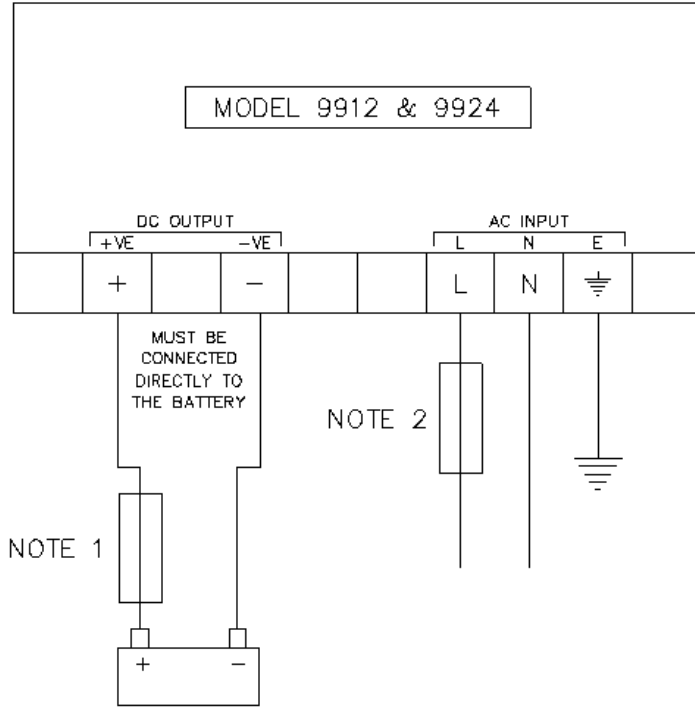


**TYPICAL WIRING DIAGRAM**



NOTE 1  
FUSE APPROPRIATELY AND AS CLOSE TO THE BATTERY AS POSSIBLE

NOTE 2  
FUSE APPROPRIATELY AND AS CLOSE TO THE BATTERY CHARGER AS POSSIBLE

**INDICATIONS**

The Battery Charger features an LED indicator to show Charger Status.

Function	Action
Charger Status	<ul style="list-style-type: none"> <li>Off when AC supply is not present or when not charging due to an error (See <i>Protections</i> overleaf).</li> <li>Steady during normal operation.</li> </ul>



**DEEP SEA ELECTRONICS  
DSE9912 & DSE9924 INSTALLATION INSTRUCTIONS**

**INSTALLATION**

DSE9912 and DSE9924 battery chargers are designed to be mounted within a control panel. Integral DIN rail mounts and chassis mounting holes provide multiple mounting options. See *Dimensions and Mounting* overleaf.

The battery chargers are fit-and-forget with no configuration necessary. Designed for permanent connection to the supply and the load, there is no requirement to disable the charger during times of heavy load. This includes engine cranking or when in parallel with a charging alternator.

**BATTERY SUITABILITY**

The battery chargers are designed to charge Lead Acid batteries only. Care must be taken to ensure the batteries connected to the charger are Lead Acid type of the correct nominal voltage.

Charger Type	Battery Suitability
DSE9912	12 V Lead Acid
DSE9924	24 V Lead Acid

**CHARGE TIME**

Typically a battery charges from 0 % to 80 % capacity in 16 hours when charged at C/10.(C=Battery Capacity in Ah).

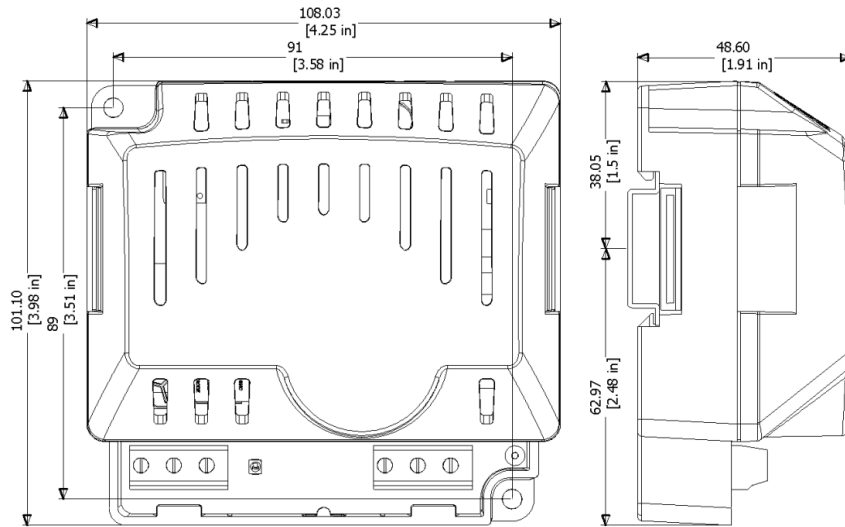
Example: Charging a 30 Ah battery for 16 hrs at 3 A charges the battery to 80% of its full capacity. Remember to account for any standing load such as control panel requirements when calculating how much power remains to charge the battery.

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## SPECIFICATION

### DIMENSIONS AND MOUNTING

Description	Specification
Overall Size	108.03 mm X 101.10 mm X 48.6 mm (4.25 " X 3.98 " X 1.91 ")
Weight	0.2 kg (7 oz)
Mounting Orientation	Connectors facing downwards (as show in the diagram below)
Mounting Type	DIN rail or chassis mounting
DIN Rail Type	EN 50022 35 mm type only
Mounting Holes	Suitable for M4 (0.16 " diameter)
Mounting Hole Centres	91 mm x 89 mm (4.25 " x 3.51 ")
Screw Terminal Tightening Torque	0.4 Nm (3.54 lb-in)
Recommended Cable Size	1.5mm <sup>2</sup> (AWG 16)



Dimensions in mm unless stated

### PROTECTIONS

Description	Specification
Temperature Derating	To prevent overheating of the device, the Maximum Output Current de-rates until ambient temperature is 70 °C.
Temperature Protection	Operation is disabled when ambient temperature further exceeds 70 °C (158 °F)
AC Input Detection	Operation is disabled when AC input voltage is below 100 V
Output Reverse Polarity	Reversal of battery connections ruptures the internal fuse. The battery charger must be returned to DSE for fuse replacement.
Alternative Voltage Source Connection	Operation is disabled upon detection of a higher voltage external charge source. This allows (for example) a charge alternator to charge the battery while the DSE battery charger remains connected.
Output Short Circuit	Operation is disabled if the output is short circuit.

## TEMPERATURE

Description	Specification
Operating Temperature	-30 °C to 70 °C (-22 °F to 158 °F)

### AC INPUT

Description	Specification
Phase Configuration	Single Phase and Neutral
Input Voltage (Nominal)	210 V to 250 V
Input Voltage (Absolute Range)	189 V to 275 V
Input Frequency (Nominal)	50 Hz / 60 Hz
Input Frequency (Operation Range)	47 Hz to 63 Hz
Max Input Current at 189 V	<1 A
Fuse Protection	External 1.5 A anti-surge fuse
Input Power (No Load)	<3 W
Efficiency	>86 % at 230 V

### DC OUTPUT

Description	Specification	
	DSE9912	DSE9924
Nominal Output Voltage	12 V	24 V
Float Voltage	13.7 V	27.4 V
Nominal Output Current	5 A	3 A
Output Voltage Ripple (of Nominal Voltage)	2 %	2 %
Output Load Regulation (of Nominal Output Current)	3 %	3 %

### APPLICABLE STANDARDS

Description	Specification
BS EN 60529 (Degrees of protection provided by enclosures)	IP20  Protected against penetration by solid objects with a diameter of more than 12 mm (0.47 "). Fingers or similar objects prevented from approach.  No protection against water.
UL508 NEMA rating	Enclosure type 1  Provides a degree of protection against contact with the enclosure equipment and against a limited amount of falling dirt
BS EN 61000-6-4:2007 + A1:2011	Electromagnetic compatibility (EMC). Generic Emission standards for industrial environments.
BS EN 61000-6-2:2005	Electromagnetic compatibility (EMC). Generic Immunity standards for industrial environments.
BS EN 60950-1:2006 + A2:2013	Safety of information technology equipment, general requirements.