



u::Lux RJ45-Connector

Mounting Instruction

www.u-lux.com

office@u-lux.com

Tel: +43/662/450 351-13

Fax: +43/662/450 351-16

u::Lux GmbH

Rechtes Salzachufer 42

5020 Salzburg

Austria



Table of Contents

General Information 3
Categories 3
 Connector Assignment..... 4
Connector Assembly 5
 Mounting of connectors with comb: 5
 Mounting of connectors without comb: 9
 Compatible Connectors:..... 12
Version Management..... 13

u::Lux RJ45-Connector Mounting Instruction



General Information

The communication interface of *u::Lux* is based on the Ethernet-standard which has been approved for many years. As cables there can be used cost effective twisted-pair lines.

In certain circumstances the mounting of the connectors can cause problems. This document provides assistance for a professional mounting of the RJ45-Connectors.

Basically, the network cables can be divided into different categories, which differ in certain parameters such as maximum bandwidth or shielding attenuation.

Categories

Twisted-pair cables are divided into different categories. Due to the continuously developing of technology there are currently 7 specified main categories. These range from simple phone lines to modern cables which are able to transfer several Gigabits of data per second.

Additionally to the division of categories there is a classification of the different types of shielding. Basically, for *u::Lux* there can be used the following cable types and shielding combinations.

The following categories are suitable for the operation of an *u::Lux*-System:

| Category | Shielding | Suitable for uLux | Notes |
|----------|-----------|-------------------|-------|
| CAT5 | FTP | Yes | |
| CAT5 | SFTP | Yes | |
| CAT5e | FTP | Yes | |
| CAT5e | SFTP | Yes | |

The cables must have an outer shield which is ideally composed of a foil shield and a braided shield. You can recognize cables with shields by designations like “**FTP, SFTP, ...**”.

Also other categories such as CAT6 and CAT6a could possibly work but you should consider the larger outer diameter and the resulting problems with the handling of the cables.

Another important criterion for the network cable in an *u::Lux*-System is the conductor cross-section. This determines the losses which result from the supply of the *u::Lux*-Switches. The larger the conductor cross-section (the thicker the individual wires), the lower are the losses. You should also take into account that too thick wires could cause problems with the mounting of the connector.

Two standards are foreseen for the assignment of the connectors: The TIA-568A and the TIA-568B standard. It does not matter which one of the standards is used. The only important thing is that the same standard is used on both cable ends. Otherwise you have a crossover cable.

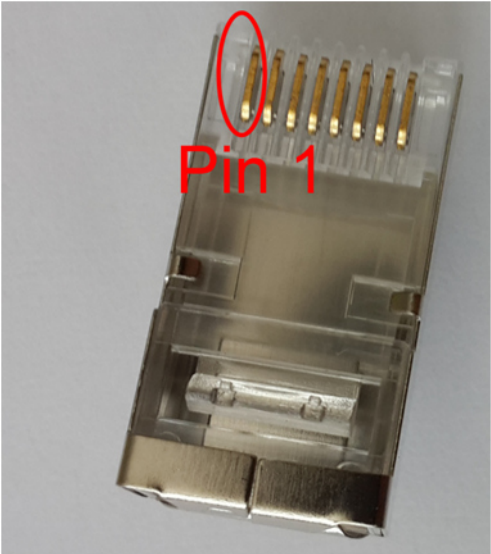
u:Lux RJ45-Connector Mounting Instruction



Connector Assignment

| Contact | TIA-568A | TIA-568B |
|---------|--------------|--------------|
| 1 | Green/White | Orange/White |
| 2 | Green | Orange |
| 3 | Orange/White | Green/White |
| 4 | Blue | Blue |
| 5 | Blue/White | Blue/White |
| 6 | Orange | Green |
| 7 | Brown/White | Brown/White |
| 8 | Brown | Brown |

View from below



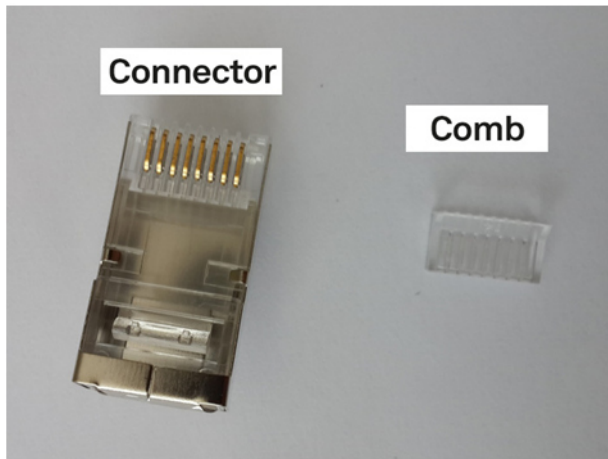
u:Lux RJ45-Connector Mounting Instruction



Connector Assembly

Basically, there are two types of connectors: connectors with comb and connectors without comb. The comb is used for a better insertion of the orderly wires in the connector.

Mounting of connectors with comb:



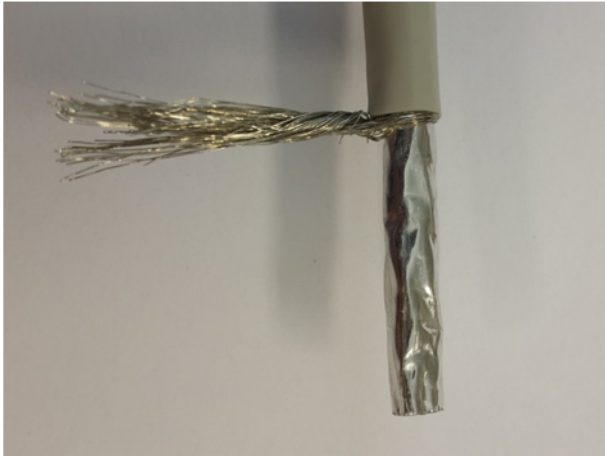
1. Cut off the end of the cable in a clean and straight way.
2. Strip the cable approx. 20mm. Make sure that no fine wires are cut off from the shielding.



u::Lux RJ45-Connector Mounting Instruction



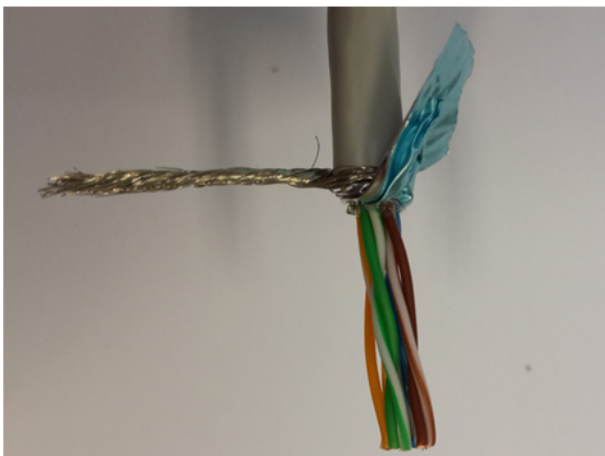
3. Shift back the braided shield and twist to one bundle.



4. Then the foil shielding can be folded back. **Attention: The foil shielding must not break off as otherwise a proper shielding can't be guaranteed.**



5. Then the plastic foil can be removed. The easiest way to cut off the plastic foil is by using a wire cutter. The foil has no function and would only disturb.



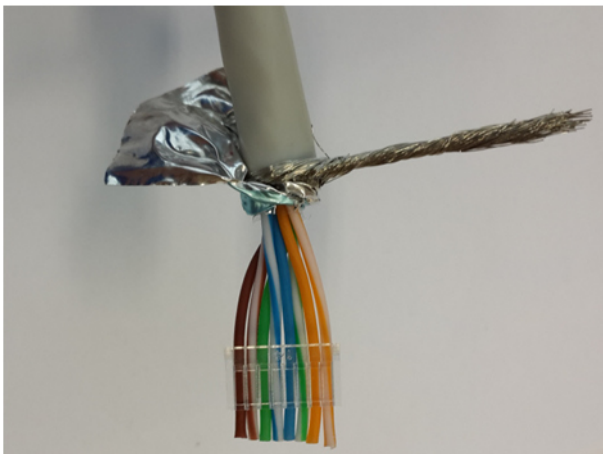
u::Lux RJ45-Connector Mounting Instruction



6. Now half of the foil shielding can be folded forwards so that the metallized film lies against the metal of the RJ45-Connector.



7. Then the individual wires can be sorted and the comb can be mounted. For this example we use the TIA-568B standard.



u::Lux RJ45-Connector Mounting Instruction



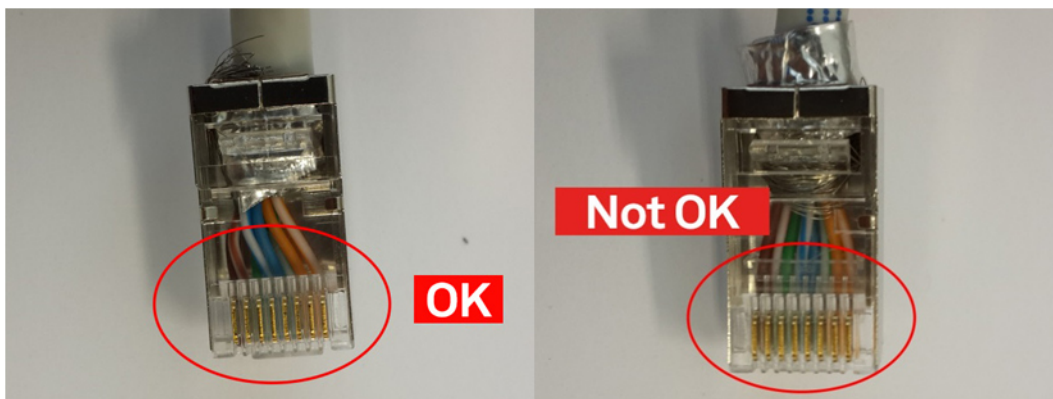
- The wires have to be cut to the same length and the comb has to be moved to the very front. The length of the stripped wires depends on the type of the connector.



- Now the cable with the mounted comb can be pushed into the connector and afterwards it can be crimped with appropriate pliers.

Please note: to control the correct insertion we recommend having a look on the tip of the connector where all wires have to be visible with the same length.

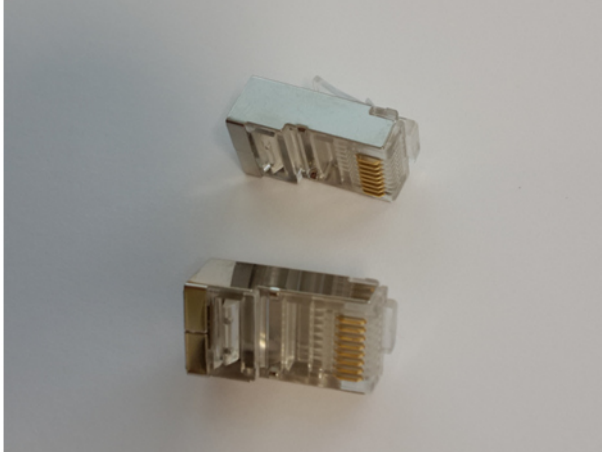
ATTENTION: The comb has to disappear completely under the connector contacts; otherwise a proper crimping is not possible.



u:Lux RJ45-Connector Mounting Instruction



Mounting of connectors without comb:



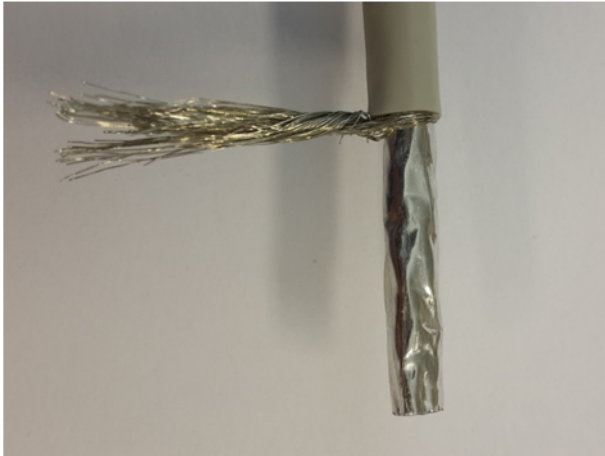
1. Cut off the end of the cable in a clean and straight way.
2. Strip the cable approx. 20mm. Make sure that no fine wires are cut off from the shielding.



u::Lux RJ45-Connector Mounting Instruction



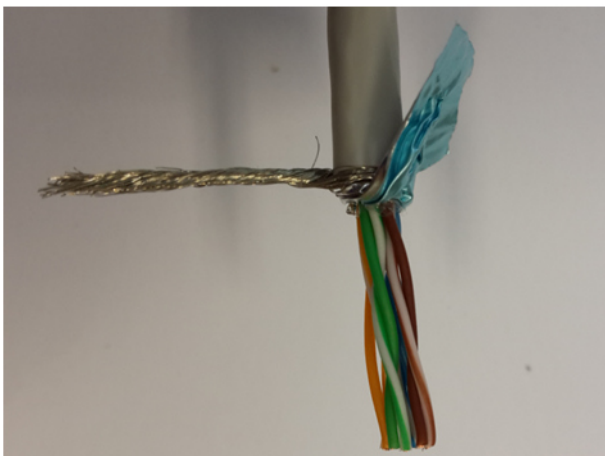
3. Shift back the braided shield and twist to one bundle.



4. Then the foil shielding can be folded back. **Attention: The foil shielding must not break off as otherwise a proper shielding can't be guaranteed.**



5. Then the plastic foil can be removed. The easiest way to cut off the plastic foil is by using a wire cutter. The foil has no function and would only disturb.



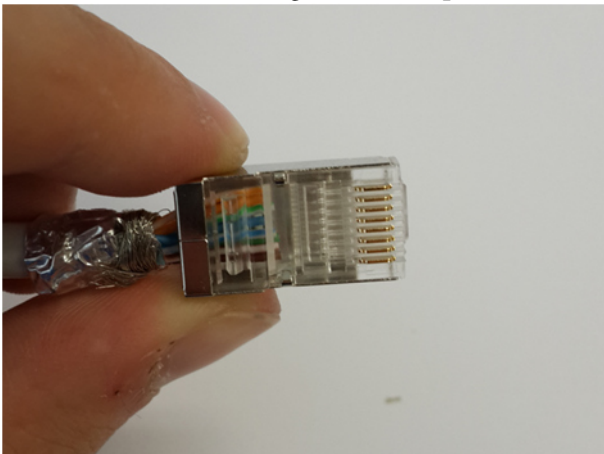
u::Lux RJ45-Connector Mounting Instruction



6. Now half of the foil shielding can be folded forwards so that the metallized film lies against the metal of the RJ45-Connector.



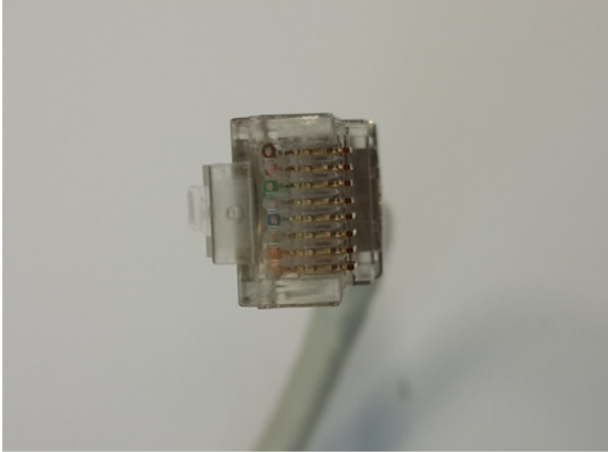
7. Then the individual wires can be sorted. For this example we use the TIA-568B standard.
8. The wires have to be cut to the same length. The length of the stripped wires depends on the type of the connector.
9. Now the cable can be inserted into the connector. To avoid changes of the individual wires we recommend inserting the wires up into the connector with light pressure.



u:Lux RJ45-Connector Mounting Instruction



Please note: to control the correct insertion we recommend having a look on the tip of the connector where all wires have to be visible with the same length.



Compatible Connectors:

| Supplier | Order number | Designation |
|----------|--------------|-------------------------------|
| Farnell | 1192804 | SPC19835 |
| Farnell | 1368649 | LUMBERG - P 129 S |
| Conrad | 992389 - 62 | RJ45-Modular connector CAT 5e |
| | | |
| | | |



Version Management

| Version | Date | Name | Notes |
|---------|------------|------|--------------------------|
| 1.00 | 29.08.2013 | NICZ | Creation of the document |
| 1.01 | 01.10.2014 | AK | Contact has been updated |
| 1.02 | 03.03.2016 | HK | Addition, formatting |