



PRODUKTINFORMATION

Vi reserverar oss mot fel samt förbehåller oss rätten till ändringar utan föregående meddelande

ELFA artikelnr

69-413-06 Blyladdare 9940 12V/2,3A

69-413-22 Blyladdare 9940 24V/1,3A

MODEL 9940

3-STEP BATTERY CHARGER / LEAD BATTERIES

PRODUCT Information

Mascot A/S
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www.mascot.no

- **New design**
- **Universal input voltage (100-240 VAC)**
- **Ideal for "World Wide Use"**
- **LED indicator with 3 different colors**
- **2-pin IEC 320 input connector**
- **Meets the safety standard for medical equipment - EN 60601**
- **Available in 12 V and 24 V voltage versions**



Data	Version	12 V	24 V
Input voltage	(VAC)	100-240 ± 10%	100-240 ± 10%
Output voltage			
* Cycle mode	(V)	14,7 ± 0,2	29,5 ± 0,2
* Standby mode	(V)	13,8 ± 0,3	27,6 ± 0,3
Max. output power	(W)	35	40
Load regulation			
(20 mA - 2/1 A load change, 230 V mains)	(mV)	< 200	< 200
Line regulation			
(Mains variation 90-264 V, full load)	(mV)	< 100	< 100
Switch frequency, approx.	(kHz)	45	45
Leakage current			
with mains disconnected	(uA)	< 100	< 200
Temperature range	(°C)	-10 - +40	
Ripple	(mV p-p)	< 100	
Efficiency (at 100% load)		> 81 %	> 81 %
Current limit	(A)	2,3 ± 0,3	1,3 ± 0,2
Protection		Mains fuse. Automatically resettable fuse protects the charger against wrong polarity.	
Insulation class		Class II	
Electrical safety		EN 60601-1, EN 60950, EN 60335-2-29	
EMC standards			
* Medical		EN 60601-1-2	
* Emission		EN 50081-1	
* Immunity		EN 50082-1	
Mains connection		2 pins IEC 320 connector	
Indicator			
* Orange (constant current)	(A)	2,3	1,3
* Yellow (constant voltage)	(V)	14,7	29,5
* Green (constant voltage)	(V)	13,8	27,6
Timer		2h ± 30min (also available with other values)	
Dimensions (LxWxH)	(mm)	107 x 67 x 36,5	
Weight	(g)	250	

Technical specifications might be subject to changes !

** Mains cable not supported as standard.

Termination can be by Crocodile Clips, Spade terminals, DC socket or connector of choice.

Diagram on the reverse.

pi9940-e / 181099 / s.1/2

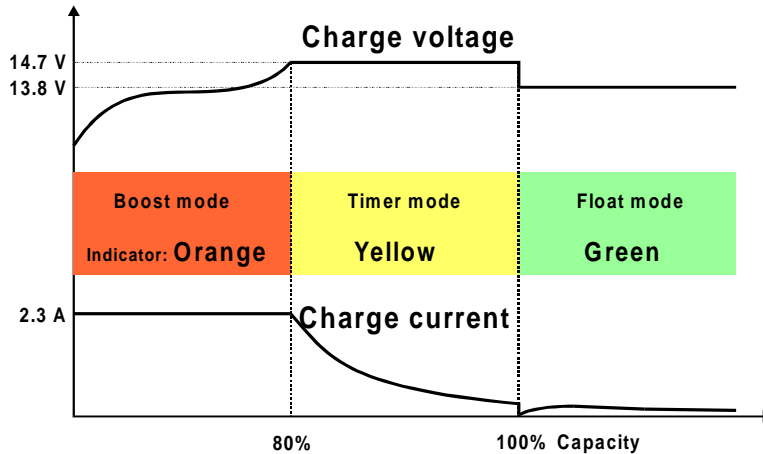
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Charging diagram for model 9940 - 12 V version



The charger works in three different modes. An LED-indicator with three different colours shows the mode that the charger is in. Unlike the so called «taper chargers», this model charges with a constant current in the first mode. When the battery voltage during charging rises to the maximum cycle voltage (eg. 14.7 V), the charger does not immediately change to standby mode. Instead, the charger starts a timer and remains in constant voltage mode (eg. 14.7 V) until the selected time (eg. 2h) 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 time boost period ensures, however, that the battery will receive the remaining 10 to 20% capacity in a very short time compared to chargers which do not have this feature.

The LED-indicator changes from orange to yellow when the timer starts, and changes to green when the timer period is out. At this point the constant voltage level is reduced to a safe value where the battery can be left without risk of overcharge ie 13.8 V. This is the float charge or standby mode.

A primary switch mode technology based on a high efficiency (>80%) flyback topology, allows an output power as high as 35 W. The low leakage current (<100 uA) makes it also possible to leave the battery connected to the charger, without mains connected, for more than ½ a year, without losing more than approx 0.4 Ah capacity into the charger (12 V version).

A new charging cycle starts when the charging current rises to the constant current level (2.3 A). This will incur if the battery voltage drops because of a load on the battery. The charger will therefore automatically recharge batteries used in backup systems to their maximum capacity.

LED indications



ORANGE

Quick Charge

The charger is in constant current mode.

Charge current is maximum (2.3A).

The battery capacity is something between 0 and 80%.

The battery voltage is lower than the cycle voltage level (<14.7V).



YELLOW

Absorption Charge

The charger is in timer/constant cycle voltage mode.

Charge current is less than maximum (<2.3A).

The battery capacity is something between 80 and 90% fully charged when the LED-indicator changed to yellow.

The battery voltage is equal to the cycle voltage level (14.7V).

The charger stays in this mode until the timer has run out (eg. 2h).



GREEN

Float Charge

Charge current is normally very low.

The battery is 100% fully charged.

The charge voltage is at float/standby level (13.8V).

The battery can be left with the charger connected for years or months. This is float charge.

A new cycle starts if the battery is loaded.