Televes

# Ethernet Patch Cord U/UTP Cat 6 LSFH, white

Preconnected Ethernet patch cord with RJ45 connector at each end. It is made of a Category-6 data cable, U/UTP type, with a flexible copper inner conductor 24 AWG and outer sheath made of white LSFH (Low Smoke Free of Halogen).

| | |
|---|---|
| **Ref.** | 209011 |
| **Logical ref.** | PK6P05W |
| **EAN13** | 8424450221976 |

## Other features

| | |
|---|---|
| **Colour** | White |
| **Length** | 0.50 m |

## Packaging info

| | |
|---|---|
| **Box** | 10 pcs. |

## Physical data

| | |
|---|---|
| **Net weight** | 27.00 g |
| **Gross volume** | 0.04 dm³ |
| **Gross weight** | 27.00 g |
| **Width** | 12.00 mm |
| **Height** | 505.00 mm |
| **Depth** | 10.00 mm |
| **Main product weight** | 27.00 g |

## Highlights

- U/UTP data Cable
- Flexible copper inner conductor (24AWG)
- Compatible with PoE/PoE+ (Power over Ethernet) technology, allowing the cable to power network devices

- LSFH (Low Smoke Free Of Halogen) outer sheath
- 72% nominal speed
- RJ45 connectors with gold plated connector ends

## Discover

**Category 6**

Data cable category Cat 6 complies with the standard for Gigabit Ethernet and it is backwards compatible, with the standards of the inferior categories (Cat 5/5e and Cat 3). Category 6 evolves over category 5E, allowing to achieve transmission frequencies of up to 250 MHz (in each pair) and 1 Gbps of throughput. It includes characteristics and specifications to avoid crosstalk and noise. This type of data cable can be used in 10BASE-T, 100BASE-T and 1000BASE-T (Gigabit Ethernet) compliant systems.

Our category 6 cables are characterized:

- Comply with TIA/EIA-568B.2-1
- Crucifix type padding
- Transfer rate up to 1Gbps
- Frequency range of up to 250 MHz and up to 400MHz in some references
- Includes rip cord to make it easier to strip the cable
- Nominal impedance of 100 ohms
- Maximum resistance per conductor below 9.38 ohms/100m

The RJ45 is a connector commonly used in structured cable networks. With up to 8 connection pins, it is adequate both for data networks (8 pairs), as well as telephone networks (2 pairs). It is usually used in networks compliant with standards TIA/EIA-568-B.

**What is the PoE technology?**

PoE (Power over Ethernet) technology enables the simultaneous transmission of power and data over the same Ethernet network cable, eliminating the need for separate power supplies. Currently, there are three main standards: IEEE 802.3af (PoE), IEEE 802.3at (PoE+), and IEEE 802.3bt (PoE++/4PPoE). The latter defines two additional types (Type 3 and Type 4) with higher power levels, making four PoE levels in total.
The three aspects that differentiate the different types of PoE are:

- Maximum PSE (Power Sourcing Equipment) Power: Indicates the maximum amount of electrical power that can be supplied by an equipment over the Ethernet cable.
- Power for the PD (Powered Device): This is the electrical power that can be received by the device powered by the cable.
- Number of Twisted Pairs Used: Refers to how many twisted pairs in the Ethernet cable are used to deliver electrical power.

| Standard | Type of PoE | | Maximum PSE Power | Power for the PD | No. of Pairs Used |
|---|---|---|---|---|---|
| **IEEE 802.3af** | Type 1 | PoE | 15.4W | 12.95W | 2 |
| **IEEE 802.3at** | Type 2 | PoE+ | 30W | 25.5W | 2 |
| **IEEE 802.3bt** | Type 3 | PoE++ | 60W | 51W | 4 |
| | Type 4 | 4PPoE | 90-100W | 71W | 4 |

Recommended uses according to PoE type:

- Type 1: IP phones, basic IP cameras. low-demand Wi-Fi access points, sensors or simple IoT devices.
- Type 2: Dual band Wi-Fi access points, IP motion cameras (PTZ), IP video phones, alarm systems.
- Type 3: Wi-Fi 6 / Wi-Fi 6E access points, heated PTZ cameras, multimedia terminals, video conferencing equipment.
- Type 4: Monitors or touch screens, desktops, high-performance network equipment.

Devices compatible with a specific type of PoE can also be powered using a higher type, which provides greater versatility and scalability in installations.
The recommended data cables and connectors for Types 3 and 4 are CAT6A and above with shielding. This recommendation is based on their better ability to dissipate the heat generated during the transmission of electrical power.
CAT6A UTP cables and connectors are technically compatible with PoE++ technology, but they may present limitations over distances greater than 55 m. Since they lack shielding, thermal dissipation is

less efficient, which can cause voltage drops along the run and affect the proper operation of the powered device. This also happens with CAT5e and CAT6; they are compatible with PoE++ but not recommended for distances over 55 m.
Main advantages of PoE technology in installations:

- Quick and cost-effective installation by using the same cable for power and data transmission.
- Greater installation flexibility as there is no need to rely on auxiliary power sockets.
- More efficient management and optimised maintenance thanks to the monitoring and administration of the power supply of all equipment from a single point.
- Cost reduction by avoiding electrical conduits and external power supplies.
- Increased safety by minimising electrical risks in the installation, thanks to the use of low voltage.

# **Technical specifications** : Ref. 209011

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Type** | | U/UTP | | | | | | | | | | | |
| **Categorie** | | Cat 6 | | | | | | | | | | | |
| **Transmission bandwidth** | | 250MHz | | | | | | | | | | | |
| **Transfer rate** | | 1Gbps | | | | | | | | | | | |
| **Conductor Diameter** | in | 0.008 | | | | | | | | | | | |
| **Conductor Material** | | Flexible copper | | | | | | | | | | | |
| **Conductor type AWG** | | 24 | | | | | | | | | | | |
| **Conductor isolation Diameter** | in | 0.038 | | | | | | | | | | | |
| **Conductor isolation Material** | | Polyethylene | | | | | | | | | | | |
| **Crucifix filler** | | Yes | | | | | | | | | | | |
| **Outer sheath Diameter** | in | 0.224 | | | | | | | | | | | |
| **Outer sheath Material** | | LSFH | | | | | | | | | | | |
| **Outer sheath Thickness** | in | 0.024 | | | | | | | | | | | |
| **Rip cord** | | No | | | | | | | | | | | |
| **Cable length** | m | 0.5 | | | | | | | | | | | |
| **Data connector type** | | RJ45 | | | | | | | | | | | |
| **Spark Test** | Vac | 3000 | | | | | | | | | | | |
| **Nominal impedance** | Ω | 100 | | | | | | | | | | | |
| **Conductor resistance** | Ohm/km | < 117 | | | | | | | | | | | |
| **Nominal speed** | % | 72 | | | | | | | | | | | |
| **Working voltage** | V | 300 | | | | | | | | | | | |
| **Operating temperature** | °F | -22 ... 158 | | | | | | | | | | | |
| **Frequencies** | | 1 MHz | 4 MHz | 8 MHz | 10 MHz | 16 MHz | 20 MHz | 25 MHz | 31,25 MHz | 62,5 MHz | 100 MHz | 200 MHz | 250 MHz |
| **NEXT (typ.)** | dB/100m | 65 | 63 | 58.2 | 56.6 | 53.2 | 51.6 | 50 | 48.4 | 43.4 | 39.9 | 34.8 | 33.1 |
| **PS NEXT (typ.)** | dB/100m | 62 | 60.5 | 55.6 | 54 | 50.6 | 49 | 47.3 | 45.7 | 40.6 | 37.1 | 31.9 | 30.2 |
| **ACR-F (typ.)** | dB/100m | 63.3 | 51.2 | 45.2 | 43.3 | 39.2 | 37.2 | 35.3 | 33.4 | 27.3 | 23.3 | 17.2 | 15.3 |
| **PS ACR-F (typ.)** | dB/100m | 60.3 | 48.2 | 42.2 | 40.3 | 36.2 | 34.2 | 32.3 | 30.4 | 24.3 | 20.3 | 14.2 | 12.3 |
| **Return losses** | dB | 19 | 19 | 19 | 19 | 18 | 17.5 | 17 | 16.5 | 14 | 12 | 9 | 8 |