

# SOLARIXPEDIA

## How-to: 10 Tips for Installing Solarix Components

### HOW TO INSTALL SOLARIX COMPONENTS

Just as we did for Solarix installation cables, we have prepared an **installation guide** for Solarix components as well. This guide covers the **most important procedures**, which are based on the installation standard **EN 50174\*** (where indicated) and apply to all currently available Solarix components (i.e., patch panels, keystones, outlets, etc.) in all categories.



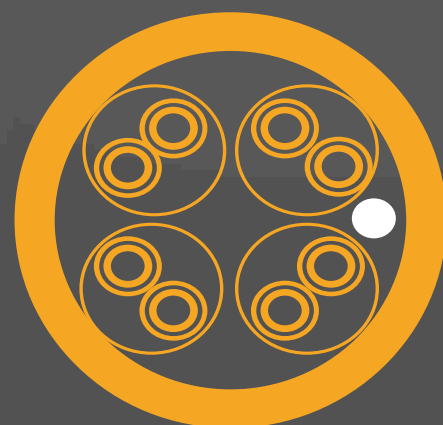
When installing components, remove only the minimum necessary length of the installation cable sheath (EN 50174-2, part 5.3.6.2), in such a way as to avoid damaging the conductor insulation (an installation cable is a cable with solid conductors).



When making terminations, always preserve the original twist of the pairs as much as possible, ideally all the way to the point where the cable is mechanically terminated in the component (EN 50174-2, part 5.3.6.2).



For shielded cabling, ensure that the cable shield is securely connected to the component shielding at both ends (EN 50174-2, part 5.3.6.3). Always properly ground all links installed in this way. The grounding and bonding systems for the cabling must comply with EN 50310.




To connect the shielding, use the ground wire (for shielded CAT5E, CAT6, and CAT6A cables) or the braid (for shielded CAT7, CAT7A, and CAT8 cables) in combination with the aluminum foil in F/UTP, U/FTP, F/FTP as well as S/FTP cables. This is the only way to ensure that the shielding functions properly.




Ensure adequate protection against dust, liquids, and other contaminants (EN 50174-1, part 4.2.7.1), both during installation (including subsequent finishing work at the installation site) and also during operation.


# HOW TO INSTALL SOLARIX COMPONENTS




Each component must be properly marked in accordance with the specifications in the documentation. The marking must be permanent, unalterable, and must not be affected by the surrounding environment (EN 50174-1, part 4.3.4). Ideally, the marking should be printed, machine-applied, or manufactured as an integral part of the components. Hand-written labeling may not be legible in all circumstances.



Always use the proper tools for the product when terminating installation cables to components (i.e., a punch down tool with the correct type of termination blade, the correct crimping pliers, etc.).



If available, always use the component's cable management system (for example, for patch panels with a cable management bar, secure the installation cable directly to the panel body with a cable tie; do the same for jacks or keystones).



During installing components, you must always ensure that all important requirements are met (e.g., compliance with the minimum cable bending radius, etc.), see EN 50174-1, part 4.2.7.1. Cable routes and their individual components (e.g., outlets, floor boxes, junction boxes, etc.) must be prepared in advance and sufficiently sized for this purpose. This is particularly important for thicker and less flexible cables (e.g., CAT6A and higher).

**PASS**

Thoroughly test the installed cabling using a certification tester (e.g., Fluke DSX 8000) in accordance with the applicable CENELEC or ISO/IEC standard (i.e., do not use TIA standards), using the Permanent Link topology (i.e., with Permanent Link adapters). All tested links must pass.

## FINAL TIPS

- Always require a gold plating thickness of **50 µin** on all components (their pins) from your suppliers. A thinner plating (e.g., 10 µin or less) is **insufficient** to ensure good **mechanical** and **electrical** properties of the component. This applies primarily to patch panels, keystones, jacks, connectors, and patch cables.

- For higher categories (e.g., CAT6, CAT6A, etc.), require **Component Level** certification along with confirmation of compatibility with **4PPoE** (i.e., the latest PoE standard).
- Solarix Category 6A shielded components are, when installed in accordance with the instructions in this guide and the requirements of the EN 50174 standard, **designed to be immune** to Alien Crosstalk. These components meet the requirements for this parameter **by design** (the so-called mitigation by design, see EN 50173-1, Annex A). In installations where **shielded Solarix Category 6A components** are used together with **shielded Solarix Category 6A, 7, and 7A installation cables**, and the **installation procedures** mentioned in EN 50174 and above are followed, it is not necessary to test the cabling for Alien Crosstalk.

\* ) This installation guide contains only a selection of the most important procedures for installing Solarix products, specifically for indoor installations. The complete rules and guidelines regarding the installation of structured cabling can be found in the referenced installation standard EN 50174 and its parts. We always recommend having these documents on hand and strictly adhering to them. Compliance with all installation procedures specified in these standards is an important criterion for meeting the conditions of the Solarix standard and system warranties and is the only way to ensure the proper functioning of all our products.

# SOLARIX COMPONENT WIRE MAP DIAGRAMS

- All Solarix components feature a color-coded wire map **showing how to terminate the pairs of** installation cables to the component's termination block.
- Both wiring methods are always shown, according to both the **T568A** and **T568B** standards.
- Choose the method that is more familiar to you (usually T568B) and use this wiring map **throughout the installation** for all other components.
- Note: The color coding will typically differ for each component type - i.e., to ensure correct wiring (i.e., T568A or T568B), it is always necessary to connect the cable pairs **exactly** according to the colors marked on the **specific product**.
- For proper termination, always use the **correct type of tool** according to the termination block type (e.g., 110, Krone). If the product has a tool-less block, you **will not need** a punch down tool.

## EXAMPLE: Component S XKJ-5E-UTP-BK-SA\*\*



### T568A

- white-blue (5)
- blue (4)
- white-orange (3)
- orange (6)
- white-brown (7)
- brown (8)
- green (2)
- white-green (1)

### T568B

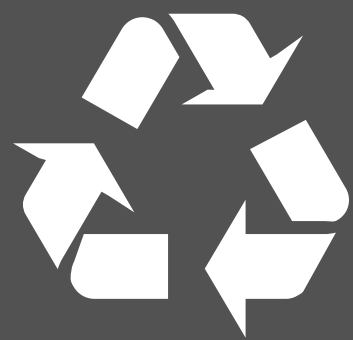
- white-blue (5)
- blue (4)
- white-green (3)
- green (6)
- white-brown (7)
- brown (8)
- orange (2)
- white-orange (1)

\*\*\*) This is just an example. The color sequence may vary for each Solarix component depending on whether the T568A or T568B wiring configuration is used.

# IMPORTANT SAFETY INSTRUCTIONS

- Solarix components are intended exclusively for voltages below **50 V (AC)** and **75 V (DC)** - i.e., they are used for transmitting **digital signals** and **PoE** power (802.3af/at/bt) in data networks.
- All components must be **protected** from any mechanical or other damage.
- **Do not store** or **use** the components outdoors, in dusty or otherwise contaminated environments, near sources of heat or water, or in locations subject to shocks or vibrations.
- Also, do not expose them to any **chemicals**, **chemical preparations**, **paints**, **adhesives**, or **cleaning agents**, either during installation or while the cabling is in use.
- The storage temperature range is **-40 to 70 °C**, and the operating temperature range is **-10 to 60 °C**.
- The **minimum length** of an installed segment in a Permanent Link topology must be at least **10 m**, and the **maximum length 90 m** (this is the so-called electrical length, i.e., the actual length of the pairs in the cable).
- When selecting components, you must assess their suitability for the given environment according to the **MICE classification** (i.e., Mechanical, Ingress, Climatic/Chemical, Electromagnetic), see EN 50173-1, part 5.1.2 and G3. The selected product must then comply with the **environmental conditions** in which it will be installed.
- When installing Solarix components, always follow the requirements and recommendations of the installation standard **EN 50174** or any **related** standards referenced therein.
- For **safety** reasons, every metal component in a data rack must be **bonded** and properly **grounded**, even in the case of unshielded cabling or fiber-optic cabling (e.g., metal FO patch panels).
- The entire building bonding and grounding system must **comply with the requirements** of **EN 50310** and all related standards. This must always be verified before the **design phase** and the actual **installation of the cabling** begins.
- For installation, use our **installation guides**, which are available free for download on the website [solarix.cz](http://solarix.cz) or are included directly with selected products.

- Always connect only installation cables and patch cables that **comply with cabling standards**, specifically EN 50173, ISO/IEC 11801, EN 50288, and EN 60603-7, to Solarix components. Failure to do so may result in irreversible damage to the components used.
- When all of the above **instructions** and **procedures from EN 50174** are followed, all of our components are **safe to use**.



If you have any **packaging** or **parts** of packaging left over after installing Solarix products, be sure to dispose of them properly.

## NEED SOME ADVICE?

If you **need advice** with installing Solarix products, please **contact us** at [info@solarix.cz](mailto:info@solarix.cz) or by phone at +420 840 505 555. This document serves as a **user manual**.

[www.solarix.cz](http://www.solarix.cz)

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