



WS500

ADVANCED ALTERNATOR REGULATOR

Configuring Regulator With DIP Switches

While the WS500 Alternator Regulator provides an extensive level of configurability via its USB connection to computer terminal programming software, the simplest way to configure your WS500 Alternator Regulator is via the onboard DIP switches. With these, you can select one of eight preset battery programs to match your battery type, identify the battery being charged, define battery capacity and toggle between small and large alternator modes. Please refer to the online User Guide for further reference.

SELECTING BATTERY ID

The Battery ID provides a designator for the battery being monitored by the WS500 alternator regulator. Used in CAN connected systems.



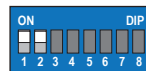
1 OFF, 2 OFF
House Battery



1 ON, 2 OFF
Main Starter



1 OFF, 2 ON
Secondary House



1 ON, 2 ON
Other

SELECTING CHARGE PROFILES

The WS500 offers the ability to select from one of eight charging profiles based on battery types being charged, including two customizable profiles which can be configured on a PC via the regulator's USB port. Refer to the online User's Guide for detailed profile values and configuration instructions.



3OFF/4OFF/5OFF
Default, AGM#1



3ON/4OFF/5OFF
Std. FLA



3OFF/4ON/5OFF
Deep Cycle FLA



3ON/4ON/5OFF
High Density AGM



3OFF/4OFF/5ON
Gel



3ON/4OFF/5ON
Carbon Foam



3OFF/4ON/5ON
Custom #1



3ON/4ON/5ON
Custom #2 LiFePO4

DEFINING BATTERY CAPACITY

Provides configurability based on the size of the battery bank being charged. Four capacity levels shown at right.



6 OFF, 7 OFF
< 250Ah



6 ON, 7 OFF
250Ah-500Ah



6 OFF, 7 ON
500Ah - 750Ah



6 ON, 7 ON
> 750Ah

SMALL/LARGE ALTERNATOR (FULL OUTPUT) MODES

Small Alternator Mode limits the maximum alternator output to 75% of maximum field potential and can be used to protect smaller alternators with larger battery loads and smaller engines and belts from excessive alternator horsepower loads. (Percentage adjustable via PC configuration. See online User Guide for details).



8 OFF
Large Alternator Mode



8 ON
Small Alternator Mode

LED Status/Advisory Codes

An onboard LED, visible on the front cover of the WS500 Alternator Regulator indicates operational and diagnostic codes during operation. There are three modes of information: Standard Operation (green), Error/Advisory mode (red), and Sync Mode (when the regulator is connected to another dominant regulator or a BMS via CAN bus) indicated by orange LED pattern. Error messages are identified by a numeric count, following the generic "error" sequence. LED blink patterns are described below:

Idle		Short Flash/Long Delay (4 sec.)
Ramp to Bulk		Short Flash/Short Delay (1/4 sec.)
Acceptance		Flash/Flash/Long Delay (2 sec.)
Over Charge		Equal Flash/Delay (1/4 sec.)
Float/Post Float		Equal Long Flash/Delay (2 sec.)
Equalize		Short Flash/Flash/Long Delay (1.5 sec.)
Error*		Equal Long Flash/Delay (2 sec.)
Restarting		Equal Flash/Delay (1/4 sec.)

* Error pattern repeated twice, followed by flashing of Error ID #. See reference guide for details.

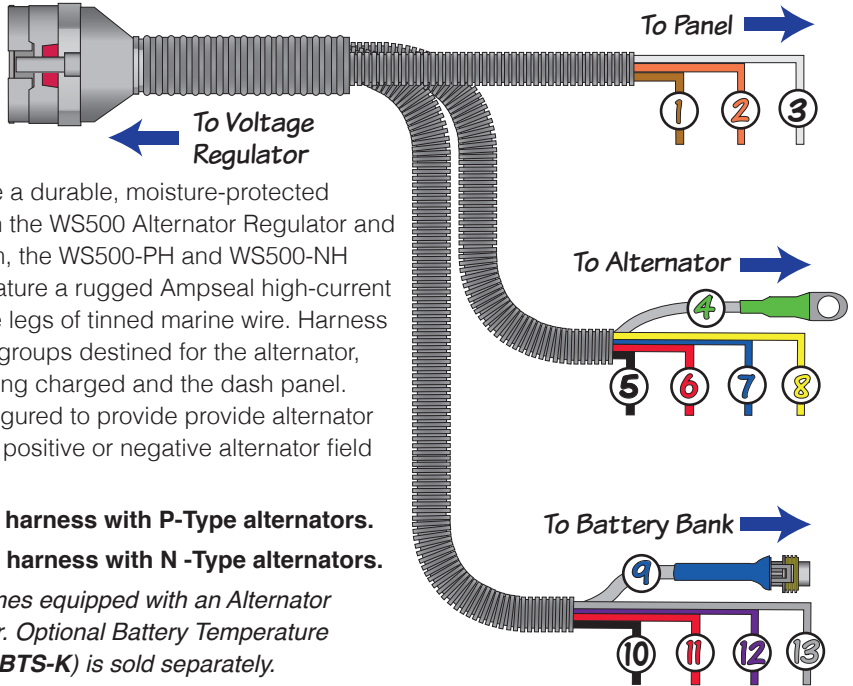
WWW.WAKESPEED.COM

©2019 Copyright Wakespeed® Offshore • PO Box 1541, Anacortes, WA 98221 USA



WS500

ADVANCED ALTERNATOR REGULATOR



Designed to provide a durable, moisture-protected connection between the WS500 Alternator Regulator and the electrical system, the WS500-PH and WS500-NH wiring harnesses feature a rugged Ampseal high-current connector and three legs of tinned marine wire. Harness legs consist of wire groups destined for the alternator, the battery bank being charged and the dash panel. Harnesses are configured to provide provide alternator excitation based on positive or negative alternator field polarity.

Use the WS500-PH harness with P-Type alternators.

Use the WS500-NH harness with N-Type alternators.

NOTE: Harness comes equipped with an Alternator Temperature Sensor. Optional Battery Temperature Sensor Kit (WS500-BTS-K) is sold separately.

- 1 Ignition Wire (Brown 16 ga.)** Connects to switched voltage source (key switch or oil pressure switch). Must see zero volts when off and minimum of 8.5 VDC to activate.
- 2 Lamp/Feature Out Wire (Orange 16 ga.)** Connects to switched voltage source (key switch or oil pressure switch). Must see zero volts when off and minimum of 8.5 VDC to activate.
- 3 Feature In Wire (White 16 ga.)** Connects to switched voltage source (key switch or oil pressure switch). Must see zero volts when off and minimum of 8.5 VDC to activate.
- 4 Alternator Temperature Sensor (Grey 20/2 cable. Green cable shrink.)** Connects to alternator case bolt or ground post.
- 5 Alternator Ground (Black 16 ga.)** Connects to alternator ground post.
- 6 Alternator Positive (Red 16 ga.)** Connects to alternator positive output post. Wire is fused at 15A (inline fuse and holder included).
- 7 Alternator Field (Blue 16 ga.)** Connects to alternator's external field terminal.
- 8 Stator (Yellow 16 ga.)** Connects to alternator's AC/stator output.
- 9 Battery Temperature Cable (Grey 20/2 cable. Blue cable shrink.)** Provides a connection point for optional battery temperature sensor. Battery Temperature Sensor (WS500-BTS-K) sold separately.
- 10 Battery Ground Sense (Black/Yellow Stripe 16 ga.)** Connects to ground terminal of battery being charged. Connect wire to battery ground terminal closest to the center of the battery bank.
- 11 Battery Positive Sense (Red/Yellow Stripe 16 ga.)** Connects to positive terminal of battery being charged. Connect wire to battery positive terminal closest to the center of the battery bank.
- 12 Current Sensing (+) (Purple 16 ga.)** Connects to the positive sense terminal on the battery shunt (500A/50mV default).
- 13 Current Sensing (-) (Grey 16 ga.)** Connects to the negative sense terminal on the battery shunt. Installation may depend on whether shunt is installed HIGH or LOW. Refer to User's Guide for recommendations.

WWW.WAKESPEED.COM

© Copyright 2019 Wakespeed® Offshore • PO Box 1541, Anacortes, WA 98221 USA