

uniLIGHT.at Modul BLACK.4

Our 4-channel module is the new standard level controller for the uniLIGHT system. It is easy to use and brings brilliant and fast results for all aircrafts. The BLACK.4 can be used on nearly all areas of technical modelling with four powerful light functions.

Channel 1: Strobe The strobe lights are very bright, white flashlights and are usually fixed at the wing tips or even the end of the fuselage. The flashlights are often found in the same luminaries as the navigation lights.

Channel 2: Navigation This kind of light separate the space around the aircraft into three areas of 120°. Green light is on the right hand side, red on the left and white at the rear. The lights are usually in continuous operation, partly also used as blinking lights.

Channel 3: Beacon Beacon lights are used as red warning signals, meaning „Danger engine ON“. They are placed at the top and/or bottom of the fuselage, sometimes also on the rudder. They can be a strong blinking light or also an un- & decreasing light, simulating a rotating beacon.

Channel 4: Landing These lights are always white coloured and bound forward. Mostly symmetrical fixed in the wings, sometimes mounted on the engine nacelle or on the landing gear. Warmwhite types often used for older generation aircrafts to substitute glow bulbs.

New in BLACK Series

Dynamic nicer, faster and even sharper defined light effects

Functions full light schemes for classic and modern aircrafts, also special effects are available

Power higher load possible for stronger light systems

Safety basic short cut protection, cut off and automatic restore

Battery deep discharge protection for connected Lipos

Master-Slave Operation no switch in power circuit necessary, activation by the receiver channel

Scale with soft light transition to simulate rotating functions and glow bulb behaviour

Sport Navigation and strobe on one channel – a function for many sport applications

Programming

The light system is usually operated with a 3 step switch. The easiest way is to start with position **-1-** (centre). Change servo-centre (sub-trim) until the desired light signal is displayed.

Position **-0-** with negative deflection (-100%) indicates the condition „all off“. If the centre point has been displaced, or if you prefer activating another in initial state, adjust the servo throw on the transmitter until the desired light signal appears.

Finally switch to position **-2-** and adjust the 2nd operating mode by using the full-scale deflection. The landing-lights are mostly switched on during this process.

Hint Depending on the manufacturer, the percentage values and corresponding results may vary. Simply adjust the servo until the desired signal is displayed in live.

Hint Best results are usually made when you use free mixers to define the light-servo position for the switch. Remember the light controller is a servo, the position of the arm is the selection of the light scheme.

Hint On some systems, you can also use two switches and pair them to attain more positions. You can also achieve this through phases of flight, use gear of flap switches to control the servo travel of the light channel

The Black.4 controller can supply three completely different light schemes. So you can select the function depending on your personal taste. Please follow like instructed:

1. Keep SET button pressed and power up the receiver power supply. The LEDs start blinking simultaneously.
2. After release the channel 1 will be selected to allow special effect adjustments. Press the button >2 seconds to swap the channel. After channel 4 the light scheme selection will be shown. Make your selection.
3. Power off the controller and return to normal operation

System behaviour 1 (o - -) CLASSIC

This is the well known light patterns of the original uniLIGHT MODUL-4 - modified with some optimizations to increase sharpness. It replaces older systems completely.

INPUT	SWITCH	SIGNAL FUNCTION	CH1: STROBE	CH2: NAVIGATION	CH3: BEACON	CH4: LANDING	SERVO
-100%	SWITCH -0- POSITION	ALL OFF	CH 1	CH 2	CH 3	CH 4	-100%
-90%		CHECK LIGHTS	CH 1	CH 2	CH 3	CH 4	+100%
-80%		BEACON	CH 1	CH 2	CH 3	CH 4	-100%
-70%		2xBEACON	CH 1	CH 2	CH 3	CH 4	-100%
-60%		BLINK NAV + BEACON	CH 1	CH 2	CH 3	CH 4	-100%
-40%	SWITCH -1- POSITION	BEACON + NAV	CH 1	CH 2	CH 3	CH 4	-100%
-30%		2xBEACON + NAV	CH 1	CH 2	CH 3	CH 4	-100%
-20%		BEACON + NAV + 2xSTROBE	CH 1	CH 2	CH 3	CH 4	-100%
-10%		BEACON + NAV + 3xSTROBE	CH 1	CH 2	CH 3	CH 4	-100%
0%		2xBEACON + NAV+ LATE STROBE	CH 1	CH 2	CH 3	CH 4	-100%
10%		BLINK NAV + BEACON + 2xSTROBE	CH 1	CH 2	CH 3	CH 4	-100%
30%	SWITCH -2- POSITION	BEACON + NAV + 2xSTROBE + LAND ²	CH 1	CH 2	CH 3	CH 4	-100%
50%		BEACON + NAV + 3xSTROBE + LAND	CH 1	CH 2	CH 3	CH 4	-100%
60%		2xBEACON + NAV+ LATE ACL + LAND	CH 1	CH 2	CH 3	CH 4	-100%
70%		BLINK NAV + BEACON + 2xSTROBE + LAND	CH 1	CH 2	CH 3	CH 4	-100%
100%		ALL ON	CH 1	CH 2	CH 3	CH 4	-100%

Hint Entries with the same color show the same logical group of light signals. Adjust your transmitter to select only the related entries.

System behaviour 2 (- o -) MODERN

This is a modern and clean system behavior with three beacon and two strobe effects. In this pattern you can also select to operate beacon and strobe or beacon and navigation first.

INPUT	SWITCH	SIGNAL FUNCTION	CH1: STROBE	CH2: NAVIGATION	CH3: BEACON	CH4: LANDING	SERVO
-100%		ALL OFF	CH 1	CH 2	CH 3	CH 4	-100%
-90%		BEACON	CH 1	CH 2	CH 3	CH 4	-100%
-80%		2x BEACON	CH 1	CH 2	CH 3	CH 4	-100%
-70%		CH3 ON	CH 1	CH 2	CH 3	CH 4	-100%
-60%		BEACON + NAV	CH 1	CH 2	CH 3	CH 4	-100%
-50%		2x BEACON + NAV	CH 1	CH 2	CH 3	CH 4	-100%
-40%		CH3 + NAV	CH 1	CH 2	CH 3	CH 4	-100%
-30%		2x BEACON + LATE STROBE	CH 1	CH 2	CH 3	CH 4	-100%
-20%		BEACON + STROBE	CH 1	CH 2	CH 3	CH 4	-100%
-10%		CH3 + LATE STROBE	CH 1	CH 2	CH 3	CH 4	-100%
0%		2x BEACON + LATE STROBE + NAV	CH 1	CH 2	CH 3	CH 4	-100%
10%		BEACON + STROBE + NAV	CH 1	CH 2	CH 3	CH 4	-100%
20%		CH3 + STROBE + NAV	CH 1	CH 2	CH 3	CH 4	-100%
30%		2x BEACON + LATE STROBE + NAV + LAND	CH 1	CH 2	CH 3	CH 4	+100%
40%		BEACON + STROBE + NAV + LAND	CH 1	CH 2	CH 3	CH 4	+100%
50%	CH3 + STROBE + NAV + LAND	CH 1	CH 2	CH 3	CH 4	+100%	

Hint The function CH3 ON is needed for the rotating uniLIGHT Beacon luminaries

System behaviour 3 (- - o) EFFECT

This is a pattern with various special effects for show and night flying, also very well usable for sport helicopters and all kind of ground vehicles. Different running lights, scanner and flashing schemes as well as simple switch functions are possible.

INPUT	SIGNAL FUNCTION	CH1: STROBE	CH2: NAVIGATION	CH3: BEACON	CH4: LANDING	SERVO
-100%	ALL OFF	CH 1	CH 2	CH 3	CH 4	-100%
-90%	CH1 ON	CH 1	CH 2	CH 3	CH 4	-100%
-80%	RUNNING 1	CH 1	CH 2	CH 3	CH 4	+100%
-70%	RUNNING 2	CH 1	CH 2	CH 3	CH 4	+100%
-60%	RUNNING 3	CH 1	CH 2	CH 3	CH 4	+100%
-50%	CH2 ON	CH 1	CH 2	CH 3	CH 4	-100%
-40%	CH1 + CH2 ON	CH 1	CH 2	CH 3	CH 4	-100%
-30%	SCANNER 1	CH 1	CH 2	CH 3	CH 4	+100%
-20%	SCANNER 2	CH 1	CH 2	CH 3	CH 4	+100%
-10%	SCANNER 3	CH 1	CH 2	CH 3	CH 4	+100%
0%	CH3 ON	CH 1	CH 2	CH 3	CH 4	-100%
10%	CH1 + CH2 + CH3 ON	CH 1	CH 2	CH 3	CH 4	-100%
20%	SCRAMBLE 1	CH 1	CH 2	CH 3	CH 4	+100%
30%	SCRAMBLE 2	CH 1	CH 2	CH 3	CH 4	+100%
40%	CH4 ON	CH 1	CH 2	CH 3	CH 4	+100%
50%	CH1 + CH2 + CH3 + CH4 ON	CH 1	CH 2	CH 3	CH 4	+100%
60%						
70%						
80%						
90%						
100%						

Special Function (SF)

With this **uniLIGHT** module BLACK.4 it is now possible to select a special function for the switch transition.

Channel 1 In classic and modern schemes a basic level of around 20% power is given to the strobe light. With these function a strong strobe light can be operated as navigation light AND at the same time be a strobe signal. Perfectly usable on sport models: one light, two functions!

Channel 2, 3 and 4 A soft transition simulates a soft glow-up and glow-down like an old glow bulb or simulates a rotating beacon effect.

- Keep SET button pressed and power up the receiver power supply..
- Channel 1 will be activated after letting go of the button.

Flashing: Special Function OFF

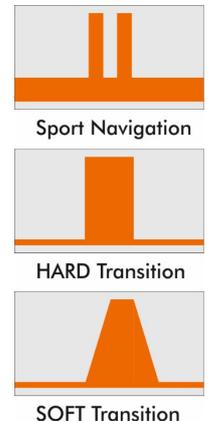
Permanent light: Special Function ON

- Press short, change setting, press key >2 seconds , go to next channel (Channel1 > ... > Channel4 > Pattern > Channel 1 >...)
- Switch off system power to leave the programming mode.

Attention The soft transition and glow effect is technically enabled by PWM technology. If possible, use twisted pair wires and build in the wires as far away as possible from the receiver and HF equipment. The hard transition is more robust and has less electrical disturbances. Always do a detailed range test after electrical installations!

Safety functions

- In case of short circuit or massive overload the output will be switched off immediately. The blue LED will flash. After 10 seconds pause the controller will try to resume the operation. Maybe you have to restart the controller.
- In case of low battery the output is also turned off. The blue LED is blinking slowly. The controller will continue the operation for 2 seconds each 10 seconds to show the low battery operation. Please charge!

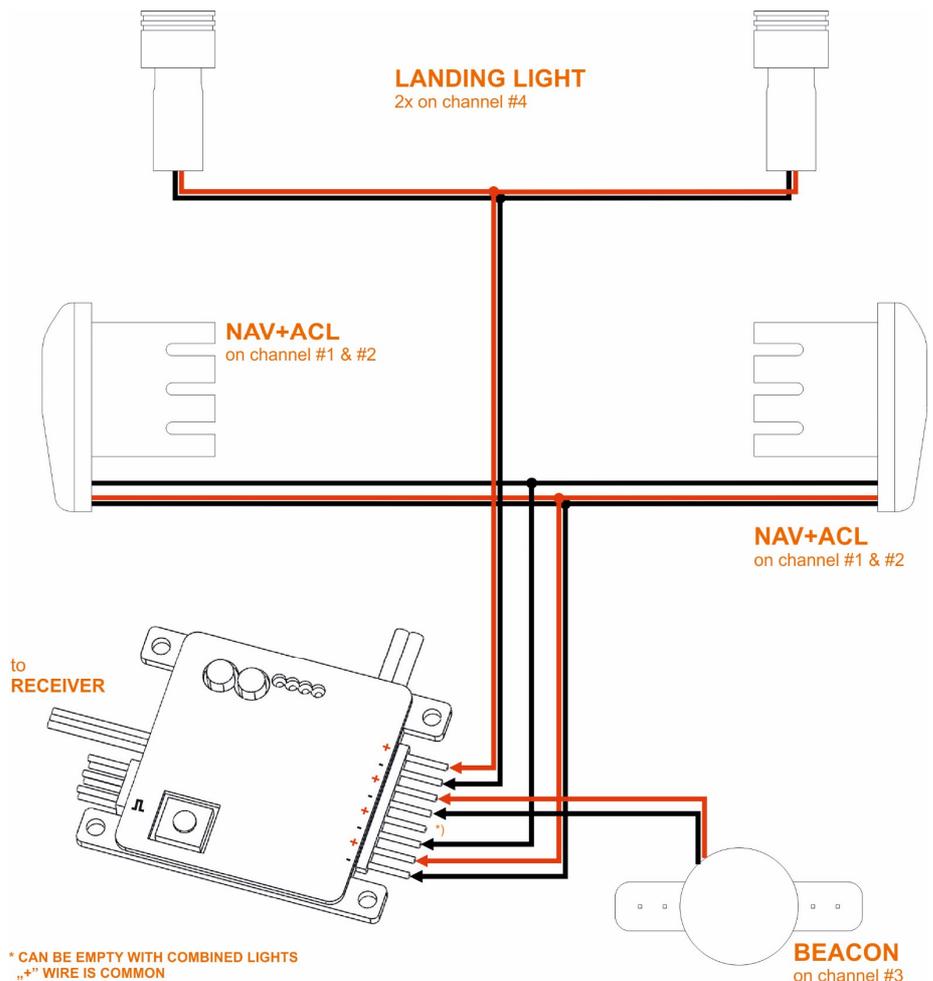


Connection

In the uniLIGHT system it is possible to connect all lights simply parallel. Under that feature the four functions are completely enough for most aircrafts. The connection can be done by our standard Y-cables or by soldering while making the wing-to-fuselage connector. Normal lighting systems will never reach the controllers maximum capacity, it can power 12-15 lamps of 040 type parallel on one channel.

If you are using non-system lights, then make sure that they are directly operable with the applied voltage and/or corresponding resistors are used.

When using multiple lights on one connector you can reduce the cable amount with collecting all "+" poles together, also for DUAL lights.



Factory Defaults - RESET

Start the receiver power while pressing the SET button and keep it for about 10 seconds. Once the blinking light signal transitions into a constant light, the reset has been performed and the default setting is restored.

Hint Keep the button pressed for another 10 seconds and a DEMO mode will be activated. In this mode receiver signals are ignored and the light system can operate for longer time on the ground. Restart exits the DEMO mode:

Technical Data

	BLACK.4	MODUL-4-300
Receiver side:	3,6-9,6V	4,8-9,6V
Weight (excl. Cables):	9g	10g
Dimensions:	50x35x6mm	50x35x8mm
Current per channel:	5A, up to 16V	3A, up to 16V
Maximum current (10s):	6A, up to 16V	5A, up to 16V
Combined load:	8A	5A
Galvanish sperated:	YES	YES
Operation without RC possible:	YES	YES
Light effect with various speed:	48 in three groups	16
Soft transition selectable :	YES	YES
Navigation&Strobe Function:	YES	-
Short circuit protection:	YES	-
Deep discharge protection:	YES	-
Servo output channel	YES, slow moving	YES

For more information and further manuals visit www.unilight.at