

## SANWA 107A54502A

# Sanwa Super Vortex Gen2 Pro ESC Instruction Manual

## 1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your Sanwa Super Vortex Gen2 Pro brushless SSL Electronic Speed Controller (ESC). Please read this manual thoroughly before using the product to ensure safe and optimal performance.

The Sanwa Super Vortex Gen2 Pro is an advanced brushless ESC designed for high-performance remote-controlled vehicles. It features improved circuitry, full aluminum casing, and enhanced telemetry functions, compatible with Sanwa's Synchronized Link (SSL) system.

## 2. FEATURES

- Compatible with SSR (Sanwa Super Response)
- Compatible with SSL (Sanwa Synchronized Link) system
- Compatible with PROGRAM BOX Gen2 (sold separately)
- Achieves 130% output compared to the previous Gen2 model due to circuit design review
- New function developed for CODE 10 (SSL: Remote Transmitter Setting) for M12S, M12S-RS, EXZES ZZ, and MT-44 transmitters
- Increased heat dissipation through cooling duct design
- Firmware update capability via Program Box Gen2
- Compatible with CODE AUX1 on EXZES Z, M12, MT-4S, MT-S (allows setting MODE 5~MODE 9)
- Compatible with CODE10 on M12S, M12S-RS, EXZES ZZ, MT-44 (allows setting MODE5~MODE14)

**Important Note:** The SUPER VORTEX Gen2 PRO does not have a reverse motor rotation function. Ensure this limitation is acceptable for your application.

## 3. SETUP

### 3.1 Component Connection

Carefully connect the Sanwa Super Vortex Gen2 Pro ESC to your motor, receiver, and battery. Ensure all connections are secure and observe correct polarity to prevent damage to the ESC or other components.

- **Motor Connection:** Connect the three motor wires to the corresponding terminals on the ESC.

- **Receiver Connection:** Plug the ESC's signal cable into the throttle channel of your compatible Sanwa receiver (e.g., RX-482, RX-472, RX-47T).
- **Battery Connection:** Connect your battery pack to the ESC's power input. Double-check positive and negative terminals.

### 3.2 Initial Calibration

Refer to your transmitter's manual for initial throttle calibration procedures. This typically involves setting the neutral, full throttle, and full brake positions to ensure proper communication between the transmitter and ESC.

### 3.3 SSL System Configuration

When using a compatible Sanwa M12S or Exzes ZZ transmitter with an RX-482/RX-472/RX-47T receiver, the SSL system allows direct adjustment of ESC programming values from the transmitter using the CODE AUX function. Consult your transmitter's manual for detailed instructions on configuring and utilizing the SSL system.



Figure 1: Sanwa Super Vortex Gen2 Pro ESC. This image shows the compact design of the ESC with its various connection points for motor, battery, and receiver.

## 4. OPERATING

## 4.1 Basic Operation

Once properly set up and calibrated, the ESC will respond to your transmitter's throttle input. Ensure your vehicle is on a stable surface before applying throttle. Always power on your transmitter first, then the vehicle's ESC, and power off the ESC first, then the transmitter.

## 4.2 Programming with SSL

The SSL system enables real-time adjustment of ESC parameters directly from your compatible Sanwa transmitter. Use the CODE AUX function on your transmitter to access and modify settings such as motor timing, brake force, and throttle response. Refer to your transmitter's manual for a complete list of adjustable parameters and their functions.

## 4.3 Telemetry Functions

The Super Vortex Gen2 Pro ESC supports telemetry data transmission to compatible Sanwa transmitters. This allows you to monitor critical information such as motor RPM, ESC temperature, motor temperature (if supported by your motor), and battery voltage directly on your transmitter's display. This feature aids in optimizing performance and preventing overheating.

# 5. MAINTENANCE

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## 5.1 Cleaning and Storage

Keep the ESC clean and free from dirt, dust, and moisture. Use a soft brush or compressed air to remove debris. Store the ESC in a dry, cool environment away from direct sunlight and extreme temperatures when not in use.

## 5.2 Firmware Updates

Sanwa may release firmware updates to improve performance or add new features. These updates can be applied using the optional Program Box Gen2. Refer to the Program Box Gen2 manual and Sanwa's official website for the latest firmware and update instructions.

## 5.3 Inspection

Regularly inspect all wires, connectors, and the ESC casing for any signs of damage, wear, or loose connections. Address any issues promptly to prevent operational problems.

# 6. TROUBLESHOOTING

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This section addresses common issues you might encounter. For more complex problems, contact Sanwa support or your authorized dealer.

- **ESC Not Powering On:**

- Check battery connection and charge level.
- Verify all wires are securely connected.
- Ensure the power switch (if applicable) is in the ON position.

- **Motor Not Responding:**

- Confirm proper motor wire connections.
- Recalibrate the ESC's throttle range with your transmitter.
- Check receiver connection and ensure the transmitter is powered on and bound.

- **Overheating:**

- Ensure adequate airflow around the ESC.
- Check motor timing and gearing; excessive timing or gearing can cause overheating.
- Verify the motor is not overloaded or damaged.

- **Inconsistent Performance:**

- Inspect all solder joints and connectors for corrosion or looseness.
- Check for radio interference.
- Ensure battery is fully charged and in good condition.

## 7. SPECIFICATIONS

Parameter	Value
Nominal Input Voltage	3.7V - 7.4V
Rated Current	1000A/Phase (Transistor Rating at 25°C)
Dimensions (L x W x H)	32.0mm x 36.8mm x 20.5mm (1.26"L x 1.45"W x 0.81"H)
Total Weight (w/o power capacitor)	41.7g
Model Name	SNW107A54502A
Compatible Devices	SANWA M12S or Exzes ZZ transmitter, RX-482/RX-472/RX-47T receiver, SANWA SUPER VORTEX STOCK ESC

## 8. WARRANTY AND SUPPORT

For warranty information, please refer to the documentation provided with your purchase or contact your authorized Sanwa dealer or the manufacturer directly. Warranty terms and conditions may vary by region and retailer.

For technical support, troubleshooting assistance beyond this manual, or service inquiries, please contact Sanwa customer support through their official website or your point of purchase. Keep your proof of purchase handy when seeking support.