Instruction Manual

Thank you for choosing ORCA Products. Welcome to the world of RC racing.

Specifications:
- 32 bit processor
- Low resistance FET
- Continuous current
- Auto Fan control
- System: Brushless
- Forward/Brake/Reverse: Yes (Factory preset at Forward/Brake)
- Dimensions: 35.8(L) x 29.5(W) x 13.85(H)mm
- Weight: 27g (excluding wires)
- Voltage Input: 6 Cells NiCD/NiMH
- Voltage Input: (4.8 – 8.7V DC)
- Continuous Current: 100A
- Motor Limit: Over 10.5 Turns
- Motor Type: Sensored 540 sized brushless motors
- B.E.C. Output: 6V / 7A / 5A
- Multi Protection System: Yes

Radio & ESC set-up

Transmitter Settings:
- Throttle Travel
- Maximum / 100%
- Brake Travel
- Maximum / 100%
- Throttle Exponential
- Start with 0%
- Throttle Neutral Trim
- Center / 0
- Throttle Servo Reverse
- Reverse (Futaba, KO, Sanwa)

Initial set-up of the throttle endpoints of the ESC:
- Connect the power wires of the ESC to a fully charged battery set, making sure the polarity is correct.
- Set your receiver and transmitter first before the ESC settings are made.
- Secure the on/off switch in a place where it will not be accidentally knocked during a crash.
- The Fan port voltage is drawn directly from the battery.
- The Motor configuration A-B-C can be changed to C-B-A in the Initial Setup section of the Program Card. Ensure that your physical wiring configuration of A-B-C matches the Initial Setup options of the Program Card. (WARNING! Improper configuration may damage the ESC)

Customizing the ESC

Due to the different requirements of each style and class of racing, it is important to customize your ESC for each use case. Customization of the ESC is done using the Program Card (Sold Separately):

To begin, connect the battery wires to a charged battery, then connect supplied 4pin wire (200mm) to the ESC setting port (4pin port) and Program Card. Turn on the ESC and the Program Card will activate automatically. Note that the screen will show “Loading…” during initialization – indicating that the ESC is copying the current setup in the ESC to the Program Card. Once loading is completed, the screen will show “ORCA B32 Pro” and “Program”. You can now begin programming your ESC.

Press “Enter” to access Program, Update or Data Record.

TIPS!
- Whenever in doubt, double check your ESC setting by initializing the Program Card again and checking each menu setting.
- Navigation around the Program Menu is done using the 4 buttons on the right hand side of the Program Card. The function of each button varies depending on which screen the display is showing:
  - “Select” button: go to next select
  - “A” button: Scroll up
  - “▼” button: Scroll down
  - “Enter” button: Send Changes from Program Card to the ESC and overwrite old data in the ESC

NOTE! The Program Card is not included and is sold separately.

The Program Card will compare the Parameters within the card and ESC before sending. If changes are detected, you will hear a series of beeps and the Program Card will display:

Send Success

Operation

Getting started

Turn on the on/off switch, the screen will display:

Use “A” button and “▼” button to find [Program], [Update] or [Data Record].

Press “ ” button to choose. Each mode presented are independent from each other and will require setup.

Press “SELECT” button for 2 seconds to go back to the previous screen.

TIPS!
- Do not worry about making mistakes. You will not damage the ESC during setting. If in doubt, you can always reload the default setup and start over again.

1. Program

BLINKY MODE

1: Quick Setup

Use “SELECT” button to find [BLINKY MODE].

Use “A” button and “▼” button to find the right position of the motor link.

Press “ ” button to set up your ESC after you choose the right motor link.

2. Update

Updating of ESC Firmware:

Scroll to the “Update” menu and press “Enter”. This will show the current ESC FW Version. Press “Enter” again to access the SD cards Firmware folder. Select the FW Version that you would like to use to update the ESC. Press “Enter” again and the update will commence (It will take around 1 minute to complete the update).
Updating of Program Card Firmware:

ORCA B32 PRO
21.11.170304A

Depress and hold the Program card’s “Enter” button while turning on the ESC. It will display the current Program card FW Version. Press “Enter” again to access

1. Program

| A + B – C |
| C + B – A |

**Blinky Mode**

**Quick Setup**

| Punch | Level:1-15 | 15 |
| 2.Pulse Width Modulation (PWM) | 2000-32000Hz | 8000Hz |
| 3.DragBrake | OFF | OFF |
| 4.Compress | 0%-50% | 10% |

**Advance Setup**

| Punch/FineTune | Normal |
| 1 | Punch/FineTune |
| 2 | BrakeFreq |
| 3 | InitialBrake |
| 4 | Initial Brake range |
| 5 | MaxbrakeForce |

| RunningMode | Forward/Brake |
| 1 | RunningMode |
| 2 | Battery |
| 3 | CutOffVoltage |
| 4 | EscOverHeat |

| MotorOverHeat | No Protection |
| 5 | MotorOverHeat |
| 6 | NeutalRange |
| 7 | Fan Mode |
| 8 | BEC Voltage |
| 9 | MotorAction |

the SD cards Firmware folder. Select the FW Version that you would like to use to update the Program Card. Press “Enter” again and the update will commence (it will take around 1 minute to complete the update).

**Preparing the SD card for use:**

Format a microSD card using FAT32 file structure using a personal computer. If you are using a Micro SD Card larger than 32GB, you will need to use a 3rd party SW Package to do this. Create a new folder called “Firmware”. Download the latest firmware from www.orcara.com/firmware/ and copy the file to the “Firmware” folder on the Micro SD card. Once completed, install the MicroSD card into the microSD card slot of the Program Card. Both the Program Card and ESC FW Files need to be copied in to the "Firmware" Folder. A maximum of 10 of each ESC/Program card firmware can be present in the folder at any one time.

3. **Data Record**

![Image of data record](image)

Press "▲" button

7.65V 30° 0.00ms 0rpm

7.64V MAXE30° RMH:xxxxx M30

This will show the last pack of run, the min Battery Voltage, max ESC Temperature max Motor Temperature.

Please double press “)” Enter button to clear the data, otherwise this data will keep forever.

**Operating Tips**

Multi Protection System – In addition to the Low Voltage and Overheat Protection that were described above, the ESC is protected in 2 more ways.

**Motor Lock Protection:**

- The ESC is protected against damage when the motor is stuck and does not turn at all. Power will not be applied in this situation.
- CAUTION! Since the ESC relies on the feed back of the 3 motor wires to deploy this protection, it ONLY works if the motor does not turn AT ALL. If the rotor has any rotation, the ESC will consider the motor to be operational and the power to the motor will not be cut off.

**Fail Signal Protection:**

- In case the radio signal to the ESC is interrupted for over 1 second during a run, the ESC will cut off until the signal resumes.

**ROAR Stock Spec Racing:**

ROAR has announced the new class of Stock Spec Racing using a zero degree timing ESC with Spec Motors known commonly as ‘Blinky’ classes. The B32 ESC satisfies the ROAR requirement showing a blinking LED.

**Misc. Tips:**

- Connect the ESC to the battery pack only when you are ready to run. This will avoid draining the battery pack. Always disconnect the battery after your run.
- A small spark may occur when the battery is initially connected to the ESC. This is normal and is due to the charging of the capacitors.

**Limited Warranties / Repair Procedures**

All ORCA products are manufactured in accordance with the highest quality standards. ORCA guarantees this product to be free from defects in materials or workmanship for 60 days from the original date of purchase verified by sales receipt. This limited warranty does not cover damages resulting from abnormal wear, misuse or improper maintenance of the product.

To avoid unnecessary service and mailing charges, always eliminate all other possibilities and check all components for malfunctions before sending in your unit for repair. Products sent in for repair that operate perfectly will be charged a service fee.

When sending in the product, always pack carefully and include the original sales receipt, a description of the problem encountered, your return address and contact information.

Since we do not have control over the installation and use of this product, we cannot accept any liability for any damages resulting from the usage of this product. Therefore, using this product is at your own risk, and the user accepts all resulting liability from installing and using of the product.

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