TenNuoDa SP28 (9 PIN)

TenNuoDa SP28 Waterproof Connector User Manual

Model: SP28 (9 PIN)

Product Overview

The TenNuoDa SP28 series waterproof connector is designed for reliable and secure electrical connections in demanding environments. This 9-pin model features a docking type design with M28 x 1.5mm threading, suitable for power cable connections in bridge electronic equipment and various industrial applications. Its robust construction ensures durability and stable performance.



Figure 1: TenNuoDa SP28 9-PIN Waterproof Connector. This image shows the assembled male and female connector parts, highlighting its compact and robust design.

Key Features

- **PA66 Shell Material:** Constructed from high-quality PA66 and PA6 shell materials, ensuring durability, stability, corrosion resistance, and flexibility. Designed to prevent cracking at low temperatures, providing a long service life.
- **Solid Copper Contacts:** Features copper gold-plated contacts and solid pins for excellent oxidation resistance and insertion performance, ensuring reliable electrical conductivity and extended lifespan.
- **Welding Connection:** Designed for secure welding connections using an electric soldering iron, ensuring a firm and stable electrical bond.
- **M28 x 1.5mm Thread:** Equipped with M28 x 1.5mm threading for easy and secure mounting installation.
- **Waterproof Design:** Provides reliable waterproof protection for electrical connections.
- **Wide Applicable Scope:** Suitable for various applications including communication equipment, instrumentation, computers, program-controlled machines, alarms, and general electronic equipment.



Figure 2: Exploded view of the SP28 connector, showing its individual components including the male plug assembly and female socket components. This illustrates the internal structure and materials used.

Specifications

Parameter	Value
Model	SP28 (9 PIN)

Parameter	Value
Rated Voltage	380V
Rated Current	10A
Thread Specification	M28 x 1.5mm
Shell Material	PA66, PA6 Nylon
Contact Material	Copper Gold-Plated
Connection Type	Welding
Waterproof Rating	(Implicit from "Waterproof Connector")
Item Weight	2.82 ounces
Manufacturer	TenNuoDa

Setup and Installation

Proper installation is crucial for the performance and longevity of the SP28 waterproof connector. Follow these steps carefully:

1. **Prepare Cables:** Strip the insulation from the ends of the power cables to expose the conductive wires. Ensure the wire gauge is appropriate for 10A current.
2. **Disassemble Connector:** Carefully unscrew and separate the male plug and female socket components. Note the order of parts, including sealing rings and locking nuts.
3. **Wire Connection (Welding):**
    - Identify the corresponding pins on both the male and female connector inserts.
    - Using an electric soldering iron, solder the prepared cable wires to the respective copper gold-plated pins. Ensure strong, clean solder joints.
    - Verify that there are no short circuits between adjacent pins.
4. **Assemble Connector:**
    - Thread the cable through the locking nut and silicone sealing ring before inserting the soldered pins into the connector housing.
    - Ensure all components, especially the silicone sealing rings, are correctly seated to maintain the waterproof integrity.
    - Screw the parts together firmly, ensuring the M28 x 1.5mm thread engages properly.
5. **Mounting (Optional):** If mounting is required, use the M28 x 1.5mm thread to secure the connector to the desired panel or equipment housing.



Figure 3: Close-up view illustrating the male plug and female socket components, emphasizing the insulator, sealing rings, and solid pins. This image helps in understanding the assembly process.

Operating Instructions

Once installed, operating the SP28 connector is straightforward:

1. **Connection:** Align the male plug with the female socket, ensuring the keyways are correctly oriented. Push the plug firmly into the socket until it clicks or seats securely.
2. **Disconnection:** To disconnect, grasp both the male plug and female socket firmly and pull them apart. Avoid pulling by the cables.
3. **Dust Cover:** When the connector is not in use, ensure the dust cover is securely attached to the female socket to protect the pins from dust, moisture, and debris.



Figure 4: The SP28 connector shown with its protective dust cover attached, demonstrating its readiness for use or storage.

Maintenance

Regular maintenance ensures optimal performance and extends the lifespan of your SP28 connector:

- **Cleaning:** Periodically inspect the connector for dirt, dust, or corrosion. Clean the contacts and housing with a dry, lint-free cloth. For stubborn dirt, a small amount of electrical contact cleaner can be used, ensuring it evaporates completely before re-connection.
- **Inspection:** Check the silicone sealing rings for any signs of wear, cracks, or damage. Damaged seals can compromise the waterproof integrity. Replace if necessary.
- **Cable Integrity:** Ensure the cables connected to the connector are not frayed, cut, or damaged. Repair or replace damaged cables immediately.
- **Storage:** When not in use, store the connector in a clean, dry environment with the dust cover in place to protect the pins.



Figure 5: Two SP28 connectors, one with its dust cap, illustrating the importance of protecting the connection points when not in use.

Troubleshooting

If you encounter issues with your SP28 connector, consider the following:

Problem	Possible Cause	Solution
No electrical connection	Loose or poor solder joints; corroded contacts; incorrect wiring.	Inspect solder joints and re-solder if necessary. Clean contacts. Verify wiring against pinout.
Connector difficult to mate/unmate	Misalignment; debris in threads or pins; damaged components.	Ensure correct alignment. Clean threads and pins. Inspect for physical damage.
Water ingress	Damaged or improperly seated sealing rings; loose connection.	Inspect and replace damaged sealing rings. Ensure connector is fully tightened.
Overheating	Overcurrent; poor contact resistance.	Ensure current does not exceed 10A. Check for clean and secure contacts.

Warranty and Support

TenNuoDa is committed to providing high-quality products. For any issues or support needs, please contact TenNuoDa customer service. While specific warranty details are not provided in this manual, general product support is available. For further assistance, please refer to the official TenNuoDa store or contact their support team directly. You can visit the TenNuoDa Store on Amazon for more information.

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