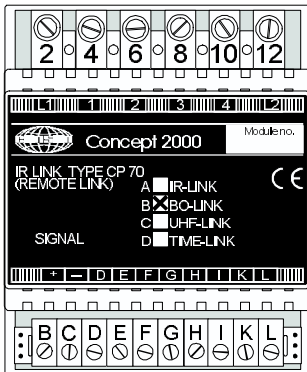# BO-Link type CP 70B

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.

09.07.97

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
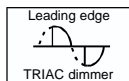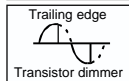
|	
Leading edge / TRIAC dimmer	Dimmer module type CP 31LR
Trailing edge / Transistor dimmer	Dimmer module type CP 31CR
Ballast controller / 0-10V / Low current control	Dimmer module type CP 31BC

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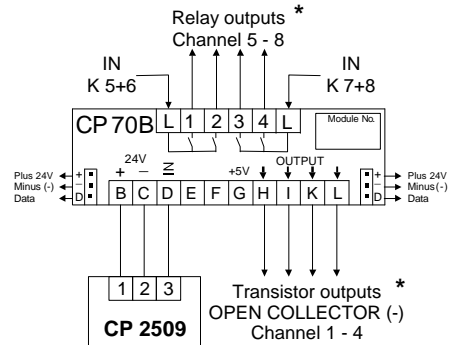
* If necessary for toggle input on H.M.S. 2000

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

BO-Link type CP 70B

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.

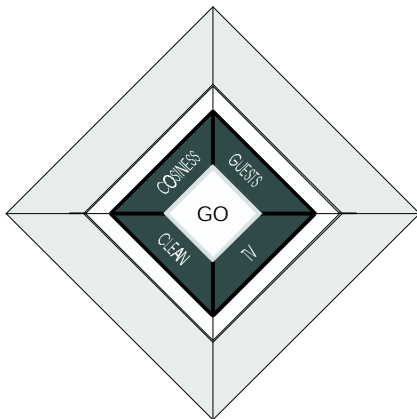| Touch button LIGHT + ...	Suggestion of function	CP-Bus channel	Bus command at touch	Bus command at let go	Stand-alone function
STOP	All off	1 *	Start+Stop	-/-	Transistor out. 1
GO	Daily on/off	2 *	Start/Stop **	-/-	Transistor out. 2 ***
GREEN	Light cosiness	3 *	Start	Stop	Transistor out. 3
YELLOW	Light 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"   **User intereface in mode 1**   **Symbol on Beo4**   **Light requirements**   **4 light places**
(4 pcs. dimmer modules type CP 31)

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

|	DINING TABLE	WALL	CEI-LING	COFFEE TABLE
ON/OFF DAILY (GO)				
Light scene 1 COSINESS				
Light scene 2 GUESTS				
Light scene 3 TELEVISION				
Light scene 4 CLEANING				
ALL OFF (STOP)				

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

09.07.97
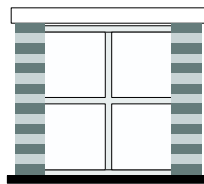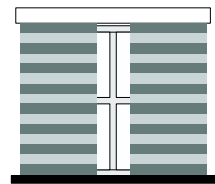
BO-Link type CP 70B
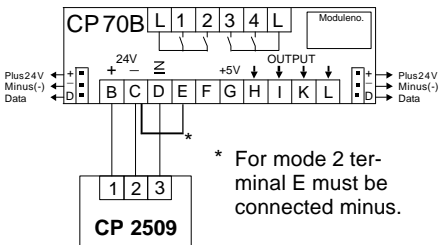
Mode 2 - Simple number - mode
Mode 2 = · 8 numbers pr. CP 70B
　　　　· 4 x CP 70B = 32 channels
　　　　(programmed with Link no. 1-4)
This mode provides a simple user interface,
as only LIGHT + [number] must be keyed in.
Mode 2 is most suitable for control of fixed
light requirements or toggle with relay or
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.
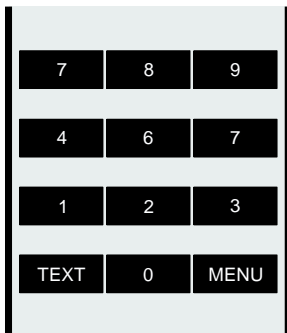
Touch button LIGHT + ...	CP-Bus channel	Bus command at touch	Bus command at let go	Stand-alone function
1	1 *	Start/Stop **	-,-	Transistor outp. 1
2	2 *	Start/Stop **	-,-	Transistor outp. 2
3	3 *	Start/Stop **	-,-	Transistor outp. 3
4	4 *	Start/Stop **	-,-	Transistor outp. 4
5	5 *	Start/Stop **	-,-	Relay 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).
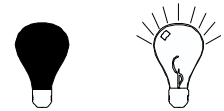At programming of active modules BO-Link no.1-4 and channel 1-8 are stated.
** NOTICE! No repeating signals

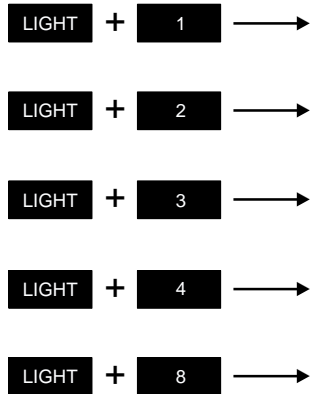**Connection of IR preamplifier in mode 2**

* For mode 2 terminal E must be connected minus.

User interface in mode 2

TOUCH BUTTON		CONCEPT 2000 Modules	Control options in mode 2
LIGHT + 1	→	CP 24	
LIGHT + 2	→	CP 31LR	
LIGHT + 3	→	CP 31CR	
LIGHT + 4	→	CP 31BC	

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

TOUCH BUTTON

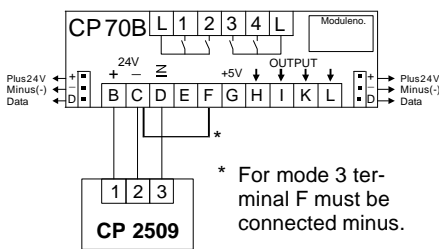|		Light requirements (Dimmer module type CP 31)	DINING TABLE	WALL	CEI-LING	COFFEE TABLE
LIGHT + 1	→	Light scene 1 *DINING*				
LIGHT + 2	→	Light scene 2 *GUESTS*				
LIGHT + 3	→	Light scene 3 *TELEVISION*				
LIGHT + 4	→	Light scene 4 *CLEANING*				
LIGHT + 8	→	*ALL OFF*				

09.07.97

5.33

BO-Link type CP 70B
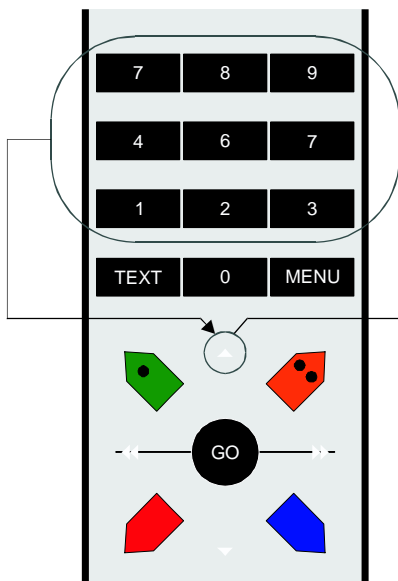
Mode 3 - Normal number - mode

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.
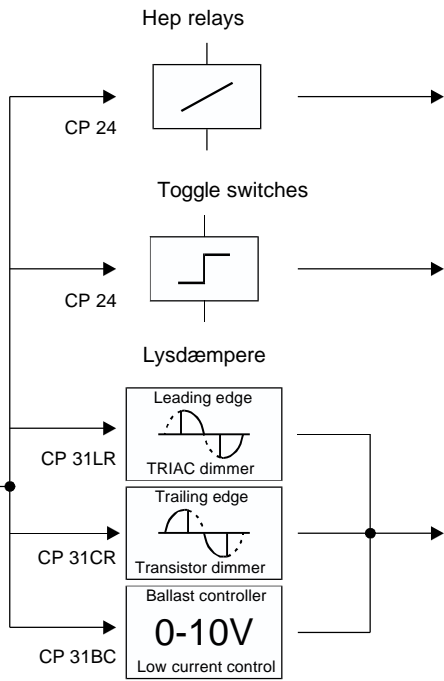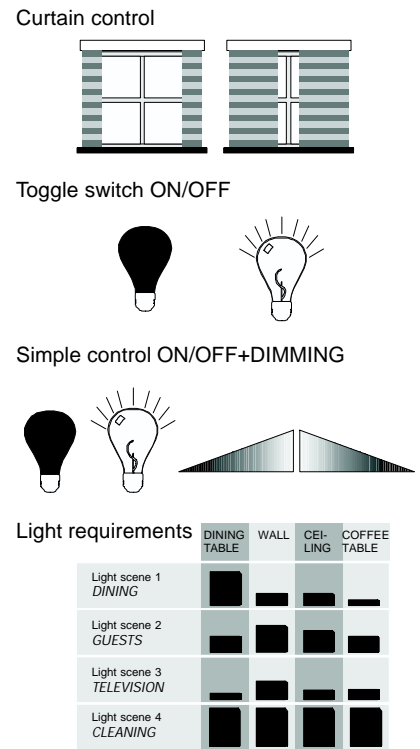
Connection of IR preamplifier in mode 3

| CP 70B | L | 1 | 2 | 3 | 4 | L | Moduleno. |

Plus 24V +
Minus(-) −
Data D

24V   +5V   OUTPUT
+ − ≥

B C D E F G H I K L

Plus 24V +
Minus(-) −
Data D

| 1 | 2 | 3 |

CP 2509

* 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

Hep relays

CP 24

Toggle switches

CP 24

Lysdæmpere

Leading edge

TRIAC dimmer

CP 31LR

Trailing edge

Transistor dimmer

CP 31CR

Ballast controller

0-10V

Low current control

CP 31BC

Curtain control

Toggle switch ON/OFF

Simple control ON/OFF+DIMMING

Light requirements

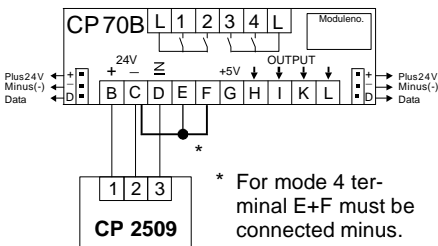|	DINING TABLE	WALL	CEI-LING	COFFEE TABLE
Light scene 1 *DINING*				
Light scene 2 *GUESTS*				
Light scene 3 *TELEVISION*				
Light scene 4 *CLEANING*				

10.07.97

BO-Link type CP 70B

Mode 4 - Extended number - mode
Mode 4= · 8 numbers(channels) pr. CP 70B
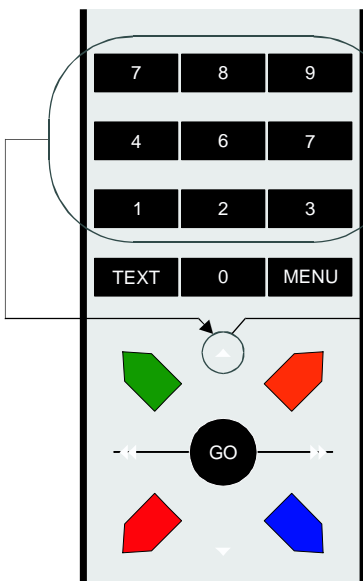· 4 x CP 70B = 32 channels
(programmed with Link no. 1-4)
This mode is similar to mode 3, but can operate with 32 channels. As a single link-modul type CP 70B only can handle 8 channels, the 32 channels are spread on the 4 possible link modules type CP 70B.
In this way link no. 1 handles channel 1-8, 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.
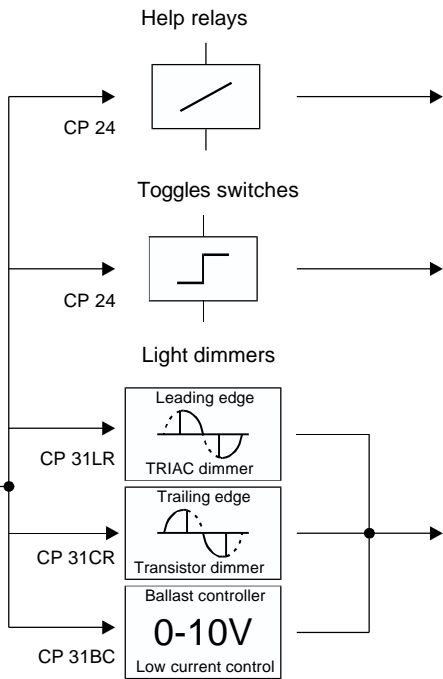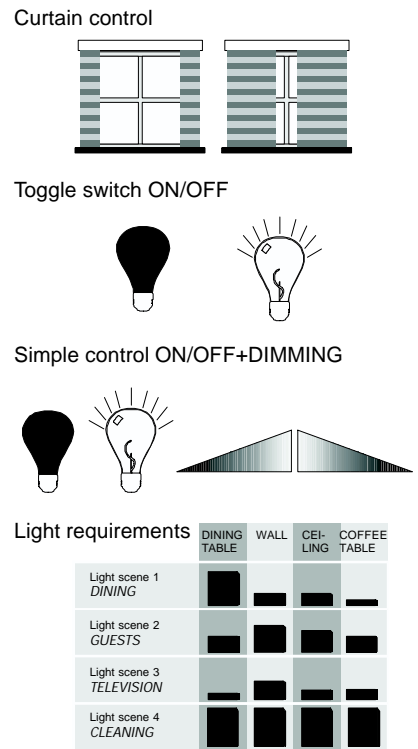
Connection of IR preamplifier in mode 4

CP 70B L 1 2 3 4 L Moduleno.

24V OUTPUT
Plus24V + − +5V
Minus(-)
Data B C D E F G H I K L Plus24V
Minus(-)
Data

1 2 3
CP 2509

* For mode 4 ter-minal E+F must be connected minus.

User interface in mode 4

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.

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

Control options in mode 3

Help relays

CP 24

Toggles switches

CP 24

Light dimmers

Leading edge
TRIAC dimmer
CP 31LR

Trailing edge
Transistor dimmer
CP 31CR

Ballast controller
0-10V
Low current control
CP 31BC

Curtain control

Toggle switch ON/OFF

Simple control ON/OFF+DIMMING

Light requirements

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

09.07.97

BO-Link type CP 70B

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.
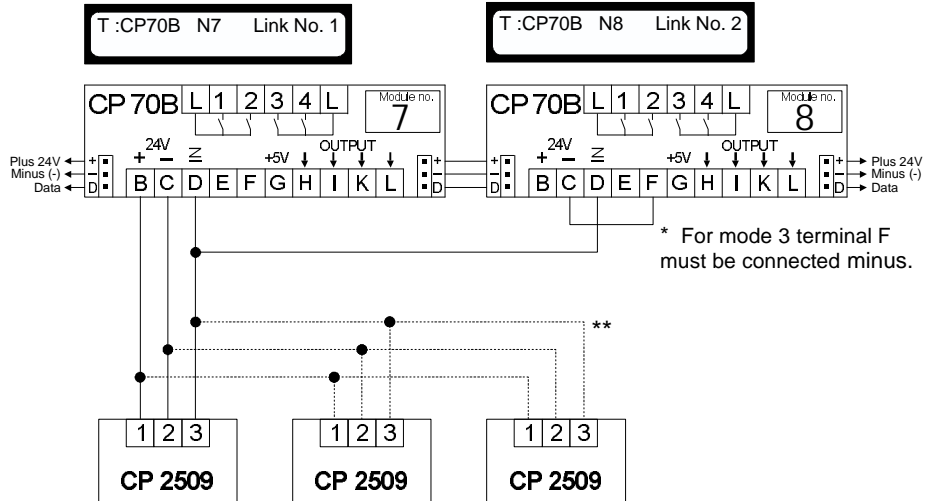
The options of combination are many, but not all combinations are available. E.g. it does not make any sense, if several linked modules run in the same mode. This will result in a conflict between these modules, which then will not function correctly. An exception, however, is mode 4, as the function 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
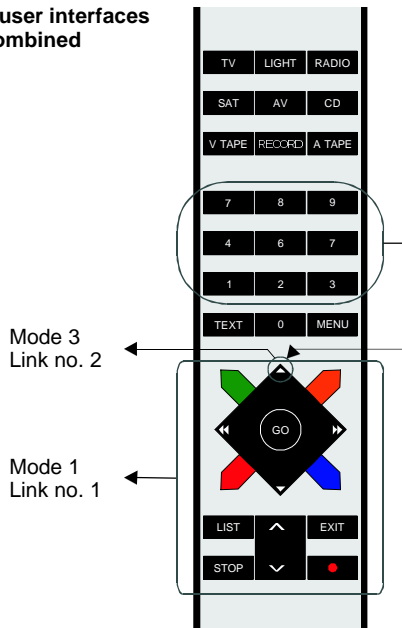3) Module 3 - link number 3 - mode 1

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.

* For mode 3 terminal F must be connected minus.

2 user interfaces combined

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