

FASTAMPS ALPHA 7

INSTALLATION & USER MANUAL



Mode 3 stationary “outdoor use” AC EV supply equipment suitable for permanent connection to the AC supply network, intended for use by ordinary persons in locations with non-restricted access (rated for medium mechanical resistance). Class II equipment.

Revision History		
Version 1.0	18 th January 2023	New Document (EAR)
1.01	14 th March 2023	Added solar default info (EAR)

CONTENTS

1. Safety.....	3
1.1 Safety Symbols.....	3
1.2 Use a Qualified Installer	3
1.3 General Warnings	3
2. Installation Information	4
2.1 Preparation	4
2.2 Electrical Requirements	4
2.3 Electrical Installation	5
2.4 Electrical Installation (Optional).....	5
2.4 Function Check	6
3. User Information	7
3.1 Start Charging.....	7
3.2 Stop Charging	7
3.3 Maintenance	8
3.4 Mobile App.....	8
3.5 Dynamic Load Management (option)	9
3.6 Twin Load Sharing (option)	9
3.7 Solar Charging (option).....	9
4. Compliance.....	10
5. Technical Specifications	12
6. Warranty and Take-back Policy.....	13
7. Troubleshooting	14
8. Get In Touch	15

1. SAFETY

1.1 SAFETY SYMBOLS

Throughout this document, the following warning words and symbols are used:

DANGER Risk of death

WARNING Risk of injury

CAUTION Risk of damage



General caution



Hazardous voltage: risk of electric shock.

1.2 USE A QUALIFIED INSTALLER



DANGER: FastAmps very strongly recommends the use of an experienced and qualified installer who is aware of the local/national electrical wiring rules, specifically relating to EVs and charging requirements. FastAmps will not accept liability for damage caused by incorrect installation.



1.3 GENERAL WARNINGS



DANGER: Read these instructions carefully before starting work. A failure to follow the instructions is likely to invalidate the warranty.



DANGER: The applicable local and national wiring regulations must be adhered to during the installation and commissioning process.



WARNING: If the Alpha7 charger is damaged in any way: do not use it: contact FastAmps to arrange a replacement unit.



WARNING: Do not use high-pressure washers to clean the Alpha7 Charger.



WARNING: Do not fit glands to the top of the product: this is associated with an increased risk of water ingress and potential electric shock.



WARNING: Do not use charging extensions or adaptors with this product.



CAUTION: Avoid positioning the installation in direct sunlight. Use only cabling suitable for EV installations.

Please make this user manual available for future users.

2. INSTALLATION INFORMATION

2.1 PREPARATION

1. Open the Alpha7 carton: inspect for any damage.
2. Choose a location, indoors or outdoors but ideally out of direct sunlight (direct sun will heat up the charger, limiting its performance and lifetime), that allows easy charging access and can be supplied by the necessary cabling. A flat, brick, concrete, or masonry wall is ideal. The charger should be fixed at a height of between 0.9m and 1.5m from the ground.
3. Use the mounting template from the box insert to mark the holes ready for drilling.
4. DeWalt wall plugs and stainless-steel screws are supplied with the Alpha7 for your convenience. The drill size is **8mm** and the holes should be at least **40mm** deep. The hole centres are 95(w) x 215(h) mm.
5. Remove the four front cover screws (a T20 security torx is required: see box label for tool part nos).
6. Drill the gland holes (using eg a hole cutter) and fit the glands to the Alpha7 unit, according to the preferred direction of entry. There are helpful locating dimples on the bottom and rear of the Alpha7: LHS and RHS gland mounting is also possible. There may be multiple glands required if options are fitted.
7. Fit the Alpha7 charger to the wall using the 4off stainless-steel screws supplied.

Contact us if you have any concerns.

2.2 ELECTRICAL REQUIREMENTS

The cable sizing and installed supply protection depends on the output charging current that is set for the application (see section 2.3.4 below), the distance between the consumer unit and the Alpha7 charger, and the local electrical code being used for the installation. The cable size is likely (but not exclusively) to be between 4mm sq and 6mm sq. The maximum charging current can depend on the wider requirements of the overall electrical installation at the premises. The use of the dynamic load monitoring option may positively influence this setting.

FastAmps recommends a 40A MCB (type C) or RCBO for a 32A installation and a 20A MCB (type C) or RCBO for a 16A installation. The used circuit must be protected by a 30mA type A RCD breaker.

The Alpha7 is designed to be compatible with glands sized up to M40: capable of an overall cable diameter of up to 28mm.

The Alpha7 is designed to easily accept copper conductor power supply cable of up to 10mm sq / 6AWG.

Contact us if you have any concerns.

2.3 ELECTRICAL INSTALLATION

1. Ensure supply cable is dead.
2. Set the max. output current DIP switch (AMP) setting (LHS DIP-switch) as required:

	S1	S2	
6A	OFF (DOWN)	OFF (DOWN)	
12A	ON (UP)	OFF (DOWN)	

	S1	S2	
20A	OFF (DOWN)	ON (UP)	
32A (Factory setting)	ON (UP)	ON (UP)	

3. Fit the power supply cable to the “MAINS IN” terminal block. Take care to observe the correct polarity of Live, Neutral, and Earth. Recommended torque rating is 1.3Nm, a medium flat-head screwdriver is required.
4. Ensure glands are tightened to provide a weatherproof seal and cable retention means.
5. Replace the lid and re-tighten the 4off cover screws. Recommended torque rating is 2Nm, a T20 security screwdriver is required (see box label for suggested tool part nos).

Contact us if you have any concerns.

2.4 ELECTRICAL INSTALLATION (OPTIONAL)

1. **DYNAMIC LOAD BALANCING:** The Alpha 7 charger can be set to limit output current according to other electrical demand elsewhere in the electrical installation. It has the advantage of allowing a charger installation even when the electrical supply is constrained.

1.1 Set the main incomer fuse rating DIP switch (DYN) settings (centre DIP-switch) if required (note: this is only active if the dynamic load balancing ACCT is fitted):

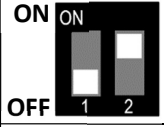
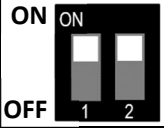
	S1	S2	
Disabled (Factory setting)	OFF (DOWN)	OFF (DOWN)	
80A	ON (UP)	OFF (DOWN)	

	S1	S2	
100A	OFF (DOWN)	ON (UP)	
130A	ON (UP)	ON (UP)	

1.2 Fit the mains power dynamic load balancing cable (if required) to the 2way connector, J6, marked “DYN LOAD”. Polarity is not important. Recommended torque rating is 0.5Nm, a small flat-head screwdriver is required. The recommended ACCT is LEM TT 100-SD (RS 198-885), but any 3000:1 ratio ACCT is compatible.

2. **NETWORK CURRENT SHARING:** A pair of Alpha 7 chargers can be configured to work in conjunction with each other, sharing up to 32A of current. This is achieved without using the dynamic load balancing option. It does not need an ACCT to be fitted and allows the use of a single, standard supply cable.

2.1 Set the networked current sharing DIP switch (NET) settings (RHS DIP-switch) if required (note: this is only active if the charger is networked with another Gen2 Alpha 7 EV charger):

	S1	S2	
Slave	OFF (DOWN)	ON (UP)	
Master	ON (UP)	ON (UP)	

2.2. Fit the RJ45 network cable (if required) to the RJ45 connector, J3. Alternatively fit a cable to J5 (polarity is important): this has the advantage of allowing easier cable glanding: RJ45 cables are difficult to fit through glands and subsequently seal. The + and – cable needs to be a twisted pair. The 0V connection is required: the cable shield can be used. Recommended torque rating is 0.5Nm, a small flat-head screwdriver is required. The maximum cable length is 20m.

3. **SOLAR INTEGRATION:** The Alpha 7 charger has the functionality to respond to a solar inverter output, reducing the charger’s output current according to the amount of electricity being generated by the solar array. This has the advantage of significantly reducing the cost of charging.

3.1 Fit the mains power Solar Integration cable (if required) to the 2way connector, J5 (Power PCB), marked “SOLAR”. Polarity is not important. Recommended torque rating is 0.5Nm, a small flat-head screwdriver is required. The recommended ACCT is LEM TT 100-SD (RS 198-885), but any 3000:1 ratio ACCT is compatible.

Note that this function is enabled in the app: the default setting is “Solar disabled”.

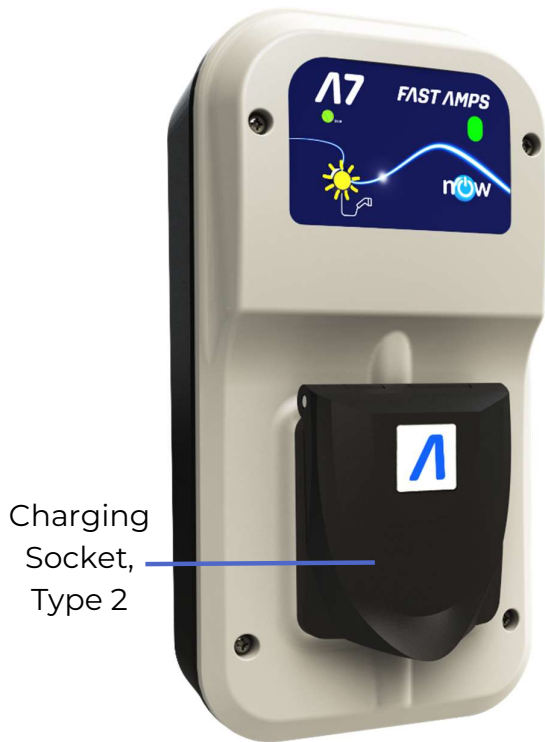
Contact us if you have any concerns.

2.4 FUNCTION CHECK

1. Turn the power on.
2. After a few seconds the LED will light up with a BLUE colour (it may be flashing depending on the random delay or charging time settings).
3. A Fault is indicated by a red, pink, white, or yellow LED colour (see trouble-shooting: section 6).

Contact us if you have any concerns.

3. USER INFORMATION



LED Indicator Colours

	Blue	Ready to Charge
	Blue Flash	Delay (0-600s/off-peak)
	Green	Charging
	Green Flash	Finished Charging
	Yellow	Over-Temperature
	Yellow Flash	Lock open/close error
	Red	RCD/Relay Fault
	Red Flash	Communication error
	Red/Blue Flash	Mains under-voltage
	Red/Yellow Flash	Mains over-voltage
	Blue/Yellow Flash	Network comms error
	Pink Flash	Over-current
	White	Clock error
	White Flash	Battery low
	Multi-colour	App charger lock

3.1 START CHARGING

1. Unlock the car and connect the cable to the car & Alpha7.
2. Pressing the “Now” button starts the charging process.



Note: If the “Now” button is not pressed, charging will commence after a random delay of up to 10 minutes, subject to the charging times stored in the memory (accessible via app: see section 3.4). Default charging times are 10pm – 8am, 11am – 4pm.

4. Charging starts when the LED turns a constant green.
5. For more info & real-time data, install the FastAmps app.

Contact us if you have any concerns.

3.2 STOP CHARGING

1. Unlock the car and disconnect the cable from the car.
2. Disconnect the cable from the Alpha7 charger.

Note: The cable remains locked to the charger until the car has given the unlock instruction.

Contact us if you have any concerns.

3.3 MAINTENANCE

The Alpha7 is designed for many years of trouble-free use.

1. Cable socket covers stop dirt ingress or foreign objects: this improves life and reliability.
2. Enclosure: use a pH neutral cleaner: wipe down with a non-abrasive sponge.



WARNING: Do not use high-pressure washers to clean the Alpha7 Charger

Contact us if you have any concerns.

3.4 MOBILE APP

Legislation requires FastAmps to sell chargers that are set up to only charge during off-peak hours (10pm – 8am, 11am – 4pm) and starts with a randomised delay of up to 600 seconds (10 minutes). Pressing the “now” button over-rides these functions and allows the car to charge immediately. Using the FastAmps app allows a user to make changes to the “charging hours” settings.

Using the FastAmps App allows you to connect to your charger via BlueTooth®, enabling the following features:

- Add your charger and give it a name.
- See the real-time status of your charger.
- Start or stop the charging process.
- Lock your charger.
- See the charging history over the last week, month, year.
- Export charge history data eg to email.
- Set charging times.
- Enable or disable: solar charging, the charge now button, and charge times.
- Change the randomised delay.
- View technical information.
- View the user manual.
- Update your charger firmware.
- The app will also tell you if your charger has been subjected to an unsuccessful cyber or tamper attack.

Download the app here:



or visit: www.fastamps.com/download-the-app

Contact us if you have any concerns.

3.5 DYNAMIC LOAD MANAGEMENT (OPTION)

Note: This option requires extra electrical installation: speak to your installer if you would like this feature enabled.

Dynamic load management helps ensure that the overall electrical installation is never overloaded.

When linked to an external monitoring device (an ACCT: see section 2.4), attached to the property's electrical supply, the Alpha7 identifies high electrical load use on the premises' supply and dynamically react to reduce charger output. The additional installation and settings will have been made by your electrical installer.

1. The "DLM" LED will flash when the charger output current has been reduced in this way.

2. For more info & real-time data, install the FastAmps app.

Contact us if you have any concerns.



3.6 TWIN LOAD SHARING (OPTION)

Note: This option requires extra electrical installation: speak to your installer if you would like this feature enabled.

A pair of Alpha 7 chargers can be configured to work together, sharing up to 32A of current. This has the advantage of not requiring an ACCT and can allow the use of a smaller supply cable. The chargers are connected together using an RJ45 cable: this additional installation requirement will have been made by your electrical installer.

- No additional user settings are required.
- The first EV plugged in will charge at up to 32A.
- The second EV plugged in will share current: both EVs will charge at up to 16A.
- When one or other EV has finished charging, the full current will be available to the other EV that is not yet fully charged.

Contact us if you have any concerns.

3.7 SOLAR CHARGING (OPTION)

Note: This option requires extra electrical installation: speak to your installer if you would like this feature enabled. Note that this function is enabled in the app.

When linked to an external monitoring device (an ACCT: see section 2.4), attached to your solar inverter's output, the Alpha7 can identify when the solar panels are generating energy and dynamically react to match charger output. The additional installation and settings will have been made by your electrical installer.

1. Press the solar button.

2. The "DLM" LED will show when the solar button has been engaged.

3. For more info & real-time data, install the FastAmps app..

Contact us if you have any concerns.



Note that the minimum charge rate whilst the solar button is active is 6A.

UK DECLARATION OF CONFORMITY

ALPHA7 GEN2 EV CHARGER

FastAmps Limited
Darwin House, 2 The Mount,
Shrewsbury, Shropshire,
SY3 8PU, United Kingdom

hereby declares, under sole responsibility as manufacturer, that the products listed above, when used in accordance with the relevant user guides and installation instructions, comply with the following UK harmonised standards:

BS EN61851-1:2019	Electric vehicle conductive charging system – Part 1: General requirements (IEC 61851-1:2017)
BS EN61851-22:2002	Electric vehicle conductive charging system – Part 22: AC electric vehicle charging station (IEC61851-22:2001)
BS EN61439-7:2020	Low-voltage switchgear and controlgear assemblies – Part 7: Assemblies for specific applications such as marinas, camping sites, market squares, electric vehicle charging stations (IEC61439-7:2018)
BS EN61439-1:2021	Low-voltage switchgear and controlgear assemblies – Part 1: General rules (IEC61439-1:2020)
BS EN62196-1:2022	Plugs, socket-outlets, vehicle connectors and vehicle inlets. Conductive charging of electric vehicles - General requirements
BS EN62196-2:2022	Plugs, socket-outlets, vehicle connectors and vehicle inlets. Conductive charging of electric vehicles - Dimensional compatibility and interchangeability requirements for a.c. pin and contact-tube accessories
EN 301 489-17 v3.2.4	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard for ElectroMagnetic Compatibility
EN 300 328 v2.2.2	Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz band; Harmonised Standard for access to radio spectrum

following provision of UK regulations:

Electrical Equipment (Safety) Regulations 2016 (1101)
Electromagnetic Compatibility Regulations 2016 (1091)
Radio Equipment Regulations 2017 (1206)
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (3032)
The Electric Vehicles (Smart Charge Points) Regulations 2021 (1467)



Supplementary Note:

The UKCA marking and conformity are only valid if the product has been installed in accordance with this user guide.

Glyn Jones
Director, FastAmps
Shrewsbury, 8th January 2023

CE DECLARATION OF CONFORMITY

ALPHA7 GEN2 EV CHARGER

FastAmps Limited
Darwin House, 2 The Mount,
Shrewsbury, Shropshire,
SY3 8PU, United Kingdom

hereby declares, under sole responsibility as manufacturer, that the products listed above, when used in accordance with the relevant user guides and installation instructions, comply with the following European harmonised standards:

BS EN61851-1:2019	Electric vehicle conductive charging system – Part 1: General requirements (IEC 61851-1:2017)
BS EN61851-22:2002	Electric vehicle conductive charging system – Part 22: AC electric vehicle charging station (IEC61851-22:2001)
BS EN61439-7:2020	Low-voltage switchgear and controlgear assemblies – Part 7: Assemblies for specific applications such as marinas, camping sites, market squares, electric vehicle charging stations (IEC61439-7:2018)
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EN 300 328 v2.2.2	Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz band; Harmonised Standard for access to radio spectrum

following provision of the council directives:

2014/30/EU (EMC)

2014/35/EU (LVD)

2014/53/EU (RED)

2011/65/EU (RoHS) modified by delegated directive 2015/863



Supplementary Note:

The CE marking and conformity are only valid if the product has been installed in accordance with this user guide.

Glyn Jones

Director, FastAmps

Shrewsbury, 8th January 2023

5. TECHNICAL SPECIFICATIONS

Electrical Rating	7.3kW, 220-240V (+/-10%), 50/60Hz, 32A
Over-voltage Category	Category III (4.8kV impulse)
Rated Insulation Voltage	0.5kV
Charging Current	6 to 32A
Supply Cable	L1, N, PE (2.5 – 10mm ²)
Cable Strip Length	10mm (Power Terminals) 5mm (Control Terminals)
Tightening Torque	1.3Nm (Power Terminals) 0.5Nm (Control Terminals)
Upstream Breaker	40A Type C MCB for 32A Charging, 20 A Type C MCB for 16A Charging.
Earth Leakage Protection	Integrated 20mA AC, 6mA DC earth fault protection, & broken PEN connection. External 30mA must also be fitted.
Over-current Protection	Internal (Dynamic)
Under-voltage Protection	207V AC
Over-voltage Protection	253V AC
Operating Temperature	-30°C to +50°C
Charging Mode	Mode 3
Socket Type	Type 2, EN62196 connector, 32A
Standby Power Consumption	~2.7 Watts
LED Indication	Integrated LED charging status indicator
Dimensions	(H)270 mm x (W)140 mm x (D)110 mm
Enclosure Rating	IP54, Fire retardant, UV stabilized, impact & corrosion resistant
Humidity	5 to 95% RH
Weight	1.1Kg
Impact Rating	IK08
Mounting	Wall, surface mount, Indoor/Outdoor, permanently fixed 900 – 1500mm from ground level. Hole centres 95(w)*215(h) mm
Ventilation	Not Supported

6. WARRANTY AND TAKE-BACK POLICY

Warranty

The FastAmps Alpha7 is designed for many years of trouble-free operational use. The actual lifetime will depend on many factors but, even in the most challenging environments, should be significantly longer than three years.

In addition to consumer legal statutory rights, FastAmps voluntarily provides an additional manufacturer's warranty.

FastAmps warrants, for **three years** from the date of sale, that the product is free from defects in materials and workmanship (parts and labour). The warranty can be extended to start from the "date of installation" by emailing info@fastamps.com with the following information:

- Serial No
- Date of Installation
- Installer (Name, Address, and tel. no)
- Installation Post Code

In the event that service under this warranty is required, consumers should contact info@fastamps.com. FastAmps will, at its discretion, arrange for free-of-charge: collection and replacement, return and repair, or on-site repair. This will be within a reasonable period of time. The warranty period of repaired or replaced product will be the remainder of the warranty period for the initial product. Proof-of-purchase is required.

The warranty does not cover:

- Costs related to removal or re-installation.
- Scratches or dents.
- Periodic checks and maintenance.
- Improper installation and/or use.
- Instances where the serial number has been defaced or removed.
- Consequential or indirect losses.

Take-Back












As a responsible manufacturer and retailer of electronic products, FastAmps offer a free collection and take-back of product.

The FastAmps Alpha7 EV charger is an electronic product, is marked with the crossed-out wheeled bin symbol and so should not be disposed of in the landfill waste stream at the end of its life. Many electrical items can be recycled, saving natural resources, and avoiding landfill soil and water contamination.



Contact info@fastamps.com if you would like to take advantage of this free service.

7. TROUBLESHOOTING


The LED is not lit		There is no power supply. Check that there is power supplied to the Alpha7 charger. If the problem persists, you may consider contacting your installer in the first instance.
The Blue LED is flashing, the charge setting does not start		The Alpha7 charger does not start charging immediately unless the “now” button is pressed. If the “now” button is not pressed there is a random delay of up to 600 seconds before it starts charging. The Alpha7 charger will further delay charging, in this instance, until the charging times (set in the app). Default “off-peak” charging times are: 10pm – 8am, 11am – 4pm.
The yellow LED is flashing		This means that there is a “lock-open” or a “lock-close” error. This can happen if the connector is not quite seated correctly into the socket. Give it a “wiggle” and try again. If the problem persists, please contact your installer or FastAmps.
The yellow LED is showing		This means that the unit has become too hot (>80°C). The unit will reset once the internal ambient temperature has reduced below 70°C. The Alpha7 will automatically resume charging. Note that direct sunlight can have a strong heating effect. Note that charging current is automatically limited to no more than 20A once the internal ambient temperature reaches 75°C. If the problem persists, please contact your installer or FastAmps.
The red LED is showing		There are several reasons why the red LED might show. Switch off the Alpha7 at the power supply (the circuit breaker in the power distribution panel), wait 5 seconds and then power on again. If the problem persists, please contact your installer or FastAmps.
The pink LED is flashing		This indicates that the car is drawing too much current. Reduce the car’s charge setting. If the problem persists, talk to your car’s manufacturer or local dealership about the problem.
The LED is alternating blue - red		This means that the mains voltage is too low (less than 207V AC). Switch off the Alpha7 at the power supply (the circuit breaker in the power distribution panel), wait 5 seconds and then power on again. If the problem persists, please contact your installer or FastAmps.
The LED is alternating yellow - red		This means that the mains voltage is too high (more than 253V AC). Switch off the Alpha7 at the power supply (the circuit breaker in the power distribution panel), wait 5 seconds and then power on again. If the problem persists, please contact your installer or FastAmps.
The LED is alternating blue - yellow		This means that there is an error in the network current-sharing communications. Switch off the Alpha7 at the power supply (the circuit breaker in the power distribution panel), wait 5 seconds and then power on again. If the problem persists, please contact your installer or FastAmps.
The LED is flashing white		This means that your Alpha7 charger has lost its time settings. Connect to the EV charger using the app to re-set the time. The charger will continue to work until time settings are restored. If the problem persists, please contact your installer or FastAmps.
The LED is changing colour and I cannot charge		This means that the Alpha7 charger has been “locked” using the app. Connect to the charger and unlock the charger. If the problem persists, please contact your installer or FastAmps.

Where is the password?	<p>The password is on a label on the quick-start guide that was supplied with the charger. There is an additional label on the inside, front plastic, of your charger. It is essential to power down the charger before opening the front: WARNING, HIGH VOLTAGE, RISK OF ELECTRIC SHOCK.</p> <p>If the problem persists, please contact FastAmps, who will be able to provide you with the number.</p>
I cannot remove the cable from the Alpha7 charger	<p>This can happen if the connector is not quite seated correctly into the socket. Give it a “wiggle” and try again.</p> <p>If the problem persists, please contact your installer or FastAmps.</p>
The blue LED is on, but the charge session will not start	<p>It is possible that the EV needs to be “woken up”. Unlock and lock the EV.</p>
Charging is at a reduced rate	<p>There are a number of reasons why this might be the case:</p> <ul style="list-style-type: none"> - The car may be demanding less than full current: this often happens as the battery gets nearly full. - The installer may have limited the maximum charging current allowed, to maintain the electrical safety of your installation. - The dynamic load balancing (if installed) may be limiting the current allowed: this is to protect the property fuse: in this case the “DLM” LED will be lit. - The Alpha7 may reduce the current, to prolong life, as the internal ambient charger temperature is above 75°C. - The “Solar” button is active and there is a reduced amount of current available from the solar array. In this case the “DLM” LED will be lit. Press the solar button again to return to normal charging.
The app will not install on my phone	<p>Please contact FastAmps: we will be able to help step you through the process.</p>

8. GET IN TOUCH

Do you have a question? We're here to help:

 info@fastamps.com

 01743 249 900



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