



Installation instructions for Yamaichi Y-SOL4 F.A.T. plug connectors



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Introduction

The Yamaichi Y-SOL4 F.A.T. is a plug connector developed for free assembly in the field. No special crimping tool is needed. The cable and the contact are connected by closing the spring contact in the plug connector. A typical application is flexible line lengths in a solar collector. Y-Sol4 F.A.T. is available in a socket variant and a plug variant. Both have a stable housing of hard plastic with a screw seal. There is a sealing ring mounted on the socket side. This structure ensures reliable power transmission and protection compliant with IP67. The socket is the anode "+" in the circuit (Fig. A). The plug variant is the cathode "-" (Fig. B). Two spanners are needed for the screw connection (Fig. C). The spanners can also be used to loosen the connected plug connector again. More technical data can be found in the data sheet for the Y-Sol4 F.A.T. plug connector.



Fig. A Yamaichi Y-SOL4 F.A.T. socket variant (anode)



Fig. B Yamaichi Y-SOL4 F.A.T. plug variant (cathode)

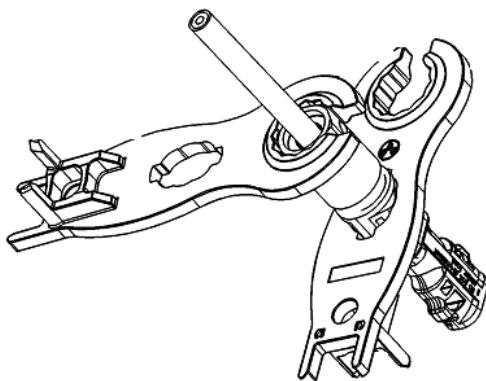


Fig. C Y-Sol4 F.A.T. spanner

Warning instructions

Under the influence of light, solar modules produce electric power. When solar modules and their components are not installed and handled according to specifications, danger can result to life and limb. Solar modules may therefore only be installed by trained personnel in compliance with applicable instructions.



- ! Plug connectors may never be disconnected or connected under load.
- ! Contacts or conducting parts may never be touched with unprotected hands.
- ! Plug connectors may not be connected when wet or dirty.
 - ! Insulated tools must always be used during installation.
- ! The plug connector should not be exposed to direct contact with water during operation.
- ! The plug connector should not be exposed to long-term UV radiation during operation.

To avoid damage to the plug connectors, they should not be exposed to unnecessary forces or impacts during transport and assembly.

Installation

Important note!

Please read the installation instructions completely before installation. Carry out the installation only after reading the entire installation instructions and based on the instructions. If questions arise before or during installation that you cannot answer using the installation instructions, do not start or continue the installation until you have clarified the questions by discussing them with us. We remind you that we cannot assume liability for defects or damages due to incorrect installation – particularly due to failure to comply with our installation instructions.

Remark! First disconnect the power connection to the solar module to avoid electrocution.

Using suitable material:

Solar cables:

A suitable, double-insulated solar cable should be used during installation. With the following parameters:

Conductor cross section: 2.5mm² up to 6.0mm²
Outer diameter (D): 5,8mm up to 7,2mm



Fig. D Solar cables

Y-Sol4 F.A.T. spanner:

The spanner is used to tighten the screw connection to the plug connector (see illustration). The spanner is designed to "slip" once the right torque has been reached. This prevents stripping the screws. The lateral guides are used to loosen the snap arms to open a Y-Sol4 plug connector that has already been connected. Two spanners are needed for the assembly of the Y-Sol4 F.A.T.

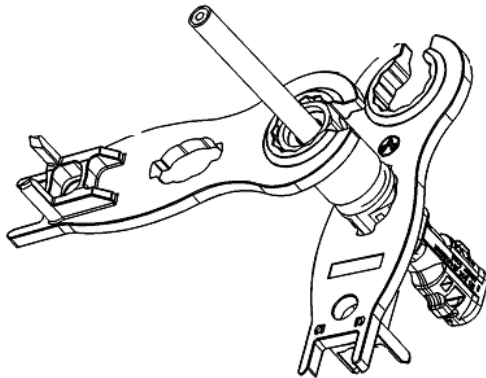
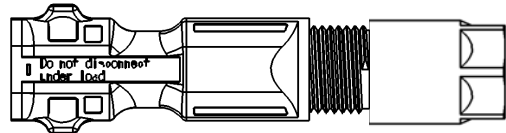


Fig. E Y-Sol4 F.A.T. spanners

Y-Sol4 F.A.T. plug connector:

Y-Sol4 F.A.T. plug connectors are delivered packaged in plastic bags. They are preassembled as shown in the illustrations below. One bag generally contains 50 sockets and 50 plugs.



Socket (preassembled)

Plug (preassembled)

Fig. F Y-Sol4 F.A.T. female/male

Stripping cable insulation

A suitable tool (e.g. a wire stripper) must be used to strip the insulation from the cable. The stripped section of insulation is typically 12mm to at most 16mm long (Fig. G). Correct stripping of insulation is required for later reliable power transmission.

Please be sure that the individual strands of the copper wire remain twisted.

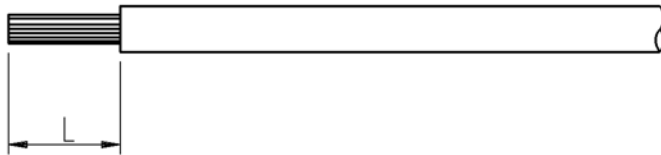


Fig. G Stripping of cable insulation between 12mm and 16mm (L)

Connecting the cable line and contact

Open the screw connection of the plug connector. Insert the stripped cable into the plug connector as shown in Fig. H. Be sure that the copper line of the cable is inserted up to the front contact tip. Otherwise, there is a risk that the copper line will later not be properly contacted.



Fig. H Inserting the cable

After the cable is inserted, press the spring contact down until it snaps in (Fig. I). Correct engagement is indicated by haptic feedback and a snapping sound. Check that the line and contact are reliably connected (see diagram in Fig. I).

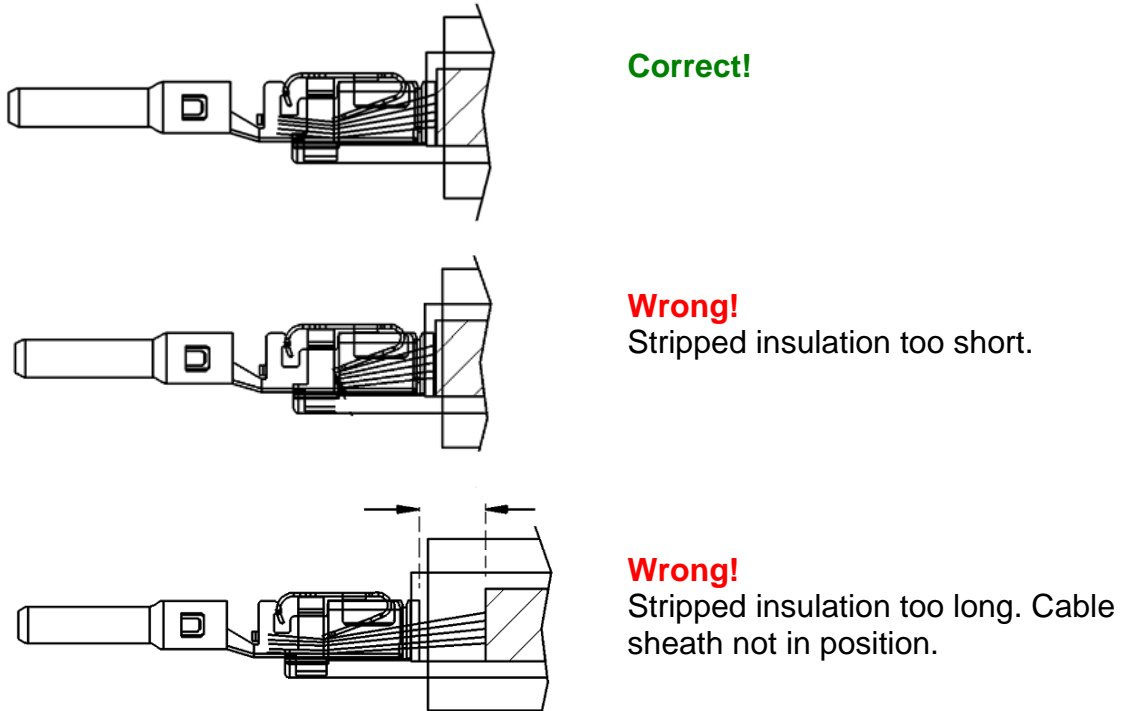


Fig. I Closing the spring contact

Closing the screw connection

Push the contact into the housing of the plug connector as shown in Fig. J. The narrow side of the contact should lie in a line flush with the narrow side of the housing (see the illustration below).

The red sealing ring must be inserted completely into the housing. Note the last picture in Fig. J. The seal here is inserted completely into the housing. Now the screw connection can be tightened.

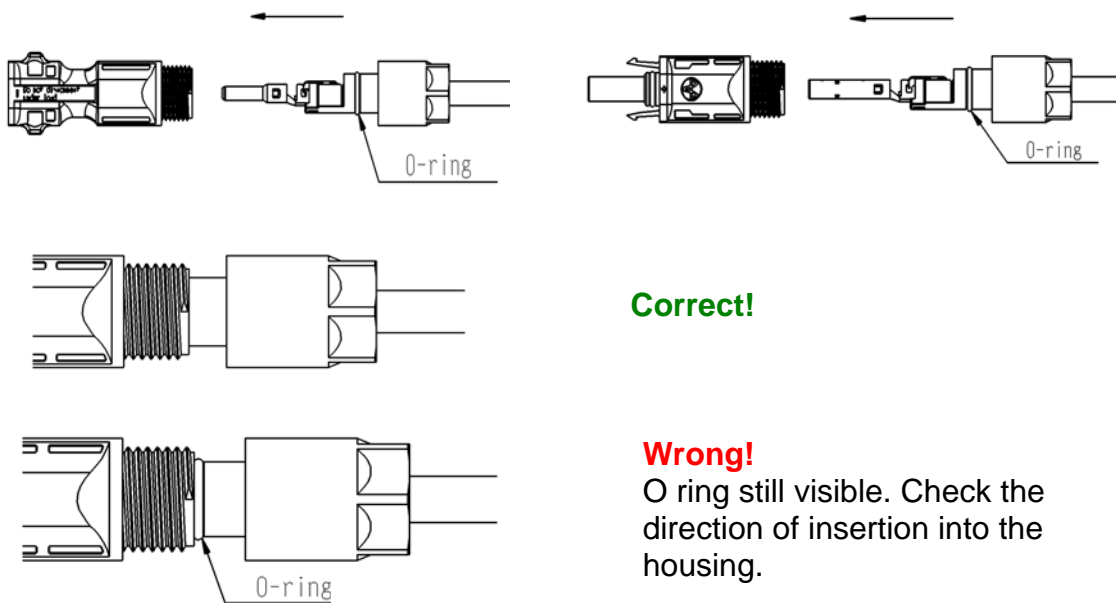


Fig. J Preparing the screw connection of the plug connector

After a few turns of the screw by hand, use the spanners to tighten the connection (Fig. K). The spanner slips over the screw with a ratchet effect once the proper torque has been reached. The screw then has the correct tightness and no additional force should be applied. This avoids stripping of the screws.

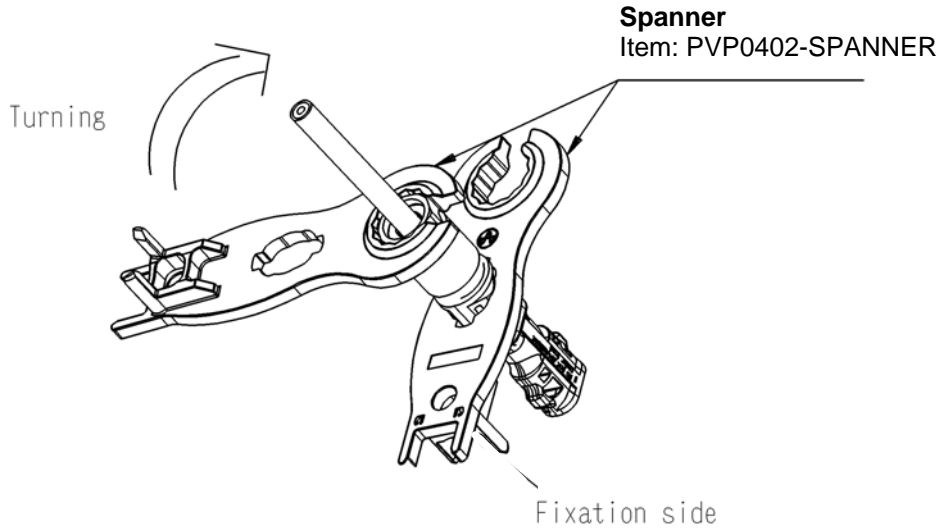


Fig. K Screw connection

After the screw connection is complete, the plug connector should appear as shown in Fig. L. The screw connection is completely tightened.

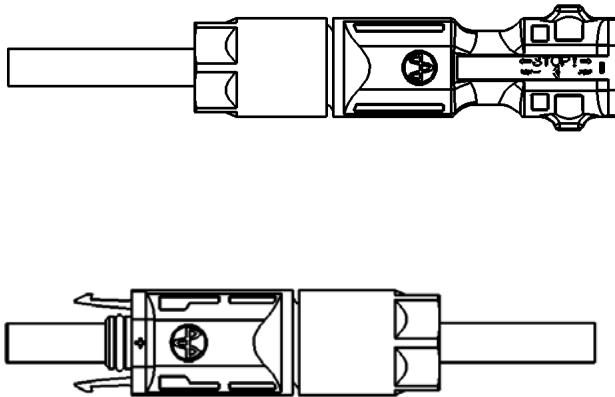


Fig. L Assembled plug and socket with cable

Assembling the plug

Connecting the Y-Sol4 F.A.T.

The Y-Sol4 F.A.T. plug connector has a closure mechanism that prevents unintentional opening during operation. This mechanism is implemented with two snap arms in the socket and corresponding snap openings in the plug.

To close the plug connector, the socket and plug must be plugged together. See Fig. M.

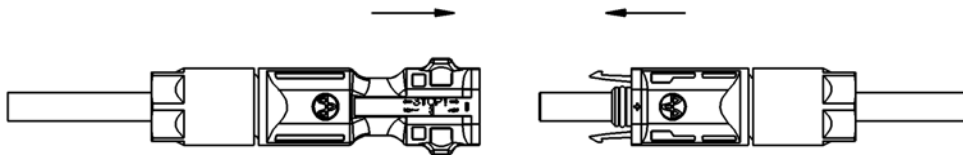


Fig. M Connecting the Y-Sol4 F.A.T.

Opening the Y-Sol4 F.A.T.

The plugged Y-Sol4 F.A.T. can be opened with the two guides of the spanner. To do this, insert the guides into the snap openings as shown in Fig. O.

Once the guides push the snap arms up, the plug connector can be opened by pulling on it.

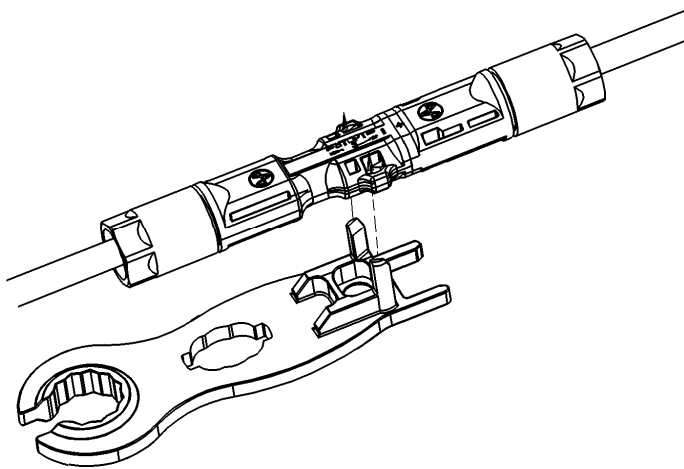


Fig. N Opening the Y-Sol4 F.A.T.

Tests after assembly

Contact position

To ensure the proper electrical functionality of the Y-Sol4 F.A.T. plug connector, contact between the socket and plug must be in the correct position in each housing. If the assembly has been carried out as described in these installation instructions, this contact position is correct. To check the contact position after assembly, the steps shown in Fig. O can be followed. The correct contact position is indicated by visibility of the specific white line on the test gauge.

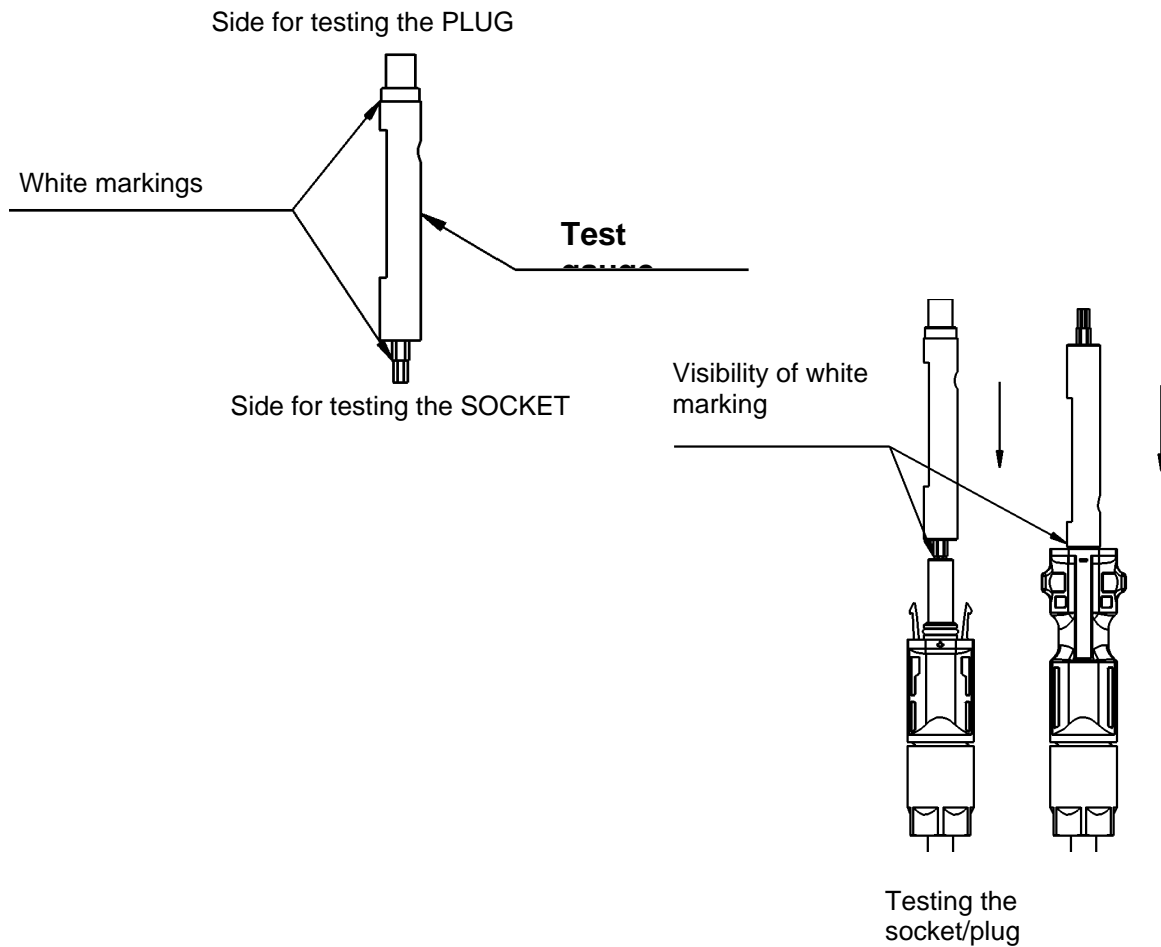


Fig. O Testing the contact position

Yamaichi order numbers for the Y-Sol4 F.A.T.

Y-Sol4 F.A.T. male	PVP0402-202-0202-000
Y-Sol4 F.A.T. female	PVS0402-202-0202-000
Spanner tool	PVP0402-SPANNER
Test gauge	PVK-02-001