



stay on top of the situation

# Sense and Control

**iLumTech**<sup>™</sup>  
Innovation ahead



stay on top of the situation

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We all like it when things happen the way we want without us having to think about it. Thanks to the great technical advancement of recent years, it is now possible for new devices to sense and understand our needs and subsequently modify our environment and many of the things in it. The same applies to lighting. The best control system is the one that is invisible and just works; the one we never really think about.

To accomplish this, there are many sensors to measure light intensity, light type, and the presence of people, according to which lighting is switched, dimmed, or altered in some way. Yet there are times when we still want or need to take charge, meaning manual control is a necessary option for even the most innovative automated system. Wireless or wired, controlled by computer, tablet, or smartphone, or simply by a wall switch, iLumTech offers several smart possibilities that provide all the required and desired features for automated lighting control.



### SAVE ON INVESTMENT COSTS

iLumTech controls and sensors are generally supplied ready to take a universal and active part in any DALI installation. They offer several functions within one device meaning there is no need to buy additional equipment.

### EASY INSTALLATION

All iLumTech Sense & Control devices are designed to be incorporated into existing or new DALI installations with minimal setup and configuration. DeeBridge and BlueBridge will address your DALI installation for you.

### SAVE TIME

Significant time savings can be achieved for all types of installation and project as system addressing and commissioning can be done in just a few minutes.

### SAVE ENERGY

Sensors save energy by enabling lighting to be used as needed – no more, no less. What's more, iLumTech sensors have little to no power consumption.

### SAVE ON MAINTENANCE COSTS

iLumTech devices enable easy commissioning and control using a single device without the user needing knowledge of DALI installation principles. This reduces both installation and maintenance costs as tasks that must normally be carried out by electricians and installers can now be done by the user directly.

### THE FREEDOM TO MOVE

iLumTech control devices are mainly built around mobile platforms allowing users the freedom to move throughout an installation. It also means a user can commission the system alone, without needing anyone else to help.

### FULL LIGHTING CONTROL

iLumTech's Sense & Control devices can understand every aspect of our lighting including light intensity and colour temperature because all lighting parameters are important to our health and wellbeing.

# Wireless controls

Wireless controls allow us to select and maintain the light we want without being tied to static interfaces. Instead, users can interface through their smartphones and tablets wherever they are. So easy, this is great for use in places where people are always coming and going.

## DEEBRIDGE

- An Ethernet to DALI bridge and easily operated user interface app for the control of luminaires in a DALI installation via an Ethernet network from a computer, tablet, or smartphone
- Runs on Windows, Android, and iOS
- Provides dimming, TW, and RGB control via buttons, sliders, lighting scenes, and schedules
- Automatic commissioning

## BLUEBRIDGE

- A DALI control solution that control DALI installations via Bluetooth Low Energy (4.1) from a tablet or smartphone
- User-friendly Android and iOS app
- Provides dimming, TW, and RGB control via buttons, sliders, lighting scenes, and schedules
- DALI powered with push-to-connect DALI terminals make it easy to install.
- Small dimensions and simple design ensure reliability
- Automatic commissioning and smart switching function



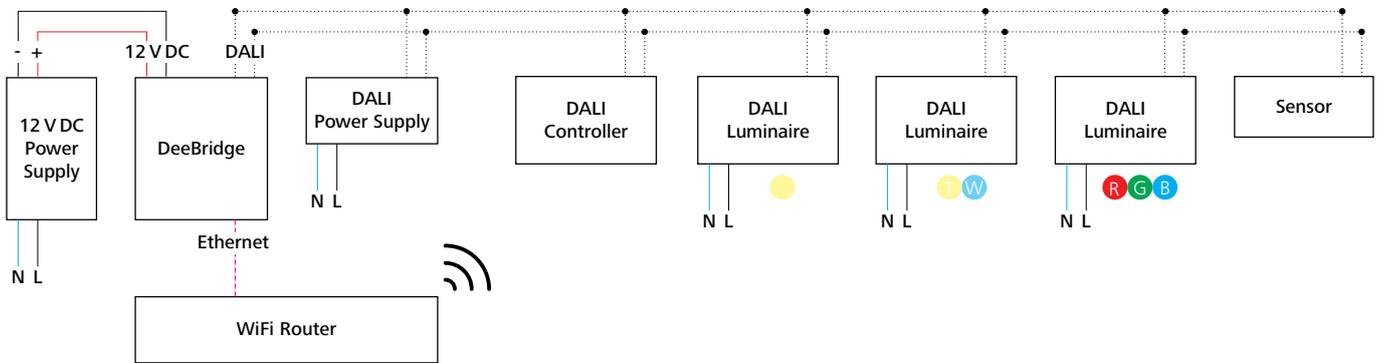
# DeeBridge



An Ethernet to DALI bridge device with easily operated user interface app. DeeBridge enables intuitive control of luminaires within a DALI installation via an Ethernet network from a computer, tablet, or smartphone. The device is housed in a standard 2U DIN box for easy installation in electrical switchboards.

## SPECIFICATION AND TECHNICAL PARAMETERS

- App runs on Windows, Android, and iOS
- Mains biased using a 12 V external power supply (not included but available on request)
- Standard or advanced automatic and manual TW and RGB control
- Customisable static and dynamic lighting scenes, and schedules
- Integrated web server for initial setting
- Wireless control via Wi-Fi router
- Fast DALI network scanning
- Auto commissioning
- Smart switching
- Dimensions: 2U DIN rail box – 94 x 36 x 60 mm



# Intuitive control from your personal devices



## SETUP AND CONNECTION

- DeeBridge requires initial IP address setting and setup via a web interface on a LAN-connected computer
- The computer must be setup to connect to DeeBridge using a specified TCP/IPv4 configuration
- The first time you run the DeeBridge app or when you are unable to connect, it will automatically scan the sub-network for available DeeBridge devices
- You can save found devices with a name for easy future identification and connection

## FAST SCANNING

- The first time you run the DeeBridge app, it will rapidly scan the DALI network for its configuration
- It can also commission a new or updated network itself, so there is no need to use external commissioning tools

## LUMINAIRE SETUP

- It is not possible for the app to differentiate between single colour, TW Type 6, or RGB luminaires so the user must define this information
- Select from one of first four displayed options to assign each luminaire its control type: BASIC (single colour with 1 address), TW COLD / WARM (2 addresses), TW BRIGHT. / CCT (2 addresses), or RGB (3 addresses)
- Type 7 switches and Type 8 colour control devices are automatically recognised, and only appropriate configuration options are displayed
- The luminaire "list" can be checked and updated at any time



## CONTROL METHODS

- Broadcast: allows for control of all luminaires in the network at once using dimming and basic DALI commands via sliders or lighting scenes
- Group – allows for control of selected luminaire groups via sliders and lighting scenes
- Individual – allows for control of individual luminaires via sliders
- Lighting scenes – allows for broadcast or group control using pre-defined or saved user-defined lighting parameters

## GROUP SETTING AND CONTROL

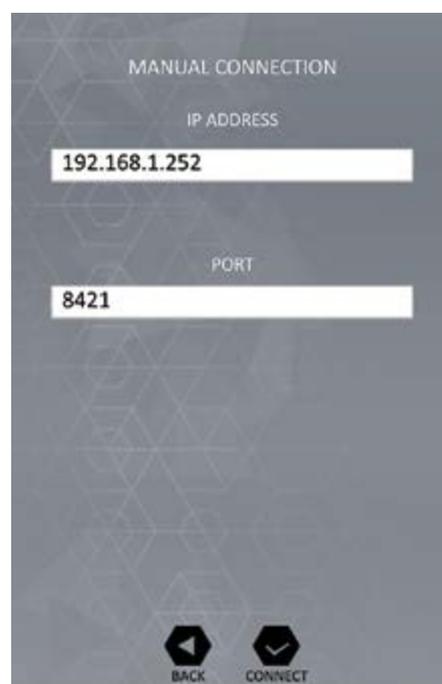
- When setting up a new group, you will be asked to assign the group to a specific DeeBridge device
- Select an icon and name for the group to aid easy identification
- The selected group type will only show corresponding luminaires (e.g., RGB luminaires will be displayed when setting up an RGB group)

## LIGHTING SCENES

- Choose from a series of pre-defined lighting scenes or create your own
- You can select an icon and name for your custom lighting scenes to make identification easier

## SETTINGS AND CONFIGURATION FILES

- Within the Settings section of the app, you can manage group configurations, edit the luminaire "list", clear the app configuration, and manage language options
- It is possible to save the current DeeBridge configuration to a file that can be restored or moved to another smart device (via upload and download)



The screenshots shown are to illustrate the options and functionality of DeeBridge only. For a full explanation of what you can do with DeeBridge, please refer to the device User Guide downloadable from [www.ilumtech.eu/download](http://www.ilumtech.eu/download).

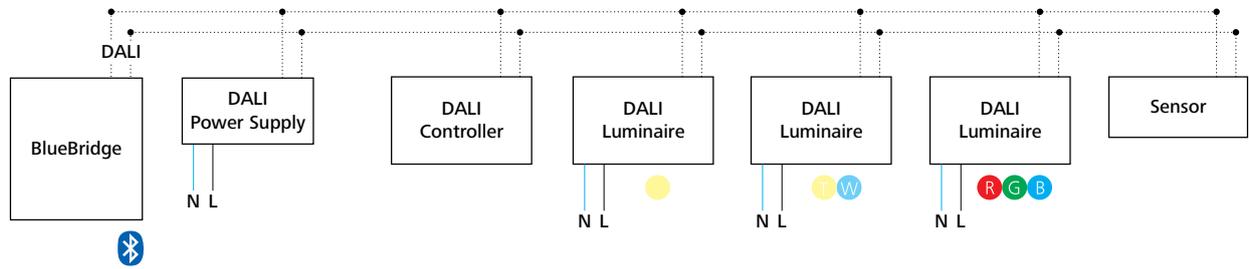
# BlueBridge



BlueBridge enables intuitive control of luminaires within a DALI installation via Bluetooth Low Energy (4.1) from most Android tablets or smartphones (smart devices must be equipped with a BLE 4.0 or higher chipset and marked as Bluetooth SmartReady). The device requires no external power supply and has small dimensions and simple construction, making it a reliable and very easy to install and use controller for DALI installations.

## SPECIFICATION AND TECHNICAL PARAMETERS

- User-friendly Android (4.4 or higher) and iOS app
- DALI biased so no external power supply needed
- Push-to-connect DALI terminals – easy to install and use
- Fast DALI network scanning
- Auto commissioning
- Smart switching for automatic reconnection of Bluetooth devices within a network
- DALI voltage: 12–25 V DC
- DALI consumption: < 10 mA
- System power: < 0.25 W
- Current range: max. 1 mA
- IEC class II
- Dimensions: 50 x 35 x 15 mm



# Mobile control made easy



## SETUP AND CONNECTION

- Once the BlueBridge app is installed on your Bluetooth SmartReady Android smartphone or tablet, simply search for the UUID of available BlueBridge devices
- Select the device you wish to use using the UUID and give it a name – the UUID of your chosen device will be remembered to make reconnection easier and faster in future
- You can always select a different BlueBridge if you are using multiple devices within a system
- Only one smart device can connect to each BlueBridge at a time
- An icon beside each BlueBridge identifier shows if you are connected

## FAST SCANNING

- The first time you run the BlueBridge app, it will rapidly scan the DALI network for its configuration
- It can also commission a new or updated network itself, so there is no need to use external commissioning tools



## LUMINAIRE SETUP

- It is not possible for the app to differentiate between single colour, TW Type 6, or RGB luminaires so the user must define this information
- Select from one of first four displayed options to assign each luminaire its control type: BASIC (single colour with 1 address), TW COLD / WARM (2 addresses), TW BRIGHT. / CCT (2 addresses), or RGB (3 addresses)
- Type 7 switches and Type 8 colour control devices are automatically recognised, and only appropriate configuration options are displayed
- The luminaire "list" can be checked and updated at any time

## CONTROL METHODS

- Broadcast: allows for control of all luminaires in the network at once using dimming and basic DALI commands via sliders or lighting scenes
- Group – allows for control of selected luminaire groups via sliders and lighting scenes
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- Lighting scenes – allows for broadcast or group control using pre-defined or saved user-defined lighting parameters

## GROUP SETTING AND CONTROL

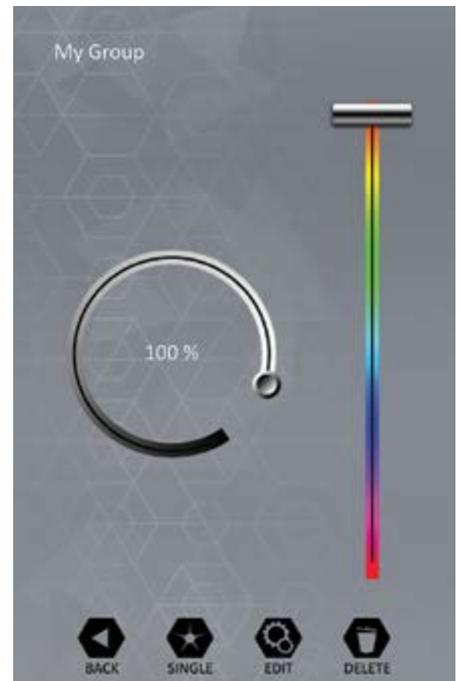
- When setting up a new group, you will be asked to assign the group to a specific BlueBridge device
- Select an icon and name for the group to aid easy identification
- The selected group type will only show corresponding luminaires (e.g., RGB luminaires will be displayed when setting up an RGB group)

## LIGHTING SCENES

- Choose from a series of pre-defined lighting scenes or create your own
- You can select an icon and name for your custom lighting scenes to make identification easier

## SETTINGS AND CONFIGURATION FILES

- Within the Settings section of the app, you can manage group configurations, edit the luminaire "list", clear the app configuration, and manage language options
- It is possible to save the current BlueBridge configuration to a file that can be restored or moved to another smart device (via upload and download)



The screenshots shown are to illustrate the options and functionality of BlueBridge only. For a full explanation of what you can do with BlueBridge, please refer to the device User Guide downloadable from [www.ilumtech.eu/download](http://www.ilumtech.eu/download).

# Fast scanning, auto commissioning, and customisable settings

SCAN A FULL DALI  
NETWORK IN ONLY  
**20 SECONDS**

## FAST SCANNING OF THE DALI NETWORK

Network scanning is now carried out directly in the DeeBridge or BlueBridge device, so there is no need for additional communication between the devices and their apps. As a result, scanning is much faster than before, approximately 20 seconds for a full DALI network of 64 devices.

COMMISSION A FULL,  
UNCONFIGURED DALI  
NETWORK IN ONLY

**4 MINUTES**

OR

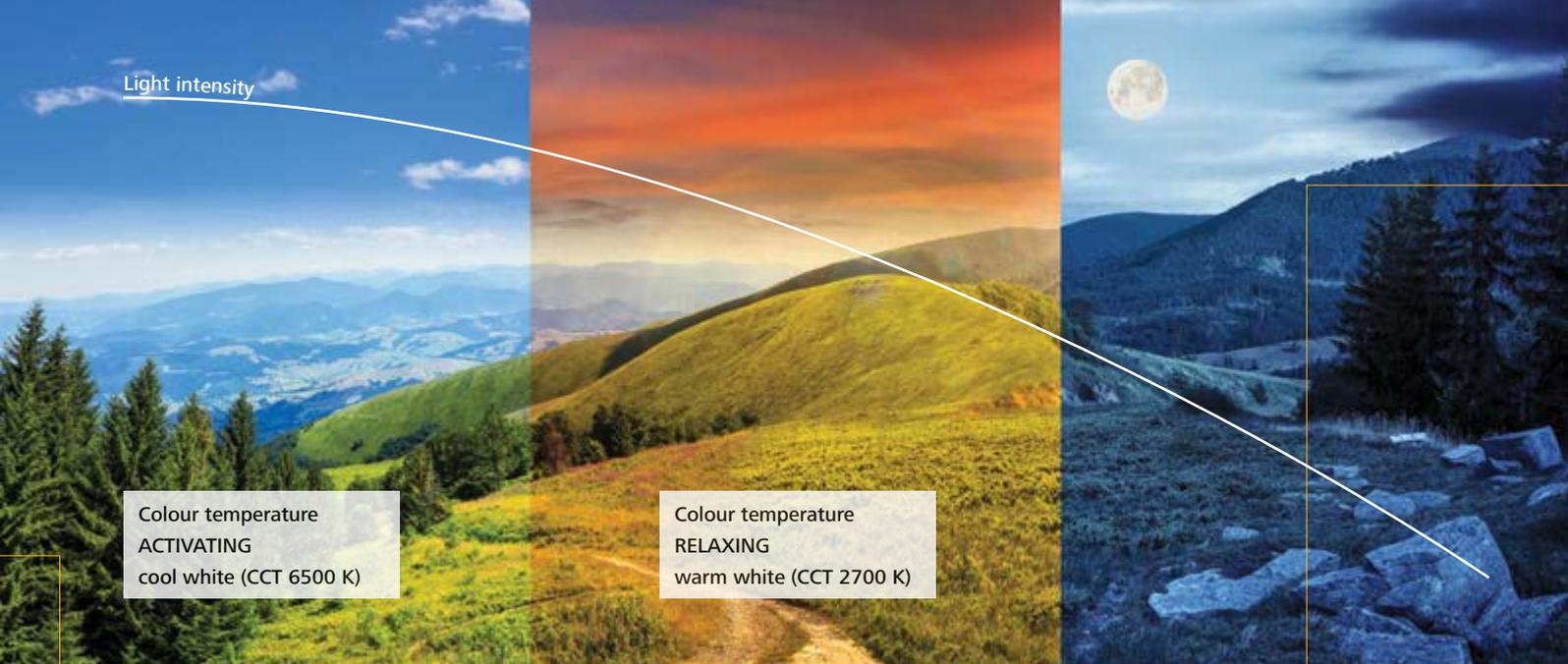
**4 SECONDS  
PER DEVICE**

## AUTO COMMISSIONING

After scanning of the DALI network, the app will automatically recognise which DALI devices have no address, a duplicate address, or are ok. Then it will begin the commissioning process where every DALI device on the bus is assigned a suitable, individual address. How long the commissioning process takes depends on the number of DALI devices on the bus and their addressing status. The longest time will be taken to commission a new, unaddressed DALI installation with 64 devices. This can take up to four minutes; around four seconds per device.

## PRESET AND CUSTOMISABLE LIGHTING SCENES

Lighting scenes are one of the preferred ways of control for DALI installations. For this reason, the app includes a series of five pre-set scenes as well as the option to create up to four customised group lighting scenes to perfectly match the device possibilities of the network and user needs. Pre-set scenes cover dimming, TW, and RGB control.



## BASIC AND HUMAN CENTRIC SCHEDULES

Both DeeBridge and BlueBridge include real-time clock modules that enable the creation of up to four customised, scheduled lighting sequences. Schedules function on a weekly basis and allow for independent activation for each day of the week, and provide basic functions as well as more advanced TW and RGB control. There is also the possibility to create Human Centric schedules that utilise smooth transitions of TW light. Each schedule can have up to thirty time stamps and so offer a wide scope for creation of detailed lighting sequences. As the real-time clock module is integrated directly within the DeeBridge and BlueBridge devices, schedules function even if the apps are not running. When the app is started again, the device and app are automatically synchronised. In the case of the BlueBridge device, a backup power supply ensures that the clock module remains active for two hours after power loss, such as during a power cut.

## SENSOR AND CONTROL DEVICE SUPPORT

Sensors have become an essential part of every smart lighting installation. To fully support ecological lighting, we have included support for sensors in the DeeBridge and BlueBridge apps. Users can configure and activate iLumTech light intensity, CCT, and movement sensors simply via the app and then incorporate them into existing groups. And for those times when manual control is required, it is possible to configure iLumTech DALI Input Units using the easy interface inside the app.

## FIRMWARE UPDATES

We are always adding new features to our DeeBridge and BlueBridge devices. Many of these features are based on firmware rather than hardware updates. We offer free firmware updates so that customers can always benefit from the latest functions. The DeeBridge or BlueBridge app will automatically notify users of any available firmware updates. Firmware files are included in the apps, so there is no need for uncomfortable file browsing.

# Wired controls

The simplest method of controlling your lighting is through static interfaces. For many applications such as small offices, meeting rooms, and even our homes, this is still the most suitable and easiest to implement and use option. From switches to touch panels, the light you want is at your fingertips.

## DALI INPUT UNIT

- A DALI compatible interface designed to control DALI luminaires via standard on-off devices such as switches, sensors, timers, etc.
- Small size and integrated PCB make it easy to install directly behind switches and other switching devices
- DALI powered with up to 4 universal binary (2-state) inputs

## DLS PANEL II

- A 7" touchscreen display control panel with simple GUI for TW and RGB control of DALI luminaires
- Can be connected to sensors and up to three DALI buses
- DALI Type 8 compatible
- Provides manual or automatic dimming, TW and RGB control via direct regulation, schedules, customisable lighting scenes, and customisable dynamic lighting scenes such as daylight simulation

## DALI 4x RELAY

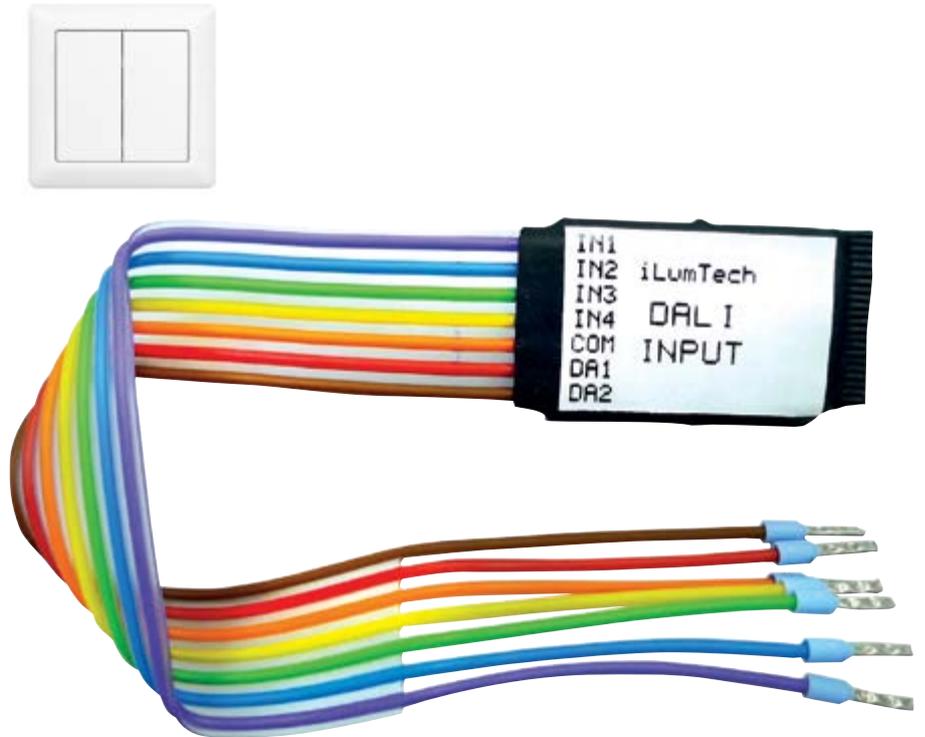
- A DALI compatible relay device that enables the independent switching of up to four non-DALI devices (luminaires and others) via a DALI interface
- One DALI address per contact (DALI device Type 7 compatible: EN 62386-208)
- Includes a push button manual interface for testing

## DALI / USB BRIDGE

- A user-friendly, USB powered tool for the setup and commissioning of DALI networks
- Supports DALI standards for device types 1, 6, 7, and 8
- Supports all iLumTech DALI devices



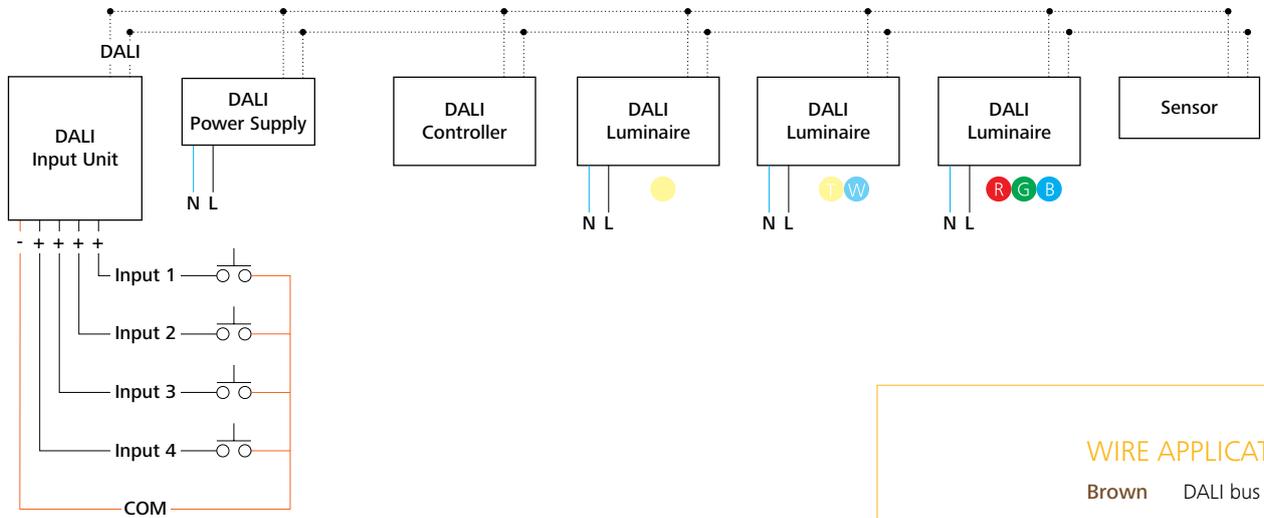
# DALI Input Unit



A fully DALI compatible interface that allows for the incorporation of any type of standard switch, button, timer, sensor, or other switching device into a DALI network. The Input Unit is a small, pre-wired, encapsulated PCB module suitable for inclusion in all standard back boxes together with a suitable mains rated switch. The Input Unit can be used to switch on/off, dim, and even control TW and RGB luminaires.

## SPECIFICATION AND TECHNICAL PARAMETERS

- DALI biased (only one DALI Power Supply may be used) with up to four inputs to support four DALI addresses
- Universal binary (2-state) input with DALI output
- Pre-set configuration that can be reprogrammed on request
- User-defined reaction to combination of long (> 1 s) and short (< 1 s) presses using static, direct level, or toggle commands
- DALI voltage: 12–25 V DC
- DALI consumption: < 9 mA
- Inputs: Voltage range open 5 V DC, closed max. 0.3 V DC
- Current range: max. 1 mA
- Dimensions: 27 x 20 x 4 mm



### WIRE APPLICATION

- Brown DALI bus
- Red DALI bus
- Orange COM
- Yellow Input 4
- Green Input 3
- Blue Input 2
- Purple Input 1



# Use and configuration

The DALI Input Unit is designed for use with standard push buttons ("push to make" push button switches) that create a short circuit when pressed. The length of the press determines the commands actuated by the device based on the counting of the duration of the detected short circuit. A short press is defined as a short circuit lasting for a period of less than one second. This sends a single command such as ON or OFF. A long press is defined as a short circuit lasting for a period longer than one second. It is possible to configure long presses to send single commands or repeat commands such as UP and DOWN for dimming.

## CONFIGURATION

The DALI Input Unit is supplied with default configuration (see table below) but can be reconfigured by the user allowing them to define what commands short and long presses represent (see the table on the opposite page). A command repetition rate of once per 0, 0.15, 0.3, 0.45, 0.6, 0.75, 0.9, or 1.05 seconds can also be set, with selection of 0 seconds disabling the repeat sending of commands. A shorter repeat rate means that brightness will increase or decrease faster in line with the programmed fade rate of the used driver(s). This applies to both smooth and incremental brightness changes.

## LUMINAIRE, GROUP, AND NETWORK CONTROL

Each of the four inputs to the DALI Input Unit can be configured to control a single DALI luminaire, a defined DALI group (up to 16 groups containing no more than 64 DALI luminaires in total), or to send broadcast commands to an entire DALI network (up to 64 DALI luminaires).

## DEFAULT CONFIGURATION SETTINGS

Input	Address	Short press	Long press
1	Broadcast	Recall max. level (ON)	UP
2	Broadcast	OFF	DOWN
3	Group 1	Recall max. level (ON)	UP
4	Group 1	OFF	DOWN

It is not possible to increase or decrease brightness while the device is OFF using the UP / DOWN or STEP UP / STEP DOWN commands. However, the ON AND STEP UP and STEP DOWN AND OFF commands also incorporate "switching" on and off.

## STANDARD COMMANDS

Command	Action
Recall max. level (ON)	"switch" on to maximum brightness level defined by driver
Recall min. level (ON)	"switch" on to minimum brightness level defined by driver
OFF	"switch" off
UP	smooth increase of brightness
DOWN	smooth decrease of brightness
STEP UP	incremental increase of brightness
STEP DOWN	incremental decrease of brightness
ON AND STEP UP	recall min. level (if switched off) and incremental increase of brightness
STEP DOWN AND OFF	incremental decrease of brightness and OFF (if min. level reached)

## TOGGLE COMMANDS

Toggle commands are like 2in1 commands because they allow you to use the same button for two actions. For example, a single short press could mean ON, and a second short press OFF. It is also possible to use other commands combinations. A third press will repeat the same operation as the first, and the fourth press the same as the second, etc.

Command	Action
Recall max. level (ON) / OFF	first press "switch" on / second press "switch" off
MAX. LEVEL / MIN. LEVEL	select maximum brightness / select minimum brightness
SCENE X / SCENE Y	select scene X / select scene Y

## SPECIAL TUNABLE WHITE COMMANDS

There are several commands for use specifically with DALI Type 8 Tunable White devices to change CCT values according to defined parameters.

Command	Action
DT8 – CCT 2700 K	modifies the CCT of controlled luminaires to 2700 K
DT8 – CCT 3500 K	modifies the CCT of controlled luminaires to 3500 K
DT8 – CCT 4500 K	modifies the CCT of controlled luminaires to 4500 K
DT8 – CCT 6000 K	modifies the CCT of controlled luminaires to 6000 K
DT8 – Step Warmer	modifies the CCT of controlled luminaires to the next warmest setting
DT8 – Step Cooler	modifies the CCT of controlled luminaires to the next coolest setting

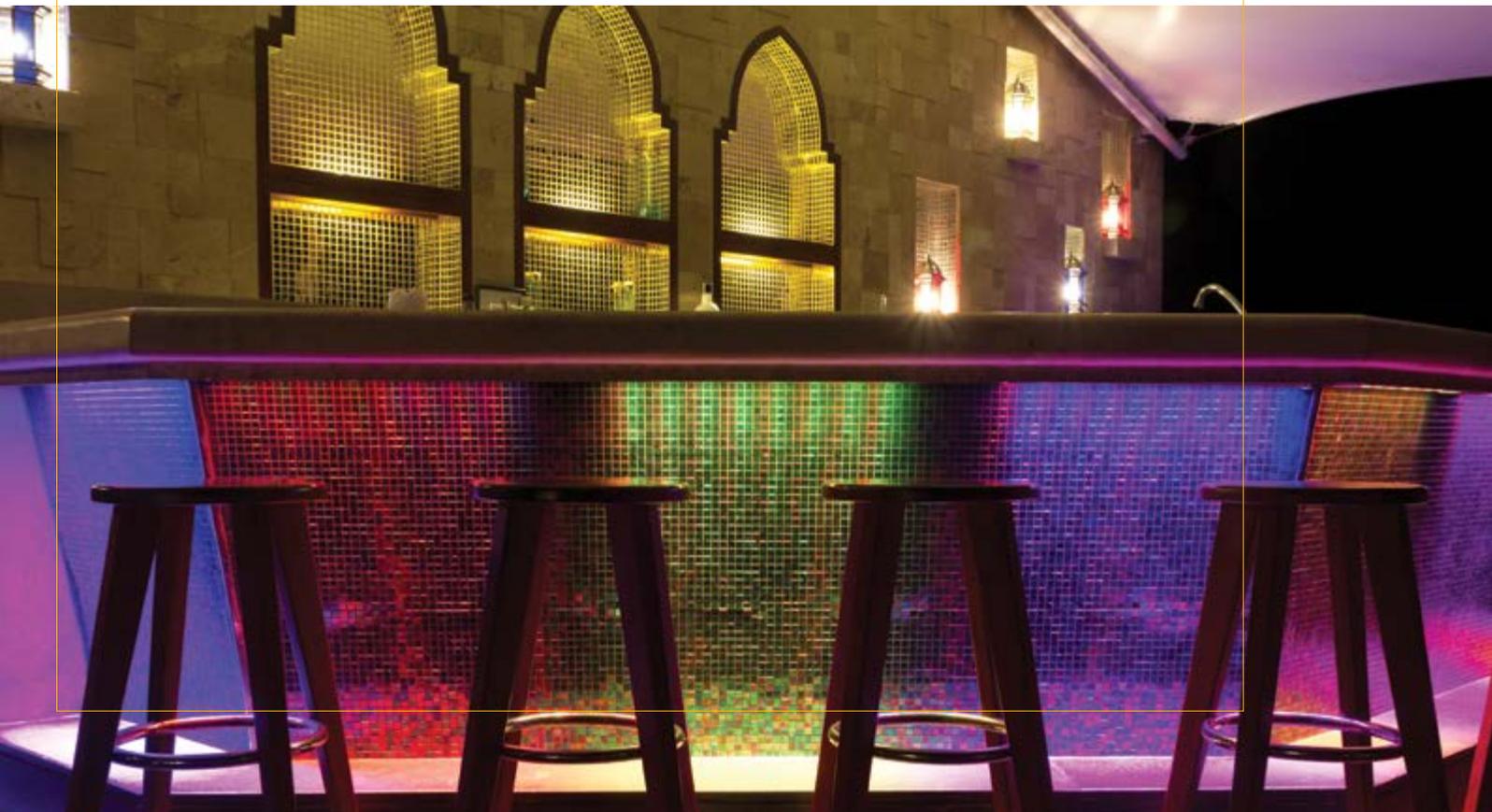
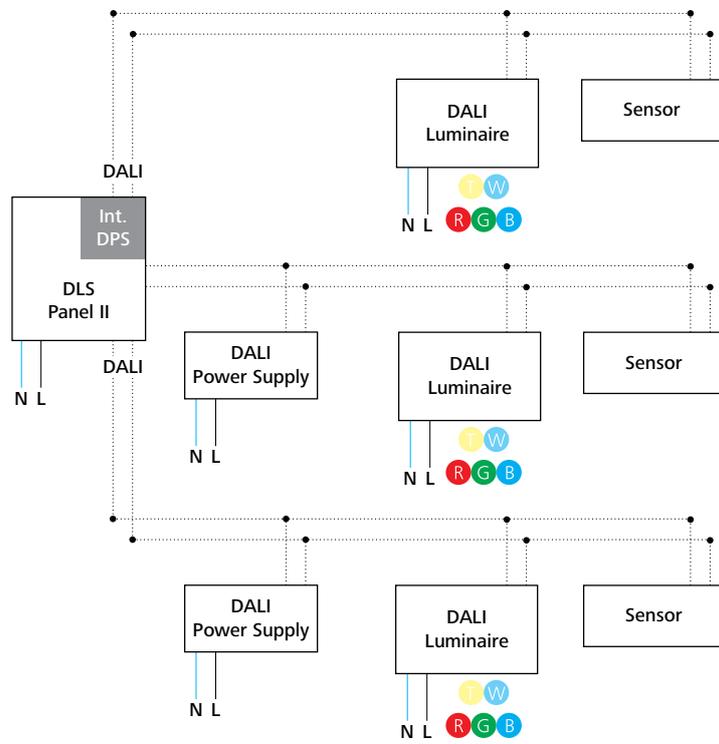
# DLS Panel II



A 7" capacitive TFT anti-glare, 262,000 colour touch panel device with easy GUI for the control of TW **or** RGB luminaires. Users can use pre-set lighting scenes or create their own. Automatic control can be overridden by manual control at any time. It is possible to connect sensors to increase the intelligence of the installation using motion and ambient lighting parameters sensing. DLS Panel II can control up to three DALI lines and so it suitable for the control of larger installations. DALI Type 8 device compatible.

## SPECIFICATION AND TECHNICAL PARAMETERS

- Supports up to 192 DALI Type 8 devices (96 TW **or** 64 RGB Type 6)
- Mains biased via internal 12 V DC power supply
- 3 independent DALI lines – one internally powered
- Automatic and manual control options
- Pre-set dynamic lighting scenes and customisable static and dynamic lighting scenes, and schedules
- Can be connected to motion and ambient light sensors
- Password protection, screen savers, and energy saving mode
- Input: 12 V DC
- Power consumption: max. 9 W
- Memory: 256 MB SDRAM / 128 MB NAND FLASH
- Networking: LAN, 3 x DALI (1 x DALI internally powered – 250 mA)



# Setting the right scene

## OPERATIONAL MODES

- Tunable White with ambient sensor (closed loop)
- Tunable White without a sensor (open loop)
- RGB



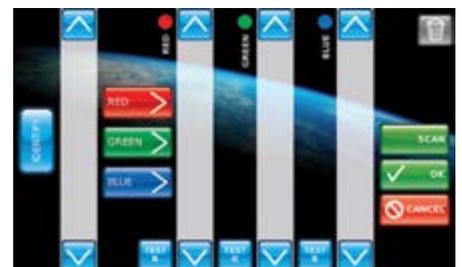
## GENERAL SETTINGS

- Date and time
- Screen and screensaver
- Touch panel sensitivity and cleaning mode
- System modification and new initialisation of DALI networks
- Security settings and customisable password protection
- Ethernet communication – DLS Panel II has its own IP address or can operate using any static IP address



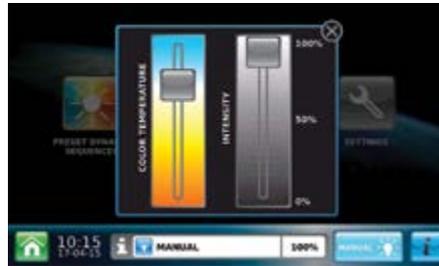
## FAST SCANNING

Automatic fast scanning and addressing can be carried out simply by selecting "Scan" on the screen. Afterwards, users can create groups by selecting and assigning luminaires as required.



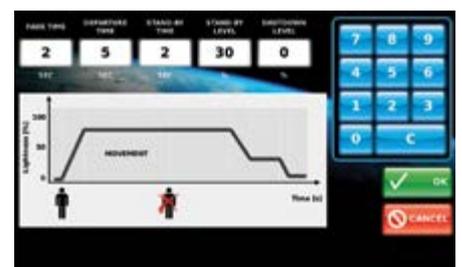
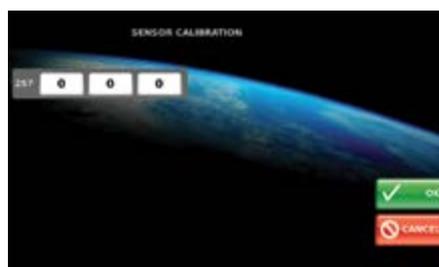
## CONTROL MODES

- Manual – direct control of colour intensity, colour temperature, colour hue, colour saturation, and light intensity of luminaires
- Preset static – Tunable White or RGB scenes
- Custom static – Tunable White or RGB scenes
- Preset dynamic – Tunable White DAYLIGHT, ACTIVATE, and MOVING sequences
- Custom dynamic – customisable sequences with automated changes of lighting parameters using timers, schedules, and groups



## SENSORS

DLS Panel II can be used with the Tridonic MSensor 02.



The screenshots shown are to illustrate the options and functionality of DLS Panel II only. For a full explanation of what you can do with DLS Panel II, please refer the device User Guide.

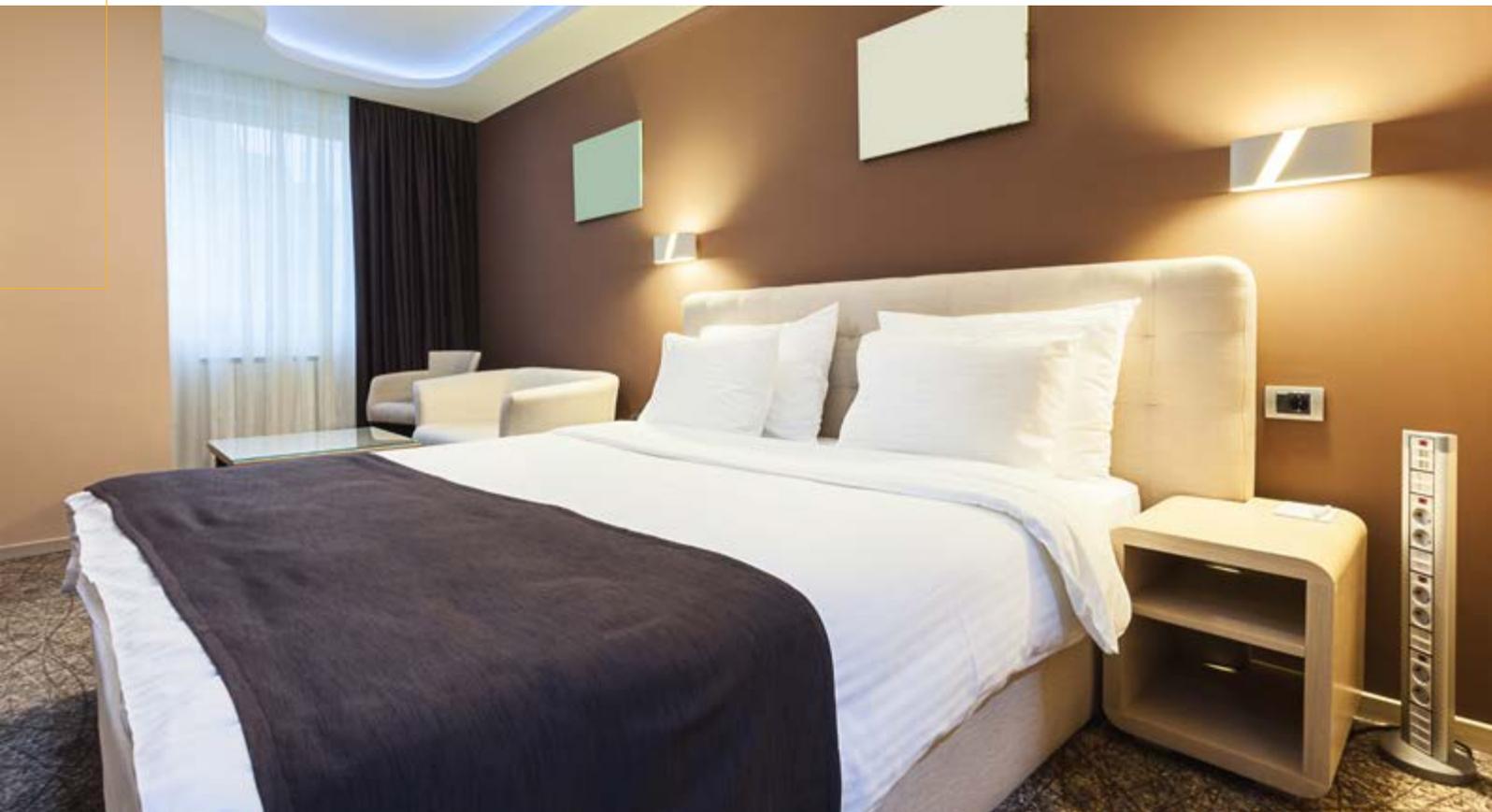
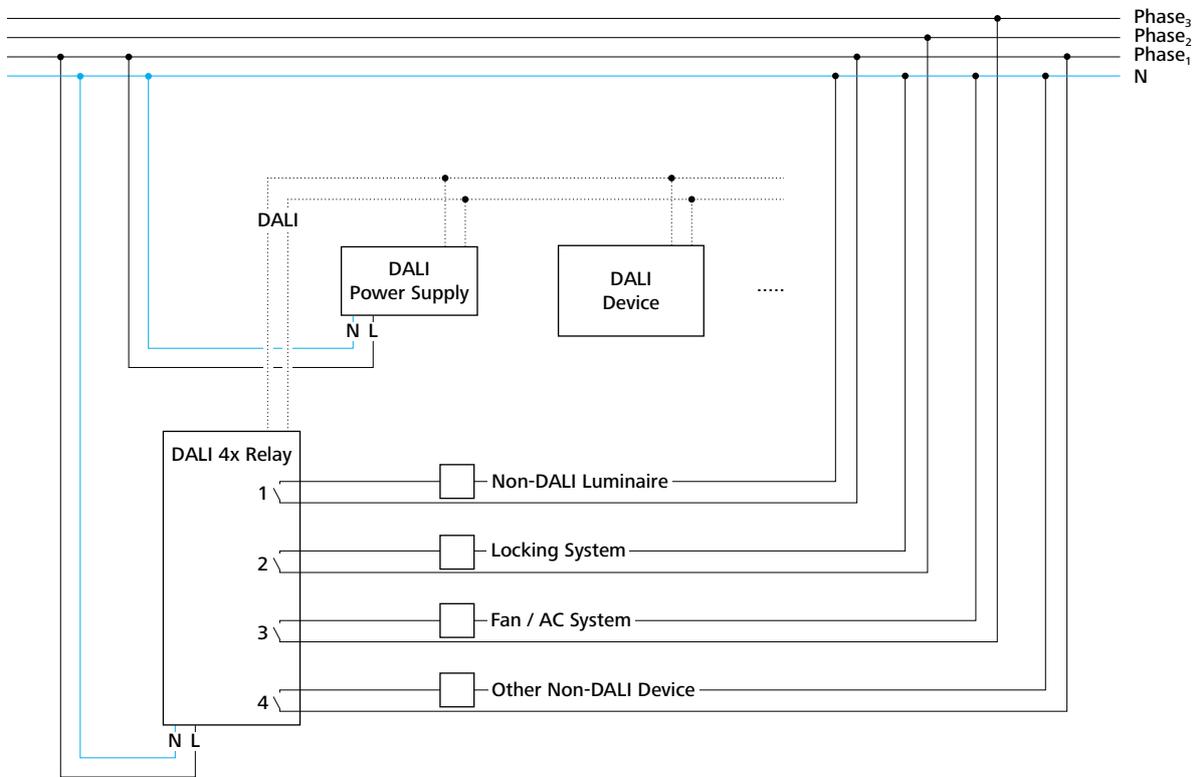
# DALI 4x Relay



A DALI compatible relay device that enables the independent switching of up to four non-DALI devices (luminaires and others) via a DALI interface. The device includes integrated push buttons for manual control and testing of each relay as well as five indicator LEDs. Upon powering of the device, a short internal test sequence is initiated, after which the device functions in Normal Mode awaiting DALI commands. The device is housed in a standard DIN box for easy installation.

## SPECIFICATION AND TECHNICAL PARAMETERS

- Four independent relay contacts
- One DALI address per contact (DALI device Type 7: EN 62386-208)
- 10 A maximum switching current per contact
- Push button manual interface for testing
- Mains supply: 220–240 V AC / 50–60 Hz
- System power: max. 6 W
- DALI consumption: < 2 mA
- Insulation: 4 kV
- IP 20
- Dimensions: 4U DIN rail box – 90 x 71 x 58 mm



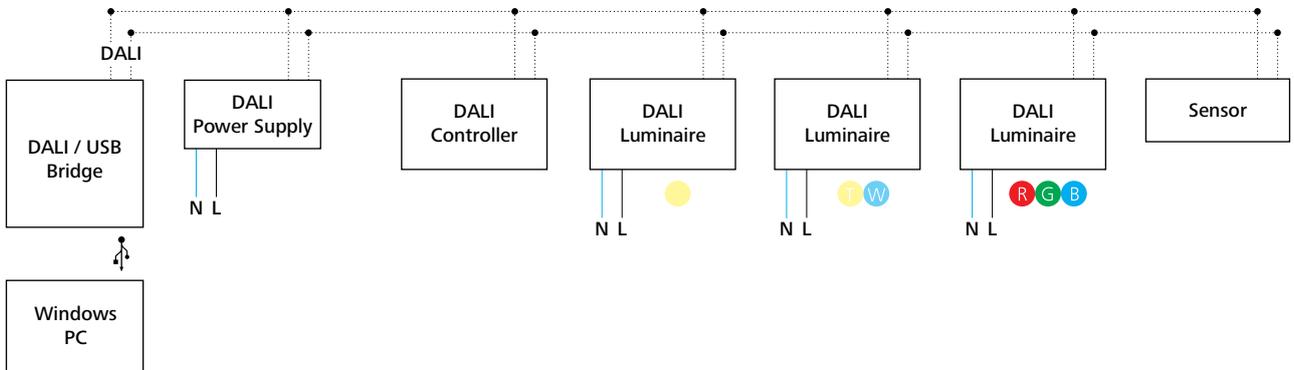
# DALI / USB Bridge



A control and configuration device that connects a DALI bus to any computer equipped with a USB port. Housed in an easy to transport USB stick, the device allows for the setup and configuration of operating parameters defined by the DALI standard, and the operating parameters of iLumTech DALI devices. The small form factor of the device along with its simple electronic design make it an effective, reliable, and easy-to-use solution for the setting of DALI networks.

## SPECIFICATION AND TECHNICAL PARAMETERS

- User-friendly tool for the setup and commissioning of DALI networks
- Application runs on Window
- Housed in an easy to transport USB stick
- Simple and reliable electronic design
- Functions independently of the DALI network – USB powered
- Supports DALI standards for device types 1, 6, 7, and 8
- Supports all iLumTech DALI devices
- DALI input current: < 2 mA
- USB input current: < 10 mA
- Voltage at USB input: 5 V DC
- Dimensions: 70 x 23 x 20 mm



# Sensors

The most effective and efficient lighting systems use sensors. This is because sensors allow lighting to adapt to real-time needs such as occupancy of a space, movement of vehicles, and the amount of natural lighting available. Sensors can be used alone to control an installation, as well as combined with other controls such as programmable interfaces to provide the very best system autonomy.

## DALI AMBIENT SENSOR

- A sensor to measure ambient illuminance [lx] and CCT [K] parameters to enable maintenance of desired values
- Passive mode measures parameter values for use in centralised regulation
- Active mode both measures parameters and directly control luminaires

## DALI AMBIENT SENSOR OUTDOOR

- An IP50 sensor to measure ambient illuminance [lx] and CCT [K] parameters to enable maintenance of desired values
- Passive mode measures parameter values for use in centralised regulation
- Active mode both measures parameters and directly control luminaires

## ENERGY HARVESTING AMBIENT SENSOR

- An energy harvesting sensor to measure ambient illuminance [lx] and CCT [K] parameters to enable maintenance of desired values
- Communicates wirelessly via Bluetooth Low Energy (4.1)
- Powered by a PV cell – no wiring is needed and very easy to install

## DALI LM SENSOR 01

- A combined ambient illuminance [lx] and motion sensor
- Possible to operate in motion only, ambient illuminance only, or combined sensing modes

## DALI LP SENSOR 01

- A combined ambient illuminance [lx] and presence sensor
- Possible to operate in presence only, ambient illuminance only, or combined sensing modes



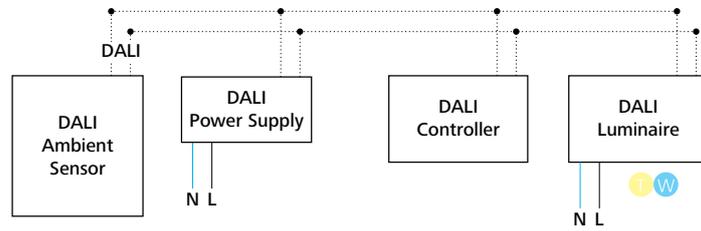
# DALI Ambient Sensor



The DALI Ambient Sensor measures ambient illuminance (lux [lx]) and Correlated Colour Temperature (Kelvins [K]) parameters. It can be used for only illuminance, only CCT, or dual sensing. The sensor can operate as a simple sensor with its data being processed by another device on the same DALI bus (passive mode), or as a combined sensor and control device to regulate the lux and CCT parameters of DALI addressed Tunable White luminaires (active mode).

## SPECIFICATION AND TECHNICAL PARAMETERS

- Measures illuminance in the range of 100–30,000 lx, and CCT in the range of 2500–8000 K
- Biasing, communication, and configuration via the DALI bus
- Measurement runs automatically using automatic range switching
- Can control 2-channel (warm/cold), 2-channel (lx/CCT), and DALI Type 8 luminaires in parallel.
- DALI voltage: 12–25 V DC
- DALI consumption: < 9 mA
- Weight: 40 g
- Dimensions: ø 50 x 64 mm – ceiling opening ø 40 mm



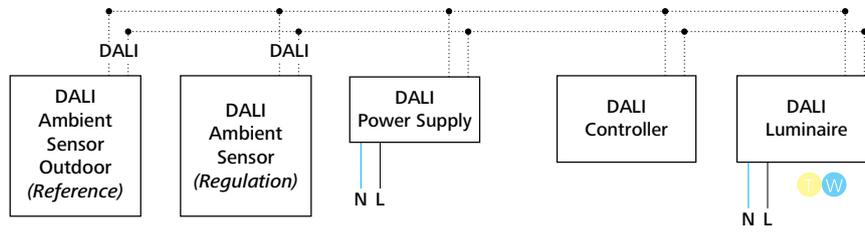
# DALI Ambient Sensor Outdoor



The IP50 DALI Ambient Sensor measures ambient illuminance (lux [lx]) and Correlated Colour Temperature (Kelvins [K]) parameters. It can be used for only illuminance, only CCT, or dual sensing. The sensor can operate as a simple sensor with its data being processed by another device on the same DALI bus (passive mode), or as a combined sensor and control device to regulate the lux and CCT parameters of DALI addressed Tunable White luminaires (active mode).

## SPECIFICATION AND TECHNICAL PARAMETERS

- Measures illuminance in the range of 100–30,000 lx, and CCT in the range of 2500–8000 K
- Biasing, communication, and configuration via the DALI bus
- Measurement runs automatically using automatic range switching
- Can control 2-channel (warm/cold), 2-channel (lx/CCT), and DALI Type 8 luminaires in parallel
- Outdoor-ready IP 50
- DALI voltage: 12–25 V DC
- DALI consumption: < 9 mA
- Dimensions: 110 x 85 x 55 mm – distance between key hole openings 93 mm



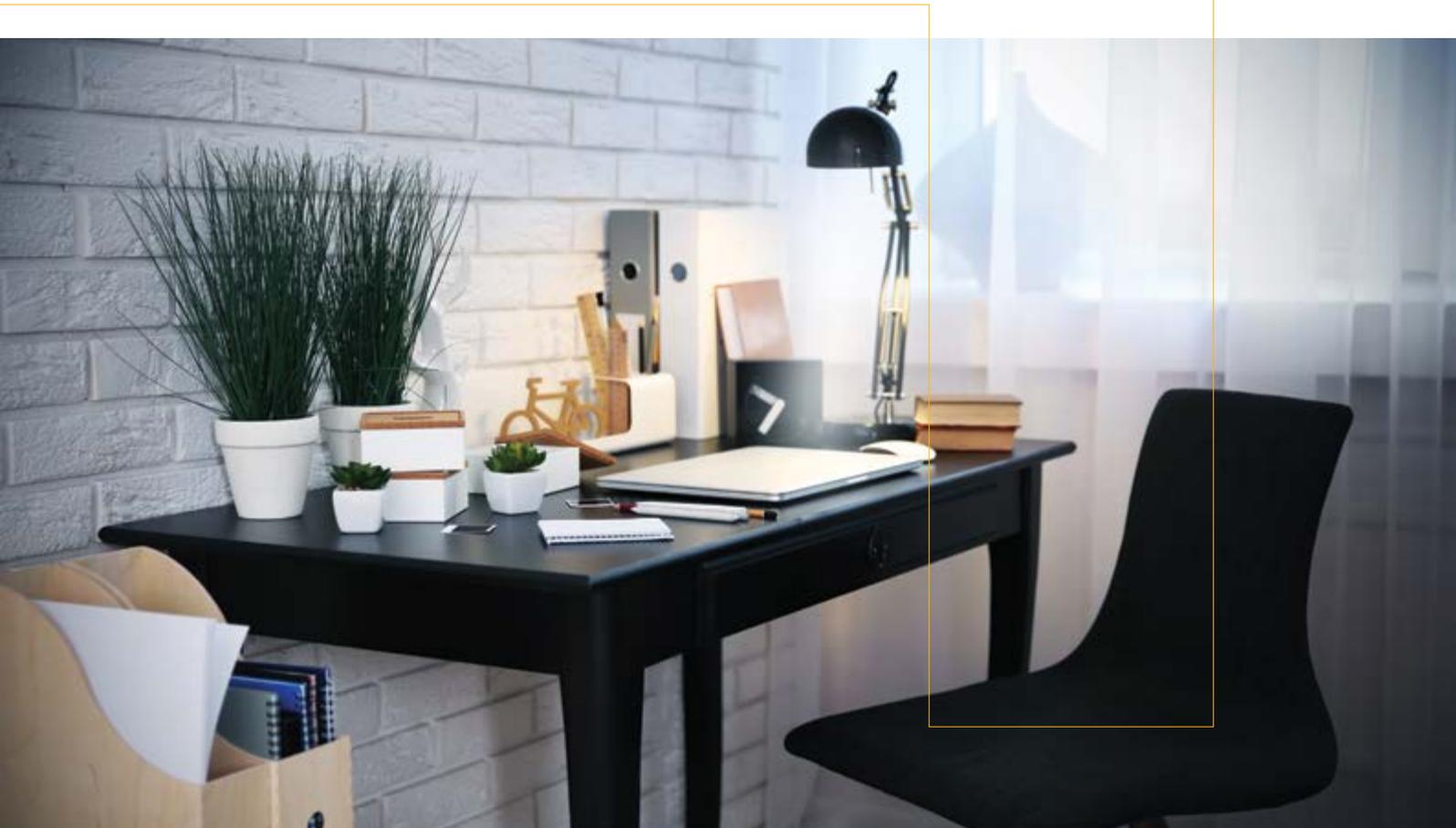
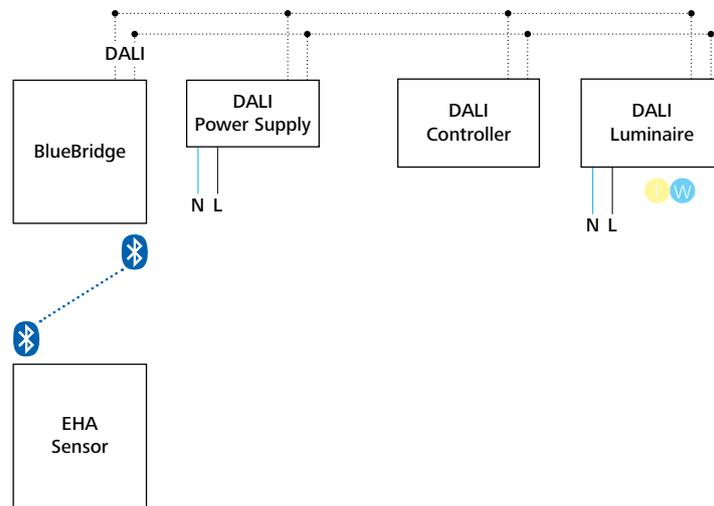
# Energy Harvesting Ambient Sensor



The Energy Harvest Ambient Sensor measures ambient illuminance (lux [lx]) and Correlated Colour Temperature (Kelvins [K]) parameters. It can be used for only illuminance, only CCT, or dual sensing. The sensor can operate as a simple sensor with its data being processed by another device on the same DALI bus (passive mode), or as a combined sensor and control device to regulate the lux and CCT parameters of DALI addressed Tunable White luminaires (active mode). Regulation and configuration of TW luminaires are possible using BlueBridge and its app.

## SPECIFICATION AND TECHNICAL PARAMETERS

- Measures illuminance in the range of 100–12,000 lx, and CCT in the range of 2500–8000 K
- Biasing via PV cell; no wiring needed and simple to install
- Communication and configuration via wireless Bluetooth Low Energy (4.1)
- Measurement runs automatically using automatic range switching
- Due to the energy harvesting biasing circuit, the measurement period can be up to 20 seconds depending on ambient light parameters
- Can control 2-channel (warm/cold), 2-channel (lx/CCT), and DALI Type 8 luminaires in parallel.
- Dimensions: 40 x 40 x 20 mm



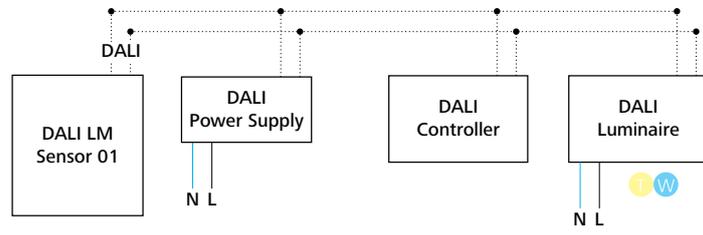
# DALI LM Sensor 01



A recessed DALI compatible device that combines an ambient light sensor that can sense ambient illuminance levels (lux [lx]), and a PIR-based motion detector. Each sensor can be independently configured. The ambient light sensor allows for the setting of illumination levels for both movement and no-movement states. The PIR sensor allows for the definition of a luminaire address (individual or group) and delay period before entering a no-movement state. The sensor can operate as a simple sensor with its data being processed by another device on the same DALI bus (passive mode), or as a combined sensor and control device (active mode) capable of direct regulation of luminaires to configured illumination levels using DALI commands.

## SPECIFICATION AND TECHNICAL PARAMETERS

- Motion detection range up to 4 m; detection angle of 90°
- Measures illuminance in the range of 10–1000 lx
- Biasing, communication, and configuration via the DALI bus
- Setting via DALI/USB Bridge, DeeBridge, or BlueBridge
- Manually or DALI configurable parameters including lux levels and delays
- Single-point calibration
- DALI consumption: < 5 mA
- IP20
- IEC class II
- Weight: 40 g
- Dimensions: ø 50 x 64 mm – ceiling opening ø 40 mm



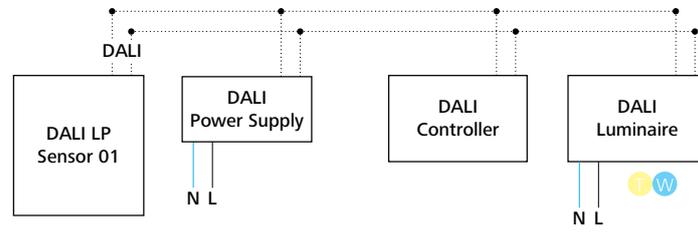
# DALI LP Sensor 01



A recessed DALI compatible device that combines an ambient light sensor that can sense ambient illuminance levels (lux [lx]), and a microwave presence sensor that can sense the absence or presence of people. Each sensor can be independently configured. The ambient light sensor allows for the setting of illumination levels for both movement and no-movement states. The microwave sensor allows for the definition of a luminaire address (individual or group) and delay period before entering a no-presence state. The combined sensor device can operate as a simple sensor with its data being processed by another device on the same DALI bus (passive mode), or as a combined sensor and control device (active mode) capable of direct regulation of luminaires to configured illumination levels using DALI commands.

## SPECIFICATION AND TECHNICAL PARAMETERS

- Presence / absence detection range up to 4 m; detection angle of 90°
- Biasing, communication, and configuration via the DALI bus
- Setting via DALI/USB Bridge, DeeBridge, or BlueBridge
- Manually or DALI configurable parameters including lux levels and delays
- Single-point calibration
- DALI consumption: < 5 mA
- IP20
- IEC class II
- Weight: 40 g
- Dimensions: ø 50 x 64 mm – ceiling opening ø 40 mm



# Tunable White controls

Tunable White is becoming commonplace in modern lighting. It offers the possibility to adapt the colour of white light to need, mood, or preference, and enables the implementation of human centric daylight simulation. We provide a range of small Tunable White modules that make it easier and more effective than ever before to incorporate Tunable White functionality into your luminaires, and so into your lighting system.

## TUNABLE WHITE CONTROLS

### **DALI TW TYPE 6**

- A DALI Type 6 extension module for standard DALI LED drivers that enables TW control
- Mains powered

### **DALI TW TYPE 8**

- A DALI Type 8 extension module for standard DALI LED drivers that enables TW control
- Mains powered

### **MANUAL TW 01**

- An extension module that allows for simple TW control using fixed position push buttons for smooth and incremental regulation
- No DALI bus required
- Powered from the connected LED driver

### **MANUAL TW 02**

- An extension module that allows for simple TW control using variably positioned push buttons for smooth and incremental regulation
- No DALI bus required
- Powered from the connected LED driver

## STANDARD TUNABLE WHITE COMPARED TO iLumTech'S TRUE TUNABLE WHITE

Standard Tunable White luminaires require the use of two independent power sources to supply separate warm and cold white LED arrays. Efficiencies are dependent on the selected CCT with the warmest or coldest settings performing best. It is difficult to combine such CCT control with dimming. Such luminaires have a bigger BoM and lower reliability.

True Tunable White uses only one power supply for both LED arrays, which provides consistent efficiency across the entire CCT range. It is easy to combine true Tunable White control with dimming. This type of regulation makes it possible to offer advanced control options – through DALI or using manual push buttons. Such luminaires have a smaller BoM and higher reliability.



# DALI TW Type 6



An extension unit that can be added to standard 1 dimmable DALI LED drivers to provide TW functionality. DALI compatible for Type 6 (LED driver) devices, it provides a simple way to regulate CCT using standard LED drivers and DALI controllers through direct light intensity and CCT level control, group addressing, and scenes. Its open frame design and small dimensions make it easy to install directly inside luminaires.

## SPECIFICATION AND TECHNICAL PARAMETERS

- Standard 1 DALI LED driver required for dimming control
- DALI Type 6 devices use two DALI addresses: brightness and CCT
- Supports use of a wide range of lighting scenes
- Mains biased
- System power: < 200 mW
- DALI consumption: < 2 mA
- Output voltage: 30–180 V
- Output current: 0–3 A
- Output power: up to 150 W
- IEC class II
- Dimensions: 94 x 45 x 26 mm



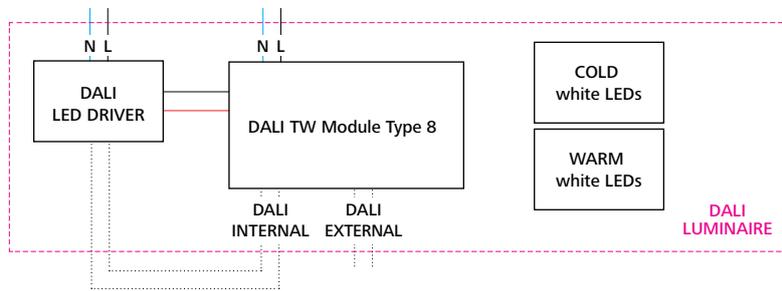
# DALI TW Type 8



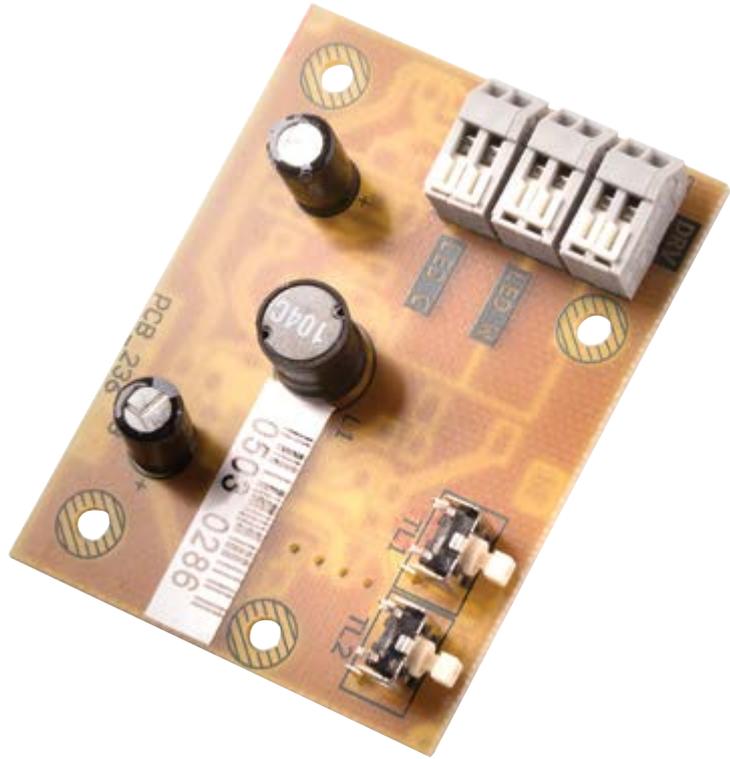
An extension unit that can be added to standard DALI LED drivers to provide TW control through a DALI interface. DALI compatible for Type 8 (colour control) devices, it provides a simple way to regulate CCT via DALI using standard LED drivers and DALI controllers through direct light intensity and CCT level control, group addressing, and scenes. Its open frame design and small dimensions make it easy to install directly inside luminaires.

## SPECIFICATION AND TECHNICAL PARAMETERS

- Standard 1 DALI LED driver required for dimming control
- DALI Type 8 devices use one DALI address for brightness and CCT
- Supports use of a wide range of lighting scenes
- Mains biased
- System power: < 200 mW
- DALI consumption: < 2 mA
- Output voltage: 30–180 V
- Output current: 0–3 A
- Output power: up to 150 W
- IEC class II
- Dimensions: 94 x 45 x 26 mm



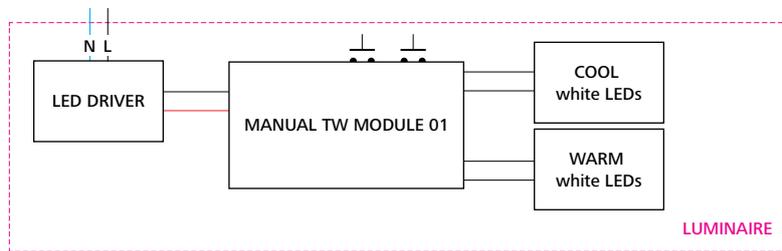
# Manual TW 01



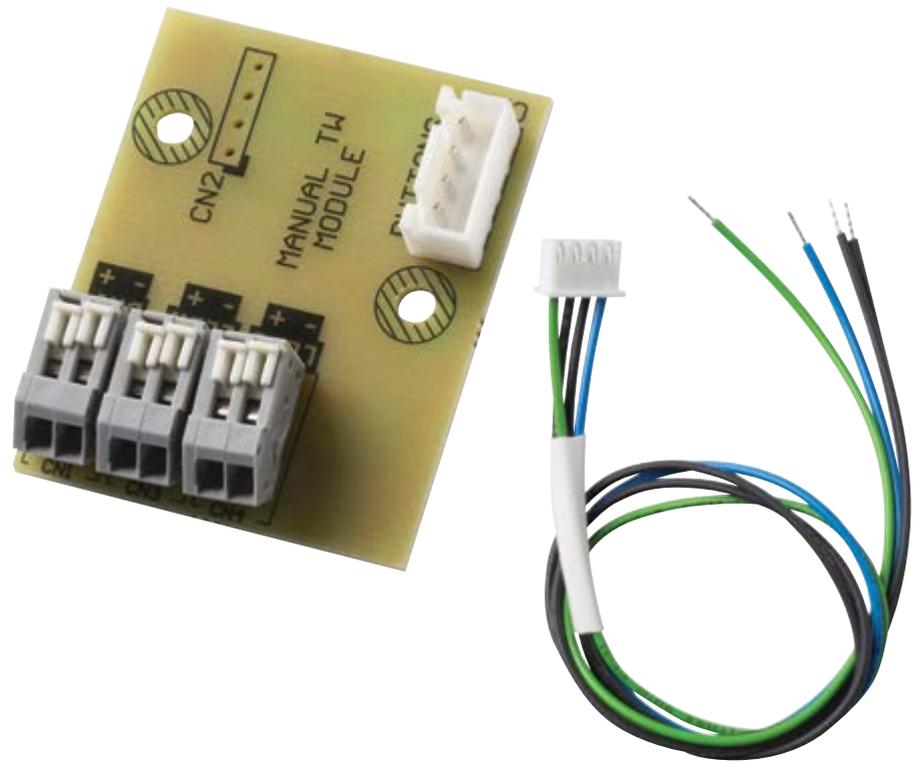
A simple interface that allows for TW control of luminaires without the need for connection to a DALI bus. Module 01 comes with push buttons in a fixed location and is especially suitable for incorporation into track luminaires.

## SPECIFICATION AND TECHNICAL PARAMETERS

- Facilitates push button CCT control by altering the current output ratio provided to warm and cold LED modules
- Fixed position of the buttons on the luminaire
- Biased by standard LED drivers – FIX, 1–10 V, and DALI
- Smooth CCT regulation using long presses (> 1 s) of the push buttons
- Discreet, incremental CCT regulation using short presses (< 1 s) of the push buttons
- Last used settings stored in memory after 10 seconds and recalled upon switching on again
- Input voltage ( $V_{in}$  terminal): 25–56 V DC
- Output voltage (LED W, LED C terminal): 25–56 V DC
- Module consumption: < 15 mW
- Output current: up to 1.5 A
- Dimensions: 60 x 45 x 15 mm



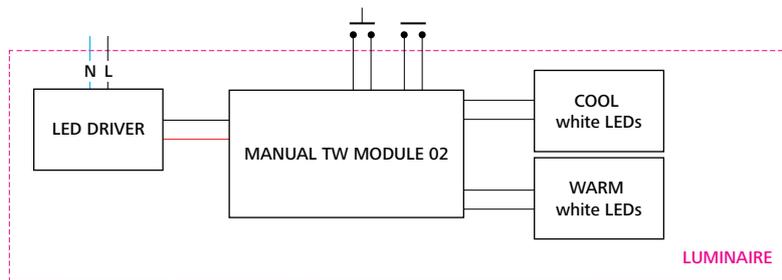
# Manual TW 02



A simple interface that allows for TW control of luminaires without the need for connection to a DALI bus. Module 02 comes with push buttons that can be flexibly positioned and is especially suitable for incorporation into track luminaires.

## SPECIFICATION AND TECHNICAL PARAMETERS

- Facilitates push button CCT control by altering the current output ratio provided to warm and cold LED modules
- Flexible position of the buttons on the luminaire
- Biased by standard LED drivers – FIX, 1–10 V, and DALI
- Smooth CCT regulation using long presses (> 1 s) of the push buttons
- Discreet, incremental CCT regulation using short presses (< 1 s) of the push buttons
- Last used settings stored in memory after 10 seconds and recalled upon switching on again
- Input voltage (Vin terminal): 25–70 V DC
- Output voltage (LED W, LED C terminal): 25–70 V DC
- Module consumption: < 15 mW
- Output current: up to 1.5 A
- Dimensions: 42 x 34 x 15 mm



# What is DALI?



DALI is an international standard for professional digital lighting and a worldwide registered trademark, and is considered the most flexible and reliable control system for innovative lighting solutions. It is a worldwide standard, specified by the International Electrotechnical Commission (IEC). The DALI protocol is set out in the technical standard IEC 62386.

## DEVICES USED IN A DALI SYSTEM

- Control gear: provides a power control circuit to drive light sources.
- Control device: provides information to other control devices and can send commands to control gears.
  - a) Input device: provides some information to the system such as a button press or movement detection.
  - b) Application controller: provides commands and works as a decision-makers in a DALI system (sends commands to control gears to modify the light output).
- Bus power supplies: allow for both communication on the bus and supply power to any bus-powered DALI device. At least one bus power supply must be present in a DALI system (can be part of another device or a separate unit).
- Bus wires: connect the DALI terminals of devices in the system.
- Other devices: configuration tools, DALI interfaces, etc.



## GENERAL REQUIREMENTS

The standard specifies general requirements for:

- 101: the system,
- 102: control gears,
- 103: control devices (upcoming in the DALI 2 standard).

The DALI standard defines the following devices and describes their particular requirements:

- Device type 1: self-contained emergency lighting (202),
- Device type 2: discharge lamps (203),
- Device type 3: low voltage halogen lamps (204),
- Device type 4: supply voltage controller for incandescent lamps (205),
- Device type 5: conversion from digital signal into DC voltage (206),
- Device type 6: LED modules (207),
- Device type 7: switching function (208),
- Device type 8: colour control (209).

The current DALI standard does not contain definition of control devices, which will be addressed in the upcoming DALI 2 standard in part 103: control devices. It will allow for use of single- and multi-masters, and define input devices, application controllers, timing and addressing modes, and commands to enable and disable application controllers, etc.

## TECHNICAL BASICS

Technical boundaries:

- a maximum of 64 devices per subnet (hub/router),
- cabling no longer than 300 m,
- devices can consume no more than 250 mA each.

Cabling benefits:

- standard 2-core cabling (1.5 mm<sup>2</sup>),
- polarity free and free wiring topology,
- DALI power and data on the same wires.

Digital benefits:

- robust communication,
- individual (64), group (16), and broadcast (all) control,
- easy to change using software,
- two-way communication (feedback).

Information sourced from [www.dali-ag.org](http://www.dali-ag.org)

# About iLumTech

iLumTech is a market-leading research and development company that blends technology, creativity, and engineering to help customers transform their ideas into world-class products and solutions that follow global trends, focus on energy efficiency and cost reduction, and ensure wellbeing for all. With almost 90 engineers, extensive expertise across optical, thermal, electronic, and mechanical engineering as well as software and hardware design, we are in a position to provide uniquely comprehensive services.

Located in the heart of Europe, we hold a unique position within the research and development field thanks to time-proven capabilities in luminaire, technology, and user experience design, and development and engineering for a wide variety of industries. We leverage this valuable skill set to help our customers create exceptional products, services, and experiences that drive their strategic growth.

It is our goal to become the preferred partner for customers wanting world-class products and differentiated solutions based on our professional services, continued innovation, and use and development of cutting-edge technologies.

## SERVICES

- Turnkey full luminaire development
- Optical design and laboratory services, and lens manufacture
- Electronic design and laboratory services, DALI testing, and electronics manufacture
- Hardware, firmware, software, and labware design
- Industrial design and product promotion
- Mechanical engineering
- Thermal design and laboratory services
- Prototyping and 3D printing

## PRODUCT PORTFOLIO

- Control and sensing devices for luminaires
- Internet of Things devices
- DALI PowerLine Communication
- Optical components for the lighting industry
- 3in1 LED units for the lighting market
- Street lighting management system



**iLumTech**<sup>TM</sup>  
*innovation ahead*

**PROVIDING THE PERFECT SOLUTION IS NOT JUST OUR JOB.  
IT IS OUR PASSION.**



**iLumTech™**  
*innovation ahead*

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