Durst

BCS-A1220

AUTOMATIC SMART BATTERY CHARGER

Operating Instructions

Model BCS-A1220 | 12V | 20A | BCS-A Series



Durst Industries (Aust.) Pty Ltd | Certified to Australian and International Standards

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Introduction

Read these instructions before using the charger. Keep them with the unit.

The Durst BCS-A1220 is a fully automatic 12V 20A smart battery charger from the Durst BCS-A Series. It is a set-and-forget charger, designed to be left on permanently, with multistage charging that delivers fast, safe and reliable charging and keeps batteries at their peak.

It is housed in a heavy-duty extruded aluminium case, with high-efficiency operation and intelligent charging control for professional battery maintenance and charging.

Model

Model	Battery system	Charge current	Operation	Charging cycle
BCS-A1220	12V	20A	Fully automatic, set and forget	Boost, Equaliser & Float

Features

- **Compact size and light weight.**
- **High efficiency.** The high efficiency of Durst BCS-A battery chargers reduces power consumption (cheaper to run) and provides 25% more power saving than other ordinary battery chargers.
- **Short-circuit protection.** The charger output cuts off automatically when a short circuit occurs.
- **Overload protection.** The charger output is current-limited automatically when overloaded.
- **Reverse polarity protection.** The charger output cuts off automatically when the battery is connected in reverse.
- **Automatic set-and-forget multi-rate charging.** Boost charge, Equaliser charge (charges quickly when the battery is low) and Floating charge (charges slowly when the battery is high).
- **LCD and LED display.** Shows both the charger status and the battery level. Three-colour LED display: Red (power on), Yellow (equaliser charge) and Green (floating charge).
- **Advanced SMD technology.** Reliable and robust surface-mount circuitry for longevity.
- **Anodised red aluminium housing.** Elegant, strong and disperses heat efficiently.
- **Temperature-compensated cooling fan.** The fan speed is controlled to suit the charging state.
- **Mounting feet.** Secure the charger vertically or horizontally.
- **The right charger for the job.** Selecting the correct Durst battery charger will prolong battery life.

Specifications

BCS-A1220 technical data.

Specification	BCS-A1220
Model	BCS-A1220 (BCS-A Series)
Battery system	12V
Charge current	20A
Input voltage	AC 200 to 240 V
Input frequency	47 to 63 Hz
Boost voltage	14.4 V
Float voltage	13.7 V
Wattage at 12V	294 W
Efficiency	Above 87% (at full load), reducing power consumption
Battery capacity range	60 Ah to 300 Ah
Display	LCD and LED indication
Protection	Reverse polarity, short-circuit and overload protection
Cooling fan	Speed control set automatically by the charging stage
Housing	Anodised red extruded aluminium, with mounting feet
Dimensions	190 x 118 x 58 mm
Weight	1.2 kg
Compliance	Certified to Australian and International Standards (N19332). CE marked.
Warranty	1 year

NOTE: Customised voltages and currents can be factory set to your requirements. Contact Durst.

Built-in protection

Protection	What it does
Reverse polarity	The output cuts off automatically if the battery is connected in reverse.
Short-circuit	The output cuts off automatically when a short circuit occurs.
Overload	The output current is limited automatically when the charger is overloaded.
Overcharge	Multistage charging drops to a float voltage once the battery is charged, so the charger can stay connected.
Spike and surge suppression	Helps protect the charger and battery from supply spikes and surges.

Compatible batteries

The BCS-A1220 charges 12V batteries of the following types.

Durst fully automatic set-and-forget chargers are designed to be left on permanently and are suitable for charging:

- Lead-acid batteries
- Calcium batteries
- Gel batteries
- Gel-Tech batteries
- AGM (Absorbed Glass Mat) batteries
- Spiral wound batteries
- NiMH batteries
- LiFePO4 (lithium iron phosphate) batteries

IMPORTANT: Charge only the battery types listed above. Avoid charging damaged batteries or incorrect battery types.

Applications

Automotive, marine, caravan, mobility equipment, solar, deep-cycle and UPS standby battery systems.

Battery capacity

The BCS-A1220 suits batteries from 60 Ah to 300 Ah.

Safety and important notices

Follow these notices every time you use the charger.

WARNING

Wear protective goggles and clothing while handling and charging batteries.

The charger uses its aluminium housing as a heat sink. For your own safety, avoid touching the case, as it may be hot when charging at maximum current.

- **Not a power supply.** The charger cannot be used as a DC power supply unless it is connected to a suitable battery.
- **Right battery only.** Avoid charging damaged or incorrect types of batteries.
- **Watch for the green LED.** The battery may be damaged if the LED does not change to green after charging for a long time. Monitor the charger, and test batteries correctly before charging.
- **Ventilation.** Always place the charger in a well-ventilated and dry environment.
- **Full range.** A comprehensive range of Durst battery chargers and testers is available on request.

Know your charger

The front panel shows the charging status. The rear panel has the mains connection and cooling fan.



Front panel. LCD display, red AC power LED, bi-coloured charging status LED and DC output lead.



Rear panel. Cooling fan, power switch and AC mains inlet.

Display and indicators

The LEDs and the LCD confirm the charger status and battery level at a glance.

LED indication

Indicator	Colour	Meaning
AC power status LED	Red, on	AC power OK
AC power status LED	Off	AC power fail
Charging status LED (bi-coloured)	Yellow	Equaliser charge
Charging status LED (bi-coloured)	Green	Floating charge

LCD indication

The BCS-A1220 has the LCD display fitted as standard. It shows the charging status and the battery level.

Charging status display	Meaning
Float + Charging	Floating charge
Equalise + Charging	Equaliser charge

Battery level display	100%	75%	50%	25%
Battery voltage (12V)	13.9 V	13.3 V	12.6 V	11.9 V

Operating your charger

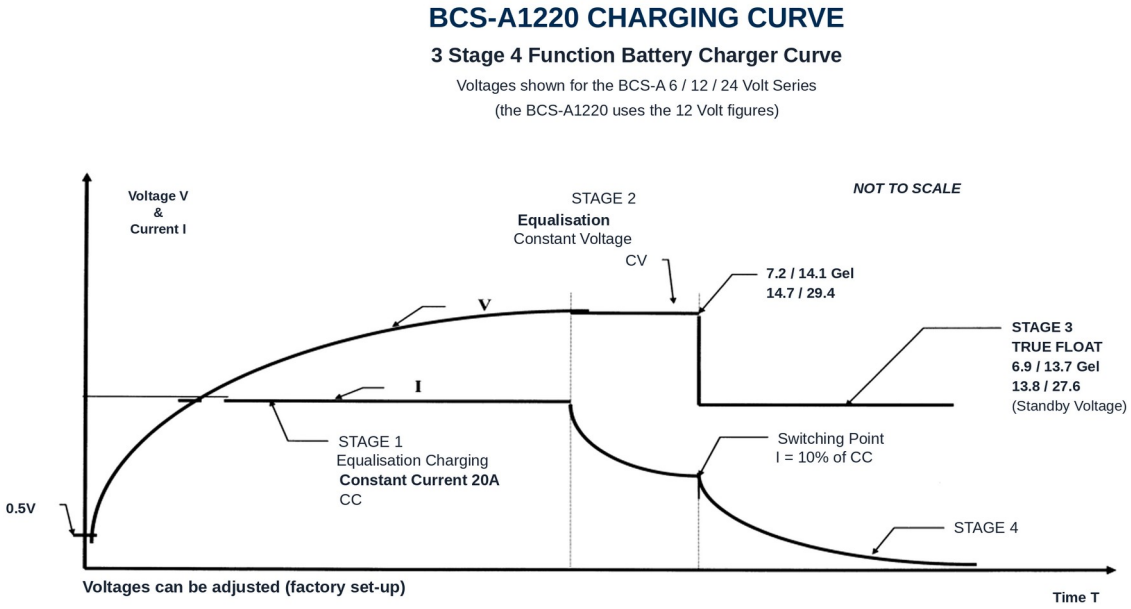
Set up once, then let the charger look after the battery.

1. **Mount the charger securely.** Use the mounting feet to secure it vertically or horizontally, in a well-ventilated and dry place.
2. **Connect to the mains.** Connect the charger to a standard GPO AC supply.
3. **Connect the battery.** Connect the battery clips to the correct battery terminal polarity: the Red clip to the Positive (+) terminal and the Black clip to the Negative (-) terminal.
4. **Turn on the power switch.** The Red LED lights and charging commences.
5. **Follow the charge.** The bi-coloured LED confirms the next stages: Yellow (equaliser charge) and Green (floating charge). The LCD confirms the charger stage and battery level (see Display and indicators).

TIP: The BCS-A1220 is a set-and-forget charger. It can stay connected permanently and will hold the battery at float voltage, ready for use.

Charging curve

The BCS-A1220 charges in three stages with four functions.



BCS-A1220 charging curve. Not to scale. The BCS-A1220 uses the 12 Volt values.

Stage	What happens
Stage 1: Equalisation charging	Constant current (CC). The charger delivers its full constant current, 20A for the BCS-A1220, and the battery voltage rises.
Stage 2: Equalisation	Constant voltage (CV). The charger holds the boost voltage while the charge current falls. At the switching point, when the current falls to 10% of CC, the charger moves to Stage 3.
Stage 3: True float	The charger drops to the float (standby) voltage and holds the battery at full charge.
Stage 4	The charge current tapers off while the battery is held at float.

Troubleshooting

If the charger does not work as expected, check this table.

What you see	What to do
Red AC power LED is off	AC power fail. Check the mains connection, the GPO and the power switch.
No charge, or the output cuts off	Check the battery clips are on the correct terminals (Red to Positive, Black to Negative). The output cuts off automatically if the battery is connected in reverse or if there is a short circuit.
LED does not change to green after charging for a long time	The battery may be damaged. Test the battery correctly before charging again.
Case is hot	Normal at maximum current, as the aluminium housing acts as a heat sink. Keep the charger in a well-ventilated place and avoid touching the case.

NOTE: For any other issue, contact Durst. Do not open or modify the charger.

General maintenance

Regular checks keep the charger reliable and your batteries healthy.

Keep it clean and dry

- Switch the charger off at the wall and disconnect it before cleaning. Wipe it down with a soft, dry or slightly damp cloth.
- Do not use high-pressure water or harsh chemical cleaners.
- Keep it in a dry place.
- Keep the vents and the cooling fan clear. Never cover the charger while it is working.
- Mount the charger on its feet with space around it for airflow.

Leads, clips and connectors

- Before each use, check the charge leads for cracked or frayed insulation, loose connectors and corrosion.
- Check that the battery clips are clean, grip firmly and make good contact with the battery terminals.
- Check the mains lead and plug for damage.
- Do not use a damaged lead or clip. Contact Durst for the correct replacement.
- Store the leads neatly after use so they are not crushed or kinked.

Connecting and disconnecting

- Charge in a well-ventilated area, away from sparks and flames. Batteries can give off explosive gas.
- Check that the battery is a compatible type before you connect.
- Disconnect from the battery with the charger switched off.

Who should service the charger

- Operators can carry out the external checks in this section.
- Only a qualified person should open the charger or work on internal parts.
- Do not modify the charger. For repairs, contact Durst.

Extreme environment maintenance

For mining, defence, construction and any other dusty, wet or hot site. Follow this section in addition to General maintenance.

WHY DUST MATTERS

The charger has cooling openings and a fan that draws air through the case. Fine dust, such as iron ore or coal dust, can get in and build up. This dust can be conductive and can damage the electronics.

Dust

- Use and store the charger in a covered, low-dust area, such as a workshop or crib room.
- Never cover, tape or seal the cooling openings or fan to keep dust out.
- Keep the openings and fan guard clear of dust, mud and debris.
- Where dust is present, have a qualified person open the charger regularly, with it switched off and unplugged, and blow it out with clean, dry, low-pressure air. Do not use water, solvents or high-pressure air.

Wet and hot conditions

- Never hose down or pressure-wash the charger.
- Keep it out of rain, washdown bays and standing water.
- If water, mud or chemicals get into the charger, switch it off, unplug it and have it checked by a qualified person before you use it again.
- In hot conditions, place the charger in the shade where possible, keep the openings clear, and allow it to cool after long, heavy use.
- Heat, sun and rough handling wear leads and clips faster. Check them more often.

Set a maintenance schedule for your site

- Operators set a maintenance schedule that suits their site conditions and use.
- Check and clean more often where there is more dust, water or heat.
- Add the charger to your site plant inspection system and record each check.

WARRANTY

Damage caused by contamination (such as dust, water or chemicals), or by a lack of maintenance in harsh environments, is not normal use. It is not covered by warranty.

BCS-A Series reference

Specifications for the full BCS-A Series, for comparison. The BCS-A1220 is in the BCS-A1220 / BCS-A2412 column of the second table.

BCS-A models	BCS-A0610	BCS-A0618	BCS-A1203	BCS-A1204 (Gel-Tech)	BCS-A1206 / BCS-A2404
Meter	LED	LED / LCD	LED indicators		
Input voltage	AC 100 to 240 V				
Input frequency	47 to 63 Hz				
Boost volts	7.2	7.2	14.4	14.1	14.4 / 28.8
Float volts	6.9	6.9	13.7	13.7	13.7 / 27.4
Current 6V	10	18			
Current 12V			3	4	6
Current 24V					4
Wattage at 6 / 12V	88 W	137 W	44 W	58 W	88 W
Wattage at 24V					117 W
Efficiency	Above 87% (at full load), reducing power consumption				
Reverse protection	Yes	Yes	Yes	Yes	Yes
Short-circuit protection	Yes	Yes	Yes	Yes	Yes
Overload protection	Yes	Yes	Yes	Yes	Yes
Cooling fan	Speed control set automatically by the charging stage				
Dimensions (mm)	155 x 70 x 48	167 x 103 x 50	155 x 70 x 48		
Weight	0.5 kg	0.9 kg	0.5 kg		

BCS-A models	BCS-A1210 / BCS-A2407	BCS-A1216	BCS-A1220 / BCS-A2412	BCS-A1225 / BCS-A2414	BCS-A1230 / BCS-A2417
Dual channel				BCS-A1225	BCS-A1230
Meter	LCD and LED indication				
Input voltage	AC 100 to 240 V	AC 200 to 240 V			
Input frequency	47 to 63 Hz				
Boost volts	14.4 / 28.8	14.4	14.4 / 28.8	14.4 / 28.8	14.4 / 28.8
Float volts	13.7 / 27.4				
Current 12V	10	16	20	25 (dual)	30 (dual)
Current 24V	7		12	14	17
Wattage at 12V	147 W	235 W	294 W	367 W	441 W
Wattage at 24V	206 W		353 W	440 W	500 W
Efficiency	Above 87% (at full load), reducing power consumption				
Reverse protection	Yes	Yes	Yes	Yes	Yes
Short-circuit protection	Yes	Yes	Yes	Yes	Yes
Overload protection	Yes	Yes	Yes	Yes	Yes
Cooling fan	Speed control set automatically by the charging stage				
Dimensions (mm)	167 x 103 x 50	190 x 118 x 58		225 x 70 x 152	
Weight	0.9 kg	1.2 kg		2.1 kg	2.3 kg

LCD battery level (6V / 12V / 24V)	100%	75%	50%	25%
Battery voltage	6.95 / 13.9 / 27.8 V	6.65 / 13.3 / 26.6 V	6.3 / 12.6 / 25.2 V	5.95 / 11.9 / 23.8 V

LCD indication is standard on all BCS-A models except the BCS-A0610, BCS-A1203, BCS-A1206 and BCS-A2404. Customised voltages and currents can be factory set to your requirements.

Warranty and support

The BCS-A1220 carries a 1 year warranty. Keep your proof of purchase.

Contact Durst

Contact	Details
Company	Durst Industries (Aust.) Pty Ltd
Address	1/11 Packard Ave, Castle Hill NSW 2154, Australia
Website	durst.com.au
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Phone	+61 2 9660 1755
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Your BCS-A1220 record

Fill this in and keep it with your proof of purchase.

Item	Details
Model	BCS-A1220
Serial number	
Date of purchase	
Purchased from	

Durst may update this manual without notice. Revised November 2026.