



User guide

DeeBridge

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1

What you will find in the box

1. DeeBridge device

(housed in a standard 2U DIN box)

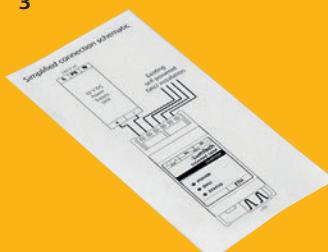
2. RJ45 1 m Ethernet cable

3. Simplified connection schematic

2



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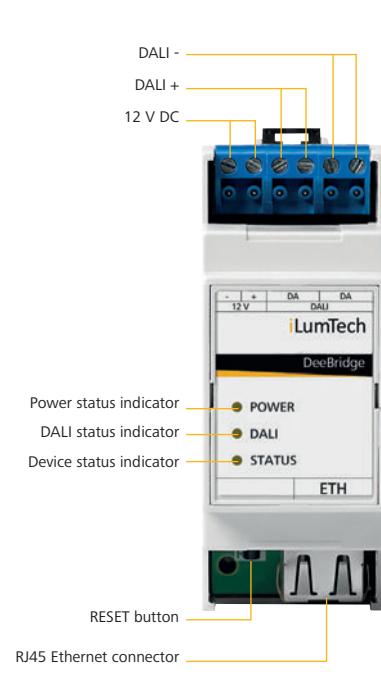


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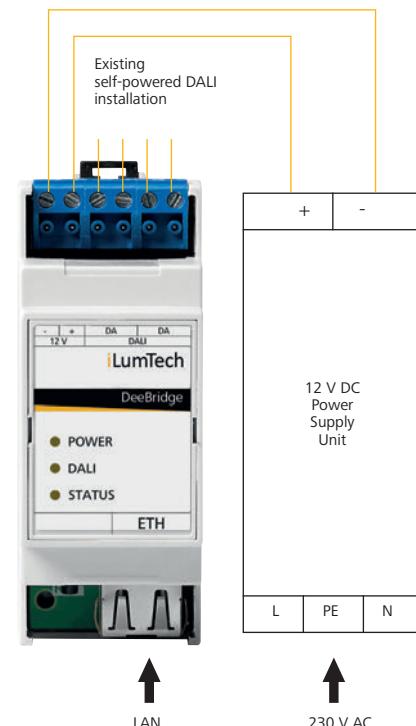
DeeBridge is a solution comprising a DeeBridge device (Figure 1) and easily operated user interface application. This solution enables intuitive control of luminaires within a DALI installation via an Ethernet network using a PC, tablet or smartphone. The software runs on Windows, Mac, Android and iOS.

2 Introduction

Overview of the DeeBridge device



Simplified connection schematic



2.1 Features

- An intuitive and user friendly Graphical User Interface (GUI)
- Broadens the possibilities of lighting control
- Enables the real-time control of brightness, colour temperature and RGB output
- The applications enable date and time functions

2.2 Overview of the device

The device comes housed in a standard 2U sized DIN box which allows for installation on electrical switchboards. It is powered by an external 12 V DC Power Source Unit (not standardly supplied with the device but available on request). Figure 2 depicts a simplified connection schematic of the DeeBridge device.

2.3 Default settings

Initial DeeBridge device TCP/IP and port configuration settings:

TCP/IP address: 192.168.1.252

Port: 8421

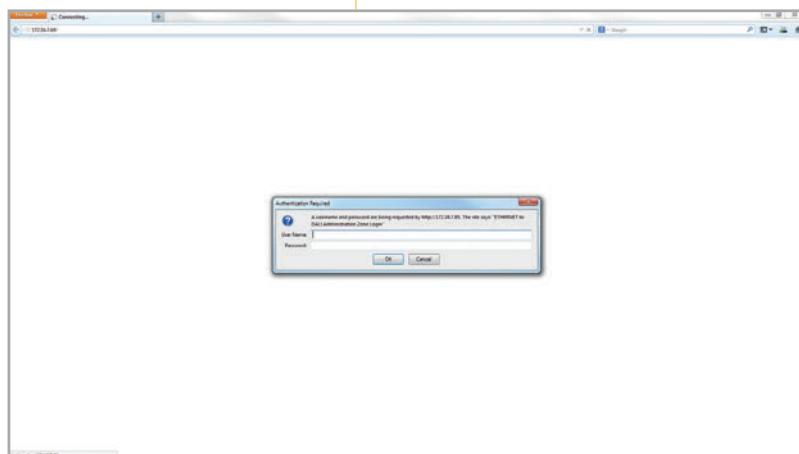
Default web configuration settings:

Username: admin

Password: admin

How to change the DeeBridge device IP address and port is covered in 3 Hardware Installation.

3 Hardware installation and setup



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DEEBRIDGE

Configuration		Password change	
IP address:	192 . 168 . 1 . 252	New password:	<input type="text"/>
Subnet mask:	255 . 255 . 255 . 0	Repeat password:	<input type="text"/>
Gateway:	192 . 168 . 1 . 1	<input type="button" value="Change"/>	
Web port:	80	<input type="button" value="Save and restart"/>	
DALI port:	8421	<input type="button" value="Free web sockets"/>	

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```
C:\Administrator:C:\windows\system32\cmd.exe
C:>ping 172.16.7.72
Pinging 172.16.7.72 with 32 bytes of data:
Reply from 172.16.7.72: bytes=32 time=2ms TTL=128
Reply from 172.16.7.72: bytes=32 time=1ms TTL=128
Reply from 172.16.7.72: bytes=32 time=1ms TTL=128
Reply from 172.16.7.72: bytes=32 time=1ms TTL=128

Ping statistics for 172.16.7.72:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms
C:>
```

3.1 Hardware installation requirements

- Before hardware installation and setup you will need:
- A correctly wired DALI installation with DALI Power Supply
 - A 12 V DC power supply
 - A PC with the capability to connect to a Local Area Network (LAN) using a RJ45 connector
 - Knowledge about how to perform the IP configuration of your PC
 - Knowledge about the IP configuration used for your LAN

3.2 Installation

For the correct installation of the DeeBridge device please follow these steps and refer to Figure 2:

1. Connect the DeeBridge device to the 12 V DC power supply by the 12 V DC terminals. The 'power' indicator LED will light-up showing that the device is operational.
2. Connect the DeeBridge device to an existing DALI installation by the DALI terminal.
3. Connect the DeeBridge device to the LAN with the RJ45 connector using a UTP Ethernet cable.
4. Configure your computer Ethernet interface using the following TCP/IPv4 configuration (in the case that you have any problem please contact your IT administrator):

IP address: 192.168.1.100
 Subnet mask: 255.255.255.0
 Default gateway: 192.168.1.252

5. Open your web browser and type the IP address mentioned above into the address bar.
6. To login in, use the default username: "admin", and password: "admin". The device settings window will be shown. Now fill-in the IP connection settings fields with the valid configuration information of your LAN and click the '**Save and restart**' button.
7. Wait 30 seconds for restarting and then restore the TCP/IP settings to those correct for your LAN.
8. If the configuration procedure ended successfully, the DeeBridge device will respond to a PING command in the console from the newly configured local IP address.

The DeeBridge application for Android and iOS platforms is available to download from Google Play Market and Apple App Store respectively, free of charge. If using the Android platform, Android version 4.3 and higher is recommended. The Windows PC and Mac OS DeeBridge software can also be downloaded at <http://ilumtech.eu/downloads>.

4 Application

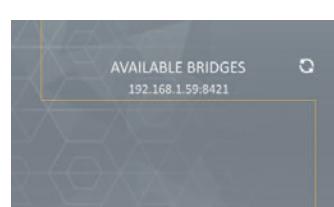
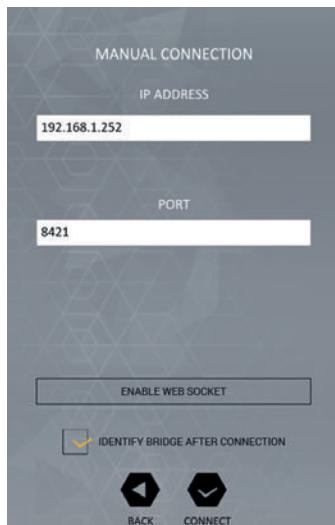
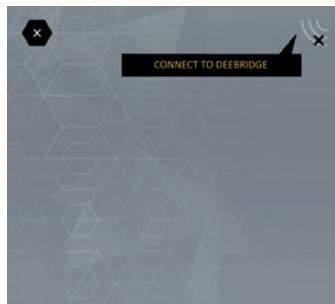
4.1 Connection to DeeBridge

During the first start-up (or when the application is not able to connect to the last used DeeBridge), you will see the basic screen with only the option to connect to DeeBridge. The application will automatically start scanning its sub-network and looking for any connected DeeBridge.

During the next start-up, the app will automatically load saved controls and the last used configuration settings. It will then connect to the device with the last IP/port configuration settings. Discovered DeeBridge devices will appear in a table with their corresponding IP addresses. If the discovered DeeBridge (or its IP address) is not listed in the '**Favourites**' list, it will appear named as DeeBridge.

If your DeeBridge hasn't been discovered automatically, you can try to connect manually by choosing the '**Manual**' option, from where you can also change the port number. In order to easily recognise which DALI bus is controlled by a specific DeeBridge, you can check the '**Identify Bridge after Connection**' option, which will send broadcast ON and OFF commands.

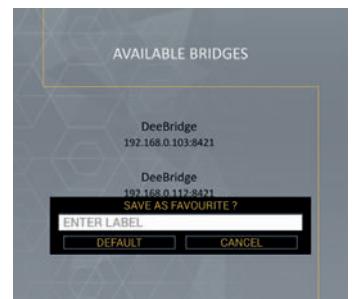
After successful connection you will be asked to enter the name of the selected DeeBridge. If you don't want to think about the name, just select **Default** and the DeeBridge will be named: "DeeBridge(x)" where "x" is an automatically incremented index number for the DeeBridge. After this, the DeeBridge is automatically added to Favourites list.



Discovered device

Manual button
Manually connecting or changing port number

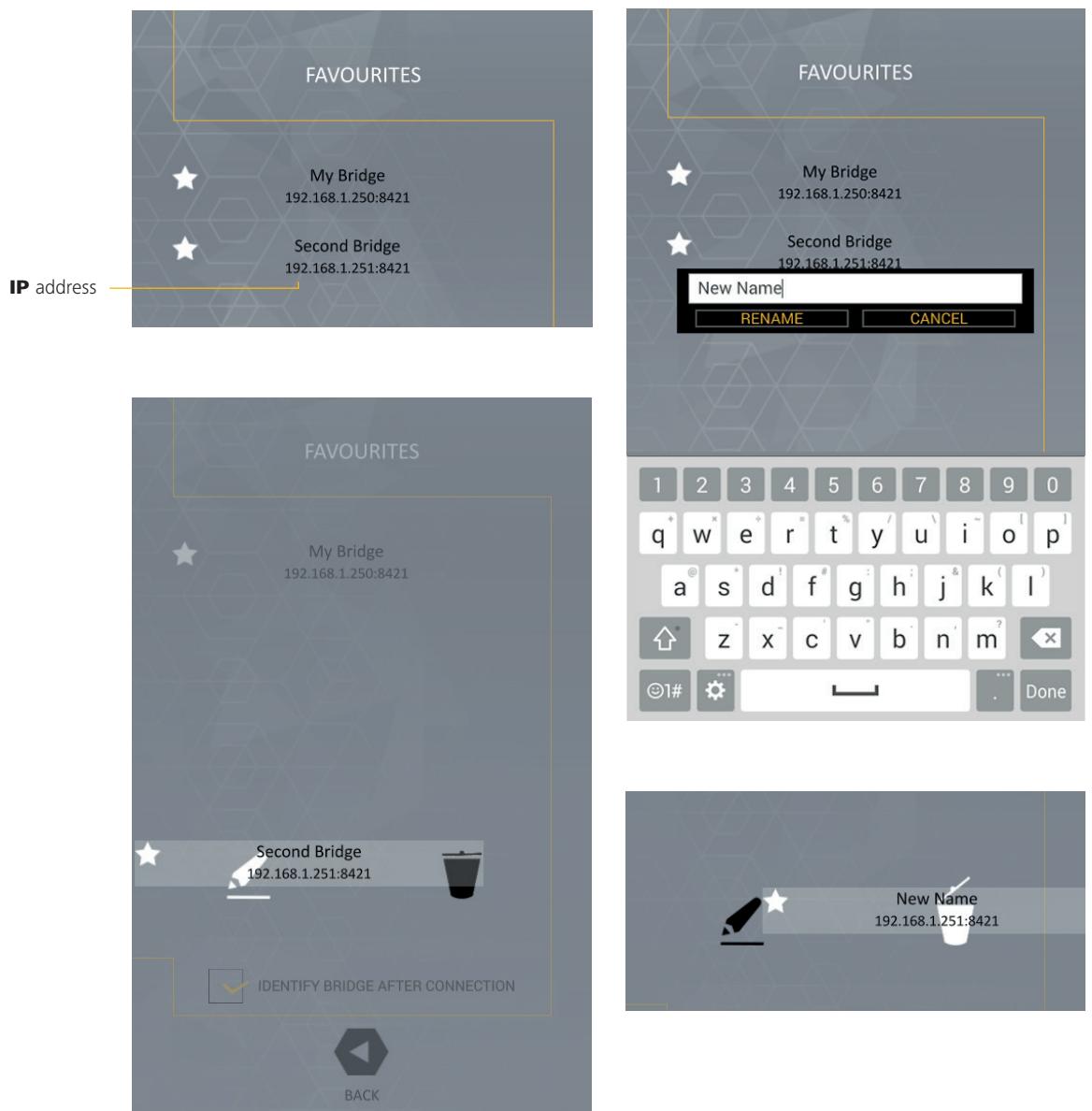
Searching



4.2 Favourites menu

In the Favourites menu, you can see all the DeeBridges already added as favourites. You can connect to a specific DeeBridge by clicking on it. If you want to edit the name of the DeeBridge device, drag and drop its name to the **edit icon** (left).

If you want to delete the DeeBridge from your favourites, drag and drop its name to **trash bin icon** (right).

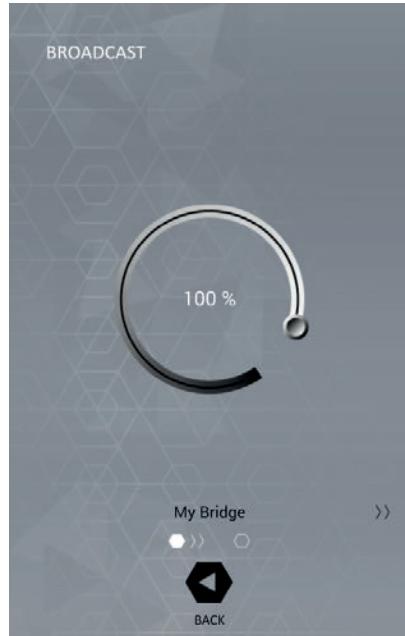


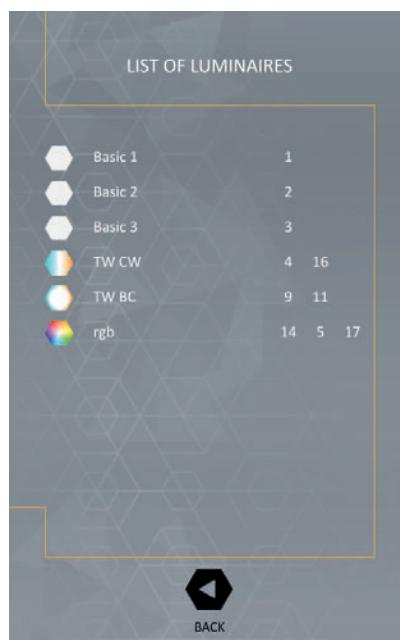
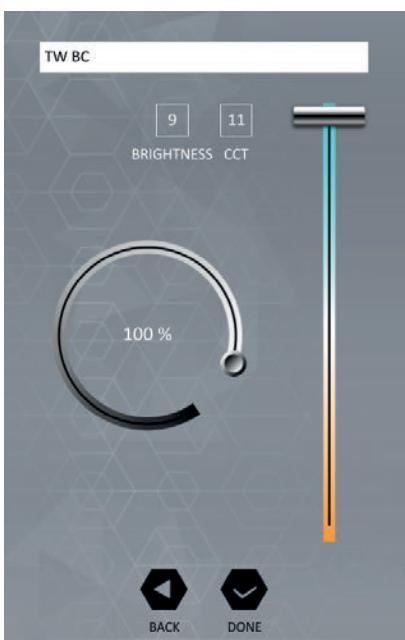


4.3 Main screen

The main screen contains group icons for simple access to group control. In the top-right corner, there are a **status icon** and a **connection icon**. The connection icon shows the current connection status – connected or not connected. When pressing the connection icon, you will go to the Connection screen described in the section 4.1. The status icon shows the current status of the DALI installation. Status functionality is described in section 4.6.

The bottom part of the screen contains three buttons: '**Setting**' will activate the screen showing the setting menu (section 4.8), '**New Group**' allows for adding a group (section 4.5) and '**Broadcast**' activates the screen for broadcast control of luminaires. You can use a standard slider for dimming, or when switching to scene mode (swipe to the right), you can use predefined dimming scenes. Use the '**Back button**' to return to the main screen. By default, the main screen shows Groups. Swiping to the right brings up the Timers screen, which allows for the control of existing timers and the creation of new ones ('**New Timer**' button). Timer functionality is described in more detail in section 4.7.





4.4 Creating luminaires

After successful connection, you will be asked whether you would like to **scan the DALI network**. This step is essential when running the app for the first time. The app will perform the scan in order to discover all the luminaires connected to the DALI network. During this step, the app will discover the FW version of the connected DeeBridge. If the FW is not up-to-date, you will see a notice saying that there is a new version available. During scanning, you will see how the process is progressing including how many luminaires are discovered.

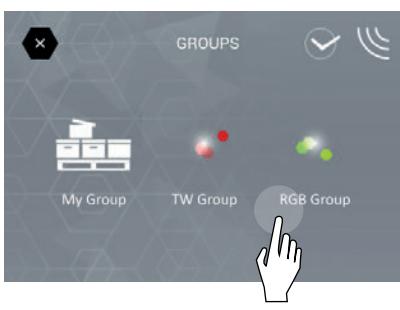
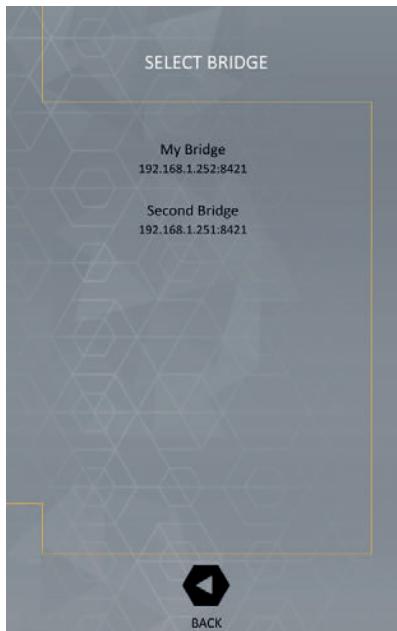
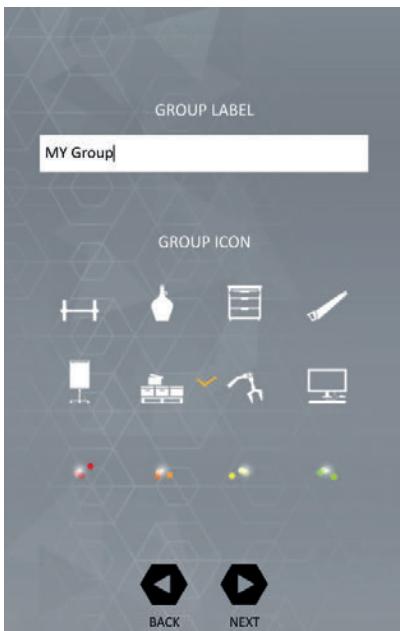
If the DeeBridge detects some DALI devices without addresses it will start the commissioning automatically. The progress of commissioning is shown in the dialog windows.

When scanning is finished, you will see a '**Create Luminaires**' wizard. In the upper part of the screen, you can see the total number of luminaires (or addresses) discovered during the scanning process. Below, you can see six basic types of luminaire. The first four types work with DALI device type 6 – Basic (single colour), TW Cold/Warm, TW Brightness/CCT and RGB. The app is not able to differentiate between single colour luminaires and other TW or RGB luminaires so the user must define this information. If you want to create a single colour luminaire, select the 'Basic' option.

You will be asked to **select the address of the luminaires**. Selected addresses are indicated by a yellow tick. Each time you select an address, the corresponding luminaire will be switched off and on again making it easy to identify the luminaire you want to define. Addresses in black are already used by other luminaires. When the addresses are selected correctly, choose '**Next**', which will take you to a screen where you can test the dimming of the luminaire and choose a specific label for it in order to easily distinguish it from other luminaires (you don't need to remember all the addresses). Once you have finished, you can confirm the settings by clicking '**Accept**'. You will see that the number in the 'Basic' group has been incremented and also that the number of unused addresses is lowered by one. In a similar way, you can add Tunable White luminaires with either Cold/Warm or Brightness/CCT control methods. You will be asked to select two addresses as each of these Tunable White luminaires requires a separate addresses for each function. The same is valid for three-channel RGB luminaires, which require three independent addresses. Already **selected addresses are highlighted in a corresponding colour** – for example when selecting address for the blue channel of an RGB luminaire, you will see the address for the red channel in a red square and the address for the green channel in a green square. In the case of switches (Device type 7) and colour control (Device Type 8), the app is able to recognise the type of luminaire and only corresponding device type devices will appear in the address selection screen when selecting 'Switch' or 'Colour control' type. For 'Colour control' type, you can select only a single address.

You can check the current state of the '**List of luminaires**' at any time by clicking on the list, which includes already created luminaires. Once you have defined all the luminaires in your installation (unused addresses will equal to 0), you can **finish the wizard by clicking on 'Done'**.

The '**AutoCreate**' button automatically creates luminaires and groups using current settings for the DALI network. The app reads the group status of all luminaires and creates groups accordingly. Group names are based on the group addresses. When using the AutoCreate function, the app cannot distinguish between type 6 single colour luminaires and Tunable White or RGB luminaires, so all type 6 luminaires will be considered single colour.



4.5 Creating groups

To create a new group, press the '**New Group**' button on the main screen. You will be asked to select an icon and label for the new group to help you to differentiate between groups easily. If you have created devices on multiple DeeBridges, the next step requires that you select which DeeBridge the group will relate to – this step will be skipped if there is only one DeeBridge with created devices as this will be selected automatically. Next, you need to **select the type of group** – the same types are available as for the luminaires. Each group type also contains a number of existing corresponding luminaires. When the group type is selected, you will see a list of luminaires of the corresponding type – you can select which of them you want to add to the group. Click on '**Done**' when you've finished. The new group will appear on your main screen.

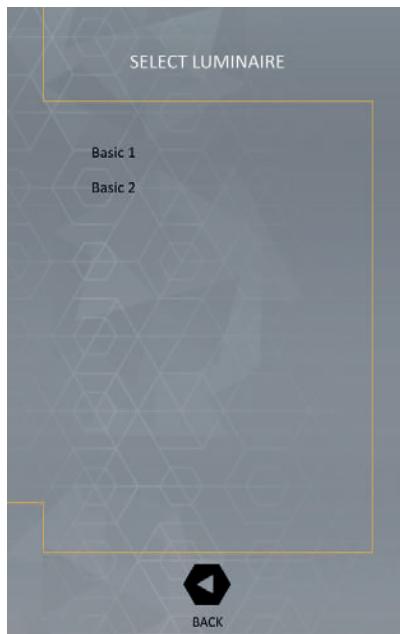
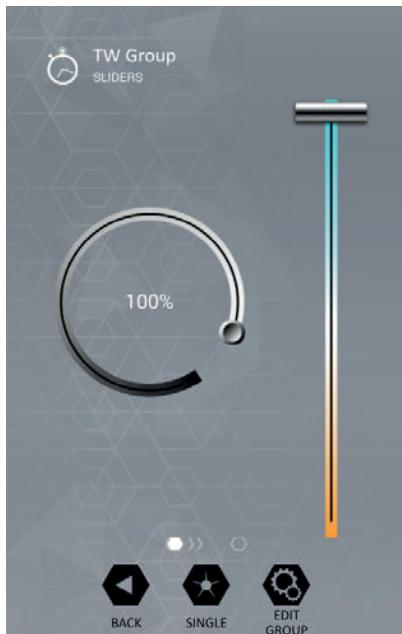
The DALI standard allows for a maximum of 16 groups, and the app automatically uses the possibility of 16 group addresses. When the number of groups exceeds 16, the further group will be processed sequentially (consequent reaction to dimming). **Sequentially processed groups are marked in orange**. Advanced control possibilities like timers or sensor are only supported for groups that uses DALI group addresses.

You can repeat the process until you have creates groups for all of the luminaires in your installation. You will see the created groups on the main screen represented by their icons and labels. To control a specific group, just click on its icon to select it. Depending on the group type, you will see different control objects – a circular slider for dimming; a linear slider for CCT or hue control; and an ON/OFF switch for switching devices.

If you want to control individual luminaires from within the group, click on the '**Single**' button. A list of luminaires contained within the group will appear. Simply select the one you want to control and you will see the screen for single luminaire control. You can return to group control by clicking on the '**Back**' button.

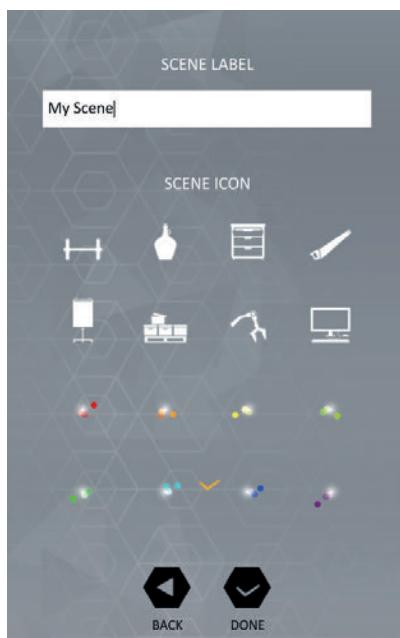
A group can be deleted by pressing and holding the icon and dragging it to the **trash bin**. You can select whether the group will be deleted only from the app (the group address will stay configured for the luminaires) or deleted also from the DALI bus settings (luminaires will lose their group address).

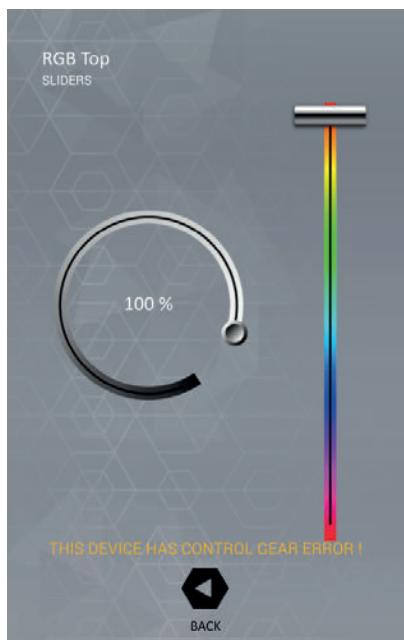
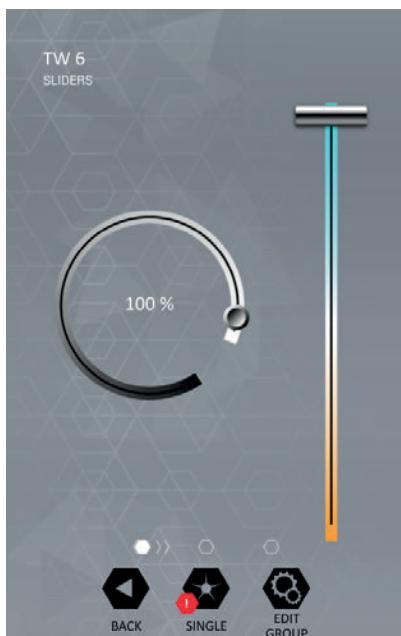
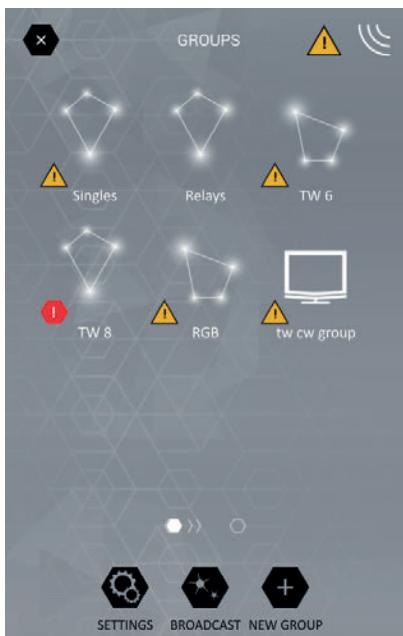
When a **stopwatch icon** is shown next to the group name, there is a timer active for this group. When you make changes using sliders, the timer will override the slider setting after some time. To deactivate the timer, click on the stopwatch icon and it will disappear. To reactivate the timer, go to the timer screen.



If you prefer scene control, you can switch to scene mode (by sliding according to the arrows at the bottom of the screen). You can choose from predefined scenes or create custom ones.

You can create your custom scenes by clicking on the '**Edit Scenes**' button. You can add an icon and label to the custom scene. The scene will be created according to currently set levels. You can also edit already created scenes.





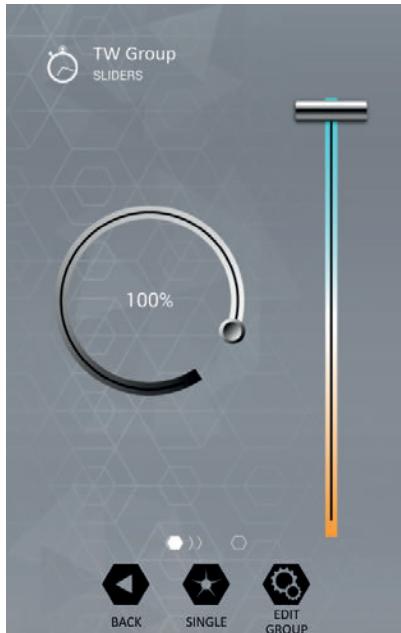
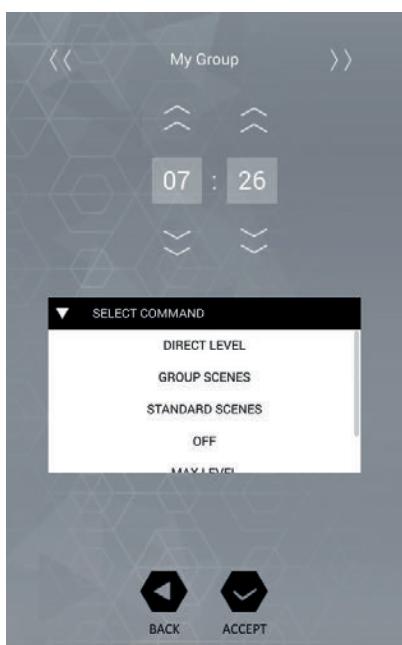
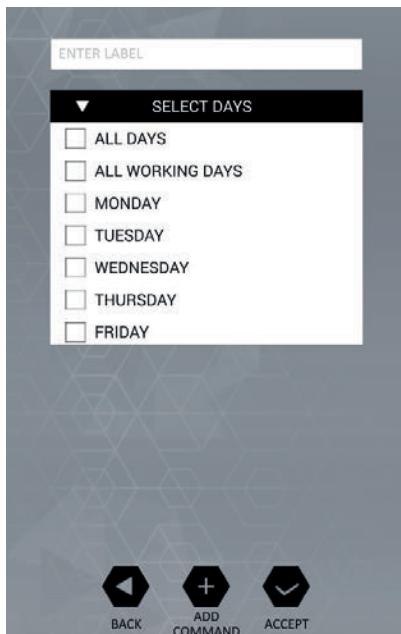
4.6 Status function

The status function is a feature included in the latest FW update. To enable this feature, upgrade your DeeBridge device to FW version 3.3. DeeBridge periodically checks the status of each DALI device. The results of the check are sent to the application once per minute. If all previously discovered devices work correctly, the status icon will show '**Installation OK**'. If there is an error such as lamp or control gear failure, a **warning sign** will appear. The relevant warning icon will also appear next to the group icon of the corresponding device, and next to the single device within the group. When you open the device with a warning, you will find a description of the error.

In the case that a device stops responding to status checking, an error will appear. If the device starts to respond again, the error icon will disappear. If you want to see the exact time that the error occurred, click on the status icon and a list of events will appear.

Description of status icons:

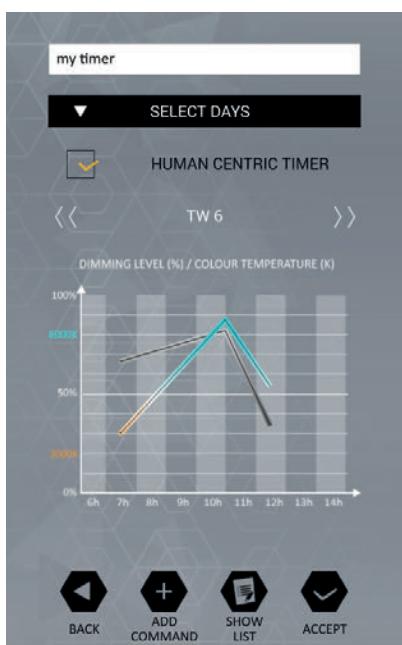
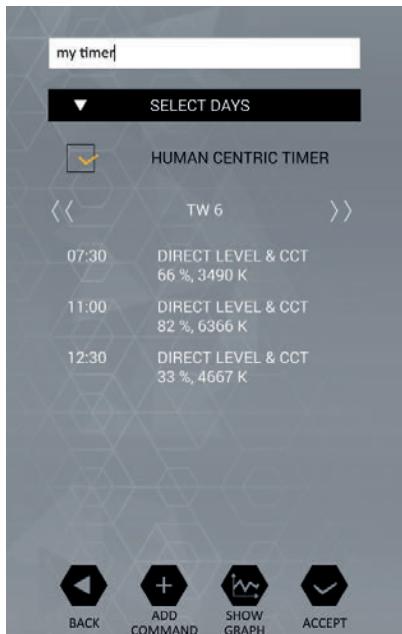
- Installation **OK**
- Device **Error**
- Device **Disconnected**
- Device **Reconnected**



4.7 Timers

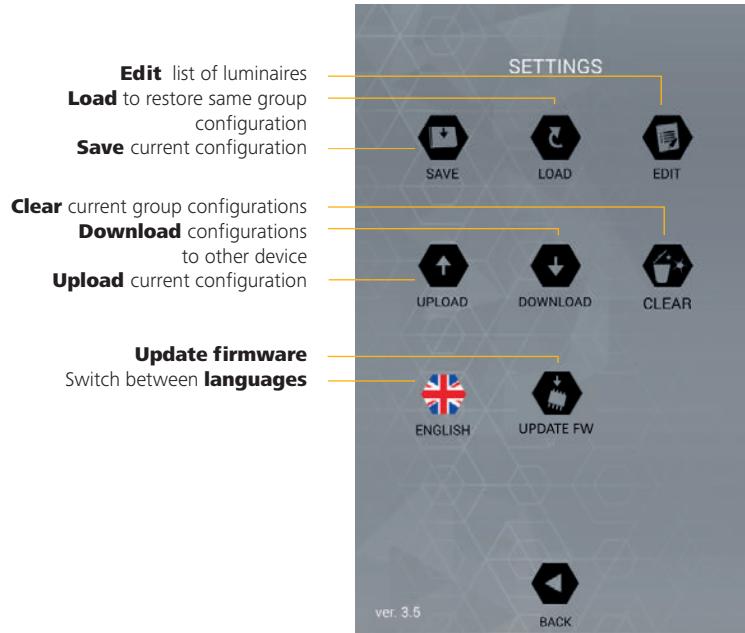
The timer function is a feature related to the latest HW and FW versions of DeeBridge. To benefit from this feature, you will need to upgrade your FW to the latest version 3.3. This HW version of DeeBridge contains a real-time clock module and allows for the creation of 4 independent timers with 30 second time steps (basic timers) and 15 time steps (Human Centric sequences). Timers run independently of the app once activated, and will override other settings from the app. **Each timer is defined by its label and the days of the week it is active.** Any day of the week can be selected. There are extra setting options available for Human Centric sequences.

Basic timers can be used to control any group based on a DALI group address (labels are white). Transitions between time steps are sudden without fading. To add new commands, press the corresponding button. Now you can select the group you want to control, set the command and the time the command should be sent. Supported commands include direct level, control, scene, and DALI Type 8 CCT commands. After confirmation of the setting, the command will appear in a command list. When all commands have been added to the timer sequence, the timer is loaded and stored inside the BlueBridge device by pressing '**Accept**'.



Human Centric sequences have smooth transitions between time steps. There must be a minimum of 2 time steps with each sequence in order to create a transition (DeeBridge internally calculates the linear interpolation between time steps). The defines values of each time are only reached as the specific time. Human Centric sequences are related to CCT regulation, therefore, only Tunable White groups can be selected when creating a new timer, and only one group can be selected for each timer. You can add commands using the same method as basic timers. In the dialog that appears when adding a time step, you will see a **graph with current points**, a **clock for time setting**, and **two sliders for changing of CCT and brightness settings**. The position of the points on the graph change whenever you change some of the above-mentioned parameters. Each added command will be shown in the command list. You can review the sequence by pressing '**Show Graph**'. Once the sequence is finished, press 'Accept' and the timer will be stored.

Created timers can be independently activated and deactivated by pressing the play/stop button next to them. An active timer is has a spinning wheel icon next to it on the left. Human Centric timers are marked with a Sun icon. To delete any timer, press and hold the entry in the list and drag and drop it into the trash bin.



4.8 Settings

The last button on the main screen is dedicated to the '**Settings**'. In the settings menu, you can manage the configuration of groups. You can save current configurations to a file that can be moved to other devices and loaded to restore the same group configuration as on the original device. You can also upload current configurations to the DeeBridge and from there download it to other devices – this is the most comfortable way. You can also clear current group configurations, edit the list of created luminaires, and switch between languages. The '**Update FW**' button allows for simple updating of FW when an update is available. A list of FW versions will appear, all of which are compatible with the detected DeeBridge device. You can also reload older FW versions.

Some settings are protected by password. This password is set by default to **admin**.



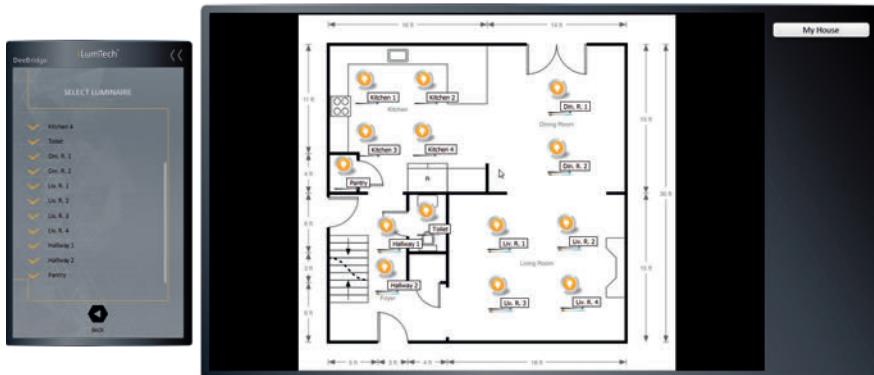
There are some minor graphic design differences in the Windows version of the app. The main window is surrounded by a frame, and the top part of the frame can be used to move the window (click and drag). Double-clicking on the top part of the frame minimises the window. The software can be closed using the Exit button in the main screen.



Main window



Enter the name of the floorplan

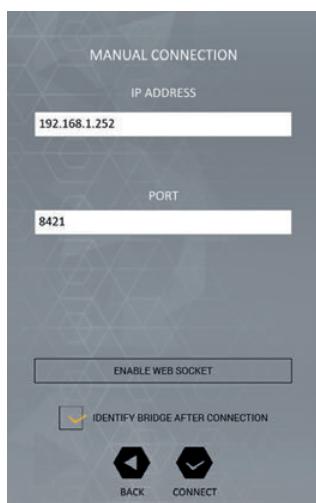


4.9 Floorplan function for Windows and Mac

The new floorplan feature allows for easier lighting installation control.

- To activate the **floorplan feature**, use the **double arrow button** in the top-right corner of the main window. It will appear in a window. By default it is blank.
- In order to add new image as floorplans, right click on the black area and select '**Add new floorplan**'.
- Now select the image file. Supported formats are png and jpg.
- Then you will be asked for the name of the floorplan. You can change the image or rename the floorplan by clicking on the floorplan image and selecting the appropriate option.
- Right click and select '**Add device**' in order to add luminaires to the floorplan.
- In the main window, you will see all the DeeBridges in your Favourites list. Select the DeeBridge which is related to the current floorplan. Then you will see the **list of luminaires** you have created for the corresponding DeeBridge.
- If the list is empty, create new luminaires first. Click on a desired luminaire and the mouse cursor will automatically move to the floorplan, and you can place the luminaire by moving the mouse and left clicking when location is good. The location of the luminaire on the floorplan can be changed by left clicking on the luminaire icon and holding it until the cursor changes to a movement icon. Move the luminaire while holding the left button and release it when finished.
- You can change the luminaire settings by hovering over it with mouse cursor – this activates the sliders. Right clicking on a luminaire icon allows you to rename it or delete it from the floorplan. When clicking on a luminaire icon, corresponding groups will appear in the main window. When hovering over the icons of the groups or when selecting a group, the luminaires that belongs to corresponding groups are highlighted in the floorplan. The floorplan can be hidden by clicking on the double-arrow button.
- When creating a group you can pick any already located luminaires from the floorplan.

5 Reset and recovery procedures



Soft reset

If the DeeBridge device is not responding or not working properly, please perform a soft reset by pushing the **Reset** button located next to the Ethernet port (please refer to Figure 1) for 2 seconds or less. If the problem persists, unplug the DALI and power cables and then reconnect.

Re-enabling the web interface

If this does not work, there are two methods for restarting the web interface. The first way is to go to the **connection screen** and **manual connection**. Type in the IP address of the DeeBridge with the disabled web interface and click on the button '**ENABLE WEB SOCKET**'. After connection, the web interface is enabled automatically. The second way is to hold the **Reset** button between three to seven seconds (while the Status LED is blinking). If you press for longer than this period the LED will stop blinking, this is a hard reset, as described below.

Hard reset (reset to default settings)

By setting an incorrect IP address, or other parameter, you can make the device unreachable. In this case, you can recover the default settings by holding the **Reset** button for more than ten seconds until the Status and DALI LEDs stop blinking and go off.

Warning: this operation erases the device's memory (network configuration settings, password and control configuration settings).

Recovery from interrupted firmware update

If a firmware update is interrupted because of a certain problem, the application will automatically detect this. When you connect to the DeeBridge device, a message and window will open to prompt you to begin the firmware update again. If this message and window does not appear, you can manually begin the firmware update again by clicking on the **Firmware Update** button in the **Settings** screen. In case of a power loss during a firmware update, the device must be physically reconnected to the DALI network and you will need to perform a hard reset.

1. The DeeBridge is not found in the connection screen, or manual connection doesn't work

Click on the **Scan** button. If the problem persists, check your IP/port settings and correct them using the current device settings.

Make sure that the Ethernet cables are securely plugged in. The left yellow LED indicator on the Ethernet port will be lit if the Ethernet cable from the device to the router, switch, hub or PC is plugged in correctly and both are turned on.

2. The web interface is unreachable but the DALI sub-system is working correctly

One cause of this could be that the user has incorrectly entered the IP address, username, or password. Please check and try again.

3. The DALI sub-system is unreachable but the web interface is working correctly

Make sure you're using the correct DALI port and that there is sufficient power supplied from the DALI network.



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