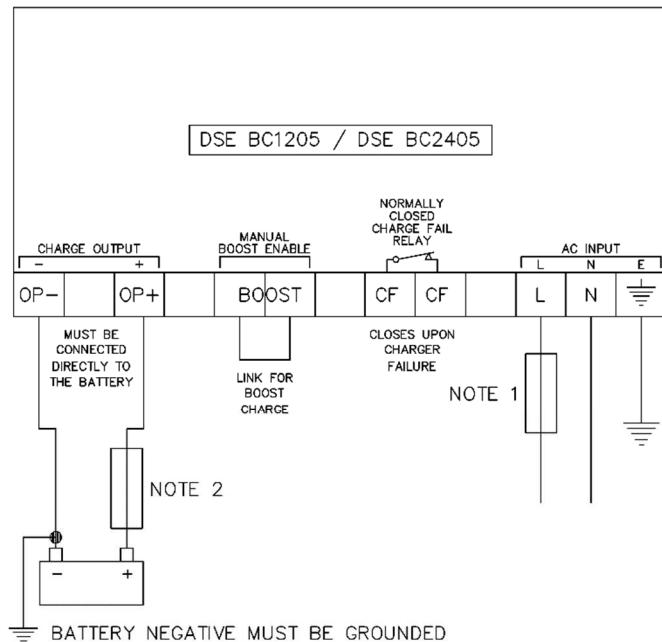


⚠ DANGER OF DEATH: LIVE PARTS exist within the enclosure. The charger cover must not be removed when connected to an AC supply.

⚠ DANGER OF DEATH: The DSE charger must be mounted in a suitable way, so that access to the exposed terminals is prevented during operation and when connected to the mains supply.

TYPICAL WIRING DIAGRAM

⚠ NOTE: A larger version of the Typical Wiring Diagram is available in the product's operator manual, refer to DSE Publication: 057-355 *DSE BC1205 & DSE BC2405 Operator Manual* available from www.deepseaelectronics.com for more information.



BATTERY NEGATIVE MUST BE GROUNDED

NOTE 1

FUSE APPROPRIATELY AND AS CLOSE TO THE BATTERY CHARGER AS POSSIBLE TO PROTECT THE CABLES

NOTE 2

FUSE APPROPRIATELY AND AS CLOSE TO THE BATTERY AS POSSIBLE TO PROTECT THE CABLES AND BATTERY



DEEP SEA ELECTRONICS

053-267
ISSUE 1

DSE BC1205 & DSE BC2405 Installation
Instructions

INSTALLATION

⚠ NOTE: The DSE chargers must have an earth connection.

⚠ NOTE: If the DSE charger is used to charge an automobile batteries: First connect the battery terminal that isn't connected to the chassis, then the other connection is to be made to the chassis. The battery charger is then to be connected to the supply mains. After charging, disconnect the battery charger from the mains. Then remove the chassis connection and then the battery connection.

⚠ NOTE: If the mounting holes are to be used then the DIN rail clips must be removed.

The DSE BC1205 (12 V, 5 A) & DSE BC2405 (24 V, 5 A) battery chargers are designed to be mounted vertically on the panel DIN rail utilising the integral mounts or horizontally on a chassis utilising the mounting holes within a control panel. For dimension and mounting details, see overleaf. DSE battery chargers are designed as a fit-and-forget device therefore, are permanently connected to the supply and the load, with no requirement to disable the charger during times of heavy load such as engine cranking, or when in parallel with a charge alternator.

BATTERY SUITABILITY

⚠ WARNING! Do not connect the DSE chargers to non-rechargeable batteries.

⚠ WARNING! Non-sealed Lead Acid batteries must be placed in a well ventilated area.

⚠ NOTE: The DSE BC1205 & DSE BC2405 are two stage battery chargers, consisting of a boost and float stage.

⚠ NOTE: The charge output voltage level can be varied via the pot accessible from the hole. This is to suit the required battery type charge profile.

⚠ NOTE: Typically a 5 A battery charger is suitable for 50 Ah battery when rated at C/10. A 5 A battery charger can be used to charge a battery with a greater than a 50 Ah rating but it will take longer to be fully charged.

The battery charger is factory set by DSE to suit Lead Acid batteries but its DC output voltage is adjustable to suit any 6 cell battery type and 18 & 20 cell Ni-Cd batteries. The charger's DC output voltage is adjusted via its pot that is accessible through the hole on the case. Care must be taken to ensure the batteries connected to the charger are of the correct technology to suit the setting of the charger.

Deep Sea Electronics Ltd.

Tel: +44 (0)1723 890099

Email: support@deepseaelectronics.com

Web: www.deepseaelectronics.com

Deep Sea Electronics Inc.

Tel: +1 (815) 316 8706

Email: usasupport@deepseaelectronics.com

Web: www.deepseaelectronics.com

CHARGE STAGE 1: CONSTANT CURRENT (BULK)

The battery charger enters this mode once the charger's output current reaches 5 A. In this mode the battery charger maintains a constant current of 5 A and the output voltage is reduced.

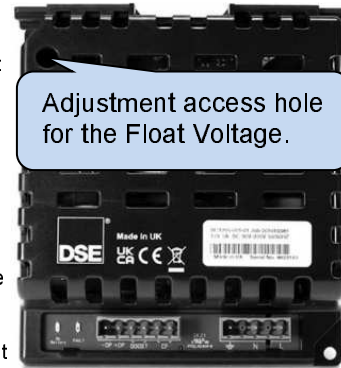
CHARGE STAGE 2: CONSTANT VOLTAGE (FLOAT OR BOOST)

The battery charger enters this mode once the charger's output current falls below 5 A.

In this mode, the battery charger's voltage rises to either the Float or Boost voltage levels, this is determined by activation of the Boost Input. During this time, the voltage is constantly maintained at either Float or Boost and the charge current continues to decrease.

Float Charge is used to provide a small amount of charge current to the battery to overcome internal losses and keep the battery at its 100% charged state. The Float Voltage is adjustable between 12.8 V to 16.6 V on the DSE BC1205, and 25.6 V to 30.3 V on the DSE BC2405 by the access hole using an isolated potentiometer adjustment tool.

Boost Charge is used to provide a larger amount of charge current to the battery to provide a quick charge to a depleted battery. With a Lead Acid type battery, it may also be used to remove sulfation from the battery plates and helping the cells to equalise in voltage. Boost mode is operated manually by connecting the battery charger's BOOST terminals together for instance with an external switch or timer circuit. Manual boost raises the float voltage by 0.6 V on the DSE BC1205 or by 1.2 V on the DSE BC2405.



BATTERY DETECTION

NOTE: The Battery Detection feature is only available on the DSE BC1205-02 & DSE BC2405-02 variants.

The DSE Battery Charger performs a Battery Detection test every 60 minutes. To detect the presence of a battery, the DSE BC1205 reduces its output voltage to 9 V and the DSE BC2405 reduces its output voltage to 18 V. If the voltage measured on the charger's output terminals is higher than 9 V (DSE BC1205) or 18 V (DSE BC2405), the battery charger considers that the battery is connected. Once the charger determines the battery is disconnected it de-energises (closes) the Charge Fail Relay, activates the No Battery LED, and then raises its output voltage to the float voltage level. The fault only resets if the battery is connected with a voltage higher than 9 V (DSE BC1205) or 18 V (DSE BC2405) during the next Battery Detection test, or if the charger is powered down.

LED INDICATIONS

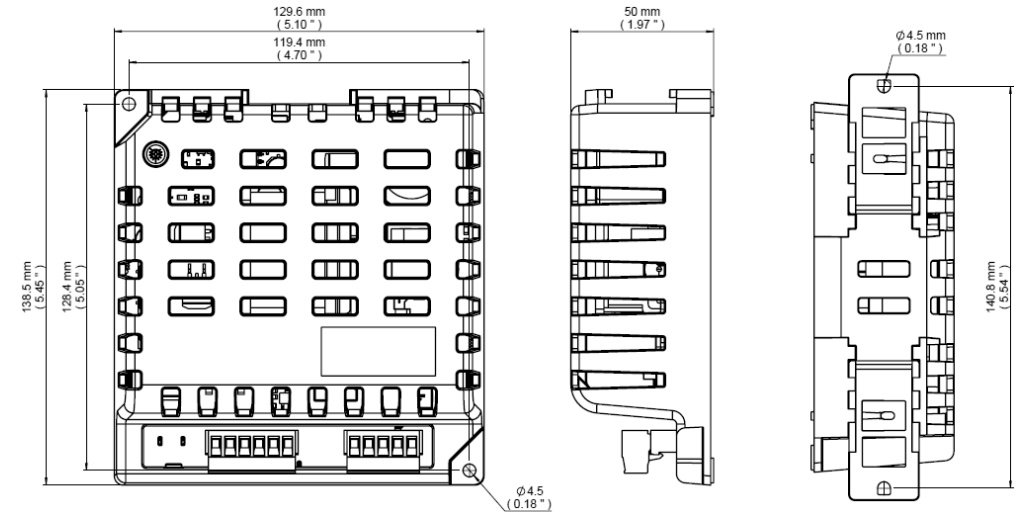
The *Status LED* indicates the operating state of the battery charger.

Status LED	Condition
Off	AC supply failure / Low output DC voltage
Red Constant	Charging with AC Supply above the min operating voltage (90 Vac)
Red Flashing	Connected to an operating charging alternator
Red Pulsing	DC output overload (DC output current rises above 5.3 A)

The *No Battery LED* indicates if a battery is connected to the charger. This LED is only available on the DSE BC1205-02 & DSE BC2405-02 variants. The state of the LED updates every 60 minutes.

No Battery LED	Condition
Off	Battery detected (test passed)
Red Constant	Battery not detected (test failed)
Red Flashing	Battery detection test in progress

DIMENSIONS AND MOUNTING



Parameter	Comment
Mounting Environment	For use indoors or enclosed spaces only.
Overall Size	129.6 mm X 138.5 mm X 49 mm (5.10" X 5.45" X 1.93")
Perimeter Distance for Ventilation	50 mm (2")
Material	Polycarbonate
Surface Finish	Black Resin
Protection Category	IP20, NEMA 1
Unboxed Weight	0.42 kg (0.93 lb 14.81 oz)
Mounting Type	DIN Rail (Vertical) or Chassis Mounted (Horizontal). For DIN Rail mounting: vertically mounted on the DIN Rail with connection terminals opposite to the axis. For horizontal chassis mounting: base mounted to a vertical surface with connection terminals to the bottom.
Mounting Holes	Diameter 4.5 mm (0.18"), 119.4 mm X 128.4 mm (4.7" x 5.05") centres
Operating Temperature	-25 °C to +55 °C (-13 °F to +131 °F)
Operating Temperature (With Derate To Output)	-25 °C to +80 °C (-13 °F to +176 °F)

TERMINAL SPECIFICATION

Parameter	Specification
Connection Type	Screw terminal, rising clamp, no internal spring
Minimum Cable Size	0.5 mm ² (AWG 20)
Maximum Cable Size	2.5 mm ² (AWG 13)
Tightening Torque	0.4 Nm (3.5 lb-in)
Wire Strip Length	7 mm (9/32")
DSE BC1205 & BC2405 AC Fuse	230 V AC Supply: 3.5 A Anti-Surge 110 V AC Supply: 6.3 A Anti-Surge
DSE BC1205 & BC2405 DC Output Fuse	7.5 A Anti-Surge