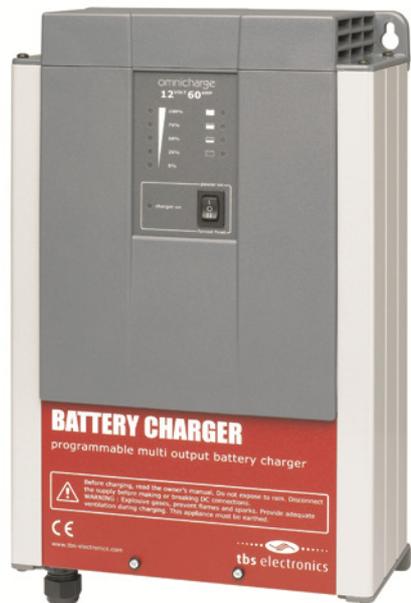## Tips & Tricks to Plugging In

TBS OmniCharge 12v & 24v

Charger would suit applications such as:
*Caravans
*Marine/boats
*Industrial Systems
*Systems that require specialise Charging Algorithms

The TBS Charger can be set up for all battery types including:
*Flooded
*AGM
*Calcium
*Gel
*Lithium

Specs At Glance

*Fully Programmable
*Universal AC input with PFC
(100—260VAC / 47—63Hz / PF ≥ 0.95)
*AC input—Supplied with 1m lead fitted but can be hard wired to the Screw Terminals.

Model	Omnicharge 12v 40amp Charger	Omnicharge 12v 60amp Charger	Omnicharge 24v 20amp Charger	Omnicharge 24v 30amp Charger
Enerdrive Code	OC12-40	OC12-60	OC24-20	OC24-30
Input voltage	100 - 260VAC / 47 - 63Hz / PF ≥ 0.95			
Full load consumption	700VA	1050VA	700VA	1050VA
AC input current (115V / 230V)	6A / 3A	9A / 5.4A	6A / 3A	9A / 5.4A

*Two DC Outputs
1 Main & 1 Slave to Trickle charge Start Bank
*DC Output Connections—M8 Bolts (Main Output) & Screw Terminals (Auxiliary output)

	Omnicharge 12v 40amp	Omnicharge 12v 60amp	Omnicharge 24v 20amp	Omnicharge 24v 30amp
Total output current (Aux.)	40A (4A)	60A (4A)	20A (2.5A)	30A (2.5A
Recommended battery capacity 2)	80 - 400 Ah	120 - 600 Ah	50 - 200 Ah	70 - 300 Ah

*Dimensions—351 x 210 x 114mm
*Weight—5.8kg

Combining new power conversion techniques and the best available parts with years of power electronics design expertise, the Omnicharge battery chargers will deliver long life performance even in the most demanding applications. A unique active rectifier output stage ensures unmatched efficiency figures. Combined with active PFC, the Onmicharge battery chargers are very energy efficient. This will reduce running costs and guarantees a maximum charge current per ac watts.

All Omnicharge battery chargers are equipped with advanced 4 stage charging algorithms and temperature compensation for optimal battery performance and long lifetimes. Users are also allowed to create a custom charging algorithm for their specific battery, using the TBS "Dashboard" software. The standard available TBSLink port enables remote control and readout via the optional TBS Universal Remote Panel.
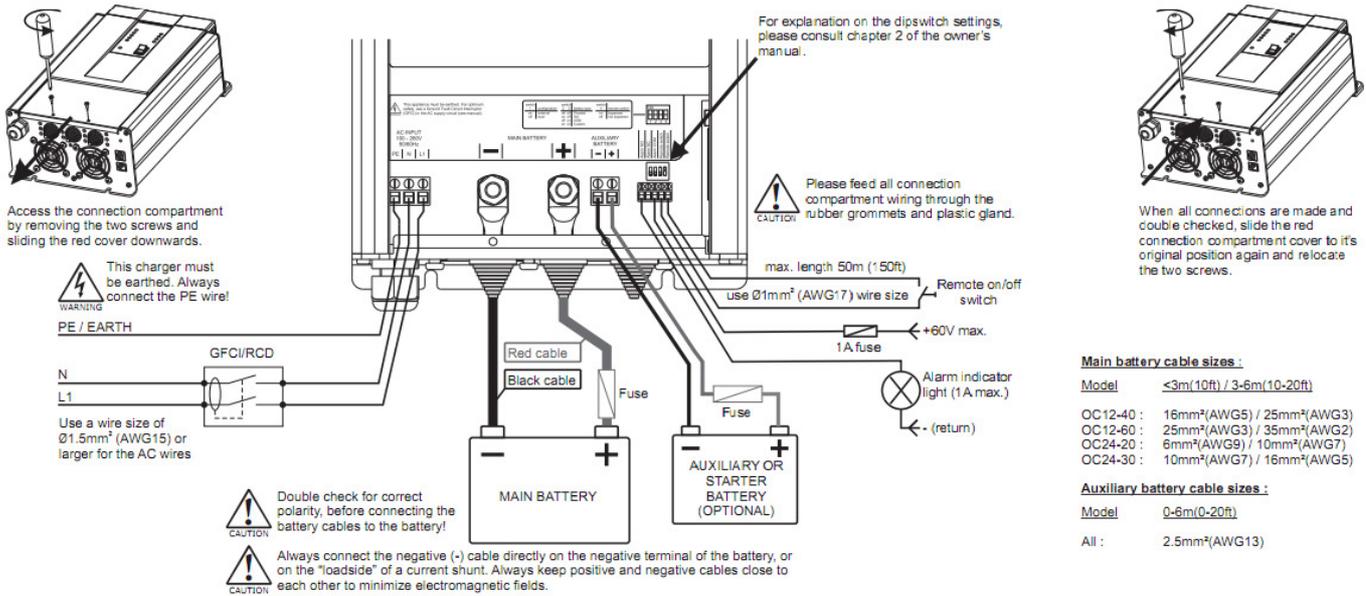
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Tips & Tricks to Plugging In

TBS OmniCharge 12v & 24v

CONNECTION COMPARTMENT WIRING DETAILS

For explanation on the dipswitch settings, please consult chapter 2 of the owner's manual.

Access the connection compartment by removing the two screws and sliding the red cover downwards.

WARNING This charger must be earthed. Always connect the PE wire!

PE / EARTH

N
L1

Use a wire size of Ø1.5mm² (AWG15) or larger for the AC wires

GFCI/RCD

Red cable
Black cable

Fuse

CAUTION Double check for correct polarity, before connecting the battery cables to the battery!

CAUTION Always connect the negative (-) cable directly on the negative terminal of the battery, or on the "loadside" of a current shunt. Always keep positive and negative cables close to each other to minimize electromagnetic fields.

MAIN BATTERY

AUXILIARY OR STARTER BATTERY (OPTIONAL)

Fuse

AC INPUT 100 - 260V 50/60Hz
MAIN BATTERY
AUXILIARY BATTERY

CAUTION Please feed all connection compartment wiring through the rubber grommets and plastic gland.

max. length 50m (150ft) use Ø1mm² (AWG17) wire size

Remote on/off switch

+60V max.
1A fuse

Alarm indicator light (1A max.)
- (return)

When all connections are made and double checked, slide the red connection compartment cover to it's original position again and relocate the two screws.

Main battery cable sizes :

Model	<3m(10ft) / 3-6m(10-20ft)
OC12-40 :	16mm²(AWG5) / 25mm²(AWG3)
OC12-60 :	25mm²(AWG3) / 35mm²(AWG2)
OC24-20 :	6mm²(AWG9) / 10mm²(AWG7)
OC24-30 :	10mm²(AWG7) / 16mm²(AWG5)

Auxiliary battery cable sizes :

Model	0-6m(0-20ft)
All :	2.5mm²(AWG13)

Out of the box settings

DS1	DS2	DS3	DIP SWITCH BOX	BATTERY TYPE	Absorption 12v/24v	Float 12v/24v
OFF	OFF	OFF		Flooded	14.4v/28.8v	13.5v/27.0v
OFF	ON	OFF		GEL	14.2v/28.4v	13.5v/27.0v
OFF	OFF	ON		AGM	14.3v/28.6v	13.3v/26.6v
ON	ON	ON		Custom	Not available when dipswitch 1 is set to Off (LOC)	

CHARGER MOUNTING

= Approved
= Not recommended

vertical wall mounting (IP21)

vertical wall mounting (upside down)

horizontal wall mounting

floor mounting

ceiling mounting

187mm
334mm
126mm
drilling template
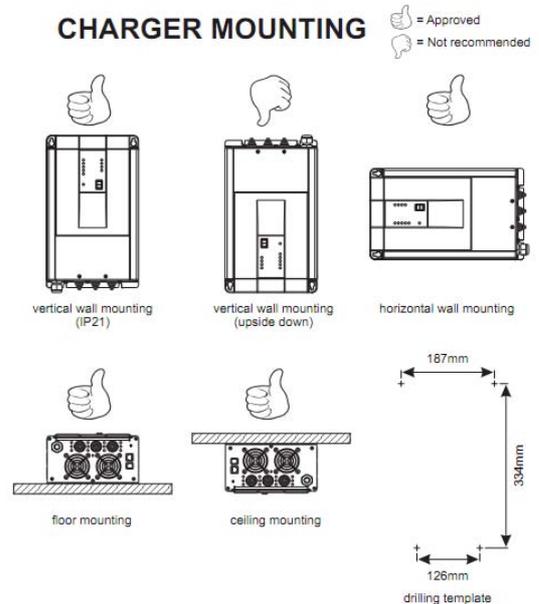
Remote Screen Shots

| Charger Status | Battery Status | Remote Setup | Charger Output |

Tips & Tricks to Plugging In

TBS OmniCharge 12v & 24v

EQUALIZATION

If you are using a flooded lead acid battery, an occasional equalization charge cycle may be recommended by the manufacturer. This might also be true when the flooded battery has been very deeply discharged or often charged inadequately. During equalization, the battery will be charged up to 15.5V (or 31V for 24V models) at a reduced output current level. Before starting an equalization charge cycle, the following caution statements must be read carefully :

⚠️ Equalization should only be performed on a flooded (wet) lead acid battery. Therefore the Omnicharge chargers only allow equalization when the battery type dipswitches are set to Flooded. Other battery types like GEL or AGM will be damaged by this process.

⚠️ Always follow the battery manufacturer's instructions when equalizing flooded batteries.

⚠️ During equalization, the battery generates explosive gasses. Follow all the battery safety precautions enclosed with your charger. Ventilate the area around the battery sufficiently and ensure that there are no sources of flames or sparks in the vicinity.

⚠️ Disconnect all loads connected to the battery during equalization. The voltage applied to the battery during this process may be above safe levels for some loads.

⚠️ The Omnicharge chargers cannot automatically determine when to stop the equalization of a battery. The user must monitor the battery's specific gravity throughout this process to determine the end of the equalization cycle. The internal 2 hours time-out timer of your charger is only intended as a safety feature, but may not be sufficiently short to prevent battery damage. Therefore, equalizing a battery is always a process that must continuously be supervised by the user.

⚠️ When equalizing the main battery, the smaller battery connected to the auxiliary battery output will be equalized as well. When this is not desirable, please disconnect this battery before starting the equalization cycle.

Since equalization is only allowed for flooded (wet-) lead acid batteries, the Omnicharge chargers will only allow this function to be available when the "Flooded" charging program is selected (see chapter 2). Besides this, the charger also needs to have a full charge cycle completed and is operating in the Float mode. When these two conditions are met, the equalization charge mode can be activated by pressing the recessed pushbutton on the bottom side of the charger (see installation guide step 4) for 3 seconds until all charge status indicators start flashing. The charger will allow a maximum equalization time of 2 hours before it automatically jumps back to Float mode. If the specific gravity of each cell does not match the battery manufacturer's specifications yet, you can initiate a new 2 hours equalization cycle by pressing the pushbutton for 3 seconds again. Always keep on checking the specific gravity of each cell repeatedly during the equalization process. When these values are correct, you can manually exit the equalization process by pressing the recessed pushbutton once. The charger will then return to the Float mode.

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Tips & Tricks to Plugging In

TBS OmniCharge 12v & 24v

Custom Charge Setting to suit any Application. Look at what's Possible.

Enerdrive are able to custom set the TBS Omnicharger to suit any battery application. We offer our service at no extra charge or you can purchase the communication kit to be able to program your own settings.

Enerdrive offers Custom Programming at no Extra Charge

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Input voltage	100 - 260VAC / 47 - 63Hz / PF ≥ 0.95			
Full load consumption	700VA	1050VA	700VA	1050VA
AC input current (115V / 230V)	6A / 3A	9A / 5.4A	6A / 3A	9A / 5.4A
Full load efficiency	88%	88%	91%	91%
Nominal output voltage 1)	12V		24V	
Total output current 1) 4) (Aux.)	40A (4A)	60A (4A)	20A (2.5A)	30A (2.5A)
Charge characteristic 2)	IUoUop, intelligent 4 stage, temperature compensated			
Absorption voltage 2)	14.4V		28.8V	
Float voltage 2)	13.5V		27.0V	
Equalize voltage 2)	15.5V		31.0V	
Supported battery types 2)	Flooded / GEL / AGM / Custom			
Recommended battery capacity 2)	80 - 400 Ah	120 - 600 Ah	50 - 200 Ah	70 - 300 Ah
DC current draw (charger off)	≤ 5mA		≤ 4MA	
Operating temperature range 4)	-20°C to 50°C (humidity max. 95% non condensing)			
Storage temperature range	-40°C to 80°C (humidity max. 95% non condensing)			
Cooling	Variable speed fan controlled by temperature and load			
TBS Link enabled	Yes			
Protected against	Low AC voltage, output short circuit, high temperature, battery overcharging and reverse polarity (fuse)			
Indications	Power on, output current bar, state of charge bar, error			
DC output connections	M8 bolts (main output), Screw terminals (auxiliary output)			
AC input connections	Screw terminals			
Enclosure body size	351 x 210 x 114 mm			
Total weight	5.8kg			
Protection class	IP21 (mounted in upright position)			
Standards	CE market meeting EMC directive 2004/108/EC and LVD 2006/95/EC complying with EN60335-1, EN60335-2-29			

1) Maximum output current tollerance is +/- 3%. Maximum setpoint voltage deviations are +/- 0.1V for 12V and +/- 0.2V for 24V models. All setpoint voltages are temperature compensated when battery temperature sensor is connected 2) Value is programmable 3) Always consult battery manufactures specifications for maximum allowable charge current. 4) At higher ambient temperatures (>40°C), maximum output current may be reduced automatically

Optional Accessories		
Enerdrive Code	URC-TBS	TBS Dashboard
Model	TBS Universal Remote Control Panel	TBS Dashboard Software
Dimensions (H x W x L)	130 x 70 x 48mm	
Cut Out Dimensions	113 x 58 x 30mm - (Diameter x Intrusion)	
Display	LCD	
Operating Temperature Range	-10°C to 50°C	
Weight	140gm	
Warranty	2 year	

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