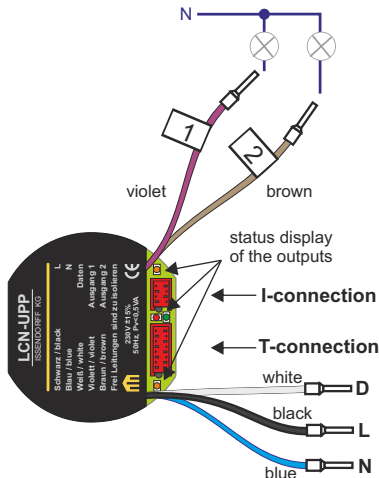


Universal switch and dimming module for flush mounting

The LCN-UPP is sensor-/actuator-module for building installation with Bus systems. It is a member of the Local Control Network System.



Application

The LCN-UPP module is for installing in dry rooms in deep flush-mounted boxes directly behind, push-buttons, electrical sockets etc. Even the installment in distribution boxes is possible. The module has a sensor input, the T-connection (push-button input), to which 8 standard push-buttons or KNX-push-buttons and further peripherals can be connected to.

As a second sensor input, the I-connection is available for many functions, e.g. IR-receiver. The LCN-UPP also has two electronic outputs, which can be independently controlled. The outputs can be operated as leading edge dimmer or in switching operation as a zero voltage switch. They each have timers, for choosing separate dimming ramps and switching times.

Installation / Connection

The flush mounted module is connected over 5 wires on the supply side :

Description	Colour	Function
D	white	data wire
N	blue	neutral
L	black	230V live phase (L1, L2 or L3)
1	violet	output 1 (switches internally against live)
2	brown	output 2 (switches internally against live)

Note:

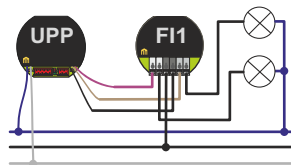
The outputs 1 and 2 are supplied from the live phase of the module.
Should outputs not be in use, then the free connections must be insulated!

The power connections are voltage fixed up to max. 2kV(D)/ 4kV(L+N) according to VDE, additional measures against overvoltage in operational conditions are not necessary. (Measures for lightning protection should be applied as usual.)

Because the electronic switches in the LCN modules switch off on the current zero crossing, no noise levels, even when using inductive loads, are to be expected.

Outputs

The module is not supplied with a built in interference filter for dimming. For compliance with the CE rules, the filter LCN-FI1 is to be used when dimming. The module has no fuses for the electronic outputs. That's why a back-up fuse 2,5A MT should be used, in case short circuits of low impedance are to be expected. Short circuits with a series resistor, e.g. through a broken filament are not critical for the module: Overcurrents of up to 150A are allowed for 10ms. Most of the time a back-up fuse is dispensable, when a fuse with a fast-acting characteristic curve has been selected (e.g. B).



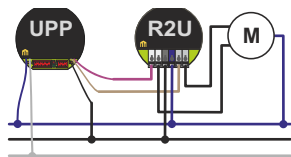
Operating with motors: These are **not allowed to be connected directly** to the LCN-UPP. The combined use of an LCN-R2U is necessary!

The LCN-UPP (serial nr. 0E... or later) monitors the operating temperature. If this unexpectedly increases too high due to an overload, the outputs will be switched off and a status message will be sent to the bus monitor:

"Module reports overload/over temperature".

This message will be shown directly on the LCN-PRO.

After cooling down to under 70°C the outputs can be simply switched back on. However you should check if too much load has been accidentally selected.



Further sources of error, could be a very high environmental temperature and / or an unfavourable (thermally insulated) installation.

Tips for installing in flush-mounted boxes:

- Installation in solid walls (e.g. sand-lime brick)
max. load 2 x 300VA
- Installation in lightly thermal insulated walls (e.g. Y tong)
max. load 2 x 250VA
- Installation in strongly thermal insulated walls (e.g. cavity walls with rock wool)
max. load 2 x 150VA

If a filter LCN-FI1 or a power supply LCN-NU16 is installed in the same flush-mounted box, the maximum load is reduced by 1/3 on each output. That's why it is cheaper to install the filter in a separate flush-mounted box.

Notes:

LCN outputs do not need a minimum load, which means very small loads can be directly connected.

When the dimming operation is activated, an LCN-FI1 must be used. The same goes for ohmic loads, for example electronic ballast or electronic transformers.

However if the filter module LCN-FI1 is connected, its reactive current of almost 10mA must be considered: In this case where no 230V~ relays are being controlled with the LCN-UPP, the relays will “stick” caused by the reactive current. Please do not connect an LCN-FI1 in this case or use an LCN-R1U or an LCN-R2U directly.

When connecting fluorescent lamps, the large reactive current should be considered, which will reduce the connectable power consumption to around half the size. Remedy: series or parallel compensation.

When using zero-voltage switches the problem with the contact burn-up using capacitive load will not occur. That's why large condensers can be connected to the LCN outputs in the switching operation. A parallel compensation is therefore possible trouble free.

Properties of the built-in control programme

Issued numbers:	module ID: 5..254, group nr.: 5..254 segment nr.: 5..124
group members:	12 (fixed) plus 10 (dynamic)
command tables:	A, B, C & D with each 2 * 8 targets (each 3 commands) and 32 targets at 3 commands (double operation)
links:	depending on: logic, time, sensors, output- conditions, panel and fault report-processing (4-way) according to DIN.
scene storage:	10 x 10 per light group (brightness & ramp)

Timers (amount):

outputs (2):	10ms..40 min
keys (4):	each 1s .. 45 days
key blocking (1):	each 1s .. 45 days
output blocking (2x1):	1s .. 45 days (part & full blockage)
clock (1):	0,3s .. 6500 s
relay (2):	30ms ..4 min

Properties of the built-in control programme:

Measured value processing

triggering:	8, 10 or 12 bit
pre processing:	value corr., hum sound suppression, remote query
evaluation:	input sizes can be calculated as difference values
thresholds / intermitt. regulator	5 thresholds (=10 commands) with hysteresis
controllers:	2 continuous controllers, can be used independently
counting/computing:	0 ... 30000, can be cascaded

Remote control

keys:	16 (with LCN-RT: 4 key levels)
amount access codes:	250 + serial number evaluation (transponder)
zentral access control:	> 16 mio codes
transponder:	16 codes evaluated direct, many over LCN-GVS

Status display of the lamps

GREEN (flashes constantly):

nr. of flashes	<u>message</u>
1	normal operation
2	self testing-error, module is not programmed
3	bus error: module cannot send
4	(reserved)
5	module is in programming mode

RED (flashes only when occurrences are entered):

nr. of flashes	<u>message</u>
1	key was pressed, command was sent
2	different errors: please check with PC and the LCN-PRO
3	received telegram data was faulty
4	IR-telegram received from unauthorised sender
5	received illegal command (will be ignored)
6	error in the structure of a received command
7	parameter of a command exceeds permitted limit
8	command received cannot be carried out at the moment
cyclic (30s.)	periphery (T-,I-connection) was overloaded and/or short circuited. Both LED's left and right side of the plug, show switch and dimming conditions of the outputs.

In the menus and help texts found in the programme LCN-PRO, further informations and properties of the module are available.

Without parameterization the module has no functions.

Because no access to the module is required when first programming, (no programming button, all functions are controlled over the bus), the module may be installed before being setting up. In this case the serial number of the unprogrammed module should be noted in the building plan, for better identification.

Important note:

Despite its extensive functionalities, the LCN system is simple to install and programme: It's all in the hands of the electrician. However a **training course is necessary for every electrician**, who installs this system. The direct users support over the telephone hotline, is only free of charge and open to installers who have taken part in a training course.

Sensor technology (T- & I-connection)

The red sensor connecting plugs are protected only in a low extent against overvoltage. A contact with a live phase will destroy the module. The sensor terminals are on the N potential, which means they are not decoupled from the electrical isolation. That's why you must make sure, that a protection against contact for the user in every operating condition is ensured. The push-buttons from all of the approved switch panel systems ensure this protection.

The module has two sensor connections, which can be used as additional switchings, if necessary as actuator (LCN-R1U, LCN-DDR).

Note: The plugged connectors (T- & I-connectors) are protected against slipping through noses on the housing. To remove the plug, please pull upwards on the cable with moderate force. Please don't use violence! Try it first of all on an uninstalled module!

T-connection

Over a push-button converter LCN-T8/-BT4R, max. 8 conventional push-buttons can be evaluated. Apart from that, there are a selection of sensors that can be connected here alternatively, e.g. the LCN-GT6/-GT12, etc..

Additionally by connecting the LCN-DDR module, the 3 internal electrical outputs can be used and the 3 DALI groups controlled. (alternatively two DSI groups).

I-connection

Here the IR-receiver for the remote control can be connected, additionally the binary sensor LCN-B3I, the LCN-BMI (ser.nr. 0A0A.. or later), the LCN-UT (ser.nr. 0C06... or later) and the temperature sensor LCN-TS. These components can be operated parallel on the I-connection by using the LCN-IV.

The I-connection can alternatively be served as a counter for pulses up to 1kHz, when no further periphery is connected, max. counter value is 30000.

notes about the sensor technology

The module (ser.nr. 0E... or later) monitors overloads and short circuits (T-, I-connection) on its sensor technology. Should the module be short circuited on its periphery, due to wiring errors, it will switch off the power supply from the sensor for 4 seconds by itself. If 2 further tests show the same error, it will switch off for 8s + 30s and a status message will be sent to the bus:

`"module reports overload/short circuit periphery."`,

apart from that the red LED will flash cyclic, as long as the sensor technology is switched off. In this case check the connected sensor technology and the wiring. The module stays accessible and operational even after these errors!

Technical data**Connection**

power supply:	230V AC $\pm 15\%$, 50/60Hz (110V AC available)
power consumption:	<0,5W
power connection:	5 wires with end sleeves 0,75mm ²
connection sensor side:	T- und I-connection

Outputs

type:	2x zero voltage switches or leading edge dimmers
triggering:	200 steps in dimming operation
switching capacity:	each 300VA ($\cos \varphi=1$) with solid walls, each 150VA with full thermal insulation, see page 4. Is an LCN-FI1 in use or LCN-NU16 in the same fl. mounted box, max. power consumption reduces by 1/3.
overload strength:	each 1kW max.10s
power loss:	1% from the apparent power
minimum load:	- not required -

Installation

operating temperature:	-10°C..+ 40°C
air humidity:	max. 80% rel., non condensing
environmental conditions:	use as stationary installation according to VDE632, VDE637
protection art:	IP20 when installed in fl. mounted box, only stationary
dimensions (BxDxH):	50mm \varnothing x 22mm

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

Technical hotline: +49 5066 998844 or www.LCN.de