u::Lux NetCon & u::Lux NetCon Power

Manual

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

Contents

u::Lux NetCon / u::Lux NetCon Power - Manual

General Information

The *u::Lux NetCon* or *u::Lux NetCon Power* is a 4 port, 100-Mbit/s-Ethernet Switch. The 4 ports are equipped with RJ45 jacks and have the designation LAN1 – LAN4. LAN1 and LAN2 serve for connecting up to 10 *u::Lux Switches RJ45*. LAN3 and LAN4 are generally used for connections to the control centre or the computer.

The following details apply equally for the *u::Lux NetCon* and *u::Lux NetCon Power*, except in case of an explicit distinction between the models.

The energy supply of the *u::Lux NetCon* is carried out via direct voltage through the connections – VCC and +VCC. The voltage has to be sufficiently filtered (max. voltage ripples $2V_{SS}$) and it must be within the following range:

|	
u::Lux NetCon	48V DC
u::Lux NetCon Power	22V – 30V DC

Mounting

The mechanical assembly of the *u::Lux NetCon* is effected on a 35mm top-hat rail which has to be mounted horizontally. Therefore a flap is provided on the bottom part of the housing. If the flap is pulled forwards (screwdriver) the *u::Lux NetCon* can be easily placed on the top-hat rail.
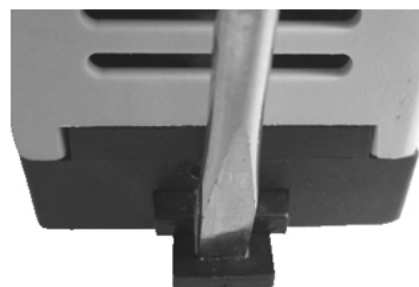
The installation width is 35mm. There are ventilation slots on the top and the bottom of the housing which provide heat exchange. Please note that these vents are not covered and a sufficient distance to adjacent components is kept.
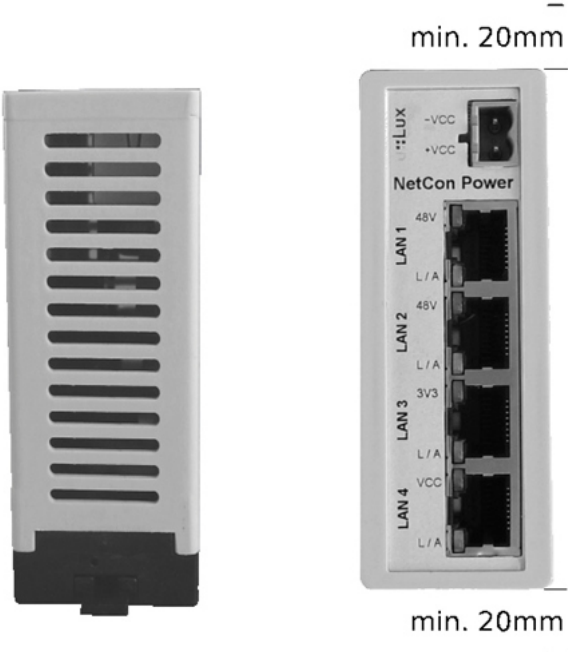
The housing height is approx. 80mm. Please note that for the Ethernet-connections (on the front) there will be added approx. 50mm additionally to the housing depth. Altogether a free installation depth of approx. 130mm is necessary. Please take this into consideration when selecting an appropriate junction box (wall cabinet).
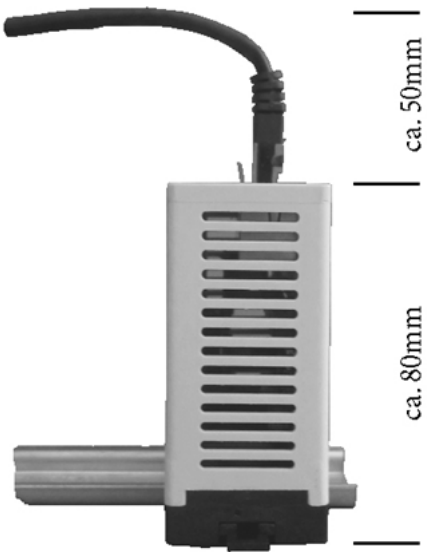
Mounting order

1. *u::Lux NetCon* or *u::Lux NetCon Power* must snap into place on the top-hat rail.
2. Connect the network cable (not included in the scope of delivery) for the *u::Lux Switch RJ45* to LAN1 or/and LAN2.
   We recommend the use of a Patchpanel (taking into account the potential equalization) so that a shielded network cable can be lead to ground or to get a better ground-contact from the installation cable to the Patch cable. When indicated, already existing local connecting instructions must absolutely be obeyed.
3. For the control or cascading connect the network cable (not included in the scope of delivery) to LAN3 or/and LAN4.
4. Connect the energy supply.
   A plug connector (Phoenix - MSTBA 2,5/ 2-ST-5,08) is included in the scope of delivery.
   Connect the negative supply voltage of the energy supply to Pin – VCC and the positive supply voltage to +VCC (see Chapter General Information).

Startup

After connecting the power supply all green LEDs have to illuminate. With these LEDs the presence of the following voltages is indicated:

1. Energy supply with supply voltage *VCC*.
2. Internal voltage generation *3,3 volts*.
3. Internal voltage generation *48 volts* (on ports LAN1 and LAN2).

If a network cable is connected to each of LAN1 – LAN4 and a physical connection (LINK) is established, the corresponding yellow LED illuminates permanently. As soon as there is traffic on the connection (ACTIVITY) it will be signalized by this flashing LED. Regarding the LAN ports we recommend the connection of the following network subscribers:

LAN1: is used exclusively to connect up to 10 *u::Lux Switches RJ45*.
LAN2: is used exclusively to connect up to 10 *u::Lux Switches RJ45*.
LAN3: is used to connect a PLC control or to connect another *u::Lux NetCon Power* module (cascading) or a computer.
LAN4: is used to connect a PLC control or to connect another *u::Lux NetCon Power* module (cascading) or a computer.

Startup order

1. Control of the green LED. All 4 LEDs have to illuminate.

2. Control of the yellow LED. Depending on the connected network subscriber and depending on the traffic the LEDs illuminate or flash. The yellow LED must not illuminate or flash on an unoccupied port (LAN1 – LAN4).

Practical example

The installation and energy supply of 40 *u::Lux Switches RJ45* is required. All *u::Lux Switches RJ45* shall be connected to a control.

A maximum of 2x10 *u::Lux Switches RJ45* per *u::Lux NetCon Power* can be supplied with energy. Therefore 2 units of *u::Lux NetCon Power* are required for the energy supply of all 40 *u::Lux Switches RJ45*.
The *u::Lux Switches RJ45* are connected to the ports LAN1 and LAN2 of the *u::Lux NetCon Power*.
Both ports of LAN3 are connected to each other (cascading). One of the two LAN4 ports forms the connection to the control (PLC); the other one can be used for a connection to a computer.
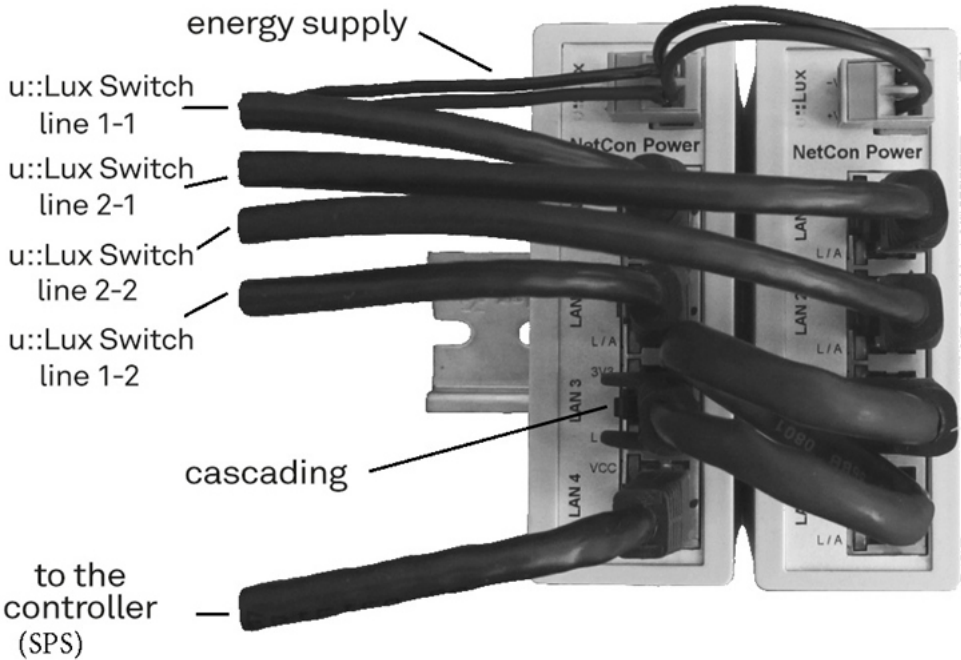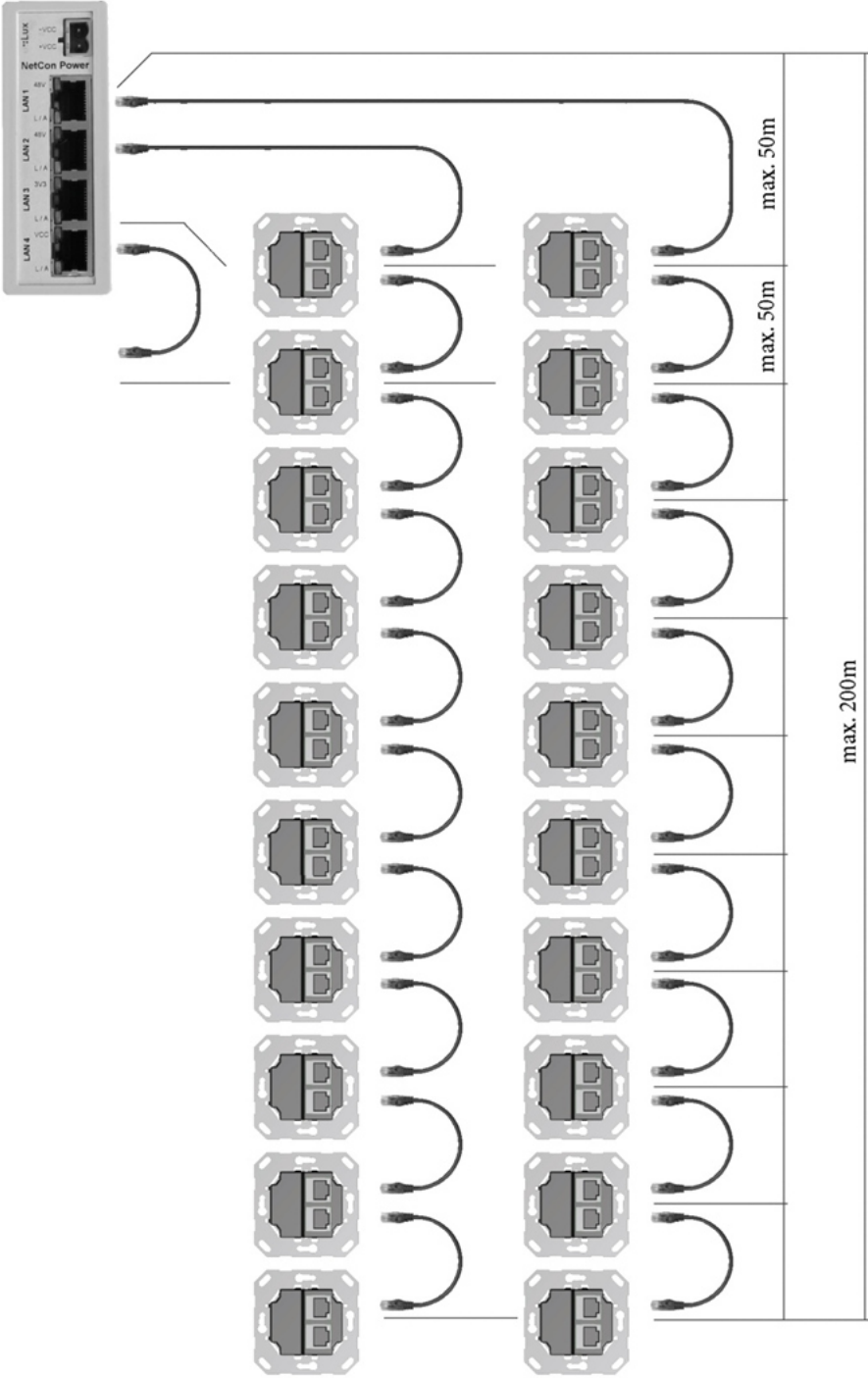

If you use more than 2 *u::Lux NetCon Power* modules, we recommend to wire the supply connections separate to the power supply and not together as shown in the image.

Network wiring

An *u::Lux Switch* line may not exceed the total length of 200 m because of the cable resistance (voltage drop). We recommend not exceeding the max. length of 50 m of a single sub segment.

Technical Data

Supply :	Direct voltage with a ripple of max. $2V_{SS}$

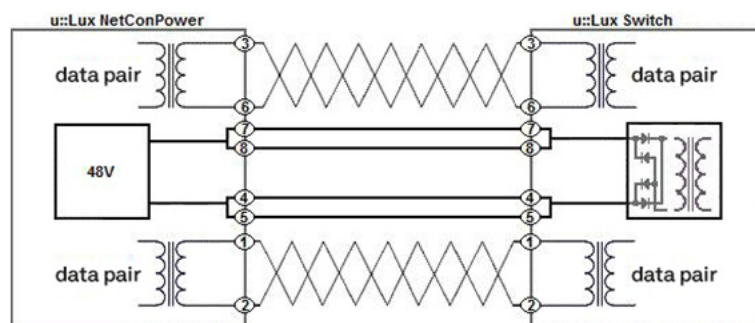| *u::Lux NetCon*	48V
u::Lux NetCon Power	22V - 30V

Power consumption:	max. 1,5W (without connection of *u::Lux Switch RJ45*)
	max. 48 W (with connection of 2 x 10 pieces of *u::Lux Switches RJ45*)
Connections:	1 x supply (+VCC or –VCC, Phoenix MSTB 2,5/ 2-ST-5,08
	2 x Ethernet RJ45 jacks with 48V supply (LAN1 and LAN2 -> each via Pins 4+5 [–VCC] and 7+8 [+VCC])

	2 x Ethernet RJ45 jacks without 48V supply (LAN3 and LAN4)
	1 x ground connection (via metal bracket on the bottom of the housing)
Displays:	At the network connections per port there is a yellow LED for „LINK" or "ACTIVITY" and respectively a green LED for displaying the voltages VCC, 3V3 und 2x 48V.
Network:	100BaseT
Ambient temperature:	-10 °C to +40°C
Storage temperature:	-30 °C to +80°C
Protection type:	IP30
Protection class:	III
Assembly type:	Vertical on horizontal top-hat rail (35mm)
Installation dimensions:	95mm x 35mm x 76mm
Housing materials:	UPPER PART: synthetic mat. LEXAN UL94-V0, self-extinguishing
	Colour: RAL 7035 light grey
	Ambient temperature: up to +100°C
	LOWER PART: synthetic mat. NORYL UL94-V0, self-extinguishing
	Colour: RAL 7021 black-grey
	Temperature range: up to +100°C
	FOIL: made of polyester DIN 42 115, fine grained
	Foil with sanded look, horizontal sanding direction

Hazard warnings

Attention! Assembly and installation of electrical devices may only be performed by a qualified electrician. Strictly observe the prevailing accident prevention measures. Failure to observe the installation instructions may result in damage to the device, fire or other dangers.
u::Lux NetCon or *u::Lux NetCon Power* are devices which do not correspond to the PoE standard.

CE – marking

The CE marking is exclusively addressed to the governmental supervising authorities of the Member States and facilitates the free movement of goods. The CE marking does not represent any guarantee of specific features.

Guarantee

The guarantee complies with the statutory requirements. Technical changes and error reserved.

Ordering Information

u::Lux NetCon Power   order number 10962
u::Lux NetCon   order number

Version Management

Version	Date	Name	Notes
1.00	12.12.2012	KH	Creation of the document
1.01	17.12.2012	THSI	Correction/Release
1.02	18.12.2012	AK	Correction/Release
1.03	14.01.2013	KH	Addition (Network connections via patchpanel)
1.04	21.01.2013	KH	Addition (Connections)
1.05	14.01.2014	THSI	Addition of new order numbers
1.06	07.07.2014	KH	u::Lux switch -> u::Lux switch RJ45
1.07	01.10.2014	AK	Contact updated