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ELECTRONIC RELAY XP24
4 RELAY OUTPUT
µ13A 240V ~ 50-60 Hz

SPECIAL INPUT
RELAY 1+2 Ⓜ
RELAY 3+4 Ⓜ

ON1   ON2   ON3   ON4

Output connections

Bipolar example

Tripolar exemple

Fourpolar exemple

to L1 en L2 from the next XP24
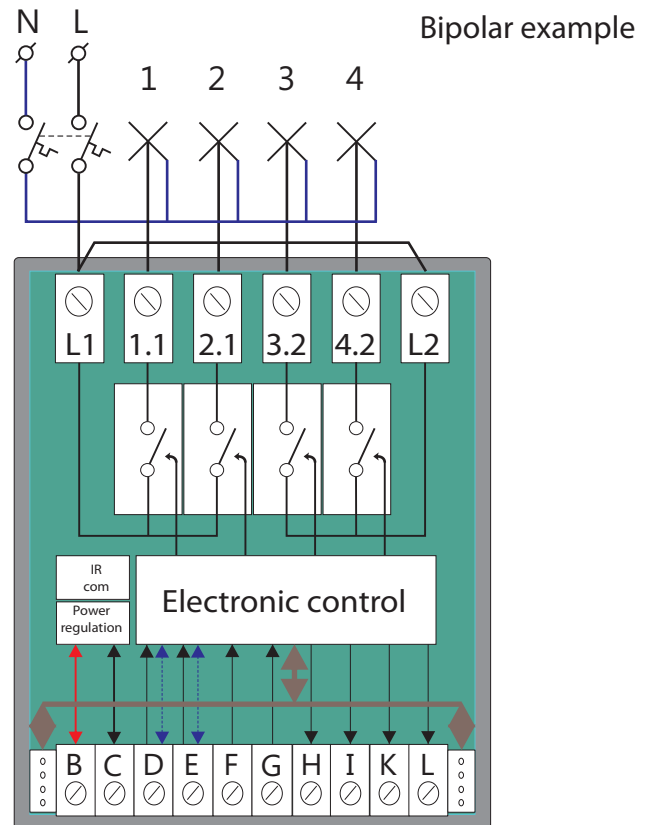

Introduction

The XP24 is a programmable relay module with four outputs of 13A and two by two supplied by the common inputs L1 and L2. The module has four direct inputs to directly control the 4 relays. Each input controls its corresponding relay. The inputs are programmed by default as pulse-inputs (teleruptor). When programming the module, other functions will be available such as an auxiliary-relay or a time-set. Furthermore, it is possible to program 2 relays to the action "Lock mutually" and in combination with a timer function. It's surprisingly interesting to use it for controlling curtain motors, projection screens and other. The actions slave-/pulse-/relay when using the local bus can be executed with a timer function.
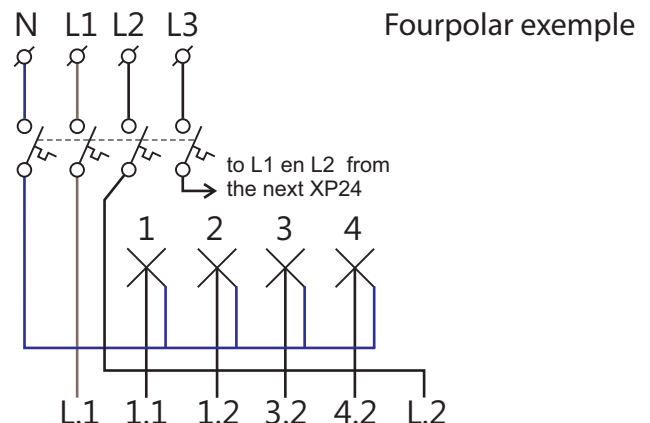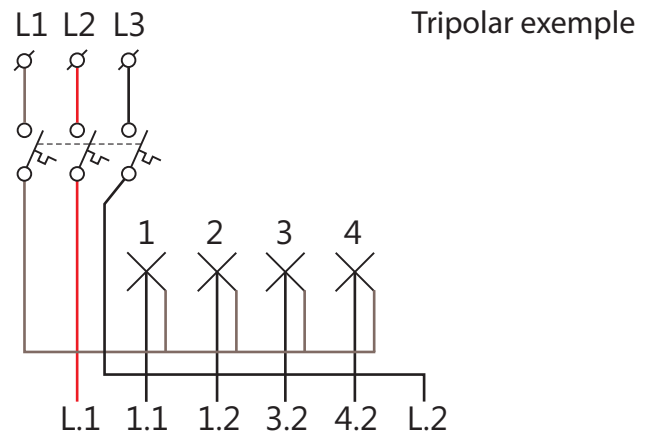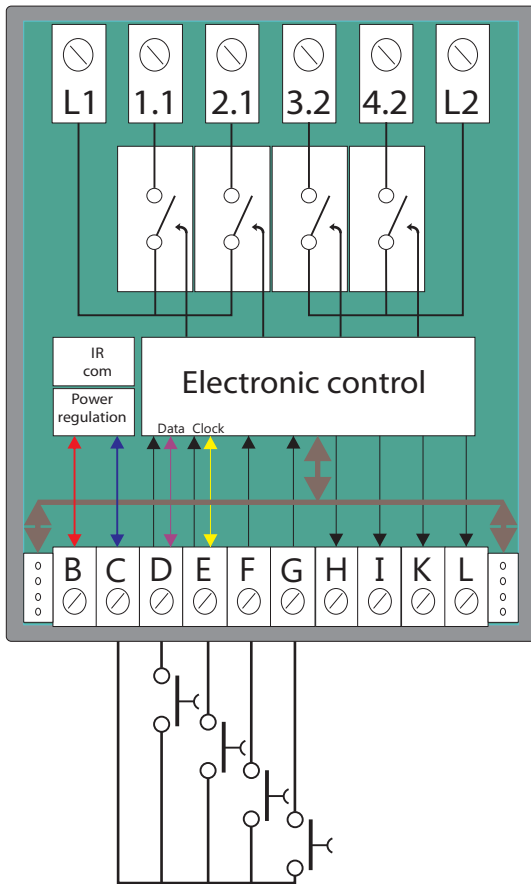
Technical data

High power
Relay data

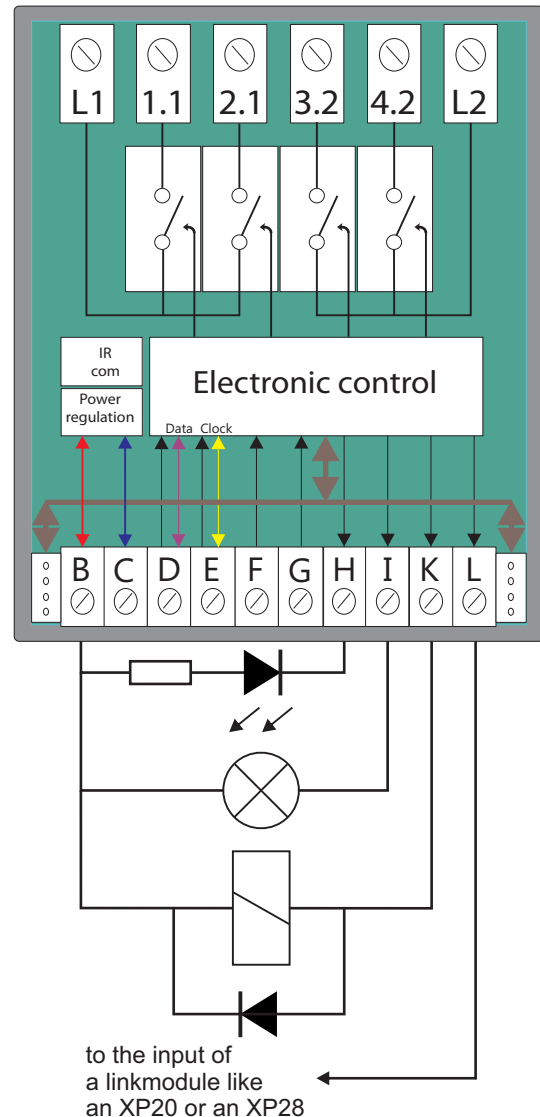|	
Max load at 277 VAC/24 VDC	16A
In application 240 VAC/24VDC	13 A
Operate time	15 ms
Release time	15 ms
Dielectric between coil and contacts	4000 VAC
Dielectric between open contacts	1000 VAC
Maximum rating at the powerinputs L1 and L2	
Resistive cos φ 1,0	2 x 2300 VA
Inductive cos φ 0,5	2 x 1150 VA
Maximum value fuse	2 x 16 A

Low power

Consumption in the idle	0,2 W
Consumption all relays on	2,4 W
Voltage at the inputs D en E (no load)	13,6 VDC
Voltage at the inputs F en G	5,0 VDC
Minimum responstime	40 ms
Minimumscurrent at the inputs	0,5 mA
Maximum loss resistance control line	1 KΩ
Maximum charge Led-outputs	75 mA

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Input connections

Led-outputs connections

to the input of
a linkmodule like
an XP20 or an XP28

An XP24 module leaves the factory as a CP24 module. In case it used as a CP24, please check the technical information for a CP24. In case the XP24 is programmed via the gateway XP130 and the Contool software, it will become a real XP24 with all its possibilities.

Resetting to the factory settings without using the software can be done by connecting MINUS with the 4 inputs (CDEFG). Make a power-up: the left led goes slightly on, freezes for an amount of time and ends the process by flickering two times.

The inputs of the XP24 are standard impulse-inputs like electromechanical switches. Activating an input with a pushbutton always works with respect to the minus. The minimal input-current is 0,5 mA. This results in a maximum loss resistance of the control line <1 KΩ.

The inputs can be programmed to other functions using the Contool software. Each input can be programmed to a staircase-time-lighting. This is interesting when the light-circuit doesn't use direct controls. Both inputs 1 and 2 as well as inputs 3 and 4 can be mutually locked.

This interlocking is implemented till the relay outputs. In that way, the motors for sunshades and other can be controlled. See: explanation "motor controls".

The Conson relay and dimmer modules have since 1980 LED-outputs. This is interesting for several appliances. The LED outputs H, I, K and L can support maximally 75 mA.

Connecting a LED to a LED output:
TThe used dropping resistor depends on the used type of LED. Following formula to calculate the dropping resistor: 24V - 2,2V/10 = 2,18 KΩ. The 10 stands for the value 10 mA according to the LED-type. The pushbuttons of the Conson type CP2505 use a 3 mA type.

Connecting a signalization lamp to a LED output:
The use of filament lamps is not recommended because of their high consumption. Usually, the type is a 30 mA so it becomes difficult to use more than two.

Connecting a relay to a LED output:
A relay connected to a LED output can be used to control another actor. Don't forget the blocking diode. Most of the time the used types of relays have inside a blocking diode.

A LED output used for a feedback signal:
An LED output can serve to supply an information to an XP20 or an XP28 to perform an action followed by an action.

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Communication between the modules mutually and the sensors such as the BUS push buttons and the XP28 interfaces.

Data XP
Plus
Minus
Data CP
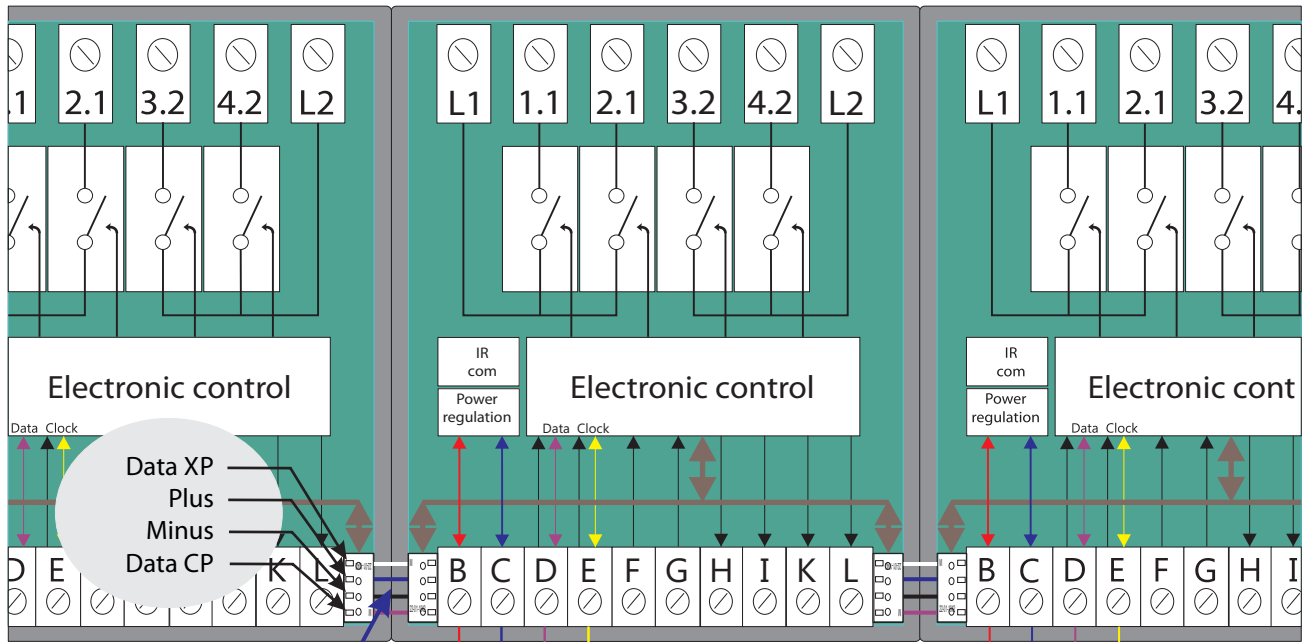
The short 4-wired local bus connects the modules mutually = **Conbus**

Plus (+) 24VDC
Minus (-)
Data
Clock

The 4-wired external bus is a longer bus = **Consonbus**.

From any actor, a new bus can be started up. This is a special feature of Concept 2000XP.
The number of sensors (Bus-pushbuttons like X P2506 or bus-interfaces XP28) is limited to 99 of each type per bus that is started-up (XP2506, XP2506A, XP2506B, XP28, XP28A and XP28B). This is really enough for all types of installations.

Remark!
The choice of the type of cable and its length depends on the influence of the data- and clock-signal with respect to each other (inducing). Data and clock can never be a part of the same pair! The diagram on the right shows the influence of the clock with respect to the data and vice-versa.

XP28

8 inputs
8 outputs
2 I/O

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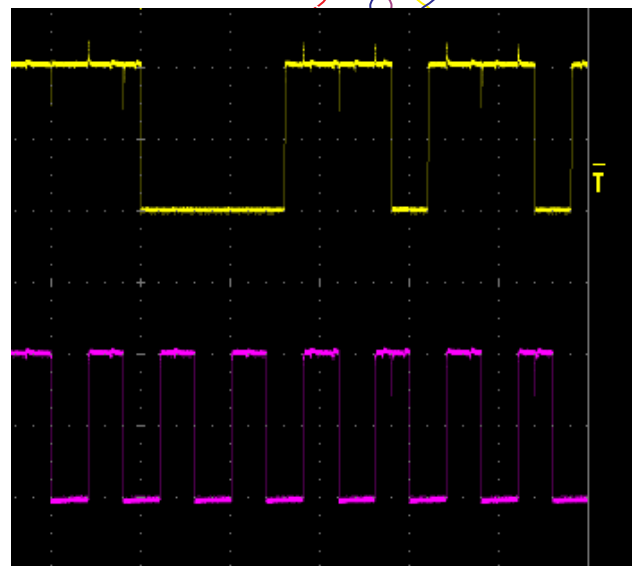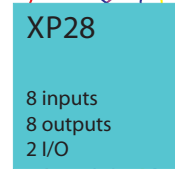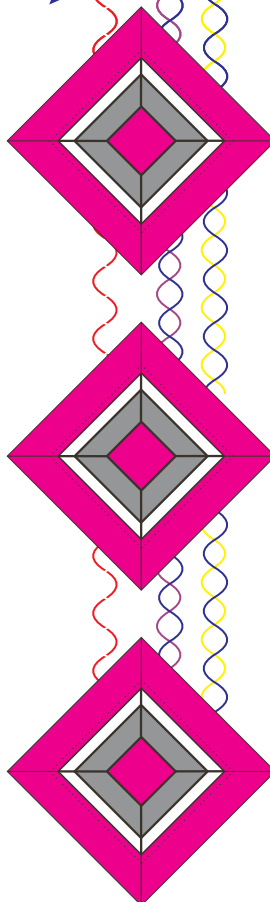
Controlling motors
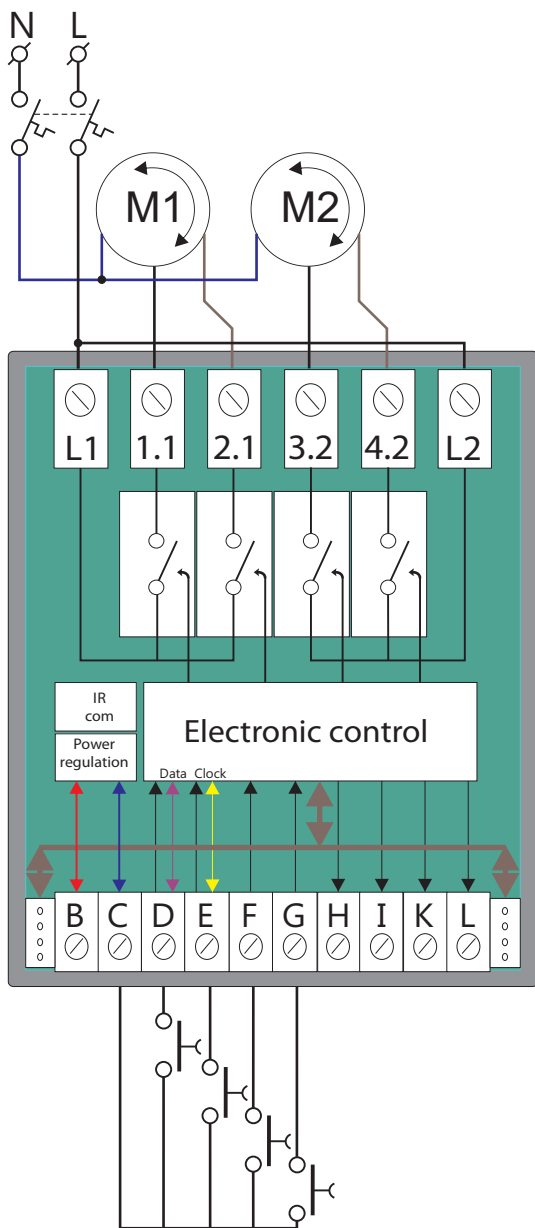
Programming other actions to the direct inputs of an XP24 and programming the direct inputs for controlling motors using the software Contool.
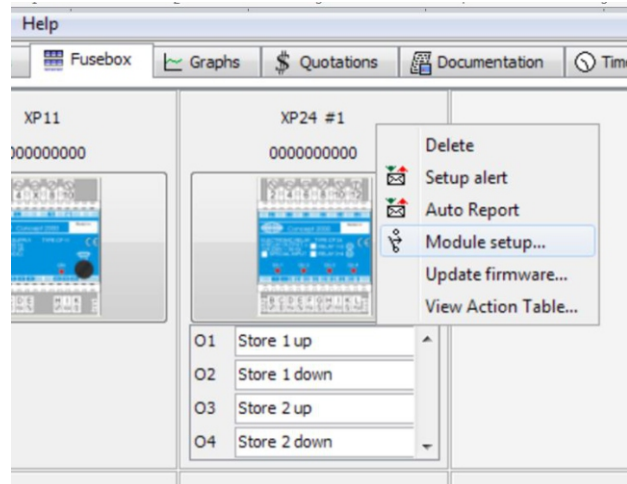
Place 2 motors on the floor plan. The Contool software adds automatically an XP24. Select the tab "Fusebox". Right click on the XP24 module (right in the top corner) and an action window will open. Select „Module set-up". The window „XP24 module programming" appears (see image below). Relay 1, 2, 3 and 4 are mutually blocked. Change the duration-time depending on the type of rollers, shutters or blinds, e.g. 30 seconds.

Important remarks:
In case the motors have an electronic cross limit switch , change the blocking time to 500ms.

In case the blinds have slats , use „Blinds 1-2 (3-4)".

The explained work method to program the direct inputs for motor controlling is also the same according to the other action to control   the direct inputs of an XP24 relay module. It is possible to assign an action „On 5 minutes" to input 3 and not an impulse action, so a Pir-detector can be connected to the direct input.

When using the Consonbus at D and E, do not change the actions of the direct inputs 1 and 2!
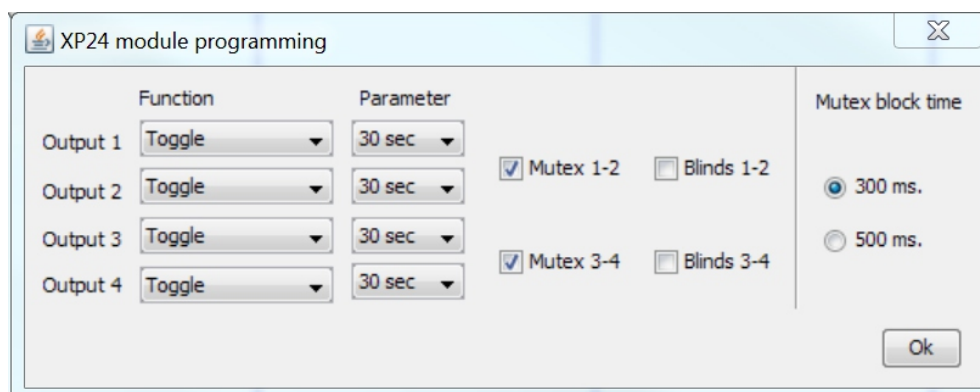
Programming of XP24 in Concept 2000 Xp

Start the Contool software and add a floor plan. Choose tab „Design", then tab „Sensors/actors" and put both an actor-lamp On/Off, a sensor XP28A and a double pushbutton on the floor plan.

Select the tab „Programming", select the double pushbutton on the floor plan, and on the right you see a separate window. Give a location, e.g. living room. Select the left button on the double pushbutton and write its behavior in the corresponding box: e.g. on/off.

Below the pushbutton-panel window you find the programming method, please select the XP28 sensor. Select the assigned module of „Not assigned" to XP28AL1 and choose channel 1. Click on the lamp that can be found on the floor plan. The window „Functions for actor XP24 on/off" appears. Change the actor-name into „Living room".

Choose in the drop-down menu the action "Impulse" and click on "Add". Click OK to close.

Channel 1 becomes red and this means that this channel has been used. Thus, the lamp is controlled by channel 1 of link 1 of the Concept 2000 XP (not same link 1 of the Concept 2000 system). Go the main tab „Fusebox". Click „Upload". The data will be sent to the XP24 module.

Click again on the main tab „Floorplan" and select the right window „User interface". Click on the left button of the pushbutton and the light goes on, clicking again will turn it off.

In case you click on the arrow direction right of the right window, it will disappear. When you click the pushbutton on the floor plan it will become bigger and can be controlled with the mice cursor or touch screen.

Click on „Design" and choose the tab „Detect XP sensors". Below, a window appears with a list. Drag the XP28A from the list to the XP28A on the floor plan. A window appears asking whether the serial number of the XP28A should be copied or not. Click OK.

Go to the main tab „Fusebox" and click on „Upload".

Connect both pushbuttons with input 1 and 2 of the XP28A and test the functions.

These previously mentioned methods of programming are the same for all actors and sensors of the Concept 2000 Xp

The different actions of the XP24

Impulse	When pressing and pressing again the actor goes „on and off".
Impulse + x-time	When pressing and pressing again the actor goes „on and off". When „on" there is a duration time of x-time.
On	On means that the actor goes on.
On + x-time	On + x-time means that the actor goes on for a duration of x-time.
Off	Off means that the actor goes off.
Off + x-time	Off + x-time means that the actor goes off after a duration of x-time.
Block	Blocking means when blocking is assigned to a particular actor by a specific channel, that as long as this channel is active, the actuator cannot be operated. Thus locking certain buttons on alarm as an example.
Help fonction	Auxiliary relay means when pressing a pushbutton (or door contact) that the actor comes on and when unloading the actor goes out.
Help relay + next line x-time	See description XP20.
On after x-time	On after x-time means that actor goes on after x-time.
Ventilation step by step	To control in ventilation systems.
Random timer	Description in a next edition

Functions for actor: 'Central light living'

Actor: Central light living

Output 1

☑ Member of 'All on'   ☐ Auto reporting
☑ Member of 'All off'   ☐ Push-panel feedback

Function   Parameter
Toggle   0 sec   Add

Toggle
Switch on (time):
Switch off (time):   meter   Remove
Block
Help function
On After
Ventilator Step
Ventilator Step Up

Ok

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