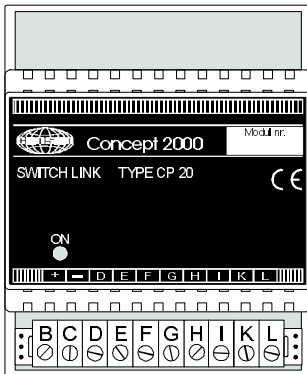## CONCEPT 2000

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.
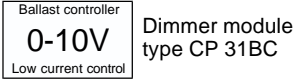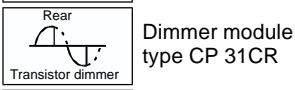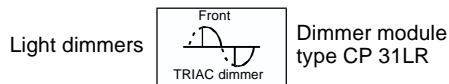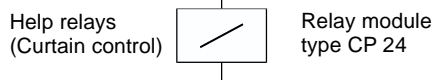
Installation guide.

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).

17.07.97

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

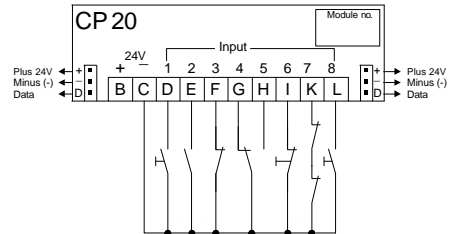|		
Toggle switches	⎍	Relay module type CP 24
Help relays (Curtain control)	╱	Relay module type CP 24
Light dimmers	Front — TRIAC dimmer	Dimmer module type CP 31LR
	Rear — Transistor dimmer	Dimmer module type CP 31CR
	Ballast controller — 0-10V Low current control	Dimmer module type CP 31BC

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

	DINING TABLE	WALL	CEILING	COFFEE TABLE
Group ON/OFF *DAILY*	■	■	■	▬
Light scene 1 *COSINESS*	▬	■	■	▬
Light scene 2 *GUESTS*	▬	■	■	■
Light scene 3 *TELEVISION*	—	■	■	■
Light scene 4 *CLEANING*	■	■	■	■
All OFF	—	—	—	—
All ON	■	■	■	■

Connection diagram Switch-Link CP 20

```
CP 20                          Module no.
              Input
       24V   1  2  3  4  5  6  7  8
Plus 24V + +                       + + Plus 24V
Minus (-) - -                      - - Minus (-)
Data     D D B C D E F G H I K L D D Data
```

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	-5⁰......+35⁰C
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

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:- - - - - - -
```
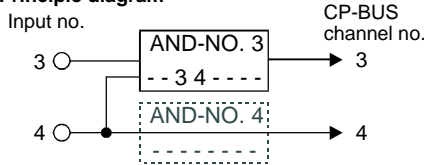
AND
The module has built in 8 AND-functions,- one for each channel. E.g. the function "AND-no. 3" controls the signals on channel 3 - only when the AND-function is fulfilled, a signal will be transmitted on channel 3.
The example shows a situation, where AND no. 3 is programmed to feel terminal 3 and 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
```
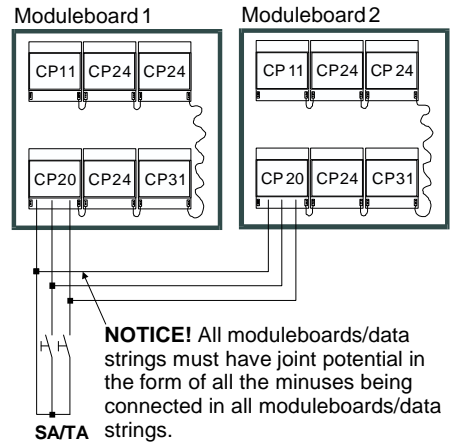
Principle diagram

Input no.

CP-BUS
channel no.

3 ○ ——— AND-NO. 3
         - - 3 4 - - - - ——→ 3

4 ○ ——— AND-NO. 4
         - - - - - - - - ——→ 4

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

Installation with more moduleboards

Moduleboard 1

| CP11 | CP24 | CP24 |
| CP20 | CP24 | CP31 |

Moduleboard 2

| CP 11 | CP24 | CP 24 |
| CP 20 | CP24 | CP31 |

SA/TA

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