

Model 2745 LA

20 A max out • 110/230 VAC input

- 3-step charge control with microprocessor
- Low current start up of deeply discharged batteries (step 0)
- Protected against reversed polarity and short circuit proof
- Unaffected by fluctuations in mains voltage
- Smart temperature control: Silent temperature controlled fan with fan speed regulation
- Waterproof (IP67) version available
- Pulsing float charge

Notes:

Desktop unit

Heat-sink casing

3-pin IEC 60320

Standard DC output cord:

Batteryclips + temp sense, AWG 12, L 1.35m, 3.5mm Red/Black,
UL 2468+2569

Autodetect 120/230 VAC



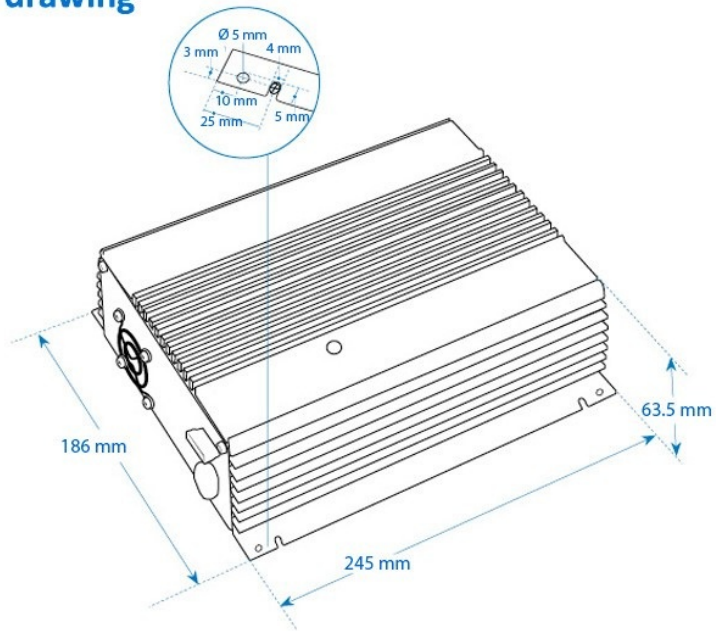
Available versions

12V / 20A

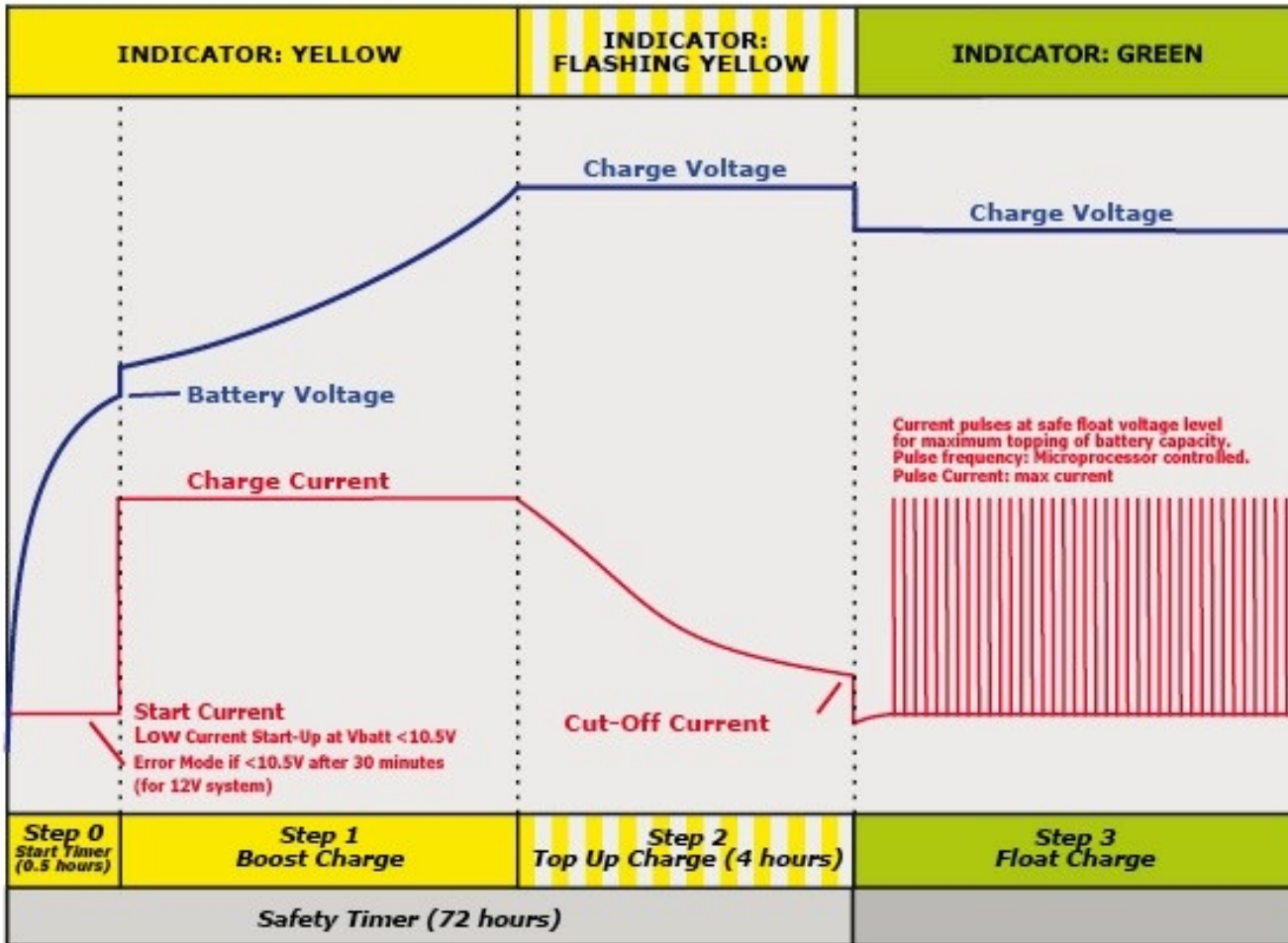
24V / 10A

SPECIFICATIONS:	Mascot type 2745 Lead Acid Charger 12V	Mascot type 2745 Lead Acid Charger 24V
Input voltage: / Line frequency:	95 – 130VAC / 198 - 264VAC / 47 - 63Hz	95 – 130VAC / 198 - 264VAC / 47 - 63Hz
Max output power:	294W	294W
Charge control: Charge indication:		
Step 0 < 30min	Yellow	1.4A ± 0.5A, when battery voltage < 21.0V
Step 0 > 30min	Red (Error-mode)	< 0.2A
Step 1	Yellow	(until Vbat = 29.4V) 10A ± 0.5A, when battery voltage > 21.0V
Step 2	Flashing Yellow	(until I charge < 1.4A or > 4h) 29.4V ± 0.1V and charge current is tapering
Step 3	Green	(until I charge > 10A) 27.4V ± 0.2V, supply current up to maximum 10A for possible parallel load
Charge timer (step2):	2.5A ± 0.3A, when battery voltage < 10.5V	
Safety timer:	< 0.2A	
Restart charge current:	(until Vbat = 14.7V) 20A ± 0.5A, when battery voltage >10.5V (until I charge < 2.5A or > 4h) 14.7V ± 0.1V and charge current is tapering (until I charge > 20A) 13.7V ± 0.2V, supply current up to maximum 20A for possible parallel load	
Temperature coefficient:	4h	
	72h	
	20A	
Formation Charge:	-3 to -4mV/C pr. cell	-3 to -4mV/C pr. cell
Float charge:	Low current start up of deeply discharged battery.	Low current start up of deeply discharged battery.
Indication when "Battery not connected"	20A pulses at safe float voltage level for maximum topping of battery capacity.	10A pulses at safe float voltage level for maximum topping of battery capacity.
Ripple:	Flashing Green (1s/1s)	Flashing Green (1s/1s)
Efficiency (at 100% load, 230V) approx.:	< 100mV p-p	< 100mV p-p
Switch frequency approx.:	> 85%	> 85%
Leakage current from battery with mains switched off:	67kHz	67kHz
Protection:	< 0.6mA at 13V battery voltage (0.43Ah/month)	< 0.6mA at 26V battery voltage (0.43Ah/month)
Temperature range:	Protected against reversed polarity and short circuit proof. Safety timer. Charging of wrong lower voltage battery pack (e.g. 6V) will be limited to 2.5A and terminated after 30min.	Protected against reversed polarity and short circuit proof. Safety timer. Charging of wrong lower voltage battery pack (e.g. 12V) will be limited to 1.4A and terminated after 30min.
Safety:	Operating: +25 to +40°C. Storage: +25 to +85°C	Operating: +25 to +40°C. Storage: +25 to +85°C
Insulation class :	EN 60335-2-29	EN 60335-2-29
Insulation voltage: Primary – secondary:	Class I	Class I
EMC standards:	3750VAC / 5300 VDC	3750VAC / 5300 VDC
Input terminal	EN 55014-1 and –2, Emission EN 61000-6-3, Immunity EN 61000-6-1	EN 55014-1 and –2, Emission EN 61000-6-3, Immunity EN 61000-6-1
Output terminals:	IEC320 connector	IEC320 connector
IP-Grade:	Leads with battery clips	Leads with battery clips
Rec. battery capacity:	20 (PCB with components are protected with coating)	20 (PCB with components are protected with coating)
Temperature control:	100 - 1000Ah	50 - 500Ah
Dimensions:	Temperature controlled fan.	Temperature controlled fan.
Weight:	245 × 186 × 63.5 mm	245 × 186 × 63.5 mm
	2.37kg	2.37kg

Technical drawing



Lead Acid charger diagram 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.



EU Declaration of Conformity



We, the responsible manufacturer;

Company Name:	Mascot Electronics AS				
Postal Address:	P.O.Box 177, N-1601 Fredrikstad, NORWAY				
Visiting Address:	Mosseveien 109, N-1624 Gressvik, NORWAY				
Telephone:	(+47) 69 36 43 00	E-mail:	sales@mascot.com	WEB:	www.mascot.com

declare that this Declaration is issued under our sole responsibility and belongs to the following product(s):

Product:	Battery Charger for Lead-Acid Batteries																															
Brand(s):	and/or MASCOT (may also carry additional customer name, logo or trade mark)																															
Type/Model/UDI:	2044, 2045, 2944, 2945 & 2745																															
Description:	Input: 230VAC (model 2745: 100-120VAC auto range), max.3.6A, 50-60Hz, Class I <table><tr><td>Output for Lead-Acid Batteries:</td><td>Output for Li-Ion Batteries (2044 & 2045 only):</td></tr><tr><td>12V-version: max.14.7VDC max.20A</td><td>1 cells-version: max.4.2VDC max.20A</td></tr><tr><td>12V-version: max.14.7VDC max.25A</td><td>2 cells-version: max.8.4VDC max.20A</td></tr><tr><td>24V-version: max.29.4VDC max.10A</td><td>3 cells-version: max.12.6VDC max.20A</td></tr><tr><td>36V-version*: max.44.1VDC max.6.7A</td><td>4 cells-version: max.16.8VDC max.15A</td></tr><tr><td>48V-version*: max.58.8VDC max.5.0A</td><td>5 cells-version: max.21.0VDC max.12A</td></tr><tr><td></td><td>6 cells-version: max.25.2VDC max.10A</td></tr><tr><td></td><td>7 cells-version: max.29.4VDC max.10A</td></tr><tr><td></td><td>8 cells-version: max.33.6VDC max.8.5A</td></tr><tr><td>Output for LiFePO4 Batteries (2044 & 2045 only):</td><td>9 cells-version: max.37.8VDC max.7.5A</td></tr><tr><td>4 cells-version: max.14.6VDC max.20A</td><td>10 cells-version: max.42.0VDC max.7.0A</td></tr><tr><td>8 cells-version: max.29.2VDC max.10A</td><td>11 cells-version*: max.46.2VDC max.6.0A</td></tr><tr><td>12 cells-version*: max.43.8VDC max.6.7A</td><td>12 cells-version*: max.50.4VDC max.5.5A</td></tr><tr><td>16 cells-version*: max.58.4VDC max.5.0A</td><td>13 cells-version*: max.54.6VDC max.5.3A</td></tr><tr><td></td><td>14 cells-version*: max.58.8VDC max.5.0A</td></tr></table> <small>* NOTE: Versions with output voltage >42.4 VDC are not within scope of standard EN 60335-2-29 Ed.4 (ref. Cl.10.101).</small>		Output for Lead-Acid Batteries:	Output for Li-Ion Batteries (2044 & 2045 only):	12V-version: max.14.7VDC max.20A	1 cells-version: max.4.2VDC max.20A	12V-version: max.14.7VDC max.25A	2 cells-version: max.8.4VDC max.20A	24V-version: max.29.4VDC max.10A	3 cells-version: max.12.6VDC max.20A	36V-version*: max.44.1VDC max.6.7A	4 cells-version: max.16.8VDC max.15A	48V-version*: max.58.8VDC max.5.0A	5 cells-version: max.21.0VDC max.12A		6 cells-version: max.25.2VDC max.10A		7 cells-version: max.29.4VDC max.10A		8 cells-version: max.33.6VDC max.8.5A	Output for LiFePO4 Batteries (2044 & 2045 only):	9 cells-version: max.37.8VDC max.7.5A	4 cells-version: max.14.6VDC max.20A	10 cells-version: max.42.0VDC max.7.0A	8 cells-version: max.29.2VDC max.10A	11 cells-version*: max.46.2VDC max.6.0A	12 cells-version*: max.43.8VDC max.6.7A	12 cells-version*: max.50.4VDC max.5.5A	16 cells-version*: max.58.4VDC max.5.0A	13 cells-version*: max.54.6VDC max.5.3A		14 cells-version*: max.58.8VDC max.5.0A
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The product(s) described above are in conformity with the relevant European Union harmonisation legislation:

2014/35/EU	EU Directive - Safety of electrical equipment ("Low-Voltage Directive") (LVD) recast, repealing Directives 2006/95/EC & 73/23/EEC
2014/30/EU	EU Directive - Electromagnetic Compatibility (EMC) recast, repealing Directives 2004/108/EC & 89/336/EEC
2015/863/EU	EU Directive - Restriction on use of Hazardous Substances in EEE ("RoHS3") recast, repealing Directives 2002/95/EC, 2008/35/EC & 2011/65/EU

The following harmonised standards and technical specifications have been applied:

Electrical Safety (to LVD- & MDD-Directives) (International standards and comments are indicated in brackets):

EN 60335-1	EN 60335-1:2012 + /AC:2014 + /A11:2014 Household and similar appliances-General requirements, Edition 5.0 (IEC 60335-1:2010 modified, Edition 5.0)(also IEC 60335-1:2010 modified + /A1:2013 + /A2:2016, Edition 5.2)
EN 60335-2-29	EN 60335-2-29:2004 + /A2:2010 Household and similar appliances-Requirements for battery chargers, Edition 4.2 (IEC 60335-2-29:2002 + /A1:2004 + /A2:2009, Edition 4.2) (also IEC 60335-2-29:2016, Edition 5.0)

Electromagnetic Compatibility (to EMC- & MDD-Directives) (International standards and comments are indicated in brackets):

EN 61000-6-1	EN 61000-6-1:2007 Immunity-residential, comm. & light-industrial environment, Edition 2.0 (IEC 61000-6-1:2005, Edition 2.0) (also IEC 61000-6-1:2016, Edition 3.0, not yet an EN-norm)
EN 61000-6-3	EN 61000-6-3:2007 + /A1:2011 & /AC:2012 Emission-residential, comm. & light-industrial environment, Edition 2.1 (IEC 61000-6-3:2006 + /A1:2010)
EN 55014-1	EN 55014-1:2006 + /A1:2009 & /A2:2011 Emission-household appliances, Edition 5.2 (CISPR 14-1:2005 + /A1:2008 & /A2:2011, Edition 5.2) (also CISPR 14-1:2016, Edition 6.0, but not yet an EN-norm)
EN 55014-2	EN 55014-2:1997 + /AC:1997, /A1:2001, /A2:2008 Immunity-household appliances, Edition 1.2 (CISPR 14-2:1997 + /A1:2001 & /A2:2008, Edition 1.2) (also CISPR 14-2:2015, Edition 2.0, but not yet an EN-norm)

EU Declaration of Conformity



Additional Information:

Compliance with harmonised standards and technical specifications may have been verified by the manufacturer, by third party testing or by a Certification Body (NCB).

The product(s) may be produced at production sites (for specific product: see "Made in"-marking on the product):

Mascot Electronics AS P.O.Box 177, N-1601 Fredrikstad, NORWAY	Mascot Baltic OÜ Taevakivi 15 EE-13619 Tallinn ESTONIA	Mascot Power Supplies (Ningbo) Co.,Ltd No.128 Jinchuan Road, Zhenhai Ningbo 315221 CHINA
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The production sites are certified to standard EN 29001:2015 (ISO 9001:2015):

Mascot Electronics AS: Kiwa Teknologisk Institutt certificate ref. 044	Mascot Baltic OÜ: Metrosert certificate ref. K-144	Mascot Power Supplies (Ningbo) Co.,Ltd: DNV-GL certificate ref. 179027-2015
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The most recent issue of this Declaration is available at www.mascot.com.

Fredrikstad, Norway

Place of issue

2018-10-26

Date of issue

Signed on behalf of Mascot Electronics AS


Finn-Erik Wailin, Compliance Manager

Name, function, signature