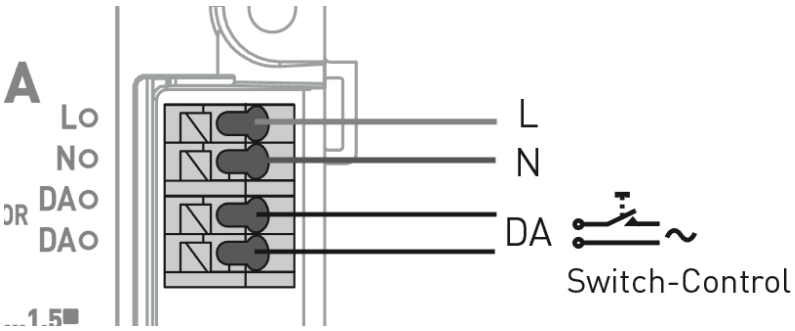
Helvar

User Guide

SWITCH-CONTROL & SWITCH-CONTROL 2

FOR LED DRIVERS

Switch-Control is a protocol for controlling the light with a mains rated retrievable switch.



CONNECTION OF SWITCH-CONTROL

Switch-Control operates by connecting the mains voltage to the DALI input terminals. Therefore please ensure that all the components connected in this line are mains rated and protected according to all applicable safety requirements. The support of DALI operation is disabled for the time of Switch-Control operation and re-enabled with a mains reset.
The maximum number of drivers & switches per circuit and the maximum wire lengths are presented in the table below. Ensure all drivers and other loads are connected to the same mains phase.

	Switch-Control	**Switch-Control 2**
Maximum number of LED drivers per circuit	30	60
Maximum wire length	25 meters *	Driver technology does not restrict the wire length
Maximum number of switches per circuit	Limited by total wire length * (see above)	Driver technology does not restrict the number of switches

*The maximum wire length from the switch to the driver in Switch-Control is 25 m. The wire length can be extended to 200 m by connecting a capacitor (1 µF, min. 275 VAC RMS and X2 rated, according to IEC 60384-14) across the Switch-Control input.

SWITCH-CONTROL 2

Helvar Switch-Control 2 brings technological updates to the original Switch-Control. While the functional logic and principles stay the same, Switch-Control 2 allows theoretically unlimited installation wiring length. In addition, the amount of controllable drivers is increased to as high as up to 60 drivers, ensuring even more flexible use of Helvar drivers in any installation.

SWITCH-CONTROL FOR DIMMING THE LIGHT INTENSITY

Switch-Control active less than 50 ms	**No operation.** This is a protection against short interruptions and disturbances in the control cables.
Switch-Control active 100-350 ms	**Short press (ON/OFF function);** toggle operation between ON and OFF, At switch ON the light returns to the previous level before OFF;
Switch-Control active for onger than 450 ms	**Press and hold (Fade UP/DOWN)**; after switch ON the first dimming direction is always to dim down; if you press and hold from OFF the light goes to min level and starts fading up; the dimming direction is always changed when Switch-Control is released.

The Switch-Control fade is using DALI commands UP and DOWN with a fixed fade rate of 5 sec from min level to max level.

RESET OF SWITCH-CONTROL

Due to differences in the cable-inductances of individual luminaires the intensity of the various drivers might occasionally go out of sequence with time. In this case press and hold the Switch-Control until all lights are ON. Then Switch all lights OFF with a short press. This will bring all lights back into synchronisation again.

You can as an alternative synchronisation procedure carry out a power reset. Switching the mains OFF and ON will perform a total reset of the drivers, that go into the default factory setting providing "power on to last level " is not activated.

SETTING POWER ON TO LAST LEVEL WITH SWITCH-CONTROL

Following sequence will either **activate or deactivate** "Power on to last level" functionality:

- 1 x long switch (20- 25 sec.)
- 3 x short switch (100-350 ms)
- 1 x long switch (20- 25 sec.)

Approximately a 2 seconds delay is allowed between the switches.
When **activating** the light must be switched ON.

SWITCH-CONTROL FOR THE CONTROL OF COLOUR TEMPERATURE AND INTENSITY

Dimming the intensity

- Short press ON / OFF < 1 s → Switch the lights ON/OFF, ON level is always with last level setting of intensity and colour temperature
- Changing the intensity
  - Long press > 1s → Lights dims always first down, next long press lights dim up

Changing the colour temperature

- Long press > 1s dimming direction have to be up
  - Hold the button → the light goes to full intensity
  - Hold the button for addional 6 sec→ colour temperatures jumps to coldest colour temperature
  - Still hold the button→ colour temperature changes from cold to warm
  - Releasing the button sets the new colour temperature.

  or
  - Press and hold button > 1s → The lights dims slowely from min. to max. Hold the button for addional 6 second the colour temperature change starts

RESET OF SWITCH-CONTROL IN IC DRIVERS

The intensity and/or CCT values of the various drivers might go out of sequence with time due to differences in the cable-inductances of individual luminaires. In this case press and hold the Switch-Control until all lights are ON. Then perform a normal colour temperature setting as described above. This will bring all lights back into synchronisation again.
You can as an alternative synchronisation carry out a power reset. Switching the mains OFF and ON will perform a reset of both light intensity and colour temperature to the default factory setting providing "power on to last level " is deactivated.

APPLICATION CONSIDERATIONS

- Cable length in a Switch-Control 2 installation is not restricted by the driver technology, but it must be always ensured that the actual installation fulfills the relevant national legislation regulations regarding short-circuit current to ensure proper fuse or MCB operation in case of a fault condition.
- If the length and the characteristics of the cabling in the Switch-Control 2 installation cause substantial induced voltages in the cables (e.g. very long cables), this may introduce risks for the driver electronic circuit damages. In these cases Helvar recommends using the X2 rated capacitor connected across the Switch-Control input, as instructed in more detail on page 1.
- Switch-Control or Switch-Control 2 circuits shall not be operated with push-buttons that include internal indicator bulbs / lights sources.