

# Operating Instructions

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**Acctiva Smart 25 A**  
**EU / CH / UK / CN 充电器**  
**Acctiva Professional 35 A**  
**EU / CH / UK / CN 充电器**

**DE** | Bedienungsanleitung

**EN** | Operating Instructions

**FR** | Instructions de service

**IT** | Istruzioni per l'uso

**ES** | Manual de instrucciones

**NL** | Bedieningshandleiding

**PT-BR** | Manual de instruções



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# Start-up

## Safety

 **WARNING!**

**Danger from incorrect operation.**

This can result in severe personal injury and damage to property.

- ▶ Do not use the functions described here until you have fully read and understood the following documents:
- ▶ Operating Instructions,
- ▶ all the Operating Instructions for the system components, especially the safety rules,
- ▶ Battery and vehicle manufacturer's Operating Instructions and safety rules.

## Proper use

The charger is designed to charge the batteries listed below. Any use above and beyond this purpose is deemed improper. The manufacturer shall not be liable for any damage resulting from such use. Proper use also includes

- following all the instructions contained in the Operating Instructions,
- regular checking of the mains and charging leads.

 **WARNING!**

**Danger from charging dry batteries (primary cells) and non-rechargeable batteries.**

This may result in serious injury and damage to property.

- ▶ Only charge the battery types listed below.

The following battery types may be charged:

- Wet batteries:
  - Sealed batteries with a liquid electrolyte (recognisable by the vent plugs) and low-maintenance/maintenance-free wet batteries (MF).
- Absorbent Glass Mat (AGM) batteries:
  - Sealed batteries (VRLA) with immobilised electrolyte (sealant).
- Gel batteries:
  - Sealed batteries (VRLA) with immobilised electrolyte (gel).

## Mains connection

The rating plate, which is located on the housing, contains information about the permitted mains voltage. The device is designed for this mains voltage only. The fuse protection required for the mains lead can be found in the "Technical data" section. If there is no mains cable or mains plug on your version of the appliance, fit one that conforms to national standards.

**NOTE!**

**Danger from insufficiently dimensioned electrical installation.**

This can result in serious damage to property.

- ▶ The mains lead and its fuse must be dimensioned to suit the local power supply. The technical data shown on the rating plate applies.

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**Safety features -  
standard protec-  
tion devices**

- The following safety features are provided as standard with the Active Inverter:
- Voltage-free and spark-free terminals protect against explosions
  - Reverse polarity protection prevents the charger from being damaged or destroyed
  - Short-circuit protection provides effective protection for the charger. The fuse does not need to be replaced in the event of a short circuit
  - A charging time monitor provides effective protection against overcharging and destruction of the battery
  - Overtemperature protection through derating (charging current reduced if the temperature rises above the permitted level)

# Control elements and connections

## General

### Please note:

as a result of firmware updates, you may find that there are functions available on your device that are not described in these Operating Instructions, or vice versa.

Certain illustrations may also differ slightly from the actual controls on your device, but these controls function in exactly the same way.

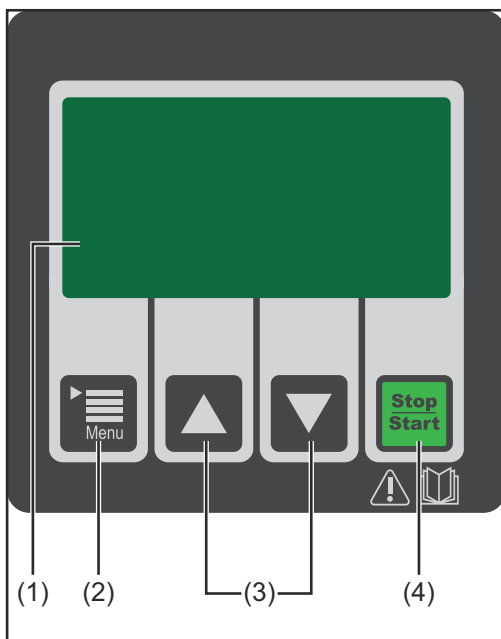
### **WARNING!**

#### **Danger from incorrect operation.**

This can result in severe personal injury and damage to property.

- ▶ Do not use the functions described here until you have read and completely understood these operating instructions.
- ▶ Do not use the functions described here until you have fully read and understood all of the Operating Instructions for the system components, in particular the safety rules.

## Control panel



No.	Function
(1)	Graphic display
(2)	Menu key <ul style="list-style-type: none"><li>- Select the desired setting, e.g. Ah</li></ul>
(3)	Up/Down keys <ul style="list-style-type: none"><li>- Select the desired operating mode, e.g. 'Charging' or 'Battery changing'</li><li>- Alter the setting that has been selected by the Menu key (2)</li><li>- After connecting to a new battery: ability to manually select the charging voltage from 6, 12 or 24 V</li></ul>
(4)	Stop/Start key <ul style="list-style-type: none"><li>- For interrupting and resuming charging</li><li>- Confirming selections, e.g. after the charging voltage has been selected from 6, 12 or 24 V using the Up/Down keys</li></ul>

## Plugging in options

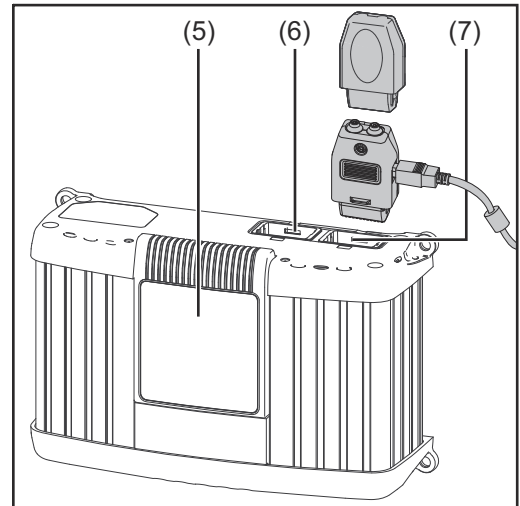
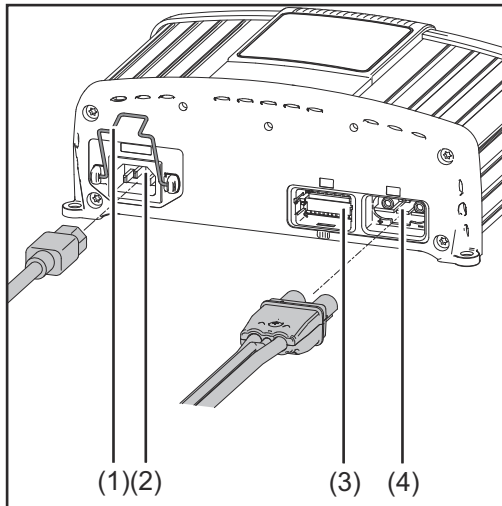
### NOTE!

**Danger from connecting options and accessories while the mains plug is plugged in.**

This can result in damage to the device and accessories.

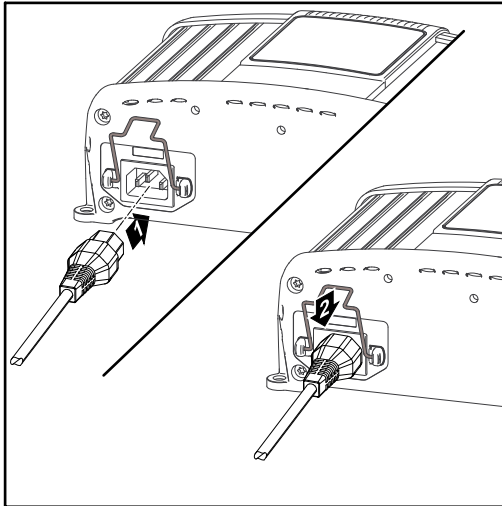
- ▶ Only connect options and system add-ons when the mains plug is unplugged and the charging leads are disconnected from the battery.

## Connections

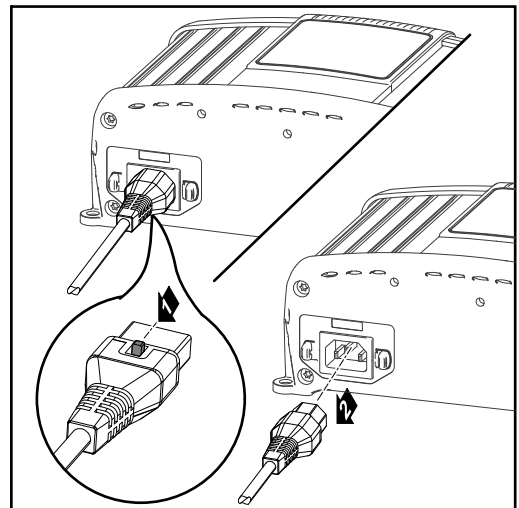
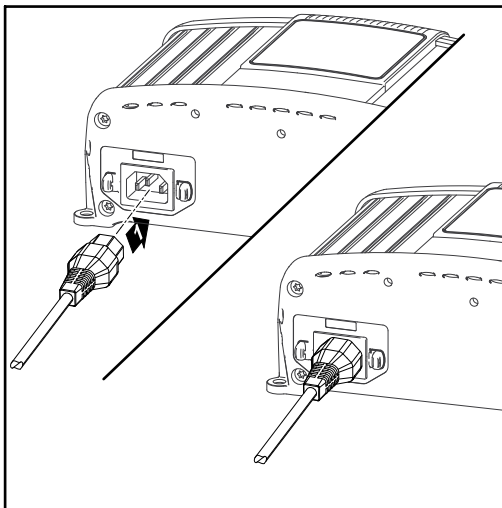


No.	Function
(1)	<b>Mains cable safety bow</b> to relieve strain on the mains cable The safety bow is not fitted to mains cables with the locking system.
(2)	<b>AC input - mains socket</b>
(3)	<b>Connection P2 - I/O port - no function, can be retrofitted however</b> for connecting the following options: <ul style="list-style-type: none"><li>- Immobiliser device</li><li>- Common error</li><li>- Immobiliser device and common error</li></ul>
(4)	<b>Connection P1 - charging lead socket</b> used to connect the charging lead also for connecting the temperature-controlled charging or external start/stop options
(5)	<b>Removable display</b>
(6)	<b>Connection P3 - Visual Port</b> for connecting the internal display
(7)	<b>Connection P4 - Multi Port</b> for connecting the following options: <ul style="list-style-type: none"><li>- Status lamp</li><li>- Software update via USB port</li></ul>

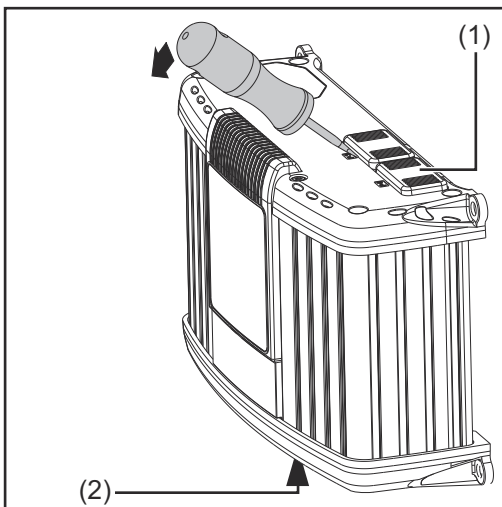
**Safety bow**



**Locking system**



**Removing covers for connections and options**



If necessary, use a screwdriver to remove:

- Cover (1) for connection P4 - Multi Port.
- Cover (2) for connection P2 - I/O port.

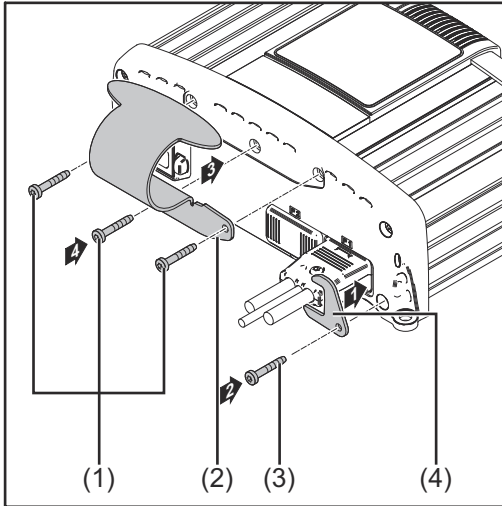
Leave covers (1) and (2) in place on unused P2 and P4 connections.

**USB update option**

The USB update option allows the charger to be updated directly via the USB interface.



**Fitting the optional bracket and strain-relief device for the charging lead**



**Please note:**  
the torque for all screws is 2.5 Nm (1.84 ft. lb.).

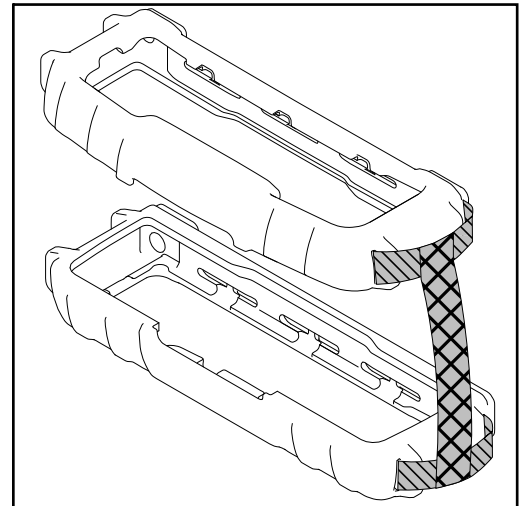
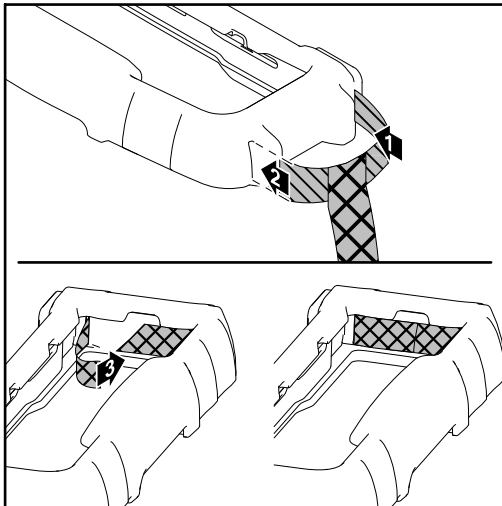
To fit the bracket:

- Undo the screws (1).
- Fit bracket (2) using the previously removed screws.

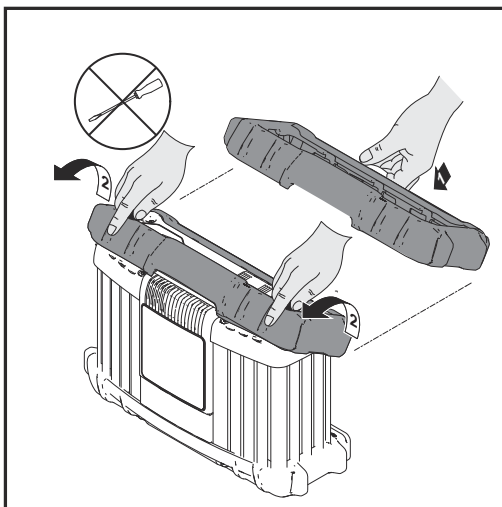
To fit the strain-relief device:

- Undo screw (3).
- Fit charging lead strain-relief device (4) using the previously undone screw.

**Handle (option)**



**Edge guard option**

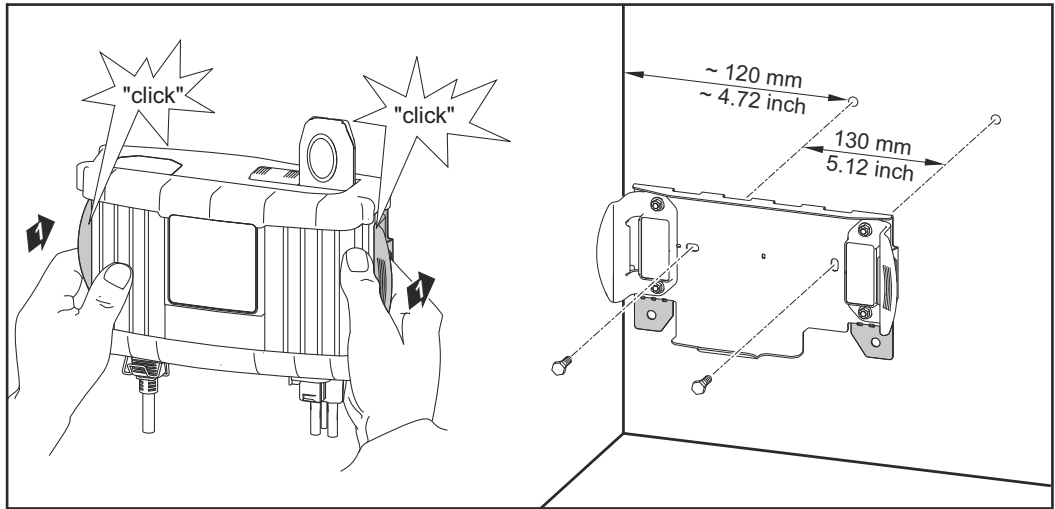


The edge guard removal process is the reverse of the fitting process.

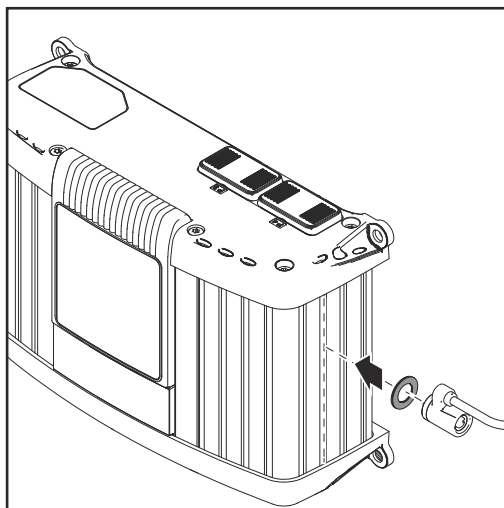
The bracket cannot be fitted if the edge guard is already in place.

**Wall bracket option**

Different wall plugs and screws will be required depending on the supporting surface. Wall plugs and screws are therefore not included in the scope of supply. The installer is responsible for selecting the right wall plugs and screws.



**Preparations for security lock**



The security lock is not contained in the scope of supply.

- A security lock can only be attached
- to the groove on the housing as shown.
  - to the groove on the housing that is exactly opposite.
  - using spacer M8 DIN 125 or DIN 134, located as shown.

**Mounting**

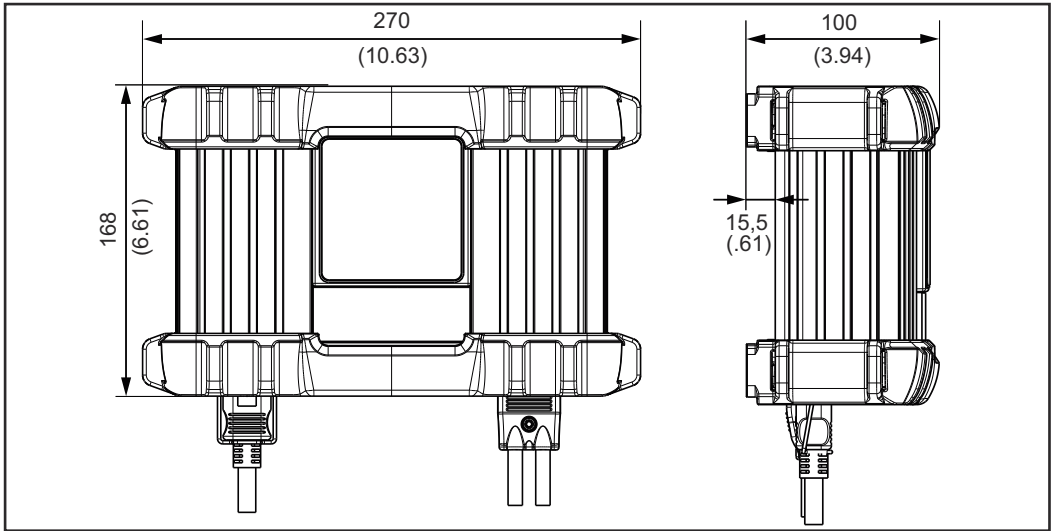
**NOTE!**

**Danger due to improper installation of the charger in a switch cabinet (or in a similar enclosed space).**

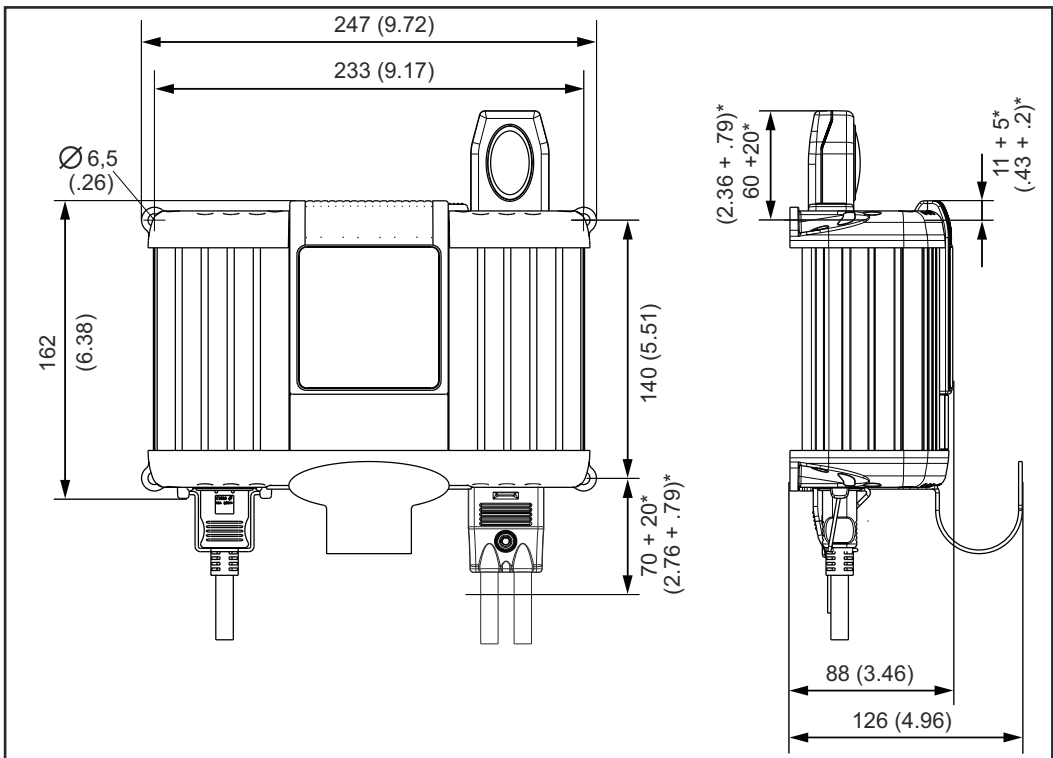
This can result in damage to property.

- ▶ Ensure sufficient heat dissipation using forced-air ventilation.
- ▶ There should be a clearance of 10 cm (3.94 in.) all around the device.

The space requirement dimensions in mm (inches) illustrated below are given to ensure that there is easy access to the plug connections:



Space requirements with edge protector



Space requirements without edge protector, and space requirements with signal lamp and bracket options (\* space for mounting/removal)

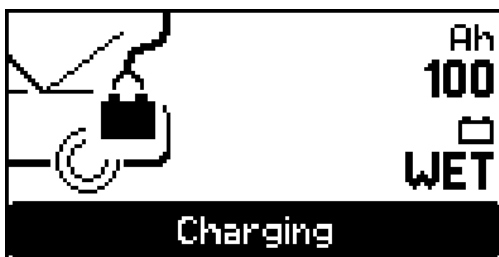
# Operating modes

**General information** The charger is suitable for all 6/12/24 V lead acid batteries (wet, MF, AGM and GEL).

**Available operating modes** The following operating modes are available:

- Charging
- Buffering (Trickle) mode during vehicle diagnosis or software updates
- Refresh
- Power supply mode
- Battery changing
- Device options

**Selecting the operating mode** 1 Connect mains cable to charger and plug into mains

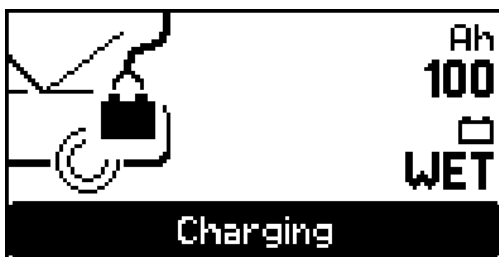


The charger is on standby - 'Charging' mode is displayed.



2 Select other operating modes using the Up/Down keys

**Charging mode**

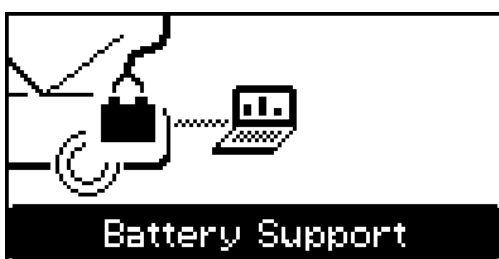


Charging mode is used for:

- Charging or conservation charging with the battery either fitted or removed
- Charging while vehicle consumers are switched on

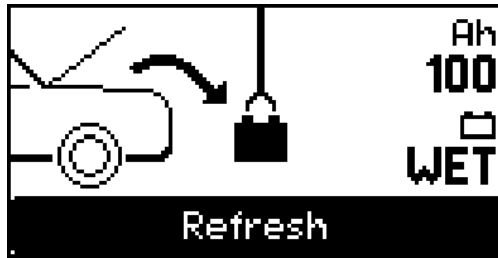
Charging mode is automatically started after the charger is connected to the mains.

**Buffering (Trickle) mode**



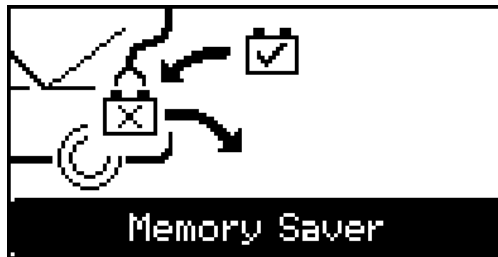
Buffering (Trickle) mode relieves the vehicle battery while vehicle diagnosis or a software update is being performed.

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**Refresh mode**

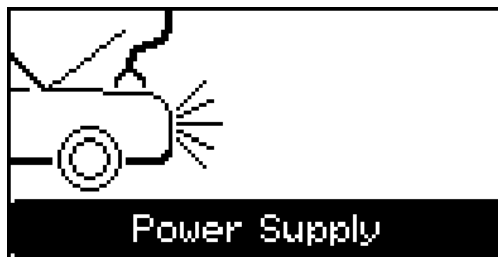
Refresh mode reactivates deeply discharged or sulphated batteries. Refresh charging of batteries must be carried out either in the open or in a well-ventilated area.

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**Battery changing mode**

Battery changing mode provides a continuous power supply to the vehicle electronics while the battery is being changed.

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**Power Supply mode**

Power supply mode provides the vehicle with power while repairs are being carried out with the battery removed.

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**Device options**

The charger can be configured in a number of ways using the device options, as follows:

- Language
- Graphic display contrast
- Configure an individual standard
- Restore factory settings
- Activate/deactivate Expert mode
- Information on the hardware and software version

# Charging mode

## General information

Charging mode is used for:

- Charging or conservation charging with the battery either fitted or removed
- Charging while vehicle consumers are switched on

## Charging the battery

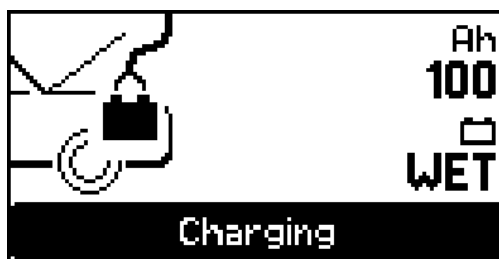
### NOTE!

#### Danger due to a faulty battery.

This can result in damage to property.

- Before charging, ensure that the battery to be charged is fully functional.

- 1 Plug in charger mains plug



Charging mode is automatically started after the charger is connected to the mains.

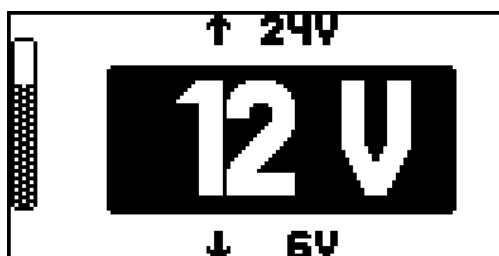


- 2 Use the Menu key to select the "Ah" or "Battery type" setting.



- 3 Use the Up/Down keys to enter the required value (e.g. 100 Ah or "Wet" battery type).

- 4 Connect the battery, observing the correct polarity. Because the charging terminals are de-energised, there is no risk of sparks when connecting to the battery, even if the charger is already connected to the mains supply.
  - Connect the red charging lead to the positive pole (+) of the battery
  - Connect the black charging lead to the negative pole (-) of the battery



The charger automatically identifies the battery, e.g. 12 V, and starts the charging process after 5 seconds.

If the battery voltage is not correctly identified (e.g. in the event of a deeply discharged battery), you have 5 seconds to enter the correct battery voltage, as follows:

### NOTE!

#### Danger if the wrong battery voltage is set.

This can result in damage to property.

- Always ensure that the correct battery voltage is set.



5 Set the correct battery voltage using the Up/Down keys (6V / 12V / 24V).



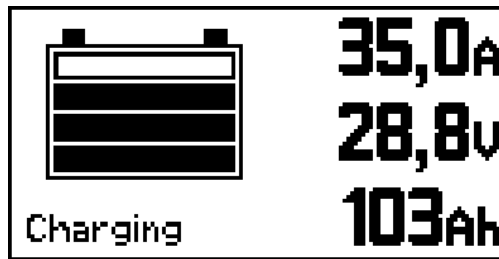
6 Confirm the selection using the Stop/Start key

If the battery voltage selection window does not open, then the battery is in a state of extreme deep-discharge (less than 2 V). In this case, it is advisable to use Refresh mode to reactivate the deep-discharged battery. For more information, see the "Refresh mode" section.

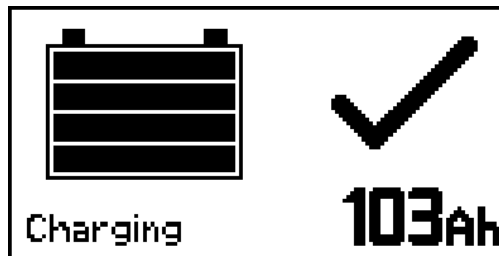
- A corresponding warning appears

If Charging mode is still required despite the battery being in a state of extreme deep-discharge

- Acknowledge the warning via the OK button using the Stop/Start key.
- Use the Up/Down keys to select the correct battery voltage in the subsequent selection window.
- Confirm the selection using the Stop/Start key



- A set of four bars shows the state of charge of the battery (e.g. three bars represent a state of charge of 80%).



- All four bars are continuously displayed.
- The state of charge is 100%.
- The battery is ready to use.
- The battery may remain connected to the charger under certain conditions\*).
- Conservation charging counteracts battery self discharge.

**⚠ WARNING!**

**\*) Danger if battery is not monitored during conservation charging.**

Serious injury and material damage can result, in particular due to short circuits, arcs and oxyhydrogen explosions.

- ▶ Visually inspect the battery at a regular interval as specified by the manufacturer (but at least once per week) to ensure the battery is filled to the max. marking with acid.
- ▶ In the event of the following, do not start the device or switch it off immediately and have the battery checked by an authorised workshop:
  - Uneven acid levels or high water consumption in individual cells
  - Impermissible warming of the battery to above 55 °C (131 °F).



## WARNING!

**Danger following ignition of oxyhydrogen caused by sparks resulting from the charging leads being disconnected too soon.**

This can result in serious injury and damage to property.

- ▶ Before disconnecting the charging leads, press the Stop/Start key to finish charging.



- 7 To end the charging process:
  - Press the Stop/Start key

- 8 Disconnect the charger
  - Disconnect the black charging lead from the negative pole (-) of the battery
  - Disconnect the red charging lead from the positive pole (+) on the battery

## Interrupting the charging process

### NOTE!

**Danger from disconnecting or unplugging the charging lead during charging.**

This can result in damage to connection sockets and connecting plugs.

- ▶ Do not disconnect or unplug charging leads while charging.



- 1 Press the Stop/Start key while charging
  - The charging process is interrupted

## Restarting charging

- 2 Press the Stop/Start button to continue charging





# Buffering (Trickle) mode

## General information

Buffering (Trickle) mode is intended exclusively for relieving the battery during a vehicle diagnosis or software update. The power used over an extended period of time must be less than the charger's maximum output current (25 A / 35 A), otherwise the battery will be drained. Buffering (Trickle) mode is not suitable for fully charging the battery.

## Buffering the battery

### NOTE!

#### Danger due to a faulty battery.

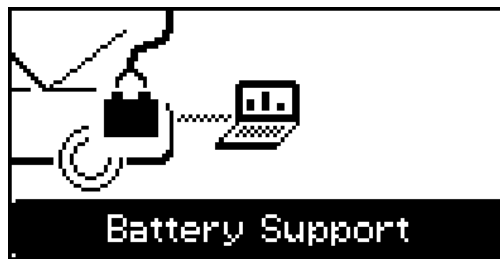
This can result in damage to property.

- ▶ Before buffering, ensure that the battery is fully functional.

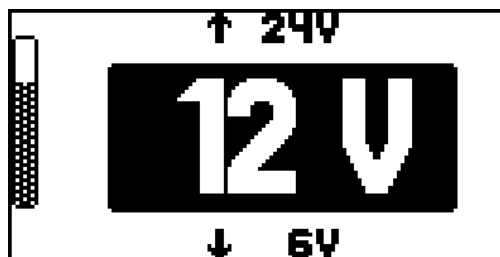
- 1 Plug in charger mains plug



- 2 Select Buffering mode using the up/down keys.



- 3 Connect the battery - the de-energised charging leads mean there are no sparks when connecting to the battery, even if the charger is already connected to the mains supply.
  - Connect the red charging lead to the positive pole (+) of the battery
  - Connect the black charging lead to the negative pole (-) of the battery



The charger automatically identifies the battery, e.g. 12 V, and starts the buffering process after 5 seconds.

If the battery voltage is not correctly identified (e.g. in the event of a deeply discharged battery), you have 5 seconds to enter the correct battery voltage, as follows:

### NOTE!

#### Danger if the wrong battery voltage is set.

This can result in damage to property.

- ▶ Always ensure that the correct battery voltage is set.



- 4 Set the correct battery voltage using the Up/Down keys (6V / 12V / 24V).



- 5 Confirm the selection using the Stop/Start key

If the battery voltage selection window does not open, then the battery is in a state of extreme deep-discharge (less than 2 V). In this case, buffering is not permitted. We recommend that the battery is replaced.

 **WARNING!**

**Danger following ignition of oxyhydrogen caused by sparks resulting from the charging leads being disconnected too soon.**

This can result in serious injury and damage to property.

- ▶ Before disconnecting the charging leads, press the Stop/Start button to finish buffering.



- 6 To cancel Buffering mode:  
- Press the Stop/Start key

- 7 Disconnect the charger
- Disconnect the black charging lead from the negative pole (-) of the battery
  - Disconnect the red charging lead from the positive pole (+) on the battery

**Interrupting Buffering mode**

**NOTE!**

**Danger from disconnecting or unplugging the charging leads during buffering.**

This can result in damage to connection sockets and connecting plugs.

- ▶ Do not disconnect or unplug charging leads while buffering.



- 1 Press the Stop/Start key during buffering  
- The charging process is interrupted

**Resuming buffering**



- 2 Press the Stop/Start key  
- Buffering is resumed

# Refresh mode

---

## General information

"Refresh" mode is used to charge the 12 V starter battery if it is suspected that the battery has been in a state of deep discharge over a long period (e.g. battery sulphated)

- Battery is charged to maximum acid density
- Plates are reactivated (degradation of sulphate layer)



### WARNING!

#### **Danger from overheated battery.**

This can result in serious injury and damage to property.

- ▶ Batteries must be supervised during the charging process.
  - ▶ Monitor the battery temperature and interrupt the charging process if necessary.
  - ▶ Do not reactivate the battery in an ambient temperature of over 30 °C (86 °F).
  - ▶ "Refresh" mode can cause the battery to reach temperatures of up to 45 °C (113 °F).
  - ▶ Immediately switch off the charger if the battery temperature exceeds 45 °C (113 °F).
- 

### NOTE!

#### **Danger from "Refresh" charging on an installed vehicle battery connected to the vehicle power supply.**

This can result in damage to the vehicle electronics.

- ▶ Disconnect the battery from the vehicle power supply and remove it from the vehicle before carrying out refresh charging.
- 

The success of refresh charging depends on the degree of sulphation of the battery.

### NOTE!

#### **Danger from improper use of the "Refresh" charging function.**

The battery may become damaged due to water loss or drying as a result. Make sure that

- ▶ the battery is at ambient temperature (20 - 25 °C) (68 °F - 77 °F).
  - ▶ the battery capacity has been correctly set.
  - ▶ the battery has been disconnected from the vehicle power supply.
  - ▶ "Refresh" charging is carried out on batteries removed from the vehicle, either in the open (without being exposed to direct sunlight) or in well-ventilated areas.
-

**⚠ CAUTION!**

**Danger from battery acid.**

This can result in personal injury.

- ▶ Wear eye protection and suitable protective clothing when handling battery acid.
- ▶ Rinse any acid splashes immediately and thoroughly with clean water.
- ▶ Seek medical attention if necessary.
- ▶ Do not inhale any of the gases and vapours released under any circumstances.

Refresh mode may be used on the following batteries:

- Wet batteries:  
sealed batteries with a liquid electrolyte (identifiable on the vent plugs)  
After reactivating, check the acid level and top up with distilled water if necessary.
- Absorbent Glass Mat (AGM) batteries:  
sealed batteries (VRLA) with immobilised electrolyte (sealant) and maintenance-free wet batteries (MF)

**Reactivating batteries**

**NOTE!**

**Danger of deep-discharged batteries freezing at 0 °C (32 °F).**

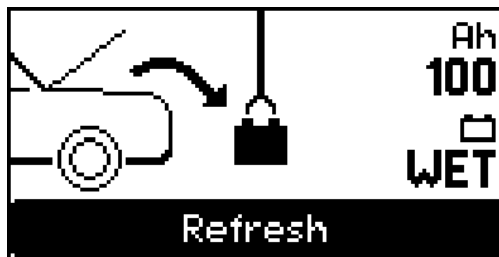
A frozen battery can become damaged.

- ▶ Before starting refresh charging, ensure that the acid in the battery to be re-freshed is not frozen.

**1** Plug in charger mains plug



**2** Select Refresh mode using the up/down keys.



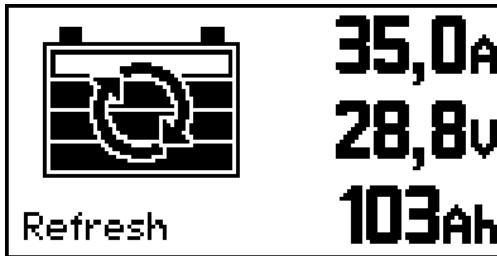
**3** Use the Menu key to select the "Ah" or "Battery type" setting.



**4** Use the Up/Down keys to enter the required value (e.g. 100 Ah or "Wet" battery type).

- 5 Connect the battery - the de-energised charging leads mean there are no sparks when connecting to the battery, even if the charger is already connected to the mains supply.
- Connect the red charging lead to the positive pole (+) of the battery
  - Connect the black charging lead to the negative pole (-) of the battery

The charger automatically recognises the battery and starts the charging process after 5 seconds.



- A set of four bars shows the state of charge of the battery (e.g. three bars represent a state of charge of 80%). (Shown symbolically; accurate voltage indicator: roughly 14-16 V)



- All four bars are continuously displayed.
- The state of charge is 100%.
- The battery is ready to use.
- The battery may remain connected to the charger under certain conditions\*).
- Conservation charging counteracts battery self discharge.

 **WARNING!**

**\*) Danger if battery is not monitored during conservation charging.**

Serious injury and material damage can result, in particular due to short circuits, arcs and oxyhydrogen explosions.

- ▶ Visually inspect the battery at a regular interval as specified by the manufacturer (but at least once per week) to ensure the battery is filled to the max. marking with acid.
- ▶ In the event of the following, do not start the device or switch it off immediately and have the battery checked by an authorised workshop:
  - Uneven acid levels or high water consumption in individual cells
  - Impermissible warming of the battery to above 55 °C (131 °F).

 **WARNING!**

**Danger following ignition of oxyhydrogen caused by sparks resulting from the charging leads being disconnected too soon.**

This can result in serious injury and damage to property.

- ▶ Before disconnecting the charging leads, press the Stop/Start button to finish buffering.



- 6 To terminate "Refresh" charging:
- Press the Stop/Start key

- 7 Disconnect the charger
- Disconnect the black charging lead from the negative pole (-) of the battery
  - Disconnect the red charging lead from the positive pole (+) on the battery

---

**Interrupting  
"Refresh" charging**

**NOTE!**

**Danger due to disconnecting or unplugging the connection sockets and connecting plugs during reactivation.**

This can result in damage to the connection sockets and connecting plugs.

- ▶ Do not disconnect or unplug charging leads while reactivating.
- 



- 1 Press the Stop/Start key while reactivating
  - "Refresh" charging is interrupted

---

**Resuming re-  
fresh charging**



- 1 Press the Stop/Start key
  - Refresh charging is resumed

# Battery changing mode

**General information** Battery changing mode supplies the vehicle electronics with power while the battery is replaced. Before disconnecting the old battery from the vehicle electronics, the charger leads must be connected to the vehicle battery leads. This connection must remain in place until the new battery is connected.

## Changing the battery

### NOTE!

#### Danger of incorrect voltage setting.

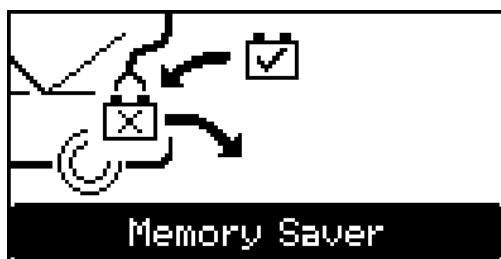
This can result in severe damage to the vehicle electronics.

- ▶ Always set the correct voltage after connecting the charger to the vehicle battery leads.

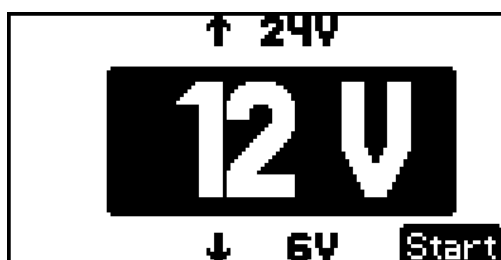
1 Plug in charger mains plug



2 Select Battery changing mode using the up/down keys.



- 3 Connect the charging leads to the vehicle battery leads as described below - the de-energised charging leads mean there are no sparks when connecting the battery, even if the charger is already connected to the mains supply.
- Connect the red charging lead to the positive (+) vehicle battery lead
  - Connect the black charging lead to the negative (-) vehicle battery lead



The charger automatically identifies the battery, e.g. 12 V, and starts powering the vehicle electronics after 5 seconds.

If the battery voltage is not correctly identified (e.g. usually the case if a battery is deeply discharged), you have 5 seconds to enter the correct battery voltage as follows:

### NOTE!

#### Danger if the wrong battery voltage is set.

This can result in damage to property.

- ▶ Always ensure that the correct battery voltage is set.



- 4 Set the correct battery voltage using the Up/Down keys (6V / 12V / 24V).



- 5 Confirm the selection using the Stop/Start key.

If the battery is in a state of extreme deep-discharge (under 2 V), a warning appears instructing the user to disconnect the battery.

Batteries in a state of extreme deep-discharge must be replaced without using Battery changing mode.

- 6 Install and connect a new battery

 **WARNING!**

**Danger following ignition of oxyhydrogen caused by sparks resulting from the charging leads being disconnected too soon.**

This can result in serious injury and damage to property.

- ▶ Before disconnecting the charging leads, press the Stop/Start button to finish buffering.



- 7 To cancel Battery changing mode:  
- Press the Stop/Start key

- 8 Disconnect the charger
- Disconnect the black charging lead from the negative (-) vehicle charging lead
  - Disconnect the red charging lead from the positive (+) vehicle charging lead

Remember:

- 9 Start charging mode to charge the (as yet not fully charged) battery.



# Power supply mode

## Requirements

In Power supply mode, the charger leads are connected directly to the battery leads or the vehicle jump start points. It ensures that the vehicle electronics are supplied with power while the battery is removed during repair work. As only the vehicle battery leads are connected to the charger, the battery voltage recognition function is not available.

## Power Supply mode

### NOTE!

#### Danger of an incorrect vehicle-specific voltage setting.

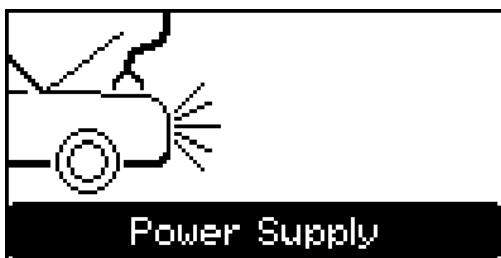
This can result in severe damage to the vehicle electronics.

- ▶ Before connecting the charger to the vehicle battery leads, ensure that the correct voltage has been set.

- 1 Plug in charger mains plug



- 2 Select Power Supply mode using the up/down keys



- 3 Use the Menu key to select the vehicle power supply voltage (6 V / 12 V / 24 V).

- 4 Connect the charging leads to the vehicle battery leads as described below - the de-energised charging leads mean there are no sparks when connecting the battery, even if the charger is already connected to the mains supply.
  - Connect the red charging lead to the positive (+) vehicle battery lead
  - Connect the black charging lead to the negative (-) vehicle battery lead



- 5 Use the Stop/Start key to confirm the safety message and start supplying the vehicle electronics with power.

**NOTE!**

**Danger if the charging leads are disconnected before pressing the Stop/Start key.**

Data stored in the vehicle may be lost as a result.

- ▶ Before disconnecting the charging leads, press the Stop/Start key to cancel Power Supply mode.
- 



- 6 Finish Power Supply mode:
  - Press the Stop/Start key

- 7 Disconnect the charger
  - Disconnect the black charging lead from the negative (-) vehicle battery lead
  - Disconnect the red charging lead from the positive (+) vehicle battery lead

# Device options

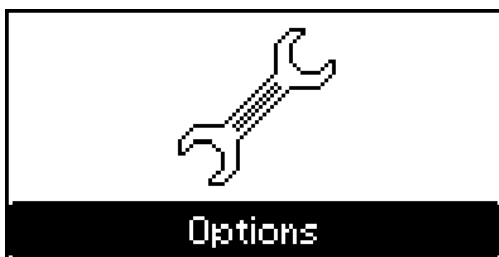
---

- General information** The device options allow the following to be configured:
- Language  
Selection of language for user guide
  - Graphic display contrast
  - Configuration  
an individual standard may be set
  - Factory setting  
restores all device options to the factory settings
  - With Acctiva Professional 35A only:  
Activate/deactivate Expert mode
  - Information  
provides information on the hardware and software version  
total Ah charged  
total operating time
- 

## Selecting device options



1 Use the up/down keys to select the device options



## Configuration

### NOTE!

#### **Danger when selecting and using individual charging lead lengths.**

This can result in damage to property.

- ▶ The user accepts full responsibility for shortening the charging leads supplied and specifying the appropriate individual charging lead lengths.
  - ▶ The manufacturer shall not be held liable for any damage arising from such actions.
- 

The following parameters can be configured to create an individual standard:

Charging lead length:

- 1 - 10 m (3 ft. 3.37 in. - 32 ft. 9.7 in.),  
in 0.5 m (1 ft. 7.69 in.) - adjustable stages
- The following lengths may be requested in the scope of supply:  
2.5 / 5 m (8 ft. 2.43 in. / 16 ft. 4.85 in.)

Initial values:

- Start mode (charging/buffering mode)
- Battery capacity (3 – 350 Ah)
- Type of battery (WET, GEL and AGM)
- Voltage selection  
Automatic  
optionally set permanently to 6 V, 12 V or 24 V

Charging parameters:

- Boost (on/off), factory setting: on  
Boost on: shorter charging time resulting in the battery being fully charged sooner. The full 25 A / 35 A of power available from the device is applied if parallel consumers are detected (car radio, etc.).  
Boost off means: a conventional workshop charging process is followed (fixed charging current of 20 A per 100 Ah of specified battery capacity). Parallel consumers (car radio, etc.) are not detected in this case.
- With Acctiva Professional 35A only:  
Expert (on/off)  
Enter the following to activate Expert mode (Expert on):

**Code number 1511**

With the device in Charging mode, the following is enabled by Expert mode ("Expert" on):

The final charging voltage is set according to the nominal voltage (6 V, 12 V, 24 V) for WET, GEL and Absorbent Glass Mat (AGM) batteries  
Customisation of the final charging voltage and the voltage for conservation charging in USER mode

- Buffering mode  
Constant voltage may be adjusted
- "Refresh" (only configurable on the Acctiva Professional 35A)  
Enter the following to configure Refresh mode:

**Code number 1511**

Final charging voltage and duration may be adjusted

- Power Supply mode  
Constant voltage may be adjusted

# Synergic lines

## Safety

### **WARNING!**

#### **Danger from incorrect operation.**

This can result in severe personal injury and damage to property.

- ▶ Follow the battery manufacturer's instructions.
- ▶ The battery must not be connected to the charger when setting parameters.

## Available characteristics

Operating mode	Battery	Characteristic	I <sub>1</sub>	U <sub>1</sub> [6/12/24V]	I <sub>2</sub>	U <sub>2</sub> [6/12/24V]	Exp. <sup>3)</sup>
Charging	WET	IUoU	25 /3 5 <sup>1)</sup>	7.2/14.4/28.8	-	6.75/13.5/27	Yes
	AGM			7.35/14.7/29.4		6.84/13.68/27.36	
	GEL			7.05/14.1/28.2			
	USER <sup>3)</sup>		2-30	1.9-29.9			
Buffering mode	ALL	IU	25 /3 5	6.75/13.5/27	-	-	Yes
Refresh	WET	IUIoU	25 /3 5 <sup>1)</sup>	7.2/14.4/28.8	4	6.75/13.5/27	No
	AGM			7.35/14.7/29.4	2	6.84/13.68/27.36	
	GEL			7.05/14.1/28.2			
	USER <sup>3)</sup>	IUa	35 2)	2-34	-	-	Yes
Power Supply mode	NONE	IU	35 4)	6.75/13.5/27	-	-	Yes
Changing the battery	ALL	IU	25 /3 5	6.75/13.5/27	-	-	No

I<sub>1</sub> Main charging current [A]

Maximum device current: 25/35 A

I<sub>2</sub> Recharging current [A per 100 Ah of specified battery capacity]

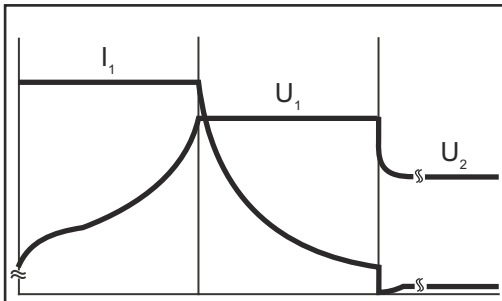
U<sub>1</sub> Final charging voltage [V]

U<sub>2</sub> Floating charge voltage [V]

Automatic switchover to pulse charge conservation after 12 hours, apart from user application in Expert mode.

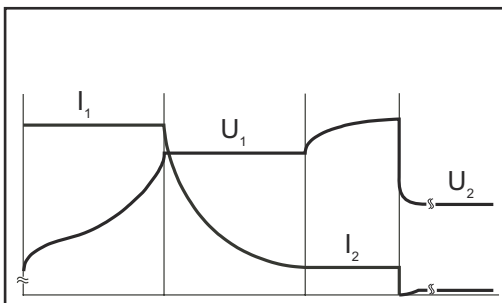
Expert mode and USER characteristics are not available for the Acctiva Smart 25 A battery charging system.

- 1) 20 A per 100 Ah of specified battery capacity
- 2) 10 A per 100 Ah of specified battery capacity
- 3) Adjustable final charging voltage and conservation charge voltage in Expert mode; for trained professionals only
- 4) In Power Supply mode, the main charging current on the Acctiva Smart 25 A charger is also  $I_1$  35 A



Charging characteristic IUoU:

$I_1$  = Main charging current  
 $U_1$  = Final charging voltage  
 $U_2$  = Floating charge voltage



Refresh characteristic IUIoU:

$I_1$  = Main charging current  
 $U_1$  = Final charging voltage  
 $I_2$  = Recharging current  
 $U_2$  = Floating charge voltage

# Troubleshooting

## Safety

### **WARNING!**

#### **Risk of electric shock.**

This can result in serious injuries or death.

- ▶ Before opening the device:
- ▶ Unplug the device from the mains.
- ▶ Disconnect battery.
- ▶ Put up an easy-to-understand warning sign to stop anybody inadvertently switching it back on again.
- ▶ Using a suitable measuring instrument, ensure that electrically charged components (e.g. capacitors) have been discharged.

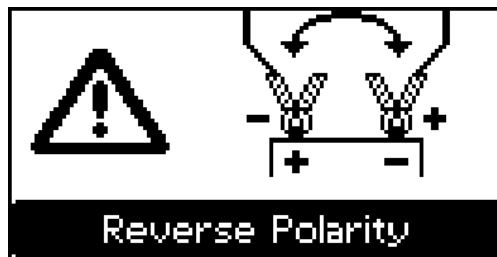
### **WARNING!**

#### **Danger from an inadequate ground conductor connection.**

This can result in severe personal injury or damage to property.

- ▶ The housing screws provide a suitable PE conductor connection for earthing the housing and must NOT be replaced by any other screws that do not provide a reliable PE conductor connection.

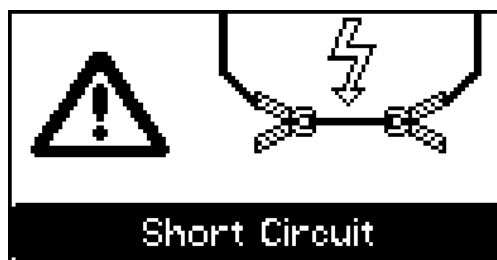
## Protective equipment



Charger leads connected to wrong poles, reverse polarity protection has tripped

Remedy:

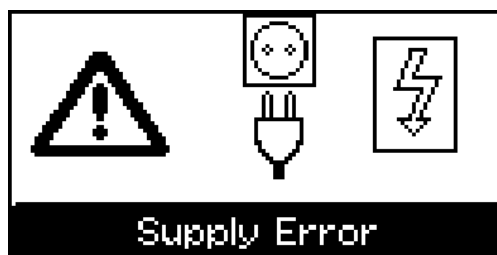
- Connect battery poles correctly



Short circuit in the charging terminals or charger lead, short-circuit detection active

Remedy:

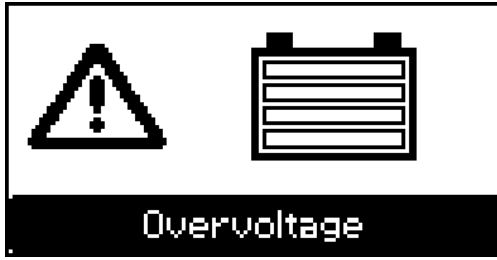
- Check charger leads, contacts and battery poles



Mains fault - mains voltage outside the tolerance range

Remedy:

- Check mains conditions

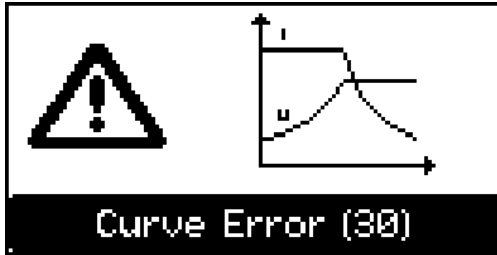


Battery overvoltage

Remedy:

- Set the correct operating mode and voltage

## Charging error



### Status codes caused by external factors:

30 Cause: Timeout in the corresponding charging phase

Remedy:

- Set Ah to correct value
- Check for parallel consumers (car radio, etc.)
- Battery temperature too high

31 Cause: Too many Ah charged, too few Ah set

Remedy:

- Set Ah to correct value
- Check for parallel consumers (car radio, etc.)
- Replace battery if it is faulty

32 Cause: Optional external temperature sensor has tripped due to under-temperature

Remedy:

- Charge the battery in an area with a more suitable temperature

33 Cause: Optional external temperature sensor has tripped due to over-temperature protection

Remedy:

- Allow battery to cool or charge it in an area with a more suitable temperature

34 Cause: Battery voltage set too high

Remedy:

- Set the correct battery voltage

35 Cause: Voltage below target voltage after 2 h - "Refresh" mode in analysis phase

Remedy:

- Check for parallel consumers (car radio, etc.)
- Replace battery if it is faulty

36 Cause: Cell short circuit

Remedy:

- Check for parallel consumers (car radio, etc.)
- Replace battery if it is faulty



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37 Cause: Conservation charge current too high

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Remedy:

- Check for parallel consumers (car radio, etc.)
- 



**Status codes in the event of device fault:**

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50 Cause: Device output fuse faulty

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Remedy:

- Contact your authorised service centre
- 

51 Cause: Secondary temperature is outside permissible range

---

Remedy:

- Contact your authorised service centre
- 

52 Cause: Current regulator faulty

---

Remedy:

- Contact your authorised service centre
- 

53 Cause: External temperature sensor faulty

---

Remedy:

- Replace external temperature sensor
- 

60 Cause: Invalid characteristic number

---

Remedy:

- Contact your authorised service centre
- 

61 Cause: Characteristic block invalid

---

Remedy:

- Contact your authorised service centre
- 

62 Cause: Incorrect checksum of calibration values

---

Remedy:

- Contact your authorised service centre
- 

63 Cause: Incorrect device type

---

Remedy:

- Contact your authorised service centre
-

# Technical data

## Electrical data input

Mains voltage	~ 230 V AC, +/- 15%
Grid frequency	50/60 Hz
Mains current	max. 9 A eff.
Mains fuse protection	max. 16 A
Efficiency	max. 96%
Effective power	max. 1120 W
Power input (stand-by)	max. 2.4 W
Protection class	I (with ground conductor)
Maximum permitted mains impedance at the interface (PCC) to the public grid	None
EMC device class	A
Marks of conformity	CE

## Standards

IEC 60068-2-6	Sine oscillations (10 - 150 Hz; 1.5 h / axis)
IEC 60068-2-29	Repetitive shock (25 g / 6 ms / 1000 shocks)
EN 60335-1	EN 60335-2-29
EN 62233	EMF standard

## Electrical data - output

Nominal output voltage	6 V / 12 V / 24 V DC
Output voltage range	2 V - 31 V
Output current Acctiva Smart 25 A	25 A <sup>*)</sup> at 28.8 V DC 25 A <sup>*)</sup> at 14.4 V DC 25 A <sup>*)</sup> at 7.2 V DC
Output current Acctiva Professional 35 A	35 A at 28.8 V DC 35 A at 14.4 V DC 35 A at 7.2 V DC
Battery return current	< 1 mA

<sup>\*)</sup> 35 A in Power Supply mode

## Battery data

6 V / 12 V / 24 V DC	3 - 350 Ah
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**Technical data**

Cooling	Convection and fan
Dimensions l x w x h	270 x 168 x 100 mm (10.63 x 6.61 x 3.94 in.)
Weight (without cable)	2 kg (4.41 lb)

---

**Environmental conditions**

Operating temperature	-20 °C - +40 °C (>30 °C derating) (-4 °F - +104 °F) (>86 °F derating)
Storage temperature	-40 °C - +85 °C (-40 °F - +185 °F)
Degree of protection	IP40