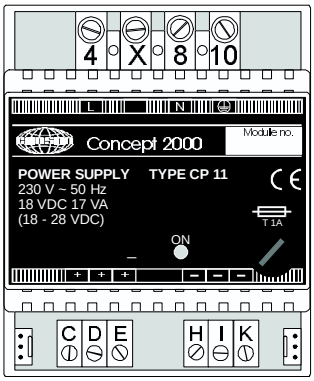
Power supply type CP 11

Power supply type CP 11



EAN-No. 5703513004231

Product description

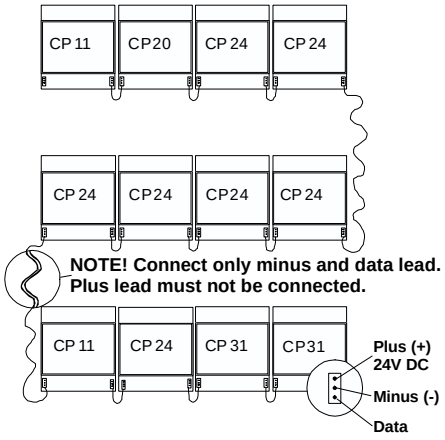
Power supply type CP 11 is a 24 volt DC power supply for the CONCEPT 2000 system. The unit can supply 17 VA at 18 volts DC and can therefore provide for control of up to 20 lamps, curtains etc. The number of modules is, however, dependent on which modules are connected, and on whether button switches with indicator or monitor panels are also connected to the power supply. Power supply is provided via the 3-pin plug, which is connected to the modules. Plus (24 V DC), minus and data are connected via this plug. When using several power supplies, minus and data, but not plus, must be connected together on the various power supply units, i.e. you remove plus from the enclosed short bus lead or the 25 cm long bus extension cord type CP 09. The module is equipped with (+) Plus- and (-) minus terminals for connection of operation equipment. Generally, all modules in CONCEPT 2000 are not equipped with a terminal for data communication, therefore it is important to use bus extension lead type CP 09 for horizontal/vertical connection of the modules.

Reliability

By using several power supplies a good reliability is obtainable. The power supply type CP 11 is built up of a traditional iron core transformer with subsequently double rectification and smoothing condenser. The secondary voltage varies with the load and must be between 18 and 28V DC. The module is marked 18V DC equal to maximum load (17VA).

NOTE! When using several power supplies connect only minus (-) and data lead, plus is cut (see the moduleboard installation).

Moduleboard arrangement



Dimensioning of power supply

At many lights, curtains etc. with e.g. relay module type CP 24 several power supplies type CP 11 are used Type CP 11 can supply control voltage for about 20 lights, curtains etc., but it is also important to include light sensor, PIR-detectors, guiding light or control light. Especially, if glow lamps are used instead of light diode, it can have an essential impact on the load. Remember if necessary simultaneity factor, especially when you use "SESAM" button switch panel, because it **only** uses the high effect when activated.

Load guiding light/control light:

1 stk. 24V glow lamp	1,0 VA
1 stk. 24V light diode	0,1 VA

Calculation example 1:

2 pcs.	CP 20 Switch-Link	á 0,5VA	1,0 VA
7 pcs.	CP 24 Relay module	á 2,5VA	17,5 VA
3 pcs.	CP 31 Dimmer	á 0,5VA	1,5 VA
10pcs.	LED guiding light	á 0,1VA	1,0 VA
		Load in total =	21,0 VA

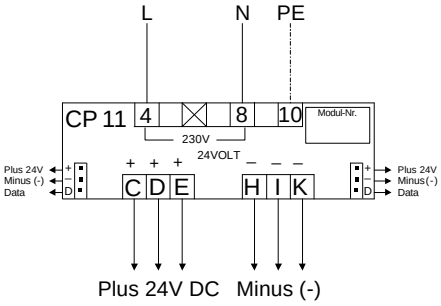
Number CP 11= 21,0 : 17VA = 1,24 ~ 2 pcs CP11

Calculation example 2:

2 pcs.	CP 20 Switch-Link	á 0,5VA	1,0 VA
8 pcs.	CP 24 Relay module	á 2,5VA	20,0 VA
5 pcs.	CP 31 Dimmer	á 0,5VA	2,5 VA
1 pce.	CP 70D Time-Link	á 0,5VA	0,5 VA
2 pcs.	CP 70B BO-Link	á 1,0VA	2,0 VA
2 pcs.	CP2509 IR-eye	á 0,2VA	0,4 VA
15 pcs.	CP2506 SESAM	a´0,6VA	9,0 VA
15 pcs.	LED guiding light	á 0,1VA	1,5 VA
		Load in total =	36,9 VA

Number CP 11= 36,9 : 17VA = 2,17 ~ 3 pcs CP11

Connection diagram power supply CP 11



Terminals CP 11

Mains current

Terminal	Symbol	Input
Terminal 4	L	Phase 220-250V~ 50Hz
Terminal 6	-	Not used
Terminal 8	N	Zero 230V AC
Terminal 10	⏚	Protective conductor

Low current

Terminal C	+	Plus 24V DC (+)
Terminal D	+	Plus 24V DC (+)
Terminal E	+	Plus 24V DC (+)
Terminal H	-	Minus (-)
Terminal I	-	Minus (-)
Terminal K	-	Minus (-)

Technical data CP 11:

Mains current

Voltage	220-250V~ 50 Hz
Current drawn	100mA

Low current

Voltage	24V DC (18-28V)
Current at 18 V DC max.	95 mA
Power consumption at 18 V DC max.	17 VA
Terminals for max.	2,5mm Ø

Mechanical data for CP 11

Temperature range	-5º.....+35ºC
Installation	for building in
Isolation	4KV > 8 mm
Insulation	DIN 40050
DIN rail symmetric	DIN 46277
Dimensions (H x W x D)	85x70x81
Weight CP 11	610 g

Installation guide.

Mount the module on the DIN rail and connect the
plug between the modules. Via this plug +/- and " data lead" are connected. Connect mains current to the module, and check connection before vol-

Power supply type CP 11/ Bus extension cord type CP 09

Joint potential

FIG. 1: At large installations it often happens that there are several individual component groups with their own power supply, e.g. when CONCEPT 2000 is combined with our large light dimmer. Figure 1 to the right shows a simplified example on two individual groups. All Conson modules inputs are activated with a "minus"(-). The figure shows how an input is connected to minus via a push-button switch. By using the minus terminal on the module involved, the optimum installation is obtained, which is very immune to electric interference fields.

FIG. 1

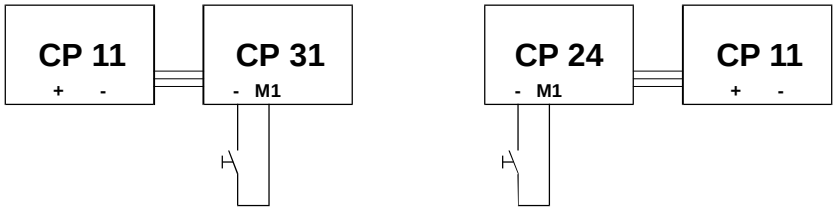


FIG. 2: Of different reasons concerning the installation, it might in some cases be easier to use a minus from another system. Figure 2 to the right shows an example where an atempt is made to get minus from another group. Unfortunately this is **not practicable**, as the two groups do not have joint potential.

FIG. 2

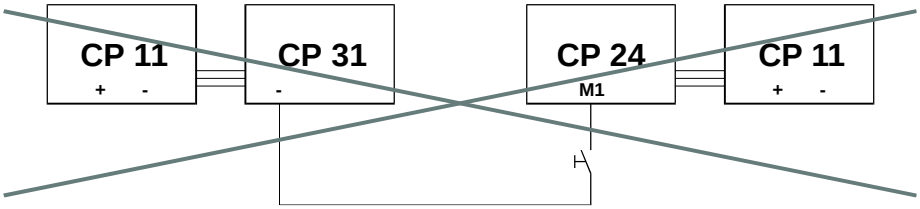
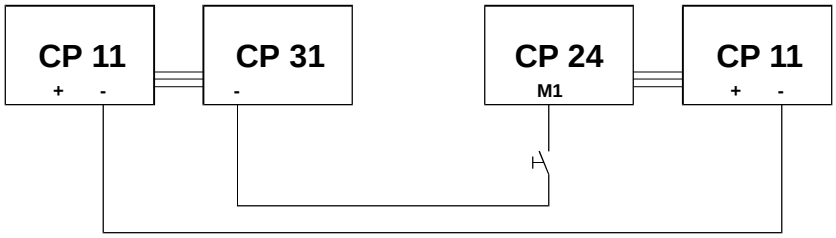


FIG. 3: However the problem can always be solved by securing a joint potential. This is done as shown in figure 3 by connecting minus on the two groups, e.g. with a lead between the minus terminals on the two power supplies.

NOTE! - Missing joint potential is the most common error in low current installations.

FIG. 3

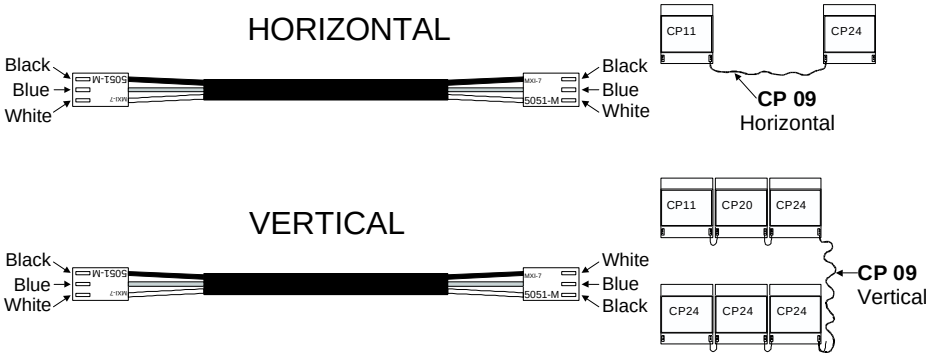


25cm Bus extension cord type CP 09

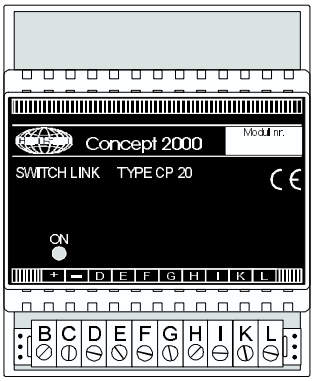
Accessories:
25 cm bus extension cord type CP 09 for connection of two CONCEPT 2000 modules. The cord contains plus, minus and data lead, and is applicable for horizontal and vertical connection.

EAN-NO. 5703513004101

NOTE! All CONCEPT 2000 modules is delivered as standard with 1 pcs. Bus cord on 3cm, except power supply type CP 11.



Switch-Link type CP 20



EAN-No. 5703513004781

Product description

Switch-Link type CP 20 is an electronic input module with 8 channels where to touch buttons, sensors, and other components, which can produce a signal in the form of a potential-free opening or closing switches can be connected.
The Switch-Link is designed for general control of a CONCEPT 2000 system with functions as "All off", "All on", light group turn on/off and light requirements in connection with dimmer modules. In other cases it is used for realisation of special functions.
The module has 8 inputs, which when activated, transmit a command over the data bus. These are received by the respective relay and dimmer modules, which reacts on the command as required.
The addressing and programming are done by means of CONKEY type CP 79 or via PC with interface.
It is possible to define special functions on each input as e.g. invert the signal group turn on/off and the function short/long press.
Furthermore AND-functions can be defined for the 8 channels being sent on the data bus.
Up to 4 pcs. CP 20 can be connected on the bus, i.e. 32(4x8) general functions can be connected.
The module is preprogrammed with module no. 2, Link-no. 1.

Installation guide.

Mount the module on the DIN rail and connect the plug between the modules. Via this plug +/- and "data lead" are connected. Connect low current to the module, and check connection before voltage is supplied for the module.
CP 20 must have external power supply type CP 11 (18-28V DC).

Possible applications Switch-Link CP 20

Central control of active modules:

- All light off
- All light on
- Light group turn on/off (with CP 31 combined with light level)
- UP/DOWN regulation of light dimmer group
- Fixed levels for light dimmer group
- Light requirements
- Central control of curtains UP/DOWN
- Special functions
- Time functions
- and much more

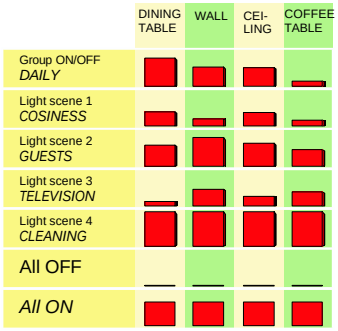
Toggle switches — Relay module type CP 24

Help relays (Curtain control) — Relay module type CP 24

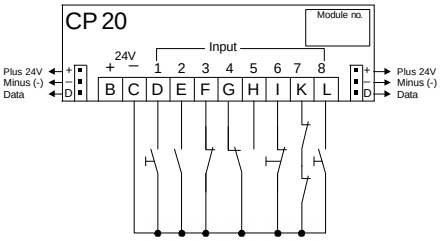
Light dimmers:
- Front / TRIAC dimmer — Dimmer module type CP 31LR
- Rear / Transistor dimmer — Dimmer module type CP 31CR
- Ballast controller / 0-10V / Low current control — Dimmer module type CP 31BC

Control in individual room:

- On/off control of light groups
- Light requirements
- All off in various rooms
- All on in various rooms
- Turn on/off in time



Connection diagram Switch-Link CP 20



All inputs can be used individually, i.e. potential-free closing, opening or changing switches from touch button panels or other sensors can be used.

Terminals (low current)

Terminal	Symbol	Input
Terminal B	+	Plus 24V DC
Terminal C	-	Minus (-)
Terminal D	D	Input 1 (-)
Terminal E	E	Input 2 (-)
Terminal F	F	Input 3 (-)
Terminal G	G	Input 4 (-)
Terminal H	H	Input 5 (-)
Terminal I	I	Input 6 (-)
Terminal K	K	Input 7 (-)
Terminal L	L	Input 8 (-)

Technical data Switch-Link type CP 20:

Low current

8 inputs controlled by minus (-)	
Voltage	24V DC (18-28V)
Current at 18 V DC max.	30 mA
Power consumption at 18 V DC max.	0,5 VA
Current all inputs	0,5 mA
Impulse time short press min.	20-300ms
Impulse time long press min.	1 sec.
Cable dimension low current e.g.	0,6mm
Terminals for max.	2,5mm Ø
Cable length	R max. 1 K-Ohm

Mechanical data for CP 20

Temperature range	-5º.....+35ºC
Installation	for building in
Isolation	4KV > 8 mm
Insulation	DIN 40050
DIN rail symmetric	DIN 46277
Dimensions (H x W x D)	85x70x72
Weight CP 20	100 g

17.07.97

Special functions
CP20 has a number of special functions which can be combined as required. The special functions can be chosen in the programming key Conkey type CP 79 at the bottom on the screen menu for Switch-Link CP 20. Table 1 shows the mode of operation of the special functions.

Invert signal
This function makes a simple inversion of the signal on the inputs chosen. The module will perceive input with opposite signs i.e. does the switch open it is perceived as closed, does the switch close it is perceived as open. The example shows a situation, where an inversion of input/channel 2 and 4 has been chosen.

```
T :CP20    N2       Link No.: 1
     Inv. signal:  2  4
```

Short/long
This function lets the module distinguish whether the impact is shorter or longer than 0.3 seconds. The system can e.g. be programmed so a short press turns on a light while a long press turns it off again. The example shows a situation where the module detects short/long on input/channel 3, 5, and 7.

```
T :CP20    N2       Link No.: 1
     Short/Long:   3  5  7
```

Grp.Turn on/off
If you want to control a group of toggle switches parallel, problems might occur if the switches get "out of time". The function Grp. Turn on/off solves this problem, as Start/Stop-commands is alternately transmitted on the bus. To make the function work the individual lights, curtains etc. must be programmed with "Help" instead of "Switch". Dimmer modules can furthermore be programmed with a light level. The example shows a situation where the module CP 20 has the function Grp.Turn on/off attached input/channel 8 which controls a light group consisting of a relay (R3-CP 24) and a dimmer module (CP 31).

```
T :CP20    N2       Link no.: 1
  Gp. on/off:                 8
```

```
T :CP24  N7  F10   L: SW -1
R3  A:Aux relay K:- - - - - -  8
```

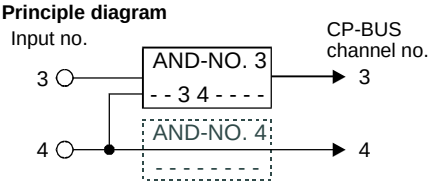
```
T :CP31  N9  F3    L: SW - 1
R-  A:Aux relay  K:- - - - - - 8
```

```
T :CP31  N9  F4    L: SW - 1
R-  A:Light 80%  K:- - - - - - -
```

AND
The module has built in 8 AND-functions,- one for each channel. E.g. the function "AND-no. 3" controls the signals on channel 3 - only when the AND-function is fulfilled, a signal will be transmitted on channel 3.
The example shows a situation, where AND no. 3 is programmed to feel terminal 3 and 4. Only when both terminal 3 and 4 are activated at the same time, a signal will be transmitted on channel 3. A typical application example could be control of outdoor lighting: A PIR-detector is connected terminal 3, and a light sensor to terminal 4. By this, the lighting is only turned on, if there is both movement and it is dark at the same time.
NOTICE! Input 3 is now engaged by the AND-function, and can therefore no longer be used for ordinary functions. Input 4 will still be transmitted on the data bus on channel 4 and can be used for other functions. This is only possible if AND-No. 4 is not used.

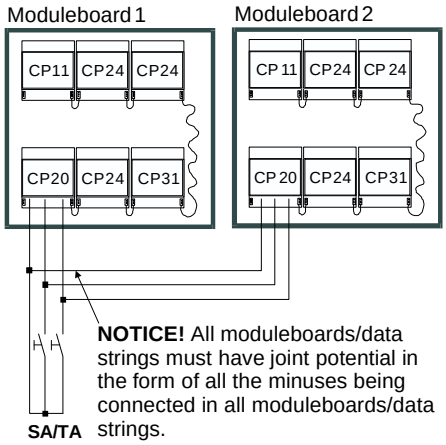
```
T :CP20    N2       Link No.: 1
     AND No. 3:    3 4
```

Principle diagram



It is furthermore possible to combine the AND-function with the functions "Switch signal" and "Grp. Turn on/off"

Installation with more moduleboards



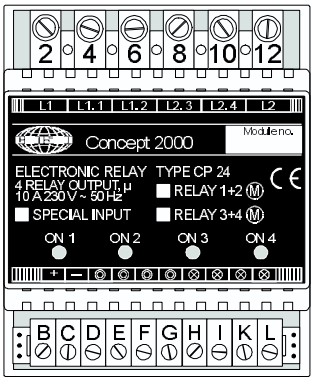
NOTICE! All moduleboards/data strings must have joint potential in the form of all the minuses being connected in all moduleboards/data strings.

In systems with more moduleboards/data strings, general functions such as "All on" and "All off", which are joint in the moduleboards/data strings be connected in parallel to control inputs on Switch-Link CP 20 in the various moduleboards. Minus (-) must also be connected in parallel, because the potential must equal in the moduleboards/data.
This form for parallel control is the most reliable. If the data string is continued, a blocking of both moduleboards/data string could be made in case of a short circuit and it would be difficult to perform fault finding.

Action on input	Explanation	Programmed function in Switch-Link CP 20			Bus command
		Inv. signal	Grp. on/off	Short/long	
	Switch closes				START
	Switch opens				STOP
	Switch closes				STOP
	Switch opens				START
	Switch closes				By turns START/STOP
	Switch opens				----------
	Short impulse				START
	Long impulse				STOP
	Short impulse				STOP
	Long impulse				START

Relay module type CP 24

Relay Module type CP 24



EAN-No. 5703513005207

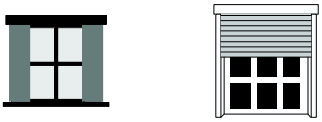
Product description

Universal Relay module type CP 24 is a programmable relay module with 4 relay outputs (2x2) - so that two outputs have a joint 10 A input. The module has 4 direct control inputs for control of the 4 relays. Each input is attached to a relay. The inputs can be programmed separately with function for toggle switch (standard) or special functions help relay or automatic step (with different times). Furthermore a mutual blocking of 2x2 relays can be programmed for curtain or screen control with help/ toggle switch/ or toggle with time function.
The module contains in addition 4 light diodes that indicate whether relays are turned on or off. These 4 light diodes are connected with 4 indication outputs which, if necessary, can be used in connection with EDP surveillance and monitor panels. Each indication output must maximum be loaded with 75 mA.
Power supply is via the 3-pin plug provided, which is connected to the modules. Via this plug plus (24 V DC), minus and data are connected. Over the data bus Switch-Link type CP 20 or Remote-Link type CP 70 can control the relay module. At operation over the bus it is possible to programme up to 40 functions (see action overview), which the relay must carry out when a bus command is received. Programming of special functions and bus functions is carried out with the programming key CONKEY type CP 79 or via a PC.

Possible applications relay module CP 24

Lighting

Motor control



Other electric appliances

Control options relay module CP 24

General control of relay module (relay 1-4) via the data bus:

- "Sleep timer"- function (time functions)
- Light group turn on/off
- All on (preprogrammed)
- All off (preprogrammed)
- Remote control from Remote-Link type CP 70A, B, and C.
- Imitated habitation from Time-Link CP 70D
- Burglar alarm from Time-Link CP 70D
- Central control of motors (curtains, screen)
- Blocking
- And much more

Direct control inputs relay 1-4:

- 4 pcs. toggle switches (on/off)

or

- 4 pcs. automatic step (time function)

or

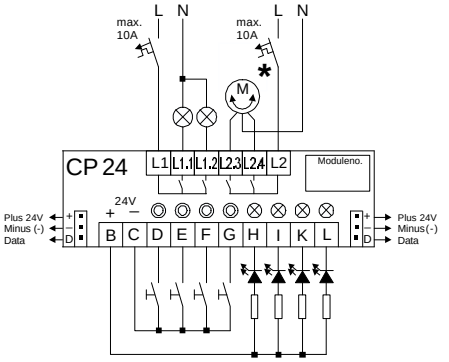
- 4 pcs. help relays

or

- 2 pcs. motor controls with mutual blocking of 2 relays (relay 1+2/ relay 3+4), toggle, time, and help function is applicable.

*** NOTICE! Above-mentioned functions can be combined. With motor controls for curtains, screen, or something else, you must make sure that the module is programmed with mutual blocking (relay1+2/3+4).**

Connection diagram relay module CP 24



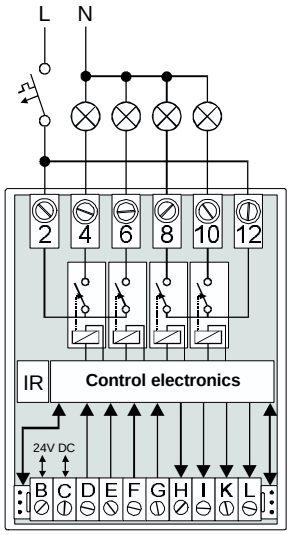
Terminals:

Mains current	Symbol	
Terminal 2	L1	Phase input relay1+2
Terminal 4	L1.1	Output relay 1 (L1)
Terminal 6	L1.2	Output relay 2 (L1)
Terminal 8	L2.3	Output relay 3 (L2)
Terminal 10	L2.4	Output relay 4 (L2)
Terminal 12	L2	Phase input relay 3+4
Low current		
Terminal B	+	Plus 24V DC
Terminal C	-	Minus (-)
Terminal D	◎	Control input relay 1 (-)
Terminal E	◎	Control input relay 2 (-)
Terminal F	◎	Control input relay 3 (-)
Terminal G	◎	Control input relay 4 (-)
Terminal H	⊗	Lightdiode outputR1 (-)
Terminal I	⊗	Lightdiode outputR2 (-)
Terminal K	⊗	Lightdiode outputR3 (-)
Terminal L	⊗	Lightdiode outputR4 (-)

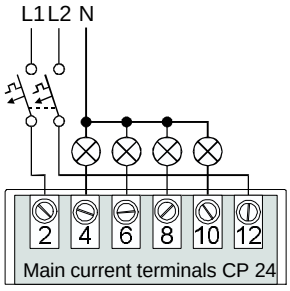
Technical data CP 24:

Mains current	
4 outputs max. 230V AC/50 Hz	
Max. load at 230V AC/50 Hz	2x2300 VA
Load ohmic - cos phi=1,0	2x2300 VA
Load inductive - cos phi=0,5	2x1150 VA
Coupling-in time max.	20 ms
Coupling-out time max.	20 ms
Delay at mutual blocking	40-50 ms
Fuses max.	2 x 10 A
Low current	
Current at 18 V DC max.	115 mA
Power consumption at 18 V DC max.	2,5 VA
Indication outputs	max. 75 mA
Current all presses	0.5 mA
Impulse time all presses min.	40 ms
Cable dimension low current	e.g. 0.6 mm
Cable length pr. input	R max. 1 K-ohm

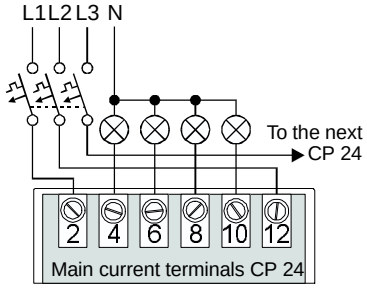
Connection 1-phased fuse



Connection 2-phased fuse



Connection 3-phased fuse



Control options of relay module type CP 24 via the data bus:	
Action via CP-Bus	**LCD-Conkey**
Switch on	ON
Switch off	OFF
Toggle function on/off	Impulse
On for 1 second	On 1 s
On for 2 seconds	On 2 s
On for 5 seconds	On 5 s
On for 15 seconds	On 5 s
On for 30 seconds	On 30 s
On for 45 seconds	On 45 s
On for 1 minute	On 1 m
On for 5 minutes	On 5 m
On for 15 minutes	On 15 m
On for 20 minutes	On 20 m
On for 30 minutes	On 30 m
On for 45 minutes	On 45 m
On for 60 minutes	On 60 m
Off after 15 seconds	Off > 15 s
Off after 30 seconds	Off > 30 s
Off after 60 seconds	Off > 60 s
Off after 5 minutes	Off > 5 m
Off after 15 minutes	Off > 15 m
Off after 30 minutes	Off > 30 m
Off after 60 minutes	Off > 60 m
Blocking (Bus+toggle input)	Block
Help relay function *	Aux. relay

*** NOTICE!** Help relay function is also used at light group turn on/off. Control input on Switch-Link type CP 20, which controls light group must be programmed with Grp. turn on/off.

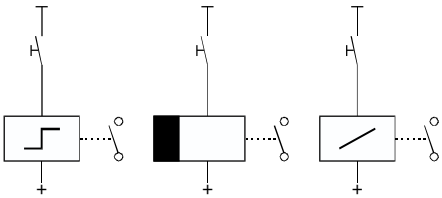
T :CP20 N2 Link No.: 1 Gp On/off: 8	T :CP24 N9 F8 L: SW -1 R1 A:Aux relay C:- - - - - - 8

Preprogramming of relay module CP 24:
Relay module CP 24 is preprogrammed for "Turn off relay 1-4" at signal from Switch-Link 1- channel 1 and "Turn on relay 1-4" at signal from Switch-Link 1- channel 2. - See screen menus

T :CP24 N3 F1 L: SW -1 R1 A:Off C:1- - - - -	T :CP24 N3 F5 L: SW -1 R1 A:On C:-2- - - -
T :CP24 N3 F2 L: SW -1 R2 A:Off C:1- - - - -	T :CP24 N3 F6 L: SW -1 R2 A:On C:-2- - - -
T :CP24 N3 F3 L: SW -1 R3 A:Off C:1- - - - -	T :CP24 N3 F7 L: SW -1 R3 A:On C:-2- - - -
T :CP24 N3 F4 L: SW -1 R4 A:Off C:1- - - - -	T :CP24 N3 F8 L: SW -1 R4 A:On C:-2- - - -

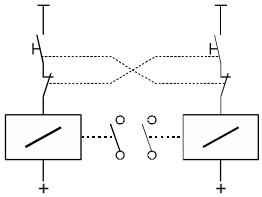
Special functions relaymodule type CP 24 for direct control inputs:	
Action for toggle inputs	**LCD-Conkey**
On for 1 second	On 1 s
On for 2 seconds	On 2 s
On for 5 seconds	On 5 s
On for 15 seconds	On 5 s
On for 30 seconds	On 30 s
On for 45 seconds	On 45 s
On for 1 minute	On 1 m
On for 5 minutes	On 5 m
On for 15 minutes	On 15 m
On for 20 minutes	On 20 m
On for 30 minutes	On 30 m
On for 45 minutes	On 45 m
On for 60 minutes	On 60 m
Help relay function	Aux relay
Mutual blocking of 2 rel.	Mut. block.

Toggle switch Automatic step Help relay



Principle diagrams

Curtain or screen controls



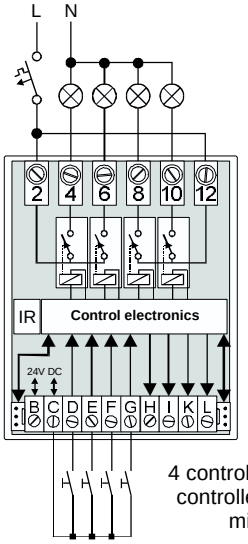
Principle diagram, relays can also be used with toggle switch, help relay, or time function at mutual blocking.

*** NOTICE! At motor controls for curtains, screen or something else, you must make sure that the module is programmed with mutual blocking (relay 1+2/3+4).**

09.08.97

Special functions relay module CP 24

Standard:
The 4 control inputs of the relay module for relay 1-4 is as standard preprogrammed for toggle function, i.e. you have 4 toggle switches.The programming can be changed individually pr. relay.



4 control inputs controlled with minus (-)

Automatic step:
The 4 direct control inputs of the relay module for relay 1-4 can separately be programmed to have a automatic step function (time function) in this way you can have up to 4 automatic steps with different times in a module CP 24.

Programming:
To be able to programme these special functions you must in the menu SET UP choose at
T: (type) module type CP 24S (special functions).

```
T :CP24S  N3   SF1
R1    A: -
```

By choosing CP 24S the first 4 functions (SF1 - SF4) are reserved for special functions for the 4 control inputs for relay 1-4:

SF1 for input 1/ relay 1	(1+2 see later on)
SF2 for input 2/ relay 2	(2+1 see later on)
SF3 for input 3/ relay 3	(3+4 see later on)
SF4 for input 4/ relay 4	(4+3 see later on)

At SF1 - SF4 you can choose at A: (action) a time (automatic step function), which controls the various relays on the toggle input.
The times can be different for relay 1-4 (see table of actions for toggle inputs).

Example of programming:

Relay 1
```
T :CP24S  N3   SF1
R1    A: On 30 s
```

Relay 2
```
T :CP24S  N3   SF2
R2    A: On 1 m
```

Relay 3
```
T :CP24S  N3   SF3
R3    A: On 30 m
```

Relay 4
```
T :CP24S  N3   SF4
R4    A: On 60 m
```

If you still want to use one of more relays as toggle switch and not as automatic step or something else, you abstain from setting up an action at A: (action) for SF1-SF4, relay 1-4.

Example for relay 3 - SF3 toggle switch function:

```
T :CP24S  N3   SF3
R3    A: -
```

Help relay function:
The 4 control inputs can separately be used with help relay function, i.e. that relay 1-4 turn on at a constant signal (-) on input and turn off when the signal is interrupted.

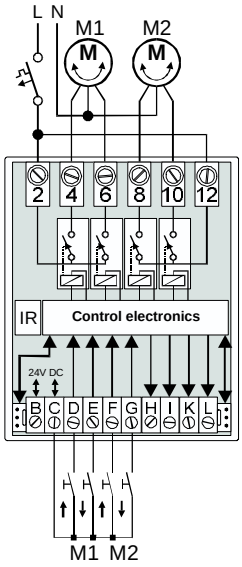
Help relay function can e.g. be used when you control a dimmer module type CP 31 and at the same time want to turn on for the basic lighting with constant light level. In this case the indication output can from dimmer module type CP 31 (terminal H) be directly wired to one of the 4 control inputs on a CP 24 (terminal D, E, F, and G).

Example of programming for relay 1 and 4 - SF1 and SF4 help relay:

```
T :CP24S  N3   SF1
R1    A: Aux relay
```

```
T :CP24S  N3   SF4
R4    A: Aux relay
```

Motor control with mutual blocking:
The relay module CP 24 can be used for 2 motor controls UP/DOWN with mutual blocking of 2 relays. This function is used for control of e.g. curtains, screen, overhead doors and other motors, where the 2 relays for UP- and DOWN-function must have a mutual blocking.
The function ensures that the 2 relays controlling the motor never are turned on at the same time and that there is a time delay between the relays when the direction is changed (UP/DOWN) on the motor.
Mutual blocking can be chosen for relay 1+2 (motor 1) or relay 3+4 (motor 2) with functions: toggle, toggle with time and help relay function.



Programming of mutual blocking:
For programming of mutual blocking the following is chosen at A: (action) Mut. block..
For relay 1+2 SF1 is used and for relay 3+4 SF3.

```
T :CP24S  N3   SF1
R12   A: Mut. block.
```

```
T :CP24S  N3   SF3
R34   A: Mut. block.
```

At special functions SF2 and SF4 toggle, toggle with time and help relay function are chosen for relay 1+2 and relay 3+4.

See the next page >>

Motor control with mutual blocking:

- Continuation -

Motor control with mutual blocking and toggle function:

If you at SF1 or SF3 have chosen mutual blocking for motor control with relay 1+2 or relay 3+4 and want to operate with toggle function, you must abstain from programming an action on SF2 or SF4 at A:.

The function ensures that the relays 1+2 or relay 3+4 are operated as toggle switches on/off with mutual blocking for the up/down-function (never turned on at the same time).

Example of motor control with toggle function on relay 1+2: A short press on UP 1 button and motor 1 runs the opposite way (UP). Another press on this button and motor 1 will stop. Is the button touched again the motor will continue upwards. For DOWN 1 button it is the same (toggle function).

Is the DOWN button touched during driving up the motor will be without voltage for 40-50 ms and hereafter start driving in the opposite direction (down).

Programming of motor control with mutual blocking and toggle function:

Relay 1+2 Motorcontrol	T :CP24S N3 SF1 R12 A: Mut. block.
Relay 1+2 Togglefunktion	T :CP24S N3 SF2 R21 A: -
Relay 3+4 Motorcontrol	T :CP24S N3 SF3 R34 A: Mut. block.
Relay 3+4 Togglefunktion	T :CP24S N3 SF4 R43 A: -

Motor control with mutual blocking and toggle with time:

At SF1 or SF3 mutual blocking for motor control must be chosen with relay 1+2 or relay 3+4. If you want operation with toggle function and that the motors will be without voltage after they have made their final stop, you can programme this function on SF2 or SF4 at A:.

NOTE! Toggle function with time only applies at mutual blocking and not at automatic step function.

Example on motor control with toggle with time on relay 1+2 (motor 1): A short press on UP 1 button and motor 1 runs in one direction (UP). Another press on the button and motor 1 will stop. Is the button operated again the motor will continue upwards. After the programmed time (SF2 for motor 1 and SF 3 for motor 2), where the button is not being activated, the relay turns off automatically when the time has gone. For DOWN 1 button the same function applies (toggle).

Is DOWN button operated during driving up the motor will be without voltage for 40-50 ms and hereafter start driving in the opposite direction (down).

NOTE! The time, object for programming depends on the running time of the motor from UP to DOWN and reverse.

Example of programming of motor control with mutual blocking and toggle with time:

Relay 1+2 Motorcontrol	T :CP24S N3 SF1 R12 A: Mut. block.
Relay 1+2 toggle+time	T :CP24S N3 SF2 R21 A: On 5 m
Relay 3+4 Motorcontrol	T :CP24S N3 SF3 R34 A: Mut. block.
Relay 3+4 toggle+time	T :CP24S N3 SF4 R43 A: On 1 m

Motor control with mutual blocking and help relay function:

At SF1 or SF3 mutual blocking for motor control is chosen with relay 1+2 or relay 3+4. For the help relay function is programmed on SF2 or SF4 at A: (action).

The function ensures that the relays 1+2 or relay 3+4 is operated as help relays with mutual blocking, i.e. That the motors only run as long as the buttons for UP or DOWN are activated. Relays for UP and DOWN are never turned on at the same time.

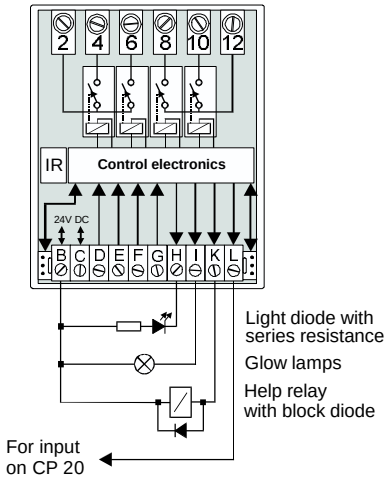
Programming of motor control with mutual blocking and help relay function:

Relay 1+2 Motorcontrol	T :CP24S N3 SF1 R12 A: Mut. block.
Relay 1+2 helprelay	T :CP24S N3 SF2 R21 A: Aux relay
Relay 3+4 Motorcontrol	T :CP24S N3 SF3 R34 A: Mut. block.
Relay 3+4 helprelay	T :CP24S N3 SF4 R43 A: Aux relay

Indication outputs

The relay module has 4 indication outputs for connection of monitor panels, control light on touch button panels or EDP/CTS-surveillance. The outputs can also be used for connection of 24V glow lamps or help relays with block diode. The indication outputs are parallel to the control lights in front of the module and must max. be loaded with 75 mA.

NOTE! Indication outputs are not short circuit protected !



Mechanical data relay module CP 24:

Temperature range	-5º.....+35ºC
Installation	for building in
Isolation	4KV > 8 mm
Insulation	DIN 40050
DIN rail symmetric	DIN 46277
Dimensions (H x W x D)	85x70x76 mm
Weight	170 g

Installation guide.

Mount module on the DIN rail and connect the plug between the modules. Via this plug +/- and "data cord" are connected. Connect mains current to the module, and check connection before voltage is supplied for the module. The module must have external power supply type CP 11(18-28V DC).

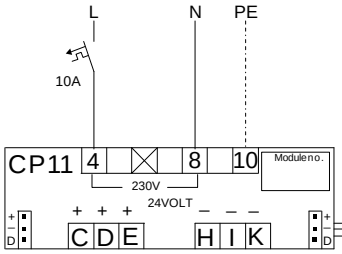
*** NOTICE! The motor controls for curtains, screen or something else, you must make sure that the module is programmed with mutual blocking (relay 1+2/3+4) before voltage is connected to the relay outputs.**

09.08.97

Relay module type CP 24

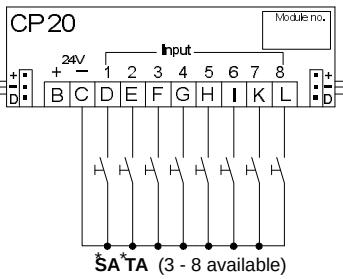
The use and mounting of the relay module type CP 24 (4 togglerelays) and dimmer module type Cp 31 (3 versions), controlled by the control inputs and central controlling from Switch-Link type CP 20 with the preprogrammed functions.

Power supply type CP 11



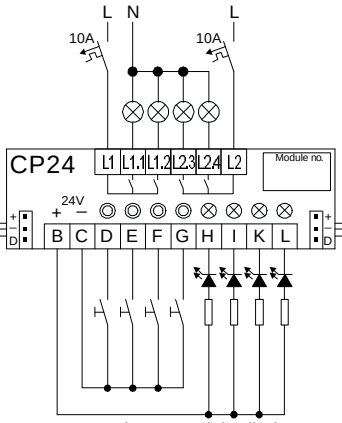
The power supply provides 24V DC (18-28V) can be loaded with 17VA. This equals about 20 lights. Number of lights however depends on which module type and operation equipment that is used.

Switch-Link type CP 20:
8 inputs/channels for:
· Central control
· Light group turn on/off
· Light requirements etc.
Transmit 8 channels on the data bus (max. 4 pcs. CP 20 pr. data string= 32 channels)



*SA *TA (3 - 8 available)

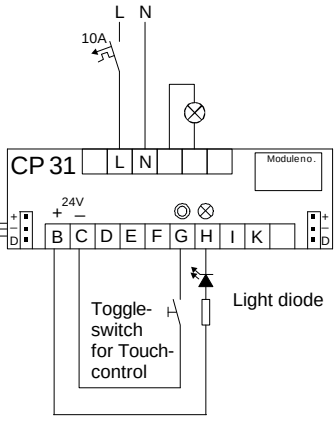
Relay module type CP 24:
- 4 relay outputs (2x2)



Toggle press Relay1-4

Light diodes

Dimmer module type CP 31:



Toggle-switch for Touch-control

Light diode

*** To make the forthcoming work easy, the modules preprogrammed for the following setting:**

Switch-Link type CP 20 - module no. 2:
CP 20 / Link No. 1 (indicates that it is Switch-Link no. 1, max.4 pcs. pr. data string).

Relay module type CP 24 - module no. 3:
- Relay 1-4 OFF= Signal Switch-Link 1 channel 1 (CP 20 terminal D) - Function no. 1-4
- Relay 1-4 ON= Signal Switch-Link 1 channel 2 (CP 20 terminal E)- Function no. 5-8

(up to 40 functions can be programmed)

Dimmer module type CP 31LR, CP 31CR, and CP 31BC - module no. 3:
- OFF= Signal from Switch-Link 1 channel 1 (CP 20 terminal D)- Function no. 1
- ON= Signal from Switch-Link 1 channel 2 (CP 20 terminal E)- Function no. 2

(up to 40 functions can be programmed)

The above-mentioned means that you can directly connect "all off" and "all on" to Switch-Link CP 20 channel 1 and 2, and in this way have a general "all off" and "all on" function.

The screen menus below show settings which the CONCEPT 2000 modules is preprogrammed with:

Switch-Link type CP 20

```
T :CP20   N2      Link No.: 1
          AND No. 1:
```

By activation of input (contact closes) the signal START is transmitted, and by deactivation (contact opens) the signal STOP on the data bus.

Function active modules:
The preprogrammed functions in active modules type CP 24 and CP 31 are activated with START-signals and make them carry out the action they are programmed with.
Type CP 24: F1 - F8
Type CP 31: F1 + F2

Relay module type CP 24

```
T :CP24 N3 F1   L: SW -1
R1 A:Off      C:1- - - - - - -
```

```
T :CP24 N3 F2   L: SW -1
R2 A:Off      C:1- - - - - - -
```

```
T :CP24 N3 F3   L: SW -1
R3 A:Off      C:1- - - - - - -
```

```
T :CP24 N3 F4   L: SW -1
R4 A:Off      C:1- - - - - - -
```

```
T :CP24 N3 F5   L: SW -1
R1 A:On       C:-2- - - - - -
```

```
T :CP24 N3 F6   L: SW -1
R2 A:On       C:-2- - - - - -
```

```
T :CP24 N3 F7   L: SW -1
R3 A:On       C:-2- - - - - -
```

```
T :CP24 N3 F8   L: SW -1
R4 A:On       C:-2- - - - - -
```

Dimmer module type CP 31

```
T :CP31 N3 F1   L: SW -1
R-  A:Off     C:1- - - - - - -
```

```
T :CP31 N3 F2   L: SW -1
R-  A:On      C: -2- - - - - -
```

Copy function:
After installation of the modules you must in accordance with position on switchboard write a module no. on the front label. Subsequently standard settings are read out with Conkey type CP 79 in menu GET. Afterwards the copy function is used in the Conkey. In the menu COPY settings are copied to the module no. you have given the modules (module 1,2,3,4,5 etc.) After copying, settings are adjusted in the Conkey-menu SETTING to the setting wanted and after that transmitted via the Conkey under menu SEND to the modules.

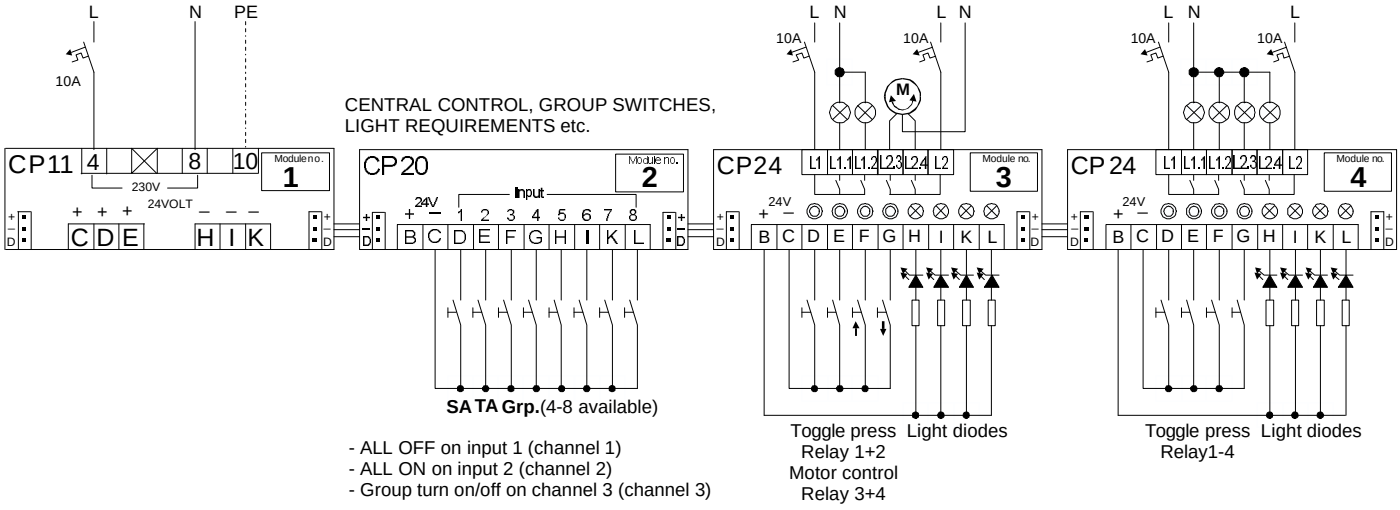
Relay module type CP 24

Example of application and programming of relay modules type CP 24 (4 relays) and Switch-Link type CP 20 for central control:

CP 20 module no. 2: - Input 1= All off
- Input 2= All on
- Input 3= Light group turn on/off for CP 24 module no. relay 1 and CP 24 module no. 4 relay 2+4

CP 24 module no. 3 : - Relay 1+2 used for light control with toggle switch function (standard)
- Relay 3+4 is used for motor control of e.g. blackout curtains

CP 24 module no. 4: - Relay 1-4 is used for light control with toggle switch function (standard)



The menu pictures below show settings for the above-mentioned functions:

Switch-Link type CP 20
Module no. 2

Input/Channel no. 3
Group turn on/off

```
T :CP20   N2      Link No.: 1
  Gp On/off:   3
```

Normally an input transmits the signal START at activation (contact closes), and the signal STOP at deactivation (contact opens) on the data bus.
By programming input/channel no. 3 to include group turn on/off function, signals START and STOP are alternately transmitted on the data at activations on terminal F .
Function of light group:
At START-signal the help relay turns on and at STOP-signal the help relay turns off.

Relay module type CP 24 - Module no. 3
With special functions

SF1+SF2= R 1+2 toggle switches

```
T :CP24S  N3   SF1
R1   A: -
```

```
T :CP24S  N3   SF2
R2   A: -
```

SF3+SF4= R 3+4 Motor control

```
T :CP24S  N3   SF3
R34  A: Mut. block.
```

```
T :CP24S  N3   SF4
R43  A: On 5 m
```

Function 5-6= All off R 1+2

```
T :CP24  N3  F5   L: SW  -1
R1  A:Off       C:1- - - - - - -
```

```
T :CP24  N3  F6   L: SW  -1
R2  A:Off       C:1- - - - - - -
```

Function 5-8= All on R 1+2

```
T :CP24  N3  F7   L: SW  -1
R1  A:On        C:-2- - - - - -
```

```
T :CP24  N3  F8   L: SW  -1
R2  A:On        C:-2- - - - - -
```

Function = Group turn on/off R 1

```
T :CP24  N3  F9   L: SW  -1
R1  A:Aux relay  C:- -3- - - - -
```

Relay module type CP 24 - Module no. 4
Function 1-8 standard setting

Function 1-4 All off

```
T :CP24  N4  F1   L: SW  -1
R1  A:Off       C:1- - - - - - -
```

```
T :CP24  N4  F2   L: SW  -1
R2  A:Off       C:1- - - - - - -
```

```
T :CP24  N4  F3   L: SW  -1
R3  A:Off       C:1- - - - - - -
```

```
T :CP24  N4  F4   L: SW  -1
R4  A:Off       C:1- - - - - - -
```

Function 5-8 All on

```
T :CP24  N4  F5   L: SW  -1
R1  A:On        C:-2- - - - - -
```

```
T :CP24  N4  F6   L: SW  -1
R2  A:On        C:-2- - - - - -
```

```
T :CP24  N4  F7   L: SW  -1
R3  A:On        C:-2- - - - - -
```

```
T :CP24  N4  F8   L: SW  -1
R4  A:On        C:-2- - - - - -
```

Function 9 +10 is added for group turn on/off relay 2+4

```
T :CP24  N4  F9   L: SW  -1
R2  A:Aux relay  C:- -3- - - - -
```

```
T :CP24  N4  F9   L: SW  -1
R4  A:Aux relay  C:- -3 -  - - -
```

09.08.97

CONCEPT 2000

LightDimmer CP31

Sensors / operation

CP31LR **CP31CR** **CP31BC / DD**

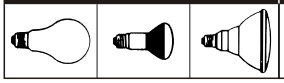
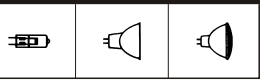
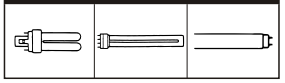
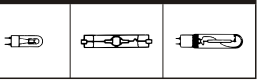
CP31LR	CP31CR	CP31BC / DD
R-L	R-C	0-10V
Leading edge TRIAC-dimmer	Trailing edge Transistor-dimmer	Controlsignal 0-10V And DSI/Dali
R + L Glowing lamps and conv. transformers	**R + C** 230V 12V Glowing lamps and electr. transformers	**HF** Electr. forkoblinger for light tubes or transform.
Advantages: • Softstart • Triac for high currents • For ohmic and inductive load **Disadvantages:** • No electronic shortcircuit fuse • Acustic sounds from noise reduction coil • Not for capacitive loads **Light sources:** • Ohmic and inductive	**Advantages:** • Softstart • Electronic short-fuse • Minimal acustic noise • For ohmic and capacitive load **Disadvantages:** • Not for inductive load without extra capacitor **Light sources:** • Ohmic and capacitive	**Advantages:** • Less energi consumption • Blinckfree start • Longer lifetime of light tubes • No stroboscope effect • Stabil light • No mechanical noise • Softstart **Disadvantages:** • Price **Lightsources:** • Light tubes og compact light tubes

R = Ohmic load:
- Glowing lamps
- 230V halogen lamps

L = Inductiv load:
- Traditional transformers for low-volt halogenlamps
- Electronic transformers (leading edge) for low-volt halogen lamps
- HF-forkoblinger for direkte dæmpning af lysstofrør og kompaktlysstofrør regulerings-område begrænset, kræver ohmsk grundlastmodstand

C = Capacitive load:
- Electronic transformers (trailing edge) for low-volt halogen lamps.

1) Dæmpning anbefales ikke, p.g.a. dårlig farvegengivelse

Glowing lamps	230V halogen lamps	Low-volt halogen lamps	Low energi bulbs	Compact-light tubes	Light tubes	Metal-halogen lamps 1)	High press. natrium lamps 1)
							

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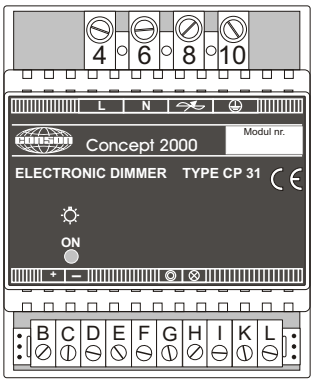
CONCEPT 2000

LightDimmer CP31

LightDimmer CP31LR and CP31CR



Leading edge CP31LR
EAN-Nr. 5703513005757

Trailing edge CP31CR
EAN-Nr. 5703513005917

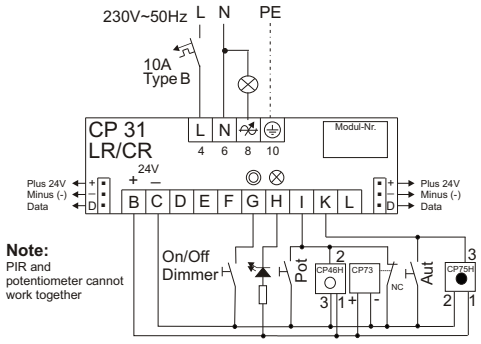
Load controller CP31BC
EAN-Nr. 5703513006143

Product description

CP31xx is an intelligent programmable light dimmer unit available in 3 versions:
- CP31LR for dimming of 40-1000 VA ohmic and inductive load.
- CP31CR for dimming of 40-600 VA ohmic and capacitive load.
- CP31BC for dimming of HF-loads for light tubes using 0-10V control signals.

CP31xx regulates logaritmically and has built-in softstart, termical fuse and null-wire failure detection. In addition CP31CR has a electronic short fuse. The lightdimmer is controlled by a switch connected to input G offering:
ON, OFF, UP and DOWN.
Operation over the databus controls up to 40 built-in functions, as for example: All Off, All On, Group Off, Group On (fixed light level), light scenes, Sleep timer, etc. Parallel operation via databus allows control of multiple CP31's. Programming of functions is carried out with CONKEY CP79 or a PC.
CP31 holds a 75 ma indicator output reflecting whether module is On or Off.

Connecting CP31LR, CP31CR and CP31BC



Connections for CP31LR/CR:

High voltage	Symbol	
Pin 4	L	Phase input
Pin 6	N	Null
Pin 8	⏚	Regulated phase
Pin 10	⏚	Ground

Low voltage for CP31LR/CR/BC

Pin B	+	Plus 24V DC
Pin C	-	Minus (-)
Pin D-E-F		See page 5.29
Pin G	◎	Impulse input (-)
Pin H	⊗	indicator output (-)
Pin I	I	PIR/potentiometer
Pin K	K	Daylightsensor
Pin L	L	Conversation

Technical data CP31xx:

High voltage:

CP31LR	
Load 220V AC/50Hz	40-1000 VA
Load 110V AC/60Hz *	40-500 VA
Power loss	< 1%
CP31CR	
Load 220V AC/50Hz	40-600 VA
Load 110V AC60Hz *	40-300 VA
Power loss	< 1%

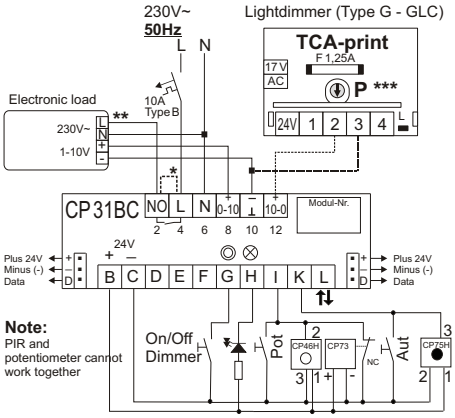
Low current CP31LR og CP31CR:

Curr. consumption @ 18 V DC max.	30 mA
Power consumption @ 18 V DC max.	0,5 VA

Common data for CP31xx:

Mains	230V AC/50 Hz
Softstart	500 ms
discontinuation time	<300 ms
Fuse (type B)	max.10 A
Indications output	max. 75 mA
Curr. consumption switch	0.5 mA
Impulse time for switch	50-300 ms
Cable dimension low current	f.ex 0.6 mm
Cable length pr. input	R max. 1 K-ohm

* Special version



* **Note !** When programming min/max light levels, the short cut is fitted and then removed when programming is done.

** At higher loads or at 3-phase control use a contactor with an RC across coil.

*** After applying high current and control-wires, the potentiometer "P" must be regulated. Turn off CP31BC and that lightdimmer type G eller GLC are off. If light is not off the potentiometer "P" is turned clockwise untill light turns off.

Connections for CP31BC

High voltage	Symbol	
Pin 2	NO	Relay output 10A
Pin 4	L	Phase input
Pin 6	N	Null
Pin 8	0-10V	Output 0-10V
Pin 10	⊥	Minus (-)
Pin 12	10-0V	Output 10-0V

Technical data for CP31BC

High voltage

Mains	max. 230V AC/50 Hz
Relay output	10A/230V ~
Load ohmic - cos phi=1,0	2300 VA
Load inductive - cos phi=0,5	1150 VA
In- and out time max.	50 ms
Fuse max.	10 A
Load 0-10V output	max. 75 mA
Load 10-0V output	max. 5 mA

Low voltage for CP31 BC

Curr. consumption @ 18 V DC max.	50 mA
Power consumption @ 18 V DC max.	**0,9 VA**

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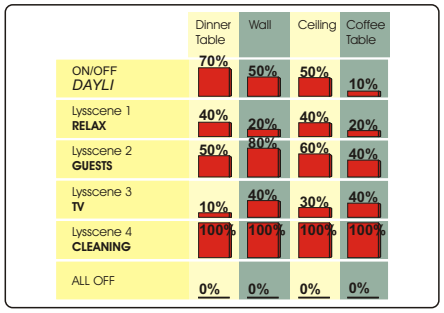
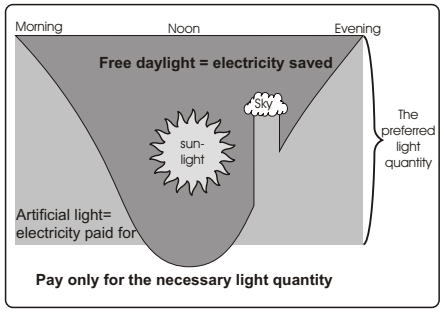
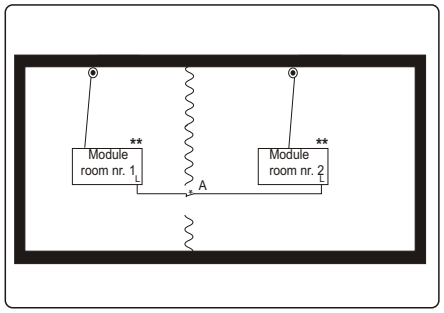
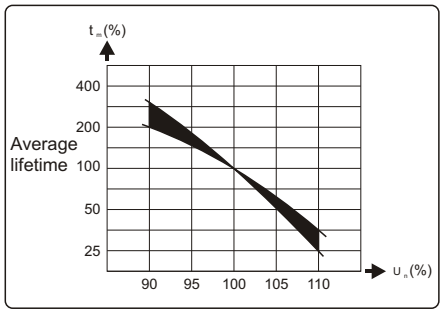
CONCEPT 2000

LightDimmer CP31









Aemployment examples/ energy saving

Create the right atmosphere with light scenes
A single push on the button can create the right lighting.
For instance, you can have buttons for:
Daily - The luminous, whitch you prefewhen entering the room.
Guests - Dim light different levels - more light over the dinner table.
Comfortable-Dim light where a few things are in focus.
TV - Blinds are closed and the light is being dimmee in order not to daze.
Cleaning -100% light

Daylight controlling.
The curve shows how many hours it is possible to save on artificial light. Pay only for the necessary light quantity.
The sun is a great light source, which varies over the day, it makes a 180 degrees journey and has different attitude depending on the season. Therefore , you have to make demands on method of control and sensorss as well as their position. CP31XX is fit with an entry point for a daylight sensor in such a way that you can control the light during the daytime.
CP31xx regulates the artificial light as to much daylight there is. (The daylight sensor must “see” 50% daylight and 50% artificial light).
The goldsmith wishes a lot of light during the day and a more dimmed lighting in the evening in his show window. This kind of lighting optimizes the customers' perception of a display.
Day lighting and evening lighting at a service station make a demand for accommodation to daylight aiming at creating as little contrast between inside and outside. This happens by means of reverse day lighting. (Daylight sensor shall only “see” daylight)

Connecting dimmers and ballast controller
Conson has developed dimmer and ballast controllers in such a way that up to 10 dimmers/ballast controllers can controlled together. This function may be applied seveal plases.

For instance:
Large rooms which by means of folding doors can be divided up into smaller rooms. In rooms or halls in which the load is too great for one dimmer/ballast controller the load can be divided between several dimmer in such a way that these may be connected permanently by connecting the “L’’ Clamps.

NB ! The connection of dimmers/ballast controllers must only be done at the side with low current. The regulating phases or outputs MUST NOT be connected.

Life time of incandescent lamps
As it is seen from this graph, it pays to dim the light. If the nominal mains voltage is lowered by 5 to 10%, most light sources average life time will double immediately. Tis reduction also results in less heat emission reducing the demand for air condition.

General - need - economy
Without doubt, there is economy in light controlling and light dimming. How much depends on the individual installation. We have seen payback times from six to four years but it completely depends on the arrangement of the room and its condition. Contact your electrician and remember that you get ‘light’ experiences when using less energy. Put a damper on the electricity bill.

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CONCEPT 2000

LightDimmer CP31

Employment
The following description of our intelligent dimmer module CP31xx only gives a small insight into the many possibilities offered by these dimmers. Compared to other dimmers at the market Conson set the standard
Dimmers module Cp31xx
- Three different hardware versions:
- CP31LR for ohmic and inductive load
- CP31CR for ohmic and capacitive load
- CP31BC for 0-10 / 10-0 volt's control
- CP31DD for digital protocol
Advantages of dimmer modules CP31xx:
-Short-circuit fuse (version CR)
-Overload protection (Long useful life)
-No fuse to be changed
-10 light levels – different luminous intensities
-Timer function – sleep function
-Touch-control – on/off, up/down
-Indication – for lay-out panel/buttons
-Battery backup – for the next 1000 years
-Advanced automatic control – simple regulation
-Soft start with high starting current
-Thermal protection with too high temperatures
-Both dimmers and ballast controllers can be connected in a simple way
-Logarithmic dimming with a single touch - Protection against zero disconnection
-Fade times

"Sleep timer": For instance, one push at the 'sleep timer' button turns on the light at 30-50% light and automatically turns of the light after 30 minutes when the children has fallen to sleep.
"Sleep control": One push at the 'sleep control' button turns on the light at for instance 10% light and automatically turns of the light after 15 seconds.
"Everyday light": Comfortable and energy-saving light in the house.
"Guests": The right and predetermined luminous intensity in the whole house when the guests arrive. Not only does the table have to look nice and food taste good, candle lights and artificial light including the lamps outside have to create the right atmosphere.
"TV": A clear pictures with a non-dazzling light – and with the curtains drawn.
"Comfortable": Feeling pleasant and comfortable make a demand for the right light atmosphere.
"Cleaning": A must which demands 100% light.
"Up at night": The button next to the bed – some might call it a luxury but still very pleasant. A single push and the light is turned on at 10% in the bedroom, 50% in the hallway and 90% in the bathroom. When go back to bed, the light will automatically be turn off.
"Getting home": Just push one button and turn on the light you need when you get home."Going to bed": The button is placed next to the bed and turn off all the light in the house except the light in the bedroom.
"Party": Evocative light when you are having a party. At the same time, you can block the buttons all over the house in order to avoid anyone fiddling with the buttons.
"Outside lightning": Normally, you would turn on the outside lightning at a 100% when it gets dark outside. With Conson's intelligent dimmers you can control the light at different luminous intensities depending on whether a person is outside or not.
Example: When it gets dark, from 4 pm to 8 pm, the light turns on at 70% and from 8 pm to midnight, the luminous intensity is 30%. If a person walks by, the light will automatically increase to 100% in five minutes.
"Imitated activity": (Protection against burglars) Now, it is possible to turn on various lamps at different intensities which is suited to your needs.
"Delayed turn off": If you have a centrally placed lay-out panel or a 'turn off everything' button you will be able to make a delay (turn off >60 seconds). You will then have 60 seconds to get to the door before the light turns off.
"Memory": (Turn on, turn on in ? time and change-over) The dimmer turns on at the level last used. If the M1 (change-over) button has not been activated within 20 seconds the next function is to adjust the light up (a long push).

Control possibilities of the dimmer module Cp31 via the data bus:

Aktion via CP-Bus		LCD-Display
ON		ON
OFF		Sluk
Pulse (on/off,dim)	**	Pulse
ON for 15 seconds		ON 15 s
ON for 30 seconds		ON 30 s
ON for 45 seconds		ON 45 s
ON for 1 Minutes		ON 1 m
ON for 5 Minutes		ON 5 m
ON for 10 Minutes		ON 10 m
ON for 15 Minutes		ON 15 m
ON for 20 Minutes		ON 20 m
ON for 30 Minutes		ON 30 m
ON for 45 Minutes		ON 45 m
ON for 60 Minutes		ON 60 m
OFF after 15 seconds		OFF > 15 s
OFF after 30 seconds		OFF > 30 s
OFF after 60 seconds		OFF > 60 s
OFF after 5 Minutes		OFF > 5 m
OFF after 15 Minutes		OFF > 15 m
OFF after 30 Minutes		OFF > 30 m
OFF after 60 Minutes		OFF > 60 m
Blocking (Bus+kipindgang)		Block
Auxiliary relay function	*	Aux
Light level up	**	Light up
Light level down	**	Light down
Light level 10%		Light 10%
Light level 20%		Light 20%
Light level 30%		Light 30%
Light level 40%		Light 40%
Light level 50%		Light 50%
Light level 60%		Light 60%
Light level 70%		Light 70%
Light level 80%		Light 80%
Light level 90%		Lys 90%
Light level 100%		Light 100%
Fade 5 seconds		Fade 5 s
Fade 10 seconds		Fade 10 s
Fade 20 seconds		Fade 20 s
Fade 30 seconds		Fade 30 s
Fade 1 Minutes		Fade 1 m
Fade 5 Minutes		Fade 5 m
Fade 15 Minutes		Fade 15 m
Fade 2 Timer		Fade 2 T
Daylight control		AUT
Inverted daylight control		AUT Inv
Potentiometer control		Pot

* Auxiliary relay function is employed with special functions for instance Group Turn on/off (see CP20), twilight relay (see CP70D).

** With 'L' communication (meaning no short between clamps 'E' and 'L') "toggle /M1" functions as Turn on/off, "light up" as Turn on and "light down" as Turn off.

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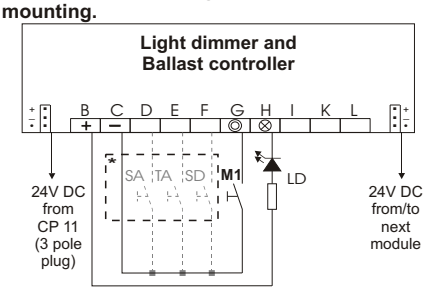
CONCEPT 2000

LightDimmer CP31

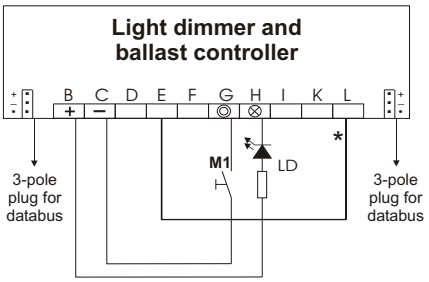
Installation of dimming module CP31xx
Clip the module on the DIN rail and connect the connection wires to the modules. The plus/minus lines and “data line” are connected through this wire. Connect high voltage to the module and control the connection before turning on the power.
NOTE: Regard the heat development when mounting the module. It is important to ensure good ventilation in the switchboard as temperatures above 35° Celsius may cause the dimmer to switch off. If this occurs, the module’s LED flashes the SOS signal (three short, three long and three short flashes). Reset the light dimmer by push and holding the M1-button (clamp G) for 20s, and then the dimmer can be restarted. Until the cause for switching off is found, it is possible to turn down the light to 30% to avoid the dimmer from switching off again. It is not possible to permanently overload a light dimmer with eg 10% and then believe that it is enough to turn down the light intensity by 10%. The light dimmer will switch off after some time. With inductive load, we recommend to reduce the power consumption by 10% due to loss in the transformers.
Normaally it is not necessary to keep a distance between mounted modules.
NOTE:
When disconnecting the high voltage (either phase or null) the light dimmer will disconnect the light source and the LED will make short flashes – long pauses. When connecting the high voltage again, the light dimmer will turn on with Softstart. The light dimmer is turned on at the same level as before. If the M1(toggle ON/OFF) button has not been activated in 20s, the next function is to adjust the light up (long push).
Adjusting max./min. levels on dimmer modules type CP31:
As standard, the field of variation is adjusted at the factory where min. = 5% and max. = 95%. This can be changed by a new adjustment. The adjustment of these levels is done as follows:
NOTE. By the dimmer module CP 31BC, mounting of a “short” between clamp two (NO) and clamp four (L) is necessary before making adjustments. After the adjustment, the “short” must be removed.
Activate the M1 button (connect clamp G) until the module’s LED flashes (about 20s after the dimming module reaches max./min. level).
Max. level: Adjust the light until it reaches the wanted max. level and turn off the light on the M1 button. - Turn on again.
Min. level: Adjust the light until it reaches the wanted min. level and turn off the light on the M1 button.
- Turn on again and wait about 20s without touching the M1 button. When the LED stopsflashing, the max./min. levels are saved in the memory – also by power has been disconnected. The two latest levels, where the dimmer module was turned off, are saved. The lowest level of the two is saved as the minimum. NOTE. A small adjustment area must always be present between the max. and min. levels. The max. and min. levels are annulled if the two levels are placed to close to each other and the programming must start over again.
Adjustment of the automatic level:
After having adjusted the min. and max. level, the light is adjusted with the M1 button until the wanted automatic light level is reached. Afterwards, the automatic light level button (placed parallel above the light meter) is operated. Wait about 20s without touching the buttons – when the light turns off, the max.-, min.- and automatic levels are saved in the memory.
The light dimmer is now ready for use.

As standard, the light dimmer CP31 is supplied so that it can replace all previous versions of Conson light dimmers for DIN bar mounting.



SA **D** Turn off all - (* for centralcontrol use)
TA **E** Turn on all - (* for centralcontrol use)
SD **F** Turn off partial - (* for centralcontrol use)
M1 ◎ Manual button "Touch"- operating ON/ OFF and dimming together with min.-, Max.- And automatic light level.
LD ⊗ LED with resistor for indication
I **I** PIR/Potentiometer input
K **K** Daylight sensor input
L **L** Input/Output for master slave connection. All types and controlling version are Connectable

When the module is used in a Concept 2000 system and receives a databus- or Conkey signal, the module automatically changes to Concept 2000 functions. (Clamp “D” also functions as CP-databus communication).



* To use the functions light up, light down, and toggle on/off via databus line from a link-module (CP20, CP70 A/B/C), it is necessary to mount a short between clamps “E” and “L” on the light dimmers. The light dimmers are supplied with this connection already mounted.
When this short is mounted, the “L” communication (parallel operation of more light dimmers) cannot be used.
NOTE:
If “L” communication is to be used, the short must be removed, the power must be shortly disconnected and the databus connection between the light dimmers must be disconnected.
When the connection between “E” and “L” is not mounted, the functions: change over, light up and light down via the databus will have the following functions:

Light up	- The light dimmer is turned on at the latest level
Light down	- The light dimmer is turned off
Toggle on/off	- The light dimmer is turned off/on

All direct operations on the light dimmer’s terminal block are independent of the above-mentioned functions.

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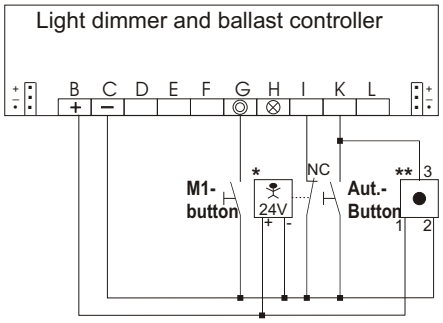
LightDimmer CP31

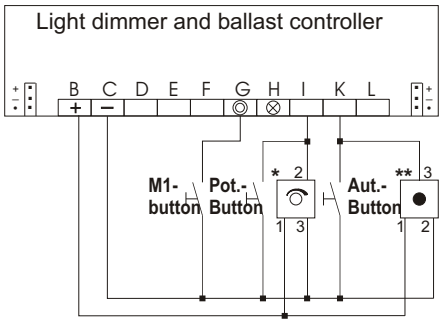
Automatic control
With help from a daylight sensor CP75H, the light dimmer or ballast controller will dim the artificial light in such a way that the light level in the room is the same regardless wether the sun is shining or the weather is cloudy. Reversed daylight controlling is also possible. I.e. when the artificial light is lowered concurrently with the reduction of the light incidence. It is suitable for goldsmiths and silversmiths. Activation occurs via CP20 (permanent short). (The daylight sensor should only be able to “see” daylight).

Furthermore, it is possible to connect the motion sensor CP73, to turn off the light after ten minutes when nobody is in the room. More motion sensors may be linked in series. Moreover, “Touch” operation is also possible. Low power push button for the “Touch” operation is connected between clamps “G” and minus (clamp “C”). This button is called “the M1 button”. “Touch” operation: Push this button (M1 button) shortly for turning the light dimmer on/off. When holding down the button, the light level is adjusted and the direction is changed when the button is unactivated shortly. The automatic button (toggle on/off) for activation of daylight controlling is connected between clamps “K” and minus (clamp “C”). Daylight sensor type CP75H is to be connected to plus, minus and clamp “K” (see connection). The light may be turned on/off on the automatic button. If the light has turned off automatically because there is no motion detected in the room, it will turn on immediately when motion is detected. If the light is turned off from a button (automatic button, M1 button or via CP 20) the motion sensor cannot turn the light back on. Here, activation of the automatic button, M1 button or a button via a link module, eg CP 20, is necessary.



* PIR-detector type CP 73
** Daylight sensor type CP 75H

Potentiometer controlling:
Apart from “Touch” operation, one might choose to operate the light dimmer or the ballast controller manual from a potentiometer CP46H (demands low power push button for on/off) or via an external control voltage 0.75-10 VDC. 0.75 VDC is the lowest light level and 10 volt is the highest light level. Less than 0.5 volt will turn the light dimmer or the ballast controller on/off alternately (ON/OFF) on the adjusted level. The control voltage and low power push button are connected to clamp “I”. The module will always turn on/off when the control voltage is adjusted down under 0.5 volt (minimum). It is possible to connect light meter CP75H to clamps "K" and automatic button in the same way as to the automatic action controlling (this does not apply to Cp73).

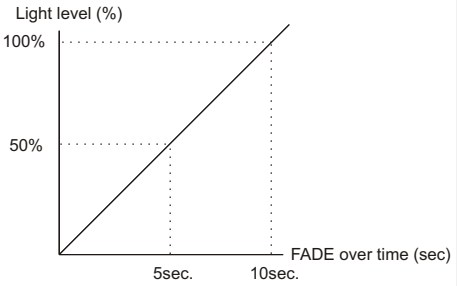


* Potentiometer CP46H
** Daylight sensor CP75H

VIA BUS:
You cannot use “fade time” + “turn on in ? time” or “turn off after ? time”.
If you want to use “turn on”, “turn off” or “light level” together with “fade time” you must program the modules as shown in the following examples:
F1 = “turn on” F2 = “fade time”
F1 = “turn off” F2 = “fade time”
F1 = “light level” F2 = “fade time”
If they are changed and programmed:
F1 = “fade time” F2 = “turn on”,
the dimmer will turn on without “fade time”.
Another example: if you want to use “light level” together with “turn on in ? time”:
F1 = “light level” F2 = “turn on in ? time”.
If they are changed and programmed:
F1 = “turn on in ? time” F2 = “light level”, the dimmer will turn on on “light level” and stay there.
SUMMARY:
If you use “light level” it must be programmed first.
If you use “fade over time” it must be programmed last.

“Fade over time”: Can be used to make a long dimming time for eg cinemas or to make a “soft” change between light scenes. Fade 2 hours is especially suited for eg chicken farm.

Fade over time: the time is calculated from 0-100% light.
If the light dimmer has been turned off, it starts from 0%. If the light dimmer is turned on at eg 50% and you say 100% - fade 10s, the light dimmer adjusts from 50% to 100% (the time is then 5s).



Technical data dimmer module CP31:

Temperature range	-5°…+35° Celsius
Mounting	DIN rail
Separation	4KV>8mm
Encapsulment	DIN 40050
DIN rail symmetrical	DIN 46277
Dimensions (h x w x d)	85x70x76mm.
Weight CP31LR	295g
Weight CP31CR	255g
Weight CP31BC	195g

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CONCEPT 2000

LightDimmer CP31

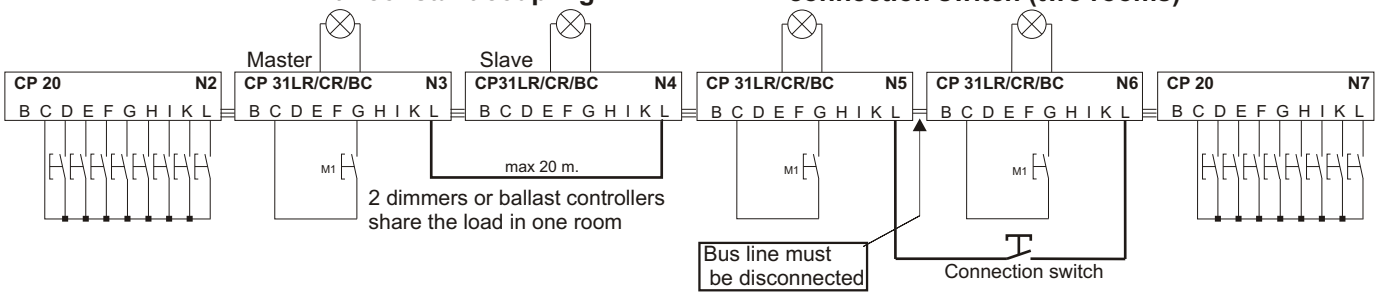
Coupling of more dimmers or ballast controllers (a combination is possible)

Coupling of dimmers and ballast controllers
Conson has developed dimmers and ballast controllers in such a way that up to ten dimmers/ballast controllers may be controlled together. Dimmers may also be connected with ballast controllers. This function may be used in various places with advantage. Some examples:
Large rooms, which may be divided up into smaller rooms by means of folding doors. In rooms or premises, where the load is too large for one dimmer/ballast controller, the load may be divided on more dimmers, thus connecting these permanently by combining the clamps “L”.
The coupling occurs when the clamp “L” on the dimmers/ballast controllers are connected. If the dimmers/ballast controllers are connected, the dimmer/ballast controller, which is operated, is the “Master” and decides the light level. Via clamp “L”, the Master “communicates” which light level the other dimmers/ballast controllers (“Slaves”) are to be adjusted to. This happens when a dimmer/ballast controller is operated via a button. The “Slave” dimmers may not be programmed (standard setting is to be erased). Bus/data line is disconnected by connection of dimmers for more rooms.

NOTE: Coupling of dimmers/ballast controllers must only occur on the low voltage side. The adjusted stages or exits must NOT be connected.

Master/slave connection with constant coupling

Master/slave connection with connection switch (two rooms)



Program N3:

:CP31 N3 F1 L: SW -1
R- A:OFF K:1- - - - - - -

:CP31 N3 F2 L: SW -1
R- A:ON K:- 2- - - - - -

Program N4:
Program is erased
(No program)

Program N5:

:CP31 N5 F1 L: SW -1
R- A:OFF K:1- - - - - - -

:CP31 N5 F2 L: SW -1
R- A:L 30% K:- - 3- - - -

:CP31 N5 F2 L: SW -1
R- A:Lys 70% K:- - - 4- - -

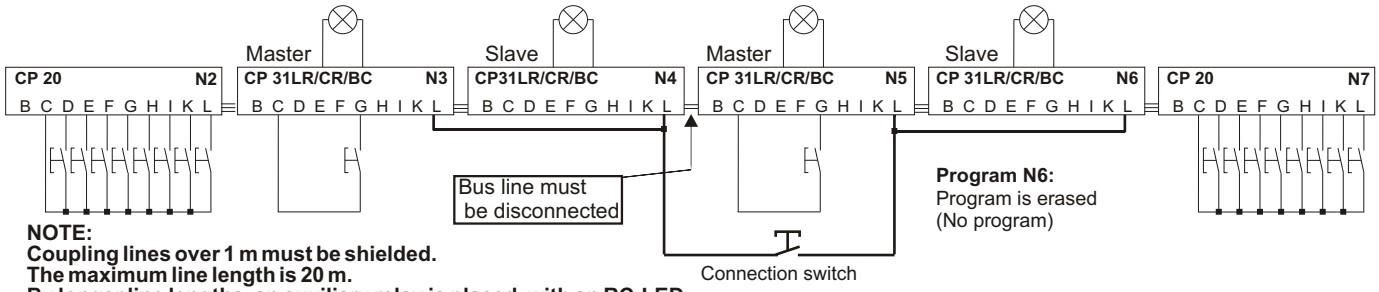
Program N6:

:CP31 N6 F1 L: SW -1
R- A:OFF K:1- - - - - - -

:CP31 N6 F2 L: SW -1
R- A:L 30% K:- - 3- - - -

:CP31 N6 F2 L: SW -1
R- A:Lys 70% K:- - - 4- - -

This coupling is a combination of the two connections above



Program N6:
Program is erased
(No program)

NOTE:
Coupling lines over 1 m must be shielded.
The maximum line length is 20 m.
By longer line lengths, an auxiliary relay is placed, with an RC-LED or a blocking diode above the coil, in the electric switch board.

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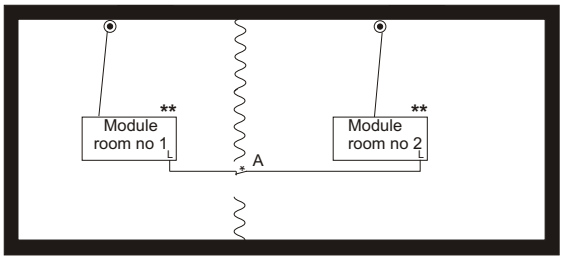
CONCEPT 2000

LightDimmer CP31

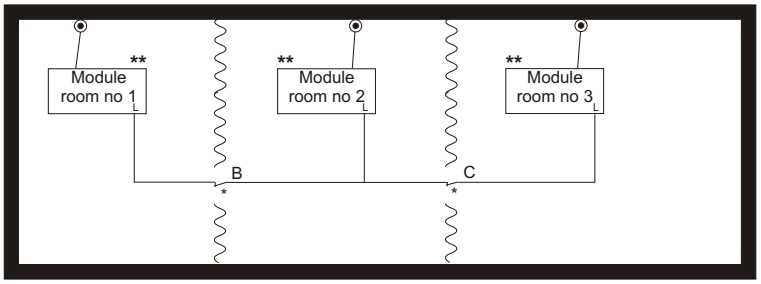
Planning examples of coupling of dimmers or ballast controllers in a conference room which can be divided into several rooms.

Coupling of dimmers and the ballast controllers (or combined):
2 rooms: If folding door A is opened (the button is closed) the dimmers or the ballast controllers will be connected. If one of the buttons is operated, both dimmersor ballast controllers are adjusted to the same level irrespective of type.



** Ballast controllers, types of dimmers and number depend on load and wishes regarding control.

3 rooms: If folding door A is opened (the button is closed) the dimmers/ballast controllers 1 and 2 will be connected and can be operated from the connected buttons. Dimmers/ballast controllers can be operated separately. If all doors are opened, all dimmers/ballast controllers will be connected and they could be operated from all buttons in the room, despite of type.



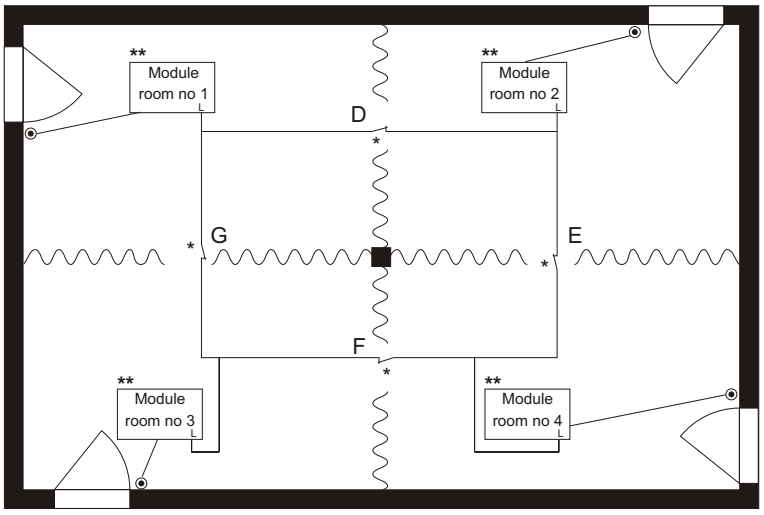
**Ballast controllers, types of dimmers and number depend on load.

4 rooms: if all folding doors are closed, all dimmers will function separately. However, if folding door D is opened, dimmers/ballast controllers 1 and 2 will be connected. If door F is opened, dimmers/ballast controllers 3 and 4 will be connected. As a result, the room is now divided into two separate rooms.

If only the doors D and G are open, the dimmers/ballast controllers 1, 2 and 3 will function analogous while dimmer/ballast controller 4 still can be operated separately.

The connection will first take place when the dimmers or the ballast controllers are operated, despite the types which are connected.

NB! The rooms can also be fitted with CP20, CP70 etc.



**Ballast controllers, types of dimmers and number depend on load.

*Note that all connection buttons are switched off when the doors are closed.

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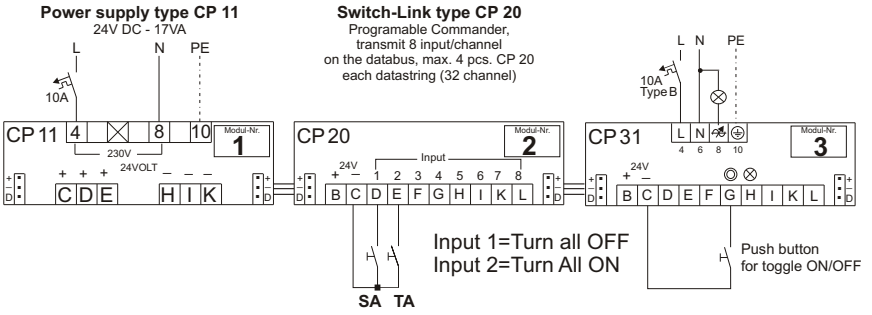
LightDimmer CP31



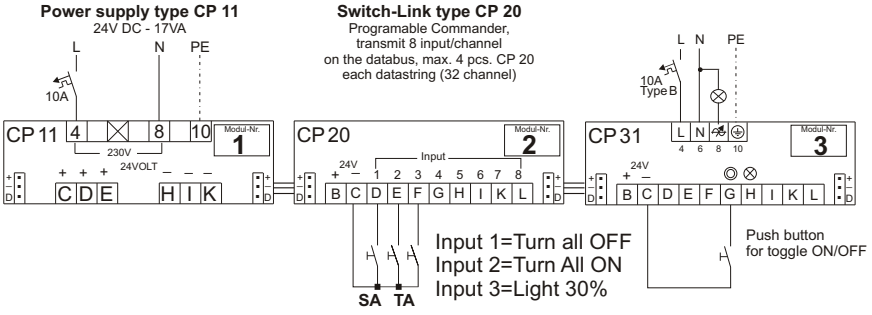
:CP11 N1
Not programable

:CP20 N2 Link nr.: 1
AND 1:- - - - - - - -

:CP31 N3 F1 L: SW -1
R- A:OFF K:1- - - - - -

:CP31 N3 F2 L: SW -1
R- A:ON K:- 2- - - - -

Factory setting



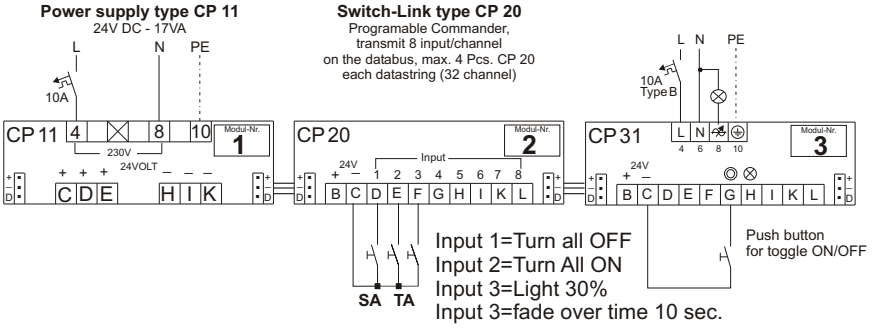
:CP11 N1
Not programable

:CP20 N2 Link nr.: 1
AND 1:- - - - - - - -

:CP31 N3 F1 L: SW -1
R- A:OFF K:1- - - - - -

:CP31 N3 F3 L: SW -1
R- A:L 30% K:- -3 - - - - -

:CP31 N3 F2 L: SW -1
R- A:ON K:- 2- - - - -



:CP11 N1
Not programable

:CP20 N2 Link nr.: 1
AND 1:- - - - - - - -

:CP31 N3 F1 L: SW -1
R- A:OFF K:1- - - - - -

:CP31 N3 F3 L: SW -1
R- A:L 30% K:- -3 - - - - -

:CP31 N3 F2 L: SW -1
R- A:ON K:- 2- - - - -

:CP31 N3 F4 L: SW -1
R- A:Fade10s K:- -3 - - - -

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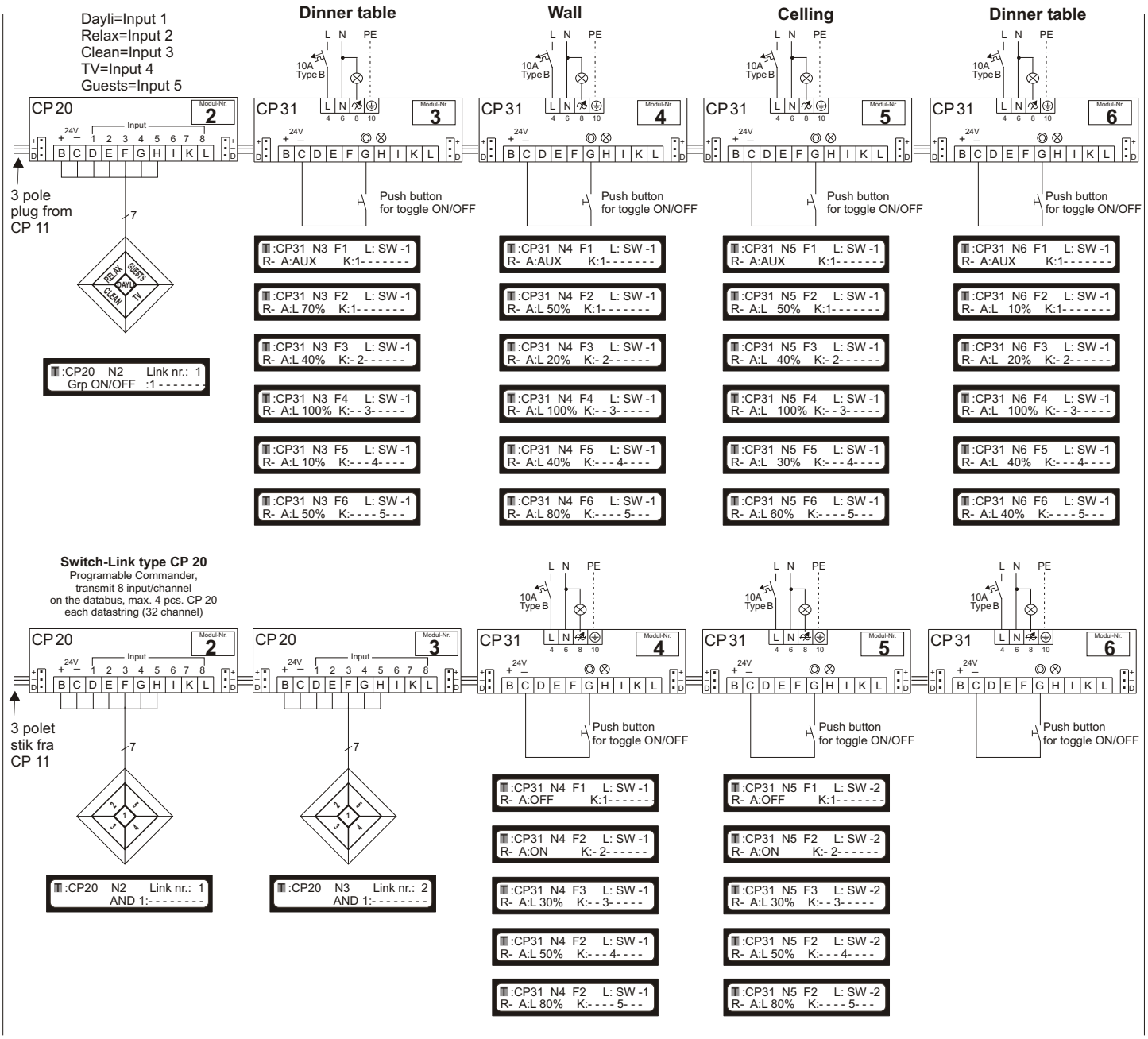
LightDimmer CP31



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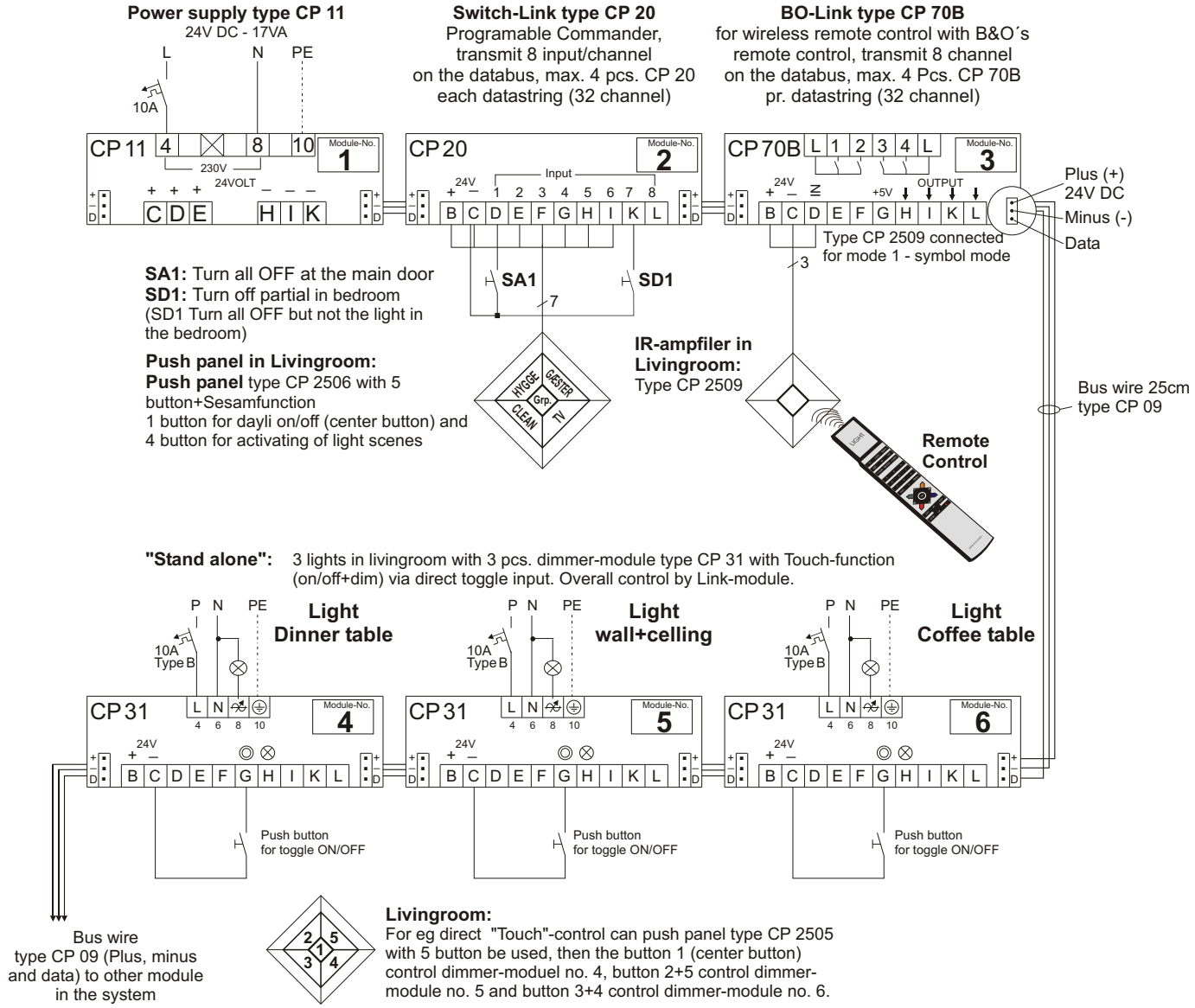
LightDimmer CP31

Employment examples:
The diagram employment examples for light control of a livingroom in a house with 3 lights with dimmer-module type CP 31 (LR/CR or BC) witch can be controlled separate by a Touch function (on, off + dim) as ("stand alone") and overall controlled by signal from Switch-Link type CP 20 (central controled, light scenes ect.) And by BO-Link type CP 70B (wireless remote control with a B&O´s remote control).



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CONCEPT 2000

LightDimmer CP31

Employment examples: Function (continued from previous page)
The examples displays bus-signal from Switch-Link CP20 and B&O-Link type CP70B there transmits on the databus to actors-module (dimmer module-no. 4, 5 and 6). In the examples shows push button on panel and button on Beo4 Remote control (via CP70B) with activate the programmed function in the dimmer-module.

Overall push button control			Wireless remote control		"CP-BUS"-function dimmer-module CP 31 module-no. 4, 5 og 6					
Push button	**Place**	**CP 20** Channel-no	Symbol on Beo4 Remote control	**CP 70B** Channel-no	**CP 31 Module-no. 4** Light level	Function	**CP 31 Module-no. 5** Light level	Function	**CP 31 Module-no. 6** Light level	Function
Turn all OFF	Maindoor	**1**	-	-						
ON/OFF ***Dayli***	Livingroom - button 1	**2**	GO	**2**						
Light scene 1 **Relax**	Livingroom - button 2	**3**		**3**						
Light scene 2 ***Guests***	Livingroom - button 5	**4**		**4**						
Light scene 3 ***TV***	Livingroom - button 4	**5**		**5**						
Light scene 4 ***Cleaning***	Livingroom - button 3	**6**		**6**						
-	-	-	STOP	**1**						
OFF partial	Bedroom	**7**	-	-						

Symbol explanations: Lamp/ light level; Lamp switch OFF; ON; OFF; ON/OFF-toggle

Employment examples: Programming
Examples displays configuration/programming of the module in menu windows of the display in the programming Key CONKEY CP79.

Power supply CP11 module-no. 1
CP 11 not grammable!

```
:CP11   N1
Not programmable
```

Switch-Link CP20 module-no. 2
8-input/channel - programmerbar

```
:CP20   N2      Link nr.:  1
  Grp ON/OFF :  2
```

B&O-Link CP70B module-no. 3
Remote control with B&O- 8 channel

```
:CP70B  N3      Link nr.:  1
```

Dimmer-module CP31 module-no. 4
Programmable with 40 busfunctions

```
:CP31 N4 F1   L: SW -1
R- A:OFF      K:1- - - - -7-
```
```
:CP31 N4 F8   L: B&O-1
R- A:Off      K:1- - - - - -
```
```
:CP31 N4 F2   L: SW -1
R- A:AUX      K:-2- - - - -
```
```
:CP31 N4 F9   L: B&O-1
R- A:Aux      K:-2 - - - - -
```
```
:CP31 N4 F3   L: SW -1
R- A:L 90%    K:-2- - - - -
```
```
:CP31 N4 F10  L: B&O-1
R- A:L  90%   K:-2 - - - - -
```
```
:CP31 N4 F4   L: SW -1
R- A:L 40%    K:- -3- - - -
```
```
:CP31 N4 F11  L: B&O-1
R- A:L  40%   K:- -3 - - - -
```
```
:CP31 N4 F5   L: SW -1
R- A:L 80%    K:- - -4- - -
```
```
:CP31 N4 F12  L: B&O-1
R- A:L  80%   K:- - -4 - - -
```
```
:CP31 N4 F6   L: SW -1
R- A:L 20%    K:- - - -5- -
```
```
:CP31 N4 F13  L: B&O-1
R- A:L  20%   K:- - - -5 - -
```
```
:CP31 N4 F7   L: SW -1
R- A:L 100%   K:- - - -6- -
```
```
:CP31 N4 F14  L: B&O-1
R- A:L  100% K:- - - -6 - -
```

Dimmer-module CP31 module-no. 5
Programmable with 40 busfunctions

```
:CP31 N5 F1   L: SW -1
R- A:OFF      K:1- - - -7-
```
```
:CP31 N4 F8   L: B&O-1
R- A:OFF      K:1- - - - -
```
```
:CP31 N5 F2   L: SW -1
R- A:Aux      K:-2- - - - -
```
```
:CP31 N4 F9   L: B&O-1
R- A:Aux      K:-2 - - - - -
```
```
:CP31 N5 F3   L: SW -1
R- A:L 40%    K:-2- - - - -
```
```
:CP31 N4 F10  L: B&O-1
R- A:L  40%   K:-2 - - - - -
```
```
:CP31 N5 F4   L: SW -1
R- A:L 20%    K:- -3- - - -
```
```
:CP31 N4 F11  L: B&O-1
R- A:L  20%   K:- -3 - - - -
```
```
:CP31 N5 F5   L: SW -1
R- A:L 70%    K:- - -4- - -
```
```
:CP31 N4 F12  L: B&O-1
R- A:L  70%   K:- - -4 - - -
```
```
:CP31 N5 F6   L: SW -1
R- A:L 40%    K:- - - -5- -
```
```
:CP31 N4 F13  L: B&O-1
R- A:L  40%   K:- - - -5 - -
```
```
:CP31 N5 F7   L: SW -1
R- A:L 100%   K:- - - -6- -
```
```
:CP31 N4 F14  L: B&O-1
R- A:L  100% K:- - - -6 - -
```

Dimmer-module CP31 module-no. 6
Programmable with 40 busfunctions

```
:CP31 N6 F1   L: SW -1
R- A:OFF      K:1- - - -7-
```
```
:CP31 N6 F8   L: B&O-1
R- A:OFF      K:1- - - - -
```
```
:CP31 N6 F2   L: SW -1
R- A:Aux      K:-2- - - - -
```
```
:CP31 N6 F9   L: B&O-1
R- A:Aux      K:-2- - - - -
```
```
:CP31 N6 F3   L: SW -1
R- A:L 60%    K:-2- - - - -
```
```
:CP31 N6 F10  L: B&O-1
R- A:L  60%   K:-2- - - - -
```
```
:CP31 N6 F4   L: SW -1
R- A:L 30%    K:- -3- - - -
```
```
:CP31 N6 F11  L: B&O-1
R- A:L  30%   K:- -3- - - -
```
```
:CP31 N6 F5   L: SW -1
R- A:L 50%    K:- - -4- - -
```
```
:CP31 N6 F12  L: B&O-1
R- A:L  50%   K:- - -4- - -
```
```
:CP31 N6 F6   L: SW -1
R- A:L 10%    K:- - - -5- -
```
```
:CP31 N6 F13  L: B&O-1
R- A:L  10%   K:- - - -5- -
```
```
:CP31 N6 F7   L: SW -1
R- A:L 100%   K:- - - -6- -
```
```
:CP31 N6 F14  L: B&O-1
R- A:L  100% K:- - - -6 - -
```

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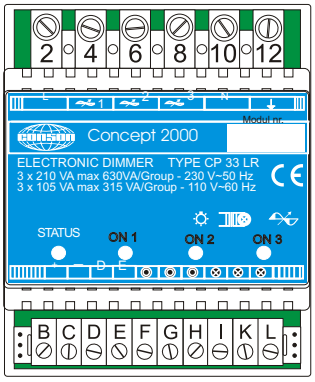
CONCEPT 2000

MODULE SEIRES, LIGHTDIMMER CP33LR, 3-CHANNELS, LEADING EDGE

Light Dimmer CP33LR



EAN-No. 5703513005887

Description

CP33LR is a DIN rail based (2 M36 units 72 mm) 3-channel light dimmer for ohmic and inductive leading edge Triac control of 110/230vac glow lamps, halogen, traditional coiled transformers for low-volt halogen and HF coils for direct dimming.

CP33LR uses logarithmic dimming control and offers softstart, softstop as well as thermal protection and detection of null-wire breakage.

Each of the 3 channels may control up to 210 VA, and the total control must not exceed 630 VA.

Each of the 3 channels are individually operated. Either by means of ground-active input F(1), G(2) and H(3) or by bus-instructions from one or more command modules as f.ex. Switch-link CP20 and/or Remote-link CP70.

Each of the 3 channels have a related indicator output (open collector, max. 75 mA) which may be connected to Sesam touchpanel indicators or a monitor panel.

The 3 channels may work together as as group controlling 4 user-programmable light scenes. Step through the factory pre-programmed scenes using Step input D, toggle all 3 channels On/Off or dim Up/Down using On/Off input E, taking advantage of the built-in light scene memory.

Programmable settling delays offers smooth changes between light scenes.

Programming of the CP33LR is achieved by means of CONKEY CP79 or a PC.

CP33LR offers more than 33 functions:

(Also see 'Action-Table')

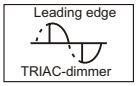
- Step through light scenes via input D
- Light scene settling timing
- Light scenes via Link-modules
- Group ON/OFF via input E
- Group dimming via input E
- Light dimming via switch input F, G and H
- Light dimming via Link-modules
- Fade timing
- "Sleep timer"-function
- Programming Output Confirmation (NEW)
- All ON / All OFF - and much more

Light scenes example:

3 lamps controlled by 1 qty. light dimmer CP33LR

	DINNER TABLE	WALL LAMP	CEILING
Daily	70%	50%	50%
Light scene 1 *RELAX*	40%	20%	40%
Light scene 2 *GUESTS*	50%	80%	60%
Light scene 3 *TELEVISION*	10%	40%	30%
Light scene 4 *CLEANING*	100%	100%	100%
ALL OFF	0%	0%	0%

Load types for CP33LR:



Leading edge dimmer 40-630 VA for ohmic and inductive load **(TRIAC)**

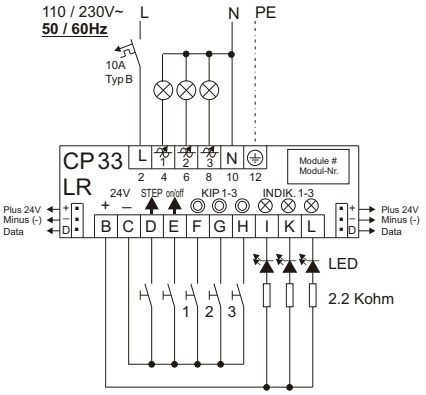
L = Inductive load:

- Traditional transformers for low-volt halogen-lamps
- Elektronic transformers (leading edge) for low-volt halogen lamps.

R = Ohmic load:

- Glow lamps
- 110/230V halogen lamps

Connections for CP33LR



Inputs for CP33LR:

High current	Symbol		Comments
Input	2	L	Phase
Output	4		Regulated phase 1
Output	6		Regulated phase 2
Output	8		Regulated phase 3
Output	10	N	Null-wire
Input	12	⏚	Earth
Low current			
Input	B	+	Plus 24V DC
Input	C	-	Minus (-)
Input	D	D	Step light scenes
Input	E	E	On/Off all channels
Input	F	◎	channel input 1 (-)
Input	G	◎	channel input 2 (-)
Input	H	◎	channel input 3 (-)
Output	I	⊗	channel indicator 1(-)
Output	K	⊗	channel indicator 2(-)
Output	L	⊗	channel indicator 3(-)

Technical data for CP33LR:

High current:

Load	230V AC	3x 210 VA max total 630 VA
Load	110V AC	3x 110 VA max total 315 VA
Powerloss		< 1%
Voltage		110/230VAC 50/60Hz
ON dwell time (SoftStart)		500 ms
OFF dwell time (SoftStop)		<500 ms
Fuse (udløsekarakteristik B)		max. 10 A

Low current:

Current consumption @ 18 VDC max.	30 mA
Power consumption @ 18 VDC max.	0,5 VA
Indicator outputs	max. 75 mA
All switches low input	0.5 mA
Impulse time for ON/OFF	50-300 ms
Cable dimensions	f.eks 0.6 mm
Cable length resistance (input)	R max. 1 K-ohm

CONCEPT 2000

MODULE SEIRES, LIGHTDIMMER CP33LR, 3-CHANNELS, LEADING EDGE

Installation Guide

Input/Output specification
Step input = low current input D
On/Off input = low current input E
Channel 1 input = low current input F
Channel 2 input = low current input G
Channel 3 input = low current input H
Channel 1 indicator = low current output I
Channel 2 indicator = low current output K
Channel 3 indicator = low current output L
Channel 1 output = high current output 4
Channel 2 output = high current output 6
Channel 3 output = high current output 8

Activation of a switch/input for less than 50 ms is concidered noise and is ignored.
Activation of a switch/input for more than 50 ms and less than 300 ms is concidered a short push.
Activation of a switch/input for more than 0,3 seconds is concidered a long push.
Activation of a switch/input for more than 20 seconds and less than 30 seconds is Learn Mode.
Activation of a switch/input for more than 30 seconds is concidered a defective input and is signaled.

Mount module(s) on the DIN rail(s) and connect all modules with bus-cables, which poweres the modules and allows bus-instructions to flow.
Connect fused mains (110/230vac) to the module and double-check before applying power.

CAUTION - Ensure proper cooling or ventilation as modules enter emergency mode at temperatures higher than 35º Celcius, signaled by an SOS indication on the built-in-LED's and on the indicator outputs. Hold any of the impulse-switches (F-H) for 20 seconds to bring CP33 out of emergency mode. Reduce light level to 30% or less to reduce heat while error tracking.

Under normal conditions there is no need to keep a distance between the modules to avoid heat accumulation.

When controlling inductive loads do not exceed 90% of maximum rates. For CP33 this means 90% x 630 VA @ 230VAC = 567VA.

NOTE - Detecting absence of phase or null, the channel outputs will be turned off and the built-in channel indicators will flash - short blink long pause. At the return of phase or null the channel outputs will softstart.

Factory settings

Maximum light level
Channel output 1=95% 2=95% 3=95%
Minimum light level:
Channel output 1=5% 2=5% 3=5%

Light scenes
1 Channel output 1=20% 2=20% 3=20%
2 Channel output 1=40% 2=40% 3=40%
3 Channel output 1=60% 2=60% 3=60%
4 Channel output 1=80% 2=80% 3=80%

In order to re-load factory settings:
Activate all 5 low current inputs and apply power to CP33. Wait 10 seconds and release inputs.

Adjusting Maximum/Minimum levels
You may set a maximum level and minimum level for each channel.
Example, to adjust Channel 1 you enter Channel Learn Mode using channel 1 input:
Activate and hold channel 1 input for more than 20 seconds and less then 30 seconds - channel 1 indicator will start blinking and channel 1 output will blink twice.
(New: Programming Output Confirmation)

Maximum: Adjust light level and turn light Off by On/Off input. Turn light On by On/Off input.

Minimum: Adjust light level and turn light Off by On/Off input. Turn light On by On/Off input.
Wait 20 seconds for light to turn off automatically.

The highest of the two adjusted levels will be recognized as the maximum level.
The lowest of the two adjusted levels will be recognized as the minimum level.

- Always keep a clearly visible difference between the two levels. Maximum and minimum levels will be ignored and cancelled if the dynamic range is too small.

- Max/min Learn Mode will be skipped after 20 seconds if programming is not carried through properly.

Light scene control

CP33 controls 4 programmable light scenes.
A light scene is an instruction for the C33 to simultaniously adjust the light level on all 3 channel outputs to individually predertermined settings.
Change Lightscene by activating Step input.
The channel outputs can be programmed NOT to be effected when changing light scene.
(ConKey programmable).

Group control
Activating the On/Off input, you control all channel outputs simultaniously. You may turn them all On or Off by a short push or adjust all light levels Up/Down by a long push.

Channel light level control
The light level of any of the 3 channel outputs may be separately adjusted.
Activating the channel inputs you control the channels outputs individually. You may turn them On or Off by a short push or adjust light levels Up/Down by a long push.

Lightscene ChangeSpeed
You may adjust the speed/time it takes to change from next lightscene to the next.
(ConKey programmable).

Storing Lightscene levels

You may store the current light level for all assigned channels to work with the current light scene:
First you adjust the light level for the required channels.
Then you enter Lightscene Learn Mode:
Activate and hold Step input for more than 20 seconds and less than 30 seconds - all assigned channel indicators will blink once and outputs will blink once.
(New: Programming Output Confirmation).
You are now back into Operation Mode.

CONCEPT 2000

MODULE SEIRES, LIGHTDIMMER CP33LR, 3-CHANNELS, LEADING EDGE

BUS-COMMAND

CP33 can be programmed to react on bus-commands from Master-modules.

The ActionTable presents an overview.

NOTE:
If you the light to fade in or out to a certain level, you must enter the function in ConKey in a speciel order, - first the time it should take to fade, then the level you want to reach.
Example: Within 30 seconds, fade to 70%.
F1: Fade 30 sec
F2: Light 70%

Fadetime:
Used to dim the light over a shorter or longer periode. For example in cinemas, etc.

Fadetime:
The fadetime is the calculated time to dim from 0 to 100% light.
I.e. if light is already on 50%, and receives the command:
Within 10 seconds regulate to 100%
the light will be regulated from 50% to 100 in 5 seconds.

ConBus commands:

Action via CP-Bus	CONKEY
Turn On	On
Turn Off	Off
Touch (toggle On/Off)	Impulse
On for 15 seconds	On 15 s
On for 30 seconds	On 30 s
On for 45 seconds	On 45 s
On for 1 minut	On 1 m
On for 5 minutes	On 5 m
On for 10 minutes	On 10 m
On for 15 minutes	On 15 m
On for 20 minutes	On 20 m
On for 30 minutes	On 30 m
On for 45 minutes	On 45 m
On for 60 minutes	On 60 m
Off after 15 seconds	Off > 15 s
Off after 30 seconds	Off > 30 s
Off after 60 seconds	Off > 60 s
Off after 5 minutes	Off > 5 m
Off after 15 minutes	Off > 15 m
Off after 30 minutes	Off > 30 m
Off after 60 minutes	Off > 60 m
Blocking	Block
Help relay function	Aux relay
Increase light level	Light up
Decrease light level	Light down
Lightlevel 10%	Light 10%
Lightlevel 20%	Light 20%
Lightlevel 30%	Light 30%
Lightlevel 40%	Light 40%
Lightlevel 50%	Light 50%
Lightlevel 60%	Light 60%
Lightlevel 70%	Light 70%
Lightlevel 80%	Light 80%
Lightlevel 90%	Light 90%
Lightlevel 100%	Light 100%
Fade 5 seconds	Fade 5 s
Fade 10 seconds	Fade 10 s
Fade 20 seconds	Fade 20 s
Fade 30 seconds	Fade 30 s
Fade 1 Minut	Fade 1 m
Fade 5 minutes	Fade 5 m
Fade 15 minutes	Fade 15 m
Scene 1	Scene 1
Scene 2	Scene 2
Scene 3	Scene 3
Scene 4	Scene 4
Next scene	Scn up
Previous scene	Scn down

PROGRAMMING VIA CONKEY

Programming of CP33 from a CP79 Conkey, requires that the ConKey is updated to version 2.14 or later.

CP33 has 33 funktion-locations and 4 light scenes with associated light level and fade time.

The 33 funktion-locations are called F1-F33.

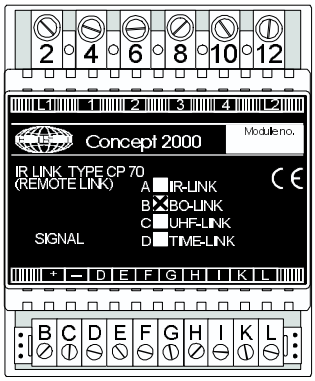
The 4 lightscenes are called
Sxy (x = light scene 1-4 y = channel 1-3)

Each channel in each lightscene can be programmed to a light level (steps of 5%):
D1:95
--- = Not effected
0 = 0% (turned off)
100 = 100% (fully on)

And you can specifiy the period of time it should take to reach this level:
S:8
8 = Now
7 = 1 second
6 = 2 seconds
5 = 5 seconds
4 = 15 seconds
3 = 30 seconds
2 = 1 minute
1 = 5 minutes
0 = 15 minutes

BO-Link type CP 70B

BO-Link type CP 70B



EAN No. 5703513006853

Product description

BO-Link type CP 70B is specially developed for infrared remote control of CONCEPT 2000 light control system with Bang & Olufsen remote control units, but can also be used for earlier Conson installations.

The module can by means of wiring be set for 4 different control modes, which makes the installation/control very flexible.
If more CP 70B modules are available, the control modes can be combined.
As basis the module is in mode 1, where you control the light control system with the symbols (see Beo4 remote control unit).
By connecting terminal E, F respectively or both to minus the mode of the module can be changed to 2,3, o 4, where control is done via the numbers on the remote control unit.

Furthermore the BO-Link is equipped with the "Standalone" function in the form of transistor and relay outputs, which provide the opportunity to use the module to control own installations or earlier Conson products. For this only the Link module and a power supply CP 11 are required. Transistor and relay outputs are activated parallel with the CP bus. A start pulse will activate the relevant output, and a stop pulse deactivates the output. Only one output can be active at a time, so the relays can be used directly for e.g. curtain control.

Possible applications of BO-Link

Light requirements

	DINING TABLE	WALL	CEI-LING	COFFEE TABLE
Light scene 1 *MEAL*	■	■	■	■
Light scene 2 *GUESTS*	■	■	■	■
Light scene 3 *TELEVISION*	■	■	■	■
Light scene 4 *CLEANING*	■	■	■	■
ALL OFF	■	■	■	■

Curtain control

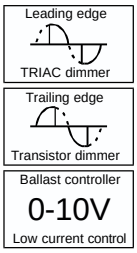
Toggle relays

Relay module type CP 24

Help relays

Relay module type CP 24

Light dimmer



Dimmer module type CP 31LR

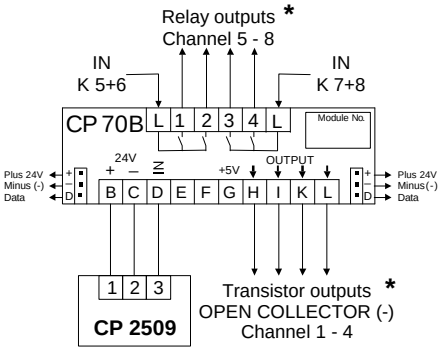
Dimmer module type CP 31CR

Dimmer module type CP 31BC

Installation guide.

Mount the module on the DIN rail and connect the plug between modules. +/- and "data cord" is connected via this plug.
Connect low current to the module, and check connection before voltage is supplied for the module. CP 70B must have external power supply type CP 11 (18-28 V DC).

Connectiondiagram BO-Link type CP 70B



* If necessary for toggle input on H.M.S. 2000

Terminals (low current)

Terminal	Symbol	Input
Terminal B	+	Plus 24V DC
Terminal C	-	Minus (-)
Terminal D	D	Input B&O Data
Terminal E	E	Mode select (-)
Terminal F	F	Mode select (-)
Terminal G	G	Output + 5V DC (+)
Terminal H	H	Transistor out. ch. 1 (-)
Terminal I	I	Transistor out. ch. 2 (-)
Terminal K	K	Transistor out. ch. 3 (-)
Terminal L	L	Transistor out. ch. 4 (-)

Technical data BO-Link type CP 70B:

Mains current (relay outputs)

4 relay outputs max. 230V AC/50 Hz µ	
Max. load at 230V AC/50Hz	2x2200 VA
Load ohmic	2x2200 VA
Load inductive	2x1100 VA
Coupling-in time max.	20 ms
Coupling-out time max.	20 ms
Fuse max.	2 x 10 A

Low current

Voltage	24V DC (18-28V)
Current at 18 V DC max.	50 mA
Power consumption at 18 V DC max.	1,0 VA
Current +5V output max.	10 mA
Load transistor outputs 1-4 max.	75 mA
Terminals for max.	2,5mm Ø
Cable length	R max. 1 K-Ohm

Mechanical data for CP 70B

Temperature range	-5º.....+35ºC
Installation	for building in
Isolation	4KV > 8 mm
Insulation	DIN 40050
DIN rail symmetric	DIN 46277
Dimensions (H x W x D)	85x70x72
Weight CP 70B	170 g

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Mode 1 - Symbol mode

Mode 1= · 8 symbols pr. CP 70B
· 4 x CP 70B = 32 channels
(programmed with Link no. 1-4)

This mode provides a user interface which consists only of symbols, and thus easy to remember. The user interface is specially optimized for B&O's latest remote control Beo4, and can only be used together with it. The middle part of the Beo4 keyboard is similar to the Sesam touch panel, and thus the optimum user comfort can be obtained by letting functions and button position be identical for all remote controls and Sesam panels in the installation. In the table to the right suggestions are made for the functions on the various buttons, but of course the choice is optional.

Mode 1 can also be combined with other modes, by which the functionality of the system can be extended.

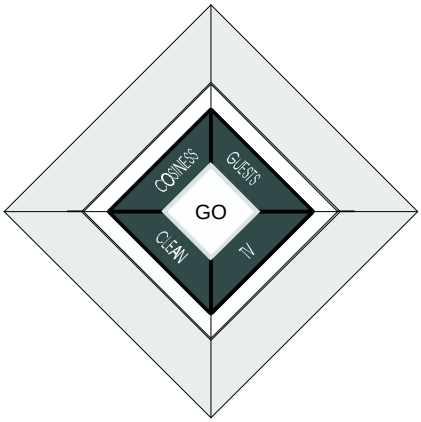
Touch button LIGHT + ...	Suggestion of function	CP-Bus channel	Bus command at touch	Bus command at let go	Stand-alone function
STOP	All off	1 *	Start+Stop	-/-	Transistor out. 1
GO	Daily on/off	2 *	Start/Stop **	-/-	Transistor out. 2 ***
GREEN	Light cosiness	3 *	Start	Stop	Transistor out. 3
YELLOW	Light guests	4 *	Start	Stop	Transistor out. 4
BLUE	Light TV	5 *	Start	Stop	Relay output 1
RED	Light cleaning	6 *	Start	Stop	Relay output 2
WIND >>	Draw curtain	7 *	Start	Stop	Relay output 3
REWIND <<	Undraw curtain	8 *	Start	Stop	Relay output 4

* REMEMBER! Link no. 1-4 must be programmed (max. 4 stk. CP 70B pr. data string). At programming of active modules BO-Link no.1-4 and channel 1-8 is stated.

** Start and Stop are transmitted alternatively (as Grp. Turn on/off). However Start is always transmitted (Grp.-turn on), if previous button was not "GO".

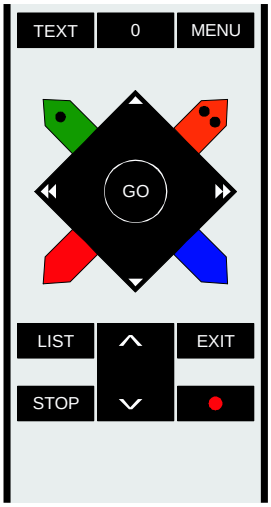
*** "GO" turns on/off transistor output 2, all the other buttons turns off the output.

Touch button panel "SESAM"



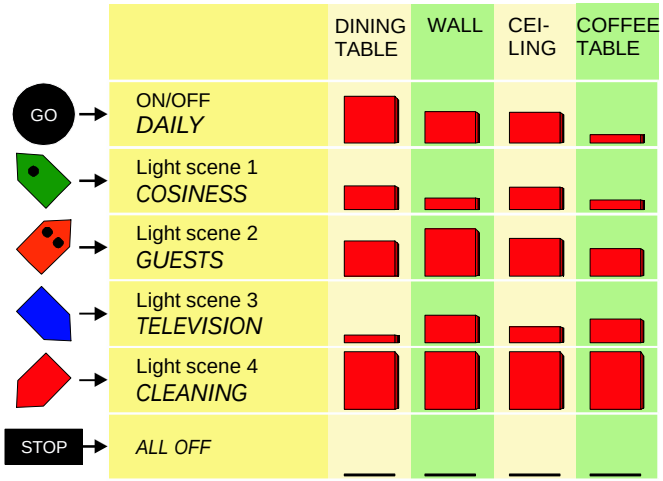
If CONCEPT 2000 touch button panel "SESAM" type CP 2506 is used for light requirements, it must be connected Switch-Link type CP 20.

User intereface in mode 1



Symbol on Beo4

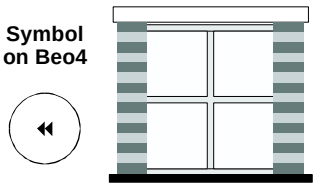
Light requirements **4 light places**
(4 pcs. dimmer modules type CP 31)



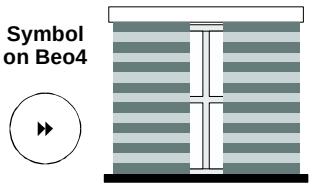
Curtain control with Beo4

For curtain or screen control relay type CP 24 is used, which can be programmed with the help relay function, by which you only draw/undraw the curtains as long as you activate the buttons WIND>> and REWIND<< (see information CP 24).

Symbol on Beo4



Symbol on Beo4



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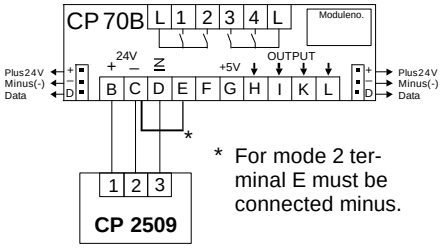
Mode 2 - Simple number - mode
Mode 2 = · 8 numbers pr. CP 70B
· 4 x CP 70B = 32 channels
(programmed with Link no. 1-4)
This mode provides a simple user interface, as only LIGHT + [number] must be keyed in. Mode 2 is most suitable for control of fixed light requirements or toggle with relay or dimmer modules.
It has no effect to keep the buttons down, the signal is only sent on the data bus when the button is touched (*no repeating signals), it is therefore not possible to dim manually (UP and DOWN) on dimmer modules type CP 31 or to use curtain control on relay module type CP 24 with help relay function.
For this all B&O remote controls with LIGHT function are applicable.

Touch button LIGHT + ...	CP-Bus channel	Bus command at touch	Bus command at let go	Stand-alone function
1	1 *	Start/Stop **	-,-	Transistor outp. 1
2	2 *	Start/Stop **	-,-	Transistor outp. 2
3	3 *	Start/Stop **	-,-	Transistor outp. 3
4	4 *	Start/Stop **	-,-	Transistor outp. 4
5	5 *	Start/Stop **	-,-	Relay output 1
6	6 *	Start/Stop **	-,-	Relay output 2
7	7 *	Start/Stop **	-,-	Relay output 3
8	8 *	Start/Stop **	-,-	Relay output 4

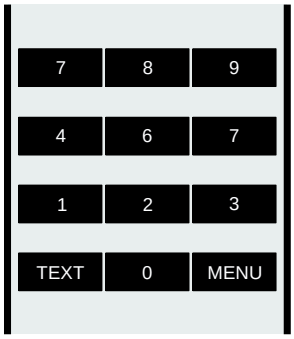
* REMEMBER ! Link no. 1-4 must be programmed (max. 4 pcs. CP 70B pr. data string).
At programming of active modules BO-Link no.1-4 and channel 1-8 are stated.
** NOTICE! No repeating signals

Connection of IR preamplifier in mode 2



* For mode 2 terminal E must be connected minus.

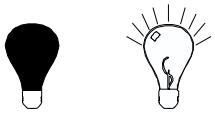
User interface in mode 2



TOUCH BUTTON — **CONCEPT 2000 Modules**

LIGHT + 1 → **CP 24**
LIGHT + 2 → **CP 31LR**
LIGHT + 3 → **CP 31CR**
LIGHT + 4 → **CP 31BC**

Control options in mode 2



By direct control
only toggle function ON - OFF
at relay and light dimmer modules.

TOUCH BUTTON	Light requirements (Dimmer module type CP 31)	DINING TABLE	WALL	CEILING	COFFEE TABLE
LIGHT + 1 →	Light scene 1 *DINING*	■	▬	▬	▬
LIGHT + 2 →	Light scene 2 *GUESTS*	▬	■	▬	▬
LIGHT + 3 →	Light scene 3 *TELEVISION*	▬	▬	▬	▬
LIGHT + 4 →	Light scene 4 *CLEANING*	■	■	■	■
LIGHT + 8 →	*ALL OFF*	___	___	___	___

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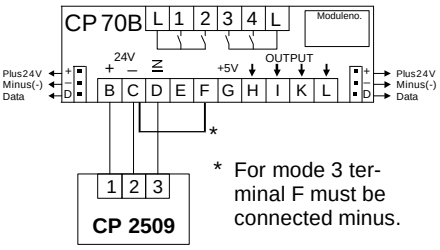
Mode 3 - Normal number - mode

Mode 3 = · 8 numbers pr. BO-Link
· 4 x CP70B = 32 channels
(programmed with Link no. 1-4)

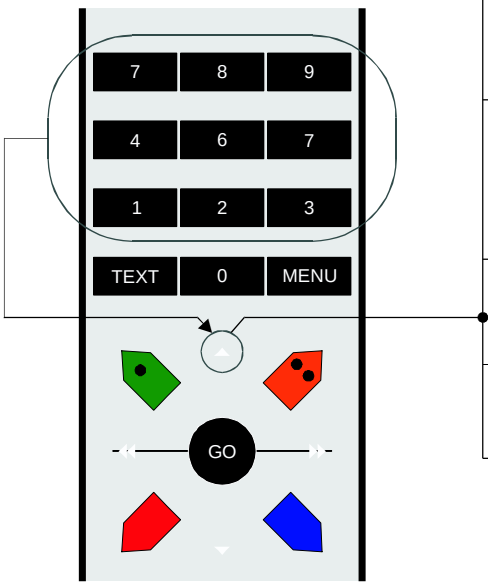
This mode is an extension of mode 2, as it furthermore provides an option for manual light regulation for up to 8 light dimmer circuits (dimmer modules type CP 31) or 4 curtains controls DRAW/UNDRAW with help relay function (relay module type CP 24) pr. BO-Link CP 70B. To obtain this it is necessary with an extra touch button (STEP UP ▲) . For this mode all B&O remote control units with LIGHT function is applicable.

Connection of IR preamplifier in mode 3



* For mode 3 terminal F must be connected minus.

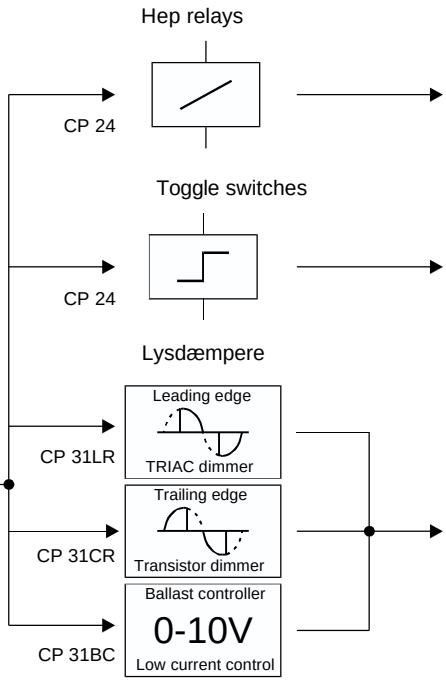
User interface in mode 3



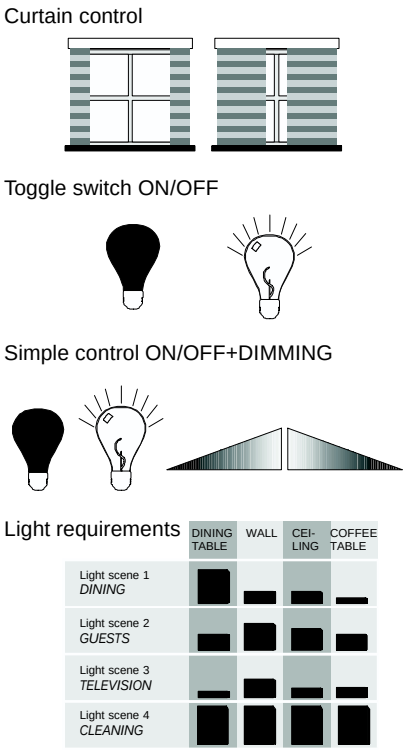
Touch button LIGHT + ...	CP-Bus channel	Bus command at touch	Bus command at let go	Stand-alone function
1 + STEP UP	1 *	Start	Stop	Transistor out. 1
2 + STEP UP	2 *	Start	Stop	Transistor out. 2
3 + STEP UP	3 *	Start	Stop	Transistor out. 3
4 + STEP UP	4 *	Start	Stop	Transistor out. 4
5 + STEP UP	5 *	Start	Stop	Relay output 1
6 + STEP UP	6 *	Start	Stop	Relay output 2
7 + STEP UP	7 *	Start	Stop	Relay output 3
8 + STEP UP	8 *	Start	Stop	Relay output 4

* REMEMBER ! Link no. 1-4 must be programmed (max. 4 pcs. CP 70B pr. data string).
At programming of active modules BO-Link no.1-4 and channel 1-8 are stated.

Relay modules type CP 24
Dimmer modules type CP 31LR/CR and BC



Control options in mode 3



Mode 4 - Extended number - mode

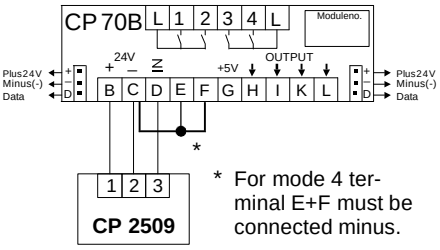
Mode 4= · 8 numbers(channels) pr. CP 70B
· 4 x CP 70B = 32 channels
(programmed with Link no. 1-4)

This mode is similar to mode 3, but can operate with 32 channels. As a single link-modul type CP 70B only can handle 8 channels, the 32 channels are spread on the 4 possible link modules type CP 70B.
In this way link no. 1 handles channel 1-8, link no. 2 channel 9-16, link no. 3 channel 17-24 and link no. 4 channel 25-32.
The table to the right shows the function of a module which is programmed for link no. 2
For this mode all B&O remote controls with LIGHT function are applicable.

Touch button LIGHT + ...	CP-Bus channel	Bus command at touch	Bus command at let go	Stand-alone function
9 + STEP UP	1 *	Start	Stop	Transistor out. 1
10 + STEP UP	2 *	Start	Stop	Transistor out. 2
11 + STEP UP	3 *	Start	Stop	Transistor out. 3
12 + STEP UP	4 *	Start	Stop	Transistor out. 4
13 + STEP UP	5 *	Start	Stop	Relay output 1
14 + STEP UP	6 *	Start	Stop	Relay output 2
15 + STEP UP	7 *	Start	Stop	Relay output 3
16 + STEP UP	8 *	Start	Stop	Relay output 4

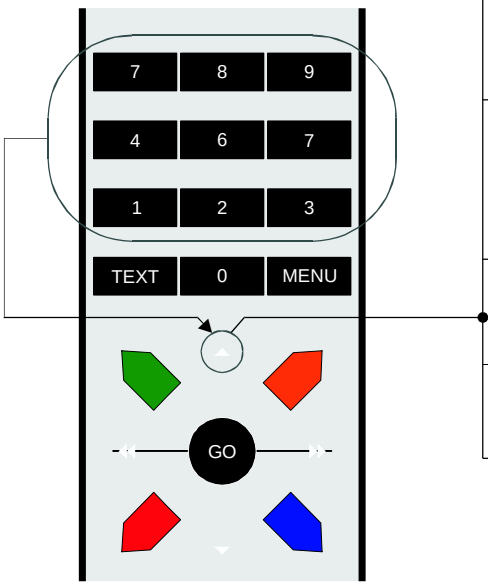
* REMEMBER ! Link no. 1-4 must be programmed (max. 4 pcs. CP 70B pr. data string).
At programming of active modules BO-Link no.1-4 and channel 1-8 are stated.

Connection of IR preamplifier in mode 4

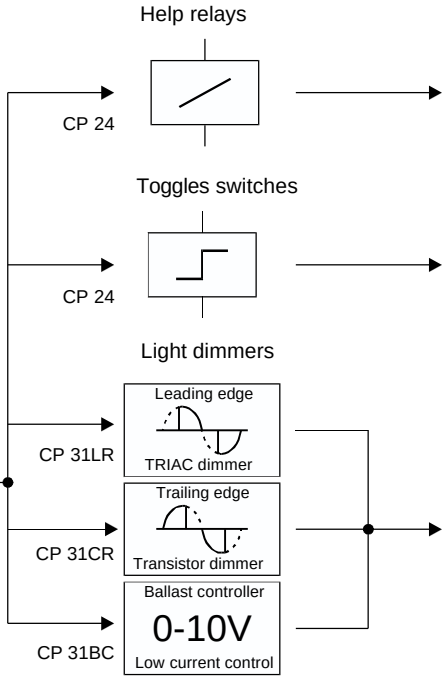


* For mode 4 terminal E+F must be connected minus.

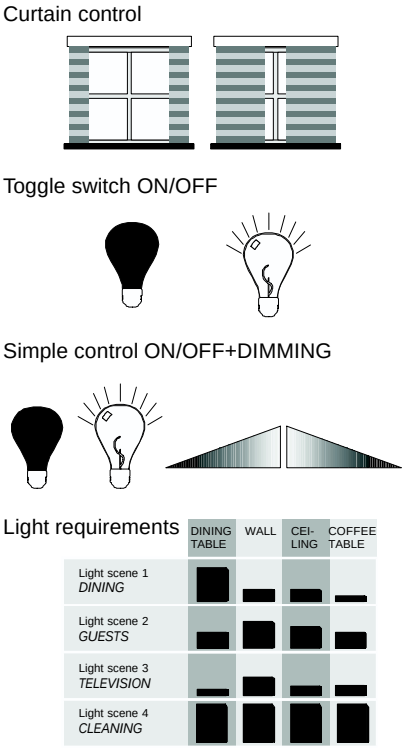
User interface in mode 4



Relay modules type CP 24
Dimmer modules type CP 31LR/CR and BC



Control options in mode 3



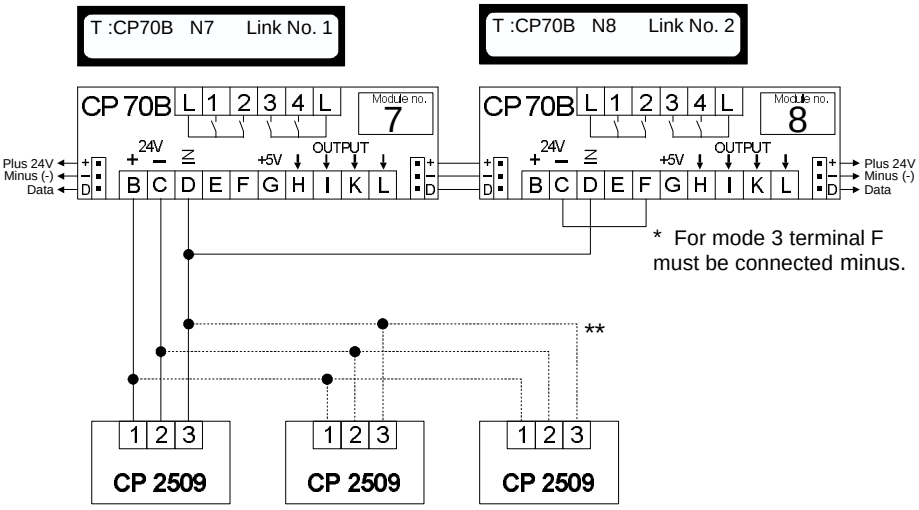
Combination of several modules/modes
It is possible to link more than one module on a single IR preamplifier, if more than 8 channels is needed. This can be done by discontinuing the signal cord (and this only) to the extra modules. If you choose to link e.g. 2 modules, one module can be set in mode 1, and the other can function as an extension with e.g. mode 2 or 3. An example could be 2 linked modules , module no. 1 and 2, with the following setting:
1) Module 1 - link number 1 - mode 1
2) Module 2 - link number 2 - mode 2

Module 1 will react to the symbol buttons, where as module 2 will react to the number buttons 1-8.

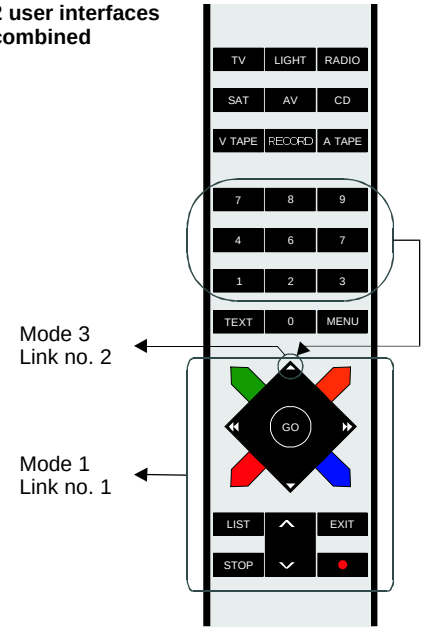
The options of combination are many, but not all combinations are available. E.g. it does not make any sense, if several linked modules run in the same mode. This will result in a conflict between these modules, which then will not function correctly. An exception, however, is mode 4, as the function here depends on programmed link number of the module. If modules in mode 4 have different link numbers (which is normally the case), they can be linked without any problems. An example on this could be 3 linked modules, module no. 1, 2, and 3, with the following setting:
1) Module 1 - link number 1 - mode 4
2) Module 2 - link number 2 - mode 4
3) Module 3 - link number 3 - mode 1

Module 1 will react to the numbers 1-8, followed by channel-up. Module 2 will react to the numbers 9-16 followed by channel-up. Module 3 will react to the symbol buttons. At the setting of CP70B you do influence which buttons that are to be used on the remote control. Though, the mode of operation of the entire system is primarily decided by the programming of light dimmers and relays, and it may be varied indefinitely. However, we recommend that an installation is done consistently, in that way you can be confident by using the system on a daily basis. Therefore, it will in most cases be obvious to use mode 1, and programme the control, so it corresponds to the Sesam touch of the installation.

Application example 1:
Combination of mode 1 (symbol mode) and mode 3 (normal number mode) e.g. for control of 4 pcs. dimmer modules type CP 31 with light requirements (Link no. 1/ mode 1) and direct control with function ON/OFF/-DIMMING (Link no. 2/ mode 3).
NOTE! Module no. is optional, depends of position in system/switchboard. The menus show programming in CONKEY type CP 79.

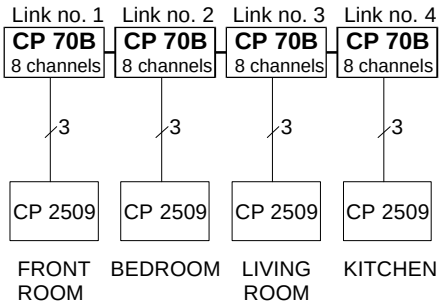


2 user interfaces combined



** IR preamplifier type CP 2509 can be linked parallel. In rare cases neon lights can interfere with the receiption of the signal.

Application example 2:
Application of 4 pcs. BO-Link type CP 70B in 4 different rooms with mode 1 - symbol mode.
REMEMBER! Max. 4 pcs. BO-Link pr. data



»UHF-Link« type CP 70C -

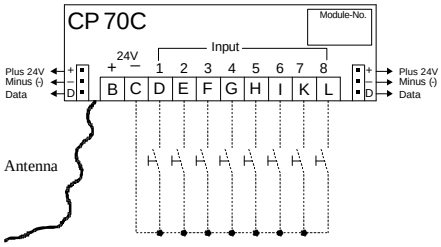
The CP70C UHF Link receives Radio Signals.

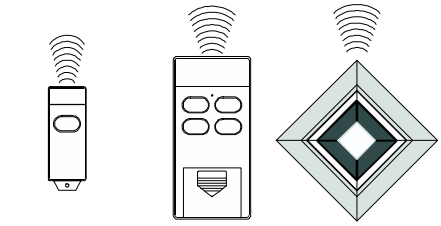
The CP70C UHF Link is an electronic UHF decoder module with 8 channels for IR remote control of "Concept 2000" systems using a radio signal of 40 Mhz.
The modules are especially suited for new or existing installations, additions or extensions. Even IR remote control of lighting etc., but where the possibilities of wiring to new switches is not practical.
The aerial for receiving the UHF signal is built into the CP70C module, and receives a signal from hand held and wall mounted remote control units. Hand held having 1,2,4 and 8 channels and wall mounted having 1,2,3,4 or 5 channels. In addition the modules have 8 direct imputs, that transmit a command via a data bus when operated. Push button switches, sensors or other devices having a voltage free make and break contact can also be used. The UHF component of the CP70C is equiped with its own unique UHF address readable from a CP70C 08 4/8 channel UHF transmitter to the module and cannot be overwritten or changed.

Function of the UHF link CP70C
UHF link type CP70C receives a signal from either a direct imput,or UHF signal from wall mounted or hand held remote control unit, decodes then via the bus, transmits the data to both the CP24 relay modules and/or the CP31 dimmer modules.

The UHF Remote Controls
Hand held or wall mounted UHF controls transmit 40 Mhz radio signals to 1,2,4,5 or 8 channels, for a distance of approximately 30 - 50 meters indoors and up to 100 meters outdoors depending on the conditions.

Connection of UHF-Link CP 70C

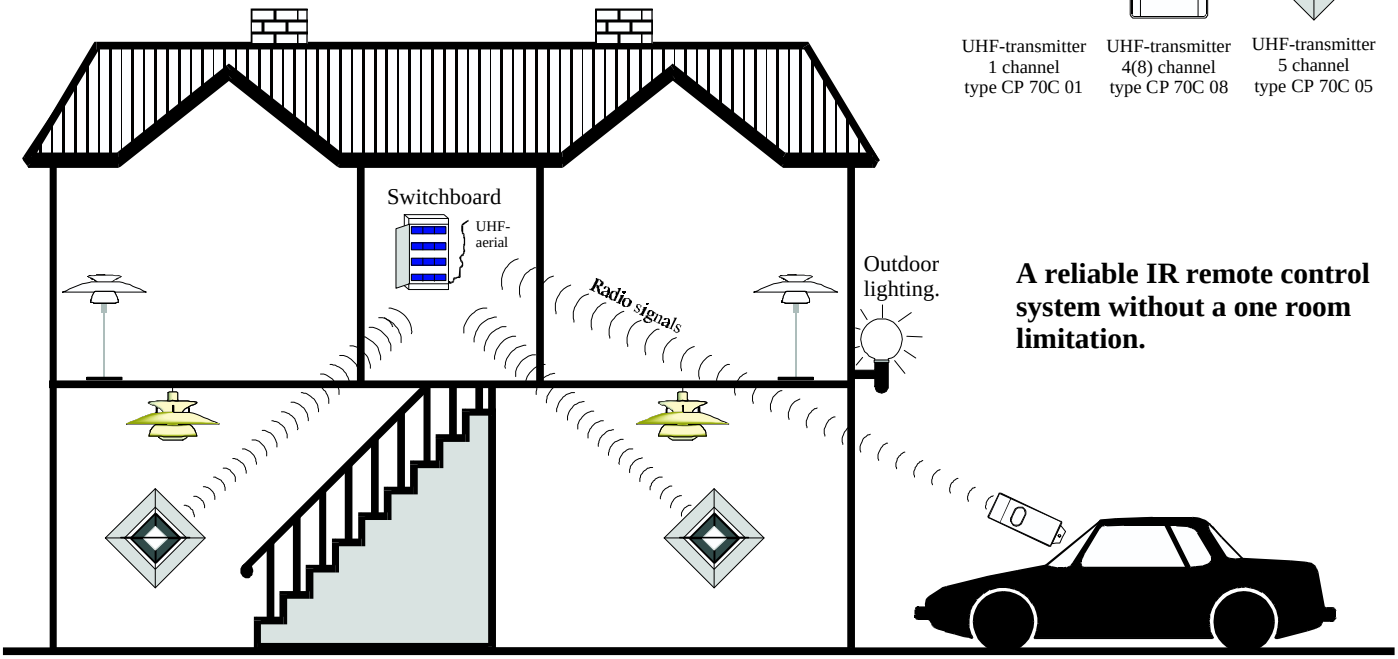




UHF-transmitter 1 channel type CP 70C 01

UHF-transmitter 4(8) channel type CP 70C 08

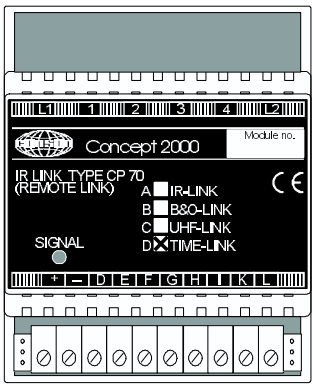
UHF-transmitter 5 channel type CP 70C 05



A reliable IR remote control system without a one room limitation.

TIME-LINK type CP 70D

TIME-LINK type CP 70D



EAN-No. 5703513007089

Product description
CP 70D is a multi-functions module, which has a built-in 24-hour clock with a solution on one second and supplements the CONCEPT 2000 system with a number of subtleties, such as:

- **Burglar alarm**
- **Imitated habitation**
- **Turn on/off clock with battery back-up**
- **Ventilator control for bathroom**
- **Intelligent twilight relay**
- **Detector of direction**
- **Possibility of test of system**

Before you read on you must know that you cannot compare the module with a week clock, as it has no display. The main stress is laid on the fact that it must be a multi-function module at a reasonable price.

At programming of modules with CONKEY type CP 79 (from version 2.08) Link-type L: TL 1-4 is applicable.
On screen menus of earlier programming keys CONKEY type CP 79 (for version 2.07) this module is not implemented. In these versions Link-type L: TEB 1-4 is used at programming.

Accessories:
25 cm bus extension cord type CP 09 for connection of 2 CONCEPT 2000 modules. The cord contains plus, minus and data lead, and is applicable for horizontal and vertical connection.
EAN-NO. 5703513004101

Possible applacations of TIME-LINK

Burglar alarm at burglary

Imitated habitation as preventive protection against burglary

16 fixed clock signals from 24-hour clock with battery back-up

Control of bathroom ventilator

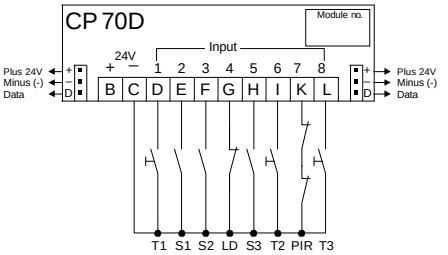
Detection of direction

Intelligent twilight relay

Channel outline TIME-LINK type CP 70D
Subsequent table shows Link number channel no., and action, which are applicable in modules type CP 24 and CP 31 at programming (TL/TEB).

Link	Chan.	Function/Time	Action
TL-1	1	Accidental gen. 1	Aux relay
TL-1	2	Accidental gen. 2	Aux relay
TL-1	3	Accidental gen. 3	Aux relay
TL-1	4	Accidental gen. 4	Aux relay
TL-1	5	Accidental gen. 5	Aux relay
TL-1	6	Accidental gen. 6	Aux relay
TL-1	7	Accidental gen. 7	Aux relay
TL-1	8	Accidental gen. 8	Aux relay
TL-2	1	Sensor 1 > Sensor 2	All action.
TL-2	2	Sensor 2 > Sensor 1	All action.
TL-2	3	Ventilator (10 min.)	Aux relay
TL-2	4	Twilight relay	Aux relay
TL-2	5	Alarm blink	Aux relay
TL-2	6	Alarm siren	Aux relay
TL-2	7	Alarm warning	Aux relay
TL-2	8	Alarm indication	Aux relay
TL-3	1	01:30 Clock	All action.
TL-3	2	03:00 Clock	All action.
TL-3	3	04:30 Clock	All action.
TL-3	4	06:00 Clock	All action.
TL-3	5	07:30 Clock	All action.
TL-3	6	09:00 Clock	All action.
TL-3	7	10:30 Clock	All action.
TL-3	8	12:00 Clock	All action.
TL-4	1	13:30 Clock	All action.
TL-4	2	15:00 Clock	All action.
TL-4	3	16:30 Clock	All action.
TL-4	4	18:00 Clock	All action.
TL-4	5	19:30 Clock	All action.
TL-4	6	21:00 Clock	All action.
TL-4	7	22:30 Clock	All action.
TL-4	8	00:00 Clock	All action.

Connection diagram TIME-LINK type CP 70D



Terminals

Terminal	Symbol	Input
Terminal B	+	Plus 24V DC
Terminal C	-	Minus (-)
Terminal D	D	Clock control (-)
Terminal E	E	Sensor 1 (-)
Terminal F	F	Sensor 2 (-)
Terminal G	G	Ventilator control (-)
Terminal H	H	Twilight relay (-)
Terminal I	I	Burglar alarm ON/OFF (-)
Terminal K	K	Closed circuit NC (-)
Terminal L	L	Accidental generator (-)

Technical data TIME-LINK type CP 70D:

Low current

Voltage	24V DC (18-28V)
Current at 18 V DC max.	30 mA
Power consumption at 18 V DC max.	0,5 VA
Current all inputs	0,5 mA
Current all presses	0.5 mA
Terminals for max.	2,5mm Ø
Cable length	R max. 1 K-Ohm

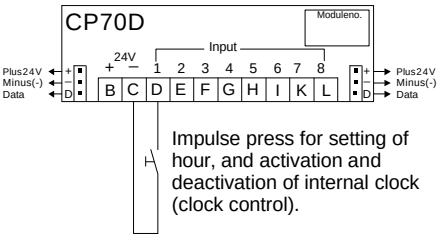
Mechanical data for CP 70D

Temperature range	-5º.....+35ºC
Installation for built-in	
Isolation	4KV > 8 mm
Insulation	DIN 40050
DIN rail symmetrical	DIN 46277
Dimensions (H x W x D)	85x70x72
Weight CP 70D	100 g

Installation guide.
Mount the module on the DIN rail and connect the plug between the modules. Via this plug +/- and "data lead" are connected. Connect low current to the module, and check connection before voltage is supplied to the module. CP 70D must have external supply from power supply type CP 11 (18-28V DC).

Attachment of power supply:
The module has a built-in 24-hour clock with a solution on one second and built-in battery for 24 hour back-up. After connection to the power supply it will take about a week before the battery is fully charged.
When the module is connected the supply the clock will automatically be blocked, i.e. the clock is not connected. This is indicated by slowly flashes in the light-emitting led in front of the module. If you want to use the clock it must first be set. When the clock is connected it will influence 3 things in the module:

1) The twilight relay is limited to the period 06.00-24.00 (see later on)
2) Imitated habitation is limited to the period 06.00-09.00 and 16.00-01.00 (see later on)
3) Turn on/off clock is connected (see later on)



Setting of internal clock (hour):
This situation is always started with 5 short activations of the press, connected minus(C) and terminal D, after this the clock will be in setting mode .This is indicated by fast flashes in the light led in the front of the module. After this, the current time in hours is entered. The time is entered as a number of activations corresponding to the hour. E.g. p.m. 14.00 is given 14 activations (therefore, the clock can only be set every hour on the hour). After this the input is permanently activated for at least 3 seconds, until the light led stops flashing. This indicated that the clock is now set, and blocking is cancelled. If the final activation on 3 seconds is neglected, the setting will be ignored and terminated.
When the entering has begun, max. 3 seconds must pass between every change on the terminal.
Is this time limit exceeded, the setting will be ignored and terminated.

Blocking of internal clock
Blocking is automatically activated when the module is turned on. Blocking is a state in which the clock is allowed to run, but moreover it has no influence on the module. This state is obviously wanted in situations where the clock is not set, or where you want to diverge from the daily routine. Blocking is indicated by slow flashes in the light led. Blocking is obtained by a short activation of press, connected minus (C) and terminal D, and is cancelled again by 2 short activations. Blocking can also be obtained by connecting the input permanently to minus. In this case blocking will be active as long as the terminal is connected to minus.

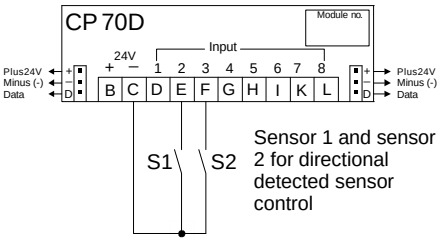
Turn on/off clock
When the clock is connected, different addresses are transmitted on the data bus every 1½ hour. Times and addresses are listed on the front page.

Test of system
Test of system is a special mode which can be used for test of the programming of the system, when the module is mounted and wired on the table. When the module is in test of system mode, the time is simulated with 60-fold speed. This applies to the clock and all the timers in the module. However, seconds is maintained at normal speed. This means in practice that a 24-hour programme is run trough on 24 minutes. With that, the electrician can in a convenient way walk around in the house with a time table and a stop watch and control that everything works optimum. Test of system mode is started with 10 fast activations on terminal D, and closed with 2 fast activations. Test of system is indicated by constant light in the light diode.
A short activation of terminal D while the module is in test of system mode, will put the clock forward 1 hour. This will happen a few seconds after the activation, and is indicated by a short flash in the light led on the module.

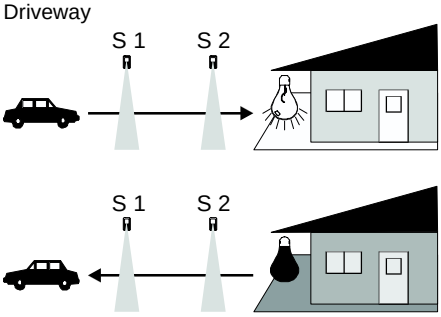
Directional detected sensor control
The module is provided with as function which can detect in which order 2 sensors are activated.
The sensors are connected minus (C) and the terminals E (sensor 1) and F (sensor 2).

The function can e.g. be used to detect the traffic direction of a car, if the inputs are connected to 2 photo cells, to turn on the outdoor light. The function can also be used for route light in a factory.

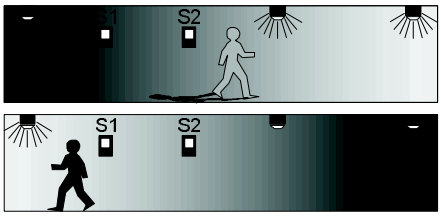
If terminal E (sensor 1) is first activated, and then terminal F (sensor 2), the address TL-2 channel 1 will be transmitted on the data bus. On the other hand, if the inputs are activated in reverse order, the address TL-2 channel 2 will instead be transmitted on the data bus.
Activation of the 2 inputs must be within 5 seconds
(sensor1>sensor2,sensor2>sensor1), otherwise this function is zerofilled.



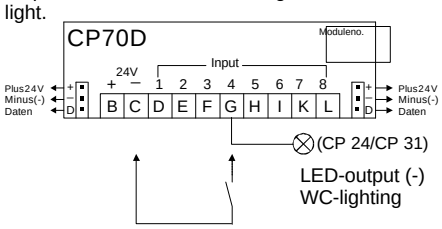
Application examples:
Driveway



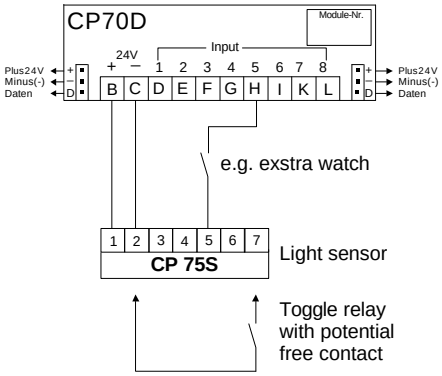
Route light



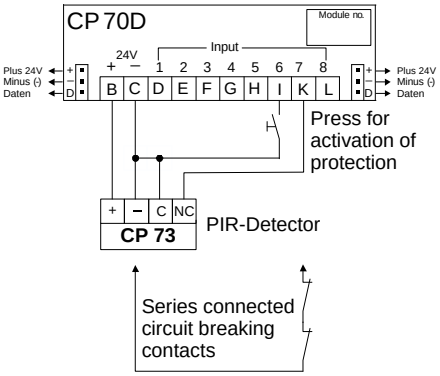
Ventilator control
The function is controlled via terminal G, and is designed to control a bathroom ventilator. The idea is that the ventilator is to start when the light is turned off, and after that run for 10 minutes. If the light is turned on again within the 10 minutes the ventilator must immediately turn off. The ventilator is connected via the address TL-2 channel 3, and terminal G is connected to the indication output on the module controlling the bathroom light.



Intelligent twilight relay
This function can be used as an extension to a ordinary twilight relay, if you want to economise on the energy consumption for outdoor lighting at night. Instead of connecting the twilight relay directly to the outdoor lighting, the twilight relay is connected to terminal H. The control of the outdoor lighting then takes place via address TL-2 channel 4. The function ensures that the outdoor lighting is always turned off in the period 24.00-06.00, regardless of the signal from the twilight relay. If the clock is blocked, the signal form the twilight relay will be used directly.
NB: If a twilight relay is not applied, and you still want to use imitated habitation, terminal H must be wired to minus.



Burglar alarm on/off
The burglar alarm can be connected if the closed circuit is connected. When the burglar alarm is connected there is 3 minutes standby, where the closed circuit is not checked . In this period it is possible to “leave the house” and close the door again. After 3 minutes the alarm will be “active”, and any breach on the closed circuit, even briefly, will result in a real alarm. An alarm will be started with a warning period on 30 seconds, where a flash signal will be transmitted on address TL-2 channel 7. This signal can e.g. control a warning lamp (e.g. In Sesam switch) or a small sounding body. After this a flash signal starts on the address TL-2 channel 5, which will last 30 minutes. This signal can be sued to flash with the light within the house (active-modules type CP 24/CP 31 is programmable with help relay function) to frighten the burglar, and with the outdoor lighting to attract attention. At the same time and activation signal is transmitted on address TL-2 channel 6, which however is followed by a deactivation signal after 3 minutes (statutory requirements in connection with sirens). This signal can e.g. be used to control a siren or to give a signal to equipment for automatic telephone call. The alarm is connected with a short activation of terminal I, and is disconnected with 2 short activations. Alternatively the alarm can be connected by connecting the input permanently to minus. In this case the burglar alarm will be connected as long as the terminal is connected to minus. When the alarm is connected, an activation signal is transmitted on address TL-2 channel 8, which is followed by a deactivation signal when the alarm is disconnected. This signal can e.g. Be used for indication lamp (e.g. in Sesamswitch).
Terminal K - Closed circuit:
This terminal is connected to minus via a number of series connected circuit breaking contacts, as it is known from ordinary alarm systems.



Imitated habitation
This function is one of the best preventive protections against burglary, because the house looks inhabited and it frightens away e.g. a burglar, even when you are on holiday.

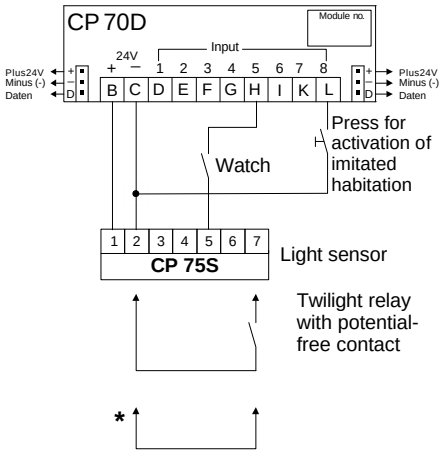
To make the imitated habitation active, 3 conditions must be fulfilled:

1) Terminal H (twilight relay) must be activated
2) Imitated habitation must be connected
3) The time must be between 06.00-09.00 or between 16.00-01.00 (if the clock is connected)

The control takes place via the addresses TL-1 channel 1-8, and takes place coincidently within the following limits:

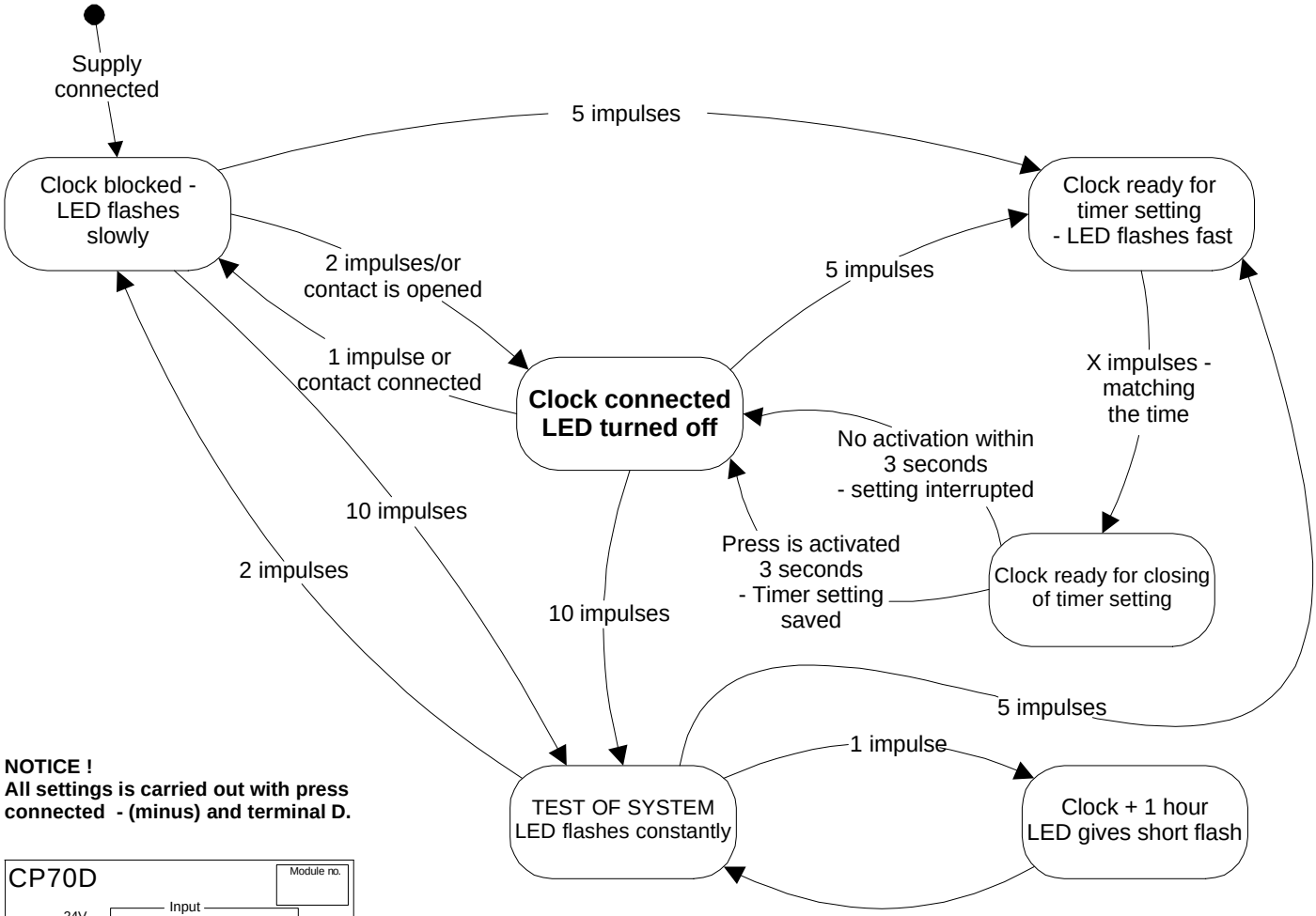
1) There will be at least 1 and not more than 2 addresses active at a time
2) Each address is active within a period of 4-20 minutes

Imitated habitation is connected by a short activation of terminal L, and is deactivated by 2 short activations. Alternatively the function can be connected by connecting terminal L permanently to minus. In this case the function will be active as long as the terminal is connected to minus.

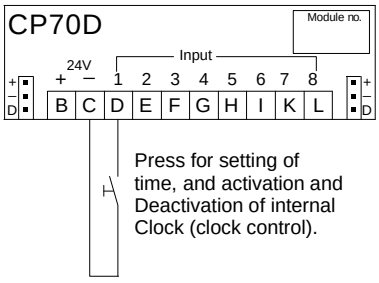


***** If a twilight relay is not applied, terminal H must be wired to minus.

Clock settings



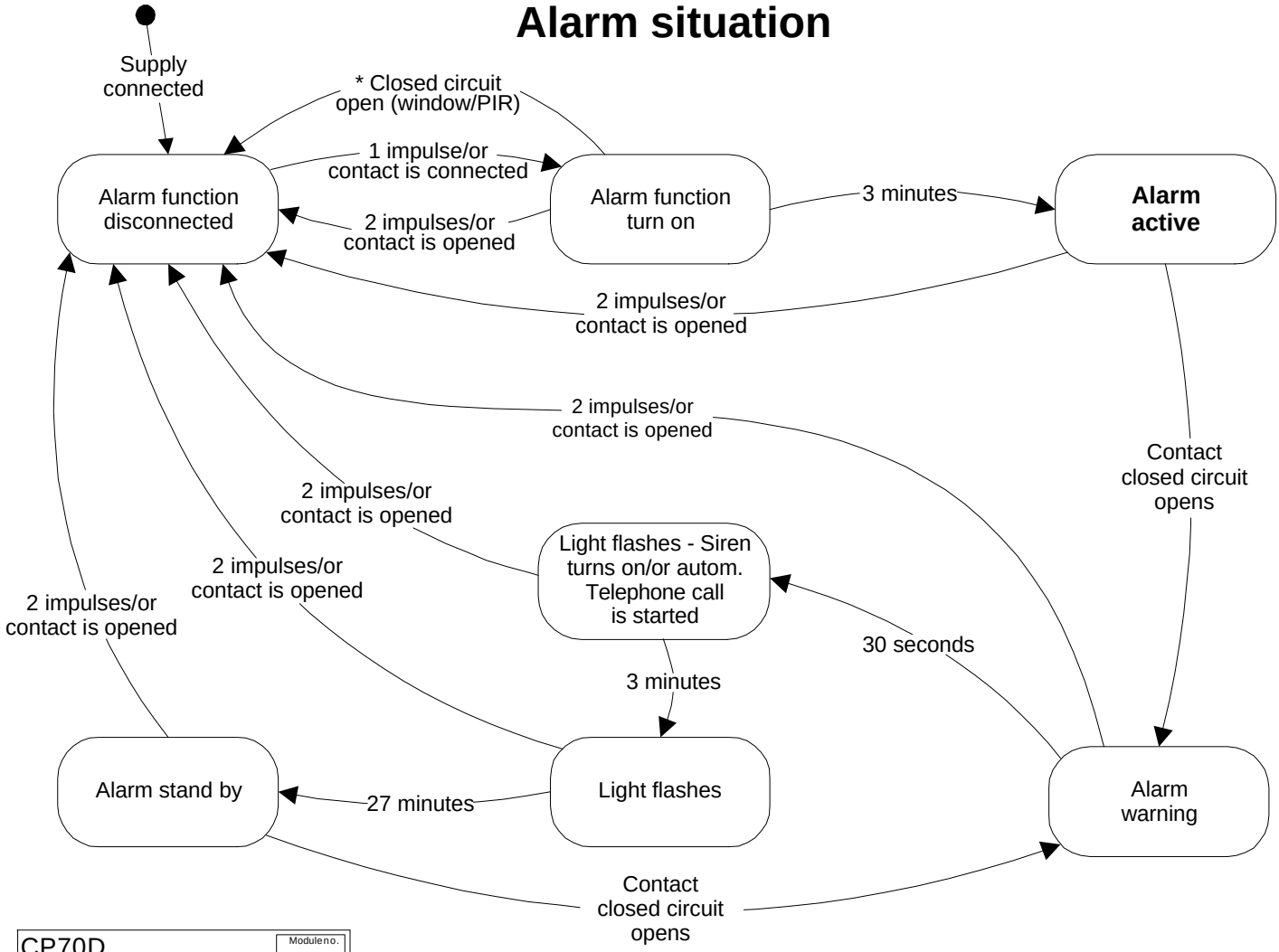
NOTICE !
All settings is carried out with press connected - (minus) and terminal D.

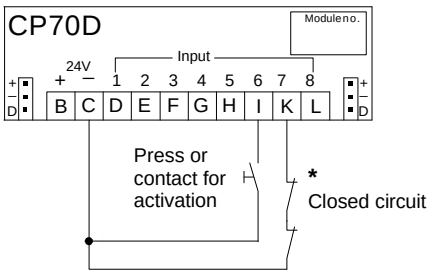


Press for setting of time, and activation and Deactivation of internal Clock (clock control).

30.06.97

Alarm situation





NOTICE !
All activations/deactivations of alarm function is carried out with press/contact connected - (minus) and terminal I.

*** NOTE! Alarm cannot be connected if one or more contacts within the closed circuit (terminal K) is opened (window contact, door contact or PIR-detector).**

30.06.97

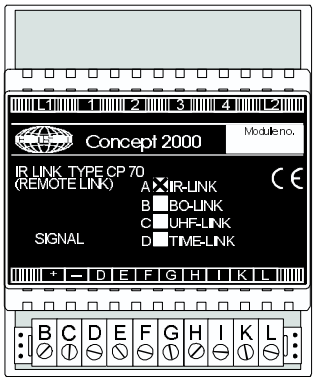
Project				COMPANY (Business stamp)	**Projecting plan** **Time-Link type CP 70D** CONCEPT 2000
Section					
Case no.	Sign.	Date	Page		

Premises	Switch no.	Module no.	Module type	Relay no.	**Imitated habitation** TL-1								**Sensor./Wait./Alarm** TL-2								**Clock control** TL-3								**Clock control** TL-4							
					C1 Acciden.1	C2 Acciden.2	C3 Acciden.3	C4 Acciden.4	C5 Acciden.5	C6 Acciden.6	C7 Acciden.7	C8 Acciden.8	C1 Sen.1>2	C2 Sen.2>1	C3 WC-Vent.	C4 Twi.rel.	C5 Al.flash	C6 Al.siren	C7 Al.warn.	C8 Al.indic.	C1 01:30	C2 03:00	C3 04:30	C4 06:00	C5 07:30	C6 09:00	C7 10:30	C8 12:00	C1 13:30	C2 15:00	C3 16:30	C4 18:00	C5 19:30	C6 21:00	C7 22:30	C8 00:00
																					on off	on off	on off	on off	on off	on off	on off	on off	on off	on off	on off	on off	on off	on off	on off	on off

Notes

IR-Link type CP 70A

IR-Link type CP 70A



EAN-No. 5703513006303

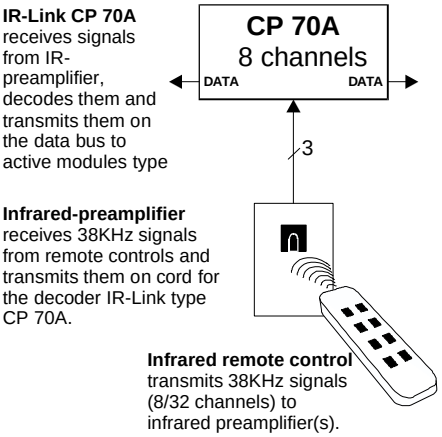
Product description

Remote control module IR-Link type CP 70A is especially developed for remote control of CONCEPT 2000 light control system with 38KHz infrared remote controls type CP 76 (8 channels) and type CP 79 (32 channels).
IR-link type CP 70 can transmit 8 channels on the data bus and with possibilities of connection of up to 8 IR-preamplifiers.
The module transmits at impact via infrared preamplifier a command over the data bus. Commands are received by the respective relay and dimmer modules, which then react on the command as required. The addressing and programming are done by means of IR-remote control and programming keys CONKEY type CP 79.
The channel range to be used (1-8, 9-16, 17-24 etc. see table of functions on the back) is programmed into the module. Only one channel range at a time can be active pr. module.
Up to 4 pcs. CP 70 can be connected on the bus i.e. 32 channels can be established for IR remote control. Power supply is via the 3-pin plug provided, which is connected to the modules. Via this plug plus (24 V DC), minus and data are connected.

Installation guide.

Mount the module on the DIN rail and connect the plug between the modules. Via this plug +/- and "data cord" are connected.
Connect low current to the module, and check connection before voltage is supplied for the module. CP 70A must have external power supply from type CP 11 (18-28 V DC).

Functional principle of IR-Link typ CP 70A



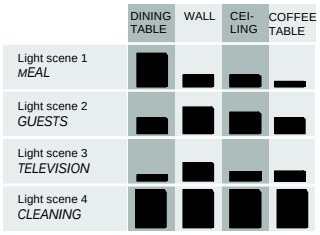
IR-Link CP 70A receives signals from IR-preamplifier, decodes them and transmits them on the data bus to active modules type

Infrared-preamplifier receives 38KHz signals from remote controls and transmits them on cord for the decoder IR-Link type CP 70A.

Infrared remote control transmits 38KHz signals (8/32 channels) to infrared preamplifier(s).

Control options with IR-Link

Light requirements



Toggle switches
ON/OFF

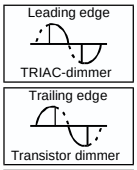
Relay module type CP 24

Help relays
(Curtain control)

Relay module type CP 24

Light dimmers

ON/OFF + REGULATION

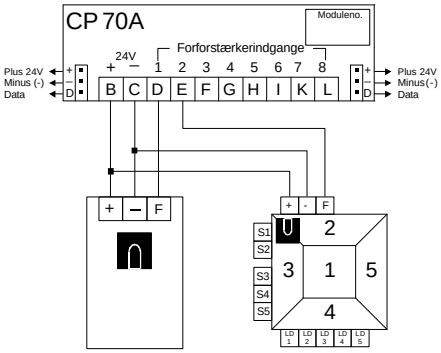


Dimmer module type CP 31LR

Dimmer module type CP 31CR

Dimmer module type CP 31BC

Connection diagram IR-Link type CP 70A



IR-preamplifier **type CP 72H** FUGA 50x77mm

Touch button panel with built-in IR-preamplifier **- type CP 2502** **- type CP 2507**

Terminals (low current)

Terminal	Symbol	Input
Terminal B	+	Plus 24V DC
Terminal C	-	Minus (-)
Terminal D	D	Preamplifier input 1
Terminal E	E	Preamplifier input 2
Terminal F	F	Preamplifier input 3
Terminal G	G	Preamplifier input 4
Terminal H	H	Preamplifier input 5
Terminal I	I	Preamplifier input 6
Terminal K	K	Preamplifier input 7
Terminal L	L	Preamplifier input 8

Technical data IR-Link type CP 70A:

Low current

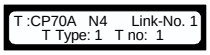
Voltage	24V DC (18-28V)
Current at 18 V DC max.	30 mA
Power consumption at 18 V DC max.	0,5 VA
Power consumption pr. preamplifier	0,6 VA
Impulse time min.	50 ms
Terminals for max.	2,5mm Ø
Cable length	max. 100 m

Mechanical data for CP 70A

Temperature range	-5º.....+35ºC
Installation	for building-in
Isolation	4KV > 8 mm
Insulation	DIN 40050
DIN rail symmetric	DIN 46277
Dimensions (H x W x D)	85x70x72
Weight CP 70A	100 g

10.08.97

Programming of IR-Link type CP 70:
At programming the following must be stated: module no. (1-200, depends of position), Link-no.(1-4, max. 4 pcs.), remote control type (HS Type:1-4) and remote control no. (HS no. 1-52= channel range).

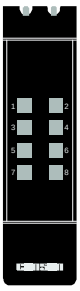


T Type: 1 - 8 channel IR remotecontrol type CP 76
- 32 channel remote control type CP 79
T Type: 2 - No use
T Type: 3 - No use
T Type: 4 - No use

T no: 1 - Channel range 1-8
T no: 2 - Channel range 9-16
T no: 3 - Channel range 17-24
T no. 4 - Channel range 25-32
to
T no. 64 - Channel range 505-512

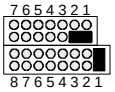
NOTE! IR-Link-no. 1-4 only transmit channel 1-8 on the data bus, even though you e.g. have chosen channel range/HS no. 17. IR remote controls type CP 76 with 8 channels can be coded for 64 channel ranges.Remote control type CP 79 only transmits from channel 1-32 and cannot be coded to other channel ranges. The module CP 70A is preprogram -med with module no. 4, Link-no. 1 (see above).

IR remote controls for remote control with IR-Link type CP 70A:



Type CP 76
Infrared remote control 8 channels
EAN-NO. 5703513006723

CP 76 is manufacture coded to channel 1-8.



Code change-over switch on the print in CP 76

To be able to choose another channel range the remote control cabinet must be opened by loosening 4 screws on the back (2 screws under battery cover).

Type CP 79
Infrared remote control 32 channels + programming key
EAN-NO. 5703513007119

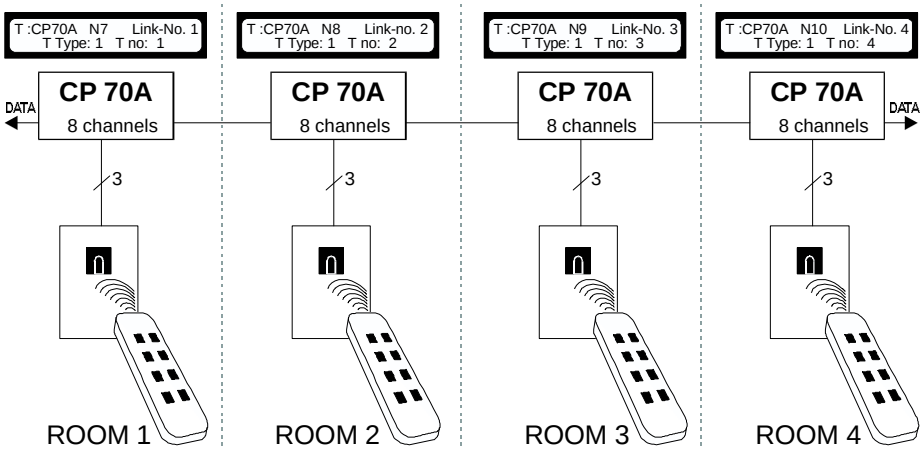
With the centre button the chosen channel number is transmitted

Remote control menu for light control with 1-32 channels

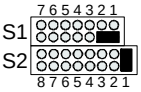
Press button 1-32 channels- Link-no. 1-4				CP-Bus channel	Bus command press	Bus command let go
HS-no.1	T-no.2	T-no.3	T-no. 4			
1	**9** (1)*	**17** (1)*	**25** (1)*	1 **	Start	Stop
2	**10** (2)*	**18** (2)*	**26** (2)*	2 **	Start	Stop
3	**11** (3)*	**19** (3)*	**27** (3)*	3 **	Start	Stop
4	**12** (4)*	**20** (4)*	**28** (4)*	4 **	Start	Stop
5	**13** (5)*	**21** (5)*	**29** (5)*	5 **	Start	Stop
6	**14** (6)*	**22** (6)*	**30** (6)*	6 **	Start	Stop
7	**15** (7)*	**23** (7)*	**31** (7)*	7 **	Start	Stop
8	**16** (8)*	**24** (8)*	**32** (8)*	8 **	Start	Stop

* IR remote control type CP 76 can be coded to different channel ranges (HS no.).
** REMEMBER ! Link-no. 1-4 must be programmed (max. 4 pcs. CP 70A pr. data string).
At programming of active modules IR-Link-no.1-4 and channel 1-8 must be stated.

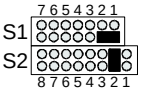
Application example: Application of 4 pcs. IR-Link type CP 70A in 4 different rooms (4x8 channels). Each 8-channel IR remote control type CP 76 can only be used in the room where it belongs, 32-kanal IR-remote control type CP 79 can be used in all rooms. The diagrams below show programming of IR-Link no. 1-4 (NOTE! Module no. N7-N10 is accidentally chosen, depends on position in the system) and remote control menu LIGHT for control with CP 79. REMEMBER! Max. 4 pcs. IR-Link pr. data string.



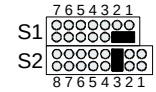
CP 76 for room 1 coded to channel 1-8



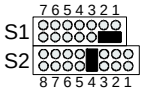
CP 76 for room 2 coded to channel 9-16



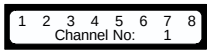
CP 76 for room 3 coded to channel 17-24



CP 76 for room 3 coded to channel 25-32



CP 79 - Remote control



CP 79 - Remote control

CP 79 - Remote control

CP 79 - Remote control

10.08.97

IR-remote control CONKEY

The modules in the installation system CONCEPT 2000 are programmed with the menu-controlled IR-remote control CONKEY. The IR-remote control contains an LCD-display and 5 buttons for use when operating the remote control and on the back a battery cover with room for 3 rechargeable batteries. Moreover, there are 3 busbars which are used when the remote control is placed in the table slot or wall slot and thus being charged. The batteries have a capacity for 20 hours of operation.

A function, which is currently under development, makes it possible to exchange data between the remote control and a PC. This means that the setup of the remote control and the modules can be operated from a PC.

At the front of the remote control a receiver diode and two sender diodes are placed and these are used when is sent or received from the modules. The diodes are placed inside the remote control. The setup for 200 modules each with 40

The modules are programmed with a two-way IR-signal, and it is therefore possible to get some feedback whether the communication was successful. The programmed data can at any time be loaded and changed. Furthermore, Conkey can be used as a remote control for CONCEPT 2000. In a later edition the built-in watch can be used as a "contact-watch", so Conkey on the wanted times sends an IR-signal to the bus. This takes place via the preamplifier and IR-link. All channels can be operated manually from Conkey. Normally Conkey will show date, time, temperature, weekday. The display also shows when Conkey is being charged.

Charging

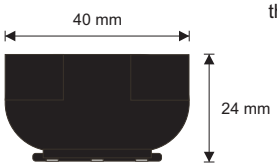
The placing of the Conkey on the table slot or wall slot charge the batteries. After approx. 6 hours the batteries are charged to approx. 80% of full capacity. Then the maintenance charging is automatically switched on, until the removal of the Conkey from the table slot or wall slot.

Technical data CONKEY

Transmitter frequency	38-40/465 KHz
Range	approx. 20 m
Number of setups	200 modules/40 functions
Battery capacity	20 hours
Charging time	8 - 9 hours
Battery type	3 x Ni/Cd 1,2V Accu, 200 mAH
Display	LCD-Display
Keyboard	Silicone-keyboard
Material	Synthetic/Aluminium
Dimensions (LxWxH)	250 x 40 x 24 mm

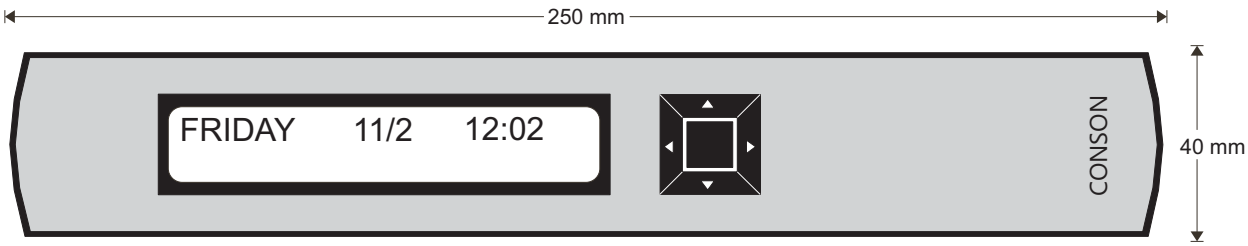
Front of CP 79

The remote control can also stand on the edge to make the display visible.



IR-remote control CONKEY for programming and cordless remote control

Front

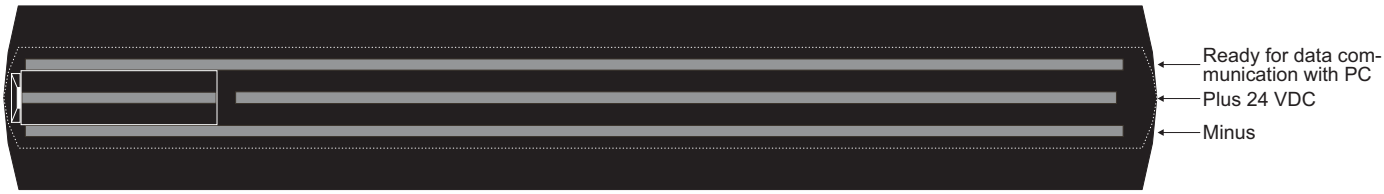


IR-remote control 32 channels + programming key Type CP 79 **EAN - NO. 5703513007119**

Back with battery cover

3 pcs. Ni/Cd, 1,2 V Accumulator 200 mAh

NOTICE! Do always use rechargeable batteries. A risk of damage of both batteries and remote control is involved using ordinary batteries



02/99

Functions in CONKEY type CP 79
CONKEY type CP79 has a large number of built-in functions, which will shortly be introduced below.

When batteries are inserted into CONKEY (or charging of empty batteries takes place) a special start-up picture is displayed briefly.

Start-up picture

```
Conson Elektronik A/S
Conkey ver. 2.08 HWC3
```

Here the version of the product is visible. In connection with telephonic support this helps the supplier to determine, which functions the relevant product is equipped with.

After approx. 3 seconds the display switches to a display with an entry field in which time and date can be set.

Time/date setting

```
11.00
94.02.11
```

When the setting is done, the display switches to the main menu.

Main menu

```
R. CTRL   conkey  adjust time
battery   more    finish
```

A press on one of the six menu items will result in a sub menu with further functions. The opportunities within each sub menu will be gone through below, but without going into details regarding each function:

R. CTRL is the menu for remote control. It provides the opportunity to remote control light (via a Concept 2000-system) and also remote control of a number of products from Bang & Olufsen. A great effort has been made in connection with the design of CONKEY in order to make it presentable in

R. CONTROL

```
LIGHT     tv      video
cd        tape    return
```

CONKEY is the most important menu, as it provides the opportunity of programming and managing Concept 2000 modules.

CONKEY

```
SETUP   send    load
copy    delete  return
```

ADJUST TIME provides the opportunity of returning to the display with time/date setting (see previous text)

BATTERY can give an indication of the remaining capacity of the battery. However, notice that the function is only a theoretical calculation from average charge and discharge times, for which reason it may be vitiated with some inaccuracy.

BATTERY

```
Capacity:  98,5%
**********************>
```

MORE is an extension of the main menu, which includes further menu items. At the moment, it is the menu items LANGUAGE, CONTOOL, and RETURN. LANGUAGE provides the opportunity of selection of various languages, CONTOOL is used to transmit data to/from interface CP78 and RETURN switches back to the main menu.

MORE

```
LANGUAGE  contool  return
```

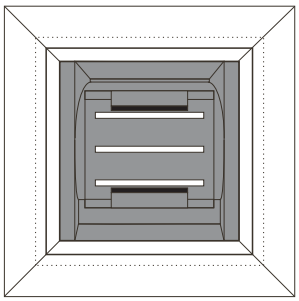
FINISH switches to display of weekday, date, time and charge status. Notice that CONKEY automatically switches to this display, when it has not been activated for one minute. A single press on the keyboard results in a switch to the menu last used. The text “Charging....” is only visible on the display, when CONKEY is correctly placed in the charger.

FINISH (display of time, date etc.)

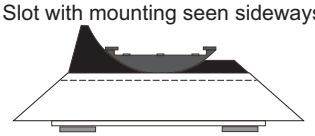
```
FRIDAY    11/2    12:02
                  Charging.....
```

Accessories for CONKEY type CP 79
CONKEY-slot with removable EURO-frame for charging and data transmission from IR-remote control CONKEY type CP 79.

Wall slot or table slot seen from above



Slot with mounting seen sideways



- Wall slot/table slot for charging of CONKEY Type CP 2520, **EAN-no. 5703513014513**
- Table slot for CONKEY-slot incl. trafo Type CP 2521, **EAN-no. 5703513014643**
- Table slot for CONKEY-slot incl. 2 m lead with plug Type CP 2522, **EAN-no. 5703513014773**

Dimensions

CP2520 with frame (HxWxD)	80x80x27mm
CP2520 without frame (HxWxD)	50x50x27mm
CP2520 with table mounting and EURO-frame (HxWxD)	80x80x34mm

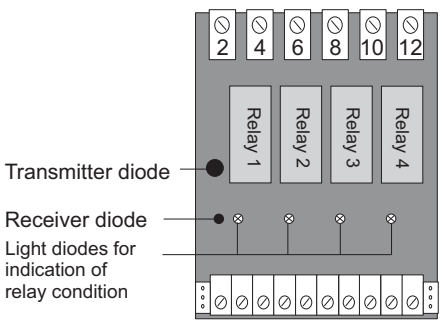
Terminals

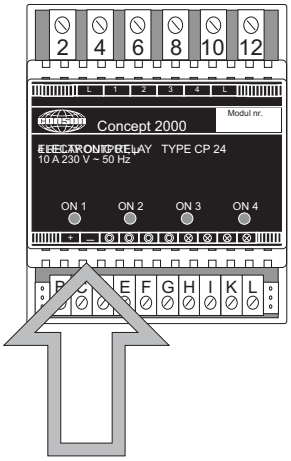
Terminals	Description
+	Plus(+) 24 V DC
-	Minus(-) 0 V DC
D	Data lead

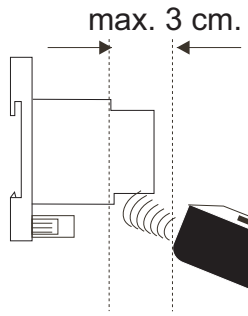
Notice! The plug on the print is inserted according whether the slot is used as a table slot or wall slot.

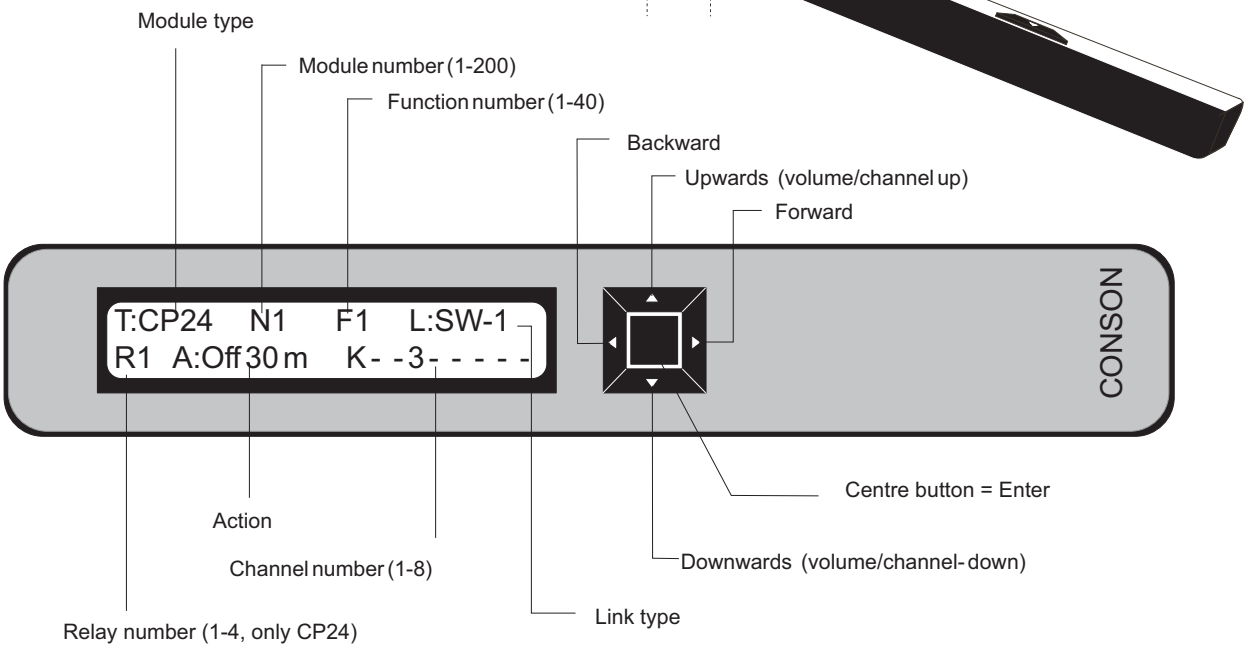
Table mounting is available with power supply 230V AC 50/60 Hz 65 mA - 24 V DC 6,5 W or 2 m lead with plug. As wall slot is must be supplied with 24 V DC from the CP 11 of the system. The terminals er placed on the back of the appliance. Both table mountings are available with white EURO-frame.

The programming of CONCEPT 2000 takes place by using the menu-controlled IR-remote control CONKEY. IR-signals are used in the transmission of data between a module and CONKEY. To manage the IR-signals, the module uses a transmitter diode and a receiver diode, which are placed on the left side (see illustration to the right). To be able to transmit data, CONKEY must point at these diodes. The optimum result is achieved by holding CONKEY at an oblique angle at a distance of max. 3 cm. from the module (see illustrations). After transmission of data, the modules will report back to the display on. If the transmission is successful the message "Data transmitted" or "Data received" will be returned, depending on whether the data are loaded from or sent to the module. If an error occur during the transmission, error reports will be displayed, e.g. "No contact" or "Wrong module type"



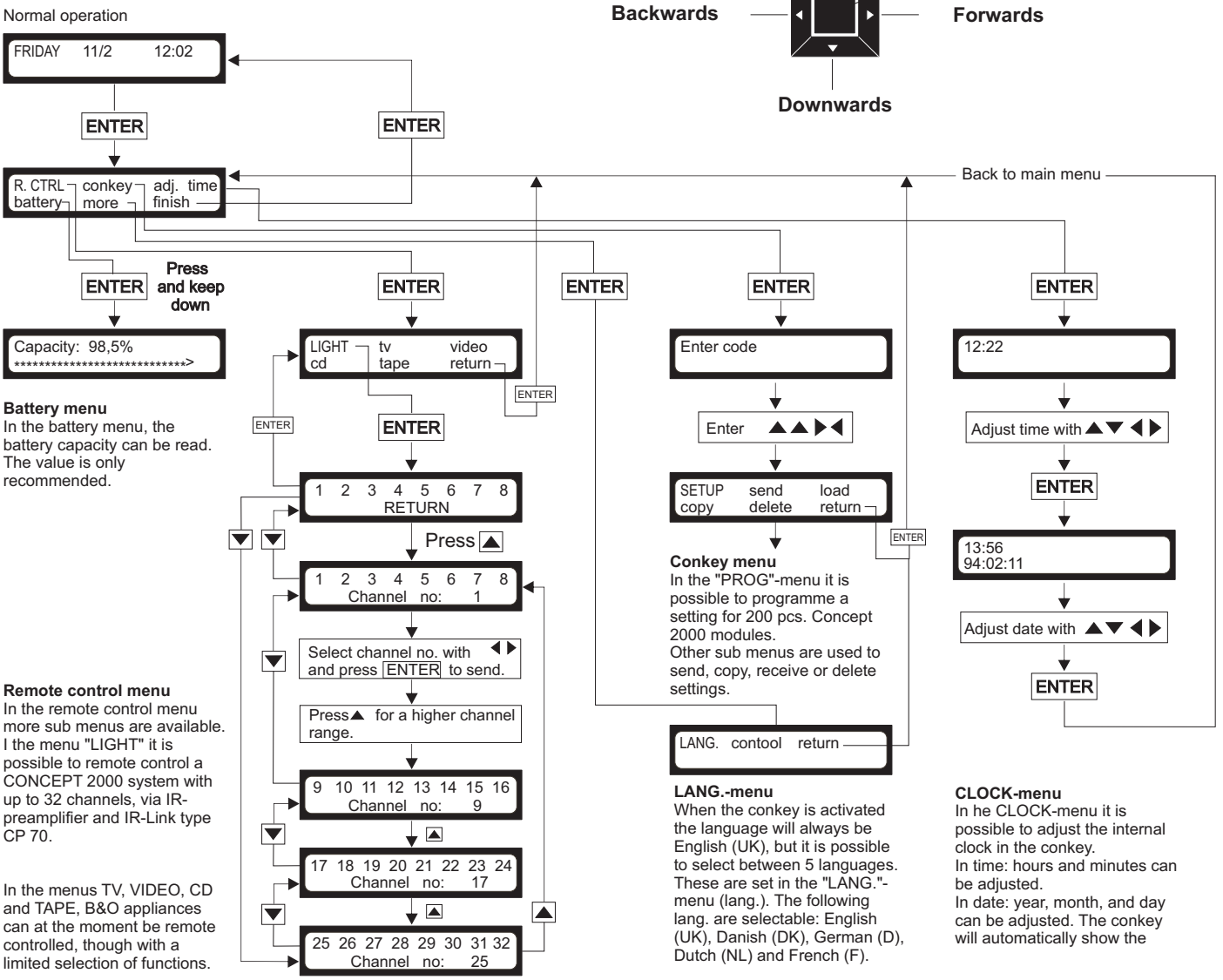






CONKEY menu

A selection of the various menus in IR-remote control CONKEY is displayed below.
The pictures below shows the LCD-display in various situations.



Battery menu
In the battery menu, the battery capacity can be read. The value is only recommended.

Remote control menu
In the remote control menu more sub menus are available. I the menu "LIGHT" it is possible to remote control a CONCEPT 2000 system with up to 32 channels, via IR-preamplifier and IR-Link type CP 70.

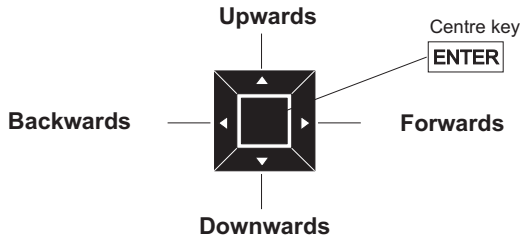
In the menus TV, VIDEO, CD and TAPE, B&O appliances can at the moment be remote controlled, though with a limited selection of functions.

Conkey menu
In the "PROG"-menu it is possible to programme a setting for 200 pcs. Concept 2000 modules.
Other sub menus are used to send, copy, receive or delete settings.

LANG.-menu
When the conkey is activated the language will always be English (UK), but it is possible to select between 5 languages. These are set in the "LANG."-menu (lang.). The following lang. are selectable: English (UK), Danish (DK), German (D), Dutch (NL) and French (F).

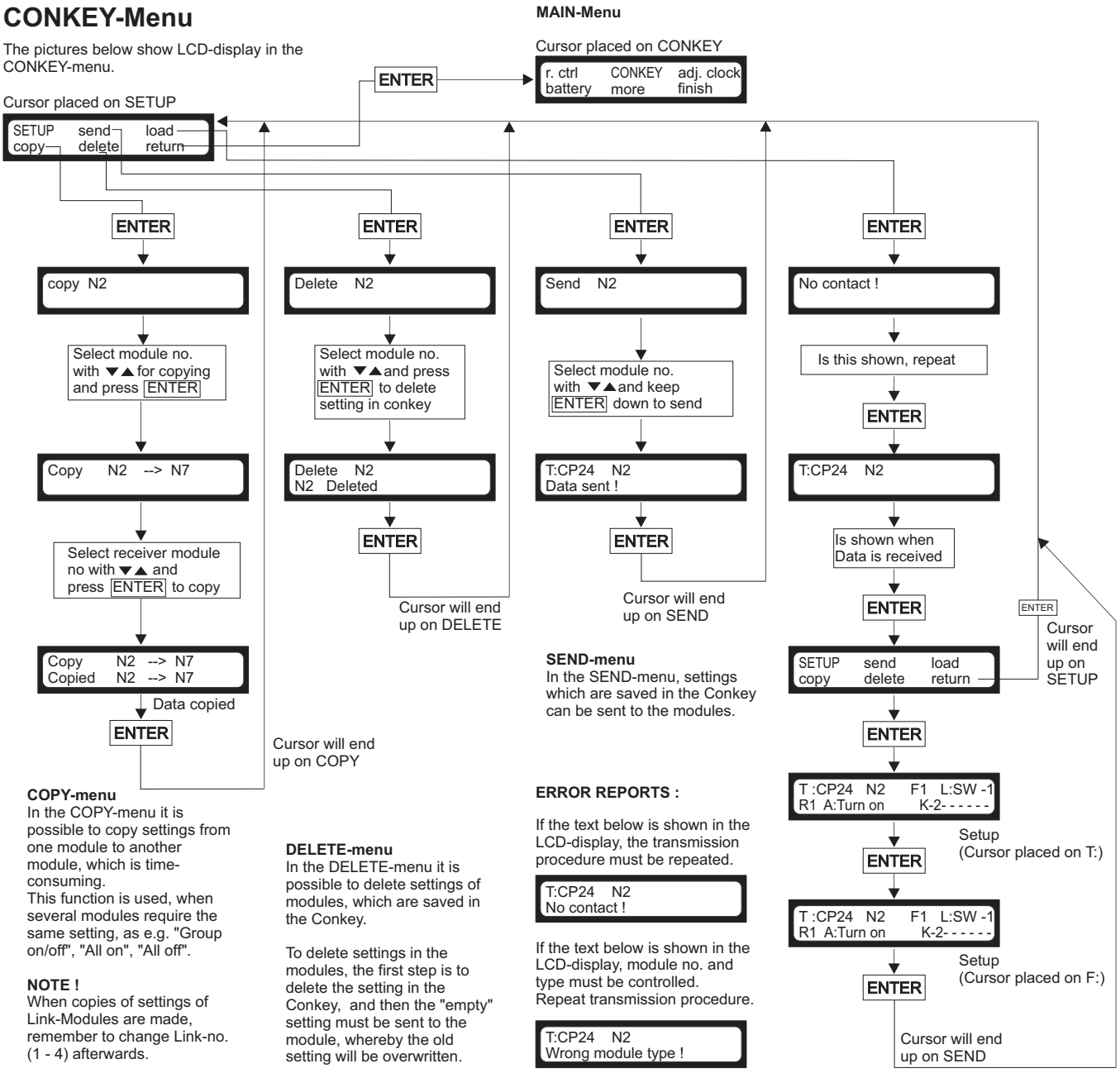
CLOCK-menu
In he CLOCK-menu it is possible to adjust the internal clock in the conkey.
In time: hours and minutes can be adjusted.
In date: year, month, and day can be adjusted. The conkey will automatically show the

Function key on CONKEY



CONKEY-Menu

The pictures below show LCD-display in the CONKEY-menu.



COPY-menu
In the COPY-menu it is possible to copy settings from one module to another module, which is time-consuming.
This function is used, when several modules require the same setting, as e.g. "Group on/off", "All on", "All off".

NOTE !
When copies of settings of Link-Modules are made, remember to change Link-no. (1 - 4) afterwards.

DELETE-menu
In the DELETE-menu it is possible to delete settings of modules, which are saved in the Conkey.

To delete settings in the modules, the first step is to delete the setting in the Conkey, and then the "empty" setting must be sent to the module, whereby the old setting will be overwritten.

SEND-menu
In the SEND-menu, settings which are saved in the Conkey can be sent to the modules.

ERROR REPORTS :

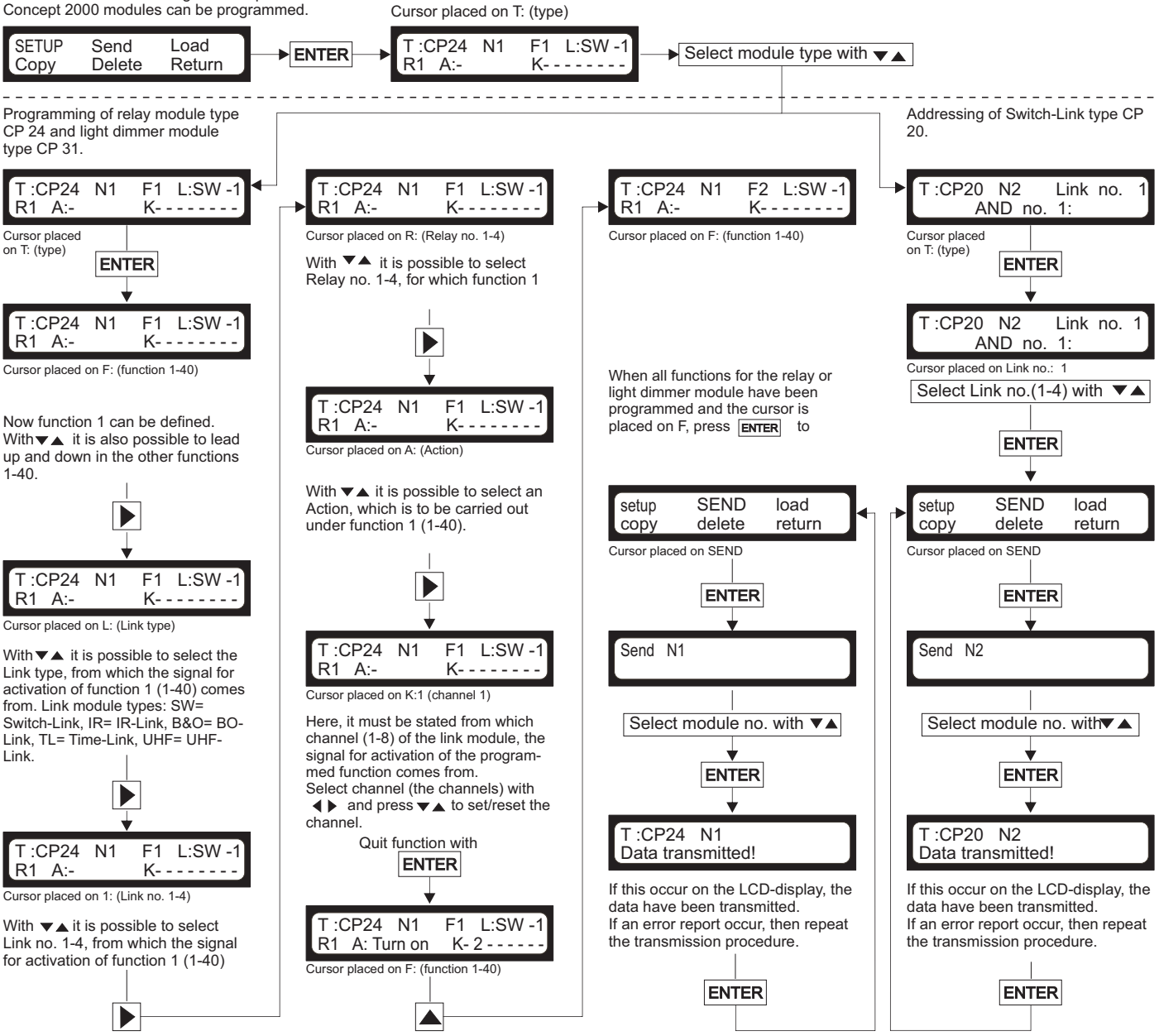
If the text below is shown in the LCD-display, the transmission procedure must be repeated.

T:CP24 N2
No contact !

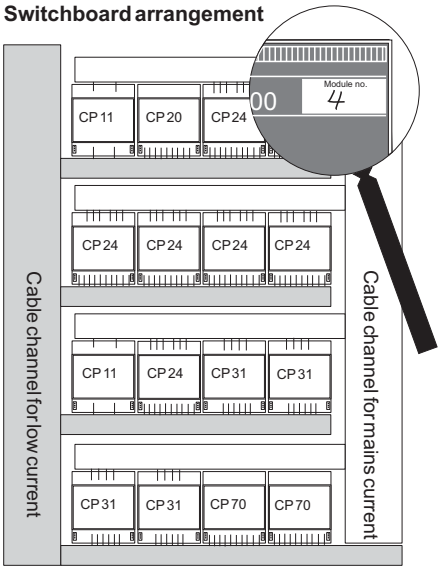
If the text below is shown in the LCD-display, module no. and type must be controlled.
Repeat transmission procedure.

T:CP24 N2
Wrong module type !

SETUP-menu
In the SETUP-menu settings for 200 pcs. Concept 2000 modules can be programmed.



Switchboard arrangement



CONCEPT 2000 is preprogrammed !

INSTALLATION TIPS: -Programming-
When the Link modules type CP20 the relay modules type CP24 , and dimmer modules type CP31 get their final test at Conson, they are preprogrammed with "All off" on channel 1, and "All on" on channel 2 - Switch-Link 1. That means that your system can be used instantly as it is.

TIP: When you have connected your modules, then start with reading the data from the various module types and execute the “copy” function N3 to N4, N4 to N5 etc.. When this is done, make the changes you want and send your data back to the modules.

TIP: Buy the package solution CONKIT I, II, III or IV, this way you will save money and get a complete system. If you need a larger system you simply just buy more CONKITs - It is as easy as that.

TIP: Borrow the CONKEY from your local electrical wholesaler. He is able to give you expert advice on a demo display.

Preparation of system for Programming
When the system is completely installed, it will be an advantage to number all the modules on the front label. This provides a better overview, when data are sent and received to and from the modules.
If there are more Link modules type CP 20 and CP 70, it can furthermore also be an advantage to state the link number (1 - 4) as e.g. M7/ L3 (module no .7/ link no. 3).

The modules are preprogrammed from the factory with the following settings:
CP 20: Module no. 2/ Link no. 1
CP 24: Module no. 3
Function 1-4: Turn off relay 1-4 at signal from Switch-Link 1 channel 1 (CP 20 terminal D).
Function 5-8: Turn on relay 1-4 at signal from Switch-Link 1 channel 2 (CP 20 terminal E).
CP 31: Module no. 3
Function 1: Turn off dimmer module at signal from Switch-Link 1 channel 1 (CP 20 terminal D).
Function 2: Turn on dimmer module at signal from Switch-Link 1 channel 2 (CP 20 terminal E).
CP 70A: Module no. 4/ Link no.1
HS type 1 (CP 76 og CP 79), HS no. 1. (channel range 1-8).
CP 70B: Module no. 4/ Link no.1
CP 70D: Link no.1-4 (transmit 32 channels) can moreover not be programmed.
The above means that "All off" and "All on" can be directly connected to Switch-Link CP 20 and with it a general "all off" and "all on" function is available.

Preparation for Programming
It is appropriate to copy the enclosed forms on the subsequent pages fill out these, before the programming is started. By filling out the forms an overview of the system is then available and it makes it easier to program the various functions.
The illustration on the right and below shows, how e.g. the blanks can be filled in.
Fill out afterwards the forms with the various settings, programmed into the modules.
Retrieve the data from the modules and alter or add something to the setting in the conkey.
Afterwards the blanks can be transferred to the modules.

Switch-Link type CP 20

Input no. (channel no.) / Function

Terminal		
(D)	1	All off
(E)	2	All on
(F)	3	Group 1 turn on/off
(G)	4	Group 2 turn on/off
(H)	5	Twilight relay
(I)	6	Clock channel 1 - on
(K)	7	Clock channel 1 - off
(L)	8	

Remote-Link type CP 70

IR channel no. / Function

1 Ceiling light front room
2 Light dining table front room
3 Spotlights front room
4 Light situation 1
5 Light situation 2
6 Outdoor light terrace
7 All on
8 All off

Relay module type CP 24

Relay outputs module no. 4

R1 Ceiling light front room
R2 Light dining table front room
R3 Outdoor light terrace
R4 Outdoor light entrance

Relay outputs module no. 5

R1 Ceiling light kitchen
R2 Light dining table kitchen
R3 Passage light ground floor
R4 Staircase light

Concept 2000 bus terminology

The Concept 2000
Concept 2000 consists of modules which are linked to a joint bus. The modules can basically be divided into two types, viz. Link modules and active modules. Link modules typically receives input from the physical surroundings (e.g. touch button panels or remote control) and convert these to a electronic telegram, which is sent to all active modules on the bus. Active modules receive electronic telegrams from the bus, and convert these to the physical surroundings (e.g. by turning on/off or regulate the light).

The electronic telegrams
A telegram always contains 2 elements, viz. Sender and command. The sender consists of link type, link number and channel number. The command can only accept 2 values, viz. start or stop. A start telegram can e.g. look like this:

Example 1:
Sender: Switch-Link no. 1 channel 1
Command: Start

A stop telegram can look similarly as follows:

Example 2:
Sender: Switch-Link no. 1 channel 1
Command: Stop

It generally applies that a Link-module transmits a start telegram, when an input is activated, and a stop telegram, when the input is cleared.

The active modules reaction on telegrams
An event in the physical surroundings (e.g. a activation of a touch button panel) will always result in a telegram being sent on the bus, which is received by all active modules. Active modules will though as starting point not respond to the telegram, unless they have been directly instructed to do so (by means of programming).
If an active module needs to respond to a certain telegram, a function must be programmed into the module. Partly, the function must know which sender to respond to, and partly the function must know which action that is to be carried out if occasion should arise.
A function in a light dimmer can e.g. Look as follows:

Example 3:
Sender: Switch-Link no. 1 channel 1
Action: Light up

If the function above is programmed into a light dimmer , it will start increasing the light intensity when it receives a start telegram with the stated sender. The light dimmer will continue increasing the light intensity until it receives a stop telegram with the stated sender (or reach maximum light intensity).
It should be noted that a single active module can be programmed with up to 40 simultaneous and individual functions.

Actions
The actions can be divided into 2 main groups, viz. continuous actions and instantaneous actions. A continuous action is characterized by starting after receiving a start telegram, and then continuously carries out an action until it is ended with a stop telegram. An example on a continuous action is the action "Light up", which is used in the example. An instantaneous action is however an action which is carried out instantaneously when a start telegram is received.
The action only lasts for a split second, and afterwards ends of itself. So a subsequent stop telegram has no influence. An example on a instantaneously action could be e.g. "On". Only 4 continuous actions are available, these are Block, Help, Light up, and Light down. All the other actions are instantaneously.
The explanation why the actions of the type On (time) and Off (time) are instantaneously is that the action just is to activate a countdown for off with the stated time.

TABLE 1: *The table shows the actions used in connection with the active modules type CP 24 and type CP 31. Notice that the toggle action for CP 31 is a bit special (see product info).*

Category of action	Action	Bus signal	Reaction
Instantaneously	On	Start	On
		Stop	--
	Off	Start	Off
		Stop	--
	Impulse	Start	Toggle
		Stop	--
	On (time)	Start	On + begin countdown for off
		Stop	--
	Off (time)	Start	Begin countdown for off
		Stop	--
	Light xx %	Start	set the wanted level
		Stop	--
Continuously	Blocking	Start	Activate blocking
		Stop	Deactivate blocking
	Help	Start	On
		Stop	Off
	Light up	Start	Begin continuous increase of light level
		Stop	Stop at the current level
	Light down	Start	Begin continuous decrease of light level
		Stop	Stop at the current level

The Link-modules
As previously mentioned, the principle rule is that activation of an input on a link module result in transmission of a start telegram, while a stop telegram is transmitted when the input is cleared again. The terminology concerning activation and clearing an input is defined best with a button that can be pressed and released again. On a Switch-Llink an input is activated by pressing a connected button, and the input is cleared by releasing the button. In connection with B&O-link, UHF-link, and IR-link, a button is not directly connected the module, but here the terminology can just be transferred to the buttons on the remote control as principle rule.

Use of button on remote/panel	Signal on CP bus
Press	Start
Let go	Stop

TABLE 2: *The table shows the function for the three Link-types CP70A, CP70B and CP70C. It is noticeable that CP70B has a few exceptions to the rule (see product information).*

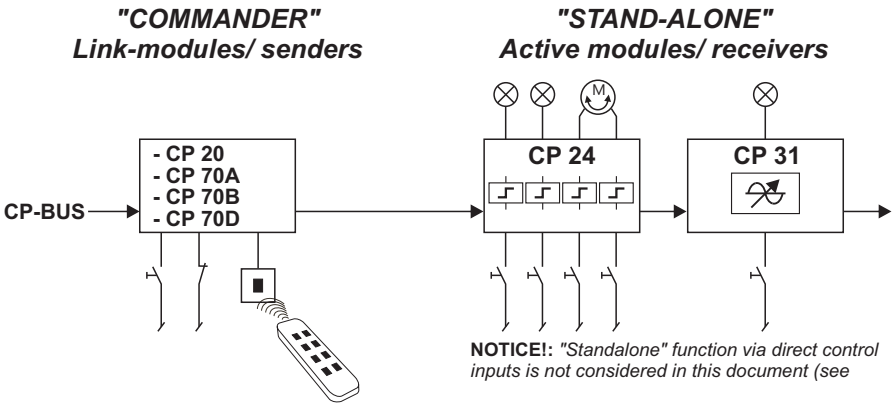
Switch-Link CP 20 differs a little bit from the other modules, as it has some special settings. An input can e.g. be set for "Invert signal". As a result of this the telegram is sent invert, i.e. a stop telegram is sent by activating an input, where as a start telegram is sent when the input is cleared. Another setting is "Grp turn on/off". This setting leads to a transmission of a start telegram and stop telegram respectively every other time the input is activated. No telegram is sent, when the input is cleared. A third option of setting is "Short/long". Here applies that if the input is activated for a period under 300 ms a start telegram is sent, where as an activation for a period on more than 300 ms results in a stop telegram.

TABLE 3

Action on input	Caption	*Setting on Switch-Link CP 20*			CP bus command
		Invert signal	Grp. on/off	Short/long	
	Switch on				START
	Switch off				STOP
	Switch on				STOP
	Switch off				START
	Switch on				Alternately START/STOP
	Switch off				----------
	Short impulse				START
	Long impulse				STOP
	Short impulse				STOP
	Long impulse				START

TABLE 3: *The table shows the most common settings for Switch-Link CP 20 for control of active modules type CP 24 and type CP 31.*

Time-Link type CP 70D differs substantially from these principle rules, and is therefore not considered in this document (see product information for Time-Link).



NOTICE!: *"Standalone" function via direct control inputs is not considered in this document (see*

Special functions
CP20 has a number of special functions which can be combined as required. The special functions can be chosen in the programming key Conkey type CP 79 at the bottom on the screen menu for Switch-Link CP 20. Table 1 shows the mode of operation of the special functions.

Invert signal
This function makes a simple inversion of the signal on the inputs chosen. The module will perceive input with opposite signs i.e. does the switch open it is perceived as closed, does the switch close it is perceived as open. The example shows a situation, where an inversion of input/channel 2 and 4 has been chosen.

```
T :CP20   N2      Link No.: 1
     Inv. signal:  2  4
```

Short/long
This function lets the module distinguish whether the impact is shorter or longer than 0.3 seconds. The system can e.g. be programmed so a short press turns on a light while a long press turns it off again. The example shows a situation where the module detects short/long on input/channel 3, 5, and 7.

```
T :CP20   N2      Link No.: 1
     Short/Long:   3  5  7
```

Grp.Turn on/off
If you want to control a group of toggle switches parallel, problems might occur if the switches get "out of time". The function Grp. Turn on/off solves this problem, as Start/Stop-commands is alternately transmitted on the bus. To make the function work the individual lights, curtains etc. must be programmed with "Help" instead of "Switch". Dimmer modules can furthermore be programmed with a light level. The example shows a situation where the module CP 20 has the function Grp.Turn on/off attached input/channel 8 which controls a light group consisting of a relay (R3-CP 24) and a dimmer module (CP 31).

```
T :CP20   N2      Link no.: 1
   Gp. on/off:              8
```

```
T :CP24  N7  F10   L: SW -1
R3  A:Aux relay K:- - - - - -  8
```

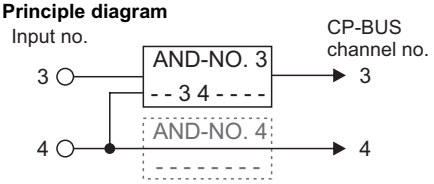
```
T :CP31  N9  F3    L: SW - 1
R-  A:Aux relay  K:- - - - - - 8
```

```
T :CP31  N9  F4    L: SW - 1
R-  A:Light 80%  K:- - - - - - -
```

AND
The module has built in 8 AND-functions,- one for each channel. E.g. the function "AND-no. 3" controls the signals on channel 3 - only when the AND-function is fulfilled, a signal will be transmitted on channel 3.
The example shows a situation, where AND no. 3 is programmed to feel terminal 3 and 4. Only when both terminal 3 and 4 are activated at the same time, a signal will be transmitted on channel 3. A typical application example could be control of outdoor lighting: A PIR-detector is connected terminal 3, and a light sensor to terminal 4. By this, the lighting is only turned on, if there is both movement and it is dark at the same time.
NOTICE! Input 3 is now engaged by the AND-function, and can therefore no longer be used for ordinary functions. Input 4 will still be transmitted on the data bus on channel 4 and can be used for other functions. This is only possible if AND-No. 4 is not used.

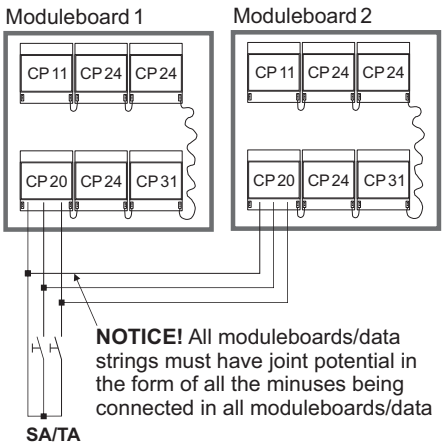
```
T :CP20   N2      Link No.: 1
     AND No. 3:    3 4
```

Principle diagram



It is furthermore possible to combine the AND-function with the functions "Switch signal" and "Grp. Turn on/off"

Installation with more moduleboards



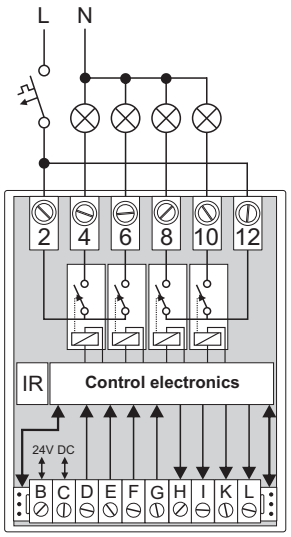
NOTICE! All moduleboards/data strings must have joint potential in the form of all the minuses being connected in all moduleboards/data

In systems with more moduleboards/data strings, general functions such as "All on" and "All off", which are joint in the moduleboards/data strings be connected in parallel to control inputs on Switch-Link CP 20 in the various moduleboards. Minus (-) must also be connected in parallel, because the potential must equal in the moduleboards/data.
This form for parallel control is the most reliable. If the data string is continued, a blocking of both moduleboards/data string could be made in case of a short circuit and it would be difficult to perform fault finding.

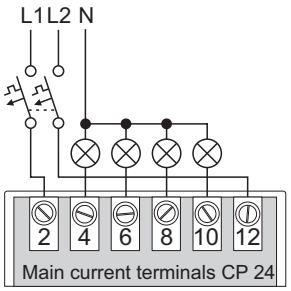
TABLE 1

Action on input	Explanation	Programmed function in Switch-Link CP 20			Bus command
		Inv. signal	Grp. on/off	Short/long	
	Switch closes				START
	Switch opens				STOP
	Switch closes				STOP
	Switch opens				START
	Switch closes				By turns START/STOP
	Switch opens				----------
	Short impulse				START
	Long impulse				STOP
	Short impulse				STOP
	Long impulse				START

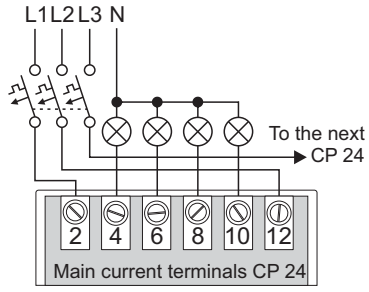
Connection 1-phased fuse



Connection 2-phased fuse



Connection 3-phased fuse



Control options of relay module type CP 24 via the data bus:	
Action via CP-Bus	**LCD-Conkey**
Switch on	ON
Switch off	OFF
Toggle function on/off	Impulse
On for 1 second	On 1 s
On for 2 seconds	On 2 s
On for 5 seconds	On 5 s
On for 15 seconds	On 15 s
On for 30 seconds	On 30 s
On for 45 seconds	On 45 s
On for 1 minute	On 1 m
On for 5 minutes	On 5 m
On for 15 minutes	On 15 m
On for 20 minutes	On 20 m
On for 30 minutes	On 30 m
On for 45 minutes	On 45 m
On for 60 minutes	On 60 m
Off after 15 seconds	Off > 15 s
Off after 30 seconds	Off > 30 s
Off after 60 seconds	Off > 60 s
Off after 5 minutes	Off > 5 m
Off after 15 minutes	Off > 15 m
Off after 30 minutes	Off > 30 m
Off after 60 minutes	Off > 60 m
Blocking (Bus+toggle input)	Block
Help relay function *	Aux. relay

*** NOTICE!** Help relay function is also used at light group turn on/off. Control input on Switch-Link type CP 20, which controls light group must be programmed with Grp. turn on/off.

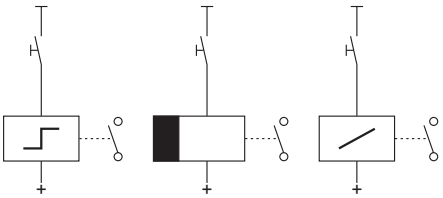
T:CP20 N2 Link No.: 1 Gp On/off: 8	T:CP24 N9 F8 L: SW -1 R1 A:Aux relay C:- - - - - - 8

Preprogramming of relay module CP 24:
Relay module CP 24 is preprogrammed for "Turn off relay 1-4" at signal from Switch-Link 1- channel 1 and "Turn on relay 1-4" at signal from Switch-Link 1- channel 2. - See screen menus below.

T:CP24 N3 F1 L: SW -1 R1 A:Off C:1- - - - -	T:CP24 N3 F5 L: SW -1 R1 A:On C:-2- - - -
T:CP24 N3 F2 L: SW -1 R2 A:Off C:1- - - - -	T:CP24 N3 F6 L: SW -1 R2 A:On C:-2- - - -
T:CP24 N3 F3 L: SW -1 R3 A:Off C:1- - - - -	T:CP24 N3 F7 L: SW -1 R3 A:On C:-2- - - -
T:CP24 N3 F4 L: SW -1 R4 A:Off C:1- - - - -	T:CP24 N3 F8 L: SW -1 R4 A:On C:-2- - - -

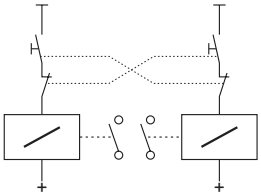
Special functions relaymodule type CP 24 for direct control inputs:	
Action for toggle inputs	**LCD-Conkey**
On for 1 second	On 1 s
On for 2 seconds	On 2 s
On for 5 seconds	On 5 s
On for 15 seconds	On 15 s
On for 30 seconds	On 30 s
On for 45 seconds	On 45 s
On for 1 minute	On 1 m
On for 5 minutes	On 5 m
On for 15 minutes	On 15 m
On for 20 minutes	On 20 m
On for 30 minutes	On 30 m
On for 45 minutes	On 45 m
On for 60 minutes	On 60 m
Help relay function	Aux relay
Mutual blocking of 2 rel.	Mut. block.

Toggle switch Automatic step Help relay



Principle diagrams

Curtain or screen controls



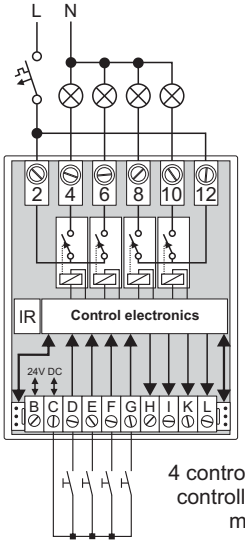
Principle diagram, relays can also be used with toggle switch, help relay, or time function at mutual blocking.

*** NOTICE! At motor controls for curtains, screen or something else, you must make sure that the module is programmed with mutual blocking (relay 1+2/3+4).**

Special functions relay module CP 24

Standard:

The 4 control inputs of the relay module for relay 1-4 is as standard preprogrammed for toggle function, i.e. you have 4 toggle switches.The programming can be changed individually pr. relay.



4 control inputs controlled with minus (-)

Automatic step:

The 4 direct control inputs of the relay module for relay 1-4 can separately be programmed to have a automatic step function (time function) in this way you can have up to 4 automatic steps with different times in a module CP 24.

Programming:
To be able to programme these special functions you must in the menu SET UP choose at T: (type) module type CP 24S (special functions).

```
T:CP24S  N3   SF1
R1   A: -
```

By choosing CP 24S the first 4 functions (SF1 - SF4) are reserved for special functions for the 4 control inputs for relay 1-4:

SF1 for input 1/ relay 1 (1+2 see later on)
SF2 for input 2/ relay 2 (2+1 see later on)
SF3 for input 3/ relay 3 (3+4 see later on)
SF4 for input 4/ relay 4 (4+3 see later on)

At SF1 - SF4 you can choose at A: (action) a time (automatic step function), which controls the various relays on the toggle input.
The times can be different for relay 1-4 (see table of actions for toggle inputs).

Example of programming:

Relay 1
```
T:CP24S  N3   SF1
R1   A: On 30 s
```

Relay 2
```
T:CP24S  N3   SF2
R2   A: On 1 m
```

Relay 3
```
T:CP24S  N3   SF3
R3   A: On 30 m
```

Relay 4
```
T:CP24S  N3   SF4
R4   A: On 60 m
```

If you still want to use one of more relays as toggle switch and not as automatic step or something else, you abstain from setting up an action at A: (action) for SF1-SF4, relay 1-4.

Example for relay 3 - SF3 toggle switch function:

```
T:CP24S  N3   SF3
R3   A: -
```

Help relay function:

The 4 control inputs can separately be used with help relay function, i.e. that relay 1-4 turn on at a constant signal (-) on input and turn off when the signal is interrupted.

Help relay function can e.g. be used when you control a dimmer module type CP 31 and at the same time want to turn on for the basic lighting with constant light level. In this case the indication output can from dimmer module type CP 31 (terminal H) be directly wired to one of the 4 control inputs on a CP 24 (terminal D, E, F, and G).

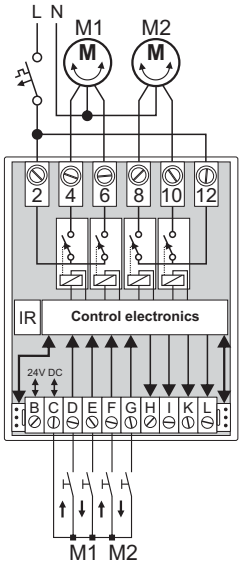
Example of programming for relay 1 and 4 - SF1 and SF4 help relay:

```
T:CP24S  N3   SF1
R1   A: Aux relay
```

```
T:CP24S  N3   SF4
R4   A: Aux relay
```

Motor control with mutual blocking:

The relay module CP 24 can be used for 2 motor controls UP/DOWN with mutual blocking of 2 relays. This function is used for control of e.g. curtains, screen, overhead doors and other motors, where the 2 relays for UP- and DOWN-function must have a mutual blocking.
The function ensures that the 2 relays controlling the motor never are turned on at the same time and that there is a time delay between the relays when the direction is changed (UP/DOWN) on the motor.
Mutual blocking can be chosen for relay 1+2 (motor 1) or relay 3+4 (motor 2) with functions: toggle, toggle with time and help relay function.



Programming of mutual blocking:
For programming of mutual blocking the following is chosen at A: (action) Mut. block..
For relay 1+2 SF1 is used and for relay 3+4 SF3.

```
T:CP24S  N3   SF1
R12  A: Mut. block.
```

```
T:CP24S  N3   SF3
R34  A: Mut. block.
```

At special functions SF2 and SF4 toggle, toggle with time and help relay function are chosen for relay 1+2 and relay 3+4.

Motor control with mutual blocking:

- Continuation -

Motor control with mutual blocking and toggle function:

If you at SF1 or SF3 have chosen mutual blocking for motor control with relay 1+2 or relay 3+4 and want to operate with toggle function, you must abstain from programming an action on SF2 or SF4 at A:.

The function ensures that the relays 1+2 or relay 3+4 are operated as toggle switches on/off with mutual blocking for the up/down-function (never turned on at the same time).

Example of motor control with toggle function on relay 1+2: A short press on UP 1 button and motor 1 runs the opposite way (UP). Another press on this button and motor 1 will stop. Is the button touched again the motor will continue upwards. For DOWN 1 button it is the same (toggle function).

Is the DOWN button touched during driving up the motor will be without voltage for 40-50 ms and hereafter start driving in the opposite direction (down).

Programming of motor control with mutual blocking and toggle function:

Relay 1+2 Motorcontrol	T :CP24S N3 SF1 R12 A: Mut. block.
Relay 1+2 Togglefunktion	T :CP24S N3 SF2 R21 A: -
Relay 3+4 Motorcontrol	T :CP24S N3 SF3 R34 A: Mut. block.
Relay 3+4 Togglefunktion	T :CP24S N3 SF4 R43 A: -

Motor control with mutual blocking and toggle with time:

At SF1 or SF3 mutual blocking for motor control must be chosen with relay 1+2 or relay 3+4. If you want operation with toggle function and that the motors will be without voltage after they have made their final stop, you can programme this function on SF2 or SF4 at A:.

NOTE! Toggle function with time only applies at mutual blocking and not at automatic step function.

Example on motor control with toggle with time on relay 1+2 (motor 1): A short press on UP 1 button and motor 1 runs in one direction (UP). Another press on the button and motor 1 will stop. Is the button operated again the motor will continue upwards. After the programmed time (SF2 for motor 1 and SF 3 for motor 2), where the button is not being activated, the relay turns off automatically when the time has gone. For DOWN 1 button the same function applies (toggle). Is DOWN button operated during driving up the motor will be without voltage for 40-50 ms and hereafter start driving in the opposite direction (down).

NOTE! The time, object for programming depends on the running time of the motor from UP to DOWN and reverse.

Example of programming of motor control with mutual blocking and toggle with time:

Relay 1+2 Motorcontrol	T :CP24S N3 SF1 R12 A: Mut. block.
Relay 1+2 toggle+time	T :CP24S N3 SF2 R21 A: On 5 m
Relay 3+4 Motorcontrol	T :CP24S N3 SF3 R34 A: Mut. block.
Relay 3+4 toggle+time	T :CP24S N3 SF4 R43 A: On 1 m

Motor control with mutual blocking and help relay function:

At SF1 or SF3 mutual blocking for motor control is chosen with relay 1+2 or relay 3+4. For the help relay function is programmed on SF2 or SF4 at A: (action).

The function ensures that the relays 1+2 or relay 3+4 is operated as help relays with mutual blocking, i.e. That the motors only run as long as the buttons for UP or DOWN are activated. Relays for UP and DOWN are never turned on at the same time.

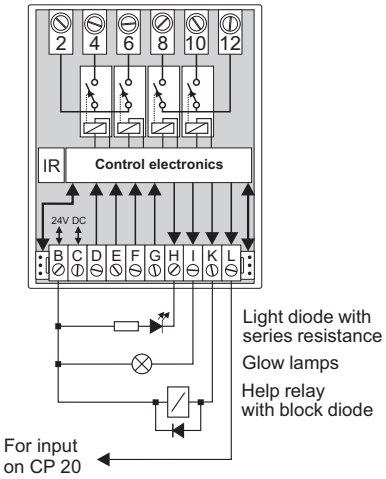
Programming of motor control with mutual blocking and help relay function:

Relay 1+2 Motorcontrol	T :CP24S N3 SF1 R12 A: Mut. block.
Relay 1+2 helprelay	T :CP24S N3 SF2 R21 A: Aux relay
Relay 3+4 Motorcontrol	T :CP24S N3 SF3 R34 A: Mut. block.
Relay 3+4 helprelay	T :CP24S N3 SF4 R43 A: Aux relay

Indication outputs

The relay module has 4 indication outputs for connection of monitor panels, control light on touch button panels or EDP/CTS-surveillance. The outputs can also be used for connection of 24V glow lamps or help relays with block diode. The indication outputs are parallel to the control lights in front of the module and must max. be loaded with 75 mA.

NOTE! Indication outputs are not short circuit protected !



Mechanical data relay module CP 24:

Temperature range	-5º.....+35ºC
Installation	for building in
Isolation	4KV > 8 mm
Insulation	DIN 40050
DIN rail symmetric	DIN 46277
Dimensions (H x W x D)	85x70x76 mm

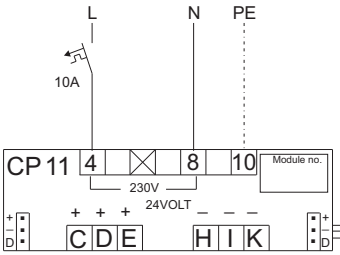
Installation guide.

Mount module on the DIN rail and connect the plug between the modules. Via this plug +/- and "data cord" are connected. Connect mains current to the module, and check connection before voltage is supplied for the module. The module must have external power supply type CP 11(18-28V DC).

*** NOTICE! The motor controls for curtains, screen or something else, you must make sure that the module is programmed with mutual blocking (relay 1+2/3+4) before voltage is connected to the relay outputs.**

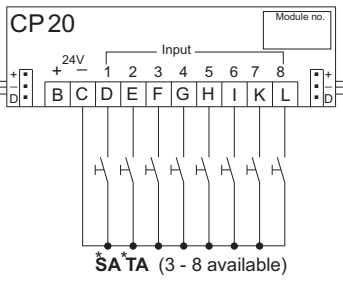
The use and mounting of the relay module type CP 24 (4 togglerelays) and dimmer module type Cp 31 (3 versions), controlled by the control inputs and central controlling from Switch-Link type CP 20 with the preprogrammed functions.

Power supply type CP 11

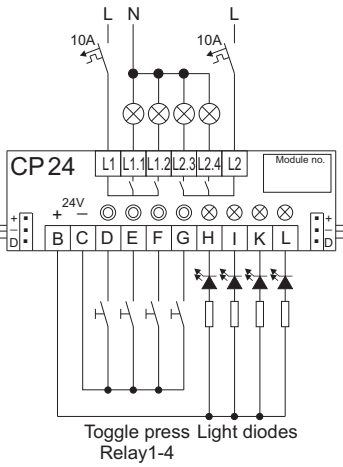


The power supply provides 24V DC (18-28V) can be loaded with 17VA. This equals about 20 lights. Number of lights however depends on which module type and operation equipment that is used.

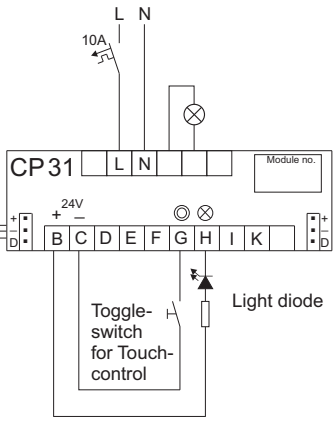
Switch-Link type CP 20:
8 inputs/channels for:
· Central control
· Light group turn on/off
· Light requirements etc.
Transmit 8 channels on the data bus (max. 4 pcs. CP 20 pr. data string= 32 channels)



Relay module type CP 24:
- 4 relay outputs (2x2)



Dimmer module type CP 31:



*** To make the forthcoming work easy, the modules preprogrammed for the following setting:**

Switch-Link type CP 20 - module no. 2:
CP 20 / Link No. 1 (indicates that it is Switch-Link no. 1, max.4 pcs. pr. data string).

Relay module type CP 24 - module no. 3:
- Relay 1-4 OFF= Signal Switch-Link 1 channel 1 (CP 20 terminal D) - Function no. 1-4
- Relay 1-4 ON= Signal Switch-Link 1 channel 2 (CP 20 terminal E)- Function no. 5-8

(up to 40 functions can be programmed)

Dimmer module type CP 31LR, CP 31CR, and CP 31BC - module no. 3:
- OFF= Signal from Switch-Link 1 channel 1 (CP 20 terminal D)- Function no. 1
- ON= Signal from Switch-Link 1 channel 2 (CP 20 terminal E)- Function no. 2

(up to 40 functions can be programmed)

The above-mentioned means that you can directly connect "all off" and "all on" to Switch-Link CP 20 channel 1 and 2, and in this way have a general "all off" and "all on" function.

The screen menus below show settings which the CONCEPT 2000 modules is preprogrammed with:

Switch-Link type CP 20

```
T :CP20   N2      Link No.: 1
        AND No. 1:
```

By activation of input (contact closes) the signal START is transmitted, and by deactivation (contact opens) the signal STOP on the data bus.

Function active modules:
The preprogrammed functions in active modules type CP 24 and CP 31 are activated with START-signals and make them carry out the action they are programmed with.
Type CP 24: F1 - F8
Type CP 31: F1 + F2

Relay module type CP 24

```
T :CP24 N3 F1   L: SW -1
R1 A:Off      C:1- - - - - - -
```

```
T :CP24 N3 F2   L: SW -1
R2 A:Off      C:1- - - - - - -
```

```
T :CP24 N3 F3   L: SW -1
R3 A:Off      C:1- - - - - - -
```

```
T :CP24 N3 F4   L: SW -1
R4 A:Off      C:1- - - - - - -
```

```
T :CP24 N3 F5   L: SW -1
R1 A:On       C:-2- - - - - -
```

```
T :CP24 N3 F6   L: SW -1
R2 A:On       C:-2- - - - - -
```

```
T :CP24 N3 F7   L: SW -1
R3 A:On       C:-2- - - - - -
```

```
T :CP24 N3 F8   L: SW -1
R4 A:On       C:-2- - - - - -
```

Dimmer module type CP 31

```
T :CP31 N3 F1   L: SW -1
R-  A:Off     C:1- - - - - - -
```

```
T :CP31 N3 F2   L: SW -1
R-  A:On      C: -2- - - - - -
```

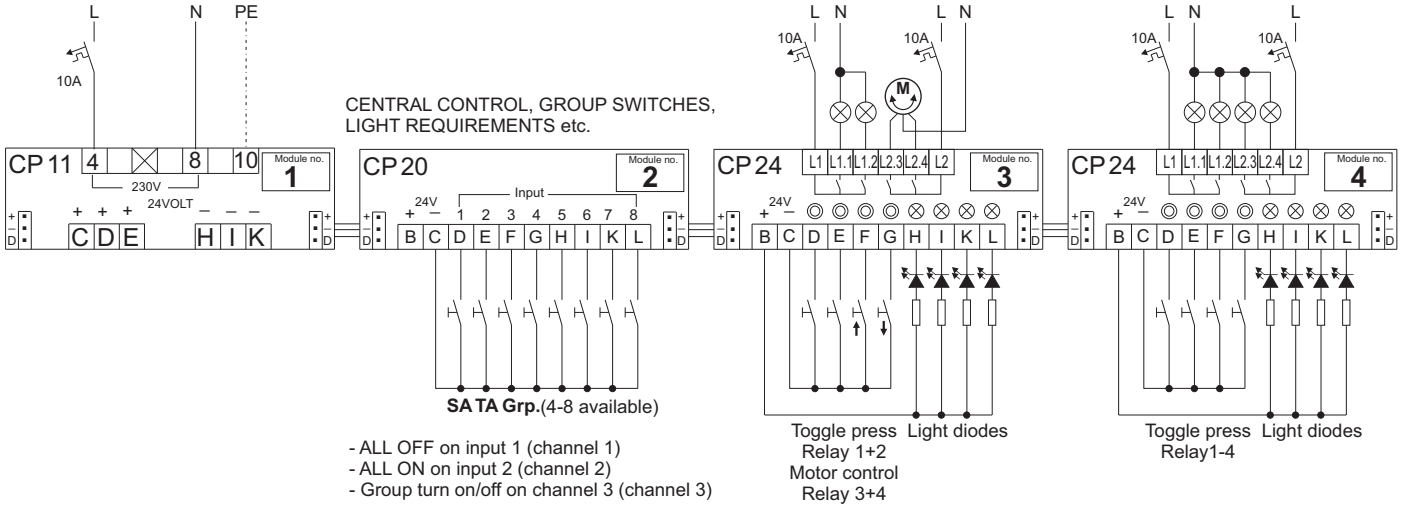
Copy function:
After installation of the modules you must in accordance with position on switchboard write a module no. on the front label. Subsequently standard settings are read out with Conkey type CP 79 in menu GET. Afterwards the copy function is used in the Conkey. In the menu COPY settings are copied to the module no. you have given the modules (module 1,2,3,4,5 etc.) After copying, settings are adjusted in the Conkey-menu SETTING to the setting wanted and after that transmitted via the Conkey under

Example of application and programming of relay modules type CP 24 (4 relays) and Switch-Link type CP 20 for central control:

CP 20 module no. 2: - Input 1= All off
- Input 2= All on
- Input 3= Light group turn on/off for CP 24 module no. relay 1 and CP 24 module no. 4 relay 2+4

CP 24 module no. 3 : - Relay 1+2 used for light control with toggle switch function (standard)
- Relay 3+4 is used for motor control of e.g. blackout curtains

CP 24 module no. 4: - Relay 1-4 is used for light control with toggle switch function (standard)



The menu pictures below show settings for the above-mentioned functions:

Switch-Link type CP 20
Module no. 2

Input/Channel no. 3
Group turn on/off

```
T :CP20   N2      Link No.: 1
  Gp On/off:  3
```

Normally an input transmits the signal START at activation (contact closes), and the signal STOP at deactivation (contact opens) on the data bus.
By programming input/channel no. 3 to include group turn on/off function, signals START and STOP are alternately transmitted on the data at activations on terminal F .
Function of light group:
At START-signal the help relay turns on and at STOP-signal the help relay turns off.

Relay module type CP 24 - Module no. 3
With special functions

SF1+SF2= R 1+2 toggle switches

```
T :CP24S  N3  SF1
R1   A: -
```

```
T :CP24S  N3  SF2
R2   A: -
```

SF3+SF4= R 3+4 Motor control

```
T :CP24S  N3  SF3
R34  A: Mut. block.
```

```
T :CP24S  N3  SF4
R43  A: On 5 m
```

Function 5-6= All off R 1+2

```
T :CP24S  N3  F5   L: SW  -1
R1  A:Off       C:1- - - - - - -
```

```
T :CP24S  N3  F6   L: SW  -1
R2  A:Off       C:1- - - - - - -
```

Function 5-8= All on R 1+2

```
T :CP24S  N3  F7   L: SW  -1
R1  A:On        C:-2- - - - -
```

```
T :CP24S  N3  F8   L: SW  -1
R2  A:On        C:-2- - - - -
```

Function = Group turn on/off R 1

```
T :CP24S  N3  F9   L: SW  -1
R1  A:Aux relay  C:- -3- - - -
```

Relay module type CP 24 - Module no. 4
Function 1-8 standard setting

Function 1-4 All off

```
T :CP24  N4  F1   L: SW  -1
R1  A:Off       C:1- - - - - - -
```

```
T :CP24  N4  F2   L: SW  -1
R2  A:Off       C:1- - - - - - -
```

```
T :CP24  N4  F3   L: SW  -1
R3  A:Off       C:1- - - - - - -
```

```
T :CP24  N4  F4   L: SW  -1
R4  A:Off       C:1- - - - - - -
```

Function 5-8 All on

```
T :CP24  N4  F5   L: SW  -1
R1  A:On        C:-2- - - - -
```

```
T :CP24  N4  F6   L: SW  -1
R2  A:On        C:-2- - - - -
```

```
T :CP24  N4  F7   L: SW  -1
R3  A:On        C:-2- - - - -
```

```
T :CP24  N4  F8   L: SW  -1
R4  A:On        C:-2- - - - -
```

Function 9 +10 is added for group turn on/off relay 2+4

```
T :CP24  N4  F9   L: SW  -1
R2  A:Aux relay  C:- -3- - - -
```

```
T :CP24  N4  F9   L: SW  -1
R4  A:Aux relay  C:- -3 -  - - -
```

Control options of dimmer module type CP 31 via the data bus:	
Action via CP-Bus	**LCD-Display**
Switch on	On
Switch off	Off
Toggle function (on/off,dim)	Impulse
On for 15 seconds	On 15 s
On for 30 seconds	On 30 s
On for 45 seconds	On 45 s
On for 1 minute	On 1 m
On for 5 minutes	On 5 m
On for 15 minutes	On 15 m
On for 20 minutes	On 20 m
On for 30 minutes	On 30 m
On for 45 minutes	On 45 m
On for 60 minutes	On 60 m
Off after 15 seconds	Off > 15 s
Off after 30 seconds	Off > 30 s
Off after 60 seconds	Off > 60 s
Off after 5 minutes	Off > 5 m
Off after 15 minutes	Off > 15 m
Off after 30 minutes	Off > 30 m
Off after 60 minutes	Off > 60 m
Blocking (Bus+toggle input)	Block
Help relay function *	Aux relay
Increase lighting	Light up
Reduce lighting	Light down
Light level 10%	Light 10%
Light level 20%	Light 20%
Light level 30%	Light 30%
Light level 40%	Light 40%
Light level 50%	Light 50%
Light level 60%	Light 60%
Light level 70%	Light 70%
Light level 80%	Light 80%
Light level 90%	Light 90%
Light level 100%	Light 100%

*** NOTE!** Help relay function is also used at light group turn on/off. Control input on Switch-Link type CP 20, which control light group must be programmed with Grp. Turn on/off. Light group turn on/off can also be combined with a light level - se programming example.

```
T:CP20   N2      Link No.: 1
  Gp On/off:              8
```

```
T:CP31 N9 F3   L: SW -1
R- A:Aux relay C:- - - - - - - 8
```

```
T:CP31 N9 F4   L: SW -1
R- A:Light 80% C:- - - - - - 8
```

Manufacture setting of dimmer module CP 31:

```
T:CP31 N3 F1   L: SW -1
R- A: Off      C:1 - - - - - - -
```

```
T:CP31 N3 F2   L: SW -1
R- A: On       C:-2- - - - - - -
```

APPLICATION:
The approaching description of our intelligent dimmer module type CP 31 only gives a small insight into the many possibilities this light dimmer offers. Compare it with other light dimmers on the market - We set the standard!.

Dimmer module CP 31:
3 different hardware versions:
· CP 31LR for ohmic and inductive load
· CP 31CR for ohmic and capacitive load
· CP 31BC for 0-10 / 10-0 volt control

Advantages dimmer module CP 31:
· Short circuit safe (version CR)
· Protected against overload (long life)
· No fuses that have to be changed
· 10 light levels - used for light requirements
· Timer function - used for "Sleep"-function
· Touch-control - turn on/off up/down
· Indication - for monitor panels/touch buttons
· Battery backup - for the next 1000 years
· "Stand alone" - most important of all (Reliability)
There are more advantages - which we think - you should discover yourself.
The subsequently text will give you some inspiration:

"Sleep timer": A press on the touch button "sleep timer" in e.g. the nursery turns on the light on 30-50% light and turns off automatically after 30 minutes when the children have fallen to sleep.

"Sleep control": A press on the touch button "sleep control" turns on the light on e.g. 10% light and turns off automatically after 15 seconds.

"Everyday light": Pleasant and energy saving lighting in the home.

"Guests": The right and predetermined light requirement in the entire house when the guests arrive. It should not just be a well-laid table and good food that is served. The candles and the "artificial lights" including the outdoor lights must make the atmosphere.

"Television light": A sharp picture with an anti-dazzle lighting - and the curtains drawn.

"Cosiness": A Danish tradition which demands the right lighting atmosphere in the entire house.

"Cleaning": A must which demands 100% light.

"Up at night": The touch button is placed next to the bed - some will say it is luxury, but it is very comfortable. A single press and the light is turned on, on 10% in the bedroom, 50% in the corridor and 90% in the bathroom. When you return to the bed the light is automatically turned off after you.

"Back home": It is enough to press on a button, and have the light turned on which you need when you get back home.

"Go to bed": The touch button is placed at the bed and turns off all light, except the light in the bedroom.

"Party": A emotional lighting when you are having a party. At the same time you can block the touch buttons in the house, so "busybodies" do not have a chance.

"Outdoor lighting": Normally you turn on the outdoor lighting on 100% when it gets dark outside. With Conson´s intelligent light dimmer you can control the light at different light levels, dependent on, whether there are people outside. Example: When it gets dark the light turns on, on 70% in the period from 16ºº to 20ºº and from 20ºº to 24ºº it it is reduced to 30%. If there are people outside the light is automatically increased to 100% for 5 minutes.

"Imitated habitation": (protection against burglary)
Conson has had an imitated habitation in the programme for 17 years, but now it is possible to turn on the different light positions with different light levels, which are adjusted to your needs.

With Conson you always have the right level of lighting !

Lighting makes interior...
...Conson makes atmosphere!

Module type / A: ACTION	Relay module CP 24					Dimmer module CP 31	DISPLAY on Conkey	Transmission of bus commands START and STOP is described in detail under bus terminology and Link modules	
	CP- BUS COMMAND	Adjust. input 1-4 (special functions)				CP- BUS COMMAND		Function of bus command START	Function of bus command STOP
	Relay 1-4 Function 1-40	R1 + R2 SF1	SF2	R3 + R4 SF3	SF4	Function 1-40			
Turn on	•	–	–	–	–	•	On	Turns on	Is ignored
Turn off	•	–	–	–	–	•	Off	Turns off	Is ignored
Button function	•	–	–	–	–	•	Impulse	Impulse ON/OFF	Is ignored
On for 1 seconds	•	•	•	•	•	–	On 1 s	Turns on 1 s	Is ignored
On for 2 seconds	•	•	•	•	•	–	On 2 s	Turns on 2 s	Is ignored
On for 5 seconds	•	•	•	•	•	–	On 5 s	Turns on 5 s	Is ignored
On for 15 seconds	•	•	•	•	•	•	On 15 s	Turns on 15 s	Is ignored
On for 30 seconds	•	•	•	•	•	•	On 30 s	Turns on 30 s	Is ignored
On for 45 seconds	•	•	•	•	•	•	On 45 s	Turns on 45 s	Is ignored
On for 1 minute	•	•	•	•	•	•	On 1 m	Turns on 1 m	Is ignored
On for 5 minutes	•	•	•	•	•	•	On 5 m	Turns on 5 m	Is ignored
On for 15 minutes	•	•	•	•	•	•	On 15 m	Turns on 15 m	Is ignored
On for 20 minutes	•	•	•	•	•	•	On 20 m	Turns on 20 m	Is ignored
On for 30 minutes	•	•	•	•	•	•	On 30 m	Turns on 30 m	Is ignored
On for 45 minutes	•	•	•	•	•	•	On 45 m	Turns on 45 m	Is ignored
On for 60 minutes	•	•	•	•	•	•	On 60 m	Turns on 60 m	Is ignored
Off after 15 seconds	•	–	–	–	–	•	Off > 15 s	Turns off >15s at ON	Is ignored
Off after 30 seconds	•	–	–	–	–	•	Off > 30 s	Turns off > 30s at ON	Is ignored
Off after 60 seconds	•	–	–	–	–	•	Off > 60 s	Turns off > 60s at ON	Is ignored
Off after 5 minutes	•	–	–	–	–	•	Off > 5 m	Turns off > 5m at ON	Is ignored
Off after 15 minutes	•	–	–	–	–	•	Off > 15 m	Turns off > 15m at ON	Is ignored
Off after 30 minutes	•	–	–	–	–	•	Off > 30 m	Turns off > 30m at ON	Is ignored
Off after 60 minutes	•	–	–	–	–	•	Off > 60 m	Turns off > 60m at ON	Is ignored
Blocking	•	–	–	–	–	•	Blocking	Blocking activated	Blocking cancelled
Help relay function	•	•	•	•	•	•	Aux relay	Turns (ON)	Turns (OFF)
Increase lighting	–	–	–	–	–	•	Light up	Light regulat up	Regulation stops
Reduce lighting	–	–	–	–	–	•	Light down	Light regulat down	Regulation stops
Light level 10%	–	–	–	–	–	•	Light 10%	Turns on w.10% light	Is ignored
Light level 20%	–	–	–	–	–	•	Light 20%	Turns on w.20% light	Is ignored
Light level 30%	–	–	–	–	–	•	Light 30%	Turns on w.30% light	Is ignored
Light level 40%	–	–	–	–	–	•	Light 40%	Turns on w.40% light	Is ignored
Light level 50%	–	–	–	–	–	•	Light 50%	Turns on w.50% light	Is ignored
Light level 60%	–	–	–	–	–	•	Light 60%	Turns on w.60% light	Is ignored
Light level 70%	–	–	–	–	–	•	Light 70%	Turns on w.70% light	Is ignored
Light level 80%	–	–	–	–	–	•	Light 80%	Turns on w.80% light	Is ignored
Light level 90%	–	–	–	–	–	•	Light 90%	Turns on w.90% light	Is ignored
Light level 100%	–	–	–	–	–	•	Light 100%	Turns on w.100%	Is ignored
Mutual blocking	–	•	•	•	•	•	Mut. block.	Is ignored	Is ignored

Project: _____ Firm: _____

Section: _____ Address: _____

Address: _____ Telephone/Fax.: _____ / _____

_____ Date: _____ Page: ____ of ____ Sign.: _____

Special functions CP 24 - SF1-SF4

T: **CP 24S** N: **SF1** (relay 1 or 1+2)
R: 1 12 A: no.

T: **CP 24S** N: **SF2** (relay 2 or 1+2)
R: 2 21 A: no.

T: **CP 24S** N: **SF3** (relay 3 or 3+4)
R: 3 34 A: no.

T: **CP 24S** N: **SF4** (relay 4 or 3+4)
R: 4 43 A: no.

T: CP 24 / CP 31 N: F: L: SW / IR 1 2 3 4
R: 1 2 3 4 A: no. C: 1 2 3 4 5 6 7 8

T: CP 24 / CP 31 N: F: L: SW / IR 1 2 3 4
R: 1 2 3 4 A: no. C: 1 2 3 4 5 6 7 8

T: CP 24 / CP 31 N: F: L: SW / IR 1 2 3 4
R: 1 2 3 4 A: no. C: 1 2 3 4 5 6 7 8

T: CP 24 / CP 31 N: F: L: SW / IR 1 2 3 4
R: 1 2 3 4 A: no. C: 1 2 3 4 5 6 7 8

T: CP 24 / CP 31 N: F: L: SW / IR 1 2 3 4
R: 1 2 3 4 A: no. C: 1 2 3 4 5 6 7 8

T: CP 24 / CP 31 N: F: L: SW / IR 1 2 3 4
R: 1 2 3 4 A: no. C: 1 2 3 4 5 6 7 8

T: CP 24 / CP 31 N: F: L: SW / IR 1 2 3 4
R: 1 2 3 4 A: no. C: 1 2 3 4 5 6 7 8

T: CP 24 / CP 31 N: F: L: SW / IR 1 2 3 4
R: 1 2 3 4 A: no. C: 1 2 3 4 5 6 7 8

T: CP 24 / CP 31 N: F: L: SW / IR 1 2 3 4
R: 1 2 3 4 A: no. C: 1 2 3 4 5 6 7 8

T: CP 24 / CP 31 N: F: L: SW / IR 1 2 3 4
R: 1 2 3 4 A: no. C: 1 2 3 4 5 6 7 8

T: CP 24 / CP 31 N: F: L: SW / IR 1 2 3 4
R: 1 2 3 4 A: no. C: 1 2 3 4 5 6 7 8

T: CP 24 / CP 31 N: F: L: SW / IR 1 2 3 4
R: 1 2 3 4 A: no. C: 1 2 3 4 5 6 7 8

T: CP 24 / CP 31 N: F: L: SW / IR 1 2 3 4
R: 1 2 3 4 A: no. C: 1 2 3 4 5 6 7 8

Action No.
Display on Conkey

1. On
2. Off
3. Impulse
4. On 1 s
5. On 2 s
6. On 5 s
7. On 15 s
8. On 30 s
9. On 45 s
10. On 1 m
11. On 5 m
12. On 10 m
13. On 15 m
14. On 20 m
15. On 30 m
16. On 45 m
17. On 60 m
18. Off > 15 s
19. Off > 30 s
20. Off > 60 S
21. Off > 5 m
22. Off > 15 m
23. Off > 30 m
24. Off > 60 m
25. Block
26. Aux relay
27. Light up
28. Light down
29. Light 10%
30. Light 20%
31. Light 30%
32. Light 40%
33. Light 50%
34. Light 60%
35. Light 70%
36. Light 80%
37. Light 90%
38. Light 100%
Special CP 24S:
39.Mut. Block.

Action no. 26 is an help relay function (the relay is switched on as long as there is a signal from Switch-Link CP 20 or Remote-Link CP 70).

Notice !
The help relay function is also used in connection with the group turn on/off function. The group turn on/off function is defined in the Switch-Link type CP 20 (CP 70B channel 2 in mode 1).

Relay outputs module no._____

R1 _____
R2 _____
R3 _____
R4 _____

Relay outputs module no._____

R1 _____
R2 _____
R3 _____
R4 _____

Project: _____ Firm: _____

Section: _____ Address: _____

Address: _____ Telephone/Fax.: _____ / _____

_____ Date: _____ Page: ____ of ____ Sign.: _____

Switch-Link type CP 20

T: **CP 20** N: ____ Link no.: 1 3 / 2 4

AND no. 1: 1 2 3 4 5 6 7 8

T: **CP 20** N: ____ Link no.: 1 3 / 2 4

AND no. 2: 1 2 3 4 5 6 7 8

T: **CP 20** N: ____ Link no.: 1 3 / 2 4

AND no. 3: 1 2 3 4 5 6 7 8

T: **CP 20** N: ____ Link no.: 1 3 / 2 4

AND no. 4: 1 2 3 4 5 6 7 8

T: **CP 20** N: ____ Link no.: 1 3 / 2 4

AND no. 5: 1 2 3 4 5 6 7 8

T: **CP 20** N: ____ Link no.: 1 3 / 2 4

AND no. 6: 1 2 3 4 5 6 7 8

T: **CP 20** N: ____ Link no.: 1 3 / 2 4

AND no. 7: 1 2 3 4 5 6 7 8

T: **CP 20** N: ____ Link no.: 1 3 / 2 4

AND no. 8: 1 2 3 4 5 6 7 8

When using the AND function the AND no. corresponds to the channel no. that is sent via the bus (channel 1-8).
Example: AND No. 1 (channel 1+2) - When signal on input 1+.2 the channel 1 is sent via the bus. If signal is only on input 2, this will be sent so far it is not defined as an AND No. 2.

T: **CP 20** N: ____ Link no.: 1 3 / 2 4

Inv signal : 1 2 3 4 5 6 7 8

T: **CP 20** N: ____ Link no.: 1 3 / 2 4

Gp on/off : 1 2 3 4 5 6 7 8

T: **CP 20** N: ____ Link no.: 1 3 / 2 4

Long / short: 1 2 3 4 5 6 7 8

Input no. / Function

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

Invert Signal: With this function the input signal can be inverted on the CP 20 channel 1-8.

Notice ! When using the group turn on/off function via switch-link type CP 20 the toggle switches and light dimmers that are to be activated MUST be programmed as A:(Action) help relay.

Grp turn on/off:
A short impulse on the input of the CP 20 turns on the group (relay or dimmer modules). A new short impulse will turn off the group.

Long / short:
A short impulse on the input of the CP 20 will turn on the group (relay or light dimmer modules). A long Impulse > 1 second turns off the group.

Remote-Link type CP 70

T: **CP 70** Ver.: A B C N: ____ Link no.: 1 3 / 2 4

Only CP 70A: T Type : 1 3 / 2 4 T no. : ____

IR-Link CP 70 A:
T-type (remote control type)
1. CONKEY type CP 76 and CP 79
2. Not in use at present.
3. Not in use at present
4. Not in use at present..

T no. (Channel range 1 - 64) type CP 70A:
1 = Channel 1 - 8
2 = Channel 9 - 16
3 = Channel 17 - 24
4 = Channel 25 - 32
5 = Channel 33 - 40
etc. until
64= Channel 505 - 512

The IR remote control type CP 76 can be coded to channel range 1-64.

The IR remote control CP 79 (CONKEY) sends to the channels 1 - 32.
IR-link module type CP 70 (1 - 4) must be set for the desired channel range areas.

Channel no. / Function

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____