuerlig	Intermittent Kortvarig
10-32 / 12	10-32	13,2	11,5-14,5	6	8	79	105
24 / 12*	18-32	13,2	11,5-14,5	12	16	158	210
24 / 24	18-32	24	20,0-29,0	7	9	168	216
36 / 24	30-48	24	20,0-29,0	7	8		192
48 / 12	40-64	13,2	11,5-14,5	12	16		216
48 / 24	40-64	24	20,0-29,0	7	9		
48 / 48	40-64	48	42,0-50,0	3,5	7		
80 / 24	70-140	24	20,0-29,0	7	9		

\* 24/12 versions are over- and undervoltage protected. / 24/12 versjonene er over- og underspenningsbeskyttet.

## 9660 Max. 158 W

- Designed for electrical forklift trucks and other electromotive applications where high voltage transients may occur
- Protected against reversed polarity and overvoltage (transorb diode against transients). Switches off automatically at input voltages over or under the specified range
- Thermal protection, short circuit proof and overvoltage protection (output)
- Input and output are electrically separated from chassis
- The input is electrically separated from output
- 6,3 mm push-on terminals (input and output)
- Mounting brackets available
- Beregnet for elektriske gaffeltrucker og annet elektrisk utstyr med store spenningstransienter
- Sikret mot polvending og overspenning (transorb diode mot transienter). Automatisk utkobling v/spenninger over eller under det spesifiserte området
- Termisk sikret, kortslutningssikker og overspenningsbeskyttet (utgang)
- Inn- og utgang er galvanisk skilt fra chassis
- Inngang er galvanisk skilt fra utgang
- 6,3 mm flatstiftkontakter (inngang og utgang)
- Festebraketter kan leveres



### Technical specifications

### Tekniske data

### 48/12 V\*

Input voltage (Transients up to 150 VDC):	Inngangsspenning (Transienter opp t.o.m. 150 VDC):	40 VDC to 96 VDC
Input voltage without transients:	Inngangsspenning uten transienter:	40 VDC to 120 VDC
Output voltage:	Utgangsspenning:	13,2 VDC
• Internally adjustable:	• Innvendig justerbar:	11,5-14,5 VDC
Output power	Utgangseffekt	
• Continuous:	• Kontinuerlig:	158 W
• Intermittent:	• Kortvarig:	211 W
Load current	Laststrøm	
• Continuous:	• Kontinuerlig:	12A
• Intermittent:	• Kortvarig:	16A
Load regulation, 12 A load variation:	Lastregulering, 12 A lastvariasjon:	2%
Line regulation for 40 to 120 V variation og 12 A load current:	Linjeregulering for 40 til 120 V variasjon og 12 A laststrøm:	5%
Switch frequency:	Svitsjefrekvens:	ca. 30 kHz
No load current (At 48 V input voltage):	Tomgangsstrøm (Ved 48 V inngangsspenning):	ca. 30 mA
Temperature range:	Temperaturområde:	-20°C - +25°C
Ripple (at 12A current):	Rippel (ved 12A laststrøm):	50 mV p-p ved
Efficiency:	Virkningsgrad:	82%
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Terminals:	Terminaler:	Push-on terminals/Flatstift
Dimensions (LxWxH):	Mål (LxBxH):	210 x 148 x 58 mm
Weight:	Vekt:	1,1 kg

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

### Voltage versions 9660 - Spenningsversjoner 9660

Version Versjon	Input (VDC) Inngang (VDC)	Output (VDC) / Utgang (VDC)		Max. current (A) / Maks. strøm (A)		Max. output power (W) / Maks. utgangseffekt (W)	
		Nom. Nom.	Adjustable Justerbar	Continuous Kontinuerlig	Intermittent Kortvarig	Continuous Kontinuerlig	Intermittent Kortvarig
48 / 12	40-120	13,2	11,5-14,5	12	16	158	211
48 / 24	40-120	24	20,0-28,0	7	9	168	216
80 / 12	70-170	13,2	11,5-14,5	12	16	158	211
80 / 24	70-170	24	20,0-28,0	7	9	168	216

# CHARGERS FOR LEAD ACID BATTERIES LADERE FOR BLYBATTERIER

## LEAD ACID BATTERIES SHOULD...

...preferably be charged with constant voltage chargers. When a lead acid battery is charged, the lead sulphate on the positive plates is converted to lead oxide. If the charger does not have a limited output voltage, the battery voltage will continue to rise and oxygen will be generated on the positive plates and hydrogen on the negative plates. Continued overcharging in this way can damage the battery or reduce its lifetime. The use of a constant voltage charger eliminates this problem, as the charging current automatically decreases as the battery voltage approaches the charging voltage.

A constant voltage charger should also have a current limiting system, to prevent the charging current to be too high at the start of the charging period. The charging current at the start of the charging period should normally not be more than 1/5 of the battery capacity, eg. 10 A for a 50 Ah battery. Note that some battery manufacturers allow for higher charging current – please contact the battery manufacturer for more information about the specific charging conditions.

## MASCOT'S 3-STEP CHARGERS...

...offer a unique solution for safe and effective battery charging. After charging the battery to 80-90% of capacity, the charger goes into a timer mode to fill the remaining 10-20% of capacity. When the timer period is out, the charge level is reduced to a safe level where the battery can be left for an unlimited time – see chart.

The 3-step chargers work in three different modes. LED-indicator with three different colors shows the charger mode. Unlike the so-called taper chargers, these models charge with a constant current in the first mode. When the battery voltage rises to the maximum cycle voltage during charging, the chargers do not immediately change to float mode. Instead, a timer starts and the charger remains in constant voltage mode until the timer period has elapsed. When the timer starts, the battery is already charged to 80 - 90% of full capacity and can be used at this point if desired. The timer period ensures, however, that the battery will receive the remaining 10 to 20% capacity in a very short time compared to chargers without this feature.

The LED-indicator changes to yellow when the timer starts, and changes again to green when the timer period is done. At this point, the constant voltage level is reduced to a safe value where the battery can be left for an unlimited time without risk of overcharge. This is the float charge.

## TIL LADING AV BLYBATTERIER...

...anbefales en konstantspenningslader. Når batteriet er full-ladet, vil videre opplading føre til utvikling av farlige gasser i batteriet, og batterispenningen vil stige brått. Ved å bruke en konstantspenningslader med riktig spenning, unngås overlading av batteriet. Når batteriet er fullt oppladet, og batterispenningen har steget til ladespenningen, avtar ladestrømmen automatisk. Nivået på ladespenningen er imidlertid svært avhengig av om batteriet skal stå kontinuerlig på vedlikeholdsloading, eller om det skal stå i daglig syklus.

En konstantspenningslader bør også ha en strømbe- grenser som hindrer for store ladestrømmer i starten av ladeforløpet. Startladestrøm bør begrenses til 1/5 av batterikapasiteten, f.eks. 10 A for et 50 Ah batteri. Noen batteriprodusenter tillater høyere ladestrømmer. Skulle det være usikkerhet m.h.t. et bestemt batteri, anbefaler vi at man kontakter batteriprodusent eller leverandør.

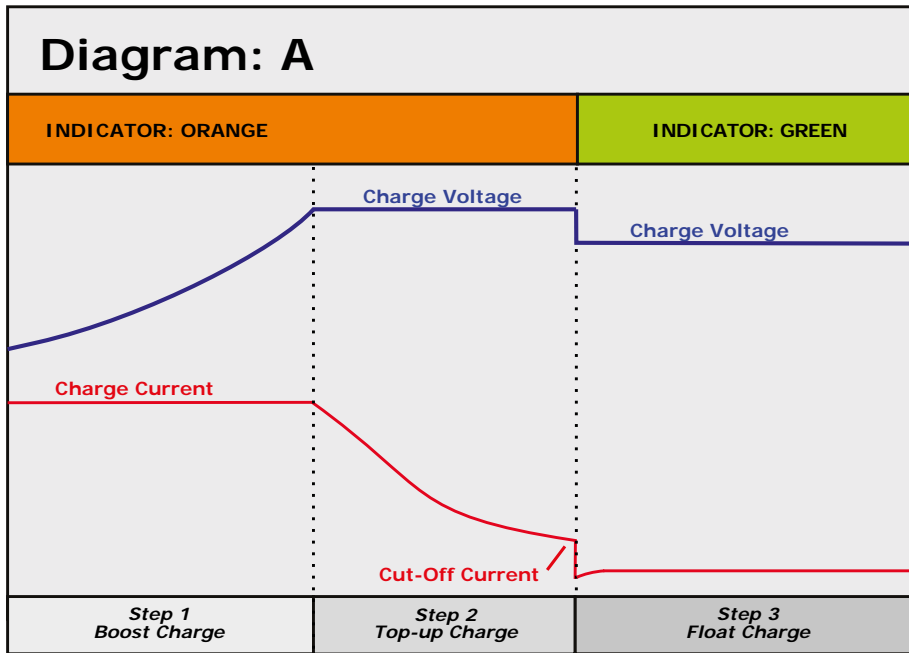
## MASCOTS 3-TRINNS LADERE...

...tilbyr en unik løsning på trygg og effektiv batterilading. Etter å ha hurtigladet batteriet til ca. 80-90% av kapasiteten går laderen inn i en timer fase for å fulllade batteriet raskest mulig. Spenningen senkes så til et trygt nivå hvor laderen kan stå tilkoblet batteriet kontinuerlig – se figur.

Laderen arbeider i tre forskjellige stadier under ladeforløpet. En LED-indikator med tre forskjellige farger, viser lade- modus. I motsetning til de såkalte uregulerte ladere, lader denne modellen med en konstant strøm i første fase. Når batterispenningen stiger til maksimum syklisk spenning, vil den ikke umiddelbart skifte til vedlikeholdsloading. I stedet starter laderen en klokke og forblir i konstant spenning modus helt til tidsforsinkelsen er ferdig. Batteriet er allere- de 80-90% oppladet når klokken starter, og batteriet kan brukes hvis man ønsker det. Denne ekstra timer perioden sikrer at batteriet blir fullstendig oppladet. Dette går svært hurtig sammenlignet med ladere som ikke har denne egenskapen.

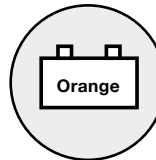
LED-indikatoren skifter til gul når klokken starter, og den skifter til grønn når perioden er ferdig. Konstantspen- nings-nivået er på dette tidspunkt redusert til et sikkert nivå, og batteriet kan stå slik i ubegrenset tid uten risiko for overlading. Dette er vedlikeholdsloading.

**CHARGING METHOD A**



**STEP 1 - BOOST CHARGE**

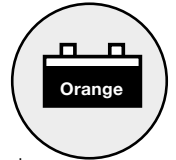
To start a charge cycle; connect the charger to the mains. The charger is in constant current mode, charging with the maximum current indicated on the charger, the LED-indication on the charger is ORANGE. This step allows rapid charging of your battery until the battery reaches typically 80 - 95% of its capacity.



**STEP 2 – TOP-UP CHARGE**

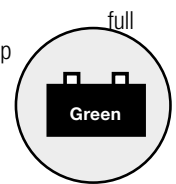
The charger is in constant voltage mode, charging with a decreasing current until the current is below the chargers charge termination level (indicated on the charger). The LED-indication on the charger is ORANGE.

The battery is charged to its full capacity at the end of this step

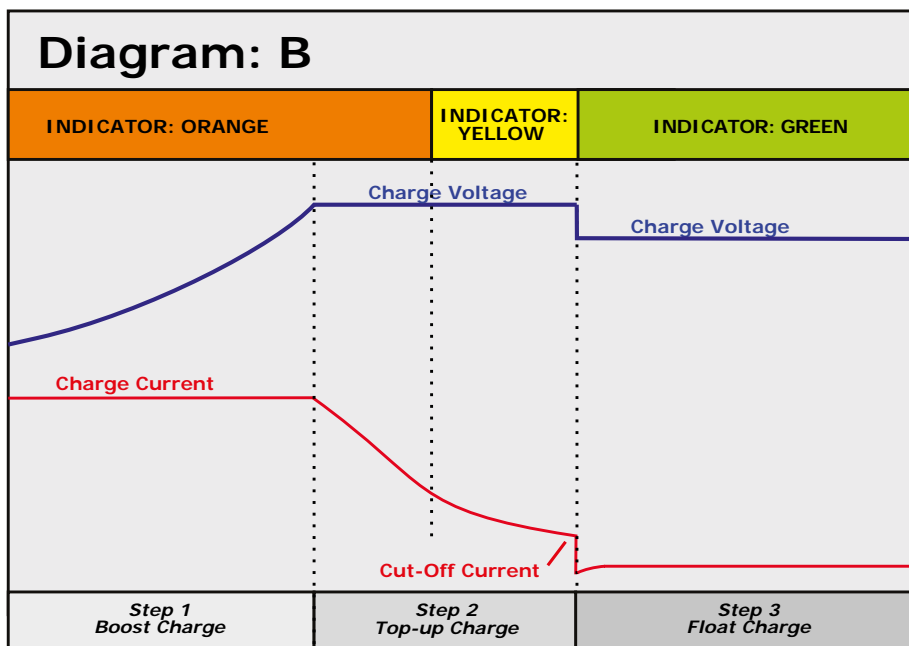


**STEP 3 – FLOAT CHARGE**

The LED-indication on the charger is GREEN and the battery is fully charged. The charger is in standby mode. The charge voltage is at standby level and the charger may remain connected to the battery. The charger will return to boost charging if the battery is used. A load larger than the cut-off current will initiate a new charge cycle.

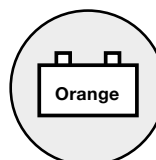


**CHARGING METHOD B**



**STEP 1 - BOOST CHARGE**

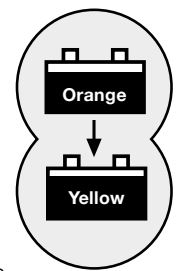
To start a charge cycle; connect the charger to the mains. The charger is in constant current mode, charging with the maximum current indicated on the charger, the LED-indication on the charger is ORANGE.



**STEP 2 – TOP-UP CHARGE**

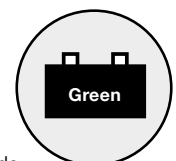
The charger is in constant voltage mode, charging with a decreasing current until the current is below the chargers charge termination level (indicated on the charger).

The LED-indication will turn to YELLOW during Top-up charge. The battery is typically 90-95% fully charged when the LED indicator changes to yellow. The charger stays in this mode until the charge current decreases to charge termination level. The battery is charged to its full capacity at the end of this step



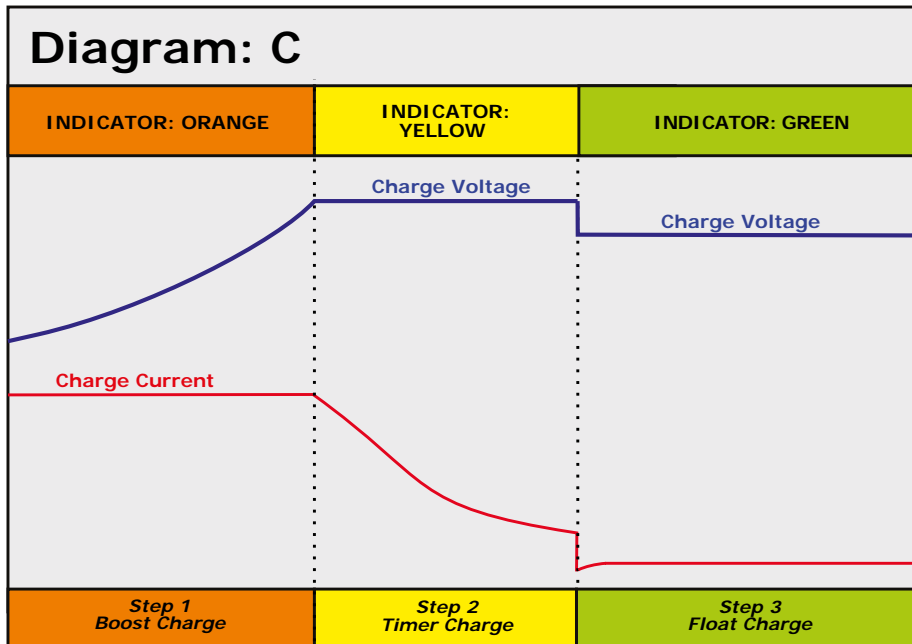
**STEP 3 – FLOAT CHARGE**

The LED-indication on the charger is GREEN and the battery is fully charged. The charger is in standby mode. The charge voltage is at standby level and the charger may remain connected to the battery. The charger will return to boost charging if the battery is used. A load larger than the cut-off current will initiate a new charge cycle.



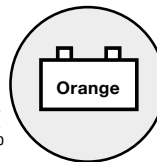


CHARGING METHOD C



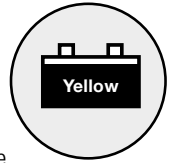
**STEP 1 - BOOST CHARGE**

To start a charge cycle; connect the charger to the mains. The charger is in constant current mode, charging with the maximum current indicated on the charger, the LED-indication on the charger is ORANGE (or RED 9640). This step allows rapid charging of your battery until the battery reaches typically 80 - 95% of its capacity.



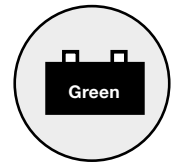
**STEP 2 – TIMER CHARGE**

The charger is in constant voltage mode, charging with a decreasing current. The LED-indication on the charger is YELLOW. The charger is now in timer mode indicated by the YELLOW LED and will remain in this mode until time interval is completed. The battery is charged to its full capacity at the end of this step

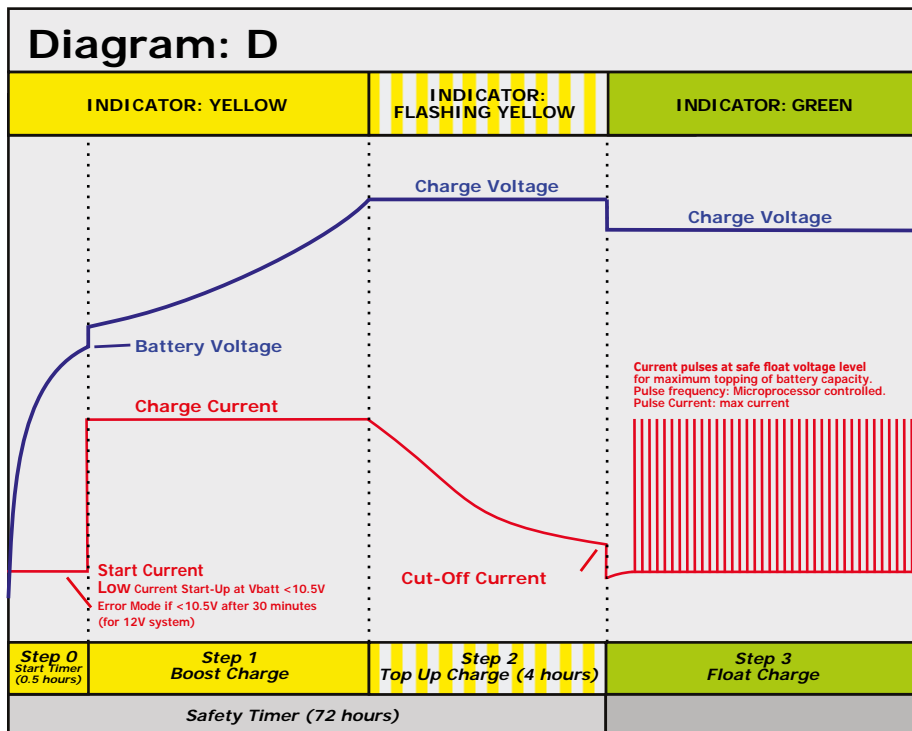


**STEP 3 – FLOAT CHARGE**

The LED-indication on the charger is GREEN and the battery is fully charged. The charger is in standby mode. The charge voltage is at standby level which means that the charger can continue to be connected to the battery. The charger will return to boost charging if the battery is used. A load current equal to the constant current level will initiate a new charge cycle.

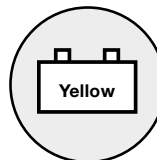


CHARGING METHOD D



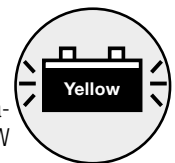
**STEP 1 - BOOST CHARGE**

LED-indicator: YELLOW  
The charger is in constant current mode (CC), charging with the maximum current until battery voltage reach Top-Up level.



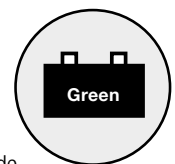
**STEP 2 – TOP-UP CHARGE**

The charger is in constant voltage mode. The LED-indication will be FLASHING YELLOW during Top-up charge. The charger stays in this mode until the charge current decreases to charge termination level or the Top-Up Charge Timer runs out. The battery is charged to its full capacity at the end of this step



**STEP 3 – FLOAT CHARGE**

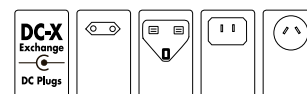
The LED-indication on the charger is GREEN and the battery is fully charged. The charger is in standby mode. The charge voltage is at standby level and the charger may remain connected to the battery. The charger will return to boost charge if the battery is used. A load larger than the cut-off current will initiate a new charge cycle.





## 2740 Max. 1 A

- 3-step charge control with current detection as charge termination
- Universal input voltage (90-264 VAC)
- LED indicator with two colors
- Custom specifications on request
- Approvals:
  - Complies w. medical std EN 60601
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med strømdeleksjon som ladestopp
- Universal inngangsspenning (90-264 VAC)
- Lysdiode indikator med to farger
- Tilpasninger leveres på forespørsel
- Godkjenninger:
  - Tilfredsst. medisinsk std EN 60601
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



Technical specifications	Tekniske data	12 V*
Input voltage:	Inngangsspenning:	90 - 264VAC
Line frequency:	Frekvensområde:	47 - 63Hz
Max. output power:	Maks. utgangseffekt:	10,3W
Switch frequency, approx.:	Svitsjefrekvens ca.:	40kHz
Leakage current from battery with mains switched off:	Strømtrekk fra batteri ved frakoblet nett:	≈ 0
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25°C til +40°C
• Storage:	• Lagring:	-25°C til +85°C
Ripple:	Rippel:	< 100mV p-p
Protection:	Sikring:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker
Insulation class:	Isolasjonsklasse:	II
Insulation voltage	Isolasjonsspenning	
• Primary – secondary:	• Primær - sekundær:	4000VAC / 5640VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950, EN 60601-1, EN 60335-2-29
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 50081-1
• Immunity:	• Immunitet:	EN 50082-1
Input terminal:	Inngangsterminal:	Standard EU, UK, AU or US
Output terminals:	Utgangsterminaler:	Cord with/without plug. Exchangeable plugs available.
IP-code:	IP-Grad:	4X
Dimensions (LxWxH)	Mål (LxBxH)	75 x 32 x 50mm
Weight	Vekt	109g

\* Some technical specifications may differ for other voltage versions.

\* Visse tekniske data kan variere for de forskjellige spenningsversjoner.

### Charge control - Ladekontroll

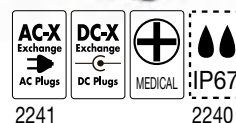
		6 V	12 V	24 V	48 V	
Max. output power	Maks. utgangseffekt	7,35W	10,3W	10,3W	10,5W	
Step 1	Charge Current (orange)	Ladestrom (orange)	1A +/- 7%	0,7A +/- 7%	0,35A +/- 7%	0.18A +/- 7%
Step 2	Charge Voltage (orange)	Ladespenning (orange)	7,35V	14,7V	29,4V	58.8V
Step 3	Charge Termination I< (green)	Ladestopp I< (grønn)	200mA ±20%	200mA ±20%	100mA ±20%	50mA ±20%
Standby voltage:	Vedlikeholdsspenning:	6,85V	13,7V	27,4V	54.8V	
Recommended battery capacity	Anbefalt batterikapasitet	3-10Ah	2-10Ah	1-5Ah	0,5-2,5Ah	

Charging characteristics and LED indication: see chapter introduction pages - diagram A

## 2240-2241 Max. 1,3 A

### 2241 - exchangeable/utskiftbare AC plugs

- 3-step charge control with current detection as charge termination
- Universal input voltage (90-264 VAC)
- 2-pin IEC 320 mains connector
- Mounting bracket available
- Order mains cord separately
- Exchangeable AC and DC plugs
- Waterproof (IP67) version available
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med strømdeleksjon som ladestopp
- Universal inngangsspenning (90-264 VAC)
- 2-pin IEC 320 nettkontakt
- Kan leveres med festebrakett
- Nettledning best. separat
- Utskiftbare AC og DC plugger
- Vanntett (IP67) versjon kan leveres
- Godkjenninger:
  - Medisinsk sertifisert 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



2241

2240

#### Technical specifications

#### Tekniske data

12 V\*

Input voltage:	Inngangsspenning:	90-264 VAC
Line frequency:	Frekvensområde:	47 – 63Hz
Switch frequency, approx.:	Svitsjefrekvens ca.:	40kHz
Leakage current from battery with mains switched off:	Strømtrekk fra batteri ved frakoblet nett:	≈ 0
Temperature range	Temperaturområde:	
• Operating:	• Drift:	-25°C - +40°C
• Storage:	• Lagring:	-25°C - +85°C
Ripple:	Rippel:	< 100 mV p-p
Efficiency (at 100% load, 230V):	Virkningsgrad (100% last, 230V):	78%
Protection:	Beskyttelse:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker
Insulation class:	Isolasjonsklasse:	II
Insulation voltage	Isolasjonsspenning	
• Primary – secondary:	• Primær - sekundær:	4000VAC / 5640VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950, EN 60601-1 3ed, EN 60335-2-29,
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Reliability (MIL-HDBK-217F):	Pålitelighet (MIL-HDBK-217F):	MTBF > 250.000h at 30°C and full load
Output terminals:	Utgangsterminaler:	Cord with/without plug Sekundærledning med / uten plugg
IP-code:	IP-grad:	4X
Dimensions (L×W×H):	Mål (L×B×H):	90 × 45 × 32mm (2240)
Weight:	Vekt:	115g (215g IP67 vers.) 2241:140g

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

#### Charge control - Ladekontroll

			6V	12V	24V	36V (2241)	48V**
	Max. output power	Maks. utgangseffekt	9,5W	14,7W	14,7W	15,4W	14,7W
Step 1	Charge Current (orange)	Ladestrøm (orange)	1,3A +5/-7%	1,0A +5/-7%	0,5A +5/-7%	0,35A +5/-7%	270mA +5/-7%
Step 2	Charge Voltage (orange)	Ladespenning (orange)	7,35V	14,7V	29,4V	44,1V	58,8V
Step 3	Charge Termination I< (green)	Ladestopp I< (grønn)	250mA ±20%	250mA ±20%	250mA ±20%	150mA ±20%	100mA ±20%
	Standby voltage:	Vedlikeholdsspenning:	6,85V	13,7V	27,4V	41,1V	54,8V
	Recommended battery capacity	Anbefalt batterikapasitet	4-12Ah	3-12Ah	1,5-12Ah	1-7,5Ah	0,8-5Ah

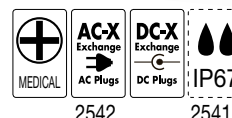
\*\* Complies with EN 60601-1 3ed. Not UL certified.

Charging characteristics and LED indication: see chapter introduction pages - diagram A

## 2541-2542 Max. 2,2A

### 2542 - exchangeable / utskiftbare AC plugs

- 3-step charge control with current detection as charge termination
  - Universal Input voltage (90-264 VAC)
  - 3-colored LED indicator
  - Order mains cord separately
  - Mounting bracket available
  - Waterproof (IP67) version available
  - Custom specifications on request
  - Approvals:
    - Medically certified EN 60601-1 3ed
    - UL approved
    - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med strømdeleksjon som ladestopp
  - Universal inngangsspenning (90-264 VAC)
  - 3 farget lysdiode-indikator
  - Nettledning best. separat
  - Kan leveres med festebrett
  - Vanntett (IP67) versjon kan leveres
  - Tilpasninger leveres på forespørsel
  - Godkjenninger:
    - Medisinsk sertifisert EN 60601-1 3ed
    - UL godkjent
    - For oppdat.: se [www.mascot.no](http://www.mascot.no)



#### Technical specifications

#### Tekniske data

Input voltage:	Inngangsspenning:	90-264 VAC
Line frequency:	Frekvensområde:	47 – 63Hz
Switch frequency, approx.:	Svitsjefrekvens ca.:	40 kHz
Leakage current from battery with mains switched off:	Strømtrekk fra batteri ved frakoblet nett:	<250µA
Temperature range	Temperaturområde	
• Operating:	• Drift:	-20°C - +40°C
• Storage:	• Lagring:	-25°C - +85°C
Ripple:	Rippel:	< 100 mV p-p
Protection:	Sikring:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker
Insulation class:	Isolasjonsklasse:	II
Insulation voltage	Isolasjonsspenning	
• Primary – secondary:	• Primær - sekundær:	4000VAC / 5700VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	IEC/EN/UL 60601-1, EN 60950-1, EN 60335-2-29
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Input terminal:	Inngangsterminal:	2-pin IEC 320 connector
Output terminals:	Utgangsterminaler:	Cord with/without plug. Exchangeable plugs available. Sekundærledning med / uten plugg. Utskiftbare plugger er tilgjengelige.
IP-code:	IP-grad:	41
Dimensions (LxWxH):	Mål (LxBxH):	107 x 67 x 36,5 mm (2542: 117 x 75 x 44 mm)
Weight:	Vekt:	250g

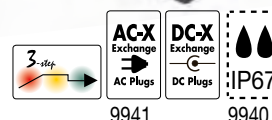
Versions - Versjoner			Charge control / Ladekontroll				
			Step 1 (orange)	Step 2a (orange)	Step 2b (yellow/gul)	Step 3 (green/grønn)	
Max. output power	Efficiency (100% at 230V)	Charge Current	Charge Voltage	To yellow when current is	Charge Termin. when current is	Standby voltage:	
							Maks. utg. effekt
12 V	33 W	84 %	2,2A ±0,1A (until 14,7V)	14,7V ±0,1V	< 1A ±0,1A	< 250mA +-20%	13,7V±0,15V
24 V	36 W	87 %	1,2A ±0,1A (until 29,4V)	29,4V ±0,1V	< 0,50A ±0,1A		27,4V±0,3V

Charging characteristics and LED indication: see chapter introduction pages - diagram B

## 9940-9941 Max. 2,3 A

### 9941 - exchangeable / utskiftbare AC plugs

- 3-step charge control with timer
- Universal input voltage (90-264 VAC)
- 2-pin IEC 320 mains connector
- Order mains cord separately
- Mounting bracket available
- Exchangeable DC plugs
- Waterproof (IP67) version available
- Approvals:
  - Complies w. medical std. (EN 60601)
  - 9940: UL approved (UL 60601-1)
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med timer
- Universal inngangsspenning (90-264 VAC)
- 2-pin IEC 320 nettkontakt
- Nettledning best. separat
- Kan leveres med festebrakett
- Utskiftbare DC plugger
- Vanntett (IP67) versjon kan leveres
- Godkjenninger:
  - Tilfredst. medisinsk std. (EN 60601)
  - 9940: UL godkjent (UL 60601-1)
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



#### Technical specifications

#### Tekniske data

#### 12 V\*

Line regulation:	Linjeregulering:	< 100 mV
Svitsjefrekvens ca.:	Switch frequency, approx.:	45 kHz
Leakage current with mains disconnected:	Strømtrekk fra batteri ved frakoblet nett:	< 200 uA
Temperature range:	Temperaturområde:	-10 °C - +40 °C
Ripple:	Rippel:	< 100 mV p-p
Efficiency (at 100% load):	Virkningsgrad (ved 100% last):	> 80 %
Current limit:	Strømbegrenser:	2,3 A ± 0,3
Protection:	Sikring:	Mains fuse / Glassikring Automatically resettable fuse protects the charger against wrong polarity. Feil polaritet beskyttelse med automatisk resetbar sikring.
Insulation class:	Isolasjonsklasse:	II
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950, EN 60335, UL 60601-1
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Mains connection:	Nettilkobling:	2-pin IEC 320 mains connector
Indicator:	Indikasjon:	3-fargers lysdiode - 3-color LED
• Orange: (const. current, boost):	• Orange: (konst. strøm, hurtig):	2,3 A
• Yellow: (const. voltage, timer):	• Gul: (konst. spenn., timer):	14,7 V
• Green: (const. voltage, float):	• Grønn: (konst. spenn., vedl.hold):	13,8 V
Timer**:	Timer**:	2h ± 30%
Output terminals:	Utgangsterminaler:	Battery clips, push-on terminals, DC connector Batteriklemmer, flatstift kontakter, DC plugg
Dimensions (LxWxH):	Mål (LxBxH):	107 × 67 × 36,5 mm (9941: 117 × 75 × 44 mm)
Weight:	Vekt:	250 g

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

\*\* The timer is also available with other values. / Timer leveres også med andre tider.

#### Voltage versions 9940 - Spenningsversjoner 9940

Version Versjon (V)	Input Inngang (VAC)	Output (VDC) / Utgang (VDC)		Max. output power Maks. utg. effekt (W)	Current limit Strøm begrenser (A)	Rec. batt. capacity * Anbefalt batt. kap * (Ah)
		Timer	Float / Vedlikehold			
12	90-264	14,7±0,2	13,8±0,2	35	2,3A±0,3	9 - 60
24		29,5±0,2	27,6±0,3	40	1,3A±0,2	4,5 - 30
36**		44,1±0,2	41,4±0,3	40	0,9A±0,1	3 - 20

\* Rec.value may vary – contact batterymanuf. for details. / Anbefalt verdi kan variere – kontakt batteriproduzenten for detaljer.

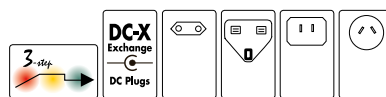
\*\* Not UL approved / Ikke UL godkjent

Charging characteristics and LED indication: see chapter introduction pages - diagram C



## 9640-9641 Max. 2,7 A

- 3-step charge control with timer
- Charge current not affected by fluctuations in mains voltage
- Protected against reversed polarity
- LED-indicator with three different colors
- Avail. in UL-approved 120 V version (9641)
- Exchangeable DC plugs
- Approvals:
  - Complies w. medical std. (EN 60601) (9641)
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med timer
- Ladestrøm uavhengig av nettspenningsvariasjoner
- Polvendings sikker
- Lysdiodeindikator med tre farger
- Tilgj. i UL-godkj. 120 V versjon (9641)
- Utskiftbare DC plugger
- Godkjenninger:
  - Tilfredst. medisinsk std. (EN 60601) (9641)
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

### 9640 12 V\*

Input voltage:	Inngangsspenning:	190-264 VAC / 240-360 VDC
Load regulation (0,2,-2,4 A load and 230 VAC mains):	Lastregulering (0,2,-2,4 A last og 230 VAC nett):	< 200 mV
Linje regulation (190-264 VAC mains at full load):	Linjeregulering (190-264 VAC nett og full last):	< 20 mV
Switch frequency:	Svitsjefrekvens:	45 kHz
Leakage current with mains disconnected:	Strømtrekk fra batteri ved frakoblet nett:	< 100 uA
Temperature range:	Temperaturområde:	-10°C - +40°C
Ripple:	Rippel:	< 20 mV p-p 40 kHz and 100 Hz
Efficiency (at full load):	Virkningsgrad (ved full last):	> 81 %
Insulation class:	Isolasjonsklasse:	II
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60335-1, EN 60335-2-29, EN 60065, EN 60950
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Indication	Indikasjon	
• Red (const. current, boost):	• Rød (konst. strøm, hurtig):	2,7 A
• Yellow (const. voltage, timer):	• Gul (konst. spenn., timer):	14,7 V
• Green (const. voltage, float):	• Grønn (konst. spenn., vedl.hold):	13,8 V
Timer**:	Timer**:	2h ± 30min.
Output terminals	Utgangsterminaler	Battery clips, push-on terminals / DC connector Batt. klemmer, flatstift kontakter / DC plugg
Dimensions without plug (LxWxH):	Mål uten plugg (LxBxH):	100 x 63 x 47 mm
Weight:	Vekt:	250 g

\* Some technical specifications may differ for other models and voltage versions. /  
Visse tekniske data kan variere for de forskjellige modeller og spenningsversjoner.

\*\* The timer is also available with other values. / Timer leveres også med andre tider.

### Voltage versions - Spenningsversjoner

Version Versjon	Max. output power Maks. utgangseffekt (W)	Current limit Strømbegrensner (A)	Mode Timer (V)	Float Vedlikehold (V)	Rec batt. capacity * Anbefalt batt. kapasitet * (Ah)
6 V	25	2,7	7,35	6,9	11-60
12 V	40	2,7	14,7	13,8	11-60
24 V	45	1,5	29,5	27,6	5,5-30
36 V	45	1,0	44,1	41,2	4-20

\*Rec.value may vary – contact battery manuf. for details. / Anbefalt verdi kan variere – kontakt batteriproducenten for detaljer.

Charging characteristics and LED indication: see chapter introduction pages - diagram C



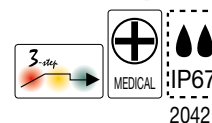
## 2040-2041-2042 Max. 4 A

2040 - 3-pin IEC 320

2041 - 2-pin IEC 320

2042 - fixed mains cord / fast nettleddning

- 3-step charge control with timer
- Universal input voltage (90-264 VAC)
- Order mains cord separately
- Mounting bracket available
- Waterproof (IP67) version available
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med timer
- Universal inngangsspenning (90-264 VAC)
- Nettleddning best. separat
- Kan leveres med festebrakett
- Vanntett (IP67) versjon kan leveres
- Godkjenninger:
  - Medisinsk sertifisert EN 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



2042

Technical specifications	Tekniske data	12 V*
Line regulation:	Linjeregulering:	< 100 mV
Switch frequency, approx.:	Svitsjefrekvens ca.:	40 kHz
Leakage current with mains disconnected:	Strømtrekk fra batteri ved frakoblet nett:	< 200 uA
Temperature range:	Temperaturområde:	-10°C - +40°C
Ripple:	Rippel:	< 100 mV p-p
Efficiency (at 100% load):	Virkningsgrad (ved 100% last):	> 80 %
Current limit:	Strømbegrensener:	4 A ± 0,3
Protection:	Sikring:	Mains fuse / Glassikring
Auto. resettable fuse protects the charger against wrong polarity.	Feil polaritet beskyttelse med automatisk resetbar sikring.	
Insulation class:	Isolasjonsklasse:	I (2040) - II (2041,2042)
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60601-1, EN 60950, EN 60335-2-29, UL-60601-1
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Indicator:	Indikasjon:	3 color LED - 3-fargers lysdiode
• Orange: (const. current, boost):	• Orange: (konst. strøm, hurtig):	4 A
• Yellow: (const. voltage, timer):	• Gul: (konst. spenn., timer):	14,7 V
• Green: (const. voltage, float):	• Grønn: (konst. spenn., vedlikeh.):	13,8 V
Timer**:	Timer**:	2h ± 30% (also available with other values)
Output terminals:	Utgangsterminaler:	Batt.clips, push-on, DC conn. Batt.klemmer, Flatstift kontakter, DC plugg
Dimensions (LxWxH):	Mål (LxBxH):	135 x 80 x 44mm
Vekt:	Weight:	350 g (850g IP67 vers.)

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.  
\*\* The timer is also available with other values. / Timer leveres også med andre tider.

### Voltage versions 2040 - Spenningsversjoner 2040

Version / Versjon (V)	Input / Inngang (VAC)	Output (VDC) / Utgang (VDC)		Max output power Maks. utg. effekt (W)	Current limit Strøm begrensener (A)	Rec. batt. capacity * Anbefalt batt. kap * (Ah)
		Timer	Float Vedlikehold			
12	90-264	14,7±0,2	13,8±0,2	60	4A±0,3	15 - 90
24		29,5±0,2	27,6±0,3		2A±0,2	7 - 45
36		44,1±0,2	41,4±0,3		1,4A±0,1	5 - 30
48		58,8±0,2	55,2±0,2		1A±1	4-22

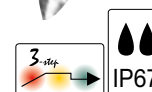
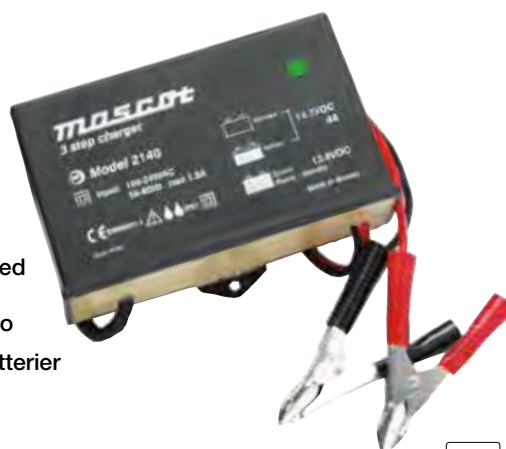
\* Rec. value may vary – contact battery manuf. for details. / Anbefalt verdi kan variere – kontakt batteriproduzenten for detaljer.

Charging characteristics and LED indication: see chapter introduction pages - diagram C

## 2140 Max. 4 A

Waterproof (IP 67) / Vanntett (IP 67)  
Shockproof / Støtsikker  
Heat resistant / Varnebestandig

- 3-step charge control with timer
  - Universal input voltage (90-264 VAC)
  - Approvals:
    - Medically certified EN 60601-1 3ed
    - UL approved
    - For updates: see [www.mascot.no](http://www.mascot.no)
  - Also available for Li-Ion batteries
- 3-trinns ladekontroll med timer
  - Universal inngangsspenning (90-264 VAC)
  - Godkjenninger:
    - Medisinsk sertifisert 60601-1 3ed
    - UL godkjent
    - For oppdat.: se [www.mascot.no](http://www.mascot.no)
  - Er også tilgjengelig for Li-Ion batterier



Technical specifications	Tekniske data	12 V	24 V
Input voltage:	Inngangsspenning:	90 - 264 VAC	
Charge voltage	Ladespenning		
• Timer:	• Timer:	14,7 V ± 0,2	29,5 V ± 0,2
• Float:	• Vedlikehold:	13,8 V ± 0,3	27,6 V ± 0,3
Max. output power:	Maks. utgangseffekt:	60 W	
Load regulation:	Lastregulering:	< 200 mV	
Line regulation:	Linjeregulering:	< 100 mV	
Switch frequency, approx.:	Svitsjefrekvens ca.:	40 kHz	
Leakage current	Strømtrekk fra batteri		
with mains disconnected:	ved frakoblet nett:	< 100 uA	< 200 uA
Temperature range:	Temperaturområde:	-10°C - +40°C	
Ripple:	Rippel:	< 100 mV p-p	
Efficiency (at 100% load):	Virkningsgrad (ved 100% last):	> 81 %	
Current limit:	Strømbegrenser:	4 A ± 0,3	2 A ± 0,2
Protection:	Sikring:	Inngangssikring / Mains fuse	
Auto. resettable fuse protects the charger against wrong polarity.	Feil polaritet beskyttelse med automatisk resetbar sikring.		
Insulation class:	Isolasjonsklasse:	II	
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60601-1, EN 60950, EN 60335-2-29	
EMC standards	EMC standarder		
• Medical:	• Medisinsk:	EN 60601-1-2	
• Emission:	• Emisjon:	EN 61000-6-3	
• Immunity:	• Immunitet:	EN 61000-6-1	
Indicator:	Indikasjon:	3 fargers lysdiode - 3 color LED	
• Orange: (constant current, boost):	• Orange: (konst. strøm, hurtig):	4 A	2 A
• Yellow: (const. voltage, timer):	• Gul: (konst. spenn., timer):	14,7 V	29,5 V
• Green: (const. voltage, float):	• Grønn: (konst. spenn. vedl. hold):	13,8 V	27,6 V
Timer *:	Timer *:	2h ± 30min	
Output terminals:	Utgangsterminaler:	Battery clips, push-on terminals, DC connector Batt. klemmer, flatstift kontakter, DC plugg	
IP-code:	IP-grad:	67	
Dimensions (LxWxH):	Mål (LxBxH):	140 x 48 x 83mm	
Weight:	Vekt:	1045g	
Recommended batt. capacity **: 15 - 90 Ah	Anbefalt batterikapasitet **: 7 - 45 Ah		

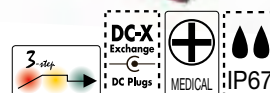
\*Timer is also available with other values. / Timer leveres også med andre tider.

\*\*Rec. value may vary – contact battery manuf. for details. / \*\*Anbefalt verdi kan variere – kontakt batteriproduzenten for detaljer.

Charging characteristics and LED indication: see chapter introduction pages - diagram C

## 2440 Max. 4.0 A

- 3-step charge control with microprocessor
- Low current start up of deeply discharged batteries (step 0)
- Unaffected by fluctuations in mains voltage
- Temperature compensated charge voltage w. external temp sensor (12V)
- Approvals:
  - Medically certified EN 60601-1 3ed
  - Home Healthcare EN 60601-1-11
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med mikroprosessor
- Lavstrømsmodus ved oppstart av meget utladde batterier (trinn 0)
- Uavhengig av nettspenningsvariasjoner
- Temperaturkompensert ladespenning m. ekstern temp føler (12V)
- Godkjenninger:
  - Medisinsk sertifisert 60601-1 3ed
  - Med. hjemmebruk EN 60601-1-11
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



Technical specifications	Tekniske data	12V
Input voltage:	Inngangsspenning:	90 - 264 VAC
Line frequency:	Frekvensområde:	47 - 63 Hz
Max output power:	Maks. utgangseffekt:	58W (24V: 74W)
Charge timer (step 2):	Ladetimer (step 2):	4 h
Safety timer:	Sikkerhetstimer:	72 h
Restart charge current:	Restart ladestrøm:	4 A
Indication "batt. not connected":	Indikasjon når batt. ikke tilkoblet:	flashing green / blinkende grønn
Ripple:	Rippel:	< 100 mV p-p
Efficiency (at 100% load):	Virkningsgrad (v. 100% last):	> 85%
Switch frequency approx.:	Svitsjefrekvens ca.:	40 kHz
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25 to +40 °C
• Storage:	• Lagring:	-25 to +85 °C
Protection	Beskyttelse	
- Safety timer	- Sikkerhetstimer	Charging of lower voltage batt (e.g. 6V/12V)
- against reversed polarity and short circuit proof.	- Polvendings- og kortslutningssikker	will be limit. to 1,2A/0,6A and term. after 30 min.
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN/IEC 60335-2-29, EN/IEC/ANSI 60601-1 (3rd Ed) & EN/IEC 60601-1-11
Insulation class:	Isolasjonsklasse:	Class II (Class I on request)
Insulation voltage	Isolasjonsspenning	
• Primary-secondary:	• Primær - sekundær:	4000VAC / 5700 VDC
EMC standards:	EMC standarder:	EN 55014-1 and -2, EN/IEC 61000-6-3, EN/IEC 61000-6-1, EN/IEC 60601-1-2
Input terminal:	Inngangsterminal:	2-pin IEC-320, 2-pin IEC60320/C8 (3-pin IEC 60320/C14 or fixed cord on request)
Output terminals:	Utgangsterminaler:	Battery clips, push-on terminals or DC conn Battery clips on picture: art.no 2440012000
IP-grade:	IP-grad:	41
Rec. battery capacity:	Anbefalt batterikapasitet:	20 - 200 Ah
Dimensions (LxWxH):	Ytre mål (LxBxH):	135 x 80 x 44 mm
Weight:	Vekt:	390 g (890 g IP67)

### Selected versions – see web for complete list

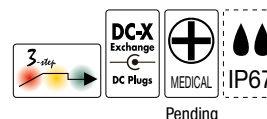
	Step 0 < 30 min	Step 0 > 30 min	Step 1	Step 2	Step 3	Float charge
	(Yellow/Gul)	(Red=error / Rød=feil)	(Yellow / Gul)	(Yellow Flash / Gul Blink)	(Green / Grønn)	Vedl. lading
<b>12V</b>	1.2A +/- 0.2A (batt volt < 10.5V)	< 0.2A	4A ± 0.2A (batt volt > 10.5V) (til Vbat = 14.7V)	14.7V ± 0.1V (until I charge < 1.2A or > 4hr) tapering charge current	13.7V ± 0.2V (until I charge > 4.0A) supply current up to max. 4.0A for possible parallel load	4.0A Pulsing current at safe float volt. level for max topp. of batt.
<b>24V</b>	0.6A ± 0.2A (batt volt < 21V)	< 0.2A	2.5A ± 0.2A (batt volt < 21V) (until Vbat = 29.4V)	29.4V ± 0.1V (until I charge < 0.6A or > 4hr) tapering charge current	27.4V ± 0.2V (until I charge > 2.5A) supply current up to max 2.5A for possible parallel load	2.5A Pulsing current at safe float volt. level for max topp. of batt.

Charging characteristics and LED indication: see chapter introduction pages - diagram D

## 2840-3240 Max. 8,5A

3240: Autodetect 115/230 VAC

- 3-step charge control with current detection as charge termination
- 2-pin IEC 320 connector. 3-pin or fixed mains cord on request
- Mains cord not included
- Waterproof (IP67) version available
- Temp. compensated charge voltage is available, model 3140
- Custom specifications on request
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med strøm-deteksjon som ladestopp
- 2-pins IEC 320 nettkontakt. 3-pins el. fast nettleiding på forespørsel.
- Nettledning ikke inkludert
- Vanntett (IP67) versjon kan leveres
- Temperaturkomp. Ladespenning tilgjengelig som mod. 3140
- Tilpasninger leveres på forespørsel
- Godkjenninger:
  - Medisinsk sertifisert 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



Pending

### Technical Specifications

### Tekniske data

Input voltage:	Inngangsspenning	198-264 VAC
Line Frequency:	Frekvensområde	47 – 63Hz
Switch frequency. approx.:	Svitsjefrekvens ca.	65kHz
Leakage current from battery with mains switched off:	Strømtrekk fra batteri ved frakoblet nett:	<0.6mA (6V, 12V) <1.0mA (24V, 36V, 48V)
Temperature range	Temperaturområde	
• Operating:	• Drift	-25 °C - +40 °C
• Storage:	• Lagring	-25 °C - +85 °C
Ripple	Rippel	< 100 mV p-p
Protection:	Sikring	Protected against reversed polarity and short circuit proof / Polvendings- og kortslutningssikker
Insulation class:	Isolasjonsklasse	II (I available on request)
Insulation voltage:	Isolasjonsspenning	
• Primary – secondary:	• Primær - sekundær:	4000VAC / 5700VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60601-1. EN 60335-2-29
EMC standards	EMC standarder	
• Medical:	• Medisinsk	EN 60601-1-2
• Emission:	• Emisjon	EN 61000-6-3
• Immunity:	• Immunitet	EN 61000-6-1
Input terminal:	Inngangsterminal:	2-pin IEC 320 connector 3-pin IEC 320 connector or fixed mains cord available on request
Output terminals:	Utgangsterminaler:	Battery clips / Push on terminals or DC connector
IP-code:	IP-Grad:	41 (IP67 on request)
Dimensions (LxWxH)	Mål (LxBxH)	2840: 135 x 80 x 44mm / 3240: 160 x 81 x 44mm
Weight	Vekt	2840: 540g / 3240: 590g

### Versions - Versjoner

				Charge control - Ladekontroll				
				Step 1 (orange)	Step 2a (orange)	Step 2b (yellow / gul)	Step 3 (green / grønn)	
	Rec. batt. capacity	Max output power (W)	Efficiency (100% at 230V)	Charge Current	Charge Voltage	To yellow when current is<:	To float charge when current is<:	Float charge voltage
	Anbef. batt. kapasitet	Max utg. effekt	Virkningsgrad	Ladestrom	Ladespenning	Til Gul når strøm er<:	Til vedlikehold når strøm er<:	Vedlikeholds spenning
6V	42.5-80 Ah	62W	>86%	8.5A +0.1/-0.4A	7.35V ±0.05V	4.25A ±0.2A	1.6A ±0.2A	6.85V±0.05V
12 V	35-80 Ah	103W	>89%	7.0A +0.1/-0.4A	14.7V ±0.15V	3.5A ±0.2A	1.6A ±0.2A	13.7V±0.15V
24 V	17.5-40 Ah	103W	>89%	3.5A +0/-0.3A	29.4V ±0.2V	1.7A ±0.2A	0.8A ±0.2A	27.4V±0.3V
36 V	11.5-25 Ah	102W	>89%	2.3A +0.-0.3A	44.1V ±0.2V	1.1A ±0.2A	0.5A ±0.2A	41.1V±0.3V
48V	8.5-20 Ah	100W	>89%	1.7A +0.-0.3A	58.8V ±0.3V	0.9A ±0.2A	0.4A ±0.1A	54.8V±0.3V

Charging characteristics and LED indication: see chapter introduction pages - diagram B



## 3245 7A

- 6-step charge control with microprocessor
- For all types of Lead Acid batteries: GEL, AGM, WET, SLA
- Mode select for battery size, type, recondition and as power supply
- Protected against reversed polarity and short circuit proof
- Memory function for last used charge program
- Temperature compensated charge voltage w. external temp. sensor
- Dust- and waterproof (IP54)
- Practical briefcase for storage
- LED flashlight included

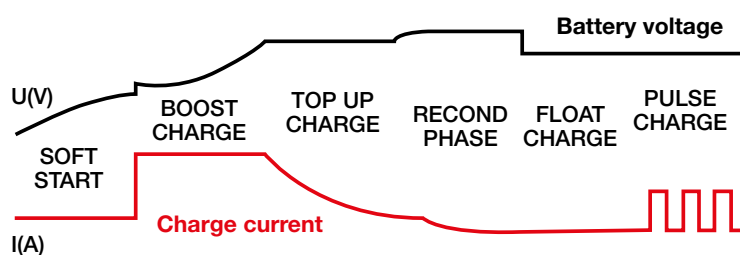


### Technical Specifications

### 12 V

Input voltage: / Line frequency:	198 - 264VAC / 47 - 63Hz
Max output power:	103W
Modes	1. Large batteries 2. Small batteries 3. Gel batteries 4. Recond 5. Power supply
Charge voltage:	14.7V at 20°C
Charge voltage GEL:	14.4V at 20°C
Charge voltage Recond:	Max 15.7V
Float voltage:	13.7V at 20°C
Charge current:	7A (1.5A small batteries and Recond Phase)
As Power supply:	Output voltage: 13.7V max 6.5A
Ripple:	< 100mVp-p
Formation Charge:	Low current start-up of deeply discharged battery.
Float charge:	7.0A pulses at safe float voltage level for maximum topping of battery capacity (1,5A pulses, small batteries).
Temperature compensation of charge voltage:	-3 to -4mV/°C pr. cell
Efficiency (at 100% load, 230V):	> 89 %
Switch frequency approx.:	65kHz
Leakage current from battery with mains switched off:	< 50 uA at 12V
Protection:	Protected against reversed polarity and short circuit proof. Prevents sparking. Charge timer: 4h. Safety timer : 72h Thermal protection. Charging of wrong lower voltage battery pack (e.g. 6V) will be limited to 1.6A (0.25A small battery) and terminated after 30 min. Charging battery > 16.2V terminated immediately.
Temperature range:	Operating: +25 to +40°C / Storage: +25 to +65°C
Electrical safety standard:	EN 60335-2-29
Insulation class :	Class II
Insulation voltage:	Primary – secondary: 3750VAC / 5300VDC
EMC standards:	EN 55014-1 and -2
Input terminal:	Non detachable mains cable
Output terminals:	Cord with Insulated battery clips and temp. sensor
IP-Grade:	54
Dimensions (LxWxH):	169 x 95 x 47 mm
Weight:	900g

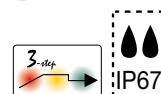
### Charging characteristics





## 9740 Max 10 A

- 3-step charge control with timer
- Charge current not affected by fluctuations in mains voltage
- Leads with battery clips
- Protected against reversed polarity and short circuit proof
- LED-indicator with three different colors
- Waterproof (IP67) version available
- Available in 120 V version
- Approvals:
  - Complies w. medical std (EN 60601)
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med timer
- Ladestrøm uavhengig av nettspenningsvariasjoner
- Ladekabler med batteriklemmer
- Polvendings- og kortslutningssikker
- Lysdiode indikator med tre farger
- Vanntett (IP67) versjon kan leveres
- Tilgjengelig i 120 V versjon
- Godkjenninger:
  - Tilfredst. medisinsk std. (EN 60601)
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

### 12 V\*

Input voltage:	Inngangsspenning:	190-264 VAC, 47-63 Hz
Switch frequency:	Svitsjefrekvens:	63 kHz
Input surge current limitation:	Påslagstrøm:	< 30 A
Leakage current with mains disconn.:	Strømtr. fra batt. ved frakoblet nett:	< 2,5 mA (12 V battery voltage)
Temperature range:	Temperaturområde:	-25°C - +40°C
Ripple:	Rippel:	< 100 mV p-p
Efficiency (at full load):	Virkningsgrad (ved full last):	> 83%
Current limit:	Strømbegrenser:	Ja / Yes
Insulation class:	Isolasjonsklasse:	I
Insulation voltage	Isolasjonsspenning	
• Primary - ground:	• Primær - jord:	2000 VAC
• Primary - secondary:	• Primær - sekundær:	4000 VAC
• Secondary - ground:	• Sekundær - jord:	500 VAC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60335-2-29, EN 60601-1
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1, EN 55014
Indication	Indikasjon	
• Orange (constant current, boost):	• Orange (konst. strøm, hurtig):	10 A
• Yellow (constant voltage, timer):	• Gul (konst. spenning, timer):	14,7 V
• Green (constant voltage, float):	• Grønn (konst. spenning, vedlikehold):	13,7 V
IP-code (PCB protected with coating):	IP-grad (kretskort påført besk. lakk):	21
Timer:	Timer:	4h ± 30min.
Dimensions (L×W×H):	Mål (L×B×H):	184 × 171 × 54 mm
Weight:	Vekt:	1,5 kg (2,7kg IP67 vers.)

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

\* The timer is also available with other values. / Timer leveres også med andre tider.

### Voltage versions 9740 - Spenningsversjoner 9740

Version Versjon (V)	Input Inngang (VAC)	Output (VDC) / Utgang (VDC)		Current limit Strøm begrenser (A)	Rec. batt. capacity * Anbefalt batt. kap. * (Ah)
		Timer	Float Vedlikehold		
12	198-264 VAC 47-63 Hz (90 -130 VAC)	14,7	13,7	10	40-400
24		29,4	27,4	5	20-200
36		44,1	40,8	3,3	15-150
48		58,8	54,8	2,5	10-100

\*Rec. value may vary – contact battery manuf. for details. / Anbefalt verdi kan variere – kontakt batteriproduzenten for detaljer.

Charging characteristics and LED indication: see chapter introduction pages - diagram C

## 2047 Max. 10 A

- 3-step charge control with timer
- Unaffected by fluctuations in mains voltage
- Protected against reversed polarity and short circuit proof
- Leads with battery clips
- LED-indicator with 3 different colors
- 3-trinns ladekontroll med timer
- Upåvirket av nettspenningsvariasjoner
- Polvendings- og kortslutningssikker
- Leveres med batteriklemmer
- Lysdiode-indikator med 3 farger



Technical specifications	Tekniske data	12 V*
Input voltage:	Inngangsspenning:	190 - 264VAC 47 - 63Hz
Leakage current from battery with mains switched off:	Max. strømtrekk fra batteri ved frakoblet nett:	< 2.5mA 12 V
Ripple:	Rippel:	< 100mV p-p
Efficiency (at 100% charge)	Virkningsgrad (v. 100% last):	> ca 83%
Switch frequency approx.:	Svitsjefrekvens ca.:	63kHz
Input surge current limitation:	Påslagstrøm:	< 30A
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25°C to +40°C
• Storage:	• Lagring:	-25°C to +85°C
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60335-2-29
Insulation class:	Isolasjonsklasse	I
Insulation voltage	Isolasjonsspenning	
• Primary - ground:	• Primær - jord:	1500V AC
• Primary - secondary:	• Primær - sekundær:	4000V AC
• Secondary - ground:	• Sekundær - jord:	500V AC
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1, EN 55014
Indication:	Indikasjon:	3 fargers lysdiode - 3 color LED
• Red: (constant current, boost):	• Rød: (konst. strøm, hurtig):	10A
• Yellow: (const. voltage, timer):	• Gul: (konst. spenning, timer):	14,7V
• Green: (const. voltage, float):	• Grønn: (konst. spenn., vedlikehold):	13,7V
IP-code (PCB protected with coating):	IP-grad (kretskort påført besk. lakk):	20
Timer**:	Timer**:	4h ± 30min.
Dimensions (LxWxH):	Ytre mål (LxBxH):	192 x 109 x 53.5mm
Weight:	Vekt:	980 g

\*Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.  
\*\*The timer is also available with other values. / Timer leveres også med andre tider.

### Voltage versions 2047 - Spenningsversjoner 2047

Version Versjon (V)	Input Inngang (VAC)	Output (VDC) / Utgang (VDC)		Current limit Strøm begrenser (A)	Rec. batt. capacity * Anbefalt batt. kap. * (Ah)
		Timer Timer	Float Vedlikehold		
12	190-264	14,7	13,7	10	40-400
24	190-264	29,4	27,4	5	20-200
36	190-264	44,1	40,8	3,3	15-150
48	190-264	58,8	54,8	2,5	10-100

\*Rec. value may vary – contact battery manuf. for details. / \*Anbefalt verdi kan variere – kontakt batteriproduzenten for detaljer.

Charging characteristics and LED indication: see chapter introduction pages - diagram C

## 2043

- Universal input voltage (90-264 VAC)
- 3-step charge control with timer
- PFC - Power Factor Correction
- Unaffected by fluctuations in mains voltage
- Protected against reversed polarity and short circuit proof
- Leads with battery clips\*
- Mains cord included
- Universal inngangsspenning (90-264 VAC)
- 3-trinns ladekontroll med timer
- PFC - Power Factor Correction
- Uavhengig av nettspenningsvariasjoner
- Polvendings- og kortslutningssikker
- Leveres med batteriklemmer\*
- Nettledning inkludert



Technical specifications	Tekniske data	12 V*
Input voltage:	Inngangsspenning:	90 - 264VAC 47 - 63Hz
Power factor, typical:	Effekt faktor, typisk:	0,93
Leakage current from battery:	Max. strømtrekk fra batteri:	< 2,5mA 12V
Ripple:	Rippel:	< 100mV p-p
Efficiency (at 100% charge):	Virkningsgrad (v. 100% last):	> ca 80%
Switch frequency approx.:	Svitsjefrekvens ca.:	60kHz
Input surge current limitation:	Påslagstrøm:	< 30A
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25°C to +40 °C
• Storage:	• Lagring:	-25°C to +85 °C
Electrical safety standard**:	Elektrisk sikkerhetsstandard**:	EN 60335-2-29
Insulation class:	Isolasjonsklasse :	I
Insulation voltage	Isolasjonsspenning	
• Primary - ground:	• Primær - jord:	1500V AC
• Primary - secondary:	• Primær - sekundær:	4000V AC
• Secondary - ground:	• Sekundær - jord:	500V AC
EMC standards	EMC standarder	PFC: EN 61000-3-2 class D, EN 61000-6-3
• Emission	• Emisjon	EN 61000-6-3
• Immunity	• Immunitet	EN 61000-6-1, EN 55014
Indication:	Indikasjon:	3 fargers lysdiode - 3 color LED
• Red (constant current, boost):	• Rød (konstant strøm, hurtig):	10A
• Yellow (const. voltage, timer):	• Gul (konst. spenn., timer):	14,7V
• Green (const. voltage, float):	• Grønn (konst. spenn., vedlikehold)	13,7V
Input terminal:	Inngangsterminal:	3-pin IEC 320 connector
IP-code (PCB protected with coating):	IP-grad (kretskort påført besk. lakk):	20
Timer***:	Timer***:	4h ± 30min.
Dimensions (LxWxH):	Ytre mål (LxBxH):	210 × 148 × 58mm
Weight:	Vekt:	1,4 kg

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.  
 \*\* For 48V version under condition that the output voltage is inaccessible / For 48V versjonen forutsettes montering slik at ladeklemmene ikke er berørbare  
 \*\*\*The timer is also available with other values. / Timer leveres også med andre tider.

### Voltage versions 2043 - Spenningsversjoner 2043

Version Versjon (V)	Input Inngang (VAC)	Output (VDC) / Utgang (VDC)		Current limit Strøm begrenser (A)	Rec. batt. cap.* Anbef. batt. kap* (Ah)
		Timer / Timer	Float / Vedlikehold		
12	90-264	14,7	13,7	10	40-400
24	90-264	29,4	27,4	5	20-200
36	90-264	44,1	40,8	3,3	15-150
48	90-264	58,8	54,8	2,5	10-100

\*Rec. value may vary – contact battery manuf. for details. \*Anbefalt verdi kan variere – kontakt batteriproducenten for detaljer.

Charging characteristics and LED indication: see chapter introduction pages - diagram C

## 2044-2944 Max. 25 A

### 2944 - charge control with microprocessor

- 3-step charge control with timer
- High efficiency (> 83 %)
- Temp. compensated charge voltage – external heat sensor
- Protected against reversed polarity and short circuit proof
- Leads with battery clips
- Available in 120V version
- 3-trinns ladekontroll med timer
- Høy virkningsgrad (> 83 %)
- Temp. kompensert ladespenning – ekstern temperaturføler
- Polvendings- og kortslutningssikker
- Leveres med batteriklemmer
- Tilgjengelig i 120V versjon



Technical specifications	Tekniske data	12 V
Input voltage:	Inngangsspenning:	198 - 264VAC
Leakage current from battery with mains switched off:	Max. strømtrekk fra batteri ved frakoblet nett:	< 0,5mA 12 V
Ripple:	Rippel:	< 100mV p-p
Efficiency (at 100% charge):	Virkningsgrad (v. 100% last):	> ca. 83%
Switch frequency approx.:	Svitsjefrekvens ca.:	67kHz
Input surge current limitation:	Påslagstrøm:	< 35A
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25°C to +40°C
• Storage:	• Lagring:	-25°C to +85°C
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60335-2-29
Insulation class:	Isolasjonsklasse:	I
Insulation voltage	Isolasjonsspenning	
• Primary - ground:	• Primær - jord:	1500V AC
• Primary - secondary:	• Primær - sekundær:	4000V AC
• Secondary - ground:	• Sekundær - jord:	500V AC
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1, EN 55014
Indication (2044):	Indikasjon (2044):	3 fargers lysdiode - 3 color LED
• Red: (constant current, boost):	• Rød: (konst. strøm, hurtig):	20A
• Yellow: (const. voltage, timer):	• Gul: (konst. spenning, timer):	14,7V
• Green: (const. voltage, float):	• Grønn: (konst. spenning vedlikehold):	13,7V
IP-code (PCB protected with coating):	IP-grad (kretskort påført besk. lakk):	20
Timer*:	Timer*:	4h ± 30min.
Dimensions (LxWxH):	Ytre mål (LxBxH):	210 x 148 x 58mm
Weight:	Vekt:	1,55 kg

\*Timer is also available with other values / Timer leveres også med andre tider

### Voltage versions - Spenningsversjoner

Version / Versjon (V)	Input / Inngang (VAC)	Output (VDC) / Utgang (VDC)		Current limit / Strøm begrenser (A)	Rec. batt. capacity* Anbefalt batt. kap.* (Ah)
		Timer / Timer	Float / Vedlikehold		
12-20A	198-264 VAC 47-63 Hz	14,7	13,7	20	100-1000
12-25A		14,7	13,7	25	125-1250
24		29,4	27,4	10	50-500
36		44,1	41,1	6,7	35-350
48		58,8	54,8	5	25-250

\*Rec. value may vary – contact battery manuf. for details. / \*Anbefalt verdi kan variere – kontakt batteriproduzenten for detaljer.

Charging characteristics and LED indication: see chapter introduction pages - 2044: diagram C, 2944: diagram D



## 2045 Max. 20 A

- 3-step charge control with timer
- High efficiency (> 83 %)
- Unaffected by fluctuations in mains voltage
- Temperature compensated charge voltage – external heat sensor
- Protected against reversed polarity and short circuit proof
- Leads with battery clips
- Waterproof (IP67) version available
- Available in 120 VAC version
- Available in Li-Ion and LiFePO<sub>4</sub> versions

- 3-trinns ladekontroll med timer
- Høy virkningsgrad (> 83 %)
- Uavhengig av nettspenningsvariasjoner
- Temperaturkompensert ladespenning – ekstern temperaturføler
- Polvendings- og kortslutningssikker
- Leveres med batteriklemmer
- Vanntett (IP67) versjon kan leveres
- Kan leveres som 120 VAC versjon
- Kan leveres som Li-Ion og LiFePO<sub>4</sub> lader



### Technical specifications

### Tekniske data

### 12 V\*

Input voltage:	Inngangsspenning:	198 - 264VAC
Leakage curr. from batt. with mains switched off:	Max. strømtrekk fra batt. ved frakob. nett:	< 0,5mA
Ripple:	Rippel:	< 100mV p-p
Efficiency (at 100% charge current)	Virkningsgrad (v. 100% last):	> ca. 83%
Switch frequency approx.:	Svitsjefrekvens ca.:	67kHz
Input surge current limitation:	Påslagstrøm:	< 35A
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25°C to +40°C
• Storage:	• Lagring:	-25°C to +85°C
Protection:	Beskyttelse:	Protected against reversed polarity, short circuit proof and over temperature Polvendings- og kortslutningssikker Beskyttet mot overtemperatur
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60335-2-29
Insulation class:	Isolasjonsklasse:	I
Insulation voltage	Isolasjonsspenning	
• Primary - ground:	• Primær - jord:	1500V AC
• Primary - secondary:	• Primær - sekundær:	4000V AC
• Secondary - ground:	• Sekundær - jord:	500V AC
EMC standards	EMC standarder	PFC: EN 61000-3-2 class D
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Indication (2045):	Indikasjon (2045):	3 color LED – 3 fargers lysdiode
• Red (constant current):	• Rød (konst. strøm):	20A (IP67: 17A)
• Yellow (const. voltage, timer):	• Gul (konst. spenning, timer):	14,7V
• Green (const. voltage, float):	• Grønn (konst. spenning, vedlikehold):	13,7V
IP-code (PCB protected with coating):	IP-grad (kretskort påført besk. lakk):	20
Timer**:	Timer**:	4h ± 30min.
Dimensions (LxWxH):	Ytre mål (LxBxH):	215 x 186 x 63,5mm
Weight:	Vekt:	2,32 kg (IP67: 4kg)

\* Some technical specifications may differ for other models and voltage versions. / Visse tekniske data kan variere for de forskjellige modeller og spenningsversjoner.

\*\*Timer is also available with other values / Timer leveres også med andre tider

### Voltage versions - Spenningsversjoner

Version Versjon (V)	Input Inngang (VAC)	Output (VDC) / Utgang (VDC)		Current limit Strøm begrenser (A)	Rec. batt. capacity * Anbefalt batt. kap * (Ah)
		Timer / Timer	Float / Vedlikehold		
12	198-264 V 47-63 Hz	14,7	13,7	20	100-1000
24		29,4	27,4	10	50-500
36		44,1	41,1	6,7	35-350
48		58,8	54,8	5	25-250

\*Rec. value may vary – contact battery manuf. for details. / Anbefalt verdi kan variere – kontakt batteriproduzenten for detaljer.

Charging characteristics and LED indication: see chapter introduction pages - diagram C



## 2745-2945 Max. 20 A

### 2745 Autodetect 120/230 VAC

- 3-step charge control w. microprocessor
- Pulsing float charge
- Low current start up of deeply discharged batteries (step 0)
- Unaffected by fluctuations in mains voltage
- Smart temperature control: silent temp controlled fan with fan speed regulation
- Waterproof (IP67) version available
- 3-trinns ladekontroll med mikroprosessor
- Pulserende vedlikeholdslading
- Lavstrømsmodus ved oppstart av meget utladde batterier (trinn 0)
- Uavhengig av nettspenningsvariasjoner
- Smart temperaturkontroll: lydsvak temp kontrollert vifte m. viftehastighetsregulering
- Vanntett (IP67) versjon kan leveres



#### Technical specifications

#### Tekniske data

#### 12 V

Input voltage:	Inngangsspenning:	198 - 264 VAC 47-63 Hz (2745: 95-130 198-264 VAC)
Max. output power:	Maks. utgangseffekt:	294 W
Charge timer (step 2):	Ladetimer (step 2):	4 h
Safety timer:	Sikkerhetstimer:	72 h
Restart charge current:	Restart ladestrøm:	20 A
Indication batt not connected:	Indikasjon når batt ikke tilkoblet:	flashing green – blinkende grønn
Leakage current from battery with mains switched off:	Max strømtrekk fra batteri ved frakoblet nett:	<0,6mA at 13V (0,43Ah/month)
Ripple:	Rippel:	< 100 mV p-p
Efficiency (at 100% load):	Virkningsgrad (v. 100% last):	> 85%
Switch frequency approx.:	Svitsjefrekvens ca.:	67 kHz
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25°C til +40 °C
• Storage:	• Lagring:	-25°C til +85 °C
Protection:	Beskyttelse:	
• Short circuit proof	• Kortslutningssikker	Charging of lower voltage batt (e.g. 6V) limited to 2,5A and term. a. 30 min.
• Against reversed polarity	• Polvendingsikker	Lading av batt. m lavere spenn. (f.eks. 6V) vil strømmen bli begr. til 2,5A og term. e. 30 min.
• Against overtemperature	• Mot overtemperatur	
• Safety timer	• Sikkerhetstimer	
Safety:	Sikkerhet:	EN 60335-2-29
Insulation class:	Isolasjonsklasse:	Class D I
Insulation voltage Primary-secondary:	Isolasjonsspenn. Primær - sekundær:	3750 VAC / 5300 VDC
EMC standards:	EMC standarder:	PFC: EN 61000-3-2 EN 55014-1-2, EN 61000-6-3, EN 61000-6-1
Input terminal:	Inngangsterminal:	2745: 3 pin IEC-320 connection 2945: mains cord / nettleiding
Output terminals:	Utgangsterminal:	leads w. battery clips / batteriklemmer
IP-code (PCB protected with coating):	IP-grad (kretskort påført besk. lakk):	20
Rec. battery capacity:	Anbefalt batterikapasitet:	100 - 1000 Ah
Dimensions (LxWxH):	Ytre mål (LxBxH):	215 × 186 × 63,5 mm (2745: L=245mm)
Weight:	Vekt:	2,36 kg

#### Versions - Versjoner

Charge control - Ladekontroll (LED indication)						
	Step 0 < 30 min	Step 0 > 30 min	Step 1	Step 2	Step 3	Float charge
	(Yellow / Gul)	(Red=error / Rød=feil)	(Yellow / Gul)	(Flash Yellow / Blink Gul)	(Green / Grønn)	Vedl. lading
12V	2,5A +- 0,3A (batt. volt< 10,5V)	< 0,2A	20A +- 0,5A (batt. volt >10,5V) (til Vbat = 14,7V)	14,7V +- 0,1V (until I charge <2,5A or >4hr) tapering charge current	13,7V +- 0,2V (until I charge > 20A) supply current up to max 20A for possible parallel load	13,7V±0,2A Pulsing current at safe float volt. Level for max. Topp. of batt.
24V	1,4A +- 0,5A (batt. volt< 21V)	< 0,2A	10A +- 0,5A (batt. volt >21V) (til Vbat = 29,4V)	29,4V +- 0,1V (until I charge <1,4A or >4hr) tapering charge current	27,4V +- 0,2V (until I charge > 10A) supply current up to max 10A for possible parallel load	27,4V±0,2A Pulsing current at safe float volt. Level for max. Topp. of batt.

Charging characteristics and LED indication: see chapter introduction pages - diagram C

## 2245 Max. 40 A

- 3-step charge control w. microprocessor
- Low current start up of deeply discharged batteries (step 0)
- PFC - Power Factor Correction
- Unaffected by fluctuations in mains voltage
- Smart temperature control: silent temp controlled fan with fan speed regulation
- Pulsing float charge
- 3-trinns ladekontroll med mikroprosessor
- Lavstrømsmodus ved oppstart av meget utladde batterier (trinn 0)
- PFC - Power Factor Correction
- Uavhengig av nettspenningsvariasjoner
- Smart temperaturkontroll: lydsvak temp kontrollert vifte m. viftehastighetsregulering
- Pulserende vedlikeholdslading



Technical specifications	Tekniske data	12 V	24 V
Input voltage:	Inngangsspenning:	198 - 264 VAC 47-63 Hz	
Max. output power:	Maks. utgangseffekt:	588 W	
Charge timer (step 2):	Ladetimer (step 2):	4 h	
Safety timer:	Sikkerhetstimer:	72 h	
Restart charge current:	Restart ladestrøm:	40 A	20 A
Indication batt not connected:	Indikasjon når batt ikke tilkoblet:	flashing green – blinkende grønn	
Leakage current from battery with mains switched off:	Max strømtrekk fra batteri ved frakoblet nett:	<0,6mA at 13V (0,43Ah/month)	<0,6mA at 26V (0,43Ah/month)
Ripple:	Rippel:	< 100 mV p-p	
Efficiency (at 100% load):	Virkningsgrad (v. 100% last):	>81%	> 85%
Switch frequency approx.:	Svitsjefrekvens ca.:	67 kHz	
Temperature range	Temperaturområde		
• Operating:	• Drift:	-25°C til +40 °C	
• Storage:	• Lagring:	-25°C til +85 °C	
Protection:	Beskyttelse:		
• Short circuit proof	• Kortslutningssikker	Charging of lower voltage batt (e.g. 6V/12V) limited to 5A/2,5A and term. a. 30 min.	
• Against reversed polarity	• Polvendingsikker	Lading av batt. m lavere spenn. (f.eks. 6V/12V) vil strømmen bli begr. til 5A/2,5A og term. e. 30 min.	
• Against overheating	• Mot overoppheting		
• Safety timer	• Sikkerhetstimer		
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60335-2-29	
Insulation class:	Isolasjonsklasse:	I	
Insulation voltage Primary-secondary:	Isolasjonsspenn. Primær - sekundær:	3750 VAC / 5300 VDC	
EMC standards:	EMC standarder:	PFC EN 61000-6-3 Class D EN 55014-1-2, EN 61000-6-3, EN 61000-6-1	
Input terminal:	Inngangsterminal:	3-pin IEC-320	
Output terminals:	Utgangsterminaler:	skruterminaler - screw terminals	
IP-grade:	IP-grad:	20	
Rec. battery capacity:	Anbefalt batterikapasitet:	200 - 2000 Ah	100 - 1000 Ah
Dimensions (L×W×H):	Ytre mål (L×B×H):	330 × 186 × 63,5 mm	
Weight:	Vekt:	3,15 kg	

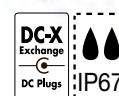
### Versions - Versjoner

Charge control - Ladekontroll (LED indication)						
	Step / Trinn 0 < 30 min	Step / Trinn 0 > 30 min	Step / Trinn 1	Step / Trinn 2	Step / Trinn 3	Float charge
	(Yellow / Gul)	(Red=error / Rød=feil)	(Yellow / Gul)	(Flash Yellow / Blink Gul)	(Green / Grønn)	Vedl. lading
12V	5A ± 0,5A (batt. volt < 10,5V)	< 0,2A	40A ± 0,5A (batt. volt > 10,5V) (til Vbat = 14,7V)	14,7V ± 0,1V (until I charge < 5A or > 4hr) tapering charge current	13,7V ± 0,2V (until I charge > 40A) supply current up to max 40A for possible parallel load	13,7V±0,15A Strøm pulserer på sikkert spenningsnivå for topplading av batt.
24V	2,5A ± 0,5A (batt volt < 21V)	< 0,2A	20A ± 0,5A (batt. volt < 21V) (until Vbat = 29,4V)	29,4V ± 0,1V (until I charge < 2,5A or > 4hr) tapering charge current	27,4V ± 0,2V (until I charge > 20A) supply current up to max 20A for possible parallel load	27,4V±0,3A Pulsing current at safe float voltage level for max. topping of batt.

Charging characteristics and LED indication: see chapter introduction pages - diagram D

## 2544 Max. 2,7 A

- DC/DC switch mode charger for lead acid batteries
- 3-step charge control with current detection as charge termination
- Charging 6-12-24V batteries
- 3-colored LED indicator
- Mounting bracket available
- Waterproof (IP67) version available
- Custom specifications on request
- 20-60 VDC input version available (2541)
- DC/DC switch mode hurtiglader for blybatterier
- 3-trinns ladekontroll med strøm-deteksjon som ladestopp
- Opplading av 6-12-24V batterier
- 3-farget lysdiodeindikator
- Kan leveres med festebrakett
- Vanntett (IP67) versjon kan leveres
- Tilpasninger leveres på forespørsel
- 20-60 VDC versjon tilgjengelig (2541)



Input voltage:	Inngangsspenning:	10-30 VDC
Switch frequency, approx.:	Svitsjefrekvens ca.:	40 kHz
Leakage current from battery with mains switched off:	Strømtrekk fra batteri ved frakoblet nett:	<1 mA
Temperature range	Temperaturområde	
• Operating:	• Drift:	-20°C - +40°C
• Storage:	• Lagring:	-25°C - +85°C
Ripple:	Rippel:	< 100 mV p-p
Efficiency (at 100% load 13,5V):	Virkningsgrad (100% last 13,5V):	ca. 80%
Protection:	Sikring:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker Note: Input/output without el. separation NB: Inng./utgang uten galvanisk skille
EMC standards:	EMC standarder:	EN 61204-3
Input terminal:	Inngangsterminal:	cable w. 5A fuse on cord ledning m. 5A hengesikring
Output terminals:	Utgangsterminaler:	Cord w. exch. plug. Sekundærledning m/utsiftbar plugg
IP-code:	IP-Grad:	41
Dimensions (LxWxH):	Mål (LxBxH):	107 x 67 x 37mm
Weight:	Vekt:	250g

### Versjoner - Versions

		Charge control - Ladekontroll				
		Step 1 (orange)	Step 2a (orange)	Step 2b (yellow/gul)	Step 3 (green/grønn)	
Version (V)	Max output power (W)	Charge Current	Charge Voltage	To yellow when current is:	Charge Termin. when current is:	Float charge
Versjon (V)	Max utg. effekt (W)	Ladestrøm	Ladespenning	Til gul når strøm er:	Ladestopp når strøm er:	Vedl. Lading
6	20	2,7A ±0,2A	7,35V ±0,1V	< 1,15A ±25%	< 0,25A +25%	6,9V±0,15V
12	30	2A ±0,15A	14,7V ±0,1V	< 0,85A ±25%		13,7V±0,15V
24	35	1,2A ±0,1A	29,4V ±0,1V	< 0,5A ±25%		27,4V±0,2V

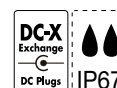
Charging characteristics and LED indication: see chapter introduction pages - diagram B

## 2641 Max. 4 A

24V: 2 x 1A, 1 x 2A or 1 x 1A (48V)

12V: 2 x 2A, 1 x 4A or 1 x 2A (24V)

- For optimal charge of 24V (12+12V) and 12V battery systems w. one charger
- 3-step charge control with current detection as charge termination
- Universal input voltage (90-264 VAC)
- Order mains cord separately
- Approvals:
  - Complies w. medical std EN 60601
  - For updates: see [www.mascot.no](http://www.mascot.no)
- For optimal lading av 24V (12+12V) og 12V batterisystemer med en lader.
- 3-trinns ladekontroll med strøm-deteksjon som ladestopp
- Universal inngangsspenning (90-264 VAC)
- Nettledning best. separat
- Godkjenninger:
  - Tilfredsst. medisinsk std EN 60601
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

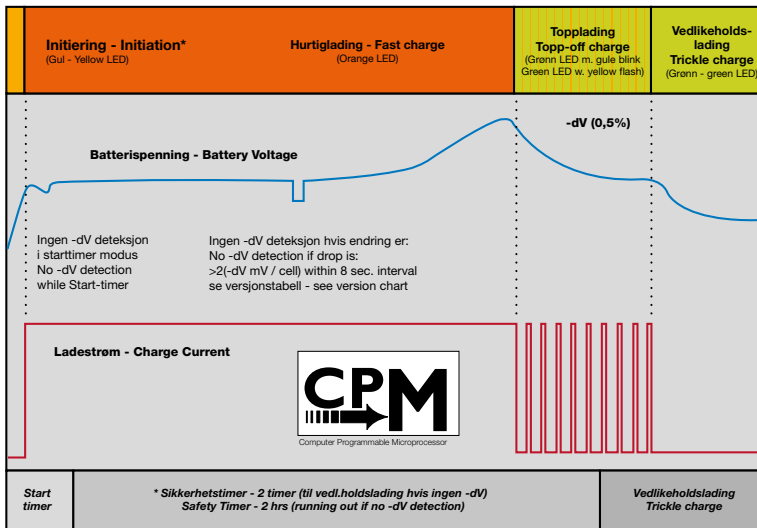
Input voltage:	Inngangsspenning:	90 - 264 VAC
Line frequency:	Frekvensområde:	47 - 63Hz
Switch frequency, approx.:	Svitsjefrekvens ca.:	40 kHz
Leakage current from battery with mains switched off:	Strømtrekk fra batteri ved frakoblet nett:	<1mA
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25°C to +40° C
• Storage:	• Lagring:	-25°C to +85° C
Ripple:	Rippel:	< 100mV p-p
Protection:	Sikring:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker
Insulation class:	Isolasjonsklasse:	II
Insulation voltage	Isolasjonsspenning	
• Primary - secondary:	• Primær - sekundær:	4000VAC/5700VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN60601-1, EN 60335-2-29, EN 60950-1
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Input terminal:	Inngangsterminal:	2-pin IEC 320 connector
Output terminals	Utgangsterminaler:	Cord w/wo plug. Exch. plugs available. Also avail. w. batt. clips. Sek. ledn. m/u plugg. Utskiftb. plugger tilgj. Lev. også m. ladeklemmer.
IP-grade	IP-grad:	41
Dimensions (LxWxH):	Ytre mål (LxBxH):	135 x 80 x 44 mm
Weight:	Vekt:	390g

Versions - Versjoner			Charge control - Ladekontroll				
			Step 1 (orange)	Step 2a (orange)	Step 2b (yellow / gul)	Step 3 (green / grønn)	
Max. output power	Efficiency (100% at 230V)	Charge current	Charge voltage	To yellow when current is:	Charge termin. when current is	Standby voltage	
Maks. utg. effekt	Virkningsgrad	Ladestrøm	Ladespenning	Til gul når strøm er	Ladestopp når strøm er:	Vedlikeholdsspenning	
2x12 V	60 W	82 %	2,0A ±0,1A (until 14,7V)	14,7V ±0,1V	< 0,8A ±0,1A	13,7V±0,15V	
2x24 V	60 W	85 %	1A ±0,1A (until 29,4V)	29,4V ±0,1V	< 0,40A ±0,1A	27,4V±0,3V	

Charging characteristics and LED indication: see chapter introduction pages - diagram B



# CHARGERS FOR NIMH/NICD BATTERIES LADERE FOR NIMH/NICD BATTERIER



Charging diagram and LED indication for -dV detection

\* Nytt ladeforløp starter ved til- og frakobling av sek. lading eller nettleddning  
A new charge cycle starts by reconn. battery at output or conn reconn. mains

## RECHARGEABLE NIMH BATTERIES

Rechargeable NiMH batteries are rapidly becoming more advanced and their uses are spreading into a wide variety of applications. Accordingly, the demands on the battery chargers have increased. For safe and fast battery charge, new chargers must be able to handle a broad range of battery specifications. Mascot has seen this development and introduces a new range of intelligent models from 16W to 65W to meet the demand for more flexible and versatile battery chargers.

The standard models are fast chargers using -dV detection, but the chargers are equipped with a Computer Programmable Microprocessor (CPM), so they can readily be programmed to fit a variety of specifications. These charge detections include (one or more options combined):

- -dV
- dT/dt
- 0 dV
- Timer only

In addition, adjustments can be made to:

- **safety timer, start timer, topoff timer**
- **-dV detection level**
- **temperature gradient detection level**

All models are equally well suited for charging NiCd batteries. Other key features include: automatic polyswitch fuse against reversed polarity on output. Compliance with international standards for medical use (EN 60601). Custom and waterproof units (IP 67) are available on request.

## OPPLADBARE NIMH BATTERIER

Oppladbare NiMH batterier er i dag både svært populære og avanserte, og de har spredt seg til mange forskjellige bruksområder. Dette stiller høyere krav til laderne, som skal kunne håndtere mange ulike NiMH batterityper og samtidig sikre full opplading, både raskt og sikkert. Mascot har sett denne utviklingen og introduserer nå en ny serie med intelligente batteriladere som ivaretar krav til både ladefleksibilitet og sikkerhet.

Standardmodellene er hurtigladerer med -dV ladekontroll, men alle laderne er utstyrt med en Computer Programmerbar Mikroprosessor (CPM), slik at de kan raskt omprogrammeres til andre ladekontrollfunksjoner. Disse ladefunksjonene er (en eller flere parametere kombinert):

- -dV
- dT/dt
- 0 dV
- Timer only

I tillegg kan følgende parametere justeres:

- **sikkerhetstimer, starttimer, oppladningstimer**
- **-dV deteksjonsnivå**
- **temperaturgradient deteksjonsnivå**

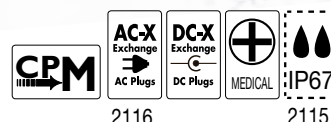
Samtlige modeller er også velegnet for lading av NiCd batterier. Laderne har automatisk polyswitch-sikring mot polvendning på utgang, og er godkjente for medisinsk bruk i hht EN 60601. Spesialtilpasninger og vann-tette (IP67) enheter leveres på forespørsel.



## 2115-2116 Max. 16 W

### 2116 - exchangeable/utskiftbare AC plugs

- Universal input voltage
- CPM-Computer Programmable  
Microprocessor offering:
  - Charge detection options (one or more):
  - dV, dT/dt, 0 dV, Timer
  - Safety timer, dV threshold, and Temperature gradient adjustment
- Exchangeable AC and DC plugs
- Custom specifications on request
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- Universal inngangsspenning
- CPM-Computer Programmerbar  
Microprosessor tilbyr:
  - Ladedeteksjonsvalg (en eller flere):
  - dV, dT/dt, 0 dV, Timer
  - Justering av sikkerhetstimer, dV nivå og temp. stigningsnivå
- Utskiftbare AC og DC plugger
- Tilpasninger leveres på forespørsel
- Godkjenninger:
  - Medisinsk sertifisert 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



2116

2115

#### Technical specifications

#### Tekniske data

Input voltage:	Inngangsspenning:	90-264 VAC, 50-60Hz
Max. output power:	Maks. utgangseffekt:	16W
Trickle charge current:	Vedlikeholdsladestrøm:	30mA +/-15mA 10-20 cell: 25mA +/-10mA
Leakage current f. batt. w mains off:	Strømtrekk fra batt v. frakobl. nett:	< 1mA
Start timer (no -dV detection) *:	Start timer (ingen -dV deteksjon) *:	3 min.
Top-off timer *:	Top-off timer *:	1 time/hour
Safety timer *:	Sikkerhetstimer *:	2 timer/hours
Switch frequency:	Svitsjefrekvens:	40 kHz
Temperature range	Temperaturområde:	-20°C - +40°C
Efficiency (at 100% load):	Virkningsgrad (ved 100% last):	ca 80 %
Protection	Sikring	
• Input:	• Inngang:	Sikringsmotstand/fusible resistor
• Output:	• Utgang:	Polyswitch-sikring mot polvendning/ Polyswitch fuse against reversed polarity
Insulation class:	Isolasjonsklasse:	II
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN/UL 60601-1, EN 60950, EN 60335-2-29
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Mains connection**:	Nettilkopling**:	2-pin IEC 320
IP-code:	IP-grad:	41
Dimensions (LxWxH):	Mål (LxBxH):	90 x 45 x 32mm (2115)
Weight:	Vekt:	125g

\* Programmable / Programmerbar

\*\* Mains cable not included. Order separately. / \*\* Nettledning følger ikke med. Må bestilles i tillegg.

#### Versions - Versjoner

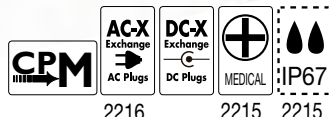
Cells	No-load voltage	Min. out. for -dV detection	Max out. for -dV detection	-dV detection mV/cell or %	Fast charge current	Top-off charge (1h. a. -dV det.)
Celler	Tomgangsspenning	Min. utsp. for -dV deteksjon	Max. utsp. for -dV deteksjon	-dV deteksjon mV/celle eller %	Hurtig ladestrøm	Topplading (1t. e. -dV detek.)
2	6,3V +/-0,7V	2,5V (min. 2 c.)	5,4V (max. 2 c.)	10mV/0,6%	1,3A +/- 100mA	160mA +/- 30mA
3-6	12,8V +/-0,7V	3,7V (min. 3 c.)	10,8V (max. 6 c.)	12mV/0,7%	1,3A +/- 100mA	160mA +/- 30mA
4-8	16,5V +/-1V	5,0V (min. 4 c.)	14,4V (max. 8 c.)	8mV/0,5%	1,0A +/- 100mA	130mA +/- 30mA
5-10	21V +/-1,2V	6,2V (min. 5 c.)	18V (max. 10 c.)		0,8A +/- 100mA	110mA +/- 30mA
6-12	24,7V +/-1,5V	7,5V (min. 6 c.)	21,6V (max. 12 c.)		0,7A +/- 100mA	100mA +/- 30mA
10-20	41V +/-2V	12,5V (min. 10 c.)	36V (max. 20 c.)		0,4A +/- 50mA	65mA +/- 20mA
Note:		min 1,25 V pr. cell	max 1,8 V pr. cell			

Charging characteristics and LED indication: see chapter introduction pages

## 2215-2216

### 2216 - exchangeable/utskiftbare AC plugs

- Universal input voltage
- CPM-Computer Programmable Microprocessor offering:
  - Charge detection options (one or more):
  - dV, dT/dt, 0 dV, Timer
  - Safety timer, dV threshold, and temp. gradient adjustment
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- Universal inngangsspenning
- CPM-Computer Programmerbar Microprosessor tilbyr:
  - Ladedeteksjonsvalg (en eller flere):
  - dV, dT/dt, 0 dV, Timer
  - Justering av sikkerhetstimer, dV nivå og temp. stigningsnivå
- Godkjenninger:
  - Medisinsk sertifisert 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



2216

2215

2215

#### Technical specifications

#### Tekniske data

Input voltage:	Inngangsspenning:	90-264 VAC, 50-60Hz
Max. output power:	Maks. utgangseffekt:	35W
Trickle charge current:	Vedlikeholdsladestrøm:	100mA +/-50mA 10-20 cell: 50mA +/-25mA
Leakage current f. battery w mains off:	Strømtr. fra batt v. frakobl. nett:	< 1mA
Start timer (no -dV detection)*:	Start timer (ingen -dV deteksjon)*:	3 min.
Top-off timer*:	Top-off timer*:	1 time/hour
Safety timer*:	Sikkerhetstimer*:	2 timer/hours
Switch frequency:	Svitsjefrekvens:	40 kHz
Temperature range:	Temperaturområde:	-20°C - +40 °C
Efficiency (at 100% load):	Virkningsgrad (ved 100% last):	ca 78 %
Protection	Sikring	
• Input:	• Inngang:	Fusible resistor / Sikringsmotstand
• Output:	• Utgang:	Polyswitch fuse against reversed polarity/ Polyswitch-sikring mot polvendning
Insulation class:	Isolasjonsklasse:	II
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60601-1, EN 60950, EN 60335-2-29, UL 60601-1
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity*:	• Immunitet*:	EN 61000-6-1
Mains connection**:	Nettilkopling**:	2-pin IEC 320
IP-code:	IP-grad:	41
Dimensions (LxWxH):	Mål (LxBxH):	107 x 67 x 36,5mm (2215)
Weight:	Vekt:	250g

\*Programmable / Programmerbar

\*\* Mains cable not included. Order separately. / Nettledning følger ikke med. Må bestilles i tillegg.

#### Versions - Versjoner

Cells	No-load voltage	Min. out. for -dV detection	Max out. for -dV detection	-dV detection mV/cell or %	Fast charge current	Top-off charge (1h. a. -dV det.)
Celler	Tomgangs-spenning	Min utsp. for -dV deteksjon	Max utsp. for -dV deteksjon	-dV deteksjon mV/celle eller %	Hurtig ladestrøm	Topplading (1t. e. -dV detek.)
2	8,7V +/-0,7V	2,5V (min. 2 c.)	3,6V (max 2 c.)	11mV/0,6%	3,0A +/- 250mA	390mA +/- 80mA
3-6	12,8V +/-0,7V	3,7V (min. 3 c.)	10,8V (max 6 c.)	11mV/0,6%	3,0A +/- 250mA	390mA +/- 80mA
4-8	16,5V +/-1V	5,0V (min. 4 c.)	14,4V (max 8 c.)	8mV/0,5%	2,2A +/- 150mA	310mA +/- 80mA
5-10	21V +/-1,2V	6,2V (min. 5 c.)	18V (max 10 c.)		1,8A +/- 150mA	270mA +/- 70mA
6-12	24,7V +/-1,5V	7,5V (min. 6 c.)	21,6V (max 12 c.)		1,5A +/- 100mA	240mA +/- 60mA
10-20	41V +/-2V	12,5V (min. 10 c.)	36V (max 20 c.)		0,9A +/- 70mA	130mA +/- 40mA
Note:		min 1,25 V pr. cell	max 1,8 V pr. cell			

Charging characteristics and LED indication: see chapter introduction pages

## 2015 Max. 45 W

- AC/DC switch mode fast charger
- CPM-Computer Programmable Microprocessor offering:
  - Charge detection options (one or more):
  - dV, dT/dt, 0 dV, Timer
  - Safety timer, dV threshold, and temperature gradient adjustment
- Available in 120V version
- Custom specifications on request
- Exchangeable DC plugs
- Approvals:
  - Complies w. medical std (EN 60601)
  - UL approved (UL 60601-1)
  - For updates: see [www.mascot.no](http://www.mascot.no)

- AC/DC switch mode hurtiglader
- CPM-Computer Programmerbar Microprocessor tilbyr:
  - Ladedeteksjonsvalg (en eller flere):
  - dV, dT/dt, 0 dV, Timer
  - Justering av sikkerhetstimer, dV nivå og temp. stigningsnivå
- Tilgjengelig i 120V versjon
- Tilpasninger leveres på forespørsel
- Utskiftbare DC plugger
- Godkjenninger:
  - Tilfredstiller medisinsk std (EN 60601)
  - UL godkjent (UL 60601-1)
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	230 VAC, 50-60Hz
Max. output power:	Maks. utgangseffekt:	45W
Trickle charge current:	Vedlikeholdsladestrøm:	3-6 cells: 150mA +/-70mA 10-20 cells: 50mA +/-25mA
Leakage current f. battery w. mains off:	Strømtrekk fra batt. v. frakoblet nett:	< 1mA
Start timer (ingen -dV deteksjon)*:	Start timer (no -dV detection)*:	3 min.
Top-off timer*:	Top-off timer*:	1 time/hour
Safety timer*:	Sikkerhetstimer*:	2 timer/hours
Switch frequency:	Svitsjefrekvens:	40 kHz
Temperature range:	Temperaturområde:	-20 °C - +40 °C
Efficiency (at 100% load):	Virkningsgrad (ved 100% last):	ca 80 %
Protection	Sikring	
• Input:	• Inngang:	Sikringsmotstand/fusible resistor
• Output:	• Utgang:	Polyswitch fuse against reversed polarity Polyswitch-sikring mot polvendning/
Insulation class:	Isolasjonsklasse:	II
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950, EN 60335-2-29, UL 60601-1
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
IP-code:	IP-grad:	20
Dimensions (LxWxH):	Mål (LxBxH):	100 x 63 x 47 mm
Weight:	Vekt:	220g

\* Programmable / Programmerbar

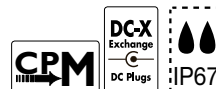
### Versions / Versjoner

Cells	No-load voltage	Min. out. for -dV detection	Max out. for -dV detection	-dV detection mV/cell or %	Fast charge current	Top-off charge (1h. a. -dV det.)	Trickle charge current (mA)
Celler	Tomgangs-spenning	Min utsp. for -dV deteksjon	Max utsp. for -dV deteksjon	-dV deteksjon mV/celle eller %	Hurtig ladestrøm	Topplading (1t. e. -dV detek.)	Vedlikeholds-ladestrøm (mA)
3-6	12,8V +/-0,7V	3,7V (min. 3 c.)	10,8V (max 6 c.)	11mV/0,6%	3,5A +/- 250mA	480mA +/- 80mA	150mA +/- 70
4-8	16,5V +/-1V	5,0V (min. 4 c.)	14,4V (max 8 c.)	8mV/0,5%	2,8A +/- 150mA	400mA +/- 80mA	150mA +/- 70
5-10	21V +/-1,2V	6,2V (min. 5 c.)	18V (max 10 c.)		2,2A +/- 150mA	330mA +/- 70mA	100mA +/- 50
6-12	24,7V +/-1,5V	7,5V (min. 6 c.)	21,6V (max 12 c.)		1,8A +/- 100mA	270mA +/- 60mA	100mA +/- 50
10-20	41V +/-2V	12,5V (min. 10 c.)	36V (max 20 c.)		1,2A +/- 70mA	160mA +/- 40mA	50mA +/- 25
Note:		min 1,25 V pr. cell	max 1,8 V pr. cell				

Charging characteristics and LED indication: see chapter introduction pages

## 2415 Max. 65 W

- Universal input voltage
- CPM-Computer Programmable Microprocessor offering:
  - Charge detection options (one or more): dT/dt, - dV, 0 dV, Timer
  - Safety timer, dV threshold, and temperature gradient adjustment
- Custom specifications on request
- Exchangeable DC plugs
- Approvals:
  - Complies with medical std. (EN 60601)
  - For updates: see www.mascot.no
- Universal inngangsspenning
- CPM-Computer Programmerbar Microprosessor tilbyr:
  - Ladedeteksjonsvalg (en eller flere): dT/dt, - dV, 0 dV, Timer
  - Justering av sikkerhetstimer, dV nivå og temp. stigningsnivå
- Tilpasninger leveres på forespørsel
- Utskiftbare DC plugger
- Godkjenninger:
  - Tilfredstiller medisinsk std. (EN 60601)
  - For oppdat.: se www.mascot.no



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	90-264 VAC, 50-60Hz
Max. output power:	Maks. utgangseffekt:	65W
Leakage current f. batt. w. mains off:	Strømtrekk fra batt. v. frakoblet nett:	< 1mA
Start timer (no -dV detection)*:	Start timer (ingen -dV deteksjon)*:	3 min.
Top-off timer*:	Top-off timer*:	1 time/hour
Safety timer*:	Sikkerhetstimer*:	2 timer/hours
Switch frequency:	Svitsjefrekvens:	40 kHz
Temperature range:	Temperaturområde:	-20 °C - +40 °C
Efficiency (at 100% load):	Virkningsgrad (ved 100% last):	ca 78 %
Protection	Sikring	
• Input:	• Inngang:	Fuse / Sikring
• Output:	• Utgang:	Polyswitch fuse against reversed polarity Polyswitch-sikring mot polvendning/
Insulation class:	Isolasjonsklasse:	II
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950, EN 60335-2-29
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Mains connection**:	Nettilkopling**:	2-pin IEC 320
IP-code:	IP-grad:	41
Dimensions (LxWxH):	Mål (LxBxH):	135 x 80 x 44mm
Weight:	Vekt:	350g

\* Programmable / Programmerbar

\*\* Mains cable not included. Order separately. / \*\* Nettledning følger ikke med. Må bestilles i tillegg.

### Versions - Versjoner

Cells	No-load voltage	Min. out. for -dV detection	Max out. for -dV detection	-dV detection mV/cell or %	Fast charge current	Top-off charge (1h. a. -dV det.)	Trickle charge current (mA)
Celler	Tomgangsspenning	Min utsp. for -dV deteksjon	Max utsp. for -dV deteksjon	-dV deteksjon mV/celle eller %	Hurtig lade strøm	Topplading (1t. e. -dV detek.)	Vedlikeholds-lade strøm (mA)
3-6	12,8V +/-0,7V	3,7V (min. 3 c.)	10,8V (max 6 c.)	11mV/0,6%	4,5A +/- 350mA	630mA +/- 100mA	150 +/- 50
4-8	16,5V +/-1V	5,0V (min. 4 c.)	14,4V (max 8 c.)	8mV/0,5%	4,0A +/- 300mA	560mA +/- 80mA	130 +/- 50
5-10	21V +/-1,2V	6,2V (min. 5 c.)	18V (max 10 c.)		3,5A +/- 300mA	480mA +/- 70mA	100 +/- 50
6-12	24,7V +/-1,5V	7,5V (min. 6 c.)	21,6V (max 12 c.)		3,0A +/- 200mA	420mA +/- 60mA	100 +/- 50
10-20	41V +/-2V	12,5V (min. 10 c.)	36V (max 20 c.)		1,8A +/- 100mA	250mA +/- 50mA	60 +/- 30
12-25	51V +/-2V	15V (min. 12 c.)	45V (max 25 c.)		1,5A +/- 100mA	210mA +/- 50mA	50 +/- 30
15-30	55V +/-3V	19V (min. 15 c.)	49,5V (max 30 c.)		1,3A +/- 100mA	175mA +/- 50mA	50 +/- 30
24-40*	69V +/-2V	30V (min. 24 c.)	66V (max 40 c.)	6mV/0,3%	0,9A +/- 50mA	150mA +/- 40mA	50 +/- 30

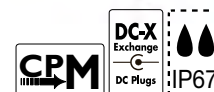
\* On request / På forespørsel

Charging characteristics and LED indication: see chapter introduction pages



## 2515 Max. 32 W

- DC/DC fast charger for NiMH/NiCd batteries
- -ΔV detection disabled at sudden voltage changes to avoid false -ΔV if external load kicks in during charging
- CPM-Computer Programmable Microprocessor offering:
  - Charge detection options (one or more): dT/dt, - dV, 0 -dV, Timer
  - Safety timer, -dV threshold, and Temperature gradient adjustment
- Exchangeable DC plugs
- DC/DC hurtiglader for NiMH/NiCd batterier
- Ingen -ΔV deteksjon ved brå spenningsendringer ved f.eks innkobling av eksternt last
- CPM-Computer Programmerbar Microprosessor tilbyr:
  - Ladedeteksjonsvalg (en eller flere): dT/dt, - dV, 0 -dV, Timer
  - Justering av sikkerhetstimer, dV nivå og temp. stigningsnivå
- Utskiftbare DC plugger



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	10-30 VDC
Leakage current battery w mains off:	Strømtrekk fra batt. v frakobl. nett:	< 1mA
Start timer (no -dV detect)*:	Start-timer (ingen -dV det.)*:	3 min.
Top-off timer*:	Top-off timer*:	1 hour / time
Safety timer*:	Sikkerhetstimer*:	2 hours / timer
Switch frequency, approx.:	Svitsjefrekvens ca.:	40 kHz
Temperature range	Temperaturområde	
• Operating:	• Drift:	-20 °C - +40 °C
• Storage:	• Lagring:	-25 °C - +85 °C
Charge control:	Ladekontroll:	-dV kontroll. -dV principle
Efficiency (at 100% load):	Virkningsgrad (100% last):	ca. 80%
Protection:	Sikring:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker Note: Input/output without el. separation NB: Inng./utgang uten galvanisk skille
EMC standards:	EMC standarder:	61204-3, 61000-6-1, 61000-6-3
Input terminal:	Inngangsterminal:	cable w. 5A fuse on cord ledning m. 5A hengesikring
Output terminal:	Utgangsterminal:	Cord w. exch. plug Sekundærledning m/utskiftbar plugg
IP-code:	IP-grad:	41
Dimensions (L×W×H):	Mål (L×B×H):	107 × 67 × 36,5 mm
Weight:	Vekt:	250g

\* Programmable / Programmerbar

### Versions - Versjoner

Cells	Max. output power	No-load voltage (yellow)	Fast charge current (orange)	Top-off charge (1 hr after -dV det.) (green with yellow flash)	Trickle charge current (green)
Celler	Maks. utgangseffekt	Tomgangsspenning (gul)	Hurtig ladestrøm	Topplading (1 t. etter -dV detek.) (grønn med gule blink)	Vedlikeholds-ladestrøm (grønn)
2	12W	8,7V ± 0,7V	3A ± 250mA	550mA ± 80mA	250mA ± 70mA
3-6	27W	12,8V ± 0,7V	2,5A ± 250mA	350mA ± 80mA	100mA ± 50mA
4-8	32W	16,5V ± 1V	2,2A ± 150mA	310mA ± 80mA	100mA ± 50mA
5-10	32W	21V ± 1,2V	1,8A ± 150mA	270mA ± 70mA	100mA ± 50mA
6-12	32W	24,7V ± 1,5V	1,5A ± 100mA	240mA ± 60mA	100mA ± 50mA
10-20	32W	41V ± 2V	0,9A ± 70mA	130mA ± 40mA	50mA ± 25mA

Charging characteristics and LED indication: see chapter introduction pages



# CHARGERS FOR LI-ION BATTERIES BATTERILADERE FOR LI-ION BATTERIER



## LITHIUM-ION (LI-ION) BATTERIES

These batteries are gaining popularity for portable energy solutions because of the high capacity and longer operating time compared to NiMH and NiCd batteries of the same size. At the same time, there are more stringent requirements for this battery charger to ensure fast, safe and complete charging of the Li-Ion batteries.

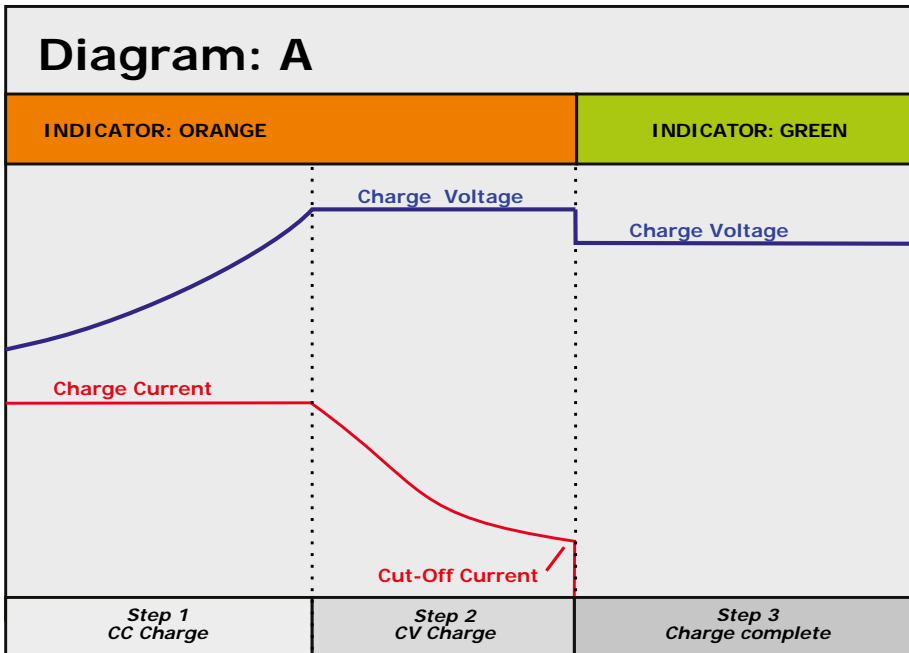
Mascot here presents a series of Li-Ion battery chargers. These chargers use the two most recognized charge control methods of either current detection or timer as charge termination. Choice of charge control method depends on battery use and charge requirements – contact Mascot for more information about which model would be best suited for your application.

## LITIUM-ION (LI-ION) BATTERIER

Disse batteriene øker i popularitet for bærbare løsninger på grunn av den økte kapasiteten og forlengede driftstiden sammenlignet med NiMH og NiCd-batterier på samme størrelse. Samtidig stilles det spesielle krav til laderen for å sikre hurtig, sikker og full lading av Li-Ion batteriene.

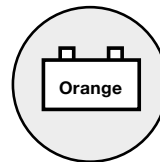
Mascot presenterer her en serie med ladere for Li-Ion batterier. Disse laderne benytter de to mest anerkjente ladekontrollmetodene med enten strømdeteksjon eller timer som ladestopp. Valg av metode avhenger av batteribruk og oppladingskrav – kontakt Mascot for avklaring hvilken modell som er best egnet for Deres applikasjon.

**CHARGING METHOD A**



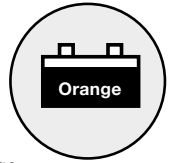
**STEP 1 – CONSTANT CURRENT CHARGE**

To start a charge cycle; connect the charger to the mains. The charger is in constant current mode, charging with the maximum current indicated on the charger, the LED-indication on the charger is ORANGE. This step allows rapid charging of your battery until the battery reaches typically 80 - 95% of its capacity.



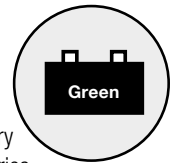
**STEP 2 – CONSTANT VOLTAGE CHARGE**

The charger is in constant voltage mode, charging with a decreasing current until the current is below the chargers charge termination level (indicated on the charger). The LED-indication on the charger is ORANGE. The battery is charged to its full capacity at the end of this step.

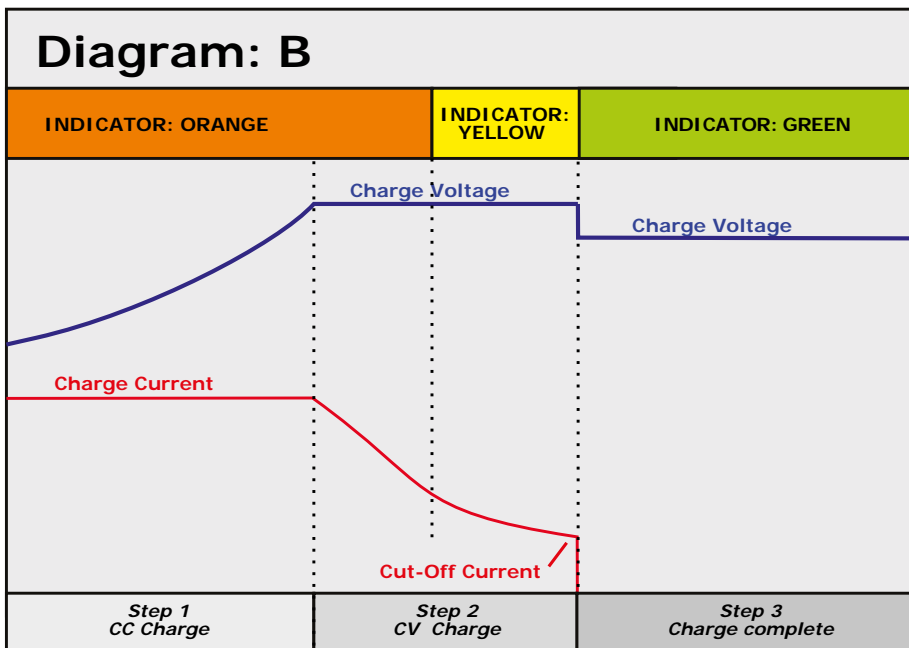


**STEP 3 – CHARGE COMPLETE**

The LED-indication on the charger is GREEN and the battery is fully charged. For Li-ion batteries the charge current is zero and the battery has been charged to its full capacity. After end of charge battery voltage will remain at "Step 2" level even if output voltage of charger is indicated as lower in the diagram. The charger will return to Step 1 if the battery is used. A load larger than the cut-off current will initiate a new charge cycle.

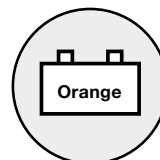


**CHARGING METHOD B**



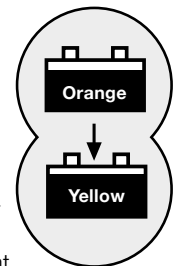
**STEP 1 - CONSTANT CURRENT CHARGE**

To start a charge cycle; connect the charger to the mains. The charger is in constant current mode, charging with the maximum current indicated on the charger, the LED-indication on the charger is ORANGE. This step allows rapid charging of your battery until the battery voltage has increased to a certain set level



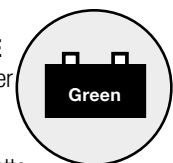
**STEP 2 - CONSTANT VOLTAGE CHARGE**

When the battery voltage has increased to a certain set level the charger enters constant voltage mode, charging with a decreasing current until the current is below the chargers charge termination level (indicated on the charger). The LED-indication on the charger is ORANGE. When the battery has reached typically 90 - 95% of its full capacity the charge current has dropped below a set level and the LED-indication on the charger changes to YELLOW to indicate that the battery is almost fully charged and may be ready for use. The constant voltage charge continues and the battery reaches its full capacity at the end of this step.

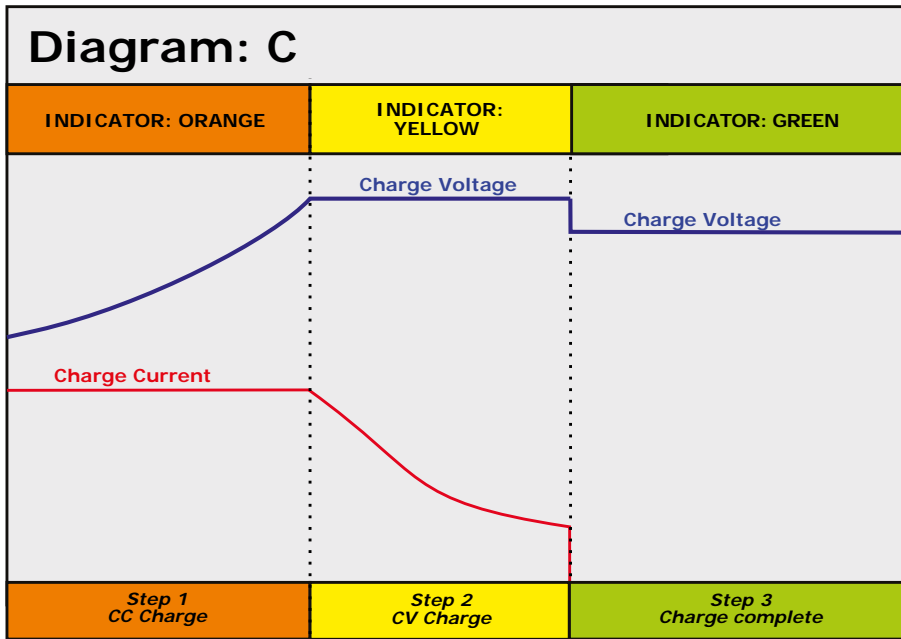


**STEP 3 - CHARGE COMPLETE**

The LED-indication on the charger is GREEN and the battery is fully charged. For Li-ion batteries the charge current is zero and the battery has been charged to its full capacity. After end of charge battery voltage will remain at "Step 2" level even if output voltage of charger is indicated as lower in the diagram. The charger will return to Step 1 if the battery is used. A load larger than the cut-off current will initiate a new charge cycle.

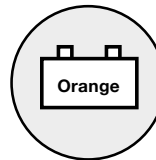


**CHARGING METHOD C**



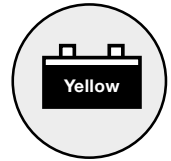
**STEP 1 – CONSTANT CURRENT CHARGE**

To start a charge cycle; connect the charger to the mains. The charger is in constant current mode, charging with the maximum current indicated on the charger, the LED-indication on the charger is ORANGE. This step allows rapid charging of your battery until the battery reaches typically 80 - 95% of its capacity.



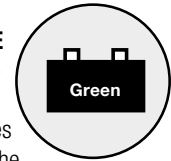
**STEP 2 – CONSTANT VOLTAGE (TIMER) CHARGE**

The charger is in constant voltage mode, charging with a decreasing current. The LED-indication on the charger is YELLOW. The charger is now in timer mode indicated by the YELLOW LED and will remain in this mode until time interval is completed. The battery is charged to its full capacity at the end of this step.



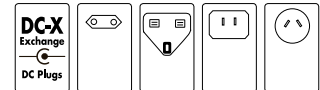
**STEP 3 - CHARGE COMPLETE**

The LED-indication on the charger is GREEN and the battery is fully charged. For Li-Ion batteries the charge current is zero and the battery has been charged to its full capacity. The charge voltage is at standby level which means that the charger can continue to be connected to the battery. After end of charge battery voltage will remain at "Step 2" level even if output voltage of charger is indicated as lower in the diagram. The charger will return to Step 1 if the battery is used. A load larger than the constant current level in Step 1 will initiate a new charge cycle.



## 2740 LI Max. 1 A

- 3-step charge control with current detection as charge termination
- Universal input voltage (90-264 VAC)
- Charging 1-7 battery cells
- LED indicator with two colors
- Custom specifications on request
- Approvals:
  - Complies w. medical std EN 60601
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med strøm-deteksjon som ladestopp
- Universal inngangsspenning (90-264 VAC)
- Opplading av 1-7 battericeller
- Lysdiodeindikator med to farger
- Tilpasninger leveres på forespørsel
- Godkjenninger:
  - Tilfredsst. medisinsk std EN 60601
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	90-264 VAC
Line frequency:	Frekvensområde:	47 – 63Hz
Switch frequency, approx.:	Svitsjefrekvens ca.:	40kHz
Leakage current from battery:	Strømtrekk fra batteri :	≈ 0
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25 °C - +40 °C
• Storage:	• Lagring:	-25 °C - +85 °C
Ripple:	Rippel:	< 100 mV p-p
Protection:	Beskyttelse:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker
		II
Insulation class:	Isolasjonsklasse:	
Insulation voltage	Isolasjonsspenning	
P • rimary – secondary:	• Primær - sekundær:	4000VAC / 5640VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60601-1, EN 60950, EN 60335-2-29
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Input terminal:	Inngangsterminal:	Standard EU, UK, AU or/eller US
Output terminals	Utgangsterminaler	
• Cord with/without plug:	• Sek. ledning med/uten plugg:	Accessories / Tilbehør
IP-code:	IP-grad:	4X
Dimensions (LxWxH):	Mål (LxBxH):	75 x 32 x 50mm
Weight:	Vekt:	109g

### Versions - Versjoner

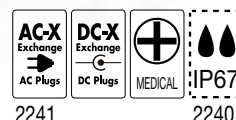
			Charge control / Ladekontroll			
			Step 1	Step 2	Step 3	
Cells	Max. output power (W)	Efficiency 100% at 230V	Charge current (orange)	Charge voltage (orange)	Charge termination I< (green)	Charge start Vbat<
Celler	Maks. utg. effekt	Virkningsgrad	Ladestrom	Ladespenning	Ladestopp I< (grønn)	Ladestart Vbat<
1	4,2	58 %	1,0A +/-7%	4,2V +/-0,05V	100mA +/-25%	4,05V+0,05-0,15V
2	8,4	72 %	1,0A +/-7%	8,4V +/-0,1V		8,1V+0,1-0,15V
3	8,8	77 %	0,7A +/-7%	12,6V +/-0,1V		12,3V+0,1-0,15V
4	10	80 %	0,6A +/-7%	16,8V +/-0,1V		16,4V+0,1-0,15V
5	10,5	82 %	0,5A +/-7%	21,0V +/-0,1V		20,5V+0,1-0,15V
6	10,1	82 %	0,4A +/-7%	25,2V +/-0,1V	50mA +/-25%	24,6V+0,1-0,15V
7	10,3	82 %	0,35A +/-7%	29,4V +/-0,1V		28,7V+0,1-0,15V

Charging characteristics and LED indication: see chapter introduction pages - diagram A

## 2240 LI-2241 LI Max. 1,3 A

### 2241 LI - exchangeable / utskiftbare AC plugs

- 3-step charge control with current detection as charge termination
- Universal input voltage (90-264 VAC)
- Charging 1-7 battery cells
- Order mains cord separately
- Waterproof (IP67) version available
- Exchangeable AC and DC plugs
- Custom specifications on request
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med strømdeksjon som ladestopp
- Universal inngangsspenning (90-264 VAC)
- Opplading av 1-7 battericeller
- Nettledning best. separat
- Vanntett (IP67) versjon kan leveres
- Utskiftbare AC og DC plugger
- Tilpasninger leveres på forespørsel
- Godkjenninger:
  - Medisinsk sertifisert EN 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications Tekniske data

Input voltage:	Inngangsspenning:	90-264 VAC
Line frequency:	Frekvensområde:	47 – 63Hz
Switch frequency, approx.:	Svitsjefrekvens ca.:	40kHz
Leakage current from battery with mains switched off:	Strømtrekk fra batteri ved frakoblet nett:	≈ 0
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25 °C - +40 °C
• Storage:	• Lagring:	-25 °C - +85 °C
Ripple:	Rippel:	< 100 mV p-p
Protection:	Beskyttelse.:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker
Insulation class:	Isolasjonsklasse:	II
Insulation voltage	Isolasjonsspenning	
• Primary – secondary:	• Primær - sekundær:	4000VAC / 5640VDC
Electrical safety:	Elektrisk sikkerhet:	EN 60601-1 3ed, EN 60950, EN 60335-2-29,
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Reliability (MIL-HDBK-217F):	Pålitelighet (MIL-HDBK-217F):	MTBF > 250.000h at 30°C and full load
Output terminals:	Utgangsterminaler:	Cord with/without plug Sekundærledning med / uten plugg
IP-code:	IP-grad:	4X
Dimensions (LxWxH):	Mål (LxBxH):	90 x 45 x 32mm (2240 LI)
Weight:	Vekt:	115g (215g IP67 vers.)

Versions - Versjoner			Charge control - Ladekontroll			
			Step 1	Step 2	Step 3	
Cells	Max. output power (W)	Efficiency 100% at 230V)	Charge current (orange)	Charge voltage (orange)	Charge termination I< (green)	Charge start Vbat<
Celler	Max. utg. effekt	Virkningsgrad	Ladestrøm	Ladespenning	Ladestopp I< (grønn)	Ladestart Vbat<
1	5,5	58 %	1,3A +5/-7%	4,2V +-0,05V	100mA +-25%	4,05V+0,05-0,15V
2	10,9	72 %	1,3A +5/-7%	8,4V +-0,1V		8,1V+0,1-0,15V
3	15,1	77 %	1,2A +5/-7%	12,6V +-0,1V		12,3V+0,1-0,15V
4	15,1	80 %	0,9A +5/-7%	16,8V +-0,1V		16,4V+0,1-0,15V
5*	14,7	82 %	0,7A +5/-7%	21,0V +-0,1V		20,5V+0,1-0,15V
6*	15,1	82 %	0,6A +5/-7%	25,2V +-0,1V		24,6V+0,1-0,15V
7*	16,4	82 %	0,56A +5/-7%	29,4V +-0,1V		28,7V+0,1-0,15V

\* Complies with EN 60601-1 3ed. Not UL approved

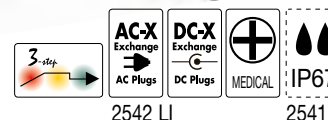
Charging characteristics and LED indication: see chapter introduction pages - diagram A



## 2541 LI-2542 LI Max. 2,7A

### 2542 LI - exchangeable / utskiftbare AC plugs

- 3-step charge control with current detection as charge termination
- Universal input voltage (90-264 VAC)
- 3-colored LED indicator
- Order mains cord separately
- Custom specifications on request
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med strømdeleksjon som ladestopp
- Universal inngangsspenning (90-264 VAC)
- 3-farget lysdiodeindikator
- Nettledning best. separat
- Tilpasninger leveres på forespørsel
- Godkjenninger:
  - Medisinsk sertifisert EN 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



#### Technical specifications

Input voltage:  
Line Frequency:  
Switch frequency, approx.:  
Leakage current from battery with mains switched off:  
Temperature range  
• Operating:  
• Storage:  
Ripple:  
Protection:

#### Tekniske data

Inngangsspenning: 90-264 VAC  
Frekvensområde: 47 – 63Hz  
Svitsjefrekvens ca.: 40 kHz  
Strømtrekk fra batteri ved frakoblet nett: <250µA  
Temperaturområde  
• Drift: -20 °C - +40 °C  
• Lagring: -25 °C - +85 °C  
Rippel: < 100 mV p-p  
Sikring: Protected against reversed polarity and short circuit proof  
Polvendings- og kortslutningssikker II  
Insulasjonsklasse: II  
Isolasjonsspenning  
• Primær – sekundær: 4000VAC / 5700VDC  
Elektrisk sikkerhetsstandard: IEC/EN/UL 60601-1, EN 60950-1, EN 60335-2-29  
EMC standarder  
• Medisinsk: EN 60601-1-2  
• Emisjon: EN 61000-6-3  
• Immunitet: EN 61000-6-1  
Inngangsterminal: 2-pin IEC 320 connector  
Utgangsterminaler: Cord w/wout plug / Sek.ledn. m/u plugg  
IP-grad: 41  
Mål (LxWxH): 107 x 67 x 36,5mm (2541 LI)  
Vekt: 250g

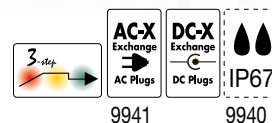
Versions / Versjoner			Charge control / Ladekontroll					Charge start Vbat<	
			Step 1 (orange)	Step 2a (orange)	Step 2b (yellow / gul)	Step 3 (green / grønn)			
Cells	Max output power (W)	Efficiency (100% at 230V)	Charge current	Charge voltage	To yellow when current is:	Charge termin. when current is:			
Celler	Maks. utg. effekt	Virkningsgrad	Ladestrøm	Ladespenning	Til gul når strøm er:	Ladestopp når strøm er:	Ladestart Vbat<		
1	12	63 %	2,7A ±0,1A	4,2V ±0,05V	< 1,15A ±0,1A	< 100mA +-25%	4,0V±0,1V	Or mains turned on Eller nettpåslag	
2	23	78 %	2,7A ±0,1A	8,4V ±0,1V	< 1,15A ±0,1A		8,0V±0,1V		
3	29	83 %	2,3A ±0,1A	12,6V ±0,1V	< 1,00A ±0,1A		12,1V±0,1V		
4	34	84 %	2,0A ±0,1A	16,8V ±0,1V	< 0,85A ±0,1A		16,2V±0,1V		
5	34	85 %	1,6A ±0,1A	21V ±0,1V	< 0,70A ±0,1A		20,3V±0,1V		
6	35	87 %	1,4A ±0,1A	25,2V ±0,1V	< 0,60A ±0,1A		24,4V±0,1V		
7	35	87 %	1,2A ±0,1A	29,4V ±0,1V	< 0,50A ±0,1A		28,5V±0,1V		
8	34	85 %	1,0A ±0,1A	33,6V ±0,1V	< 0,40A ±0,1A		32,6V±0,1V		
10	35	85 %	0,8A ±0,1A	42,0V ±0,2V	< 0,35A ±0,1A		40,7V±0,4V		
14	35	85 %	0,6A ±0,1A	58,8V ±0,3V	< 0,25A ±0,05A		57,1V±0,5V		

Charging characteristics and LED indication: see chapter introduction pages - diagram B

## 9940 LI-9941 LI Max. 2,3A

### 9941 LI - exchangeable / utskiftbare AC plugs

- 3-step charge control with timer
- Universal input voltage (90-264 VAC)
- Charges 3-8 battery cells
- Order mains cord separately
- Mounting bracket available
- Exchangeable DC plugs
- Custom specifications on request
- Approvals:
  - Complies w. medical std EN 60601
  - UL-approved (UL-60601-1)
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med timer
- Universal inngangsspenning (90-264 VAC)
- Opplading av 3-8 battericeller
- Nettledning best. separat
- Kan leveres med festebrakett
- Utskiftbare DC plugger
- Tilpasninger leveres på forespørsel
- Godkjenninger:
  - Tilfredsst. medisinsk std EN 60601
  - UL-godkjent (UL-60601-1)
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	90 - 264 VAC
Line frequency:	Frekvensområde:	47 - 63Hz
Max. output power:	Maks. utgangseffekt:	40 W
Switch frequency, approx.:	Svitsjefrekvens ca.	45 kHz
Leakage curr. with mains disconn.:	Strømtr. fra batt. ved frakobl. nett:	< 200 uA
Temperature range:	Temperaturområde:	-10 °C - +40 °C
Ripple:	Rippel:	< 100 mV p-p
Efficiency (at 100%load):	Virkningsgrad (ved 100% last):	> 81%
Protection:	Sikring:	Mains fuse / Glassikring
Automatically resettable fuse protects charger against wrong polarity	Feil polaritet beskyttelse med automatisk resetbar sikring	
Insulation class:	Isolasjonsklasse:	II
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60601-1, EN 60950 EN 60335-2-29, UL-60601-1
<b>EMC standards</b>	<b>EMC standarder</b>	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Mains connection:	Nettilkobling:	2-pin IEC 320 connector
Indication	Indikasjon	
• Orange (constant current, boost)	• Orange (konst. strøm, hurtig)	
• Yellow (constant voltage, timer)	• Gul (konst. spenning, timer)	
• Green (charge termination)	• Grønn (ladestopp)	
Timer:	Timer:	4h ± 30% (also available with other values)
Output terminals:	Utgangsterminaler:	batt. clips, push-on, DC conn. Batt. klemmer, flatstift, DC plugg
Dimensions (L×W×H):	Mål (L×B×H):	107 × 67 × 36,5mm (9940 LI)
Weight:	Vekt:	250g

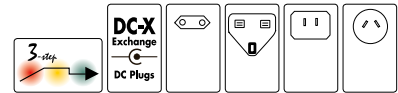
### Versions - Versjoner

Cells Celler	Nom. Battery voltage (V) Nom. Batt. spenning (V)	Charge start Vbat< Ladestart Vbat<	Charge voltage (V) Ladespenning (V)	Charge current (A) Ladestrøm (A)
3	10,8	12,0V±0,1-0,15V	12,6	2,3
4	14,4	16,0V±0,15V	16,8	2
5	18,0	20,0V±0,2V	21,0	1,3
6	21,6	24,0V±0,3V	25,2	1,3
7	25,2	28,0V±0,3V	29,4	1,3
8	28,8	32,3V±0,3V	33,6	1

Charging characteristics and LED indication: see chapter introduction pages - diagram C

## 9641 LI Max. 2,7A

- 3-step charge control with timer
- Plug-in charger
- Charges 2-8 battery cells
- Protected against reversed polarity
- Exchangable DC plugs
- Custom specifications on request
- Approvals:
  - Complies w. medical std EN 60601
  - 120V UL-approved version available
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med timer
- Plugg-inn lader
- Opplading av 2-8 battericeller
- Polvendings sikker
- Utskiftbare DC plugger
- Tilpasninger leveres på forespørsel
- Godkjenninger:
  - Tilfredsst. medisinsk std EN 60601
  - 120V UL-godkjent versjon tilgjengelig
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	190 - 264 VAC
Max. output power:	Maks. utgangseffekt:	45 W
Switch frequency, approx.:	Svitsjefrekvens ca.	45 kHz
Leakage curr. with mains disconn.:	Strømtr. fra batt. ved frakobl. nett:	< 100 uA
Temperature range:	Temperaturområde:	-10 °C - +40 °C
Ripple:	Rippel:	< 20 mV p-p
Efficiency (at 100%load):	Virkningsgrad (ved 100% last):	> 81 %
Insulation class:	Isolasjonsklasse:	II
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60601-1, EN 60950 EN 60335-2-29, UL-60601-1
<b>EMC standards</b>	<b>EMC standarder</b>	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Indication:	Indikasjon:	
• Orange (constant current, boost)	• Orange (konst. strøm, hurtig)	
• Yellow (constant voltage, timer)	• Gul (konst. spenning, timer)	
• Green (charge termination)	• Grønn (ladestopp)	
Timer:	Timer:	4h ± 25% (also available with other values)
Output terminals:	Utgangsterminaler:	Batt. clips, push-on, DC conn. Batt. klemmer, kontakter, DC plugg
Dimensions (LxWxH):	Mål (LxBxH):	100 × 63 × 47 mm
Weight:	Vekt:	250g

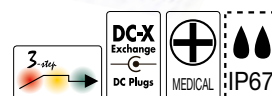
### Versions - Versjoner

Cells Celler	Nom. battery voltage (V) Nom. batterispenning (V)	Charge voltage (V) Ladespenning (V)	Charge current (A) Ladestrom (A)
2	7,2	8,4	2,7
3	10,8	12,6	2,7
4	14,4	16,8	2,4
5	18,0	21,0	1,5
6	21,6	25,2	1,5
7	25,2	29,4	1,5
8	28,8	33,6	1,3

Charging characteristics and LED indication: see chapter introduction pages - diagram C

## 2440 LI Max. 4A

- 3-step charge control with current detection as charge termination
- Universal input voltage (90-264 VAC)
- 3-colored LED indicator
- Order mains cord separately
- Custom design on request: NTC, timer, charge current, other
- Waterproof IP67 version available
- Approvals:
  - Medically certified EN 60601-1 3ed
  - Home Healthcare EN 60601-1-11
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med strøm-deteksjon som ladestopp
- Universal inngangsspenning (90-264 VAC)
- 3-farget lysdiodeindikator
- Nettledning best. separat
- Tilpasninger lev. på forespørsel: NTC, timer, ladestrøm m.m.
- Vanntett IP67 versjon tilgjengelig
- Godkjenninger:
  - Medisinsk sertifisert 60601-1 3ed
  - Med. hjemmebruk EN 60601-1-11
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	90-264 VAC
Line Frequency:	Frekvensområde:	47 – 63Hz
Switch frequency, approx.:	Svitsjefrekvens ca.:	40 kHz
Leakage current from battery with mains switched off:	Strømtrekk fra batteri ved frakoblet nett:	<0,4mA @ 7,4V (2-cell version)
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25 °C - +40 °C
• Storage:	• Lagring:	-25 °C - +85 °C
Ripple:	Rippel:	< 100 mV p-p
Protection:	Sikring:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker
Insulation class:	Isolasjonsklasse:	Class II (Class I on request)
Insulation voltage	Isolasjonsspenning	
• Primary – secondary:	• Primær - sekundær:	4000VAC / 5700VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN/IEC 60335-2-29, EN/IEC/ANSI 60601-1 (3rd Ed) & EN/IEC 60601-1-11
EMC standards	EMC standarder	EN 55014-1 and -2, EN/IEC 61000-6-3, EN/IEC 61000-6-1, EN/IEC 60601-1-2
Input terminal:	Inngangsterminal:	2-pin IEC-320, 2-pin IEC60320/C8 (3-pin IEC 60320/C14 or fixed cord on request)
Output terminals:	Utgangsterminaler:	Cord w/wout plug / Sek.ledn. m/u plugg
IP-code:	IP-grad:	41
Dimensions (LxWxH):	Mål (LxBxH):	135 x 80 x 44mm
Weight:	Vekt:	390g (890 g IP67)

			Charge control / Ladekontroll					Charge start Vbat<
			Step 1 (orange)	Step 2a (orange)	Step 2b (yellow / gul)	Step 3 (green / grønn)		
Cells	Max output power (W)	Efficiency (100% at 230V)	Charge current	Charge voltage	To yellow when current is:	Charge termin. when current is:		
Celler	Maks. utg. effekt	Virkningsgrad	Ladestrøm	Ladespenning	Til gul når strøm er:	Ladestopp når strøm er:	Ladestart Vbat<	
1	17	>60 %	4A ±0.2A	4.2V ±0.05V	< 1.8A ±0.2A	<300mA ± 25%	3.9V±0.15V	
4	59	>85 %	3.5A ±0.2A	16.8V ±0.1V	< 1.6A ±0.1A	<300mA ± 25%	16.4V±0.1V	
7	74	>85 %	2.5A ±0.2A	29.4V ±0.2V	< 0.8A ±0.1A	<300mA ± 25%	28.7V±0.2V	
12	73	87 %	1.45A ±0.1A	50.4V ±0.3V	< 0.6A ±0.1A	<200mA ± 25%	49.2V±0.3V	
16	67	87 %	1.0A ±0.1A	67.2V ±0.3V	0.6A ±0.1A	<100mA ± 25%	65.6V±0.3V	

Charging characteristics and LED indication: see chapter introduction pages - diagram B

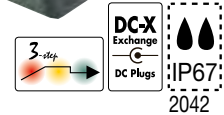
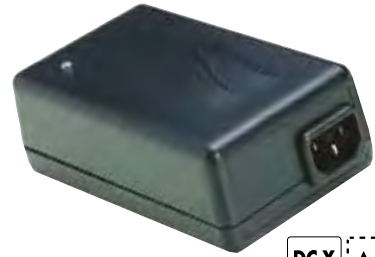
## 2040LI-2041LI-2042LI Max. 4 A

2040LI - 3-pin IEC 320

2041LI - 2-pin IEC 320

2042LI - fixed mains cord / fast nettleddning

- 3-step charge control with timer
- Universal input voltage (90-264 VAC)
- Charges 3-14 battery cells
- Order mains cord separately
- Custom specifications on request
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med timer
- Universal inngangsspenning (90-264 VAC)
- Opplading av 3-14 battericeller
- Nettledning best. separat
- Tilpasninger leveres på forespørsel
- Godkjenninger:
  - Medisinsk sertifisert 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

Input voltage:  
 Line frequency:  
 Max. output power:  
 Switch frequency, approx.  
 Leakage current with mains disconn.:  
 Temperature range:  
 Ripple:  
 Efficiency (at 100%load):  
 Protection:  
 Automatically resettable fuse protects charger against wrong polarity  
 Insulation class:  
 Electrical safety standard:

### Tekniske data

Inngangsspenning: 90 - 264 VAC  
 Frekvensområde: 47 - 63Hz  
 Maks. utgangseffekt: 60 W  
 Svitsjefrekvens ca. 40 kHz  
 Strømtrekk fra batt. ved frakob. nett: < 200 uA (10-14C:<500 uA)  
 Temperaturområde: -10 - +40 °C  
 Rippel: < 100 mV p-p (10-14C:<200mV)  
 Virkningsgrad (ved 100% last): > 81%  
 Sikring: Mains fuse / Glassikring  
 Feil polaritet beskyttelse med automatisk resetbar sikring  
 Isolasjonsklasse: I (2040LI) - II (2041LI,2042LI)  
 Elektrisk sikkerhetsstandard: EN 60601-1, EN 60950  
 EN 60335-2-29, UL-60601-1

### EMC standards

- Medical:
- Emission:
- Immunity:

### EMC standarder

- Medisinsk: EN 60601-1-2
- Emisjon: EN 61000-6-3
- Immunitet: EN 61000-6-1

### Indication

- Orange (const. current, boost)
- Yellow (const. voltage, timer)
- Green (charge termination)

### Indikasjon

- Orange (konst. strøm, hurtig)
- Gul (konst. spenning, timer)
- Grønn (ladestopp)

Timer:

Timer:

4h ± 30% (also available with other values)

Output terminals:

Utgangsterminaler:

Push-on, DC conn.

Dimensions (L×W×H):

Mål (L×B×H):

135 × 80 × 44mm

Weight:

Vekt:

350g (850g IP67 vers.)

### Versions - Versjoner

Cells / Celler	Nom. batt. volt. / Nom. batt. spenn.	Charge current / Ladestrøm (A)	Charge volt. / Ladespenn. (V)	Charge start Vbat< / Ladestart Vbat<
3	11,1	4	12,6	12,0V±0,1-0,15V
4	14,8	3,5	16,8	16,0V±0,15V
5	18,5	2	21,0	20,0V±0,2V
6	22,2	2	25,2	24,3V±0,3V
7	25,9	2	29,4	28,4V±0,3V
8	29,6	1,7	33,6	32,3V±0,3V
10	37	1,4	42	40,7V±0,4V
11	40,7	1,3	46,2	44,8±0,4V
12	44,4	1,2	50,4	48,9V±0,4V
13	48,1	1,1	54,6	53V±0,4V

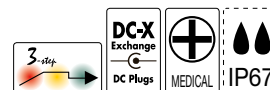
Charging characteristics and LED indication: see chapter introduction pages - diagram C



## 2840-3240 LI Max. 8,5A

### 3240LI: Autodetect 115/230 VAC

- 3-step charge control with current detection as charge termination
- Charging 1-14 Li-Ion battery cells
- Medical certificate (EN 60601) pending
- Mains cord not included
- Waterproof (IP67) version available
  - with NTC input on request
- Custom specifications on request
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med strøm-deteksjon som ladestopp
- Opplading av 1-14 Li-Ion battericeller
- Medisinsk sertifisering (EN 60601) påventes
- Nettledning ikke inkludert
- Vanntett (IP67) versjon kan leveres
  - med NTC input på forespørsel
- Tilpasninger leveres på forespørsel
- Godkjenninger:
  - Medisinsk sertifisert 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Preliminary Technical Specifications

### Foreløpige Tekniske data

Input voltage:	Inngangsspenning:	198-264 VAC
Line frequency:	Frekvensområde:	47 – 63Hz
Switch frequency, approx.:	Svitsjefrekvens ca.:	65kHz
Leakage current from battery with mains switched off:	Strømtrekk fra batteri ved frakoblet nett:	<1mA
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25 °C - +40 °C
• Storage:	• Lagring:	-25 °C - +85 °C
Ripple:	Rippel:	< 100 mV p-p
Efficiency	Virkningsgrad	
(at 100% load, 230V):	(100% last, 230V):	> 89%
Protection:	Sikring:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker
Insulation class:	Isolasjonsklasse:	II
Insulation voltage	Isolasjonsspenning	
• Primary – secondary:	• Primær - sekundær:	4000VAC / 5700VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60601-1, EN 60335-2-29
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Input terminal*:	Inngangsterminal*:	2-pins IEC 60320 connector
Output terminals:	Utgangsterminaler:	Open ends or DC connector. (6-14c) Ledning u. plugg eller DC plugg (6-14c)
IP-code:	IP-Grad:	41
Dimensions (LxWxH):	Mål (LxBxH):	135 x 80 x 44mm
Weight:	Vekt:	480g

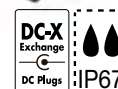
### Selected versions – see web for complete list

			Charge control - Ladekontroll						
Cells	Max output power (W)	Efficiency (100% at 230V)	Step 1 (orange) Charge Current	Step 2a (orange) Charge Voltage	Step 2b (gul/yellow) To yellow when current is:	Step 3 (grønn/green) Charge Termin. when current is:	Charge start Vbat<		
Celler	Max utg. effekt	Virkningsgrad	Ladestrøm	Ladespenning	Til Gul når strøm er:	Ladestopp når strøm er:	Ladestart Vbat<		
1 Cell	36W	>85%	8.5A +0.1/-0.3A	4.2V ±0.05V	3.8A ±0.2A	300mA ±30%	4.1V -0.15/+0.05V	Or mains turned on/ Eller nettpåslag	
4 Cells	101W	>89%	6.0A +0.1/-0.3A	16.8V ±0.1V	2.7A ±0.2A		16.4V ±0.1V		
7 Cells	103W	>89%	3.5A +0/-0.3A	29.4V ±0.2V	1.6A ±0.2A		28.7V ±0.2V		
16 cells	98W	>89%	1.5A +0/0.1A	67.2V ±0.3V	0.60A ±0.2A		65.6V ±0.4V		

Charging characteristics and LED indication: see chapter introduction pages - diagram B

## 2544 LI Max. 3 A

- DC/DC charger for Li-Ion batteries
- 3-step charge control with current detection as charge termination
- Charging 1-8 Li-Ion battery cells
- 3-colored LED indicator
- Mounting bracket available
- Waterproof (IP67) version available
- Custom specifications on request
- 20-60 VDC input version available (2541LI)
- DC/DC hurtiglader for Li-Ion batterier
- 3-trinns ladekontroll med strømdeteksjon som ladestopp
- Opplading av 1-8 Li-Ion battericeller
- 3-farget lysdiodeindikator
- Kan leveres med festebrakett
- Vanntett (IP67) versjon kan leveres
- Tilpasninger leveres på forespørsel
- 20-60 VDC versjon tilgjengelig (2541LI)



### Technical specifications Tekniske data

Input voltage:	Inngangsspenning:	10-30 VDC
Switch frequency, approx.:	Svitsjefrekvens ca.:	40 kHz
Leakage current from battery with mains switched off:	Strømtrekk fra batteri ved frakoblet nett:	<1 mA
Temperature range	Temperaturområde	
• Operating:	• Drift:	-20 °C - +40 °C
• Storage:	• Lagring:	-25 °C - +85 °C
Ripple:	Rippel:	< 100 mV p-p
Efficiency (at 100% load):	Virkningsgrad (100% last):	ca. 80%
Protection:	Sikring:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker Note: Input/output without el. separation NB: Inng./utgang uten galvanisk skille
EMC standards:	EMC standarder:	61204-3, 61000-6-1, 61000-6-3
Input terminal:	Inngangsterminal:	cable w. 5A fuse on cord ledning m. 5A hengesikring
Output terminals:	Utgangsterminaler:	Cord w. exch. plug. Sekundærledning m/utskiftbar plugg
IP-code:	IP-grad:	41
Dimensions (LxWxH):	Mål (LxBxH):	107 x 67 x 37mm
Weight:	Vekt:	250g

Versions - Versjoner		Charge control - Ladekontroll					Charge start Vbat<	
		Step 1 (orange)	Step 2a (orange)	Step 2b (yellow / gul)	Step 3 (green / grønn)			
Cells	Max. output power (W)	Charge current	Charge voltage	To yellow when current is:	Charge termin. when current is:	Charge start Vbat<		
Celler	Maks. utg. effekt	Ladestrøm	Ladespenning	Til Gul når strøm er:	Ladestopp når strøm er:	Ladestart Vbat<		
1	13	3A ±0,25A	4,2V ±0,1V	< 1,15A ±25%	< 100mA +-25%	4,1V±0,2V	Or mains turned on / Eller nettpåslag	
2	23	2,7A ±0,2A	8,4V ±0,1V	< 1,15A ±25%		8,2V±0,2V		
3	29	2,3A ±0,2A	12,6V ±0,1V	< 0,9A ±25%		12,3V±0,15V		
4	33	2,0A ±0,15A	16,8V ±0,1V	< 0,85A ±25%		16,4V±0,15V		
5	33	1,6A ±0,1A	21V ±0,1V	< 0,7A ±25%		20,5V±0,2V		
6	35	1,4A ±0,1A	25,2V ±0,1V	< 0,6A ±25%		24,6V±0,2V		
7	35	1,2A ±0,1A	29,4V ±0,1V	< 0,5A ±25%		28,6V±0,2V		
8	33	1,0A ±0,1A	33,6V ±0,1V	< 0,4A ±25%		32,8V±0,3V		
10	34	0,8A ±0,1A	42V ±0,1V	< 0,4A ±25%		41V±0,4V		

Charging characteristics and LED indication: see chapter introduction pages - diagram B

# CHARGERS FOR LiFePO<sub>4</sub> BATTERIES BATTERILADERE FOR LiFePO<sub>4</sub> BATTERIER



## LiFePO<sub>4</sub> BATTERIES

Lithium iron phosphate (LiFePO<sub>4</sub>) batteries, also called LFP battery (Lithium FerroPhosphate), is a type of lithium-ion battery, since the energy is stored in the same way, moving and storing lithium ions instead of lithium metal. These cells and batteries not only have high capacity, but can deliver high power. Lithium Iron phosphate batteries are also known to be safer than Lithium-ion cells, and are available in a wide range of cell sizes.

In addition, Lithium Iron Phosphate batteries are among the longest lived batteries ever developed. Test data in labs show up to 2000 charge/discharge cycles. This is due to the extremely robust crystal structure of the iron phosphate, which does not break down under repeated packing and unpacking of the lithium ions during charging and discharging.

Mascot offers a series of LiFePO<sub>4</sub> battery chargers. These chargers use three different charge control methods of either current detection or timer as charge termination. Choice of charge control method depends on battery use and charge requirements – contact Mascot for more information about which model would be best suited for your application.

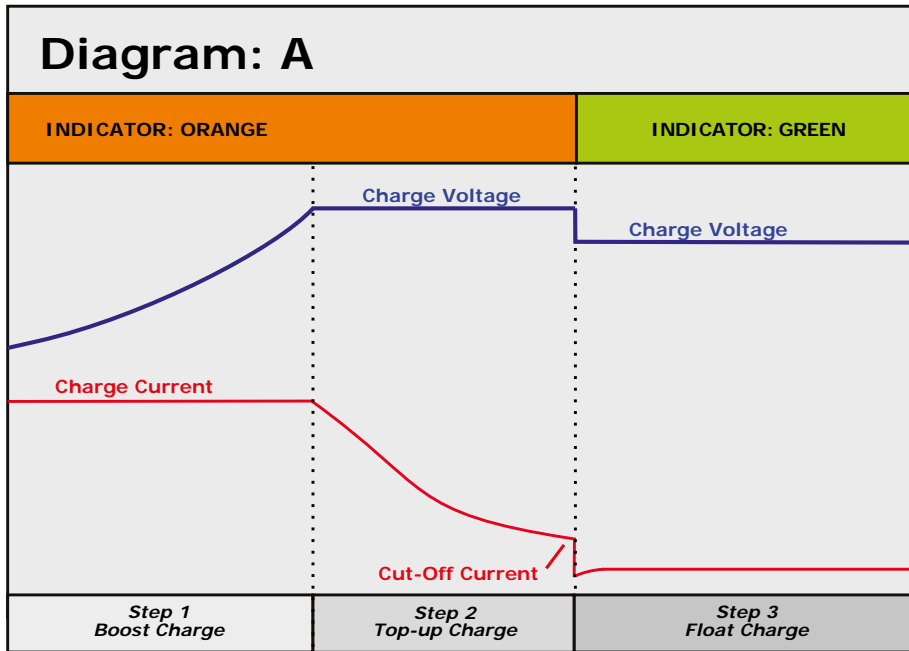
## LiFePO<sub>4</sub> BATTERIER

Litium jernfosfat (LiFePO<sub>4</sub>) batterier, også kalt LFP-batterier, er en type litiumbatteri fordi energien blir lagret på samme måte, dvs ved flytting og lagring av litium-ioner i stedet for litium metall. Disse cellene og batteriene har ikke bare høy kapasitet, men kan også levere høy effekt. LiFePO<sub>4</sub>-batterier er også kjent for å være tryggere enn Li-ion celler, og er tilgjengelige i et bredt spekter av cellestørrelser.

I tillegg er LiFePO<sub>4</sub>-batterier blant de batteritypene som har lengst levetid. Data tester i laboratorier viser at de klarer 2000 ladesykluser før de mister effekt. Dette er på grunn av den ytterst robuste krystallstrukturen av jernfosfat, som ikke brytes ned selv under gjentatt pakking og utpakking av litium-ioner under opp- og utlading.

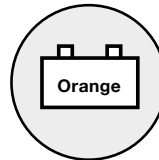
Mascot tilbyr en rekke LiFePO<sub>4</sub> batteriladere. Disse laderne bruker forskjellige ladekontrollmetoder, enten med strømdeksjon eller timer som ladestopp. Valg av lader avhenger av batteribruk og andre krav til oppladingen. Kontakt Mascot for mer informasjon om hvilken modell som vil være best egnet for Deres applikasjon.

**CHARGING METHOD A**



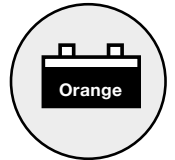
**STEP 1 – BOOST CHARGE**

To start a charge cycle; connect the charger to the mains. The charger is in constant current mode, charging with the maximum current indicated on the charger, the LED-indication on the charger is ORANGE. This step allows rapid charging of your battery until the battery reaches typically 80 - 95% of its capacity.



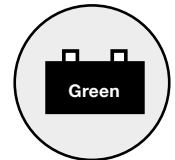
**STEP 2 – TOP-UP CHARGE**

The charger is in constant voltage mode, charging with a decreasing current until the current is below the chargers charge termination level (indicated on the charger). The LED-indication on the charger is ORANGE. The battery is charged to its full capacity at the end of this step

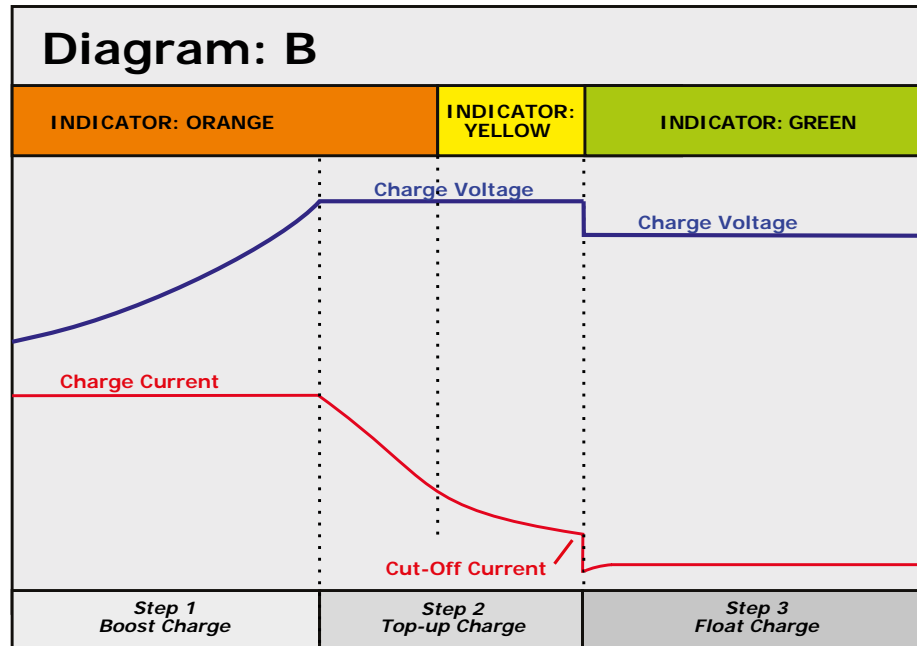


**STEP 3 – FLOAT CHARGE**

The LED-indication on the charger is GREEN and the battery is fully charged. The charge voltage is at float level and the charger may remain connected to the battery. The charger will return to Step 1 if the battery is used. A load larger than the cut-off current will initiate a new charge cycle.

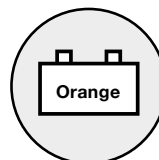


**CHARGING METHOD B**



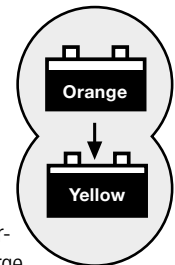
**STEP 1 – BOOST CHARGE**

To start a charge cycle; connect the charger to the mains. The charger is in constant current mode, charging with the maximum current indicated on the charger, the LED-indication on the charger is ORANGE. This step allows rapid charging of your battery until the battery voltage has increased to a certain set level.



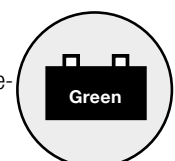
**STEP 2 – TOP-UP CHARGE**

When the battery voltage has increased to a certain set level the charger enters constant voltage mode, charging with a decreasing current until the current is below the chargers charge termination level (indicated on the charger). The LED-indication on the charger is ORANGE. When the battery has reached typically 90 - 95% of its full capacity the charge current has dropped below a set level and the LED-indication on the charger changes to YELLOW to indicate that the battery is almost fully charged and may be ready for use. The constant voltage charge continues and the battery reaches its full capacity at the end of this step

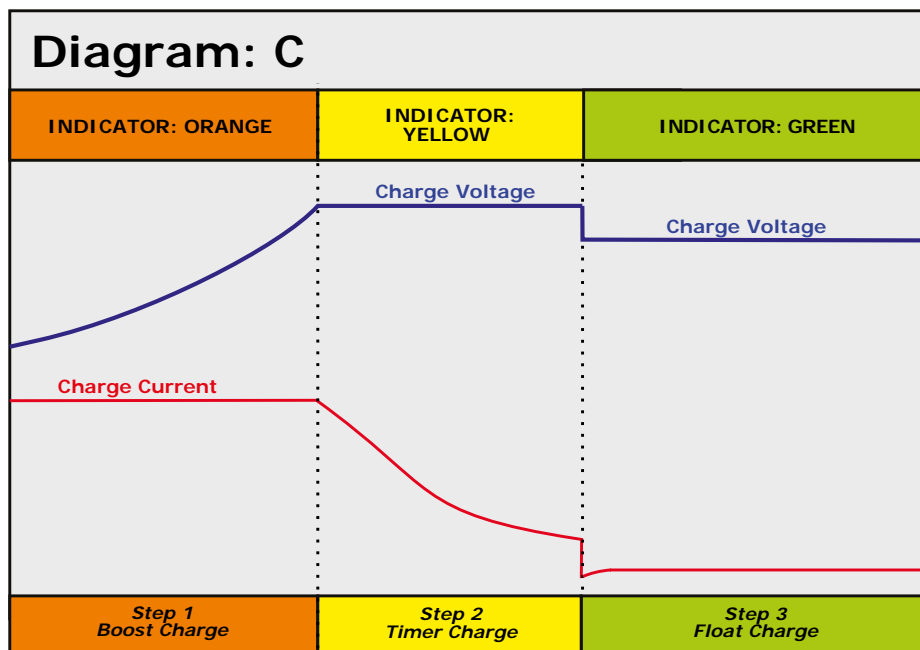


**STEP 3 - FLOAT CHARGE**

The LED-indication on the charger is GREEN and the battery is fully charged. The charge voltage is at float level and the charger may remain connected to the battery. The charger will return to Step 1 if the battery is used. A load larger than the cut-off current will initiate a new charge cycle.

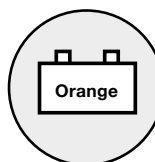


**CHARGING METHOD C**



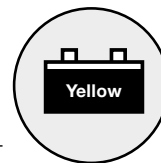
**STEP 1 – BOOST CHARGE**

To start a charge cycle; connect the charger to the mains. The charger is in constant current mode, charging with the maximum current indicated on the charger, the LED-indication on the charger is ORANGE. This step allows rapid charging of your battery until the battery reaches typically 80 - 95% of its capacity.



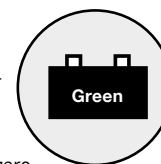
**STEP 2 –TIMER CHARGE**

The charger is in constant voltage mode, charging with a decreasing current. The LED-indication on the charger is YELLOW. The charger is now in timer mode indicated by the YELLOW LED and will remain in this mode until time interval is completed. The battery is charged to its full capacity at the end of this step.



**STEP 3 - FLOAT CHARGE**

The LED-indication on the charger is GREEN and the battery is fully charged. For LiFePO<sub>4</sub> batteries the charge current is zero and the battery has been charged to its full capacity. The charge voltage is at float level and the charger may remain connected to the battery. The charger will return to Step 1 if the battery is used. A load larger than the constant current level in Step 1 will initiate a new charge cycle.

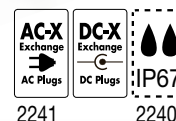




## 2240-2241 LiFePO<sub>4</sub> Max. 1,3 A

### 2241 LiFePO<sub>4</sub>- exchangeable / utskiftbare AC plugs

- 3-step charge control with current detection as charge termination
- Universal input voltage (90-264 VAC)
- Charging 1-8 battery cells
- Mounting bracket available
- Order mains cord separately
- Waterproof (IP67) version available
- Exchangeable AC and DC plugs
- Custom specifications on request
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med strømdeleksjon som ladestopp
- Universal inngangsspenning (90-264 VAC)
- Opplading av 1-8 battericeller
- Kan leveres med festebrakett
- Nettledning best. separat
- Nettetett (IP67) versjon kan leveres
- Utskiftbare AC og DC plugger
- Tilpasninger leveres på forespørsel
- Godkjenninger:
  - Medisinsk sertifisert EN 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications Tekniske data

Input voltage:	Inngangsspenning:	90-264 VAC
Line frequency:	Frekvensområde:	47 – 63Hz
Switch frequency, approx.:	Svitsjefrekvens ca.:	40kHz
Leakage current from battery with mains switched off:	Strømtrekk fra batteri ved frakoblet nett:	≈ 0
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25 °C - +40 °C
• Storage:	• Lagring:	-25 °C - +85 °C
Ripple:	Rippel:	< 100 mV p-p
Protection:	Beskyttelse:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker
Insulation class:	Isolasjonsklasse:	II
Insulation voltage	Isolasjonsspenning	
• Primary – secondary:	• Primær - sekundær:	4000VAC / 5640VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60601-1 3ed, EN 60950, EN 60335-2-29, UL 60601-1
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Reliability (MIL-HDBK-217F):	Pålitelighet (MIL-HDBK-217F):	MTBF > 250.000h at 30°C and full load
Output terminals:	Utgangsterminaler:	Cord with/without plug Sekundærledning med / uten plugg
IP-code:	IP-grad:	4X
Dimensions (LxWxH):	Mål (LxBxH):	90 x 45 x 32mm (2240 LI)
Weight:	Vekt:	115g (215g IP67 vers.)

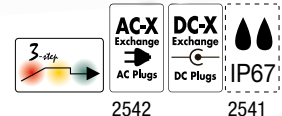
Versions - Versjoner			Charge control - Ladekontroll			
			Step 1	Step 2	Step 3	
Cells	Max. output power (W)	Efficiency 100% at 230V)	Charge current (orange)	Charge voltage (orange)	Charge termination I< (green)	Charge start Vbat<
Celler	Max. utg. effekt	Virkningsgrad	Ladestrom	Ladespenning	Ladestopp I< (grønn)	Ladestart Vbat<
1	5,5	58 %	1,3A +5/-7%	3,65V +-0,05V	100mA +-25%	3,5V+0,05-0,15V
2	10,9	72 %	1,3A +5/-7%	7,3V +-0,1V		7,0V+0,1-0,15V
3	15,1	77 %	1,2A +5/-7%	10,95V +-0,1V		10,5V+0,1-0,15V
4	15,1	80 %	0,9A +5/-7%	14,6V +-0,1V		14,0V+0,1-0,15V
5	14,7	82 %	0,7A +5/-7%	18,25V +-0,1V		17,5V+0,1-0,15V
6	15,1	82 %	0,6A +5/-7%	21,9V +-0,1V		21,0V+0,1-0,15V
7	15,1	82 %	0,6A +5/-7%	21,9V +-0,1V		21,0V+0,1-0,15V
8	16,4	82 %	0,56A +5/-7%	29,2V +-0,1V		28,0V+0,1-0,15V

Charging characteristics and LED indication: see chapter introduction pages - diagram A

## 2541-2542 LiFePO<sub>4</sub> Max. 2,7A

### 2542 LiFePO<sub>4</sub> - exchangeable / utskiftbare AC plugs

- 3-step charge control with current detection as charge termination
- Universal input voltage (90-264 VAC)
- 3 coloured LED indicator
- Order mains cord separately
- Custom specifications on request:
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med strøm-deteksjon som ladestopp
- Universal inngangsspenning (90-264 VAC)
- 3-farget lysdiodeindikator
- Nettledning best. separat
- Tilpasninger lev. på forespørsel:
- Godkjenninger:
  - Medisinsk sertifisert EN 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	90-264 VAC
Line Frequency:	Frekvensområde:	47 – 63Hz
Switch frequency, approx.:	Svitsjefrekvens ca.:	40 kHz
Leakage current from battery with mains switched off:	Strømtrekk fra batteri ved frakoblet nett:	<250
Temperature range	Temperaturområde	
• Operating:	• Drift:	-20 °C - +40 °C
• Storage:	• Lagring:	-25 °C - +85 °C
Ripple:	Rippel:	< 100 mV p-p
Protection:	Sikring:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker
Insulation class:	Isolasjonsklasse:	II
Insulation voltage	Isolasjonsspenning	
• Primary – secondary:	• Primær - sekundær:	4000VAC / 5700VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	IEC/EN/UL 60601-1, EN 60950-1, EN 60335-2-29
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Input terminal:	Inngangsterminal:	2-pin IEC 320 connector
Output terminals:	Utgangsterminaler:	Cord w/w.out plug / Sek.ledn. m/u plugg
IP-code:	IP-grad:	41
Dimensions (LxWxH):	Mål (LxBxH):	107 × 67 × 35,5mm (2541)
Weight:	Vekt:	250g

Versions / Versjoner			Charge control / Ladekontroll				
			Step 1 (orange)	Step 2a (orange)	Step 2b (yellow / gul)	Step 3 (green / grønn)	
Cells	Max output power (W)	Efficiency (100% at 230V)	Charge current	Charge voltage	To yellow when current is:	Charge termin. when current is:	Flat charge
Celler	Maks. utg. effekt	Virkningsgrad	Ladestrøm	Ladespenning	Til gul når strøm er:	Ladestopp når strøm er:	Vedlikeholdslading
1	10	63 %	2.7A ±0.1A	3.65V ±0.05V	< 1.15A ±0.1A	100mA ±25%	3.5V±0.05V
2	20	78 %	2.7A ±0.1A	7.3V ±0.1V	< 1.15A ±0.1A		7.0V±0.1V
3	25	83 %	2.3A ±0.1A	10.95V ±0.1V	< 1.00A ±0.1A		10.5V±0.1V
4	29	84 %	2.0A ±0.1A	14.6V ±0.1V	< 0.85A ±0.1A		14.0V±0.1V
5	29	85 %	1.6A ±0.1A	18.25V ±0.1V	< 0.70A ±0.1A		17.5V±0.1V
8	35	85%	1.2A ±0.1A	29.2V ±0.1V	< 0.40A ±0.1A		28.0V ±0.1V

Charging characteristics and LED indication: see chapter introduction pages - diagram B

## 2440 LiFePO<sub>4</sub> Max. 4A

- 3-step charge control with current detection as charge termination
- Universal input voltage (90-264 VAC)
- 3 coloured LED indicator
- Order mains cord separately
- Custom design on request: NTC, timer, charge current, other
- Waterproof IP67 version available
- Approvals:
  - Medically certified EN 60601-1 3ed
  - Home Healthcare EN 60601-1-11
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med strømdeleksjon som ladestopp
- Universal inngangsspenning (90-264 VAC)
- 3-farget lysdiodeindikator
- Nettledning best. separat
- Tilpasninger lev. på forespørsel: NTC, timer, ladestrøm m.m.
- Vanntett IP67 versjon tilgjengelig
- Godkjenninger:
  - Medisinsk sertifisert EN 60601-1 3ed
  - Med. hjemmebruk EN 60601-1-11
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	90-264 VAC
Line frequency:	Frekvensområde:	47 – 63Hz
Switch frequency, approx.:	Svitsjefrekvens ca.:	40 kHz
Leakage current from battery with mains switched off:	Strømtrekk fra batteri ved frakoblet nett:	<0,7mA @ 6,4V (2-cell version)
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25 °C - +40 °C
• Storage:	• Lagring:	-25 °C - +85 °C
Ripple:	Rippel:	< 100 mV p-p
Protection:	Sikring:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker
Insulation class:	Isolasjonsklasse:	Class II (Class I on request)
Insulation voltage	Isolasjonsspenning	
• Primary – secondary:	• Primær - sekundær:	4000VAC / 5700VDC
Electrical safety:	Elektrisk sikkerhet:	EN/IEC 60335-2-29, EN/IEC/ANSI 60601-1 (3rd Ed) & EN/IEC 60601-1-11
EMC standards	EMC standarder	EN 55014-1 and -2, EN/IEC 61000-6-3, EN/IEC 61000-6-1, EN/IEC 60601-1-2
Input terminal:	Inngangsterminal:	2-pin IEC 320 connector (3-pin or fixed cord on request)
Output terminals:	Utgangsterminaler:	Battery clips or DC connector
IP-code:	IP-grad:	41
Dimensions (LxWxH):	Mål (LxBxH):	135 x 80 x 44mm
Weight:	Vekt:	390g (890 g IP67)

Versions / Versjoner			Charge control / Ladekontroll					Charge start Vbat<
			Step 1 (orange)	Step 2a (orange)	Step 2b (yellow / gul)	Step 3 (green / grønn)		
Cells	Max output power (W)	Efficiency (100% at 230V)	Charge current	Charge voltage	To yellow when current is:	Charge termin. when current is:		
Celler	Maks. utg. effekt	Virkningsgrad	Ladestrøm	Ladespenning	Til gul når strøm er:	Ladestopp når strøm er:	Ladestart Vbat<	
4	58	>81 %	4.0A ±0.2A	14.6V ±0.1V	< 1.6A ±0.1A	300mA ±25%	14.0V±0.1V	
9	72	>85 %	2.2A ±0.2A	32.85V ±0.2V	0.8A ±0.1A	200mA ±25%	31.5V ±0.2V	
16	70	>87%	1.2A ±0.1A	58.4V ±0.3V	0.6A ±0.1A	100mA ±25%	56.0V ±0.2V	

Charging characteristics and LED indication: see chapter introduction pages - diagram B

## 2840-3240 LiFePO<sub>4</sub> Max. 4A

### 3240 LiFePO<sub>4</sub>: Autodetect 115/230 VAC

- 3-step charge control with current detection as charge termination
- Charging 1-16 Li-Ion battery cells
- 2-pin IEC 320 connector. 3-pin or fixed mains cord on request
- Mains cord not included
- Waterproof (IP67) version available
- With NTC input on request
- Custom specifications on request
- Approvals:
  - Medically certified EN 60601-1 3ed
  - UL approved
  - For updates: see [www.mascot.no](http://www.mascot.no)
- 3-trinns ladekontroll med strømdeteksjon som ladestopp
- Opplading av 1-16 Li-Ion battericeller
- 2-pins IEC 320 nettkontakt. 3-pins el fast nettleiding på forespørsel.
- Nettleiding ikke inkludert
- Vanntett (IP67) versjon kan leveres
- Med NTC input på forespørsel
- Tilpasninger leveres på forespørsel
- Godkjenninger:
  - Medisinsk sertifisert EN 60601-1 3ed
  - UL godkjent
  - For oppdat.: se [www.mascot.no](http://www.mascot.no)



### Technical specifications

### Tekniske data

Input voltage:	Inngangsspenning:	198-264 VAC
Line frequency:	Frekvensområde:	47 – 63Hz
Switch frequency, approx.:	Svitsjefrekvens ca.:	65 kHz
Leakage current from battery with mains switched off:	Strømtrekk fra batteri ved frakoblet nett:	<1,3mA
Temperature range	Temperaturområde	
• Operating:	• Drift:	-25 °C - +40 °C
• Storage:	• Lagring:	-25 °C - +85 °C
Ripple:	Rippel:	< 100 mV p-p
Protection:	Sikring:	Protected against reversed polarity and short circuit proof Polvendings- og kortslutningssikker
Insulation class:	Isolasjonsklasse:	II (I available on request)
Insulation voltage	Isolasjonsspenning	
• Primary – secondary:	• Primær - sekundær:	4000VAC / 5700VDC
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60601-1 EN 60335-2-29
EMC standards	EMC standarder	
• Medical:	• Medisinsk:	EN 60601-1-2
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Input terminal:	Inngangsterminal:	2-pin IEC 320 connector. 3-pin IEC 320 connector or fixed mains cord available on request
Output terminals:	Utgangsterminaler:	Battery clips or DC connector
IP-code:	IP-grad:	41 (IP67 on request)
Dimensions (LxWxH):	Mål (LxBxH):	2840LiFePO <sub>4</sub> : 135 × 80 × 44mm / 3240LiFePO <sub>4</sub> : 160 × 81 × 44,3 mm
Weight:	Vekt:	2840LiFePO <sub>4</sub> : 480g / 3240LiFePO <sub>4</sub> : 590g

### Selected versions – see web for complete list

			Charge control - Ladekontroll				
			Step 1 (orange)	Step 2a (orange)	Step 2b (gul/yellow)	Step 3 (grønn/green)	
Cells	Max output power (W)	Efficiency (100% at 230V)	Charge Current	Charge Voltage	To yellow when current is<:	To float charge when current is<:	Float charge
Celler	Max utg. effekt	Virkningsgrad	Ladestrøm	Ladespenning	Til Gul når strøm er<:	Vedlikeholdslading når strøm er<:	Vedlikeholdslading
1 Cell	31W	>85%	8.5A +0.1/-0.3A	3.65V ±0.05V	3.8A ±0.2A	300mA ±30%	3.5V ±0.05V
4 Cells	102W	>89%	7.0A +0.1/-0.3A	14.6V ±0.1V	2.7A ±0.2A		14.0V ±0.1V
7 Cells	100W	>89%	3.9A +0/-0.3A	25.55V ±0.2V	1.6A ±0.2A		24.5V ±0.2V
16 cells	99W	>89%	1.7A +0/0.2A	58.4V ±0.2V	0.6A ±0.3A		56.0V ±0.4V

Charging characteristics and LED indication: see chapter introduction pages - diagram B



# DC/AC INVERTERS DC/AC INVERTERE



## MASCOT RANGE OF DC/AC INVERTERS

Using a 12V or 24V battery, these inverters are ideal for applications such as TV, video, smaller household appliances, and tools for camping, boating and caravans.

The inverters are also well suited for charging batteries for portable PCs, cellular phones handheld games, etc.

## MASCOTS INVERTERSERIE

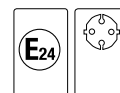
Med et 12 eller 24V batteri tilgjengelig, kan en koble til 230 VAC TV, video, mindre husholdningsapparater eller verktøy på hytta, i båten eller camping.

Inverterne kan også brukes til lading av datautstyr, mobiltelefonbatteri, spill osv.



## 9150 Max. 140 W

- Used as a mains source in cars, boats, cabins, caravans, etc. for most types of electronic equipment
- Overvoltage protected / short circuit proof at output
- Input terminal: 6,3 mm push-on terminals. Standard with 1 m cord and battery clips
- Output 230 V: socket (IEC 83)
- Mounting brackets available
- CE and "E"-marked
- Benyttes som nettspenningskilde i bil, båt, hytte, caravan etc. for de fleste typer elektroniske apparater
- Overspenningsbeskyttet / kortslutningssikker på utgang
- Inngangsterminal: 6,3 mm flatstift-kontakter. Standard med 1 m ledning og batteriklemmer
- Utgang 230 V: stikkontakt (IEC 83)
- Festebreketter kan leveres
- CE og "E"-merket



### Technical specifications\*

### Tekniske data\*

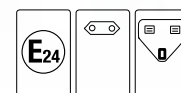
Output voltage (mod. sine w):	Utg.spennning (modifisert sinus):	230 V RMS, 50 Hz
Load regulation:	Lastregulering:	0-110 W: < 25 V
Line regulation:	Linjeregulering:	12-15 V: < 5 V
No load current:	Tomgangsstrøm:	< 300 mA
Battery drain current at:	Strømtrekk fra batteri ved:	110 W / 12 V: 11,5 A
Efficiency (at full load):	Virkningsgrad (ved full last):	80%
Insulation class:	Isolasjonsklasse:	II
Insulation voltage	Isolasjonsspenning	
• Between in- and output:	• Mellom inn- og utgang:	4000 V
• Between input and chassis:	• Mellom inngang og chassis:	500 V
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60335-1
EMC standards	EMC standarder	
• Emission:	• Emisjon:	EN 61000-6-3
• Immunity:	• Immunitet:	EN 61000-6-1
Dimensions (LxWxH):	Mål (LxBxH):	200 x 105 x 57 mm
Weight:	Vekt:	1,8 kg

\* Some technical specifications may differ for other voltage versions. / Visse tekniske data kan variere for de forskjellige spenningsversjoner.

	Input (VDC) Inngang (VDC)		Max. output power (W) Maks. utgangseffekt (W)		Typical no load input current (mA) Typisk tomgangsstrøm på inngang (mA)
	Min. Min.	Max. Maks.	Continuous Kontinuerlig	Intermittent Kortvarig	
12	11	15	110	150	150
24	22	32	140	160	150
48	44	58	140	160	100

## 2984 Max. 150 W

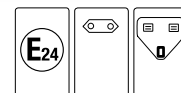
- Ideal for camping, boating and caravan
- Compact size
- Built-in alarm
- Short circuit proof
- Battery clips or cigarette lighter socket
- Available in 12 V and 24 V voltage versions
- EU or UK output socket
- CE and "E"-marked
- Ideell for camping, båt og bil
- Kompakt enhet
- Innebygget alarm
- Kortslutningssikker
- Batteriklemmer eller sigarett-tenner plugg
- Tilgjengelig i 12 V og 24 V spenningsversjoner
- EU eller UK stikkontakt
- CE og "E"-merket



Technical specifications	Tekniske data	12 V	24 V
Input voltage:	Inngangsspenning:	12 VDC	24 VDC
Output voltage (mod. sine w.):	Utg.spennning (modifisert sinus):	230 VAC +5/-10% (50 Hz)	
Output power	Utgangseffekt		
• Continuous:	• Kontinuerlig:	150 W	
• Intermittent:	• Kortvarig:	300 W	
Temperature range	Temperaturområde		
• Operating:	• Drift:	0° C - 50° C	
No load current:	Tomgangsstrøm:	< 0,2 A	< 0,14 A
Efficiency:	Effektivitet:	> 90 %	
Insulation class	Isolasjonsklasse	II	
Low battery alarm:	Alarm ved lav batterispenning:	10,5 V	21 V
Battery shut-down:	Avbrudd ved batterispenning:	10 V	20 V
Input Over Voltage	Alarm/avbrudd		
Shutdown Alarm	v. overspenning på inngang	> 16,5 V	> 33 V
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950	
EMC standards	EMC standarder		
• Emission:	• Emisjon:	EN 61000-6-3	
• Immunity:	• Immunitet:	EN 61000-6-1	
Protection:	Sikring:	Input low voltage, input overvoltage, low battery alarm, overtemperature, overload protection and short circuit proof, convection cooled	
		Mot lav inngangsspenning, inngang mot overspenning, alarm ved lav batt. spenning, termisk sikret, overlast-beskyttet og kortslutningssikker, konveksjonskjølt	
MTBF:	MTBF:	60.000 hours / timer	
DC terminals:	DC terminaler:	Cigarette plug or battery clips Sigarett-lighter plugg eller batteriklemmer	
Dimensions (LxWxH):	Mål (LxBxH):	90 x 152 x 66mm	
Weight:	Vekt:	770 g	

## 2985 Max. 300 W

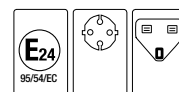
- Ideal for camping, boating and caravan
- Compact size
- Built-in alarm
- Short circuit proof
- Battery clips
- Available in 12 V and 24 V voltage versions
- EU or UK output socket
- CE and "E"-marked
- Ideell for camping, båt og bil
- Kompakt enhet
- Innebygget alarm
- Kortslutningssikker
- Batteriklemmer
- Tilgjengelig i 12 V og 24 V spenningsversjoner
- EU eller UK stikkontakt
- CE og "E"-merket



Technical specifications	Tekniske data	12 V	24 V
Input voltage:	Inngangsspenning:	12 VDC	24 VDC
Output voltage (mod. sine w.):	Utgangsspenning (modifisert sinus):	230 VAC +5/-10% (50 Hz)	
Output power	Utgangseffekt		
• Continuous:	• Kontinuerlig:	300 W	
• Intermittent:	• Kortvarig:	500 W	
Temperature range	Temperaturområde		
• Operating:	• Drift:	0° C - 50° C	
No load current:	Tomgangsstrøm:	< 0,2 A	< 0,14 A
Efficiency:	Effektivitet:	> 90 %	
Insulation class:	Insolasjonsklasse:	II	
Low battery alarm:	Alarm ved lav batt. spenning:	10,5 V	21 V
Battery shut-down:	Avbrudd ved batt. spenning:	10 V	20 V
Input Over Voltage	Alarm/avbrudd		
Shutdown Alarm	v. overspenning på inngang	> 16,5 V	> 33 V
Electrical safety standard:	Elektrisk sikkerhetsstand.:	EN 60950	
EMC standards	EMC standarder		
• Emission:	• Emisjon:	EN 61000-6-3	
• Immunity:	• Immunitet:	EN 61000-6-1	
Protection:	Sikring:	Input low voltage, input overvoltage, low battery alarm, overtemperature, overload protection and short circuit proof	
		Cooling fan	
		Mot lav inngangsspenning, inngang mot overspenning, alarm ved lav batt. spenning, termisk sikret, overlast beskyttet og kortslutningssikker	
		Kjølevifte	
MTBF:	MTBF:	53.000 hours / timer	
DC terminals:	DC terminaler:	Battery clips / Batteriklemmer	
Dimensions (LxWxH):	Mål (LxBxH):	90 x 152 x 66mm	
Weight:	Vekt:	780 g	

## 9986 Max. 600 W

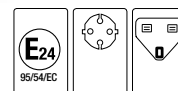
- Ideal for camping, boating and caravan
- Compact size
- Built-in alarm
- Short circuit proof
- Terminal blocks (screw terminals)
- Available in 12 V and 24 V voltage versions
- EU or UK output socket
- CE and "E"-marked
- Ideell for camping, båt og bil
- Kompakt enhet
- Innebygget alarm
- Kortslutningssikker
- Skruterminaler
- Tilgjengelig i 12 V og 24 V spenningsversjoner
- EU eller UK stikkontakt
- CE og "E"-merket



Technical specifications	Tekniske data	12 V	24 V
Input voltage:	Inngangsspenning:	10-15 VDC	20-30 VDC
Output voltage (mod. sine w.):	Utgangsspenning (modifisert sinus):	230 VAC +5/-10% (50 Hz)	
Output power	Utgangseffekt		
• Continuous:	• Kontinuerlig:	600 W	
• Intermittent:	• Kortvarig:	1000 W	
No load current:	Tomgangsstrøm:	< 0,5 A	< 0,35 A
Efficiency:	Effektivitet:	85-90 %	
Low battery alarm:	Alarm ved lav batterispenning:	10,7 V	21 V
Low battery shut-down:	Avbrudd ved lav batterispenning:	10,5 V	20 V
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950	
EMC standards	EMC standarder		
• Emission:	• Emisjon:	EN 61000-6-3	
• Immunity:	• Immunitet:	EN 61000-6-1	
Protection:	Sikring:	Input low voltage, input overvoltage, low battery alarm, overtemperature, overload protection and short circuit proof	
		Cooling fan	
		Mot lav inngangsspenning, inngang mot overspenning, alarm ved lav batt. spenning, termisk sikret, overlast beskyttet og kortslutningssikker	
		Kjølevifte	
MTBF:	MTBF:	53.000 hours / timer	
DC terminals:	DC terminaler:	Terminal blocks (screw terminals)	
		Skruterminaler	
Dimensions (LxWxH):	Mål (LxBxH):	212 x 238 x 80 mm	
Weight:	Vekt:	2,25 kg	

**9987** Max. 1000 W

- Ideal for camping, boating and caravan
  - Compact size
  - Built-in alarm
  - Short circuit proof
  - Terminal blocks (screw terminals)
  - Remote control optional
  - Available in 12 V and 24 V voltage versions
  - EU or UK output socket
  - CE and "E"-marked
- Ideell for camping, båt og bil
  - Kompakt enhet
  - Innebygget alarm
  - Kortslutningssikker
  - Skruterminaler
  - Fjernkontroll som ekstrautstyr
  - Tilgjengelig i 12 V og 24 V spenningsversjoner
  - EU eller UK stikkontakt
  - CE og "E"-merket

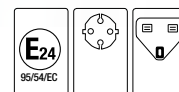


Technical specifications	Tekniske data	12 V	24 V
Input voltage:	Inngangsspenning:	10-15 VDC	20-30 VDC
Output voltage (mod. sine w.):	Utgangsspenning (modifisert sinus):	230 VAC +5/-10% (50 Hz)	
Output power	Utgangseffekt		
• Continuous:	• Kontinuerlig:	1000 W	
• Intermittent - max. 20 min.:	• Kortvarig - maks 20 min.:	1200 W	
• Intermittent :	• Kortvarig:	2000 W	
No load current:	Tomgangsstrøm:	< 0,7 A	< 0,55 A
Efficiency:	Effektivitet:	85-90 %	
Low battery alarm:	Alarm ved lav batterispenning:	10,7 V	21 V
Low battery shut-down:	Avbrudd ved lav batterispenning:	10,5 V	20 V
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950	
EMC standards	EMC standarder		
• Emission:	• Emisjon:	EN 61000-6-3	
• Immunity:	• Immunitet:	EN 61000-6-1	
Protection:	Sikring:	Input low voltage, input overvoltage, low battery alarm, overtemperature, overload protection and short circuit proof Cooling fan	
		Mot lav inngangsspenning, inngang mot overspenning, alarm ved lav batt. spenning, termisk sikret, overlast beskyttet og kortslutningssikker Kjølevifte	
MTBF:	MTBF:	53.000 hours / timer	
DC terminaler:	DC terminals:	Terminal blocks (screw terminals) Skruterminaler	
Mål (LxBxH):	Dimensions (LxWxH):	323 x 238 x 80 mm	
Weight:	Vekt:	3,15 kg	



## 9988 Max. 1500 W

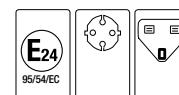
- Ideal for camping, boating and caravan
- Compact size
- Built-in alarm
- Short circuit proof
- Terminal blocks (screw terminals)
- Remote control optional
- Available in 12 V and 24 V voltage versions
- EU or UK output socket
- CE and "E"-marked
- Ideell for camping, båt og bil
- Kompakt enhet
- Innebygget alarm
- Kortslutningssikker
- Skruterminaler
- Fjernkontroll som ekstrastyr
- Tilgjengelig i 12 V og 24 V spenningsversjoner
- EU eller UK stikkontakt
- CE og "E"-merket



Technical specifications	Tekniske data	12 V	24 V
Input voltage:	Inngangsspenning:	10-15 VDC	20-30 VDC
Output voltage (mod. sine w.):	Utgangsspenning (modifisert sinus):	230 VAC +5/-10% (50 Hz)	
Output power	Utgangseffekt		
• Continuous:	• Kontinuerlig:	1500 W	
• Intermittent - max. 20 min.:	• Kortvarig - maks 20 min.:	1800 W	
• Intermittent :	• Kortvarig:	3000 W	
No load current:	Tomgangsstrøm:	< 0,8 A	< 0,65 A
Efficiency:	Effektivitet:	85-90 %	
Low battery alarm:	Alarm ved lav batterispenning:	10,7 V	21 V
Low battery shut-down:	Avbrudd ved lav batterispenning:	10,5 V	20 V
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950	
EMC standards	EMC standarder		
• Emission:	• Emisjon:	EN 61000-6-3	
• Immunity:	• Immunitet:	EN 61000-6-1	
Protection:	Sikring:	Input low voltage, input overvoltage, low battery alarm, overtemperature, overload protection and short circuit proof Cooling fan	
		Mot lav inngangsspenning, inngang mot overspenning, alarm ved lav batt. spenning, termisk sikret, overlast beskyttet og kortslutningssikker Kjølevifte	
MTBF:	MTBF:	53.000 hours / timer	
DC terminals:	DC terminaler:	Terminal blocks (screw terminals) Skruterminaler	
Dimensions (LxWxH):	Mål (LxBxH):	368 x 238 x 80 mm	
Weight:	Vekt:	4,2 kg	

**2284-2285** Max. 150 W - 300W

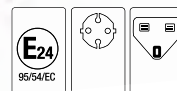
- 230 V output voltage from 12 or 24 V battery
- Power up TV/Video, appliances, battery chargers (laptop, mobile phones), instruments, tools, and other equipment
- Ideal for industrial and mobile applications, and for caravans, boats, and cars/trucks
- Built-in alarm
- Short circuit proof
- Available in 12 V and 24 V voltage versions
- CE and "E"-marked
- 230 V utgangsspenning fra 12 el. 24 V batteri
- Strøm til TV/video, husholdningsapparat, batteriladere (laptop, mobiltelefon), instrumenter, verktøy og annet utstyr
- Ideelt for profesjonelt og mobilt utstyr og for camping, hytte, båt og bil
- Innebygget alarm
- Kortslutningssikker
- Tilgjengelig i 12 V og 24 V spenningsversjoner
- CE og "E"-merket



Technical specifications	Tekniske data	12 V	24 V
Input voltage:	Inngangsspenning:	10-15 VDC	20-30 VDC
Output voltage:	Utgangsspenning:	230 VAC +5/-10% (50 Hz)	
Output power	Utgangseffekt		
• Continuous:	• Kontinuerlig:	2284: 150 W / 2285: 300 W	
• Intermittent:	• Kortvarig:	2284: 300 W / 2285: 500W	
Temperature range	Temperaturområde		
• Operating:	• Drift:	0° C - 50° C	
No load current:	Tomgangsstrøm:	< 2284:0,5A 2285:0,7A	< 0,4 A
Output wave form:	Kurveform:	Pure sine wave / Ren sinus	
Efficiency:	Effektivitet:	>90%	
Low battery alarm:	Alarm ved lav batterispenning:	10,7 V	21,4 V
Low battery shut-down:	Avbrudd ved lav batterispenning:	10 V	20 V
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950	
EMC standards	EMC standarder		
• Emission:	• Emisjon:	EN 61000-6-3	
• Immunity:	• Immunitet:	EN 61000-6-1	
Protection:	Sikring:	Input low voltage, input overvoltage, low battery alarm, overtemperature, overload protection and short circuit proof Cooling fan	
		Mot lav inngangsspenning, inngang mot overspenning, alarm ved lav batt. spenning, termisk sikret, overlast beskyttet og kortslutningssikker Kjølevifte	
MTBF:	MTBF:	2284: 63.000 h/ t 2285: 55.000 h/t	
DC terminals:	DC terminaler:	2284: Fixed cable w. battery clips 2285: Fast ledning m. batteriklemmer 2285: Terminal blocks (skrew T) w. battery clips Skruterminaler m. batteriklemmer	
Dimensions (LxWxH):	Mål (LxBxH):	190 x 152 x 66 mm	
Dimensions mounting holes:	Mål monteringshull:	110 x 145mm	
Weight:	Vekt:	2284: 1,15 kg / 2285: 1,55 kg	

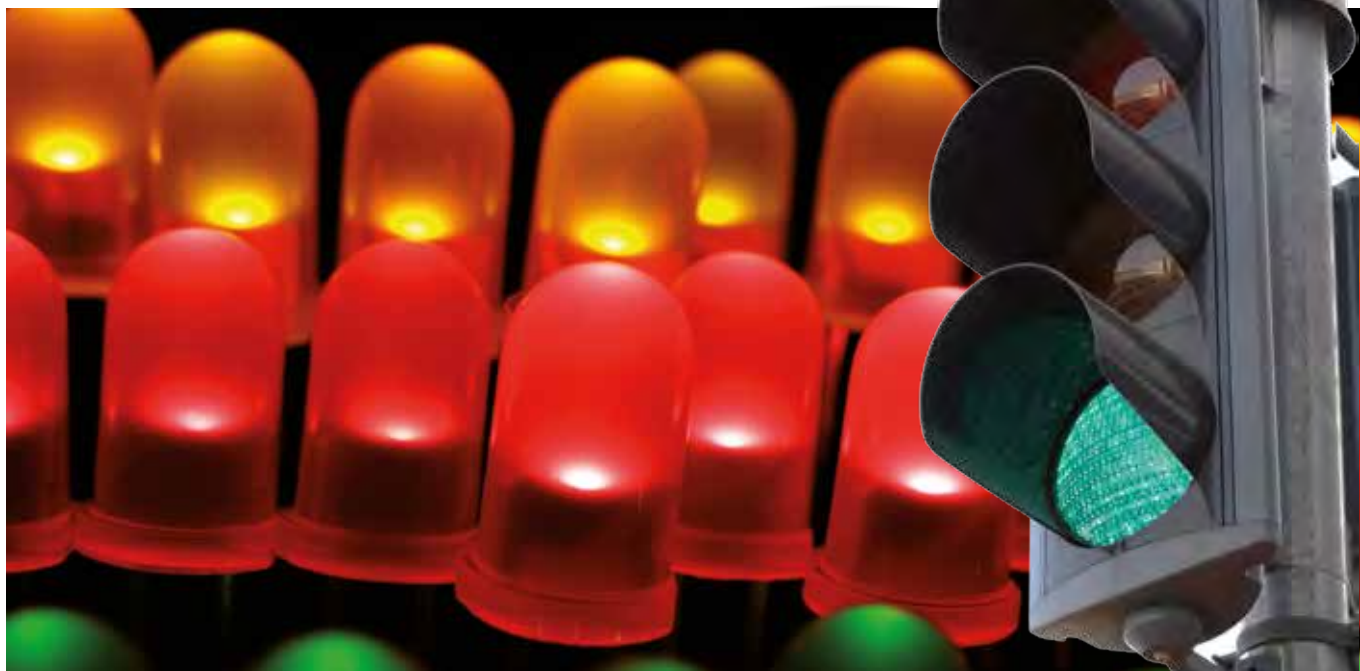
## 2286-2287 Max. 600 W - 1000 W

- 230 V output voltage from 12 or 24 V battery
- Power up TV/video, appliances, battery chargers (laptop, mobile phones), instruments, tools, and other equipment
- Ideal for industrial and mobile applications, and for caravans, boats, and cars/trucks
- Built-in alarm
- Short circuit proof
- Available in 12 V and 24 V voltage versions
- CE and "E"-marked
- 230 V utgangsspenning fra 12 el. 24 V batteri
- Strøm til TV/video, husholdningsapparat, batteriladere (laptop, mobiltelefon), instrumenter, verktøy og annet utstyr
- Ideelt for profesjonelt og mobilt utstyr og for camping, hytte, båt og bil
- Innebygget alarm
- Kortslutningssikker
- Tilgjengelig i 12 V og 24 V spenningsversjoner
- CE og "E"-merket



Technical specifications	Tekniske data	12 V	24 V
Input voltage:	Inngangsspenning:	10-15 VDC	20-30 VDC
Output voltage:	Utgangsspenning:	230 VAC +5/-10% (50 Hz)	
Output power	Utgangseffekt		
• Continuous:	• Kontinuerlig:	2286: 600 W 2287: 1000 W	
• Intermittent:	• Kortvarig:	2286: 1000 W 2287: 2000 W	
No load current:	Tomgangsstrøm:	< 2286:1A 2287: 1,8A   < 2286: 0,6A 2287: 1A	
Output wave form:	Kurveform:	Pure sine wave / Ren sinus	
Efficiency:	Effektivitet:	>90%	
Low battery alarm:	Alarm ved lav batterispenning:	10,7 V	21,4 V
Low battery shut-down:	Avbrudd ved lav batterispenning:	10 V	20 V
Electrical safety standard:	Elektrisk sikkerhetsstandard:	EN 60950	
EMC standards	EMC standarder		
• Emission:	• Emisjon:	EN 61000-6-3	
• Immunity:	• Immunitet:	EN 61000-6-1	
Protection:	Sikring:	Input low voltage, input overvoltage, low battery alarm, overtemperature, overload protection and short circuit proof	
		Cooling fan	
		Mot lav inngangsspenning, inngang mot overspenning, alarm ved lav batt. spenning, termisk sikret, overlast beskyttet og kortslutningssikker	
		Kjølevifte	
MTBF:	MTBF:	55.000 hours / timer	
DC terminals:	DC terminaler:	Terminal blocks (screw terminals) Skruterminaler	
Dimensions (LxWxH):	Mål (LxBxH):	2286: 252 x 238 x 80 mm 2287: 373 x 238 x 80 mm	
Dimensions mounting holes:	Mål monteringshull:	2286: 162 x 230 mm 2287: 280 x 230 mm	
Weight:	Vekt:	2286: 2,5 kg 2287: 4 kg	

## LED Drivers



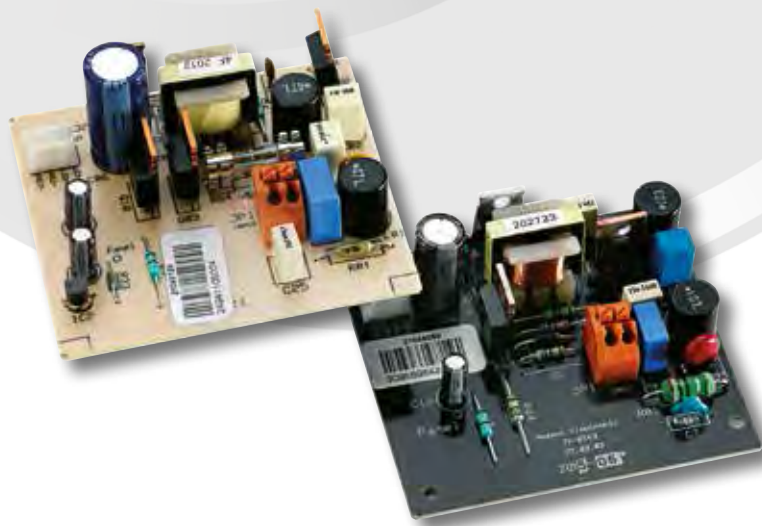
LED technology has improved significantly over the past five to ten years. Light output has reached a point where LEDs are viable for many applications, especially colored light applications. Traffic signalling is an area where LED technology was introduced quite early, and Mascot has been involved in this market for several years. We have dedicated resources in this field and therefore acquired considerable skills and knowledge in this «new» technology.

LED-based traffic signals use 90% less electricity than conventional incandescent traffic signals. Because traffic signals are operated 24 hours a day, the total reduction in energy usage is considerable. In addition, LED-based traffic signals last five to ten times longer than their incandescent counterparts, further increasing substantial energy and maintenance cost savings. All our drivers are also designed to meet any foreseeable environmental requirements and the Mascot drivers will therefore contribute to a «greener» future.

Mascot offers a variety of electronic LED drivers for traffic signals for 40-48, 120 & 230 VAC supply systems. Most of the drivers are based on a common platform, but customized for different traffic lamp characteristics, diode arrangements and control system from different manufacturers. The Mascot drivers meet all relevant international product standards.

Mascot is today a major OEM supplier of LED drivers and our customers are among the largest players in the field of Intelligent Traffic Signalling (ITS).

[PLEASE CONTACT US FOR MORE INFORMATION.](#)





# CUSTOM DESIGN KUNDETILPASSEDE PRODUKTER



## LET US DESIGN YOUR SOLUTION!

If you didn't find a power supply matching your requirements in our standard program, please take advantage of our experience in design and manufacture of custom-designed power supplies. We often use our archive as an aid to quickly design new solutions. Additionally, our own production facility is specially calibrated for custom design manufacturing – even for production batches as small as 25 units. Use our thorough knowledge of technology, manufacturing, and international standards to develop a power supply solution that meets your lead time, price, and quality requirements.

Mascot has been ISO 9001 certified since 1993.

**Please contact us for more information.**

## LA OSS DESIGNE DERES LØSNING!

Hvis ingen av våre strømforsynere i standard programmet vårt passer til Deres behov, har Mascot lang erfaring med å utvikle og produsere kundetilpassede løsninger. Ofte henter vi data fra vårt arkiv for raskt å komme frem til nye løsninger. I tillegg er vår produksjon spesialtilpasset fremstilling av kundespesifikasjoner – faktisk helt ned til serier på 25 enheter. Benytt gjerne vår kunnskap om teknologi, produksjonsteknikk og sertifiseringskrav til å finne en løsning som tilfredstiller Deres krav til leverings-tid, pris og kvalitet.

Mascot har vært sertifisert etter ISO 9001 siden 1993.

**Vennligst ta kontakt for mer informasjon.**



## Mounting brackets Festebraketter

### TYPE FBS 205825

Dim./Mål: 130x23x12mm  
2 mounting brackets per unit. Designed for type:

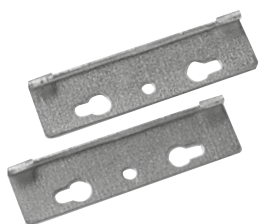
2 festebraketter pr. enhet. Beregnet for type:  
719, 8421, 9522, 9150, 9521, 9221, 9527, 2026, 9623, 2024, 9726, 2023, 2047



### TYPE FAS 207724

Dim./Mål: 80x20x8mm  
2 mounting brackets per unit. Designed for type:

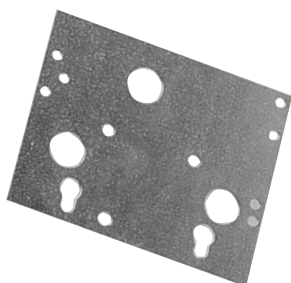
2 festebraketter pr. enhet. Beregnet for type:  
9120, 9320, 9322



### TYPE LME 207818

Dim./Mål: 93x75mm  
1 mounting bracket per unit. Designed for type:

1 festebrakett pr. enhet. Beregnet for type:  
6820, 8930, 8931, 6823, 8937, 7504



### TYPE FCS 202718

Dim./Mål: 110x30x12mm  
2 mounting brackets per unit. Designed for type:  
2 festebraketter pr. enhet.

Beregnet for type:  
8921, 9260, 2043, 2044, 9660, 2025



### TYPE 202906

Dim./Mål: 46x47x36mm  
1 mounting bracket per unit. Designed for type: \*

1 festebrakett per enhet. Beregnet for type: \*  
2240, 2121, 2122, 2124, 2125, 2115



### TYPE 201565

Dim./Mål: 60x69x38mm  
1 mounting bracket per unit. Designed for type: \*

1 festebrakett per enhet. Beregnet for type: \*  
9920, 9921, 9922, 9940, 2246, 2215, 2515, 2541, 2544



### TYPE 201970

Dim./Mål: 72x82x45mm  
1 mounting bracket per unit. Designed for type:

1 festebrakett per enhet. Beregnet for type:  
2020, 2022, 2040, 2415, 2440, 2641



### TYPE 9000-16 KLIPS ENGAGEMENT FOOT

FM4 engagement foot for TS-35 (35 mm DIN rail). Used in combination with mounting brackets. Supplied in two-pack.

FM4 klips for TS-35 (35 mm DIN skinne). Brukes i kombinasjon med festebraketter. Pakket i poser à 2 stk.



## Miscellaneous Diverse



### TYPE 131306

2-pin IEC 60320/C7 cord set, 1,8 meter



### TYPE 013095

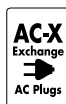
3-pin IEC 60320/C13 cord set, 1,8 meter



### TYPE 9998

Remote control with 5 m cable for inverter models 9987, 9988 and 2287

Fjernkontroll med 5 m kabel for inverter modellene 9987, 9988 og 2287



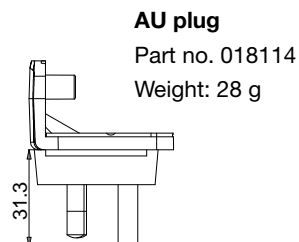
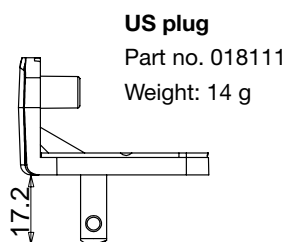
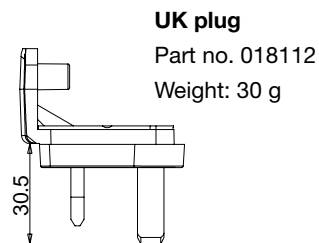
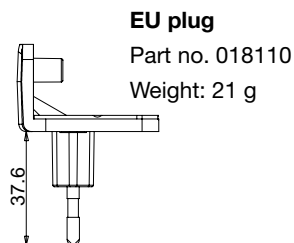
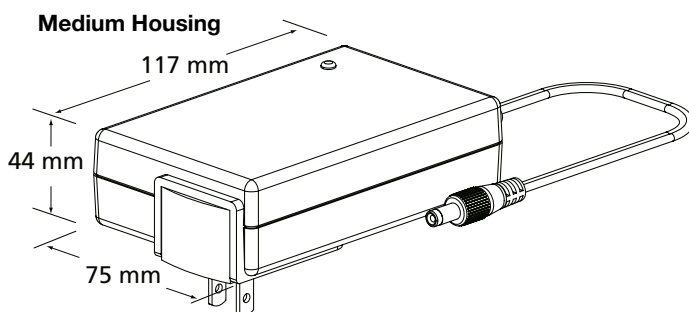
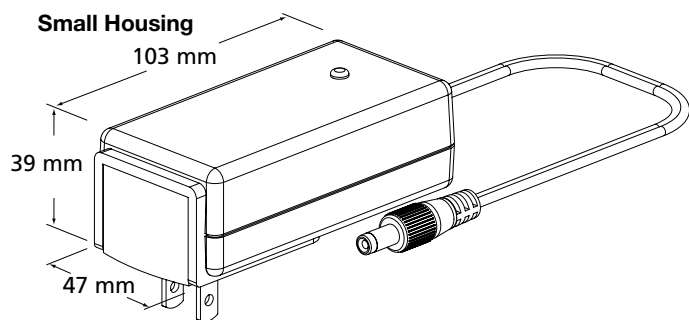
## Exchangeable AC plug models Modeller med utskiftbare AC plugger

SMALL HOUSING		
Base model / Grunnmodell		w exch. AC plug
Type	Description / Beskrivelse	Type
2220	AC/DC PSU, max 16W	2221
2924	AC/DC PSU, max 16W	2926
3326	AC/DC PSU, max 28W	3326
2115	NiMH battery charger, max 1,3A	2116
2240	Lead Acid batt. charger, max 1,3A	2241
2240 LI	Li.Ion batt. charger, max 1,3A	2241 LI
2240 LiFePO <sub>4</sub>	LiFePO <sub>4</sub> batt. charger, max 1,3A	2241 LiFePO <sub>4</sub>
Additional housing weight (excl. plug/cord) + 15 g Tilleggsvekt (uten plugg/ledning) + 15 g		

MEDIUM HOUSING		
Base model / Grunnmodell		w exch. AC plug
Type	Description / Beskrivelse	Type
9921	AC/DC PSU, max 40W	9926
2720	AC/DC PSU, max 40W	2721
3020	AC/DC PSU, max 60W	3021
2541	Lead Acid batt. charger, max 2,2A	2542
9940	Lead Acid batt. charger, max 2,3A	9941
2215	LiMH battery charger, max 35W	2216
9940 LI	Li.Ion batt. charger, max 2,3A	9941 LI
2541 LI	Li.Ion batt. charger, max 2,7A	2542 LI
2541 LiFePO <sub>4</sub>	LiFePO <sub>4</sub> batt. charger, max 1,3A	2542 LiFePO <sub>4</sub>
Additional housing weight (excl. plug/cord) + 27 g Tilleggsvekt (uten plugg/ledning) + 27 g		

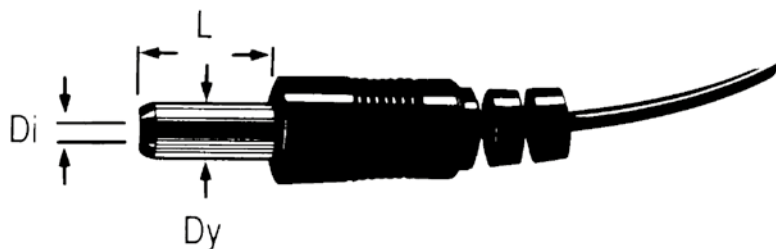


**2-pin IEC 320 C7 mains cord**  
1800 mm EU part no. 131306  
UK part no. 131148, US part no.  
131147, AU part no. 013108



## Appliance-plugs Plugger

See [www.mascot.com](http://www.mascot.com) for a complete list of available plugs  
Se [www.mascot.com](http://www.mascot.com) for en komplett liste over tilgjengelige plugger



Please indicate plug type no. and polarity when ordering.  
All dimensions are given in mm.

Ved bestilling, vennligst oppgi vårt typenummer samt opplysninger om polaritet. Alle mål er mm.



3615  
• L: 14,5 • Dy: 3,5



3617  
• L: 12,0 • Dy: 5,5 • Di: 2,5



3618  
• L: 9,5 • Dy: 5,5 • Di: 2,45



3620  
• L: 11,5 • Dy: 2,5



3626  
• L: 9,5 • Dy: 5,5 • Di: 2,02



3627  
• L: 14,0 • Dy1: 5,0  
• Dy2: 6,2 • Di: 1,97



3630  
• L: 12,0 • Dy: 5,5 • Di: 2,1



3635  
• L: 9,0 • Dy: 3,8 • Di: 1,3



3639  
• L: 14,0 • Dy: 6,2  
• Di: 2,0 / Dy1: 6,2  
• Dy2: 5,0

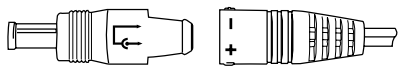
## Modular connector Modulærkontakt

For type 9725, 9525, 9923, 2121





## Exchangeable plugs Utskiftbare plugger



Connecting the exchangeable plugs is a snap!  
All plugs have a snap-lock for added safety. Both plug ends are clearly marked to connect desired polarity.

Å sette på en utskiftbar plugg er enkelt. Alle pluggene har en hakelås for sikkerhets skyld. Begge ender er tydelig merket for å koble til ønsket polaritet.

### EIAJ RC5320A Plugs



Art. no. 131125

- 53201  
• L: 9,5  
• Dy: 2,35  
• Di: 0,7

Class I



Art. no. 131126

- 53202  
• L: 9,5  
• Dy: 4  
• Di: 1,7

Class II



Art. no. 131127

- 53203  
• L: 9,5  
• Dy: 4,75  
• Di: 1,7

Class III



Art. no. 131128

- 53204  
• L: 9,5  
• Dy: 5,5  
• Di: 3,3  
• Dp: 1,0

Class IV

Push on terminals / Kabelsko  
Type 131341



Art. no. 131123

- 3615  
• L: 14,5  
• Dy: 3,5



Art. no. 131120

- 3617  
• L: 12  
• Dy: 5,5  
• Di: 2,5



Art. no. 131193

- 3618  
• L: 9,5 • Dy: 5,5  
• Di: 2,45



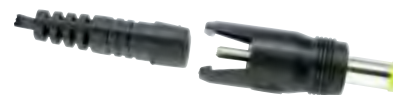
Art. no. 131124

- 3620  
• L: 11,5  
• Dy: 2,5



Art. no. 131122

- 3627  
• L: 14 • Dy1: 5  
• Dy2: 6,2  
• Di: 1,97



SNAP-LOCK  
is easy as 1-2-3!



Art. no. 131119

- 3630  
• L: 12  
• Dy: 5,5  
• Di: 2,1



Art. no. 131192

- 3630A  
• L: 12  
• Dy: 5,5  
• Di: 2,1



Art. no. 131121

- 3635  
• L: 9  
• Dy: 3,8  
• Di: 1,3

### Exchangeable plug packs Poser m. utskiftbare plugger

- Pack / pose 1: Type 9000-200  
All 36-series plugs (8 pcs)  
Alle 36-serie pluggene (8 stk)  
Pack / pose 2: Type 9000-201  
All EIAJ plugs (4 pcs)  
Alle EIAJ pluggene (4 stk)  
Pack / pose 3: Type 9000-202  
1x all plugs (12 pcs)  
1x alle plugger (12 stk)







True to the power of quality

MASCOT AS  
P.O Box 177  
N - 1601 Fredrikstad  
Norway

+47 69 36 43 00  
+47 69 36 43 01

sales@mascot.no  
www.mascot.com

