TRILUX
SIMPLIFY YOUR LIGHT.

SYSTEM MANUAL

LIVELINK WIFI CONNECT

CONTENTS

INTRODUCTION

BASIC FUNCTIONS

LiveLink Connect is a light control system which offers automatic and/or semi-automatic control for optimal quality and efficiency of illumination. The innovative operation via tables or smart phones provides maximum comfort for setup and operation.

LiveLink can be configured to meet all the client's requirements with a demand-oriented operation of luminaires. All luminaires and sensors which are connected must be equipped with a DALI interface (Digital Addressable Lighting Interface). Luminaires, sensors and push-buttons are connected per room to a LiveLink control device, whereby a room does not necessarily have to correspond to a physical room.

The system is setup via tablet and operated via tablet or smart phone. The highest security standards are also complied with (see chapter "Wi-Fi Security").

Connectivity to an existing network structure is possible.

Use Cases, which contain a pre-configuration of luminaire groups and light scenes are available to help set the system up. Through further configuration, each room can be individually set to meet their respective requirements.

SAFETY INSTRUCTIONS

- **Commissioning (electrical) must be carried out by an electrician.**
- **Work on electric devices may only be carried out when they are disconnected from mains power.**
- **Applicable safety and accident prevention regulations must be adhered to.**
- **Regarding installation, please adhere to the corresponding installation steps from the installation instructions of the luminaire to be installed.**

LiveLink is not intended for any application other than the one listed here. Other applications are considered to be in violation of the intended use. If LiveLink is used improperly, safe operation cannot be guaranteed.

APP DOWNLOAD

"LiveLink Install" app
The system is set up with the "LiveLink Install" app. The system prerequisite is a tablet with iOS 8 (or higher) or Android 4.1 (or higher).

"LiveLink Control" app
The "LiveLink Control" app provides for a comfortable operation of the room lighting. The system prerequisite is a tablet or smartphone with iOS 8 (or higher) or Android 4.1 (or higher).

www.trilux.com/livelink-app

Download on the App Store

ANDROID APP ON Google play

FAQ

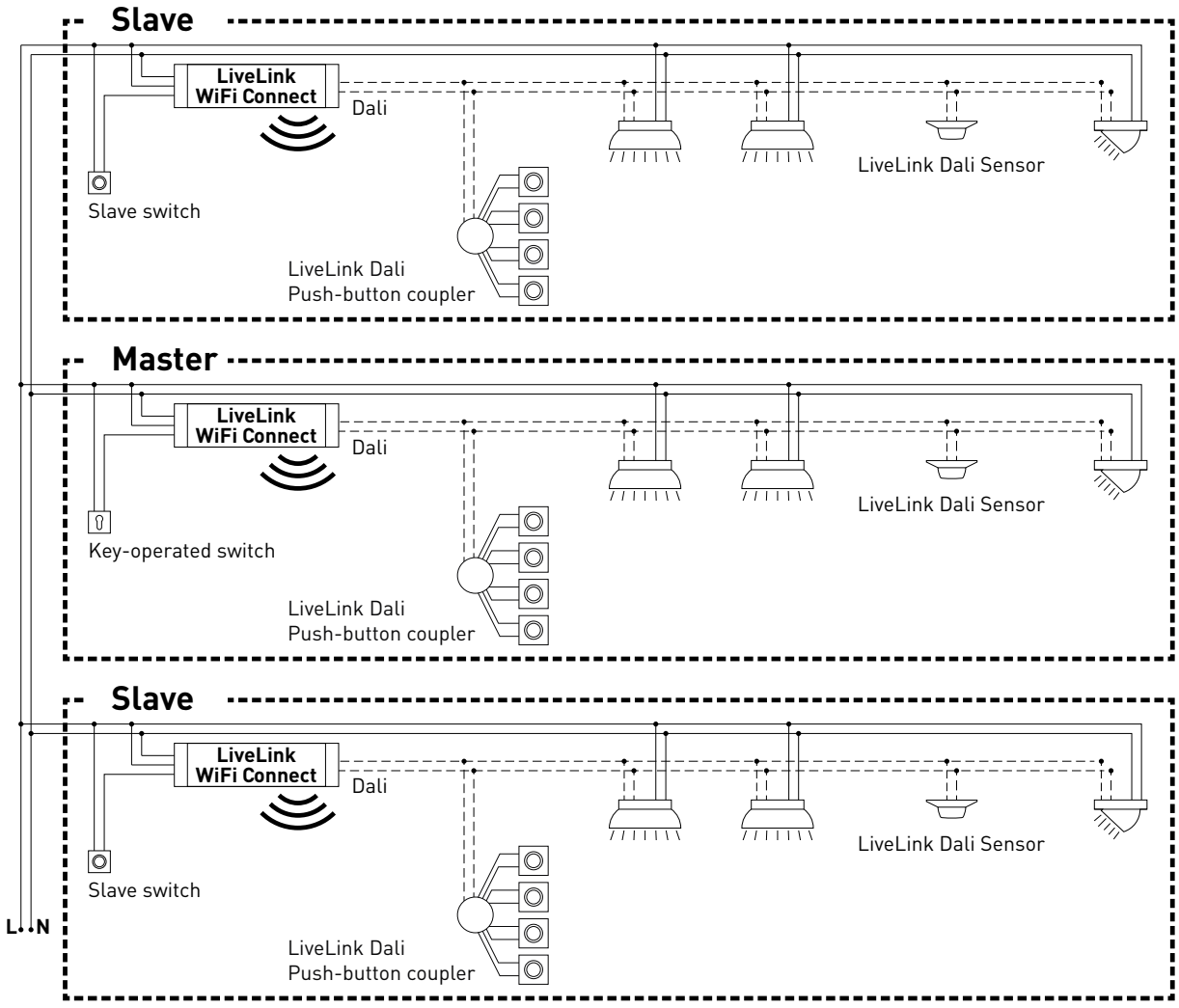
As well as this manual, the latest frequently asked questions (FAQs) and their answers are available at: **www.trilux.com/livelink-faq**

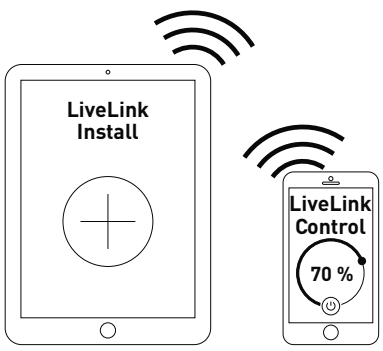
SYSTEM OVERVIEW

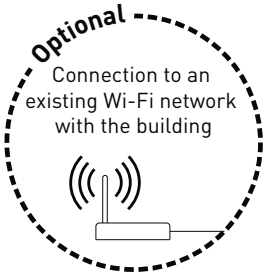
With a special master-slave function, LiveLink Connect enables compound connection of several LiveLink Connect control units. With this function, multi-purpose halls (sports halls or industrial halls) can be used with individual single hall mode, sub-hall mode or complete hall mode.

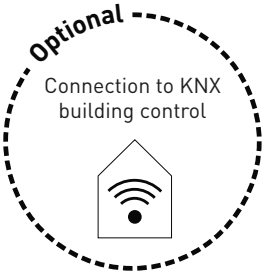
For this purpose „LiveLink WiFi Connect" control units are set up for the individual hall sections and then interconnected via WLAN. An individual control unit is installed for each hall area and set up with the LiveLink Install app. To enable correct functioning, each control unit is set up with the same Use Case.

To network the hall subsections, the control units are connected with the WLAN. The master controller should always control the central hall section so that this can be grouped with one or several slaves to enable both sub-hall mode and complete hall mode. Because of the WLAN range of the system it must be observed that the Connect controllers should be installed adjacently in the subdistribution.









APPLICATION EXAMPLES

To control a multi-purpose hall, a control unit is set up as the „master" and one or several further control units as „slaves". Optionally, each control unit (the master control unit as well) can individually control its specific hall section (single hall mode), or can be centrally controlled via the master (sub-hall or complete hall mode). In the case of sub- or complete hall mode, the slaves only implement the commands of the master.

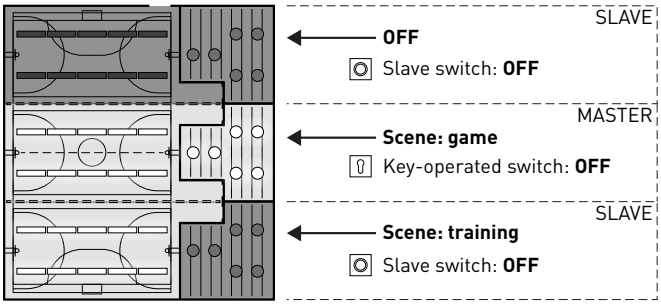
The possibility of single hall mode can be suppressed for each individual control unit by setting up this control unit permanently as a „slave" using the Install app.

Otherwise, at each control unit a switch can be used for switching between single hall mode (independent control of the hall section) and sub- or complete hall mode.

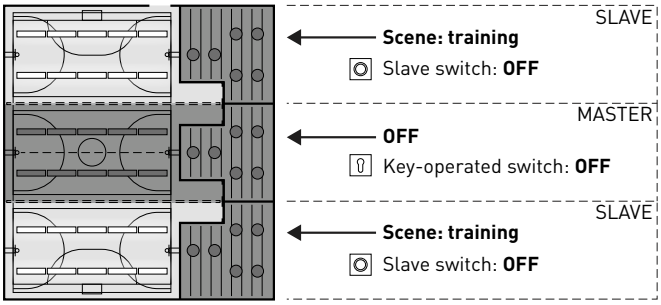
This slave switch responds as follows:
- closed slave switch: single hall mode
- open slave switch: slave mode (sub- or complete hall control via the master)

The switch on the master control unit has a special function: it can be used for switching to competition mode. In this case a special competition scene is activated for all control units, and all sensors and push-buttons are simultaneously deactivated to avoid disruptions to the competition. The prerequisite for this is the slave control units being in slave mode; this means the slave switches should be switched correspondingly if necessary. This master switch responds as follows:
- closed master switch: normal mode
- open slave switch: competition mode is activated after approx. 10 seconds

Example 1: single hall mode
All control units are in single hall mode and the slave switches on the slave controllers are closed. Each hall section is controlled individually via the sensors in each hall section (presence- and daylight-dependent). Additionally, each hall section can be individually controlled manually via possible push-buttons in the hall section or via the LiveLink app.

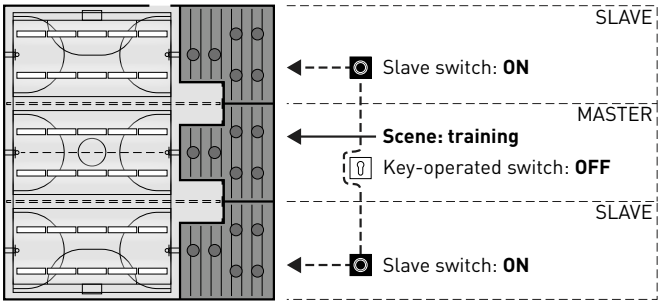


Example 2: single hall mode
A further example for single hall mode. The light control of the slave control units is implemented independently of the master, even if no light is switched on at the master control unit.

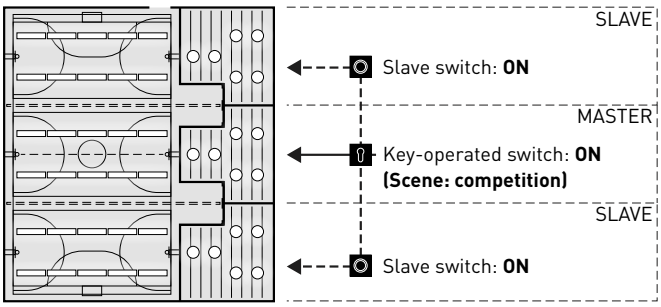


Example 3: complete hall operation
Controlling the complete lighting is implemented exclusively over the master, via the LiveLink app and also via the push-button connected to the master. The push-buttons of the integrated hall sections are deactivated. Only those hall sections are controlled with control units not switched to single hall control.

Note:
with complete hall mode, presence is detected by all sensors. The daylight-dependent control is automatically adopted by the sensor that records the lowest lighting level (lux value) (independently of whether it is connected to the master or a slave).



Example 4: competition mode
For competitions in sports halls, a key-operated switch can be connected to the master control unit and linked with a light scene in the LiveLink setup. With an open key-operated switch the scene is activated for all connected hall sections and the specific single hall controls are locked.



ON: open
OFF: closed

TECHNICAL DATA

The control device – the intelligent command centre.
The core element of the LiveLink control device is a Linux-based high-performance mini-computer which processes the incoming data streams and issues control commands to the system components. To make the communication with the installer as simple as possible, the control device is equipped with an integrated Wi-Fi module which can be controlled via tablet or smart phone.

Compact design – great flexibility
Thanks to its compact dimensions with a construction depth of just 22 millimetres, the control device can fit into shallow suspended ceilings without any problems. Also suitable for mounting on a DIN cap rail (TS35) with extra accessory.

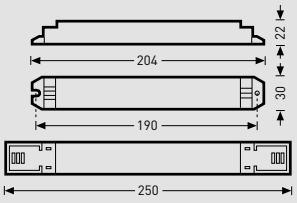
DALI interface for clever light management.
With the universal DALI interface, DALI-capable luminaires, sensors and push-buttons can be integrated, configured and controlled effortlessly. Each control device can individually address up to 16 luminaire groups. The maximum number of DALI members is 64.

Comfortable control via tablet or push-button.
The luminaires and/or groups of luminaires can be controlled either with a commercial installation push-button or via the app on a tablet or smart phone. Additional push-buttons can be connected via an optional LiveLink DALI push-button coupler that can be simply integrated into the DALI control circuit. The push-button can be configured freely – this way, "offline" groups of luminaires can be controlled too, or light scenarios called up.

Autarkic encryption for increased security.
To protect against external access, the control device is equipped with a Wi-Fi network with autarkic encryption. This way, the system remains unaffected by cyber attacks against the general computer network.

Configuration survives power outages.
No reprogramming is required after a power outage. The system configuration is stored in the control device so that the light management system is immediately fully operational again in the case of a restart.

Master-slave networking
For use in sports halls or industrial halls, up to 10 LiveLink WiFi Connect control units can be coupled over LiveLink's own WLAN. Because of the WLAN range of the system it must be observed that the Connect control units should be installed adjacently in the subdistribution. With this networking, both single room control (for each control unit) and overall room control (via all control units) is possible. The precondition for this function is the same Use Case in all LiveLink control units. For competitions in sports halls, a predefined light scene can be enforced with a key-operated switch.

Technical Data	
Weight	76 g
Input voltage	220-230 V
Input current	max. 50 mA
Input frequency	50/60 Hz
Standby power consumption	<2 W
Dimensions	
DALI members	max. 64
DALI output current	max. 128 mA
DALI groups	max. 16
Number of light scenes	max. 50
WiFi	IEEE 802.11b
WiFi encryption	WPA2
WiFi range	max. 25 m
Master-slave coupling	max. 10
Protection rating	IP20
Temperature of case tc max.	0-85 °C
Ambient temperature ta max.	0-65°C
Standards	IEC 61347-2-11 EN 55015 EN 61000-32 EN 61000-33 EN 61000-547 IEC 62386
Cable length for DALI	max. 300 m
Cable length for push-button	max. 25 m
Permissible cable cross-section	0,5 bis 1,5mm²
TOC	6925600

SETUP VIA THE INSTALL APP

Before setting up master-slave functionality, all control units (LiveLink WiFi Connect) must be set up separately for the individual hall sections and then interconnected via WLAN.

The WLAN connection can be implemented either with a supplementary WLAN router or directly between the control units.

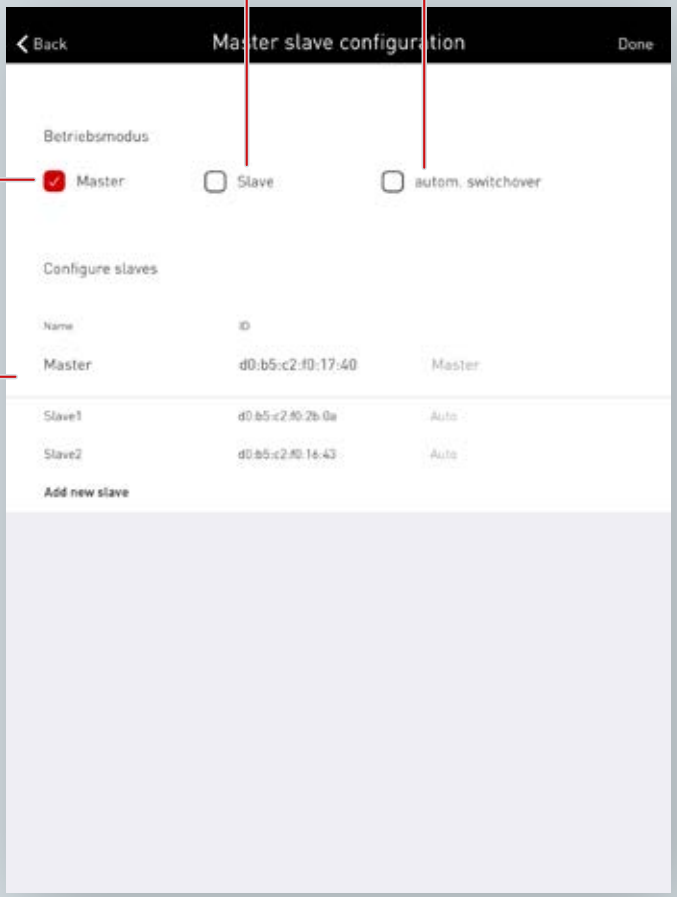
The „master-slave configuration" setting is made in the „Settings" menu.

Note:
the systems must first be set up before they can be interconnected. (Consult the **LiveLink System Manual** for setting up the systems). The controllers must be set up in the same Use Case.

Operating mode: Master
Configuration of a control unit as a master. The slave control units must be previously set up though.

Operating mode: Slave
Continuous setup of a control unit as a slave.

Operating mode: automatic switchover
Setup of a control unit for single room control that can be switched over to slave mode via a connected switch.



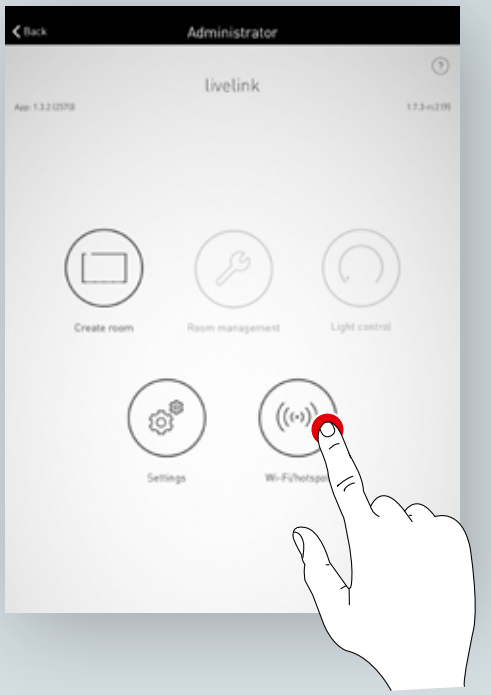
Assigning the master and slave control units
With a control unit functioning as a master, the links to slave control units can be added and deleted. With a control unit functioning as a slave, the associated master is displayed.

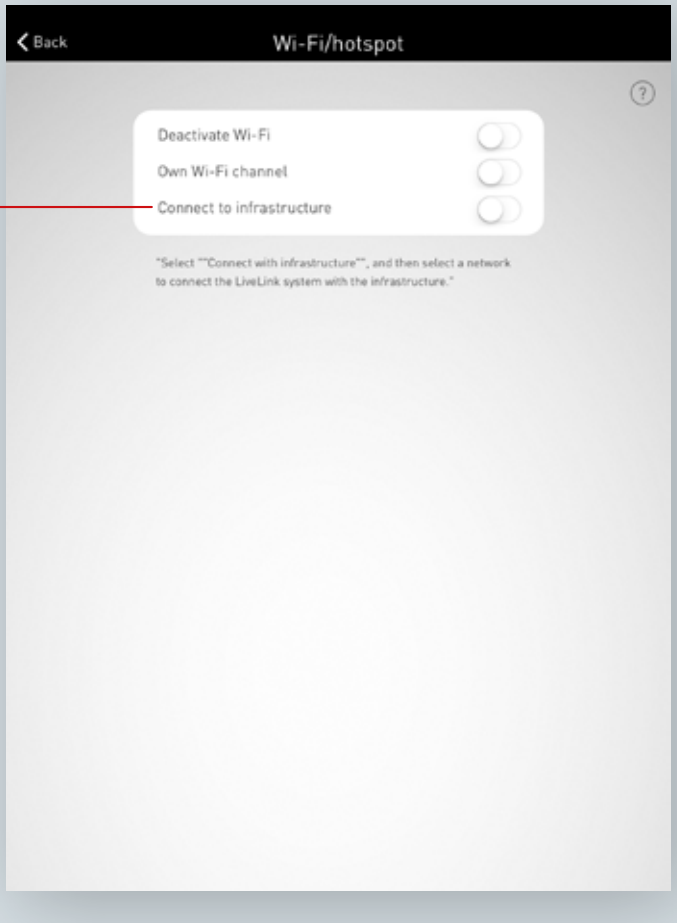
Note:
Only LiveLinks are displayed that are interconnected via WLAN.

WLAN SETTINGS

For setting up and using the master-slave function, the Connect control units are interconnected via WLAN.

For this purpose, all slave control units are connected with the WLAN of the master control unit. Alternatively, all control units including the master control unit can be connected via a supplementary WLAN router.





Connect with infrastructure

WLAN SETTINGS:
CONNECT TO AN EXISTING LOCAL NETWORK

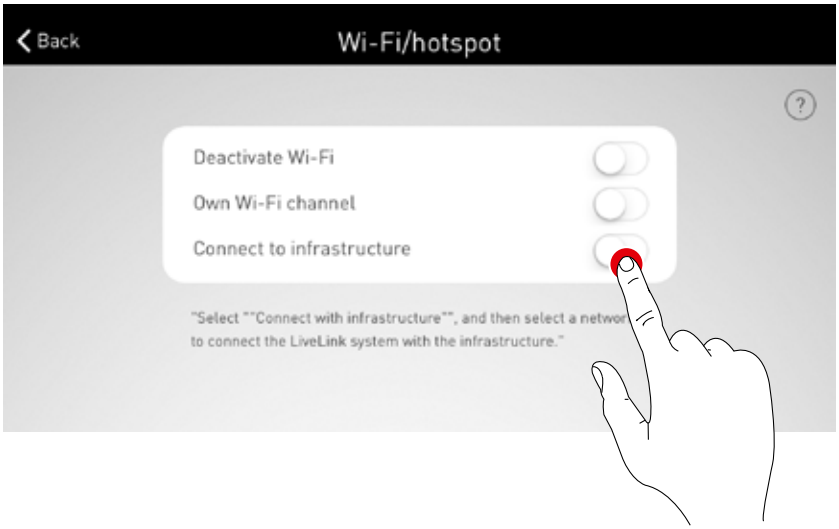
Technical requirements for the WiFi infrastructure

- **Encryption:** WPA/PSK, WPA2/PSK, WEP (not recommended)
- **WiFi standard:** 802.11bg
- **Frequency band:** 2,4 Ghz
- **Network:** DHCP or static IP
- **Port:** 8443 (not limited)
- The tablet and LiveLink must be located in the same subnet.

Technical basis for WLAN SSID

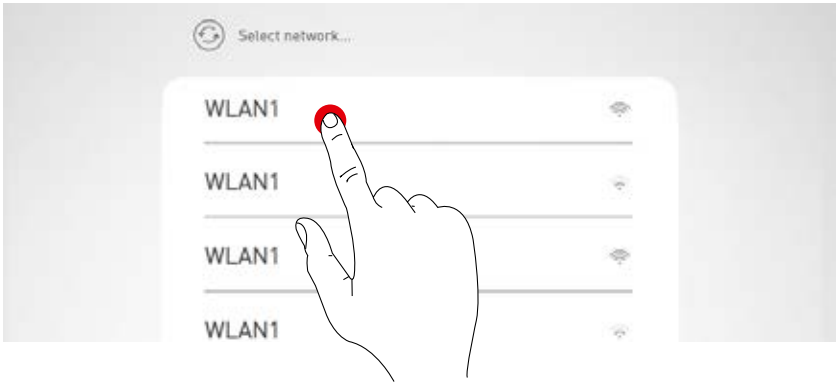
If an infrastructure connection is active the WLAN of the LiveLink control device is hidden (SSID broadcast is suppressed). The WLAN can still be used for service purposes. In this case the WLAN name must be manually entered for connection.

Switching on configuration of an existing local Wi-Fi network



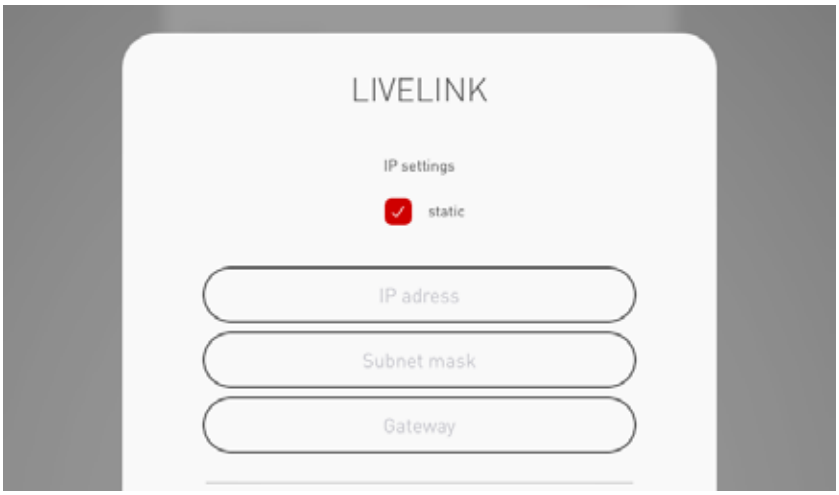
Select network

All available Wi-Fi networks are listed. The desired Wi-Fi network is selected.

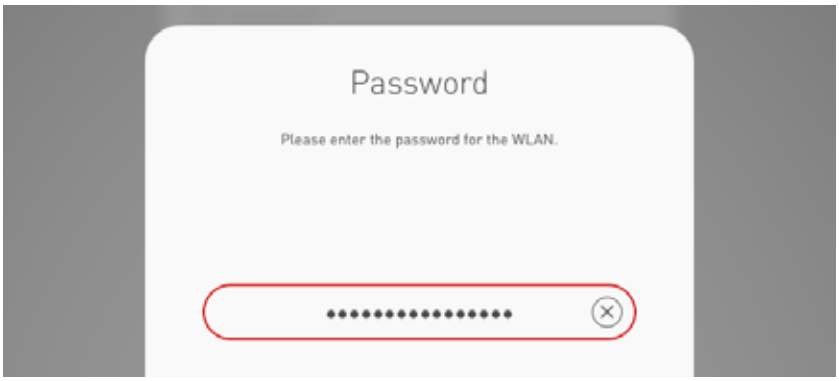


IP setting: dynamic (DHCP)
If the LiveLink control device is to be assigned an IP dynamically by the existing network (DHCP), the "static" tickbox should remain unticked..

IP setting: static
Alternatively, static IP settings can be applied.



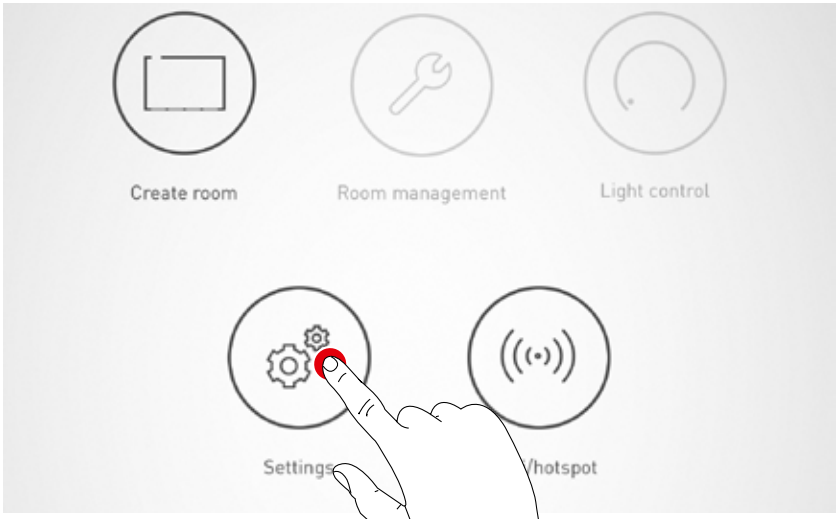
Enter the Wi-Fi password
Upon entering the password for the local Wi-Fi network the connection is established.

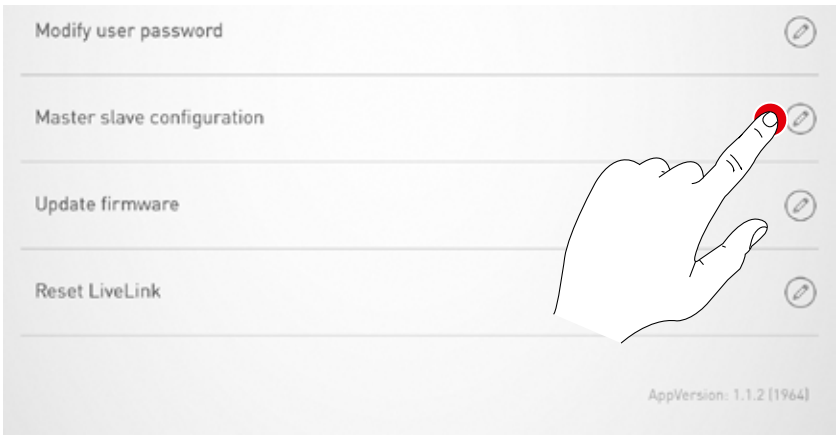


COMMISSIONING: MASTER SLAVE CONFIGURATION

Networking via WLAN
Each control unit is commissioned as usual using the LiveLink Install app. After this follows the networking of the control units and the master-slave assignment. Networking over the own WLAN is needed to enable the LiveLink control units to work in master-slave mode. For this purpose the WLAN of each slave must be connected to the WLAN of the master. This function is found in the Administrator menu under „WLAN/Hotspot"; see also the chapter „WLAN settings: Connect with infrastructure".

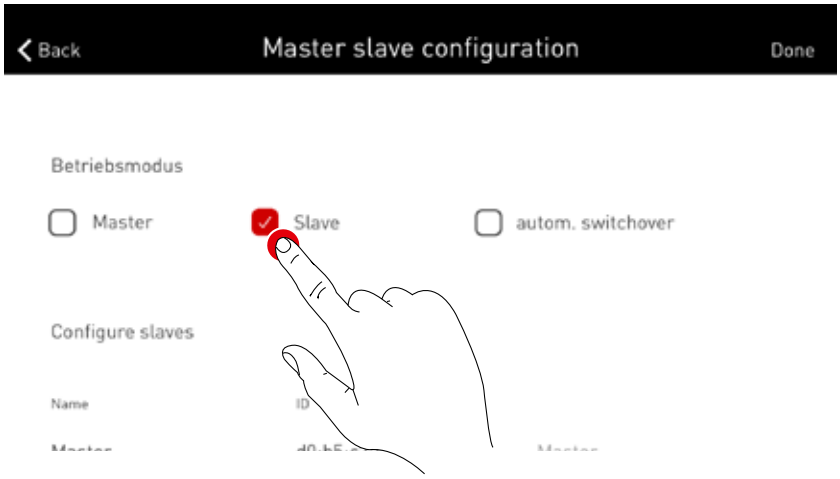
Setting up the master-slave configurations
After completing the setup of each individual LiveLink control unit, the master-slave configuration is carried out. The precondition for fault-free operation is setting up each control unit with the same Use Case.





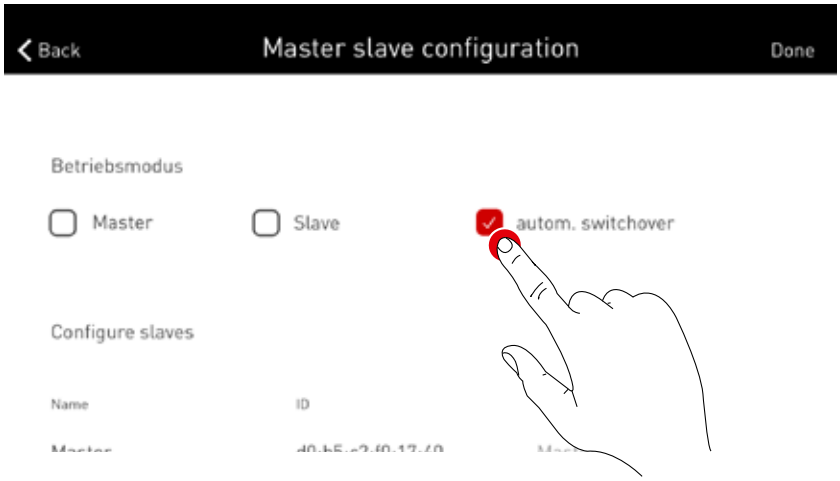
First all slave control units must be configured with the slave operating mode

Slave configuration (permanent)
By selecting the slave operating mode, the control unit is specifically set up via the app as a slave. Only after this can the slave be assigned to a master (see master configuration).

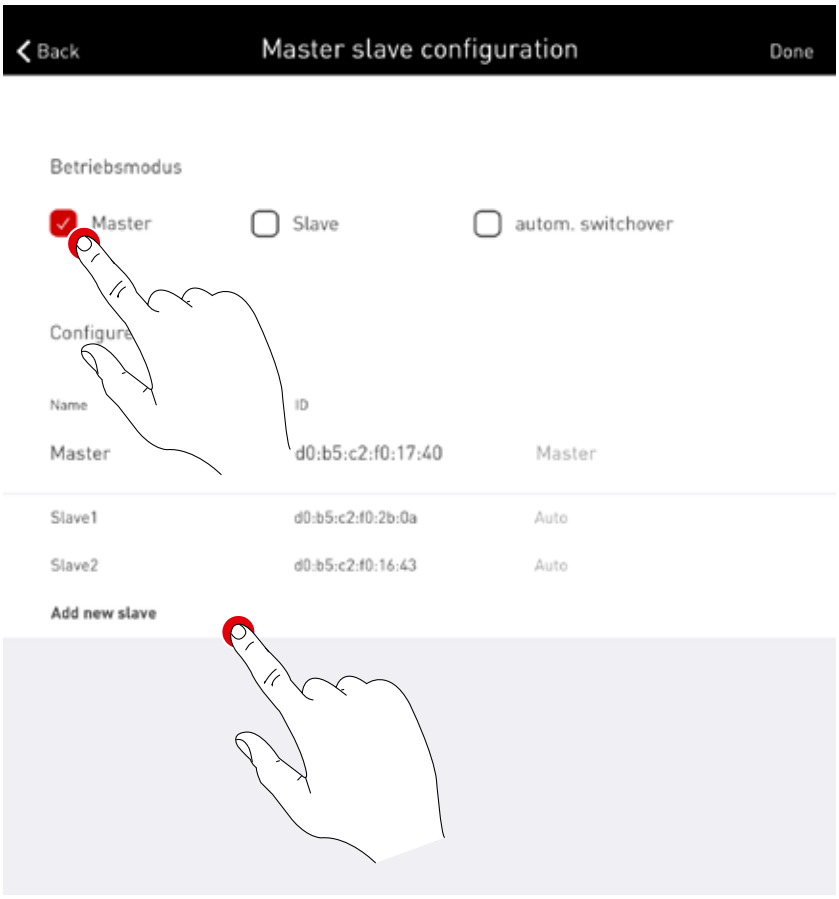


Slave configuration (automatic switchover)
The operating mode „autom. switchover" can also optionally be used. This operating mode enables automatic switchover from individual room control (e.g. a section of the sports hall) to complete room control (e.g. a multi-purpose hall).
The control unit automatically changes its operating mode from a master to a slave by permanent closing of the push-button input on the control unit (see wiring diagram in the chapter „LiveLink WiFi Connect": Master-slave switching). This can be manually actuated via a switch in the hall, or in a sports hall e.g. using a limit position switch.

- Switch opened: part- or complete hall mode, central control of all connected hall sections via the master
- Switch closed: single hall mode, individual control of the hall section via the slave



Master configuration
Specification of the master and assignment of the corresponding slaves.



After actuating „Add new slave" a selection box is displayed with all available slave control units. The list only shows control units already connected with the master via WLAN and configured with slave operating mode or autom. switchover.

Competition scene via key-operated switch
Sports halls specifically require a competition scene that is activated via a key-operated switch and that locks all further control in the sports hall.
To implement this need, a key-operated switch is connected at the push-button input of the master control unit, and linked with a light scene as usual when setting up the system. Actuating the scene is carried out by closing the key-operated switch – this disables calling up of any other scenes. The default scene of the master is only called up again after opening the key-operated switch. The scene control is then released.

ORDER DATA

	Reference	Description	TOC
Controller			
	LiveLink WiFi Connect	LiveLink control unit with DALI output for controlling up to 64 DALI devices, with integrated WLAN module for commissioning and operation via tablet or smartphone, master-slave networking of up to 10 control units via WLAN, including mounting clips for VDE-compliant connection in the ceiling or cavity wall	6925600
Sensor			
	LiveLink Sensor IR Quattro HD	PIR room sensor for daylight-dependent control and presence detection (for installing in ceiling, mounting height 2.5m to 10m, square detection zone: 8x8m to 20x20m), connection to LiveLink system via DALI line, occupies 3 DALI devices	6565500
	LiveLink Sensor IS 3360 MX Highbay	PIR highbay sensor for presence detection (for installing to ceiling, mounting height 3m to 14m, round detection range of max. Ø36m), connection to a LiveLink system via the DALI line, occupies 3 DALI devices.	6781000
Accessories			
	LiveLink DALI PB4	Push-button coupler for connecting up to 4 standard installation push-buttons, freely definable button functions, connection to LiveLink system via DALI line, occupies 1 DALI device.	6565200
	LiveLink Sensor AP BOX	Ceiling installation set for surface-mounting IR Quattro HD and Dual HF sensors, IP54.	6565700
	LiveLink Sensor BSK	Ball protection guard for the LiveLink sensors.	6565800
	LiveLink KNX Interface	KNX interface for integrating into KNX building control, rail-mounted device (2 sub-units), integration of up to 5 LiveLink control units via WLAN, equipped with KNX bus terminal and LAN RJ-45 jack.	6781200
	LiveLink ZREG	Cap rail adapter set consisting of two universal mounting brackets for installing the LiveLink control unit to a DIN cap rail.	7006700
	LiveLink Use Case	Individual use case with project-specific room configuration.	6912000

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