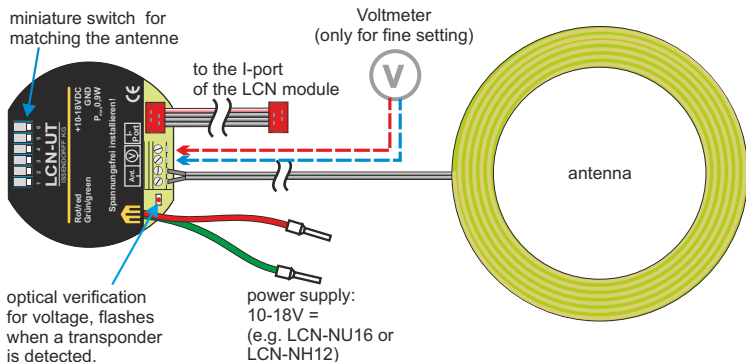


Flush mounted transponder module for LCN

The LCN-UT is a transponder evaluation system to integrate in the LCN Bus. Included in delivery apart from the module for flush mounting, are three flat antennas in different sizes, that can be installed optionally. The largest antenna covers the largest range, approx. 30cm. For special applications (e.g. in joints between wall tiles), self wrapped antennas can be made.



Included in delivery:

LCN-UT, 3 antennas & 2 transponders (1 ZTK & 1 ZTS).

Connection

The LCN-UT is for connecting to the I-port of all LCN Bus modules with firmware 0E.... (Jan. 2005) or after. The supply line can be extended up to 50m by using 2 LCN-IV's. The following peripherals can be used on the I-port parallel to the LCN-UT: LCN-GBL, -RR, -ULT, -GT2, -GT4D, -GT10D, -GT3L, max. 1 further -EFS, but no more than 5 I-periphery devices on one I-port at the same time.

Important: Operating the LCN-IV as impulse counter/counter input is not possible!

Additionally, the LCN-UT needs a power supply of 10-18V DC. for this, an LCN power supply like the LCN-NH12 or LCN-NU16 can be used.

Because the LCN-UT is electrically isolated from its LCN module, several LCN-UT modules can use the same power supply.

Function

The LCN-UT must be activated with the LCN-PRO under `Ports > I-port`. Then the LCN module will send the transponder code to the LCN Bus when the antenna is approached. It can be displayed on the Bus monitor (LCN-PRO: key <F8>) and evaluated with the LCN-GVS for access control.

The LCN module can trigger a key additionally - it sends the “**HIT**” command. Up to 16 transponder cards can be assigned to an individual key. To do this, the input window <TRANSPONDER> in the LCN-PRO must be opened and the serial number of the card with the corresponding key (e.g. D3) registered. The serial number is a 6 figure combination of letters and numerals. This can be determined on the Bus window beforehand.

To recognise non authorised cards, a serial number with 00 00 00 can be registered on position 16. The LCN module then always sends out the assigned key, when it recognises a non assigned serial number.

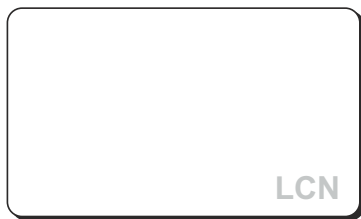
Note about function:

To parameterize the transponder, the LCN-PRO is needed and modules with firmware 0E.... (year 2005) or after. After the module firmware 10.... (year 2006 or later), the LCN-UT has to be unlocked in the module properties.

Transponder cards:

For testing the functions, two different transponders are included in the delivery. The card (illustr., page 4) achieves the largest range. Due to the fact that the LCN-UT uses a standard protocol, the receiver reacts to many other systems. Additionally JUNGHANS offers wrist watches with built in transponders.

Description of the transponders:



illustr. 1: transponder chip card,
LCN-ZTK



illustr. 2: keyring,
LCN-ZTS

installation/range:

LCN-UT can be installed in every standard flush mounted box, due to its small dimensions. Please plan enough space for a power supply and an LCN-UPP, if these are to be installed in the same area (2 deep flush mounted boxes).

The antennas are provided for installing in the wall or floor. The larger antenna offers more range. (see technical data on page 12).

The antennas are very flat, so they can be optionally plastered or wall papered over. The inner diameter is specially chosen, so that the large antenna can be installed over a double flush mounted box, the middle one over a single flush mounted box. The small antenna fits in most of the traditional switch blind covers.

For special installation places, e.g. in the joints of bricked walls or under paving stones, the antennas can be individually wrapped. See also page 9.

The polarity of the antenna connecting cable is optional.

Important notes about installing:

- Only one of the antennas can be operated on the LCN-UT, connecting two antennas parallel is not possible.
- No large metal parts directly nearby! With very strong reinforced concrete, the installation area should be tested first of all. Metal rings from switch blind covers, cause a short circuit: Saw the ring apart on one area completely. The ring must not be closed.
- Televisions, monitors and similar interfering sources directly nearby (approx. 1 m) to the antenna, reduce the range!
- With a fine setting using a volt meter, avoid any unnecessary short circuits that may occur on the connection terminals!
- The flush mounted power supply LCN-NU16 should not be installed directly on or under the LCN-UT module, otherwise the range can be reduced through the coupling on the transformer. There are no limitations when installed directly beside the LCN-UT.

Important: Always install the LCN-UT with the power switched off! Even the antenna must only be connected or disconnected with the power switched off!

Choosing and setting the antenna:

for optimizing the range, the LCN-UT allows a matching for the antenna, then the inductivity depends on the size of the antenna and the installation area. When no or just small metal parts are lying near the antenna, the following settings will give an acceptable range:

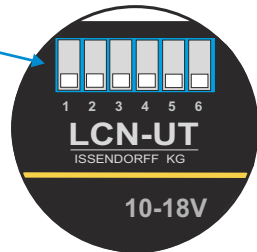
Switch settings with large antenna:



Switch settings with middle sized antenna:



Switch settings with small antenna:



it is better to match the antenna, see following page.

Fine matching (for maximum range):

If the given ranges are not reached as shown on page 12, or when the maximum range definitely has to be reached, A matching of the antenna is recommended. To do this, the combination of the miniature switches are searched to find which one gives the optimal range.

If no further tools are available, a transponder card and a folding ruler will be enough: Approaching attempts are repeatedly made and the miniature switches adjusted between times.

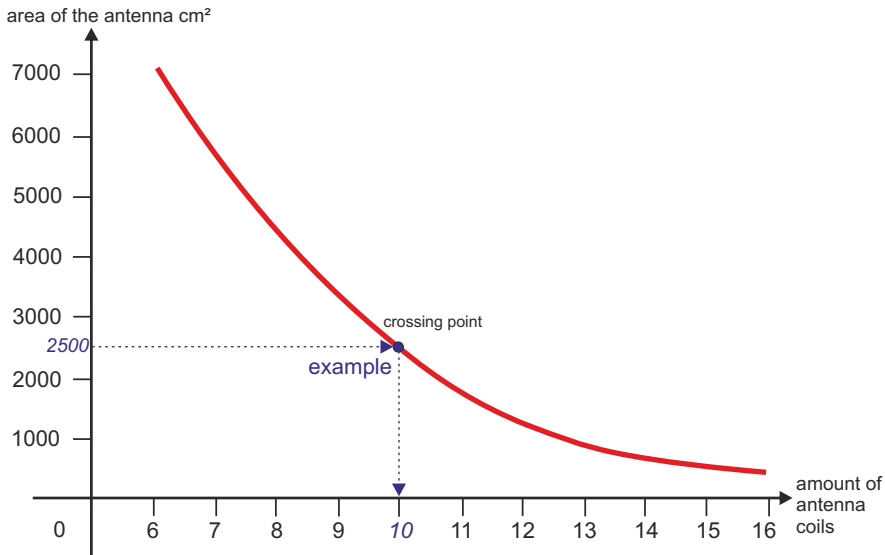
It is more comfortable and quicker with a volt meter: To make the matching simpler, the LCN-UT is equipped with a measuring device for the antenna voltage. The AC antenna voltage can be measured with the help of a multimeter on the measuring terminals (see illustr. page 1.) **Please try to avoid possible short circuits when fine matching on the measuring terminals!**

The aim is to match, so that the AC voltage is at a maximum.

Matching instructions:

push all switches towards the bottom (see illustr. page 7). The matching begins with switch 1 (rough matching). Push the switch towards the top. If the voltage rises, leave the switch there. if the voltage drops, push the switch back down. Do this in the same way with the switches 2, 3, 4, 5 and 6. Please be aware of the order, switch 6 allows the finest step.

Antenna wrap description:



To determine the optimal amount of coils for the antenna, first the area of the desired antenna has to be calculated. It does not make any difference if the antenna should be round or square shaped. Now the calculated area is followed down vertically from the curve as shown in the graphic (page 9). Under the crossing point of the curve (see example, page 9), you can read the optimal amount of coils.

In the example (marked in blue) an antenna with an area of 2500 cm² (e.g. 50x50 cm), 10 coils.

Should the crossing point lie between two coils, the next smaller amount of coils should be chosen.

To wrap the antenna, standard fine wire with 0,75 mm² or 0,5 mm² should be used. The connection cable to the self wrapped antenna, should be kept short!

Notes about self wrapped antennas:

- Antennas over 5000 cm² need (due to performance reasons) a stronger power supply, e.g. LCN-NH12 or similar.
- After finishing the wrapping, carry out a fine matching!
- The maximum range of the antenna, depends on its form. Good results are achieved with long forms. When over 5000 cm², the range reduces. **Test range before installing!**

Technical data of the LCN-UT:

power supply:	10-18V DC
power consumption:	max. 1W with 18V; typical 0,8W / 16V
supported card systems:	EM-H 4001, 4002, 4102,
casing size:	Ø 50 mm, d=20 mm
operating temperature:	-10°C...+ 35°C
environmental conditions:	for use as stationary installation according to VDE632, VDE637
protection class:	IP 20 when installing in a flush mounted box

Technical data of the flat antenna:

thickness/mounting height:	0,4 mm
measurement (antenna large): range:	Ø 245 mm outer, 200 mm inner appr. 28 cm with card type CFR03 or PF22
measurement (antenna middle): range:	Ø 123 mm outer, 86 mm inner appr. 22 cm with card type CFR03 or PF22
measurement (antenna small): range:	Ø 50 mm outer appr. 9 cm with card type CFR03 or PF22
connecting cable:	120 mm (non extendable)

Technical information and images are non binding. Changes are reserved.
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