

Important installation instructions of transmission path – that are your cooperation duties



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LIFE IS FOR SHARING.

Your cooperation summarised – checklist

To ensure that your connection can be set up smoothly, please note this checklist with important information and requirements. Please make sure that you forward it to all necessary contact persons.

For the successful commissioning of your connection, we need your support:

Up to three weeks before assembly:



Have all authorisations been made available?

- Approval of the house and property owner
- Fire load and fire protection stops approval



Has the house wiring been prepared?

- Consistency and sufficient capacity guaranteed
- Sufficient space for hardware
- Free sockets near the hardware

Until the appointment with the Telekom technician:



Has access been ensured?

- To the utility room
- To the terminating point of the Telekom line technology
- To the sub-distributions in the building



Has everyone involved been informed?

- Contact persons have been informed and are on site (if necessary, also IT technicians)
- For location in the Telehouse: Patch form completed and sent to Customer Service

On the following pages, you will find further detailed information about your necessary participation in the commissioning of your connection

Technical information

In-house network:

An **internal connection cable** **1** is required for setting up the connection – **this is your responsibility**. We will be happy to help and advise you here on our product "Installation network level 4 (NE4)". Please ensure that the conditions listed below (free capacities and technical specifications) are met. We transfer your access to a remote device **2** (device for network termination, see Fig. 1) which is usually not in the same room as Telekom's demarcation point **3**. As a result, the connection between the remote device and the copper or fibre optic demarcation point must be made via the in-house network. The internal connection cable needs to be expanded if no suitable cable is available or if the free capacities are insufficient. This can be carried out by Telekom as part of the standard installation rules, i.a. indoor cabling up to 15m – you can read the details in the [T&C Service Description](#). **Often however, more extensive measures are necessary. In that case, you as the client will be responsible for expanding the internal connection cable in good time.** If your premises are rented, please also remember to obtain the necessary approvals from the owner beforehand and coordinate the set-up with him.

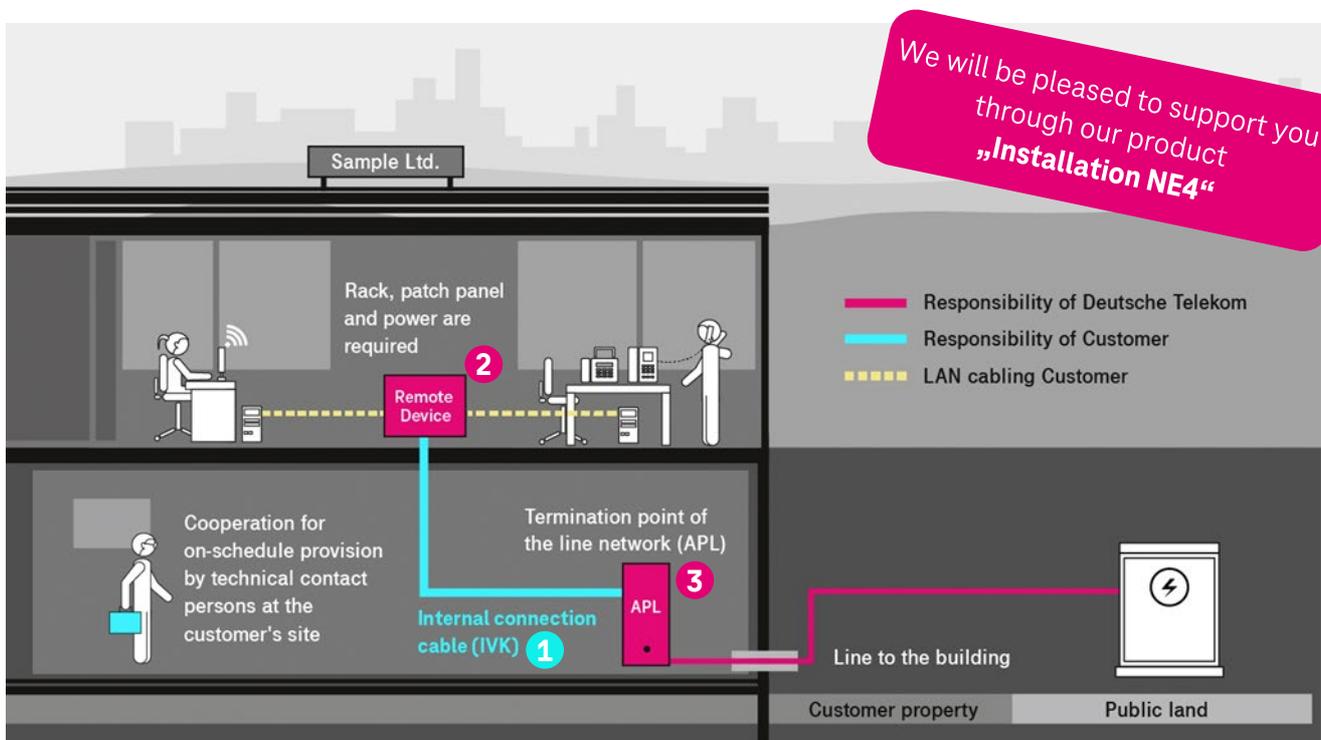


Fig. 1: In-house network

Fibre optic connections:

Symmetrical connections with speeds of more than 20 Mbit/s are implemented exclusively using fibre optic cables. **Two free single-mode glass fibres that correspond to at least the ITU-T G.652 standard (fibre type E9/125) are a must** between Telekom's demarcation point and the remote device in the in-house network. If a **new installation is required, a fibre optic cable according to the ITU-T G.657.A** standard needs to be laid. The multi-mode fibre optic cables that are often used for in-house connections cannot be used here.

Copper connections:

Connections with speeds of up to 20 Mbit/s are usually set up using copper as the medium; fibre optic cables are used less often. In the case of a copper connection, **up to 8 free copper cores are required** between Telekom's demarcation point and the remote device. At least one of these must be a category CAT-3 copper cable. For a **new installation, however, CAT-5 or higher is recommended.**

We will inform you in good time whether a fibre optic connection or a copper connection will be established.

Interface for connection to your Local Area Network (LAN)

The interfaces between your LAN and the remote device must be compatible.

We have compiled an overview of the interfaces for you in Fig. 2. Please check again whether the correct interface has been specified on your order to us. If not, please inform us immediately. **Important: a subsequent change in the order would delay the setting up of the connection.**

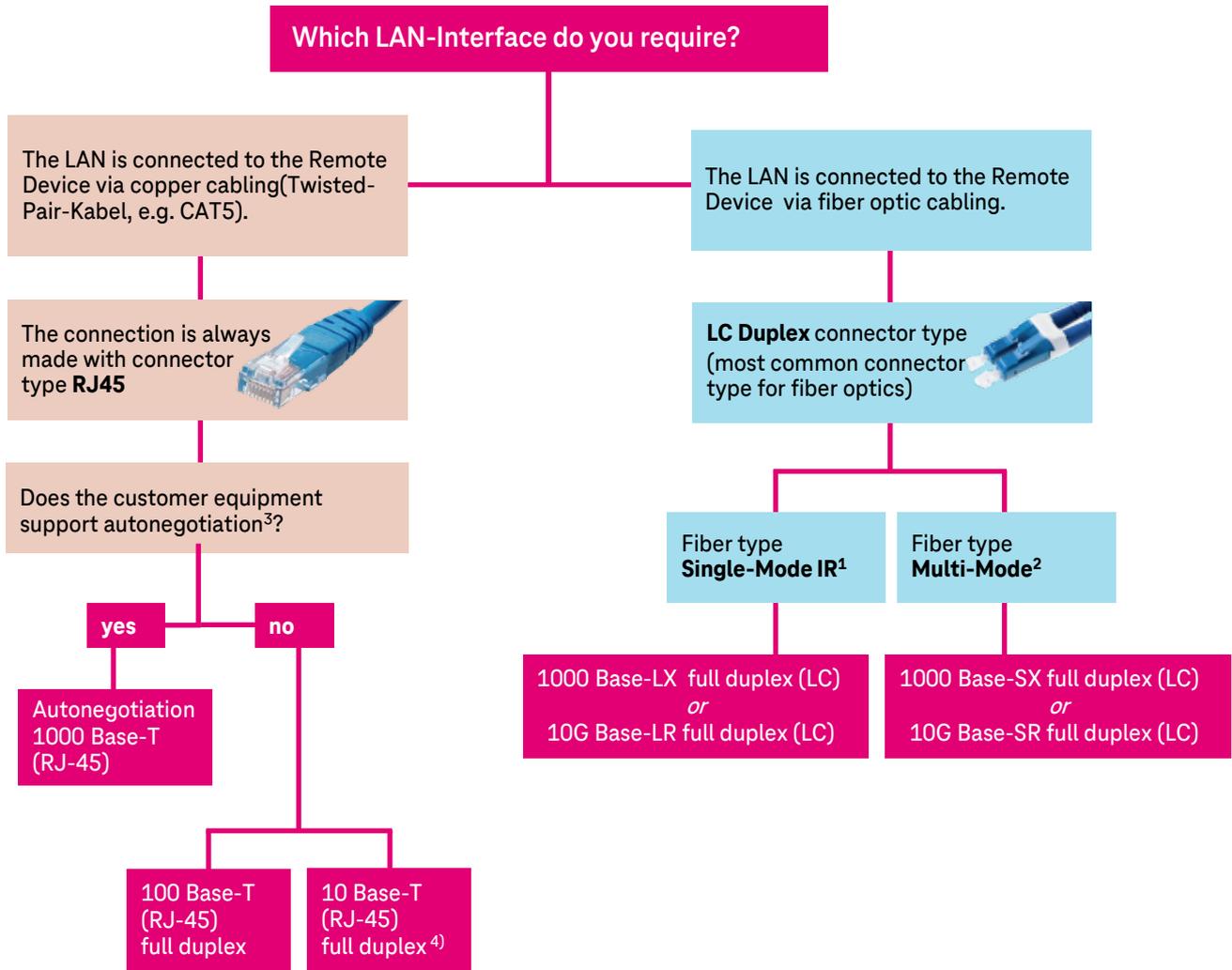


Fig. 2: Available LAN port types

1. SX: short wavelength; wavelength 850 nm; range approx. 500 m; most used fibre type for in-house connections; severe range restrictions at higher speeds
2. LX: long wavelength; wavelength 1310 nm; possible ranges approx. 2-10 km; mostly used on extensive company premises
3. Autonegotiation = automatic selection of the correct port speed
4. Available only for EthernetConnect

Note: the older standard for fibre optic plug types SC/PC is not offered. If required, you will need to purchase suitable LC Duplex to SC/PC adapters on the free market.

Your cooperation – these prerequisites must be met (1)

Important: Please understand that we cannot execute your order without your cooperation. We need your help to put your commissioned connection into operation as planned. We will coordinate the specific delivery date with you beforehand and then confirm this in writing along with the order confirmation.

Please inform our customer service no later than 3 weeks before the delivery date if you are unable to fulfil the cooperation duties listed below in good time. You can find the customer service contact details in the order confirmation.

Your cooperation in detail:

- **Telekom's demarcation point located in the building must be easily accessible.** If special access regulations apply to your location, please let us know, for example, during the conversation in which we coordinate the delivery date with you.
- If structural changes to the building or civil engineering work on the property are necessary for setting up the connection, you must obtain the permission of the landlord and property owner. **The landlord is responsible for the fire load and fire protection compartments in the building.** If fire protection compartments are affected by construction work, they must be opened and closed again independently by the owner.
- The room in which the remote device is to be installed must be accessible, dust-free and dry **3 weeks before installation.**
- Similarly, the required **internal connection cable must be available in adequate quantity 3 weeks before commissioning** and should comply with the technical specifications. In accordance with the "Rules for Standard Installation", the connection product includes surface mounting of up to 15m of internal cabling, including a maximum of one wall or ceiling penetration, but without opening and closing fire barriers. For internal cabling, we also offer the product "**Installation NE4**".
- Please have the **required space available for the remote device.** When installed in a 19" cabinet, a total of up to four rack units (RU) are required per connection. Of these, three RU are for the device, including ventilation from top and bottom. In the case of fibre optic connections, another RU must be provided for a patch field. This patch field is ideally located above or below the remote device. **A 230 V (Schuko coupling) or 48 V power connection** must also be available near the hardware, if necessary, in the earthed server cabinet. Air-conditioning: indoor (in the building as table solution or rack) in the temperature range from -5 to +55 °C.
- Free power connections and required space must also be available for additionally ordered components such as a secondary connection.
- For the backup operation of an IP service in the hot standby mode on two connections, it is necessary to connect both remote devices (RD) in the same LAN segment. In addition, a largely independent operation of the remote devices is recommended, i.e., separate power supply, separate lean-in into the in-house network and separate installation rooms.

Your cooperation – these prerequisites must be met (2)

- Please ensure that **all necessary contact persons** (e.g., in-house technicians, contact person for the in-house network) **are aware of the delivery date**.
- **Important:** when changing a product from an existing connection to a new product, you must expect an interruption of approx. 45 minutes.
- If your location is in a Telehouse, then you must order an in-house patch and **an access permit from your Telehouse operator for our technician so that the technician can carry out the necessary work on your installation cabinet**. To order the in-house patch from your Telehouse operator, we will need to give you the switching point on Telekom's demarcation point. We will share this with you in good time along with our patch form. We will also inform you of the exact space requirement along with the patch form. You must then enter the necessary information on the patch form and send it back to our customer service so that your order can be processed further.