

OPERATION MANUAL

Emergency Lighting DALI Control System

ELDCS touch panel



DALI emergency lighting from ABB can easily provide a safe and reliable solution to meet smart building emergency lighting requirements

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Emergency lighting DALI control system

Special notes

It is the responsibility of the system owner to ensure that only qualified and trained personnel are allowed to install and maintain this equipment. It is also their responsibility to ensure that all applicable international and local electrical standards and regulations are followed and ensure that safe electrical working practices are followed.

These instructions are meant only to be an additional source of information for the ABB DALI emergency lighting control unit (DCU).

The device is designed to allow the operator to follow the instructions intuitively. Therefore these instructions (where applicable) will lead the operator to the function while the operational characteristics of the system's Graphical User Interfaces (GUIs) will complete the operation of the function.

The operations guide assumes a level of knowledge equivalent to a suitably trained DALI technician. No one of a lower level of knowledge can safely work in the environment and should cease immediately until a qualified technician is available.

Compatibility

The ABB ELDCS1/DALI or DALI control Unit (DCU) only supports the use of DiiA **registered** or **certified DALI Device type 1** class products for emergency lighting only.

This product is not designed to work with any other device types.

Installation data & system documentation

Essential work to do before commencement of installation

There are several files available from our website that are essential to make the whole process of owning and installing the DALI Control Unit DCU (ELDCS1/DALI) easier both at commissioning and during the life of the product.

These documents coupled with a drawing of the premises, with emergency and exit fitting locations clearly marked, will be required at every step of the installation and for later maintenance processes.

Please download these files and complete them, ready for use and store them for later reference. Please be professional and put these documents into a binder and present them to the end user client so they can keep them onsite with the Operation and Maintenance (O&M) files for any technician who needs them.

- ABB_ELDCS1DALI Pre-commissioning document
- ABB_ELDCS1DALI_Device_location_record_sheet doc
- ABB_ELDCS1DALITest_schedule_record_sheet

Software Downloads

The spreadsheet download software is located on the ABB website

The spreadsheet download software is necessary to be loaded onto the access PC or laptop for extracting the spreadsheets with the test result information is located on the ABB website. It is recommended that one PC or laptop be used as the access computer and the software is downloaded directly by this access PC or laptop.

It is located at the following address:

<http://new.abb.com/low-voltage/products/lighting-emergency-lighting/emergencylighting/emergi-lite/monitoring-managementsystems/DALI-emergency-lighting>

Relevant standards	
EN 61347-2-11	Automatic electrical controls for household and similar use
EN 62386 (V0, V1)	Digital Addressable Lighting Interface
EN 62034	Automatic test systems for emergency escape lighting equipment
EN 60950-1	Information Technology Equipment – Safety – General Requirements
EN 61000-3-2	Electromagnetic Compatibility (EMC) – Limits for Harmonic Emissions
EN 61000-3-3	Electromagnetic Compatibility (EMC) – Limitation of Voltage Changes, Voltage Fluctuations and Flicker in Public Low-Voltage Supply systems
EN 61547	Equipment for general lighting purposes - EMC immunity requirements
EN 55015	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
EN 55022 ...	Information Technology Equipment – Radio Disturbance Characteristics – Limits and Methods of Measurement
EN 55024 ...	Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement
EN 62493 ...	Assessment of Lighting Equipment Related to Human Exposure to an Electromagnetic Field
EN 62311 ...	Assessment of Lighting Equipment Related to Human Exposure to Electromagnetic Fields (0Hz – 300Hz)

This device is independently tested and Certified as compliant with the above Standards, by an internationally accredited Testing Authority. Testing against the DALI Standard is carried out predominantly by our own Testing Facility, which is equipped with the necessary Testing Equipment to comply with the requirements of the Digital Illumination Interface Alliance (DiiA).

DALI Compliance Statement

DALI Control Unit (DCU) is designed and tested to comply with the DALI Standard EN 62386 (V0 and V1), for emergency lighting components. A client purchasing product that incorporates the DALI protocol must accept full system responsibility for the integration of the DALI Control Unit (DCU) modules into the DALI system. It is essential that the client, or his installer, have the experience and resource to accept this responsibility. Our product warranty does not extend to cover the system integration process.

ABB Reserves the right to alter the specification at any time without notice.

DALI Control Unit (DCU) operates without a need for permanent connection to a PC or network. The controller is designed to make use of intuitive controls, allowing simple control and change to its attached DALI networks.

Reports may be viewed on the screen, displayed directly. Alternatively, the reports can be transferred to a LAN connected PC and be printed for hardcopy use or storage.

DALI Control Unit (DCU) is designed to control and monitor Class 1 DALI exit & emergency fittings ONLY. It does not have support for any other class of DALI component. Future versions of the software will accommodate other classes of fitting.

Technical data

Rated voltage and Frequency	100 - 240V @ 50/60Hz, consuming 12.0W total
Temperature range	0°C to +50°C
Weight	873g without power supplies and controls
Dimensions W x H x D	213mmx150mmx35mm (including Surface mount housing)
Cutout Size	198mm x 117mm
Protection rating	IP20 - Suitable for indoor use only
Memory Capacity	4 years of report Storage

Connections

Cable requirements

Power	3-core TPS Twin & Earth 1.5mm ² minimum
Network	Cat 5e Ethernet Cable RJ45
DALI 1 and 2	2-core Mains Rated 1.0 to 1.5mm ²

Mains Supply

Mains supply with suitable protection at external source.

Network

Connection by RJ45 cable to LAN network via network switch or other suitable network products.

DALI cabling

2-core cable mains rated. Can be laid tightly coupled with the mains wiring. May also be within the same sheath as the mains cable. 5 core cable can also be used.

The DALI cables must be mains rated and capable of carrying the full mains voltage. In the event that under certain fault conditions the DALI bus can become live at mains voltage.

Maximum lengths of cables permitted to be connected to the DALI network, depends on the size of cable used. This is the sum of the main lead cable and all the sub-branches.

Do not allow any loop of cable to be formed.

1.0mm² < 200metres
1.5mm² < 300metres

Recommended mounting height: 1.5 to 1.6 metres at finished floor level

It is recommended the panel is installed in a lockable secure room where end user clients and facility managers can access and monitor the device freely.

Installation instructions

Flush mounting & surface mounting

Flush mounting

01 Remove face plate by blade screwdriver

02 Cut square hole for flush mounting

03 Connect power cable on power connector

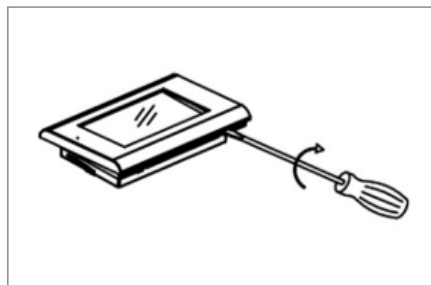
04 Connect DALI cable on fixture

05 Attach power connector, ethernet connector on fixture

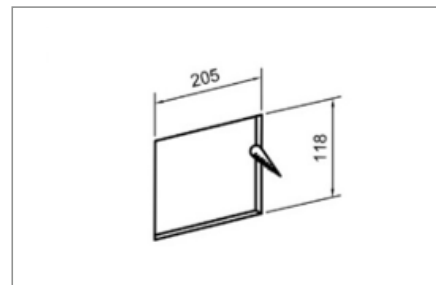
06 **Install by spring clip.** Install fixture on cut hole by spring clip, thickness of install surface 26mm max.

07 **Install by screw.** Remove 2 pcs spring clip from housing. Install fixture on surface by screws

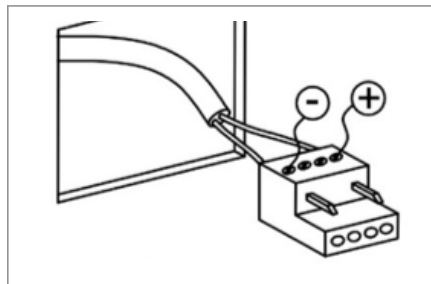
08 Restore face plate on fixture, finish installation



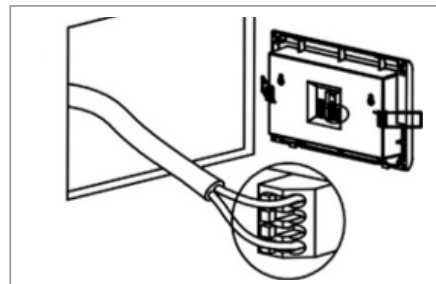
01



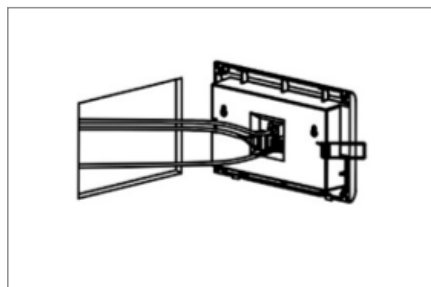
02



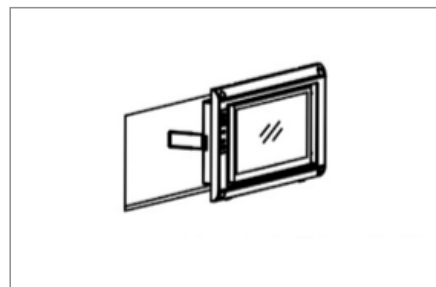
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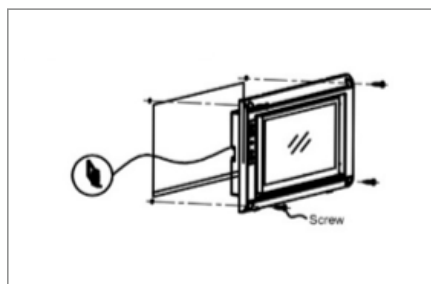
04



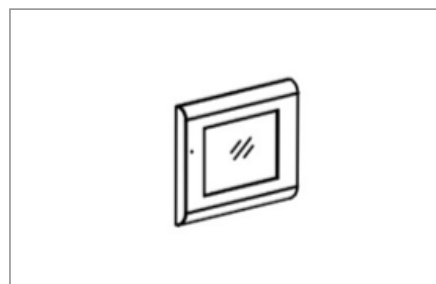
05



06



07



08

Surface mounting

01 Knockout appropriate cable hole and mounting screw hole, feed cable into mounting block

02 Install mounting block on surface by screws and anchors

03 Remove 2 pcs spring clip from housing, remove face plate by blade screwdriver

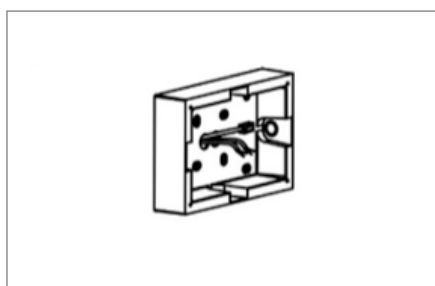
04 Connect power cable on power connector

05 Connect DALI cable on fixture

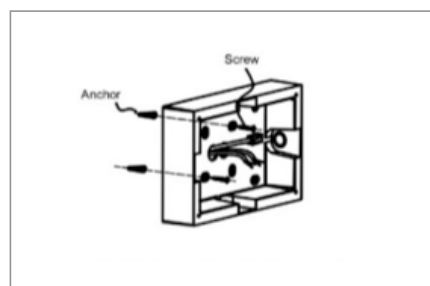
06 Attach power connector, ethernet connector on fixture

07 Install fixture on mounting block by 4 screws

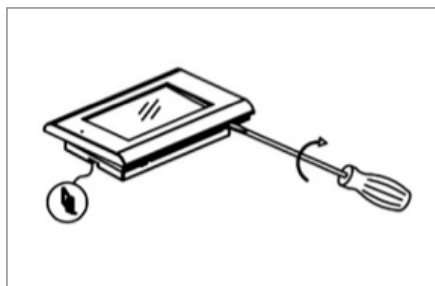
08 Restore face plate on fixture, finish installation



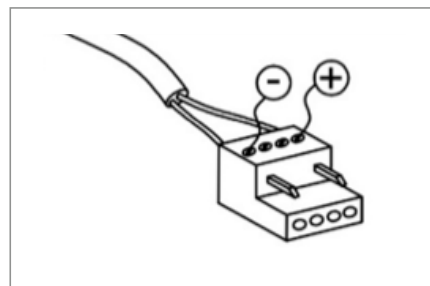
01



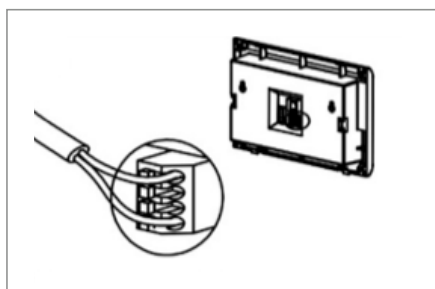
02



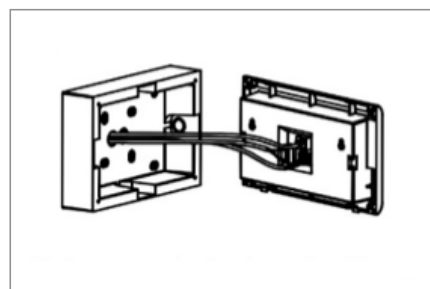
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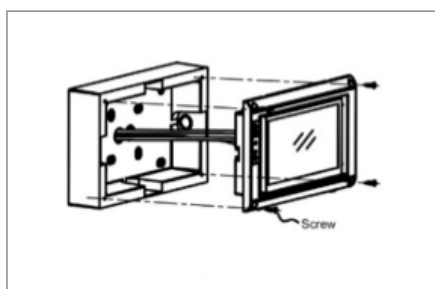
04



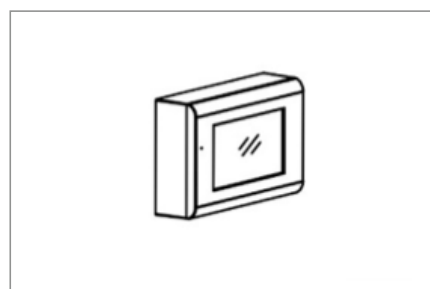
05



06



07



08

Security and Vulnerability

The DALI control unit has been tested for vulnerabilities by Spirent studios Cyberflood and Achilles test software to ensure peace of mind and security for your installation. We recommend that you have appropriate firewalls and any PCs or laptop in your installation has installed, up to date virus and malware protection.

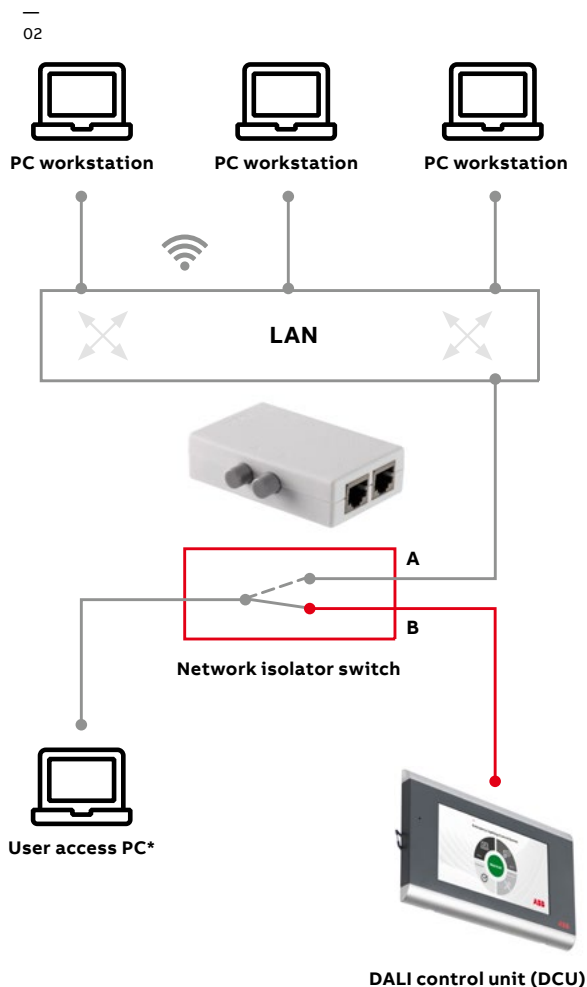
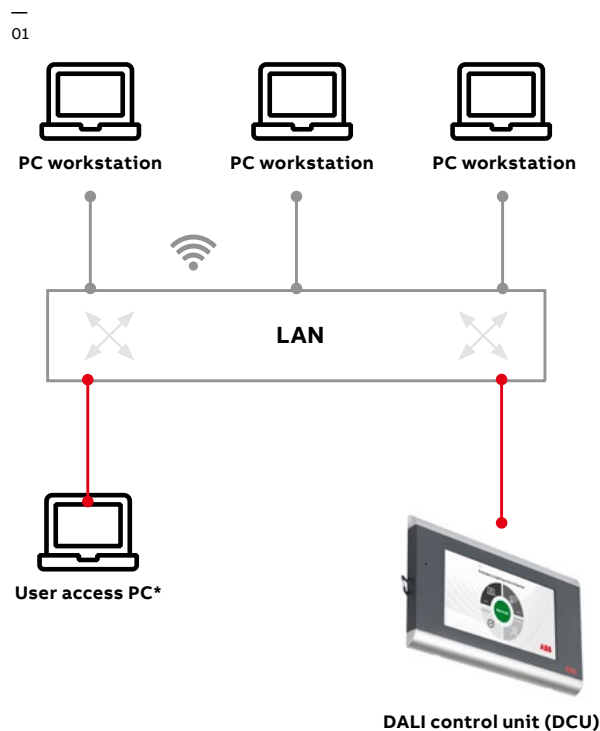
- 01 Direct connection to LAN
- 02 Indirect connection to LAN
- 03 Network isolator switch

The DALI control unit can be directly connected to the LAN and accessed in the same way as a printer on the network to download the test reports stored on the DCU. The system gives the choice of obtaining an IP address automatically.

Alternatively we also provide a network isolator switch and the IP address can be selected if the end user wishes to keep the device off their LAN network.

The DCU can store up to 4 years data but we advise that data be removed monthly or quarterly as a minimum to ensure that the records of the system are maintained.

The reports can be held electronically as a spreadsheet or can be printed and stored as a hard copy to provide a permanent and demonstrable record of the buildings emergency lighting systems health.



*** Note:** The user access PC is the only PC or laptop that has the DCU spreadsheet download software to access the automatically stored test results of the emergency luminaires.

Planning for a trouble free DALI installation

Success with DALI installations is directly related to the amount of planning and preparation applied during the commissioning process. Utilising pre-commissioning documentation and record device locations is the tried and tested method for DALI emergency lighting installations.

On commissioning

To help with the planning and preparation you will find some items in the DALI control unit box:

- Pre-planning addressing and grouping sheets. These are downloadable from the ABB website.
- Labelling stickers. (2 sets of both A0 - 64 and B0 - 64).

The fastest method of installing and commissioning the luminaires is:

1. To pre-program the units BEFORE installation.

This is the most efficient, cost effective and will reduce the time needed to commission the installation.

To pre-program the units BEFORE installation this is the process that should be employed.

- Take each emergency luminaire out of its box, temporarily connect to your DALI control unit terminals and mains power as this will enable the DALI gear to communicate with the controller and run through the commissioning process.
- Mark up the fitting on your building drawings and note its address (change the address now to what you want it to be) and the group it is connected to (change the group to what you want it to be).
- Use the on screen keyboard to update the location and luminaire type details.

Note ... it is much easier to change address and group now (while it is the only fitting connected and it's connected to the DALI control unit).

- Attach one sticky address label onto the fitting. (Address labels are provided and there is extra space if you want write something special on the label)
- Attach the other sticky label to the box the fitting came from. (So you can see what the pre programmed address is, and get the right fitting to the right location)
- Put the fitting back in the box and store till it is time to install the fitting on the site.
- When you perform your commissioning, choose the "Add New Devices" option and all your programming will be picked up, without change.

Everything will already be in the right place. SETUP >> Password >> OK >> Addressing WIZARD >> Add New Devices

- Use your walkie-talkie with an assistant, to walk the installation in address order. **If everything goes to plan, you will only need to walk the installation once.** Go to Home page on ELDCS TOUCH PANEL, and Using the **Maintenance** Option, send each fitting, in turn, a Function Test (on that option, the fittings will already be in address order).
- Your assistant should be able to confirm the function test by seeing the LED flash and the lamp change from Mains, to Battery, to Mains again.
- He/she just moves through the location following the numeric order.

This process minimises bugs and eliminates duplicated addresses.

2. At the installation mains power is supplied to the luminaires and they need to be left for 24 hours to charge their batteries. Some luminaires do this automatically and some require that the process is done manually.

In either case it is advised that luminaires in the system follow this process.

2A. Charge the battery

2B. Perform a commissioning Duration Test

(This is to ensure the battery, though brand new, can actually run the fitting for the regulated time) (this step discharges the battery so you have to complete one more step [2C], before normal operation can be performed.)

2C. Charges the battery again

When the Installer selects the option for system setup, the system will give a message stating:

"Return Commission Test Result after 28 hours, Please Wait". This is simply to remind the installer that after pressing the "New Devices" or "System Initialisation" Buttons, it will be 28 hours (or thereabouts) before you will see the results of the Commissioning Duration Tests.

Planning for a trouble free DALI installation

(Continued)

On Identification

How to identify a fitting.

There are several methods:

1. In the Setup menu under the DALI Operating section use the lamp ON and lamp OFF and LAMP Flashing controls. Identify a LINE of luminaires

This is a Class 1 DALI for device type 1 DALI emergency luminaires, downlighters and signs only.

Therefore there are a couple of types of luminaires:

1. An emergency exit sign. Today these are mostly 'Maintained'. So the Main Lamp will flash ON or OFF as directed by the controls. In the event this is non-maintained please use a function test to identify the luminaire.
2. An emergency escape or open area luminaire. This could be either maintained, non maintained or switch maintained.
 - For maintained the lamp will flash.
 - For non-maintained, the switch controlling the fitting should be turned on for the identification of the line.

These controls were provided to ensure that when commissioning products on line A or line B could be identified.

We have provided these controls to help you resolve any poor connection or faulty fittings (the most common problems) at the start of the commissioning process.

2. To identify a single fitting (for any other purpose)

It is possible to use the Maintenance option from the Home menu on the DCU.

Here the Connected fittings are laid out in a numerically sorted list.

Select the specific luminaire you wish to test by selecting the luminaire on the DCU.

Then send the device a Function Test. Press the Function Test button.

This will give a visual confirmation that the device is the right one. The fitting will go into emergency mode for 10-30 seconds. The main lamp will go from mains to battery supply, and after the predefined period will drop back to mains mode. During the test the indicator LED will flash.

Commissioning

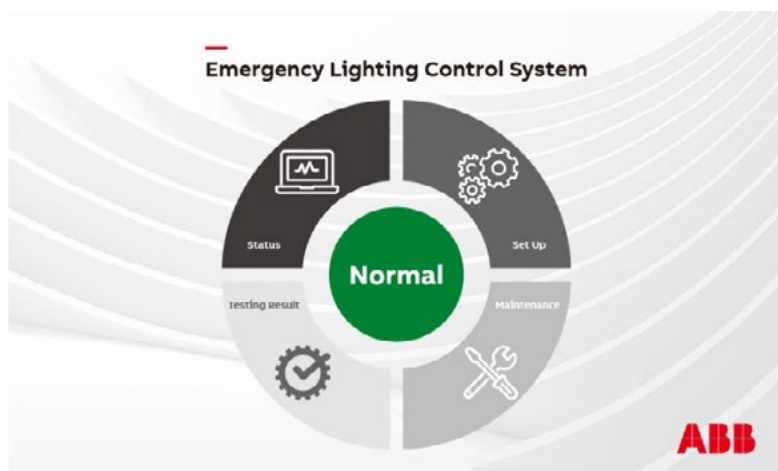
The commissioning method

1. The best method of install commissioning is to address each DALI emergency luminaire away from site and use the adhesive numbers provided with the ELDCS1 to match these devices up at the installation site. Place the number on the luminaire and one on the packaging that the luminaire arrived in, so that it can easily be identified and transported to site for the installation. Ensure all numbers are recorded on the site plan. This can be done in the setup screen under '**Add new devices**'.
2. Once all devices are installed in circuit at the site and at the exact position on the site plan reconnecting the ELDCS1/DALI into the DALI circuit will allow the device to re connect with the addressed luminaires against the addresses in the DCU.
3. Ensure that all this is complete, and the reference documentation and building plan has been updated, apply power to the network and the DALI Control Unit (DCU). From power up, it will take 2 minutes for the DCU to check the 2 DALI networks for available addresses and complete this step with either a tick or cross indication of the status found.
4. Once Commissioning is complete: From HOME Page >> go to Setup >> Select Search for Devices. The ELDCS TOUCH PANEL will now build a list of all the re-connected devices. Select EDIT Devices only if you need to:
 - change a Short Address
 - enter or update a location or Device type detail
 - remember to Press the Store Icon, otherwise changes are discarded
5. Check that the dates and times for your Duration & Function Testing are as you would like them.
6. Make sure that all the addresses programmed into the fittings match the locations shown on your drawing. Finding fittings that need attention later will take much longer if the drawing is not correct.
7. Store your documentation and drawings for later use.
8. Commissioning Tests will be running for fittings that have just been powered on. This is a function of the DALI ballast or controller. Not a function of the ELDCS TOUCH PANEL.
9. Do **NOT** press **New System Re-Initialize**. This option will confirm if you want to proceed and this is because, if confirmed, it will cause every device it finds on the DALI Lines to randomise. Therefore, all the Short Addresses will be changed. And all devices previously pre- programmed will be lost!
10. You can of course opt to commission on site but it will take considerably longer and will require a minimum of two people connected via mobile or 2 way radio to match the items that are being addressed to the luminaires on site. As the ELDCS1/DALI randomises addresses the location of the luminaires will not be in an ordered and structured numerical order.

Operations Manual, Software Operating Instructions & Notes

Opening screen

Displayed as soon as power is on



This is the opening screen and it will be displayed as soon as power is applied. While it is displayed the application controller is scanning the two DALI lines and establishing what is connected.

The program reads the contents of all the status bytes and concludes with displaying the green **Normal** or red **Error** when a luminaire connected to the DCU needs attention as appropriate to the conditions on the network.

This screen leads to the normal home screen. You need to do nothing while this is happening, and it may take around 2 minutes to complete.

Main menu page

The HOME button will always bring you here, to this page

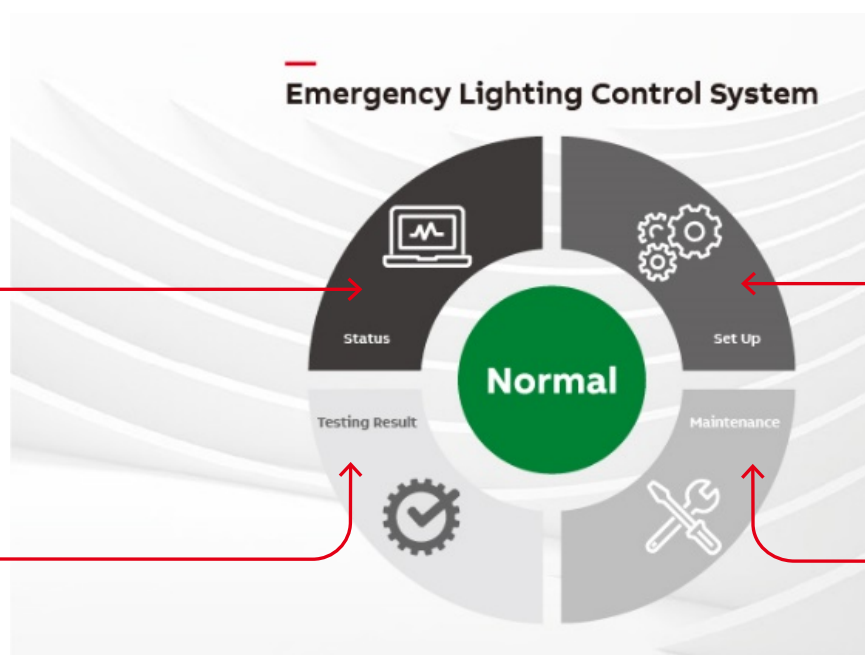
The Green Button Indicator will change to Red in the event of an error

Status

Displays the current status of the connected devices, and allows the Technician to extract the current status information

Testing Result

Go here to see the results of functional or duration tests



Maintenance page

Stop Test

Stops a current duration or function test

Inhibit Mode

Sets inhibit mode in the selected device

Rest Mode

Sets rest mode in the selected device

Terminate Inhibit/Rest Mode

Terminates rest or inhibit mode in the selected device

Group Test Setting

A range of group related special functions are available... This button takes you to that page. Included are:

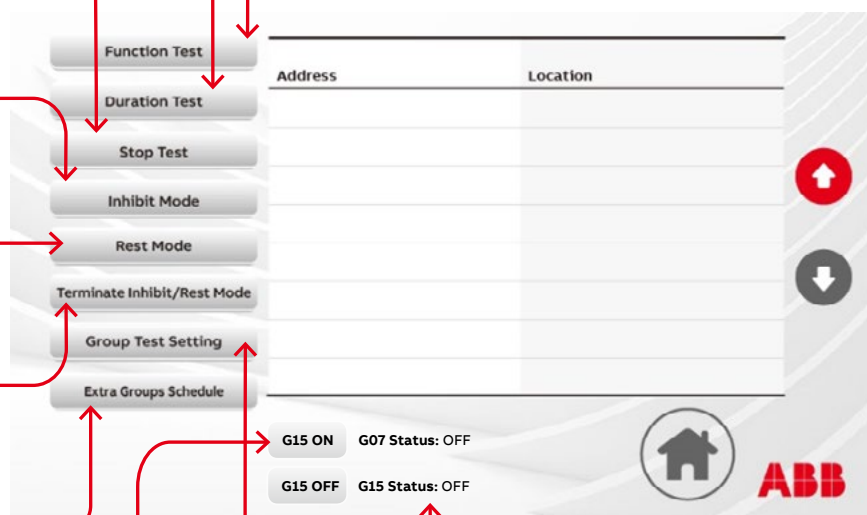
- Night Light Function on Group 7
- Inhibit setting on Group 8

Duration Test

Performs a duration test on selected device

Function Test

Performs a function test on selected device



Group Test Setting
Goes to page for setting group characteristics

Group ON/OFF

When a luminaire is added to Group 15 it can be switched on and OFF directly from this DCU button

Group Status

This points out the Status of Group 07 (Night light schedule) and the status of Group 15 switched maintained central control. If either one of these status is ON then the luminaires will be on regardless of G15 switching

Set Up

Here are the controls for the commissioning processes. The commissioning tools, and controls for the system are here also.

Maintenance

To perform manual functions
Start/stop duration or function tests
To set/reset various modes and features

Status

Device names as entered at commissioning

Connected Devices are listed here in address order. Line A first, then Line B.

Device locations as entered at commissioning

Current status of the device as at last report, taken only a few moments ago. If there was a failure, it will be in this column. Depending on the address you may need to scroll (up or down) to it.

Scroll up

Scroll down

DETAIL

Home page

Previous page

Home page

ABB

Address	Name	Location	Status

Displaying the current status bytes

Status

Address

Ready

Lamp failure

Lamp arc power on

Limit error

Fade running

Reset state

Missing short address

Power cycle seen

Test Timing

Next function test

Next duration test

Function test interval

Duration test interval

Test execution timeout

Prolong time

Hours

Hours

Days

Weeks

Days

Minutes

Home page

Previous page

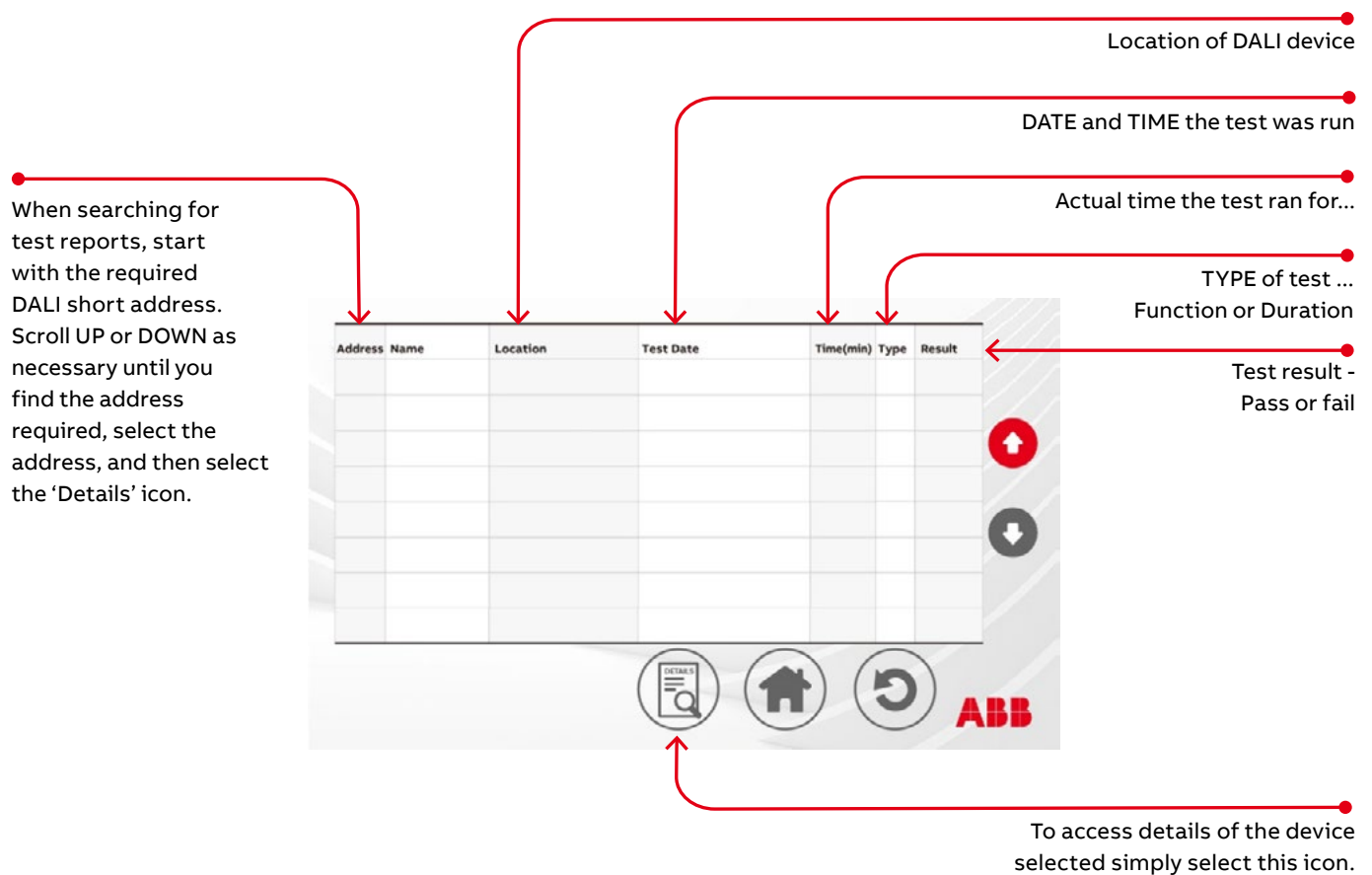
ABB

This is the first of the status bytes from a DALI device. The data here may take up to 2 minutes to load, depending where the application controller is in its polling cycle and how far that is from the selected device address

For a comprehensive understanding of the meanings of the individual status bits ...please refer to the relevant 62386 standard document or (IEC62386:202)

Scrolls back and forth through the 5 status pages

Test reports



Results are stored in the DALI control unit for 4 years.

Test take just a few minutes to appear in the test data and these can be downloaded as a spreadsheet from an access computer.

Setup Pages

Setup Code Entry Page



To enter the setup pages the user must first enter an access code.

The Default code is "123456"

This code can be changed on the commissioning page.

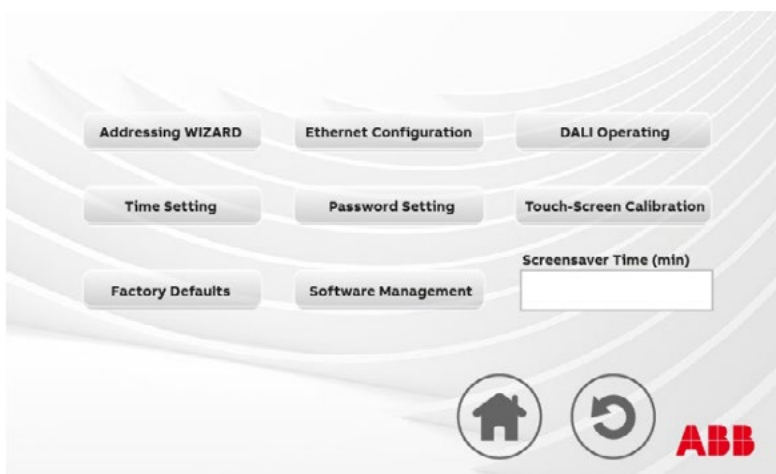
Record your code carefully!

For security reasons, if this code is lost it is not possible to access the DALI control panel sections protected by a password.

Button meanings:

- 0 through 9 – Numeric entry buttons
- ESC – Escape: Goes back to the previous page
- ← – (Arrow) Backspace on your current entry
- OK – Process the entry ... Enter button

Setup Page



Button meanings:

- **Addressing Wizard:** Goes to the commissioning wizard.
- **Time Setting:** Goes to the time setting page
- **Factory Defaults:** Allows resetting to factory defaults
- **Ethernet Configuration:** Allows for setting the LAN parameters
- **Password Setting:** Allows user to change the main password
- **Software Management:** Allows software updating
- **DALI Operating:** Tools to make setup easier
- **Touch Screen Calibration:** Allows for screen alignment
- **Screensaver Time:** Change the length of screen activity

After entering a correct password the user will be taken to the Addressing Wizard

Addressing Wizard

If your system is existing with devices already addressed, use this option to search out new devices on the DALI networks

For NEW systems ...
WARNING! Selecting this option after setting up the luminaires individually could result in loss of pre-programmed data. All devices will be randomised and each device will be given new short-addressing.

Allows the system to search for any device on the network and rebuild the list of current devices



Message area

Gives a list of current devices which can then be chosen for EDIT of name and location details

Editing Devices and Adding Text

When editing devices, the full list of devices is first displayed. Touch the line of the device you want to edit



When the chosen device is highlighted, touch the EDIT button to go to the editing page

Editing devices

Short Address, Name, Location, Group Assigning

Change the name of the chosen device. This is 12 characters free for any text numeric or special. Touch here to bring up the keypad for typing

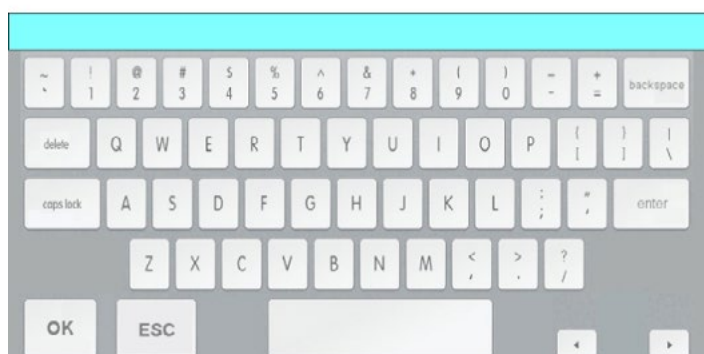
Change the short address of the chosen device

If you have changed anything ... Remember to touch the SAVE BUTTON, or your input will be ignored

Change the location of the chosen device. This is 20 characters free for any text numeric or special. Touch here to bring up the keypad for typing

Change the group of the chosen device. Touch the box for the group you wish to choose. A device can belong to more than 1 group if required

Keyboard entry

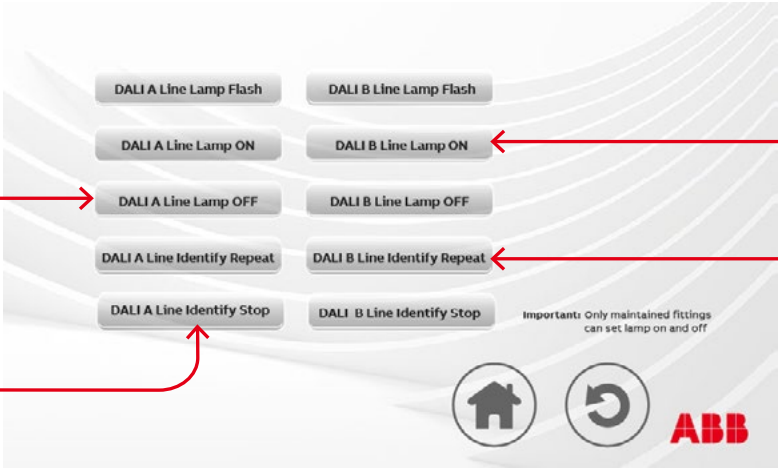


This is the Keyboard that will appear for data entry throughout the program

DALI operating

A Series of tools to allow the installer to perform time saving operations.

- The “Identify Command” causes the fitting to flash its LED status indicator with the 6 bit structure of the physical Short Address as set in the device
- **Remember that only Maintained Fittings can set the lamp on or off**



The screenshot shows a menu with the following options:

- DALI A Line Lamp Flash
- DALI B Line Lamp Flash
- DALI A Line Lamp ON
- DALI B Line Lamp ON
- DALI A Line Lamp OFF
- DALI B Line Lamp OFF
- DALI A Line Identify Repeat
- DALI B Line Identify Repeat
- DALI A Line Identify Stop
- DALI B Line Identify Stop

Annotations with red arrows point to specific buttons:

- Sends broadcast lamp off** points to the DALI A Line Lamp OFF button.
- Sends broadcast lamp on** points to the DALI B Line Lamp ON button.
- Sends a broadcast “Identify Command” repeats the command constantly** points to the DALI B Line Identify Repeat button.
- Starts a broadcast on and off sequentially. Touch to start ... touch again to stop.** points to the DALI A Line Identify Stop button.

At the bottom of the menu, there is a note: **Important: Only maintained fittings can set lamp on and off**. Below the note are icons for a home screen, a refresh/cycle icon, and the ABB logo.

Time setting page

- The clock setting offers a keyboard entry requiring date and time to follow the format 20YY-MM-DD HH:MM:SS
 - Remember to press the ‘OK’ key when finished.
- Touch the clock face to select the time setting page

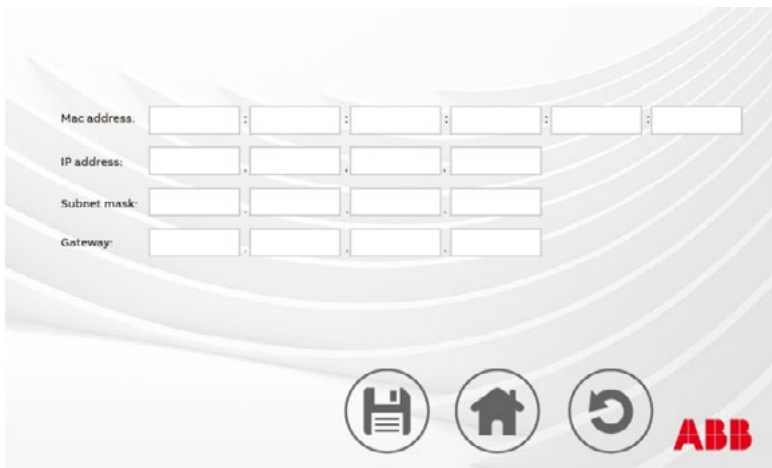


Resetting to Factory Defaults



- **WARNING!** When resetting to factory defaults this screen will display to prevent the user making the change in error.
- Defaulting, as the name suggests, deletes all data and history.
- There is one more prompt to advise that this will reset the entire system and all data entered will be lost.
- Lost data cannot be restored!

Ethernet configuration - LAN setup



- For setting your network characteristics.
- Touch the section you wish to change and the keyboard will automatically come up for input.
- For more information on direct or indirect LAN settings, see page 28.

The MAC address of this device is provided for reference only.

If you change settings, remember to 'SAVE' them afterwards.

Password resetting



- The Default password is 123456
- To change the password, complete the fields shown and press the save icon.
- Remember your password, and write it down for safe keeping.
- **For security reasons**, lost passwords can **NEVER** be restored.

In the event of finding a failure



- This indication shows there is some attention needed on the system. This indication will not extinguish (there is no timeout). It is designed to make the user take action
- Select the status page
- On the status page you will find the status, and therefore any errors, for all the connected DALI devices.

Some not so common indications that you may find are:

- Type Error - the device is not DALI device type 1
- Framing Error - There are 2 devices on the network with the same short address.

Framing errors

The screenshot shows the Address configuration screen. It has a table with four columns: Address, Name, Location, and Group. The Address field is highlighted with a red arrow and a message: "System prevents address change to an existing address". The Group column contains a list of checkboxes from 0 to 15. The ABB logo is in the bottom right corner.

In the event of a framing error it is possible to change the short address on screen. Select from the short address and grouping screen shown on page 20

It is also possible to delete addresses, this is only possible via a ABB service engineer, who can be contacted at the local sales office.

ELDCS touch panel software update

The screenshot shows the software update screen. It has three input fields: 'Current software version', 'Latest firmware version', and 'The GUI version'. A button labeled 'Update to latest firmware version' is located next to the 'Current software version' field. The GUI version is displayed as '20170915V01'. The ABB logo is in the bottom right corner.

You will need to come here at the direction of Technical Support. You come here from the Setting Page >> Software Maintenance

- To use this function, you will need a file sent to you by Technical Support.
- The Tech Support team will guide you through the process.
- The process uses the USB connector at the front of the touchscreen (under the front cover ... which you will remove to complete the process.)
- The Current Version shows the version of firmware in the touchscreen now.
- The Latest Version shows the version in the USB delivered file provided by Tech Support.

Group settings

Time & day for the testing to take place

Time periods are set on calendar year

- Quarterly is starting January, April, July and September
- 6 monthly is starting January and July

If you have Tuesday selected, a monthly test runs on the first Tuesday in that month, or quarterly, six monthly or annually.

- If the ELDACS TOUCH PANEL is installed after the 1st Tuesday in the month the 1st scheduled test will be run in the following month, or quarterly, six monthly or annually.
- These groups are all preset and therefore you do not need to make changes unless you specifically need to.

Select ... Group to which this time will apply (0-5)

A column for each ...
Type of Test
(Duration or Function)

Select ... Function
Test Frequency
Options

Select ... Duration
Test Frequency
Options

Day of the Week
the Test will run
(Mon - Sun)

Select ...
The Time the
Test will run

Send an Immediate
Test (F/T or D/T) to
a Group of Fittings

If you have
changed anything ...
Remember to Select
the SAVE BUTTON,
or your input will
be ignored

Function Test	Duration Test	Group	Day	Hour	Minute	Immediate Test
<input type="checkbox"/> Manual	<input type="checkbox"/> Manual	G0	MONDAY	:	:	G0 FT G0 DT
<input type="checkbox"/> Weekly	<input type="checkbox"/> Weekly	G1	TUESDAY	:	:	G1 FT G1 DT
<input type="checkbox"/> Every 2nd week	<input type="checkbox"/> Quarterly	G2	WEDNESDAY	:	:	G2 FT G2 DT
<input type="checkbox"/> Monthly	<input type="checkbox"/> Every 6 months	G3	THURSDAY	:	:	G3 FT G3 DT
	<input type="checkbox"/> Annually	G4	FRIDAY	:	:	G4 FT G4 DT
		G5	SATURDAY	:	:	G5 FT G5 DT
						ALL FT ALL DT

At the bottom of the screen are three circular icons: a floppy disk (Save), a house (Home), and a circular arrow (Refresh). The ABB logo is in the bottom right corner.

Using the night light schedules

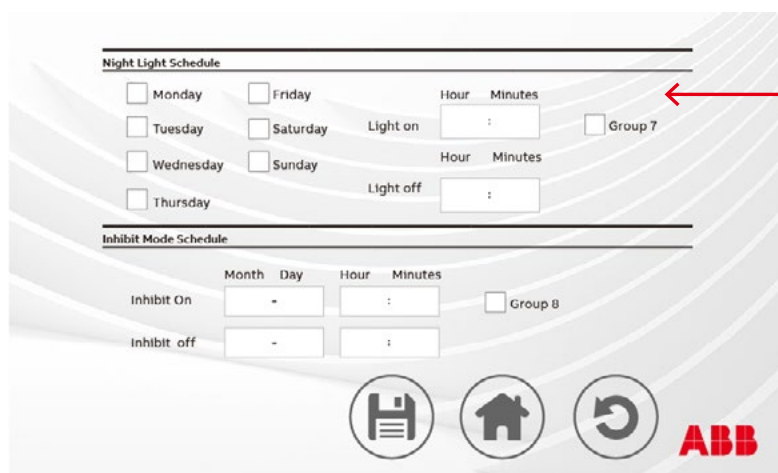
Using the inhibit mode scheduling

Inhibit mode scheduling can be enacted for fittings in Group 8.

This schedule will trigger inhibit On and Off at the allotted times.

You come here from the **Maintenance** page

- Enables The user to take advantage of DALI programming to operate some lights as **Night Lights**.
- To enable this clever enhancement, simply set the fittings you wish to turn on and off at the scheduled times to Group 7. (Along with the other Groups that may apply to this fitting.)






Night Light Schedule

☐ Monday ☐ Friday Light on Hour Minutes ☐ Group 7
☐ Tuesday ☐ Saturday Light off Hour Minutes
☐ Wednesday ☐ Sunday
☐ Thursday

Inhibit Mode Schedule

Inhibit On Month Day Hour Minutes ☐ Group 8
 Inhibit off Month Day Hour Minutes




ABB

This only works for fittings that are capable of Maintained mode.

Printing

The DALI control unit does not print directly.

The DCU produces a spreadsheet showing the data for each luminaire which can then be filed electronically. It can be filtered, reviewed, copied, stored and printed exactly as any other Excel file.

The process is to connect a PC or a laptop to the DALI control unit which has some access software installed available from the ABB website. This makes the PC or laptop the Access PC for the DALI control unit.

The item of software is called the Spreadsheet download software as detailed in the following pages.

This software enables the download of the spreadsheet information which creates an Excel file on the PC.

"The Printer "can be connected by any conventional method to the network configuration as detailed in the following pages.

Connect a PC or laptop via a LAN network

—
01 Direct
connection to LAN

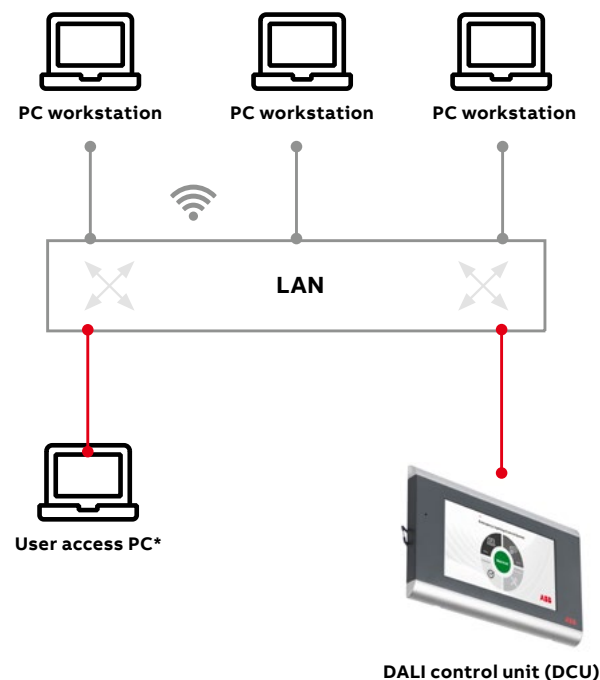
—
01 Indirect
connection to LAN

This will be the normal way the controller will be connected.

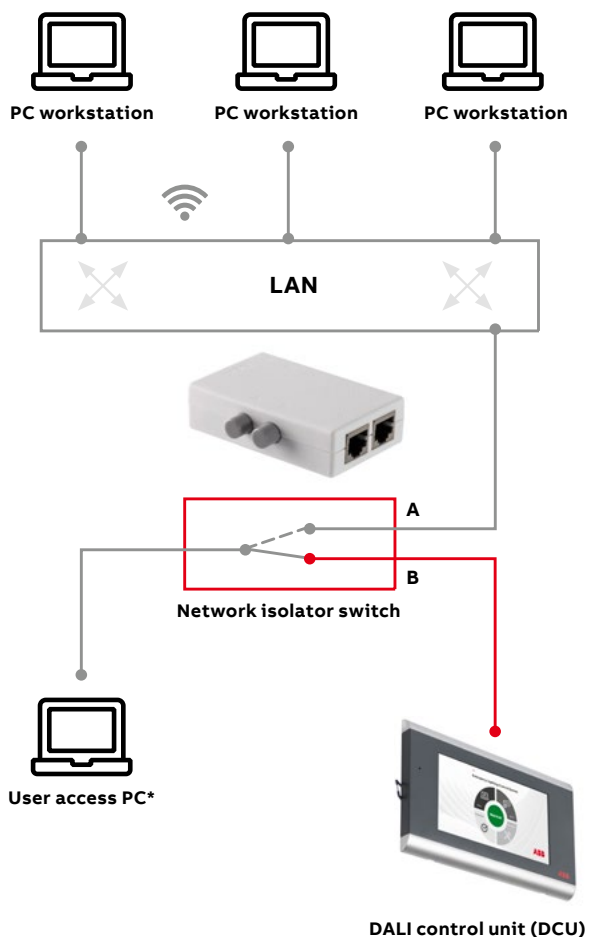
A typical example of how the LAN network would be setup in a commercial environment.

We recommend that the spreadsheet download software be loaded the minimum numbers of PCs and laptops to retain control and access to the emergency lighting reports.

—
01



—
02



LAN setup

With the network cabled in, let's set the DALI control unit network screen variables.

The PC software performs this step for you automatically and provides a direct connection to the LAN.

When you come to this screen on the DCU it will already be filled in.

Mac address: [] : [] : [] : [] : [] : []

IP address: [] . [] . [] . []

Subnet mask: [] . [] . [] . []

Gateway: [] . [] . [] . []

☒ Obtain an IP address automatically ☐ Use the above IP address

Icons: [Floppy Disk] [Home] [Refresh] [ABB Logo]

The network characteristics (addressing) are self setting

You get here from the setup page
>> Setup >> Ethernet Configuration

If you are happy to connect the DCU directly to the LAN, then you need to change nothing as the DCU will obtain an IP address automatically.

Mac address: 00 : 80 : e1 : 08 : 21 : 2e

IP address: 10 . 0 . 0 . 123

Subnet mask: 255 . 255 . 0 . 0

Gateway: 10 . 0 . 0 . 1

☐ Obtain an IP address automatically ☒ Use the above IP address

Icons: [Floppy Disk] [Home] [Refresh] [ABB Logo]

The MAC address of this device is provided for reference only.

If you wish to indirectly connect to the LAN, firstly tick the "Use the above IP address" box.

You will now need to set up the files on your computer, as shown on the next page.

Downloading

For Downloading a Status Spreadsheet log you will need the following

Your Connected PC loaded with:
Windows 7 or 10

- Microsoft Office Excel
- The Spreadsheet software (available from the ABB website)

You should have basic Windows file/folder handling skills but for connection to the LAN then basic Windows network expertise is required. If available please refer to your network administrator or IT colleague for guidance and setup help. If this option is not open to you then please follow the guidance below.

It is important to note that when we use the words “PRINTING” or “PRINT” nothing is actually printed. The program simply stores an Excel file in the folder where the executable file is stored, or to the location you supplied as you reply to the prompt.

In order to check for Windows operating system information

1. Click the Start button, find Computer in the search box, right-click Computer, and then click Properties.
2. Look under Windows edition for the version and edition of Windows that your PC is running.

Note: When connecting Using Windows 10 – Make certain to start your copy of EXCEL BEFORE starting the Spreadsheet program. This enables the program to work as at this moment Windows 10 will not open the Excel program automatically when you try to “print” (which actually uploads the data to EXCEL)

The spreadsheet software when downloaded on to the access PC will appear like this

Direct Connection via LAN

Using DHCP* the DCU and the PC will already have IP addresses assigned by the host.

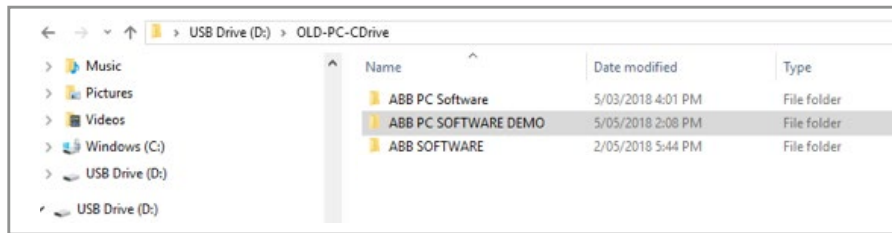
When you execute (RUN) the spreadsheet program the software will find the ELDCS1 controllers on its own and make a connection to them.

The program uses the IP address of the ELDCS1 to find controller devices and it searches in Numeric sequence.

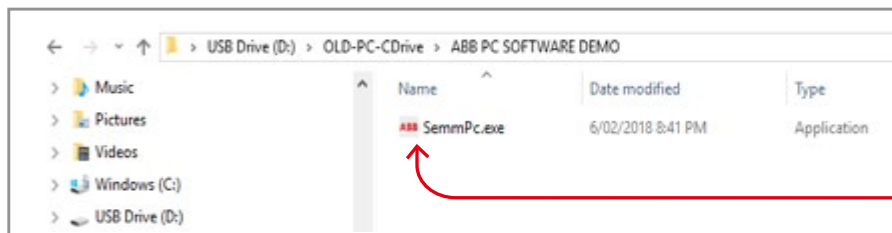
Network administrators can set this up like a setting up devices and printers.

*The Dynamic Host Configuration Protocol (DHCP) is a network management protocol used on TCP/IP networks whereby a DHCP server dynamically assigns an IP address and other network configuration parameters to each device on a network so they can communicate with other IP networks.

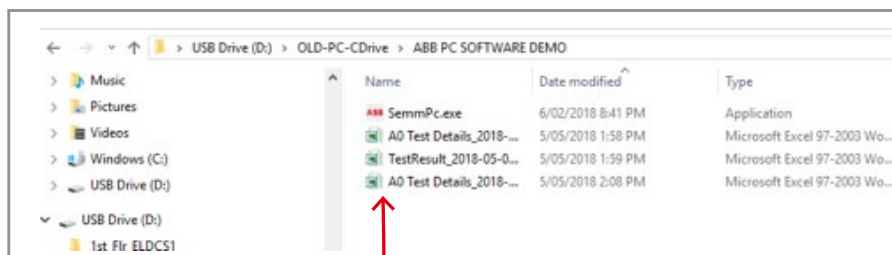
Folder setup



Create the new Folder for example ABB PC SOFTWARE DEMO Into that folder copy the PC Spreadsheet Software



From within this folder, double click the executable file to run the program and download the spreadsheet logs from the ELDCS1/DALI you are accessing



When files are "Printed" you will find the file created in this same folder in the form of a spreadsheet.

	A	B	C	D	E	F	G	H	I
1									
2		Address	Name	Location	Test Date	Type	Time(min)	Result	
3		A0	ABB	LOCAL	2018/12/06 06:18:57	FT	none	OK	
4		A1	ABB	LOCAL	2018/12/06 06:18:57	FT	none	OK	
5		A2	ABB	LOCAL	2018/12/06 06:18:57	FT	none	OK	
6		B0	ABB	LOCAL	2018/12/06 06:18:56	FT	none	OK	
7		B1	ABB	LOCAL	2018/12/06 06:18:56	FT	none	OK	

A typical spreadsheet log will appear below. Note on some Windows and Excel packages the sheet will need adjustment to the 'Row Height'.

In the name and location fields "ABB" and "LOCAL" are auto generated but can be amended to specific text required by the end user/ installer.

We recommend that the NAME field identifies the emergency luminaire and the LOCAL field refers to its location.

Network Setup

Using Direct Connection:

When using DIRECT CONNECTION (All Devices individually and permanently connected to a Network Switch or Router)

There should be no need to change any of the network setup.

In order to check for Windows operating system information

1. Click the Start button, find Computer in the search box, right-click Computer, and then click Properties.
2. Look under Windows edition for the version and edition of Windows that your PC is running.

Note: When connecting Using Windows 10 – Make certain to start your copy of EXCEL BEFORE starting the Spreadsheet program. This enables the program to work as at this moment Windows 10 will not open the Excel program automatically when you try to “print” (which actually uploads the data to EXCEL)

The spreadsheet software when downloaded on to the access PC will appear like this Simply setup the folder and file structure and run the PC Spreadsheet program from the folder you created as detailed.

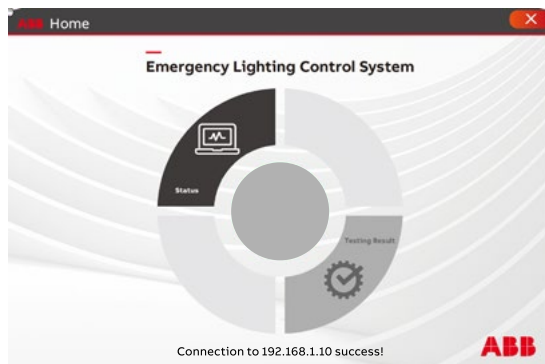
With the Network set up as above this is how to START and OPERATE the “PC Spreadsheet Upload” program.

Windows 7

>> Navigate to the folder where the executable file is stored

>> Double click to Execute (RUN) the file
Wait briefly while the program finds the ELDACS1 and makes a connection

When it makes a connection a screen like this will appear



Note the message : “Connection to 192.168.1.10 success!” beneath the circle Icon

>> The Controller program will then replicate the controller screen. You can follow the intuitive icons on the screen.

INFORMATION:

When you Press a “PRINT” icon, the program will open EXCEL and store a file within it. If you do not have EXCEL on your system the program will fail. It must be the genuine Microsoft EXCEL Program, no copies or alternatives will do.

Once the file is displayed, it is in your PC and then may be stored, copied, duplicated and updated as you see fit. You may also choose at this point to actually PRINT the file to a printer, to obtain a hardcopy.

Windows 10

Make sure to start EXCEL on your system.

Start it and leave it open.

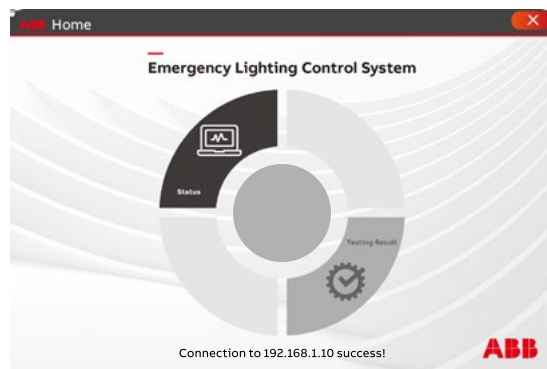
No file needs to be selected.

(This is not necessary on WIN7 systems)

>> Navigate to the folder where the executable file is stored

>> Double click to Execute (RUN) the file
Wait briefly while the program finds the ELDCS1 and makes a connection

When it makes a connection a screen like this will appear



Note the message : "Connection to 192.168.1.10 success!" beneath the circle Icon

>> The Controller program will then replicate the controller screen. You can follow the intuitive icons on the screen.

INFORMATION:

When you Press a "PRINT" icon, the program will give the option to store the file in your choice of location. Follow the prompts to put the file where you want it stored.

If you do not have EXCEL on your system the program will fail. It must be the genuine Microsoft EXCEL Program, no copies or alternatives will do. Once the file is displayed it is **in** your PC and then may be stored, copied, duplicated and updated as you see fit. You may also choose at this point to actually print the file to a printer, to obtain a hardcopy.

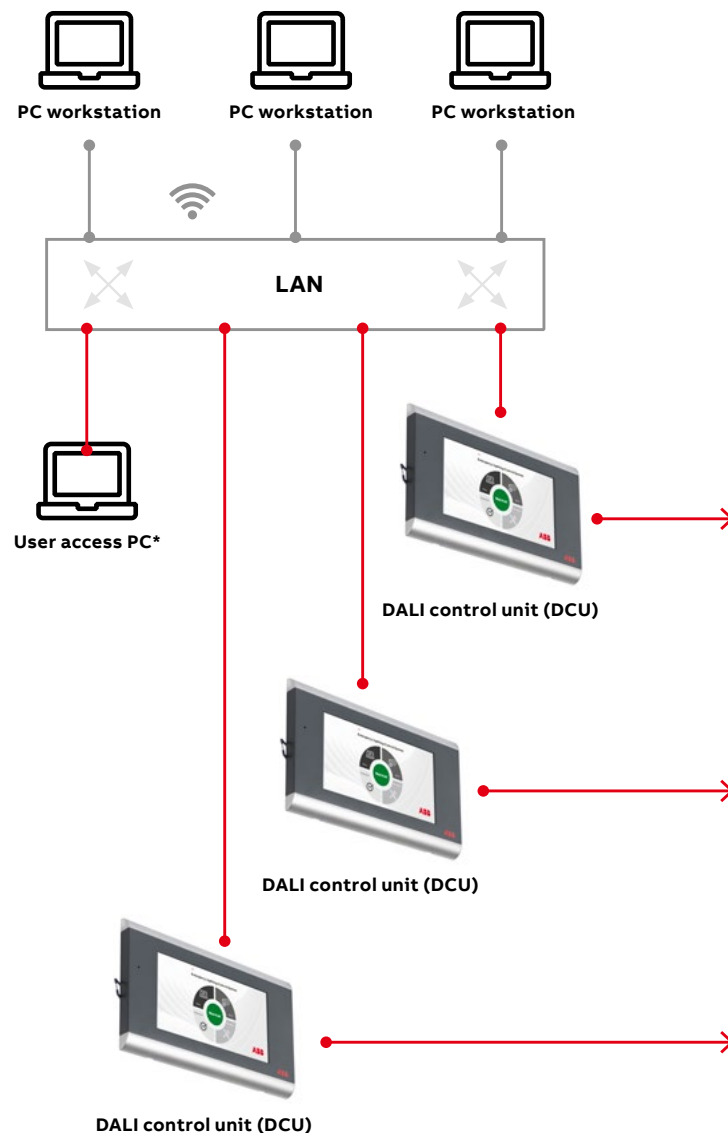
Multi ELDCS1 Applications

For Multiple ELDCS1 in the same LAN Network:

- Make sure there is a folder for each ELDCS1 on your system.
- The folder should be named to make sense as to location.
- For example: 1stFloor_ELDCS1, 2ndFloor_ELDCS1, etc
- In that folder, there must be a separate copy of the Spreadsheet download software.
- The Program is going to put any status log or spreadsheet that you "PRINT" into that folder.

01 Direct
connection to LAN

01



IMPORTANT TO UNDERSTAND THIS ABOUT MULTISCREEN APPLICATIONS USING DIRECT CONNECTIONS

Direct connections will have been allocated a permanent Static IP address by the network administrators.

- The Spreadsheet Software searches for the ELDCS1 controllers in the numeric order of the IP address
- Once an address is found, it is locked 'busy' and will ignore any further requests for reply
- So to reach address 192.168.2.7 (in this example), the first address must be 'BUSY' To reach address 192.168.2.12 .. both the other 2 controllers must be locked 'Busy' and there will be 3 copies of the program eventually running.
- To ensure the correct logs are stored in the correct folder MAKE SURE you start the spreadsheet program (double Click to Execute (RUN)) in the folder belonging to the correct DCU

IP 192.168.2.2
Name 1st Floor ELDCS
Folder c:/Documents/ABB/1st_Flr_ELDCS1

1st_Flr_ELDCS1
 A0 Test Details_2018-05-02 18_09_09.xls
 A1 Test Details_2018-03-05 18_17_28.xls
 TestResult_2018-05-02 18)09)33.xls
ABB EDLSC1.exe

IP 192.168.2.7
Name 2nd Floor ELDCS
Folder c:/Documents/ABB/2nd_Flr_ELDCS1

2nd_Flr_ELDCS1
ABB EDLSC1.exe

IP 192.168.2.12
Name 3rd Floor ELDCS
Folder c:/Documents/ABB/3rd_Flr_ELDCS1

3rd_Flr_ELDCS1
ABB EDLSC1.exe

The Network Isolator Switch (optional)



The network switch is optional and only required if you do not want the ELDCS1 connected to the building LAN. This is slightly more complex way of downloading the log in that you will need to add

The essential rules are that:

Both PC and ELDCS1 must be in the same IP address family

For example: both be within an numeric range like this : 192.168.2.xxx

PC Set to 192.168.2.20

ELDCS1 Set to ... 192.168.2.10

Note: the 2 devices must NOT be the same number totally. The segment at the end must be unique. We have used xxx.10 ... and ... xxx.20

Both PC and ELDCS1 must be in the same IP Subnet mask group.

For example: both be within an subnet mask: 255.255.255.0

PC IP Address set to 192.168.2.20

PC Subnet mask to 255.255.255.0

ELDCS1 IP Address set to 192.168.2.10

ELDCS1 Subnet mask to 255.255.255.0

It is not necessary to fill in the Gateway address as no gateway is being used in this situation.

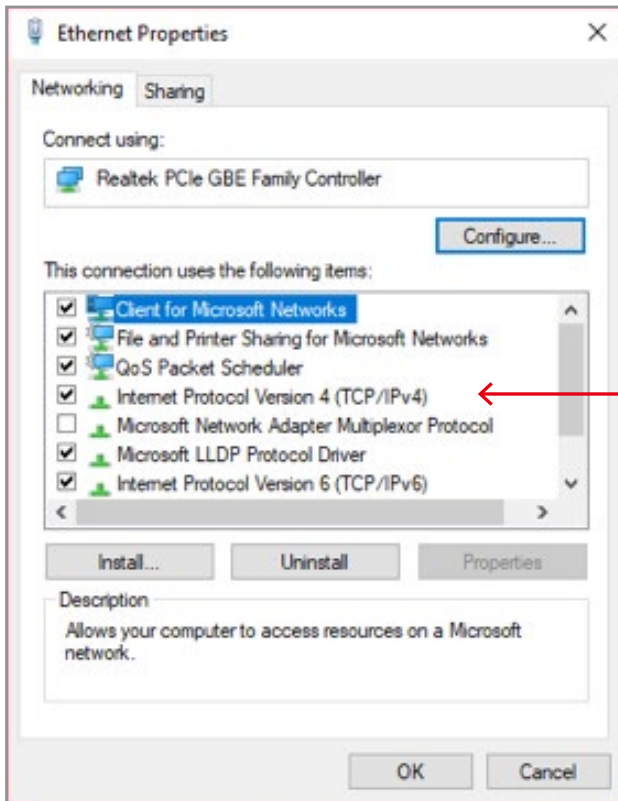
The screenshot shows two windows from the Windows operating system. The background window is the 'Network and Sharing Center', which displays network status for 'TP-LINK_Jewoo' (Private network) and 'Unidentified network' (Public network). The foreground window is the 'Ethernet Status' dialog box, showing connection details like 'IPv4 Connectivity: No network access' and 'Media State: Enabled'. Annotations include a red arrow pointing from the 'Network and Sharing Center' title bar to the text 'How to reach this page', another red arrow pointing from the 'Ethernet' connection in the 'Unidentified network' section to the text 'The Network we need to check or change. Double click for Status', and a third red arrow pointing from the 'Properties' button in the 'Ethernet Status' window to the text 'Click here to see the settings'.

How to reach this page

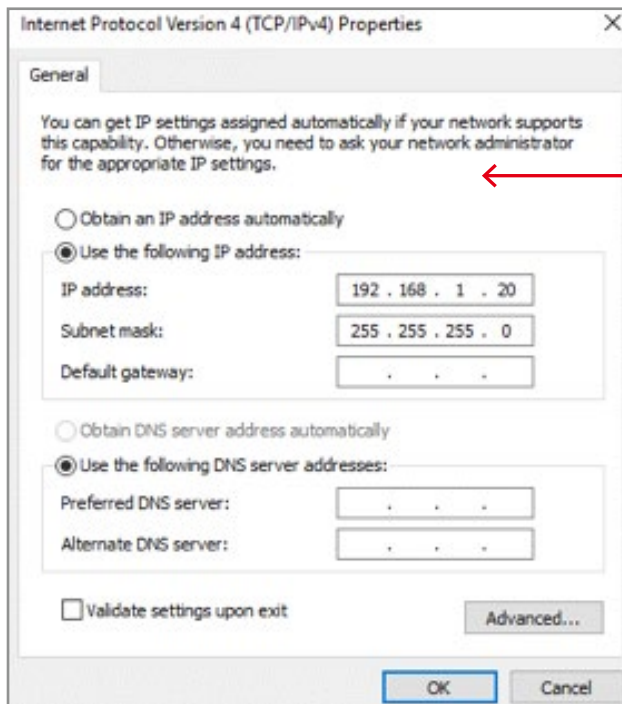
The Network we need to check or change. Double click for Status

Click here to see the settings

The Network Isolator Switch (optional)



Ethernet properties:
We need to check and change the Version 4 settings



Now to check the IP settings

Version 4 Ethernet properties :
Set the IP address appropriately.
In this case, we have set the Subnet mask to type C.
Both PC and ELDCS1 have to be the same subnet mask.

The Network Isolator Switch (optional)

Mac address: 00 : 80 : e1 : 08 : 21 : 2e

IP address: 192 . 168 . 1 . 10

Subnet mask: 255 . 255 . 0 . 0

Gateway: 10 . 0 . 0 . 1

☐ Obtain an IP address automatically ☒ Use the above IP address

ABB

When using Direct Connection method: Check the box for "Obtain IP address automatically"

Remember to SAVE your entry, before leaving the page!!

And now the ELDCS1 Network settings:

To get to here from Home page on ELDCS1:
>> SetUp >> Insert Password >> ENTER >> Ethernet Configuration

Mac Address is for reference and cannot be changed.

Insert the Required IP address and Subnet mask.

When using the Network isolator to connect between the PC and ELDCS1 check the box for "Use the Above IP address" and fill in the spaces provided as noted above

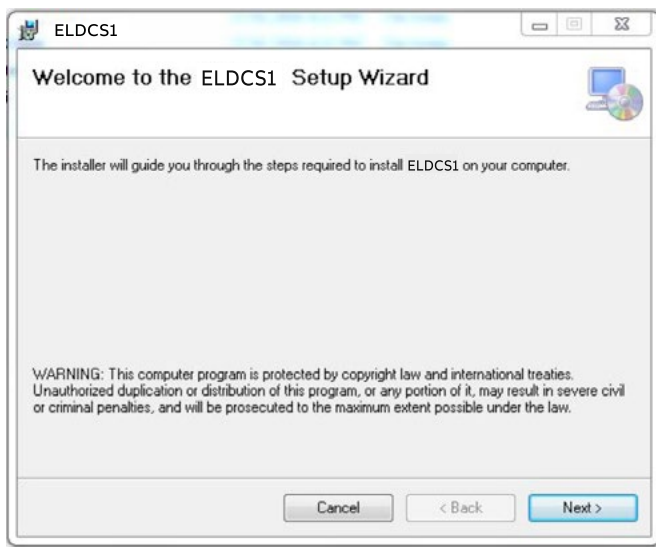
Loading the printing program onto your PC

So now you are connected, and the DALI control unit LAN connection is addressed ... let's load the program onto the PC...

You need to have a copy of the program, which can be downloaded from your DALI control unit system supplier, or contact their sales office.

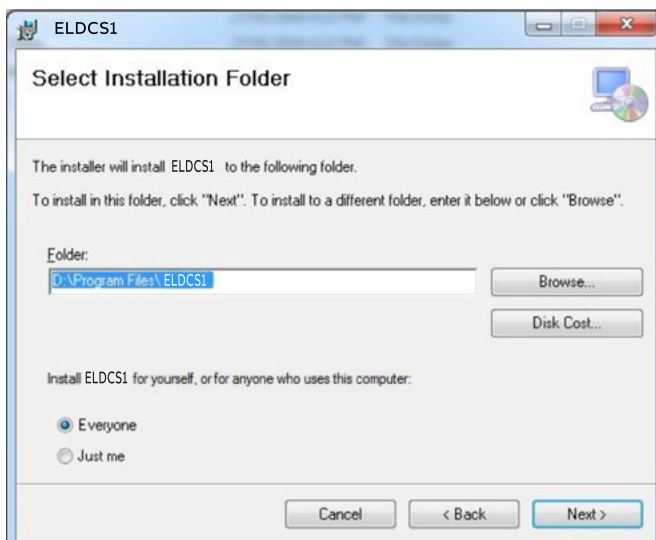
Download or copy that program to your desktop and execute the setup file in the normal fashion for your operating system.

The operation is straightforward and it will leave an Icon on your desktop.



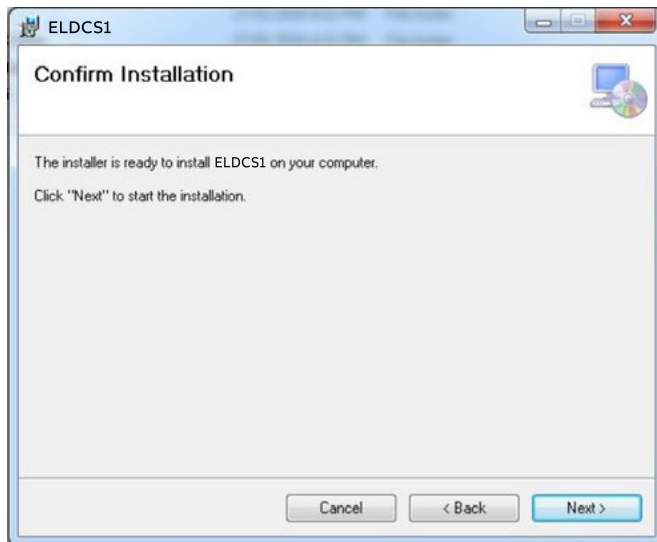
- Click "Next"

Step 1

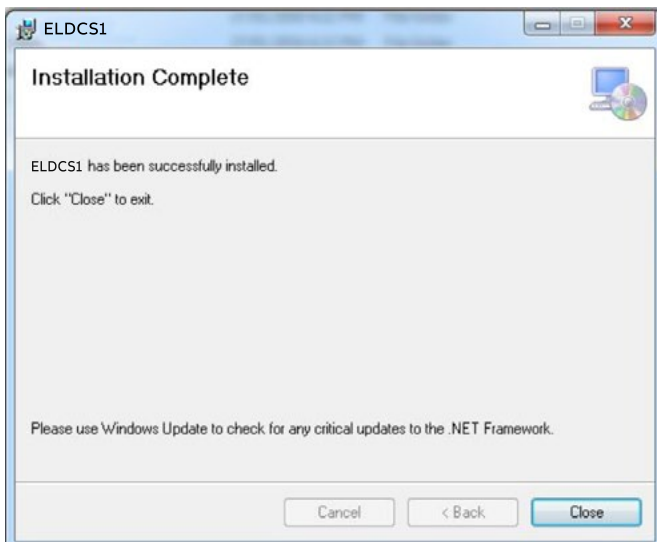


- Select the installation folder you want to use and then click "Next"

Step 2



- Confirm that you are ready to install the program
- Click "Next"

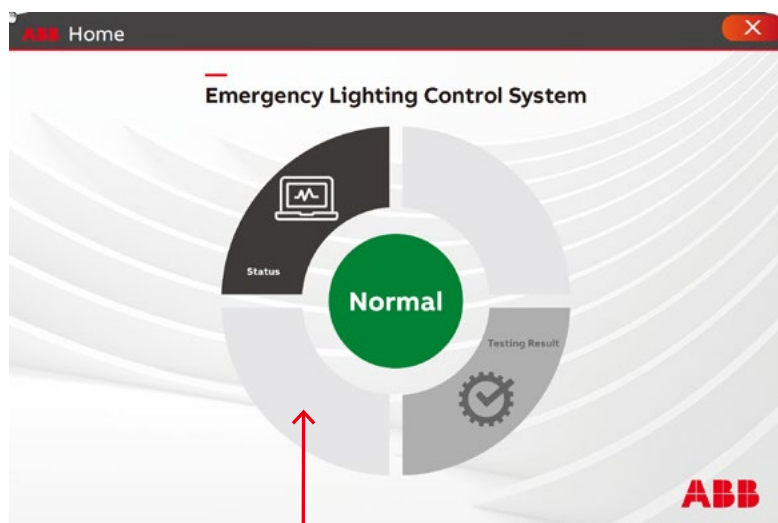
Step 3

- With the completion of this step the software is installed completely
- Click "Close"
- It is advisable to make sure that the .net framework is installed and up to date

Step 4

- There will be an Icon on your desktop which starts the data retrieval program
- Double click to run it.

Start the Program

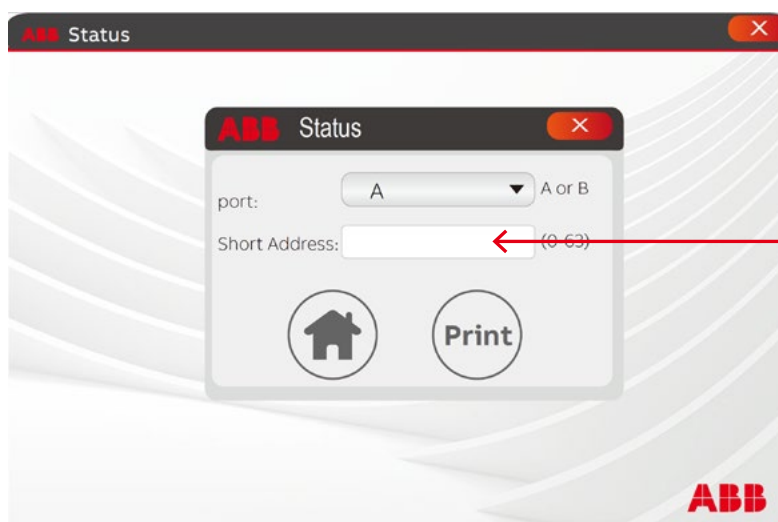


Program Home Page

When all is normal this will be the Home Page you will see.

The program will search for devices on the network. Make sure your DCU has a valid network address. If no devices are found you will see this.

Report printing: Status



Press "Status" and this is what will be presented.

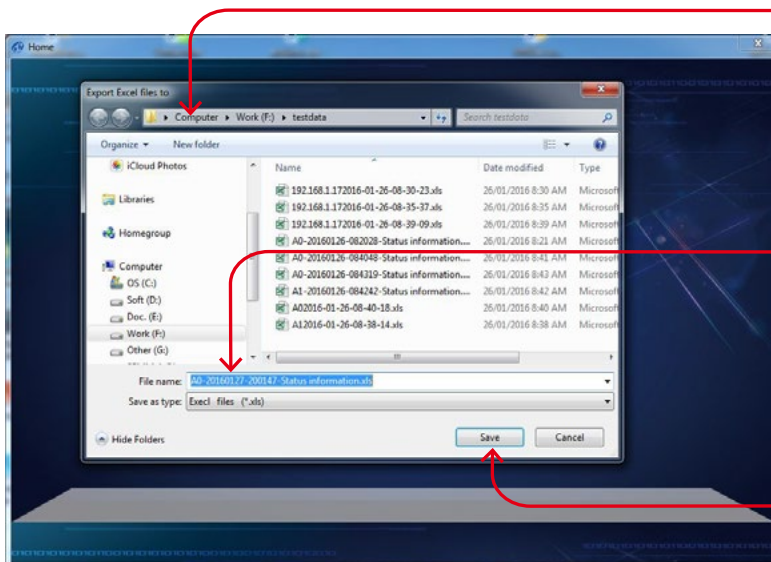
The program is looking for the address you want to print.

Enter the short address here.

The resulting page is like this.

The system will automatically create the following file:

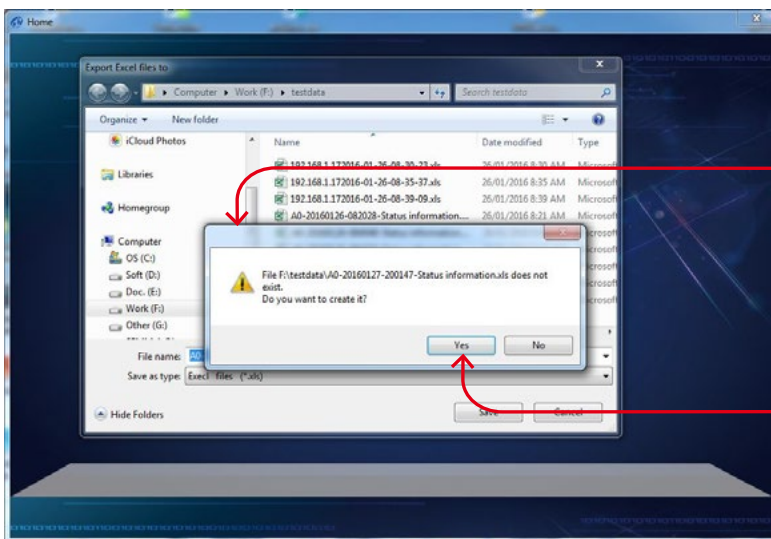
- Its name format is:
Short Address-Year-Month-Day-Hour-Minute-Seconds-Status information.xls



The user needs to confirm the location on the PC system where the file will be stored.

If you would rather a different name for the file now is the time to create it.

Once you confirm creation with pressing the "Save" option, the program checks there is no file of a similar name in the location you have chosen.



It then calls for confirmation to create the file.

If all okay Press "Yes".

Special Note:

The user can change the file names to anything required. However we think that allowing the program to name the file by default ensures the file is easy to find.

The screenshot shows the Microsoft Excel application window titled "Sheet1 - Excel". The ribbon menu at the top includes FILE, HOME, INSERT, PAGE LAYOUT, FORMULAS, DATA, REVIEW, VIEW, DYMIO Label, and ACROBAT. Below the ribbon, there are several toolbars for editing and formatting. A yellow banner across the top of the worksheet area reads "GET THE NEW OFFICE It's one of the perks of having Office 365." with links to "See what's new" and "Update Office".

The active worksheet is named "AD-20160127-20147-Status information". The visible portion of the spreadsheet contains the following data:

	A	B	C	D	E	F	G	H	I	J
1	AD-20160127-20147-Status information									
2	Session	Name	Value							
3		Ready	NO							
4		Lamp failure	NO							
5		Lamp arr power on	NO							
6		Limit error	NO							
7		Fade running	NO							
8		Reset state	NO							
9		Missing short address	NO							
10	Status	Power failure	NO							
11		Next function test	0/0							
12		Next duration test	0/0							
13		Function test interval	256 Days							
14		Duration test interval	0 Weeks							
15		Test execution time out	768 Days							
16		Prolong time	0 min							
17		Maximum level	0							
18		Minimum level	0							

The status bar at the bottom left shows "READY". The sheet tab at the bottom is labeled "Sheet1".

EXCEL STATUS DISPLAY

Now the user can choose to review the file on the screen or print as required

[illegible]

Pressing “Test Results” will bring up this display.

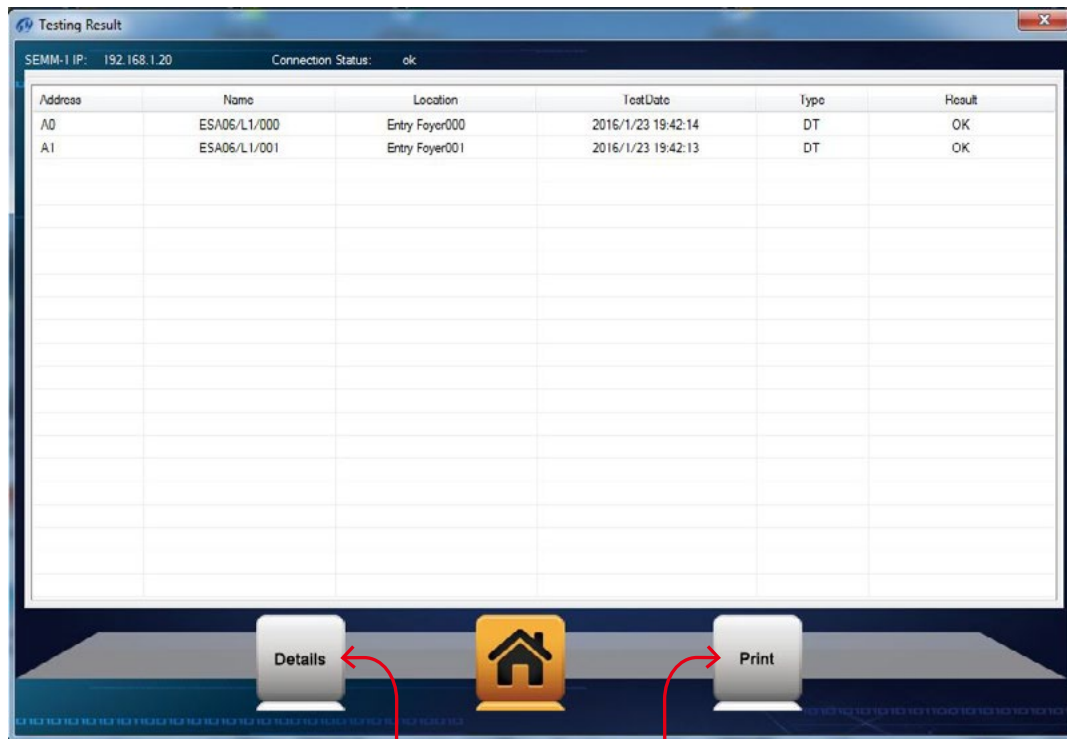
Each device address displayed in numeric sequence.

Choose a device by selecting the line required.
Once the line is selected the line will be highlighted.

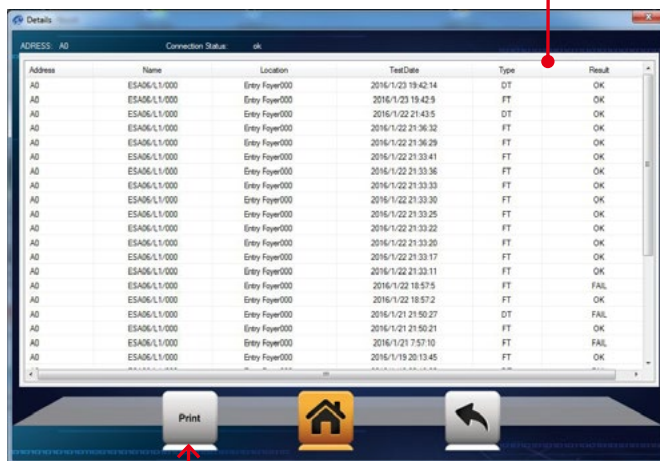
Now the user can choose “Details” or “Print”.

Details: Jumps to a display of all the recorded tests for that short address.

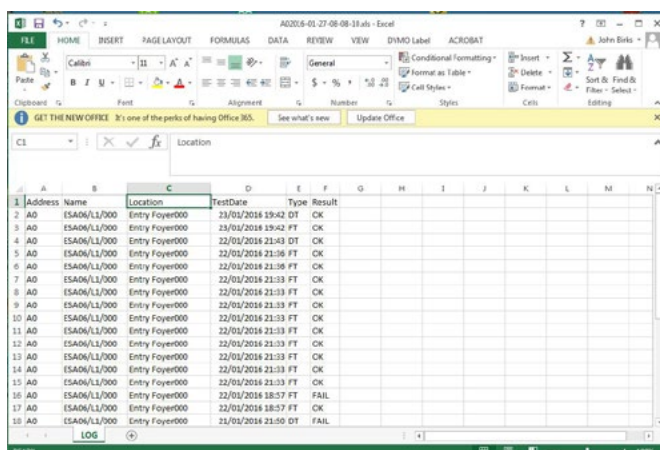
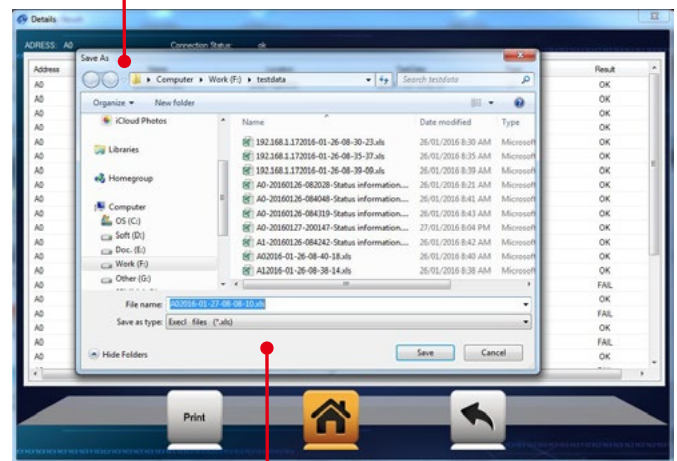
Print: Starts the printing (Excel file development) of that entry, as selected.



Result of Pressing “Details”



And then “Print”



Remember to check the file locations and names As was mentioned above.

Once the file is displayed by the Excel program the user can review the data on the screen or print the file as required.

Since the file is a standard Excel file it can be transported easily by disk or email.

Page glossary

Home page



This is the Home page. The entry point for most of the functions of the DALI control unit (DCU)

- Set Up>> Goes to the Commissioning and Set Up Page
- Maintenance>> Goes to Maintenance Page
- Testing Result>> Goes to Testing results Page
- Status>> Goes to the Current Status Display

While there are no faults on this DCU system and its connected devices, this NORMAL screen will go blank (after 15 minutes) and the heartbeat LED (in the upper left corner of the touch screen) will continue to flash to tell the owner the device is still working.

In the event of any error the lower graphic would be seen. This screen will not extinguish (or go blank) until all errors have been cleared.

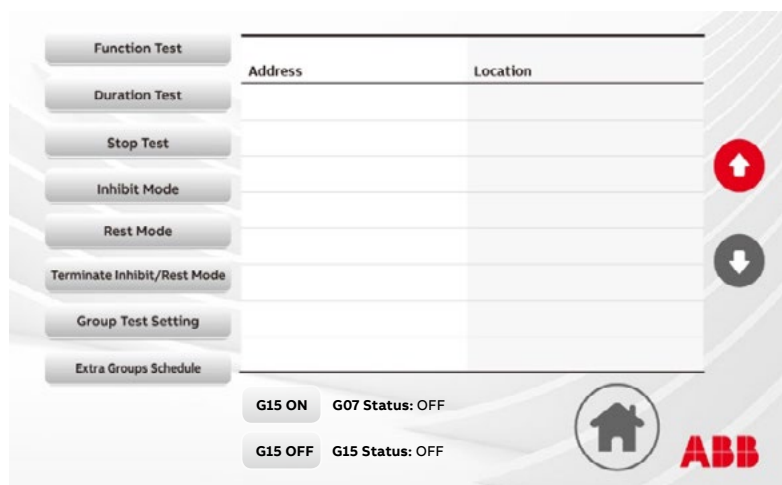


The second variant of the HOME page shows there is an error on this DCU.

The error indication will continue to be displayed until ALL ERRORS on ALL DEVICES AND LINES are cleared.

Includes errors on the DCU.

Maintenance page



The Maintenance page is the main portal to maintenance activity.

- **Function Test/Duration Test ...** As they describe these are the main testing facilities on the controller. Function test checks the fitting can switch to Emergency mode, switch off the mains power supply, operate from battery supply and that the lamp lights up. Duration test ensures the battery is able to charge to 100% and that from that point the battery can run the lamp for the full period to which it is programmed to operate on battery. (i.e. a 3 hour fitting operates on battery for 3 hours). This test also reports the actual length of the time it took for the lamp to extinguish. Using the 3 hour example, the time should be greater than 3 hours.
- **Stop Test ...** Stop function or duration tests.
- **Inhibit Mode ...** Sets inhibit mode for the selected address. See notes below.
- **Rest Mode ...** Sets the selected device into rest mode. See notes below.
- **Terminate Inhibit/Rest Mode ...** Resets the selected device into normal mode. See notes below.

Normally, emergency operation is automatically started if the mains supply is switched off. With the inhibit mode function it is possible to prevent this. With inhibit mode activated, the device will stay in charging mode even if the mains supply is switched off. Inhibit mode can be used during short periods of time when a building is completely unoccupied and the mains supply is to be switched off intentionally, for example during a holiday period. Using inhibit mode prevents a full discharge and possible damages to the batteries during these times.

Rest mode has to be activated by a competent person. Activation is only possible after the mains supply has been switched off. Contrary to this, if the Inhibit mode has been activated in advance, rest mode will be automatically switched on if the mains supply is switched off.

By sending the re-light command both modes, Rest mode and Inhibit mode, will be deactivated. The emergency unit will switch back to the previous operating mode. If it has been in Rest mode, it will switch back to emergency mode, if it has been in Inhibit mode, it will switch back to charging mode. Sending the re-light command can not be performed from the DCU.

This would require an alternate interface to deliver.

- **Address ...** The addresses on the DALI Line will be displayed here in alphanumeric sequence.
- **Location ...** Displays the location information supplied by the Installer for the associated short address.
- **Scroll Buttons ...** Allows scrolling to the desired address.
- **Home Button ...** Goes to Home Page

- **Group test setting ...** Enable group options to be setup.
- **Extra group scheduling ...** There are extra functions on Groups in the DCU. You will find them here.

Rest/Inhibit Mode Explained

This command suite is really only used when the building is occupied under normal circumstances.

That is:

- Mains power is on and normal
- Energy saving and battery saving considerations are important to the user and technical staff
- Mains power will be turned off when the area is unoccupied and running the emergency fittings to battery exhaustion would not be productive or necessary.

When the mains power fails (because of catastrophe or danger) the controller will not be operating and will not be able to send any commands.

The fittings (devices/gears) will go into Emergency Mode as they are designed to do.

Rest and Inhibit modes are conditions in the DALI gear – not in the DCU.

NOTE: When terminating inhibit or rest mode please allow 1 minute for command to be sent around the network. Larger networks may take longer.

Rest Mode

Rest mode is used to turn the lamp off during emergency mode.

The control gear has to be in emergency mode when it receives the command.

This means that

- In the normal course of events, to be in emergency mode, the mains power had to fail.
- Therefore the power to the controller would likely be off as well. And it would therefore not be able to send a command.

In short rest mode is for use by a technician who is testing the system and has put the control gear into emergency mode and to reduce the stress on the batteries sends the rest command to turn the lamps off while test are taking place.

On the DCU you can send a rest command to control gear from the Maintenance Page.

Inhibit Mode

Inhibit mode can only be activated when the control gear is in normal mode. Therefore the sequence is to send the inhibit command and then turn off the power. The control gear will not go into emergency mode.

This is used to prevent the control gear from going into emergency mode. Used mostly where there is a warehouse space in which the power is turned off (to the vacant space) for a long period to save energy and battery life. Usually linked to a set of contacts in the burglar alarm. So when the alarm arms, the control gear is prompted to go into inhibit. Or triggered by button press just before setting the alarm and turning off the power.

In the case of the DCU setting Inhibit mode can be carried out in 2 ways:

1. By going to the Maintenance page then

- Select the short address you wish to put into Inhibit
- Press Inhibit mode (Starts a 15 minute timer, which holds the control gear in “Inhibit Mode” while the timer is running)
- Within the timed period, remove mains power from the inhibited control gear

2. Initially set the gear to be included in Group 8

- (From >> SetUp >> Sign in code >> Address Wizard >> EDIT Devices >> Select the Short Address to edit >> EDIT >> Select the ‘8’ Checkbox – will now be ticked. >> SAVE)
- Return to the Maintenance page
 - Select the Button “Extra Group Schedule”
 - Insert the day and time you want the control gear to go into Inhibit
 - Insert the day and time you want the control gear to exit Inhibit
 - Tick the box for Group 8

NOTE: Remember the mains power must be removed from the control gears that are inhibited within 15 minutes of the control gears entering Inhibit Mode.

Group test settings

Function Test	Duration Test	Group	Day	Hour	Minute	Immediate Test
<input type="checkbox"/> Manual	<input type="checkbox"/> Manual	G0	MONDAY	:	:	G0 FT G0 DT
<input type="checkbox"/> Weekly	<input type="checkbox"/> Weekly	G1	TUESDAY	:	:	G1 FT G1 DT
<input type="checkbox"/> Every 2nd week	<input type="checkbox"/> Quarterly	G2	WEDNESDAY	:	:	G2 FT G2 DT
<input type="checkbox"/> Monthly	<input type="checkbox"/> Every 6 months	G3	THURSDAY	:	:	G3 FT G3 DT
	<input type="checkbox"/> Annually	G4	FRIDAY	:	:	G4 FT G4 DT
		G5	SATURDAY	:	:	G5 FT G5 DT
						ALL FT ALL DT

This page allows that the user can set the group tests to run on a particular day and at a particular time.

Firstly the duration between tests can be nominated. Set the period that applies in your standards area.

When a new device is commissioned. It is arbitrarily set to one of the 6 normal groups. (Groups 0 – 5).

We have added the ability of sending an immediate function or duration test to a group and the ability to send to all groups.

Choose the time and day when it will least disturb the occupants

When the user has made changes remember to Press the SAVE Button.

- **Save ...** Saves the changed information on the page
- **Home Button ...** Goes to home page
- **Back Button ...** Goes to the previous page

Special group functions

The screenshot shows the ABB lighting control interface. It features two main sections: 'Night Light Schedule' and 'Inhibit Mode Schedule'. The 'Night Light Schedule' section includes checkboxes for days of the week (Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday) and input fields for 'Light on' and 'Light off' times (Hour and Minutes). There is also a checkbox for 'Group 7'. The 'Inhibit Mode Schedule' section includes input fields for 'Inhibit On' and 'Inhibit off' times (Month, Day, Hour, Minutes) and a checkbox for 'Group 8'. At the bottom, there are three circular icons representing a file, a house, and a refresh/cycle function, followed by the ABB logo.

We have built in some special functionality making use of the Group Settings

Night Light Schedule

This gives the function of using the Emergency Lighting system as a night-light system. Initially designed to help nurses do their rounds after dark without disturbing the patients. It can be used by security personnel in the same way.

To operate:

Fittings have to be

- capable to be maintained
- wired for maintained operation
- a member of Group 7

- Choose the days of the week the system will operate. Can be more than 1
- Enter the time the lights will switch to On
- Enter how many hours the fittings will run from the start time
- Tick the Group 7 box to activate the Schedule.

There is also Group 15 function found in the Maintenance menu that can be used to control fittings placed into Group 15 allowing switched maintained central on and off control. This is useful for individual fitting identification or for grouping items that may require manual central control. See Page 16.

Inhibit Mode Schedule

Enables the ability to preprogram the Inhibit mode behavior in the Emergency fittings.

This is particularly useful when a premise is regularly vacated at a particular time.

The function allows the time for the fittings to go into Inhibit mode to be set. While in that 15 minute period of Inhibit mode, as mains power is removed from the emergency luminaires the selected fittings will drop into Inhibit mode (Rest Mode). Please see the detailed description of Inhibit and Rest Mode above.

To operate:

Fittings have to be

- Capable to be Inhibited
- a member of Group 8
 - Choose the Month, Day and Time the system will trigger Inhibit
 - Enter the Month, Day and Time the system will trigger Terminate Inhibit/Rest Mode
 - Tick the Group 8 box to activate the Schedule.

Status page



The Status page enables the user to look into the status of the control gears connected on the 2 lines in this controller.

The controller is continuously polling each of the 64 addresses on each line in a constant loop. There is a short handshake sequence being performed with each address in turn. Even with the addresses that are not represented by a control gear on the DALI Line. So when the user calls for a particular address it may take a moment or two to actually bring up the status. Depending on where in the loop of short addresses the controller is found, when the Status detail button is pressed.

Status Pages Breakdown

There are 5 pages of Status for each of selected address. Below there is a brief description of each item on those status pages. For a more complete understanding of this status please refer to the IEC Standard 62386 with particular reference to sections 102 and 202.

Page 1

Status Indicator	Meaning/Use
Ready	Made up of 3 indications. Lamp fail, battery fail, circuit fail. Any of those triggered will cause the gear to be not ready
Lamp Failure	No current is flowing to the lamp
Lamp Arc Power On	The lamp is being driven to on
Limit Error	A command has been received to go to a dimming level above the set maximum or below the minimum levels
Fade Running	In DALI fades (dimming commands) can be several minutes long. This indicates that a fade is running
Reset State	The fitting is in emergency mode but the lamp has been switched off by a technician to save the battery charge. Usually for testing or maintenance
Missing Short address	This fitting does not have a programmed short address
Power Cycle Seen	Not necessarily a fault. Simply indicates that the mains power was cycled off and on since the last reset
Test timing	
Next Function Test	The number of hours till the next function test begins
Next Duration Test	The number of hours till the next duration test begins
Function Test Interval	The time between function tests
Duration Test Interval	The time between duration tests
Test Execution Timeout	The amount of time a gear has to perform a duration test. Includes charging battery time. Tests will not begin until the batteries are fully charged
Prolong Time	Following emergency mode, when mains power is restored, waits this length of time before returning to normal mode

Page 2

Indicator	Meaning/Use
Maximum Level	The maximum light level set for this gear
Minimum Level	The minimum light level set for this gear
System Fail Level	When connection to the controller is lost, the fitting will go to this level. Typically, but not necessarily, 100%
Power ON Level	When the gear turns on it will go to this level
Fade Time	The time that each fade will run. Depends on the program
Fade Rate	The calculated rate at which a fade will need to run to achieve the level in the time required
Physical Minimum	The lowest level the fitting can operate
This fitting is a member of Groups 0 – 15	A fitting can belong to any of 16 groups in DALI. It may belong to 1 group, or many groups, or none at all. Each group can be addressed or commanded to perform specific actions. Here grouping is generally used for testing intervals and timing

Page 3

Indicator	Meaning/Use
Features	
Integral Emergency Control Gear	This fitting has an emergency controller embedded in its circuitry. Operates as a battery backed fitting
Maintained control Gear	The lamp can operate both on mains power and battery backup
Switch Maintained Control Gear	This gear can be controlled by a switch when in mains mode. Makes an emergency light into a normal operating, area light
Auto-Test Capable	If system control was lost, this gear would switch to auto-test operation. Testing durations would continue as planned
Adjustable Emergency Level	When in emergency mode, the gear can be made to go to a lower level than 100%
Hardwired Inhibit Supported	On some devices it is possible to use a switch, or permanent jumper, to hold the device in inhibit mode
Physical Selection Supported	This gear can be made to be selected for simple addressing, by disconnecting and reconnecting the lamp. For example, when using fluorescent (roll the lamp to disconnect and then reconnect)
Re-Light in Rest Mode Supported	When the lamp has been turned off to save battery charge in emergency mode, (usually by a maintenance technician or inhibit mode) some gear can be relit by receiving a relight command.

Page 4

Indicator	Meaning/Use
Operating Mode	
Rest Mode Active	Gear is in rest mode. The mains is off and batteries power the gear which has gone to emergency mode, however the lamp has been turned off
Normal Mode Active	Mains power is on and the gear is performing normally
Emergency Mode Active	Mains power has failed, the fitting has gone to emergency mode. The batteries are powering the lamp and gear
Emergency Mode After Mains Return Active	This enables the gear to stay in emergency mode after mains power has returned
Function Test in Progress	A function test is running
Duration Test in Progress	A duration test is running
Hardwired Inhibit Mode Active	This gear has hardwired inhibit feature and the jumper to active is installed
Hardwired Switch is ON	The gear is maintained capable. The switch is on and the lamp would now be burning
Battery Charging State	The current state of charge in the battery expressed as a percentage
Duration Test Result	While in duration test, the time the gear remained on before the batteries were so low that the controller turned off the lamp
Lamp Burning In Emergency	The time the lamp has been burning while in emergency mode
Lamp Burning Hours Total	The total burning time for the lamp
Rate Duration	The rated length of time the gear is to operate while in emergency. Also used as the time a duration test last occurred

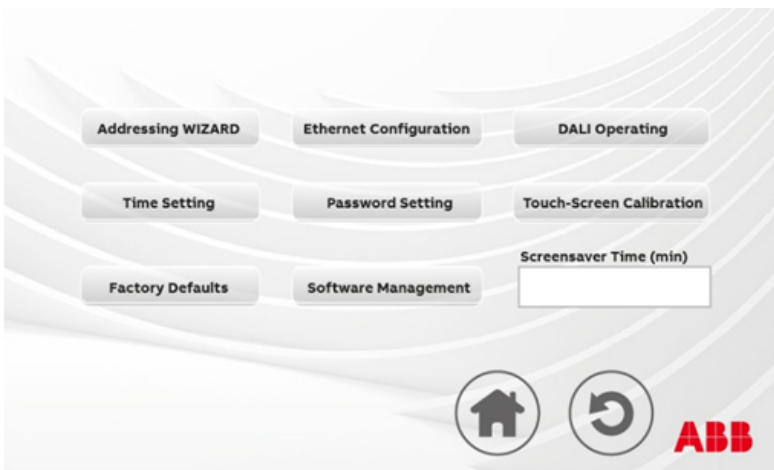
Indicator	Meaning/Use
Emergency status	
Inhibit Mode	The fitting is in inhibit mode. This operates on a 15 minute timer. Awaiting the mains power to be turned off from the device
Function Test Done	Function test is completed
Duration Test Done	Duration test is completed
Battery Fully Charged	Set when the battery has reached 100%
Function Test Request Pending	Function test could not start because the fitting is not ready. Therefore the request is pending awaiting suitable conditions to conduct the test
Duration Test Request Pending	Duration test could not start because the fitting is not ready. Therefore the request is pending awaiting suitable conditions to conduct the test
Identification Active	This indicates that the selected gear is flashing its short address identification sequence. The operation is manufacturer dependent, and therefore the actual operation could be different
Physically Selected	The gear is physically selected (its lamp was made off then on) and now the device is waiting for programming of its short address to be completed
Faults	
Circuit Failure	An internal fault has occurred in the gear
Rated Duration Not Achieved	The batteries had insufficient charge to power the lamp for the rated duration of this fitting
Battery Fault	The battery has a fault
Lamp Failure	The lamp has failed to operate
Test Window for Function Test Exceeded	Function tests must be performed inside the timing window as set by the programmer. This indicates the test did not start inside that window. Possible battery charging problem
Test Window for Duration Test Exceeded	Duration tests must be performed inside the timing window as set by the programmer. This indicates the test did not start inside that window. Possible battery charging problem
Function Test Failed	Indicates the function test failed
Duration Test Failed	Indicates the duration test failed

Setup page



Once you select the set up icon on the home page, the password entry page will appear.

Default password is '123456'. For the sake of safety and security, please change this now and write down what you made it. The field is open to any character. For security reasons, this DALI control unit cannot be unlocked if the passcode is forgotten.



A successful passcode entry takes you here:

This is the hub page for a lot of activity around the setup and commissioning of the system.

So let's begin and work through the controls left to right and top to bottom.

Addressing wizard



The primary Page for commissioning

- **ADD NEW DEVICES** ... Will add new addresses only. Searches via the short address. These are readdressed with the next available short address that is not used already. Existing short addresses are left without change.
- **NEW SYSTEM RE-INITIALISE** ... This option will cause all addresses on the controller to be readdressed. The user has one more chance with a warning that proceeding with re-initialising will result. Any short address and grouping data will be deleted and replaced. Devices will not necessarily end up with the same address as previously. The controller will start with Line A and use addresses sequentially from '0'. A message in the information pane will inform the user when the process is finished.
- **SEARCH DEVICES** ... Conducts an address search on both lines. It is used to find new addresses on the DALI network without having to perform full commissioning. >> Go to the Status page to see any new address that may have been found in the search process. This process does not change short addresses or any other information. It is simply finds any control gear responding to the search for devices.
- **EDIT DEVICES** ... Allows details and content about any control gear to be changed, added or edited provides for several screen as below:

Devices to be edited



This screen shows the devices to be edited in short address order. Line A first.

Nothing can be edited here, the user selects the short address to edit and then goes to another page.

Device Edit Screen

After selecting a device to edit, the system comes here. Displaying the short address, name and location of the fitting. Also displayed is any group this control gear belongs to.

To change any of the fields on this page the User must select the relevant section of the screen to change.

The bottom line functions are the Save icon, Home button and Back button.

Selecting the address, name or location fields brings up the Keyboard page.

Choosing to add the fitting to another group (or deselecting a group) is performed simply by selecting the check box for the appropriate group.

In DALI there are 16 groups that can be used to link fittings functionally for a variety of purposes.

Each group check box toggles its state with the touch of a finger.

The Keyboard is used to 'type' the data required into the name and location fields.

Changing short address raises a number pad of 0-9.

If you change anything on this page. If you change anything on this page ensure that the save icon is selected before leaving to save all changes made.

Ethernet Configuration

The ethernet configuration screen enables the setting of any special LAN characteristics that may be required. There is an extensive section covering the LAN configuration and PC software. Please refer to this for further information above.

DALI operating



This page is loaded with tools to help the installer during commissioning.

- **Line A and Line B Lamp Flash:** These controls are designed to be used at the start of the commissioning process. Use them to flash the lines in turn and walk the network to make sure all the control gears that are expected to be on Line A are in fact on Line A. The command stream sent onto the bus is simply broadcast on and then broadcast Off which is repeated constantly. The control gears will need to be maintained to actually perform the command.
- **Line A and Line B Lamp ON and OFF:** These are simple commands that can be used to diagnose a host of problems. Simple commands like these can be performed by most DALI Devices,

even the ones that are not registered and tested properly to comply with the DALI standard. The commands provide an easy method of checking communications to the devices.

- **Line A and Line B Identify Repeat and STOP:** These commands firstly send an 'identify' command every 15 minutes. The identify command is controlled by a 15 minute timer. The response to this is manufacturer dependent. It usually flashes the 6 address bits with the indicator LEDs. The stop command stops the identify command immediately.

Time setting



This is a simple Time setting page enabling the User to update the day and time.

The Edit button brings up a dialog requesting the time and date.

Password setting



This page enables the user to change the password.

There are no controls measuring the strength of the password.

For security reasons, this DALI control unit cannot be unlocked if the password is forgotten. Keeping the password in a secure location is strongly recommended.

REMEMBER TO PRESS SAVE OR THE OLD PASSWORD WILL BE STILL BE IN EFFECT.

Touchscreen calibration



A simple page to calibrate the touchscreen. Only use in the event that there is significant difference between the touched point and the function selected. Touch the centre of the cross symbol as accurately as possible. There are five to press before the screen reconfigures to its new positions.

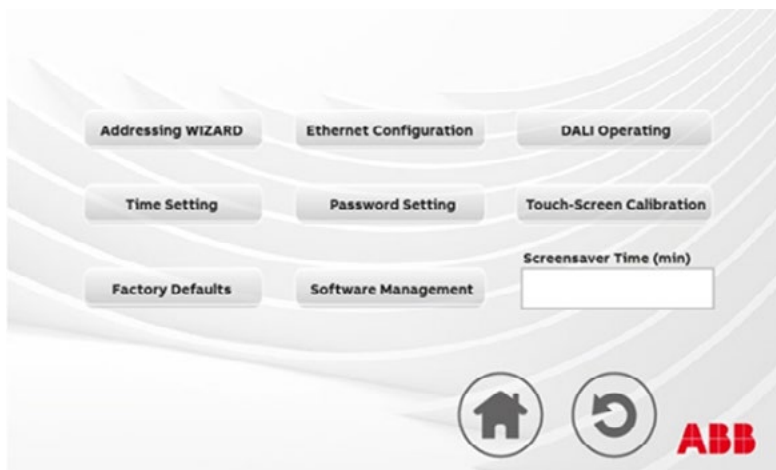
Factory defaults

After a double check of intention the DALI control unit is returned to its factory state.

WARNING

The process cannot be reversed, so please be careful when using this function as it will delete all data held in the DCU.

Screensaver timer



Note: Screensaver time in the lower right corner ...

Simply adjusts how long it takes before the screen goes to sleep.

Once asleep the heartbeat LED on the left will keep the user notified that the DCU is still working in the background and is monitoring the emergency lighting of the building.

—
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