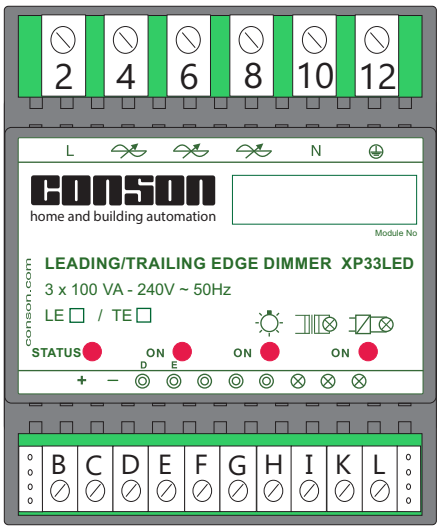
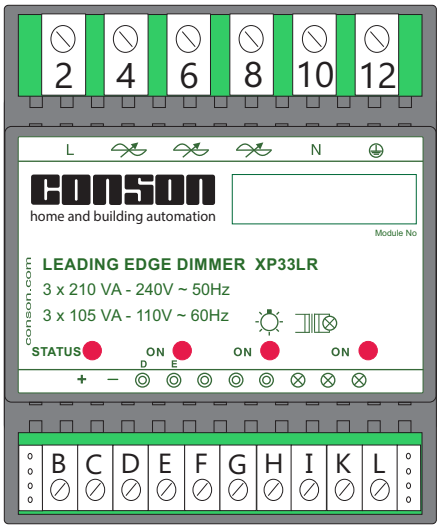
XP33LED: 3-channel dimmer 3 x 100 VA resistive - capacitive



EAN-Nr.: 5703513058999

XP33LED is a 3-channel dimmer for dimming different types of LED lamps. Each output can be configured as one leading-edge (LE) dimmer or as one trailing-edge (TE) dimmer. In both modes, it can have resistive loads as well capacitive loads. The 3 outputs are overload protected. The XP33LED regulates logarithmically and has a built-in soft-start, thermal protection and reporting of neutral interruption. Each of the 3 channels can control a load from 2VA up to 100VA (in ventilated environment 175 VA). The XP33LED owns 5 direct impulse inputs, 3 in order to dim the 3 channels, one to dim all three together and on/off, and one to select a scene from the 4 preset scenes. At the commissioning of the data-bus, up to 99 programmed functions are performed for the realisation of modes, and this by using dimming actions by percent, up and down, time and fade functions.

XP33LR: 3-channel dimmer 3x240 VA resistive - inductive

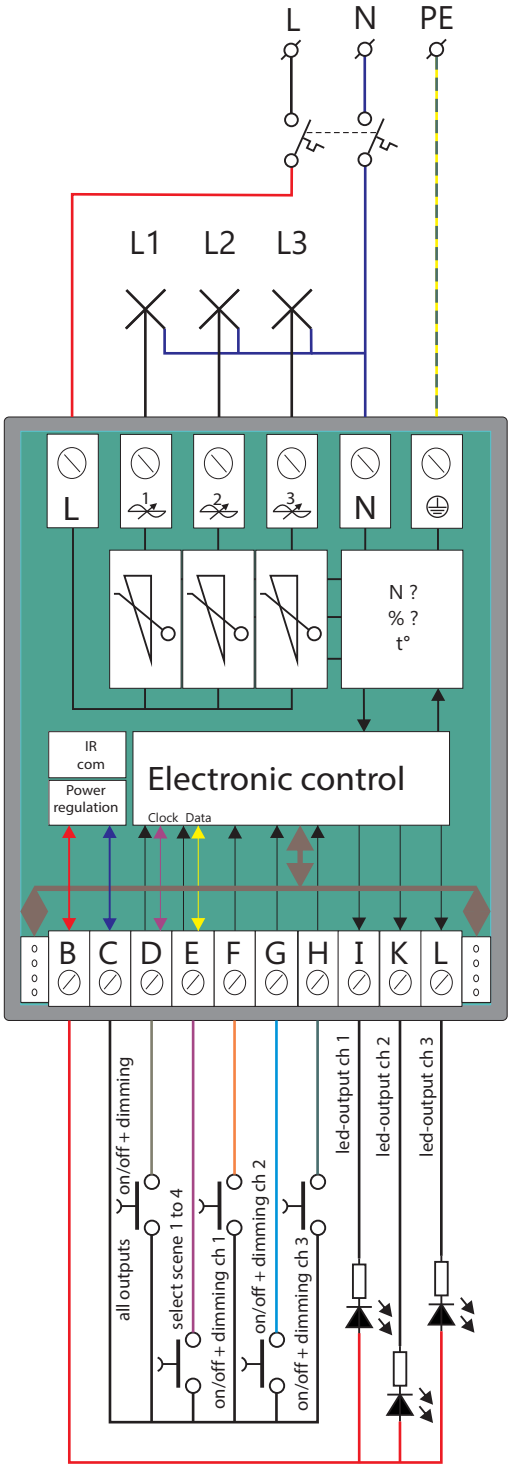


EAN-Nr.: 5703513058982

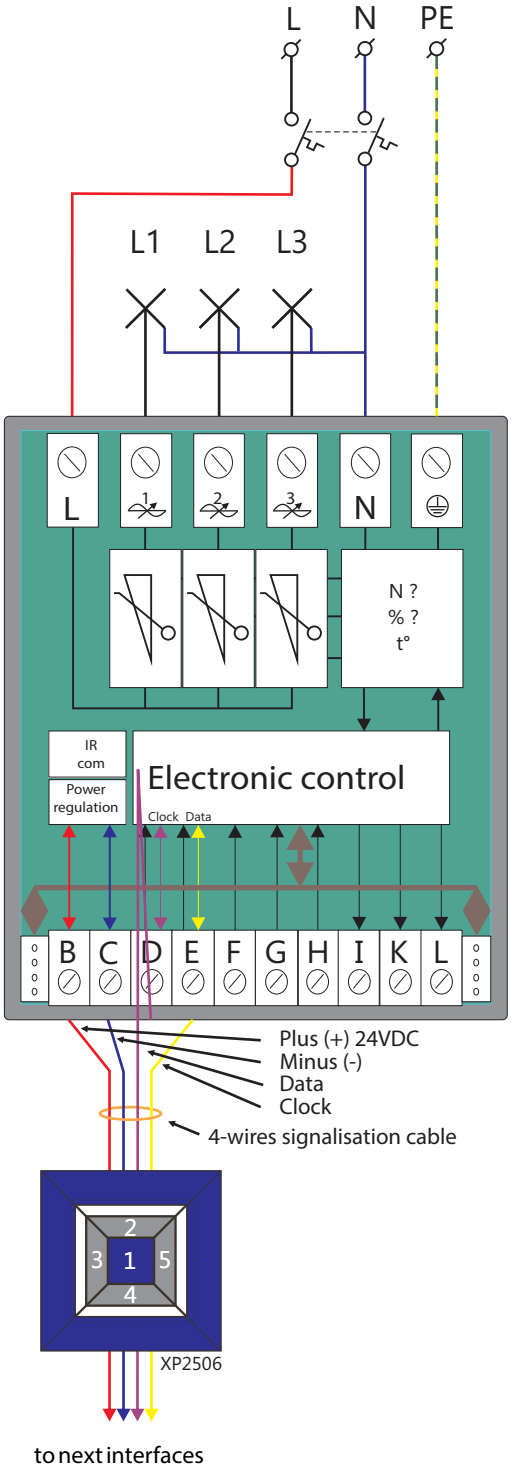
XP33LR is a 3-channel dimmer for dimming resistive and inductive charges. The XP33LR regulates logarithmically and has a built-in soft-start, thermal protection and reporting of neutral interruption. The total power of the 3 channels is 640 VA. One channel can take 500 VA, and the rest is has to be distributed over the other 2 dimmers. The XP33LR owns 5 direct impulse inputs, 3 in order to dim the 3 channels, one to dim all 3 together and on/off, and one to select a scene from the 4 preset scenes. At the commissioning of the data-bus, up to 99 programmed functions are performed for the realisation of modes, and this by using dimming actions by percent, up and down, time and fade functions.

Connections of the XP33

Connections main power of the XP33
Connections low power: control by the direct inputs and LED outputs



Connections main power of the XP33
Connections low power: Control by the Consonbus



General characteristics of the XP33-dimmers

The dimmers XP33 have a microprocessor to ensure a progressive control. Special features inter alia, soft-start, adjustable fade-in and fade-off times, thermal security, logarithmic regulation, security against neutral-break and a minimum and maximum setting without adjustment-potentiometers.

Soft start, fade-in and fade-out

When switching on the dimmer, the output voltage goes from zero to the last used or desired level and this according to a certain amount of time defined in the software of the module. This working method prevents brutal interference on the mains when switched on and extends the life of the lamp. In addition, a timely limitation is ensured by a short-circuit during the breakage of the filament. The fade-in and fade-out times can be accessed through the bus and this with actions ranging from 5 seconds to 2 hours.

Thermal protection

This limits the temperature inside the module. The level of limitation is dependent on the type of dimmer. If this temperature is exceeded, the dimmer sends an SOS signal. Because of the SOS signal, the LED-dimmer flashes in rhythm of 3 x short and 3 x long. This signal is also present at the output of the LED-dimmer module. During the SOS signal, the output level is adjusted downwards. The reset is done by activating the impulse input of the dimmer for 20 seconds, or by removing the power supply voltage 24 VDC. This protocol can be different according to the dimmer type.

Protection against short-circuit

The dimmers XP33LED and XP33LR are overload protected.

Logarithmic control

The dimmers have a logarithmic regulation which ensures that, when being operated, an ergonomic feeling arises between the operation and the determination of the light variation.

Protection against neutral-break

A disconnected or interrupted neutral is indicated by the first LED on the dimmer. This LED flashes rhythmically, followed by a long pause. In this mode, the dimmer will not work. This security includes the following advantages: it must connect properly so that the filter network is active (interference suppression to the mains and vice versa) and it protects the component against overstrain (e.g. 380V instead of 230V).

A neutral-break from the base means that there is a high tension in certain light grids on the load and thus cannot simply be transferred to the load.

Power loss of a dimmer

The choice and quality of the components contribute to a minimal power loss of 1% to the load. Thus, the power loss depends on the load used. The larger the load, the higher the power loss. With LED lighting, this is negligible in practice. However, the power loss of a dimmer must always be taken into account. It develops heat inside the electrical enclosure and can be discharged by natural ventilation.

Important remark:

Always insert the dimmers at the bottom of the enclosure. Thus, this cannot be heated by other components.

Minimum and maximum level

The minimum and maximum level is adjustable via the direct input or via the free ConTool software from Conson. Setting the minimum is particularly useful when the light source is hidden in its armature (cannot see the filament or others like Led-lamps, e.g. up-lighters).

It may also be useful for the minimum speed of fans. Through the ConTool software, one can decided that the first dimmer is directed towards the maximum, such that the engine get to its speed.

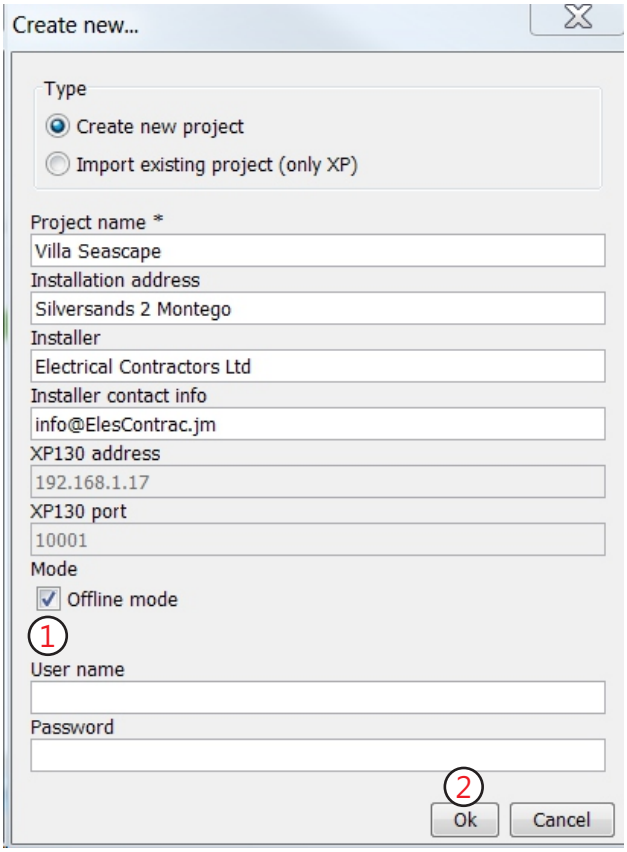
The maximum is useful in terms of energy savings. The difference between 95% and 100%, is hardly visible.

Scene control

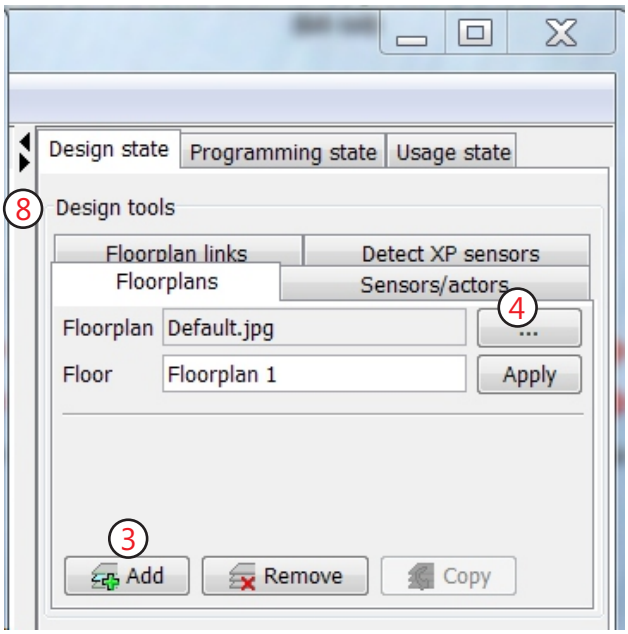
The purpose of the XP33 dimmer is to use this dimmer in one and the same room where 3 elements are installed. It is easier to program 4 different scenes (modes) in advance and ensure that they can be recalled in a fairly simple way. Thus, the user does not always have to push several buttons. Scenes such as watching TV, cleaning the room, reading a book, dining, etc.. If one needs only 2 points of light in a room, one can isolate the third output of the other 2 outputs. How to proceed is described below.

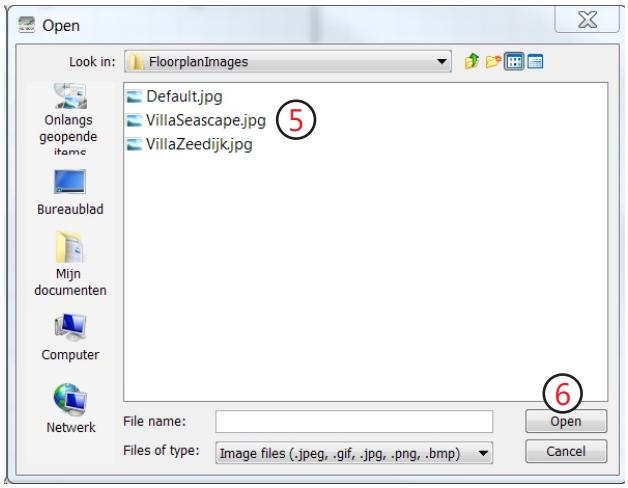
Programming the dimmers XP33 via ConTool

Start the ConTool program and create a new project. As an example, we take the project „Villa Seascape". The entered names are fictitious, but serve as a guide through the example. Place a checkmark in the „Off line"(1) and then press „OK"(2).

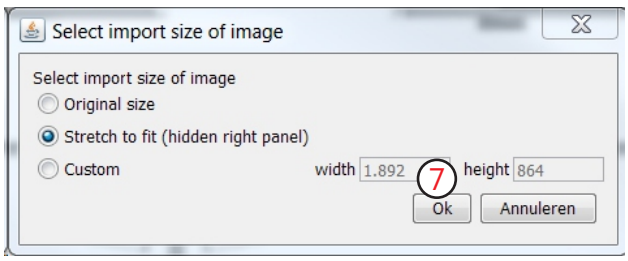


The ConTool-program starts with a blank worksheet. Before continuing, it is necessary to add a floor plan. In our example, by means of the Windows Explorer, a floor plan was copied to the „Floor Plan Images" directory. This directory is located in the root directory of the ContoolXP.
Remark: The file extension may be one of the following: jpeg., gif., jpg. or bmp.. The most CAD-programs can perform this conversion. A drawing on paper may also be used by simply photographing and copying the drawing beneath the above directory.
In the right pane, click on „Add" (3) and a standard floor plan appears on the worksheet. If he floor plan is charged, then proceed as follows: Choose the button „ ... " (4). A window „Open" (5) appears. Select the desired floor plan. Press „Open" (6).



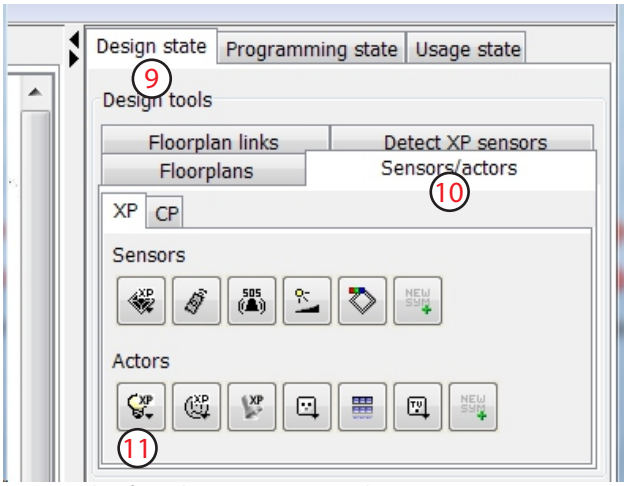


After pressing „Open" (6), a window with the message „Select Import Size of Image" appears again. The size of the floor plan can be customized. The most simple choice is „Stretch to fit hidden right panel". Press „Ok" (7). The floor plan appears and this at full screen width. With the arrows (8) on the left at the height of the right panel one can change the screen content and the size. Only the floor plan or only the right panel, or both. Clicking on the arrows or dragging the left side of the right panel.

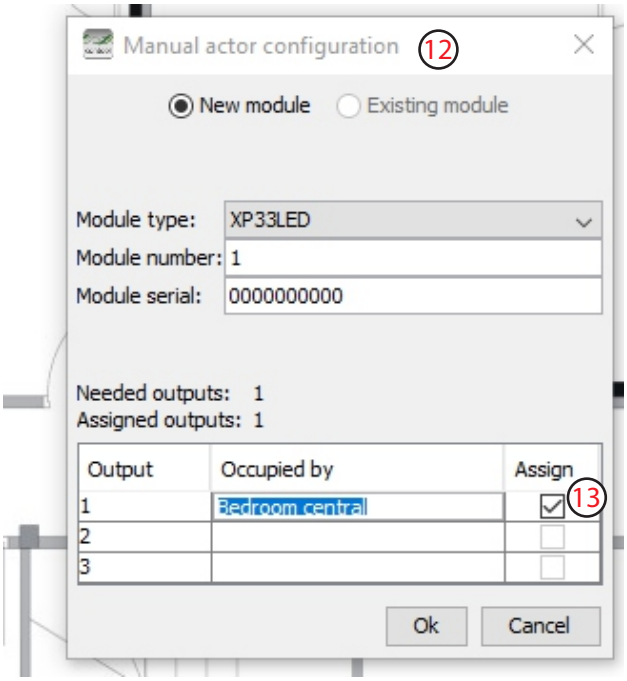


Programming the dimmers XP33 via ConTool

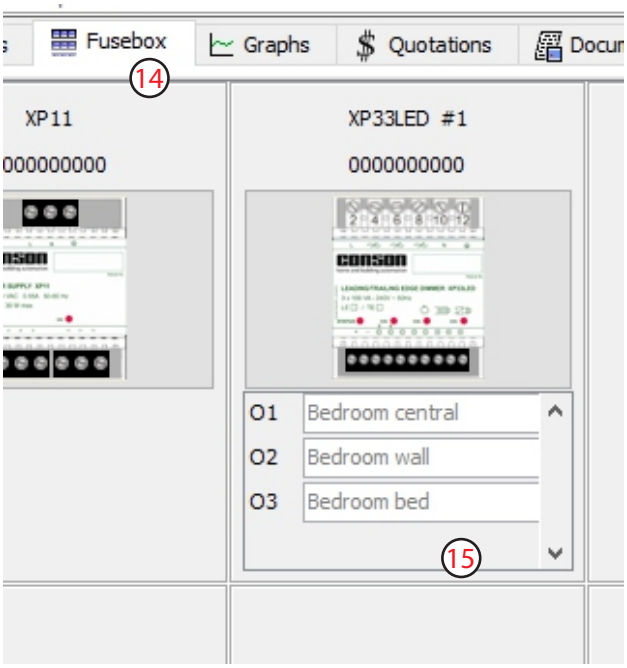
At the top left of the tab select „Settings" and a drop menu appears – add a check mark at „Automatic connection". Go to the „Design state" (9) tab - select the tab „Sensors/actors" (10) – click the selection button „Actors lamp Xp" (11) - a drop down menu opens, select „XP33LED lamp" - now drag this lamp to the floor plan, click on the place where it should be located. Do this three times, see below. As long as the mouse pointer can be seen on the floor plan, it is to place a lamp. Once the pointer is outside the worksheet, the working stops. By using the mouse, an item can always be moved.



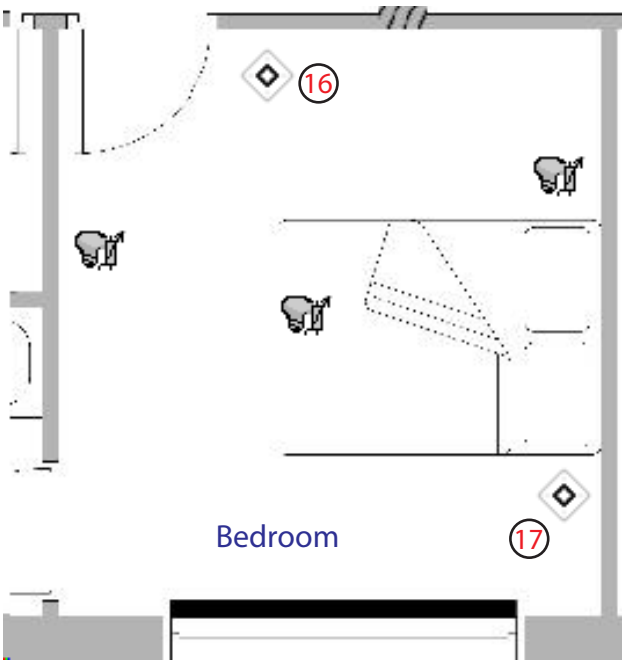
Due to the fact that in „Settings" the program is not set to „Automatic connection" a window (12) always is opened after placing a circle of light. Place a checkmark next to the first output of the XP33LED (13) and give it a name, e.g. Central SLK 1. Do the same for the wall light and the light above the bed. Each time, press „Ok".



At the top, select the tab „Fusebox" (14). A XP33LED-module appears. The outputs (15) report their location. These are written in light-gray.



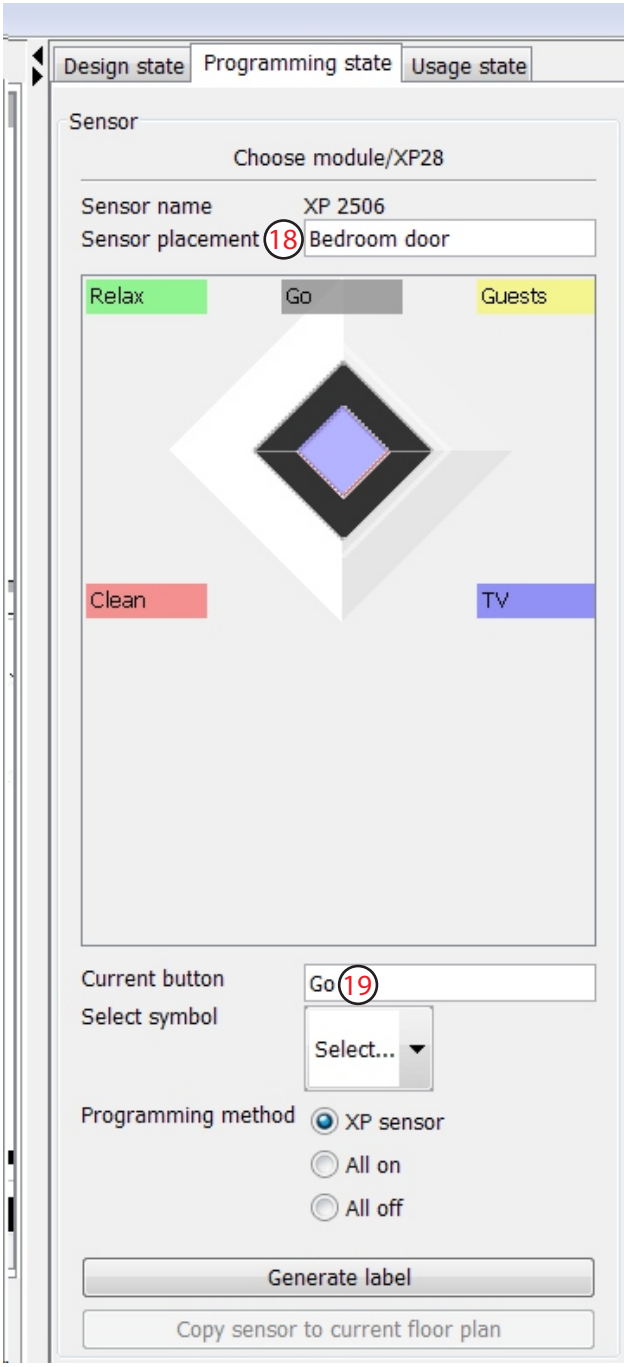
Return to „Floorplans" – „Design state" – „Sensors/actors" - click on the selection key push buttons Xp - choose a Bus-push button XP2506 and drag it to the floor plan and place it at the door entrance (16) of the bedroom 1. Insert also a XP2506 at the left of the bed (17).



Remark: It is useful to save the project from time to time. Select the tab „File" and „Save".

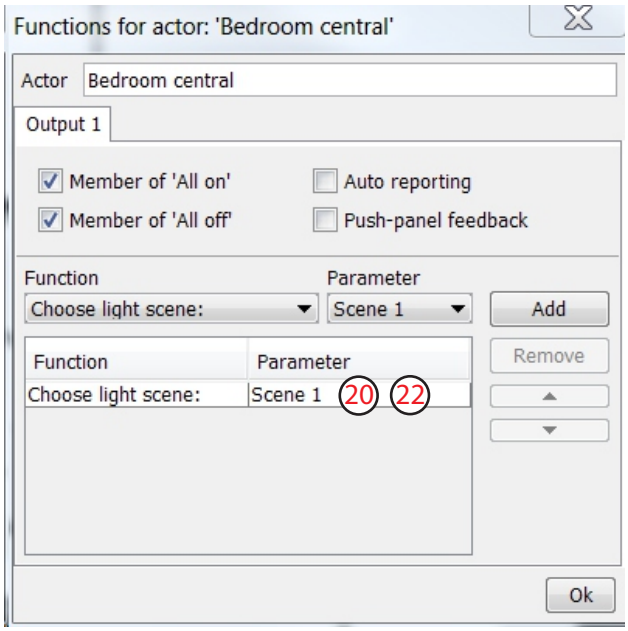
Programming the dimmers XP33 via ConTool

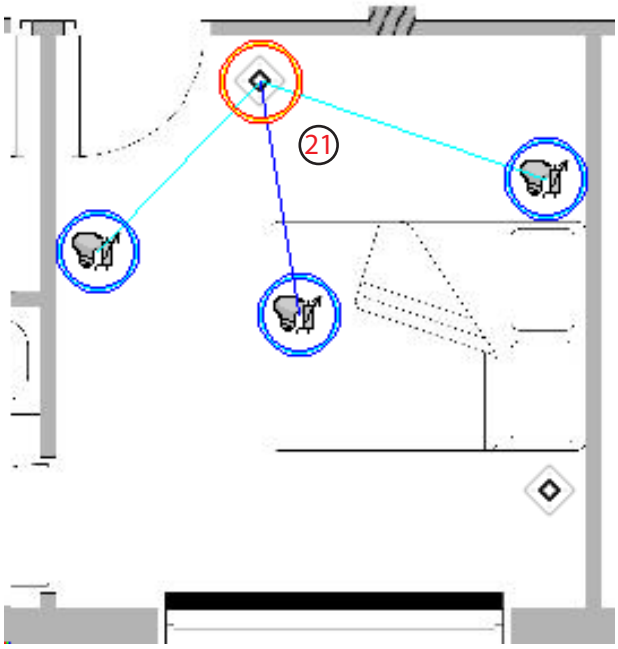
Go to „Programming state" and select the bus-push button at the door entrance of SLK 1. The following window appears.



Enter the location (18) „Bedroom door" and select the middle button of the XP2506. As long as no location is specified, one cannot continue the procedure. A warning screen will appear.
By clicking on the middle button, it takes on a purple color. The default name is „GO"(19), but it can be replaced by „Welcome to the bedroom". When this button is activated, it means that one can address an actor. Select the lamp „Central SLK2" and the actor XP33LED-window opens. Choose the „Scene 1" (20) function and press „Ok".

On the floor plan (21) is graphically shown that there is a relationship between the center push button and three light circles in the bedroom.
Press the top left button and name it "All 100%". When this button is activated, it means that one can address an actor. Select the circle of light „Bedroom wall" and the actor XP33-window opens. Choose the "Scene 2" (22) function and press „Ok".

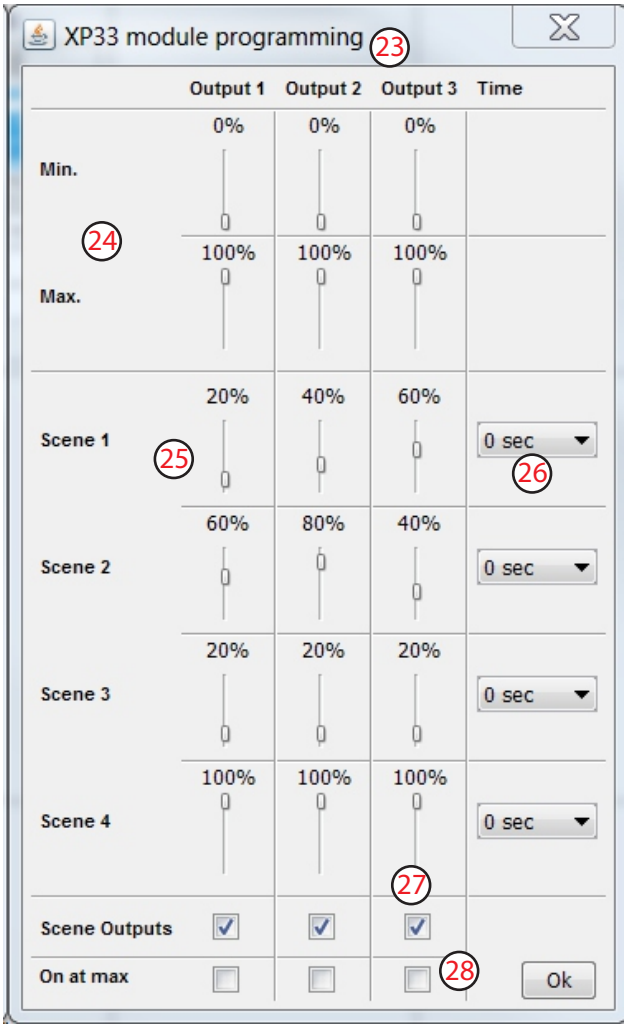




And one can go on for the other push buttons. With the push button right below, one can simply turn off all the lights by granting, one by one, the action „Off" to the three circles of light. Hereafter follows how various scenes are set.

Programming the dimmers XP33 via ConTool

Go to the tab „Progamming state" and right click on a LED lamp of the XP33LED - a menu appears - select „Setup Module" - The „XP33 module programming" (23) opens.



The different scenes (25) from 1 to 4 can be set with the sliders of the 3 outputs. In our example of the bedroom, scene 1 was assigned to the middle button. Adjust the sliders so in accordance with the result that gives the best impression when entering the bedroom.
With the establishment of the fade time-scene (26) one obtains a soothing effect to go from one scene to another. This can be useful in a bedroom when one awakens or goes to bed simply by choosing a low-light-level scene while the action „Off after X-time" is ascribed to all 3 outputs, possibly with different durations. The check-boxes (27) of the outputs have to isolate 1 or 2 outputs of the various scenes. The check-boxes (28) can ensure that a certain output starts at the maximum and not at the last memorized light level .

Technical data

XP33LED - XP33LR

Main power

Power supply	110/240 VAC 50/60Hz
Minimum and maximum load	
XP33LED	maximum load 3 x 100 VA
	minimum load 2 VA per channel
XP33LR	Total maximum of the three outputs: 640 VA
	Maximum of one output: 500VA – rest has to be distributed
	minimum per channel 40VA
Own loss per output	< 1%
Rise time (soft start)	500 ms
Off time	750 ms
Fuse that has to be used	maximum 10 A

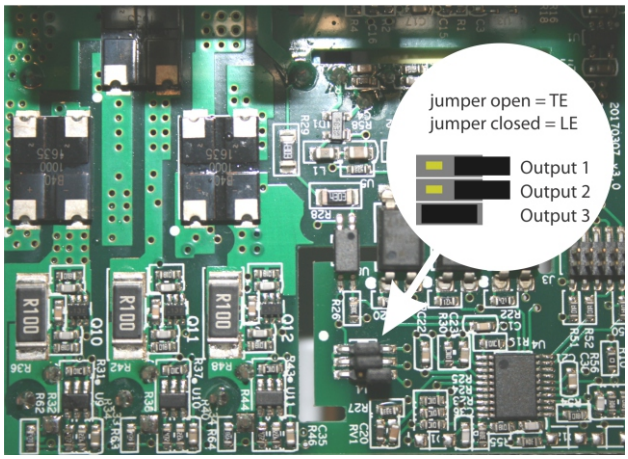
Low current

Consumption at rest at 24 VDC	
XP33LED	0,6 W
XP33LR	0,3 W
Input current of all inputs	0,5 mA
Impulse time all inputs	between 50-300 msec

Mechanical data

Montage	Din-rail DIN46277
Measurements	85x70x72 mm

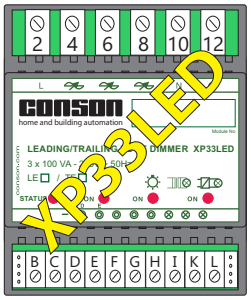
Setting load type XP33LED



The dimmers XP33LED have the following factory setting:
All 3 outputs are set for loads that require phase cut-off (TE-trailing edge). In this mode, 95% of the available LED lamps can be dimmed, notwithstanding that the load would be of a different type. If it appears that the lowest level is unstable when dimming, switch the relevant output to LE (leading edge). For inductive loads, it is recommended to use the XP33LR dimmer.

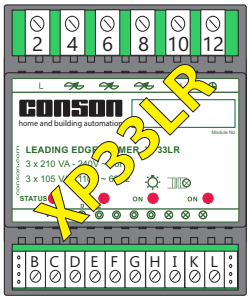
Which dimmer to use with different types of LED lighting with a power between 2 VA and 1000 VA - 240 VAC

from 2 VA to 100 VA with leading-edge (LE) or trailing-edge (TE)



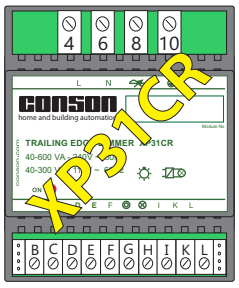
XP33LED is a 3-channel dimmer for dimming different types of LED lamps. Each output can be configured as one leading-edge (LE) dimmer or as one trailing-edge (TE) dimmer. In both modes, it can have resistive loads as well capacitive loads. The 3 outputs are overload protected. The XP33LED regulates logarithmically and has a built-in soft-start, thermal protection and reporting of neutral interruption. Each of the 3 channels can control a load from 2VA up to 100VA (in ventilated environment 175 VA). The XP33LED owns 5 direct impulse inputs, 3 in order to dim the 3 channels, one to dim all three together and on/off, and one to select a scene from the 4 preset scenes. At the commissioning of the data-bus, up to 99 programmed functions are performed for the realisation of modes, and this by using dimming actions by percent, up and down, time and fade functions.

from 40 VA to 240 VA with leading-edge (LE)



XP33LR is a 3-channel dimmer for dimming resistive and inductive charges. The XP33LR regulates logarithmically and has a built-in soft-start, thermal protection and reporting of neutral interruption. The total power of the 3 channels is 640 VA. One channel can take 500 VA, and the rest is has to be distributed over the other 2 dimmers. The XP33LR owns 5 direct impulse inputs, 3 in order to dim the 3 channels, one to dim all 3 together and on/off, and one to select a scene from the 4 preset scenes. At the commissioning of the data-bus, up to 99 programmed functions are performed for the realisation of modes, and this by using dimming actions by percent, up and down, time and fade functions.

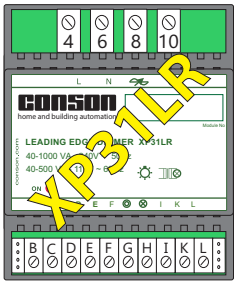
from 40 VA to 600 VA with trailing-edge (TE)



The dimmer module XP31CR is an intelligent programmable trailing edge dimmer to dim resistive and capacitive loads with a power of 40 - 600 VA. The XP31CR regulates logarithmically and has a built-in soft-start, thermal protection and reporting of neutral interruption. The dimmer has a direct impulse input. When using the data-bus, up to 99 programmed functions are performed for the realisation of modes and this by using dimming actions by percent, up and down, time and fade functions and daylight management.

In the initial phases of the LED lamps, it was difficult to dim in the range between 10 VA and 40 VA. Now it is easy to use quality LED lamps in this range.

from 40 VA to 1000 VA with leading-edge (LE)



The dimmer module XP31LR is an intelligent programmable dimmer to dim resistive and inductive loads with a power of 40 -1000 VA. The XP31LR regulates logarithmically and has a built-in soft-start, thermal security and reporting of an interruption of the neutral conductor. the dimmer has a direct impulse input. When using the data-bus, up to 99 programmed functions are performed for the realisation of modes and this by using dimming actions by percent, up and down, time and fade functions and daylight management.

In the initial phases of the LED lamps, it was difficult to dim in the range between 10 VA and 40 VA. Now it is easy to use quality LED lamps in this range.

Note: All other LED lamps that use drivers and others that can be dimmed with control signals such as Dali, DSI, 0 - 10 VDC and 10 - 0 VDC , can be controlled with the universal controller XP31BCU.