

Eonvic SP21 4-Pin

Eonvic SP21 4-Pin IP68 Waterproof Panel Mount Aviation Connector

Model: SP21 4-Pin | Brand: Eonvic

1. INTRODUCTION

The Eonvic SP21 4-Pin IP68 Waterproof Panel Mount Aviation Connector is designed for reliable power and signal transmission in demanding environments. This connector features a robust plastic construction and an IP68 waterproof rating, making it suitable for industrial devices and outdoor applications. This manual provides essential information for the safe and effective installation, operation, and maintenance of your connector.

Key Features:

- **IP68 Waterproof Rating:** Ensures protection against dust and prolonged immersion in water.
- **4-Pin Configuration:** Suitable for various power and signal applications.
- **Panel Mount Design:** Facilitates secure installation on equipment panels.
- **Durable Plastic Construction:** Provides resistance to corrosion and wear.
- **High Reliability:** Tested for pin-to-pin continuity and high voltage integrity.

2. SAFETY INFORMATION

Please read and understand all safety instructions before installing or operating the connector. Failure to follow these instructions may result in electric shock, fire, or damage to equipment.

- **Electrical Safety:** Always disconnect power to the circuit before installing, wiring, or servicing the connector. Ensure all wiring is performed by qualified personnel in accordance with local electrical codes.
- **Waterproof Integrity:** While rated IP68, ensure the connector is properly mated and the cap is securely fastened when not in use to maintain its waterproof seal. Do not submerge the connector if it is not fully assembled or if the cap is missing/loose.
- **Proper Use:** Use the connector only within its specified voltage and current ratings (AC 500V/30A). Exceeding these limits can cause overheating and damage.
- **Handling:** Avoid dropping or subjecting the connector to excessive mechanical stress, which could compromise its integrity.

3. PRODUCT COMPONENTS

The Eonvic SP21 4-Pin Aviation Connector typically consists of a male plug and a female socket, along with a protective cap for the socket. The panel mount version includes components for secure attachment to a panel.



Figure 3.1: Eonvic SP21 4-Pin Aviation Connector showing the plug, socket, and protective cap.

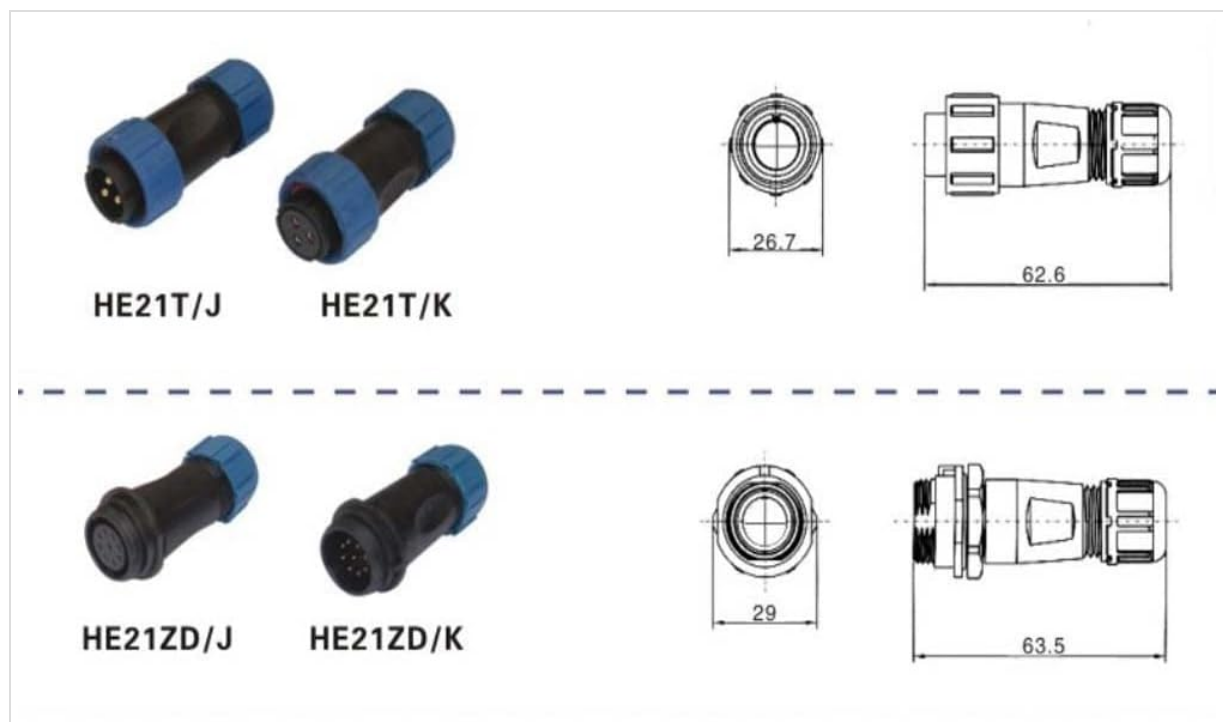


Figure 3.2: Exploded view illustrating the internal components of the SP21 connector, including the retaining nut, insert, panel connector shell, locking nut, back shell, compression nut, O-rings, rubber ring, and contacts.

4. SPECIFICATIONS

The following table details the technical specifications for the Eonvic SP21 4-Pin Aviation Connector:

Specification	Value
Model	SP21 4-Pin
Waterproof Level	IP68
Rated Current / Voltage	AC 500V / 30A
Withstand Voltage	AC 1500V
Panel Thread Diameter	21mm
Material	Plastic
Finish Type	Polished
Item Weight	1.48 ounces



芯数排列及技术特性表 Contact arrangement and spec

芯数number of contact	2	3	4	5	7	8	9	10	12
插针绝缘体正面图 Male contact face view									
额定电流Arated current(A)	30A	30A	30A	30A	15A	5A	5A	5A	5A
接触件直径contactdiameter	$\phi 3 \times 2$	$\phi 3 \times 3$	$\phi 3 \times 4$	$\phi 3 \times 5$	$\phi 2 \times 7$	$\phi 1 \times 8$	$\phi 1 \times 9$	$\phi 1 \times 10$	$\phi 1 \times 12$
工作电压rated voltage(AC.V)	500V	500V	500V	500V	500V	500V	500V	500V	400V
耐压test voltage	1500V	1500V	1500V	1500V	1500V	1500V	1500V	1200V	1200V
接触电阻contact resistance	1	1	1	1	2.5	5	5	5	5
线规mm ² /AWGwire size	$\leq 4.17/11$	$\leq 4.17/11$	$\leq 4.17/11$	$\leq 4.17/11$	$\leq 0.785/18$	$\leq 0.785/18$	$\leq 0.785/18$	$\leq 0.785/18$	$\leq 0.785/18$

Figure 4.1: Detailed contact arrangement and electrical specifications for various SP21 connector pin counts, including the 4-pin version.

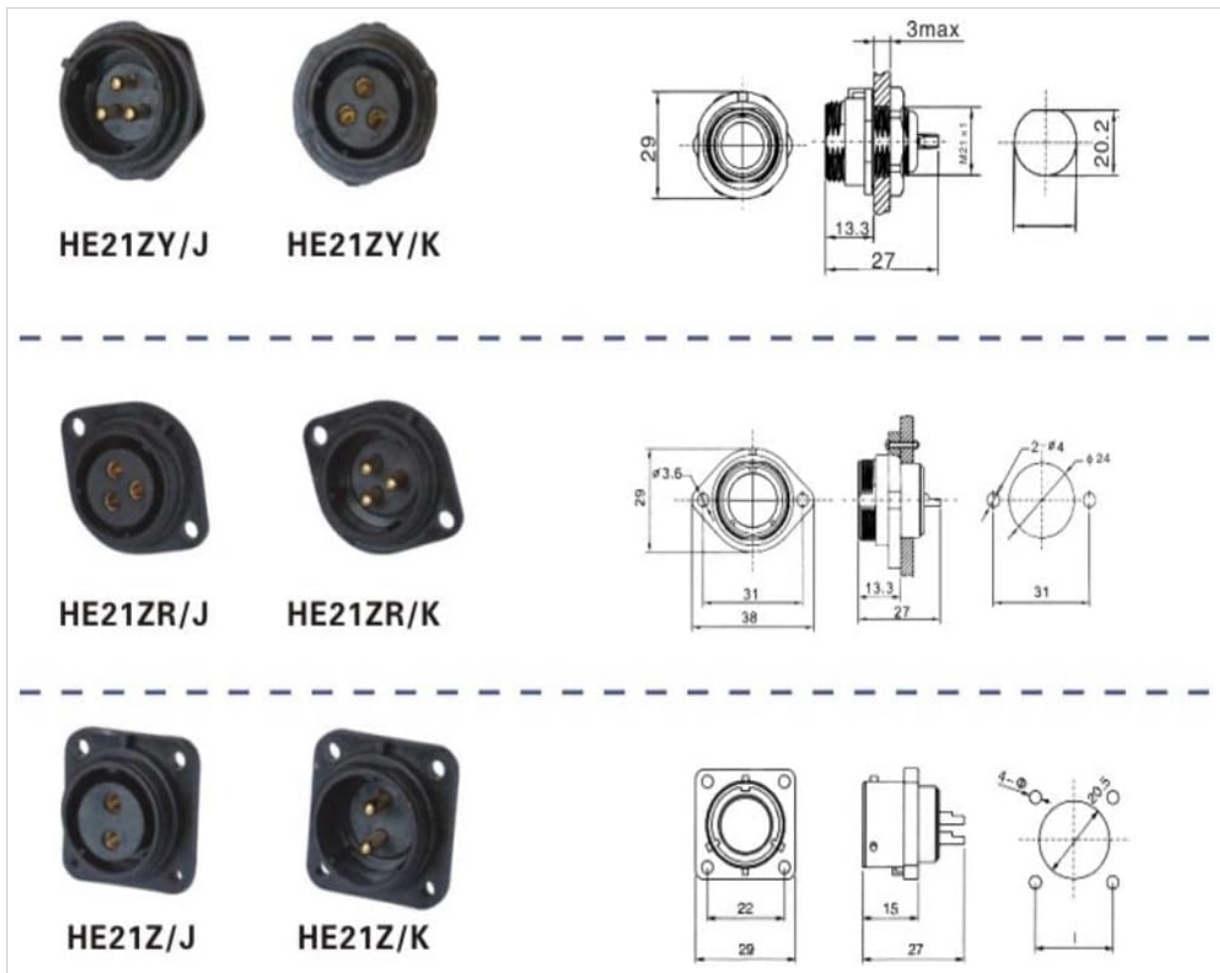


Figure 4.2: Technical drawings showing various panel mount configurations (HE21ZY/J, HE21ZR/J, HE21Z/J) with their respective dimensions and mounting hole patterns.

5. SETUP AND INSTALLATION

Proper installation is crucial for the performance and waterproof integrity of the connector.

5.1 Panel Mounting

- 1. Prepare Panel:** Drill a circular hole with a diameter of approximately 21 mm (as indicated by the panel thread diameter specification) in your equipment panel. Refer to Figure 4.2 for specific mounting dimensions and hole patterns for different panel mount types.
- 2. Insert Connector:** Insert the threaded portion of the female socket through the prepared hole from the front of the panel.
- 3. Secure with Nut:** From the back of the panel, thread the retaining nut onto the connector and tighten it securely. Ensure the O-ring is properly seated to create a watertight seal against the panel.

5.2 Wiring

The SP21 connector uses a screw-type terminal for wiring. Ensure correct polarity and secure connections.

- 1. Disassemble:** Unscrew the back shell from the connector body to expose the wiring terminals.
- 2. Strip Wires:** Carefully strip approximately 5-7 mm of insulation from the ends of your 4 wires.
- 3. Connect Wires:** Insert each stripped wire into its corresponding terminal on the insert and tighten the screw securely. Ensure no stray wire strands are present that could cause a short circuit.
- 4. Reassemble:** Slide the back shell over the wired terminals and screw it back onto the connector body until it is finger-tight. Ensure the rubber ring is in place for strain relief and waterproof sealing.

6. OPERATING INSTRUCTIONS

Using the Eonvic SP21 connector is straightforward once installed and wired correctly.

1. **Mating the Connector:** Align the male plug with the female socket. Push the plug firmly into the socket until it clicks or seats fully.
2. **Securing the Connection:** Twist the threaded coupling ring on the plug clockwise until it is hand-tight. This action compresses the O-rings and ensures the IP68 waterproof seal. Do not overtighten.
3. **Disconnecting:** Twist the threaded coupling ring counter-clockwise to loosen it. Then, pull the plug straight out from the socket.
4. **Protection:** When the socket is not in use, ensure the protective cap is securely fastened to maintain the IP68 rating and prevent ingress of dust or moisture.

7. MAINTENANCE

Regular maintenance helps ensure the longevity and reliable performance of your connector.

- **Cleaning:** Periodically inspect the connector for dirt, dust, or debris. Clean with a soft, dry cloth. For stubborn grime, a slightly damp cloth can be used, ensuring the connector is completely dry before use.
- **Inspection:** Check the O-rings and rubber seals for any signs of wear, cracking, or damage. Damaged seals can compromise the waterproof rating. Replace the connector if seals are compromised.
- **Contact Integrity:** Ensure the pins and sockets are free from corrosion or bending. Bent pins can lead to poor connections or short circuits.
- **Tightness:** Verify that the panel mounting nut and the coupling ring remain securely tightened.

8. TROUBLESHOOTING

If you encounter issues with your Eonvic SP21 connector, consider the following troubleshooting steps:

- **No Power/Signal:**
 - Check if the connector is fully mated and the coupling ring is tightened.
 - Verify all wiring connections are secure and correct, checking for loose wires or incorrect polarity.
 - Inspect the pins and sockets for damage or corrosion.
 - Ensure the power source or signal generator is functioning correctly.
- **Water Ingress:**
 - Confirm the coupling ring is fully tightened when the connector is mated.
 - Check the condition of the O-rings and rubber seals for any damage or improper seating.
 - Ensure the protective cap is securely in place when the connector is unmated.
 - Verify the panel mount nut is tight and the panel gasket is properly installed.
- **Difficulty Mating/Unmating:**
 - Ensure proper alignment of the keyways before pushing the plug into the socket.
 - Check for any debris or foreign objects in the connector.
 - Do not force the connection; if resistance is met, re-align and try again.

If problems persist after following these steps, contact Eonvic customer support for further assistance.

9. WARRANTY AND SUPPORT

Eonvic products are manufactured to high standards and undergo rigorous testing to ensure quality and reliability. While specific warranty details are not provided in this manual, Eonvic typically offers support for its products.

For technical support, warranty inquiries, or to report any issues with your Eonvic SP21 connector, please refer to the contact information provided with your purchase or visit the official Eonvic website. When contacting support, please have your product model (SP21 4-Pin) and any relevant purchase information available.