

**Monitoring central according to the norm DIN/EN 62386-202
Automate form housing for installation in distributors
for 64 emergency luminaires with DA Interface**

DLI-Z64

MANUAL



Funded by the Federal Ministry of economics and technology on the basis of a decision of the German Federal Parliament.

Contents

Inhaltsverzeichnis

SPECIFICATIONS.....	3
GENERAL INFORMATION.....	4
ROUTING OF CABLES.....	4
TERMINAL ASSIGNMENT ON THE CONTROL DEVICE.....	5
OPERATION AND DISPLAY OF THE CONTROL DEVICE.....	6
CENTRAL CONTROL BUTTON.....	6
DISPLAY.....	6
MENU STRUCTURE.....	6
LED DISPLAYS.....	7
BUZZER.....	7
POTENTIAL-FREE CONTACT (PFC).....	8
STATUS DISPLAY.....	8
CHANGING LANGUAGES.....	9
MESSAGE STORAGE.....	9
SYSTEM INFO.....	9
FUNCTIONS.....	10
TEST PROGRAMMING.....	10
<i>General information.....</i>	10
<i>Function test.....</i>	10
<i>Endurance Test.....</i>	11
<i>Test Group Assignment.....</i>	12
<i>Manual test execution.....</i>	12
<i>Test Delays.....</i>	13
TEST LOG.....	13
<i>Report Overview.....</i>	13
<i>View of Single Report.....</i>	14
<i>Deleting Test Log.....</i>	14
LIGHTING CONTROL.....	15
<i>Usage of External Switching Inputs.....</i>	15
<i>Group Assignment of Continuous Light.....</i>	15
<i>Lighting Control Function.....</i>	16
USB FLASH DRIVE.....	18
NETWORK CONNECTION.....	19
BUS CONNECTION OF THE LUMINAIRE.....	20
STARTING UP.....	21
REGISTRATION AND ADDRESSING OF LUMINAIRES.....	21
ENTERING IDENTIFICATION OF DEVICES.....	22
ENTERING OPERATION SETTINGS.....	22
REMOVAL AND ADDITION OF SINGLE LUMINAIRES (MANUAL REGISTRATION).....	23
REGISTRATION OF ALREADY ADDRESSED LUMINAIRES.....	23
TROUBLE SHOOTING.....	24

Specifications

Type	Autonomic control device for monitoring single-battery luminaires Menu operation via central control button
Supply voltage	230V AC via integrated power supply
Current consumption	30mA
Temperature range	+ 5°C up to +40°C
Bus voltage	16V DC
Data transfer	DLI-report and 1200 Baud and Bi-Phase Coding
Luminaires	up to 64 single-battery luminaires admitted for DLI-report
Line type and length	NYM 1,5 mm ² wire cross-section, up to 300m between two participants, luminaires as well as control unit
TCP/ IP interface	for PC-assisted visualization of operating parameters (optional onboard)
Fault indicating contact	changeover version
USB interface	for USB flashdrive to save test log file format CSV and TXT
Display	2x16 signs LCD with backlight
Buzzer	activatable acoustic messages
Test book capacity	208 reports (4 years when releasing test weekly)
Message storage	250 system messages
Status display	Display for the current luminaire status
Light control function	Deactivation of continuous light luminaires possible during rest periods of building 7 automatical weekly switching times programmable 7 automatical date-related switching times programmable 5 connection facilities for external switches of them 4 x continuous light group switches and 1 global continuous light main switch
LEDs	6 LEDs for showing operating parameters
Languages	German and English (switchable during operations)
Test release	Programmable automatical, weekly or monthly function test 2 annual automatically programmable endurance test times for setting individual test times of 2 luminaire groups Test repeats or delays in case of power failure of the luminaires or the control device during a test
Other matters	Automatical change summer-/wintertime

General information

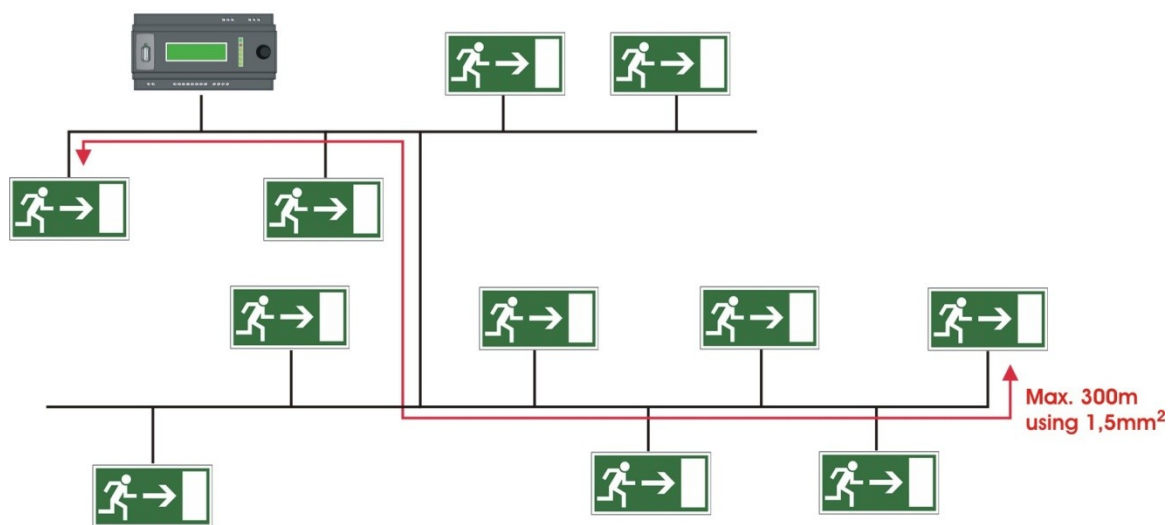
Electrical installation is only allowed to be done by an electrical specialist according to construction regulation for high voltage systems.

Starting up has to be done only by authorized specialists.

Technical parameters like e.g. max. no. of participants, line lengths and installation of only admitted luminaires have to be observed.

Technical changes can be made every time without advices.

Routing of cables



The bus connection from the control device to the luminaires is made of a two-core cable. Between both cores has to be a basic isolation. So a single-ply isolation is enough. Control and supply lines of the luminaires can be laid together.

To grant the voltage levels of the data transfer, the permissible wire cross-section of $1,5\text{mm}^2$ of the NYM has to be observed. The max. line length between two participants, luminaires as well as control unit, is not allowed to exceed 300 meters.

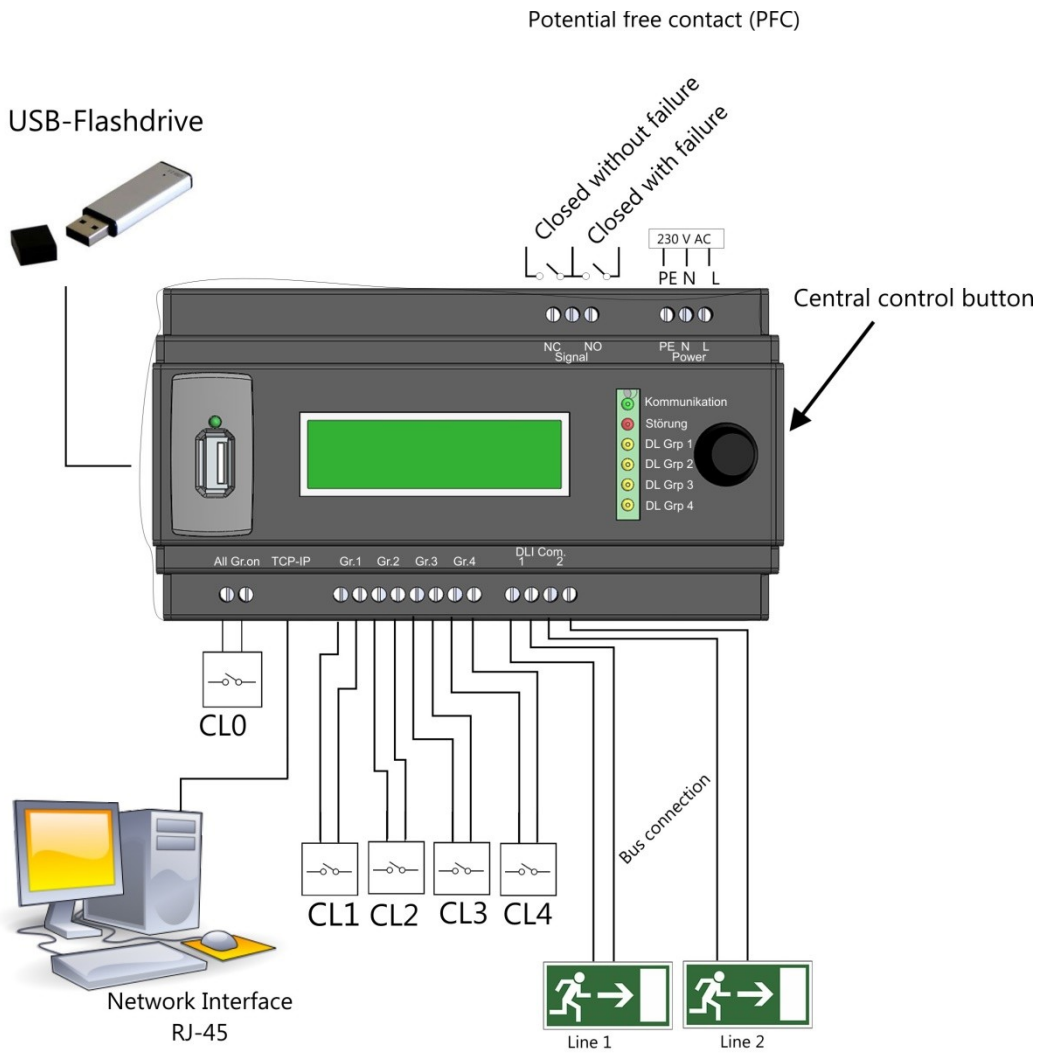
Same installation conditions apply as for supply lines.

The customary lines and cables used in installation section as well as other material used for laying cables can be appropriated.


Line and tree structures as well as star and mix structures are allowed at laying. Ring-shaped connections have to be avoided.

The selection of the lines has to be adapted to the connection lengths and to the terminals. In order that the data transfer would not be affected by a loss of level, a voltage drop of 2V is the maximum for the connection lines from the control device to each participant. The control device can be placed everywhere you like.

Terminal assignment on the control device



Declaration:
 CL0 Continuous light global switch
 CL1 bis CL4 Continuous light – group switch for group 1 to 4

 **The inputs CL0 to CL4 must only be switched potential-free. Switching on any voltage inevitably leads to the destruction of the control center.**

Operation and display of the control device

Central Control Button

The operation of the control device happens via one single control button. Menu points, parameters or functions to be set can be selected by turning. By pressing the button, normally a selection or a function execution follows.

Display

The display has 2 lines with 16 characters each.
The main display shows date and time.

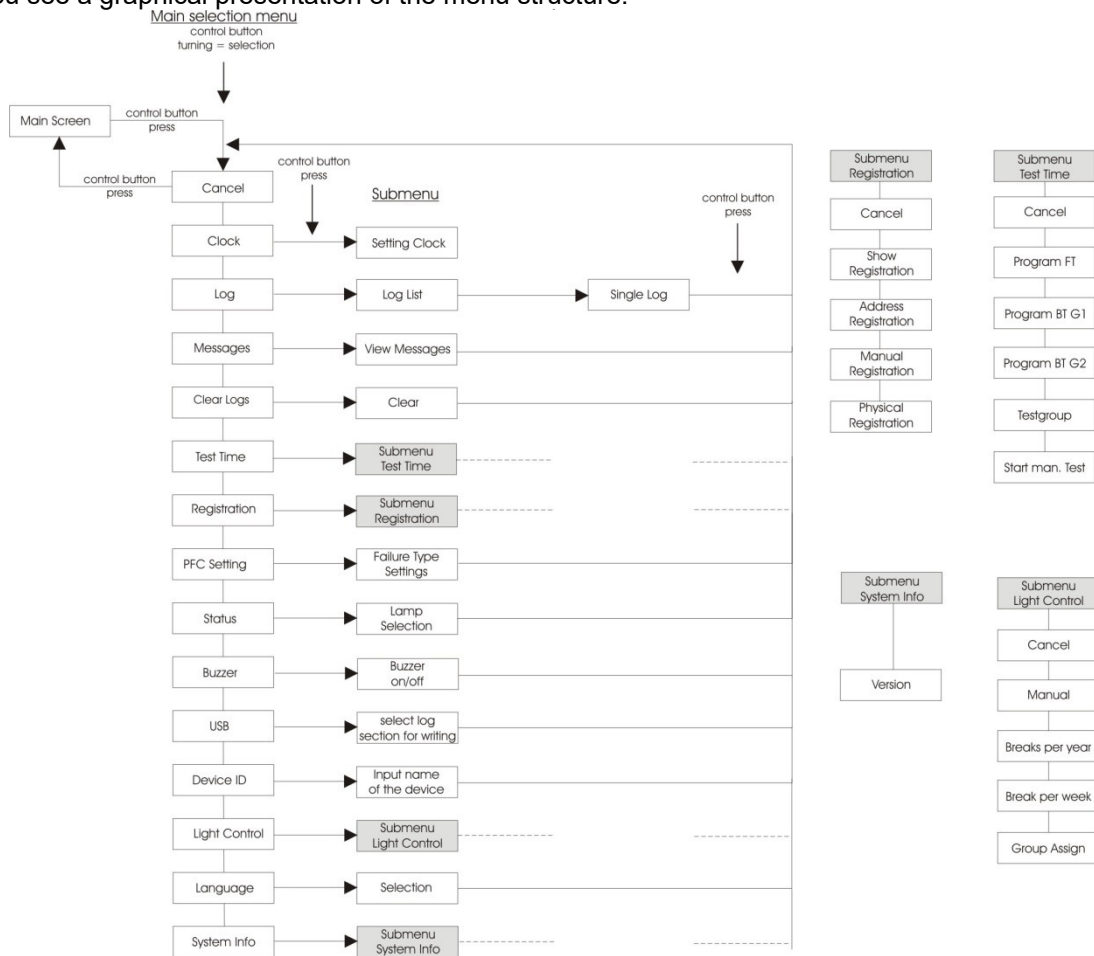
In special cases, e.g. test delays, time and a message will be shown in turns.

As far as no setting of the operating parameters has to be done the main display should be shown during monitoring operation.

With some exceptions the program carries out an automatic return to the main display when the control button will not be activated within 60 seconds while you are in a submenu.

Menu structure

Here you see a graphical presentation of the menu structure:



LED Displays

There are 6 LEDs on the control unit to show some special functions.

LED green	(communication report)
flashing green	communication with the luminaires
Permanently green	bus voltage available but no communication with the luminaires
green off	no bus voltage available, maybe due to a short circuit on the line

LED red (notice of a failure or a special operation indication)
charging fault or battery failure of a luminaire in mains operation
failure of battery capacity in the last test mode
illuminant failure in the last test mode
communication fault in test
luminaire did not execute test
short circuit on the bus line (after removal of the short circuit the advice will disappear after 5 seconds and communication makes a re-start)
power failure of a luminaire
failure of a luminaire
test is delayed

4 yellow LEDs	(indication for lighting control)
LED off	continuous light of the related group switched off
LED on	continuous light of the related group switched on
All LEDs flashing simultaneously	one of the possible lighting control functions is active

Buzzer

With help of the integrated buzzer the following warning messages can be supported acoustically.

alert in case of
charging fault or battery failure of a luminaire in mains operation
power failure and default of a luminaire <small>Note: depending on the type of the luminaire a power failure will be shown as a missing luminaire. This is because some luminaires are not able to communicate with the central unit during a power failure.</small>

If one of these failures occur during the running operation an alert will be activated. To quit and switch off the alert, press the control button.

In case of a new failure, alert will be activated again.

You can switch the buzzer on or off in general as required.

Therefore change on >Buzzer< via the drop-down menu.

Select between "buzzer on" and "buzzer off" by turning the control button. By pressing the control button you leave the setting and the selected value will be saved.

Potential-Free Contact (PFC)

The potential-free contact serves as (collective-) fault report to an external report system. Therefore you connect the switching contact „closed without failure“ and „closed with failure“ of the PFK-connection with the report system.

The following failures can be activated individually or jointly via setting on the control device.

Menu: PFK fault report	Selection
charging fault or battery failure of a luminaire in mains operation	(Off) / (On)
illuminant failure in the last test mode	(Off) / (On)
failure of battery capacity in the last test mode	(Off) / (On)
short circuit on the bus line Note: after removal of the short circuit the advice will disappear after 5 seconds and communication makes are-start.	(Off) / (On)
power failure and fault of a luminaire Note: depending on the type of the luminaire a power failure will be shown as a faulty luminaire. This is because some luminaires are not able to communicate with the central during a power failure.	(Off) / (On)

To activate / deactivate the fault report change in the main menu in the menu item >PFK Setting<.

There you select the required fault report by turning the control button.

By pressing the control button you activate (ON) or deactivate (Off) the message on the PFK.

Set all fault reports as desired.

Every activated message activates the PFK in case of failure.

Leave this setting menu by pressing >Cancel<.

Status Display

The status display shows the current state of a luminaire.

Select the item >Status< in the menu.

Turn the control button to select registered luminaires.

One of the following statuses will be shown:

Status	Meaning
Lxy ⁾ miss.	Luminaire xy does not answer. Maybe there is a power failure of the luminaire.
Lxy ⁾ Com.Error	Communication of luminaire xy is faulty.
Lxy ⁾ Emerg.Mode	Luminaire xy has a power failure and is in emergency mode.
Lxy ⁾ Charge Error	Luminaire xy has a battery failure or a charging fault in mains operation.
Lxy ⁾ BattCap.	Luminaire xy had a defect battery in the last test.
Lxy ⁾ Lm err.	Luminaire xy had a defect illuminant in the last test.
Lxy ⁾ OK	A fault of luminaire xy has been repaired.

⁾ Lxy represents a luminaire address , e.g. L01, L02 etc.

Changing Languages

During operation mode you can select between the languages „German“ and „English“. Select the item >language< in the menu.

Select a language by turning the control button and activate it by pressing control button.

Message Storage

In the message storage up to 250 system messages can be stored. Select the item >messages< in the menu. By turning the control button you can see all reports up to now.

When the control device has recorded 250 storage spaces, it begins in the first place again so that you can always see the last 250 reports.

As far as messages are related to luminaires the appropriate address of a luminaire will be shown before the message.

You can find the following messages in the message storage:

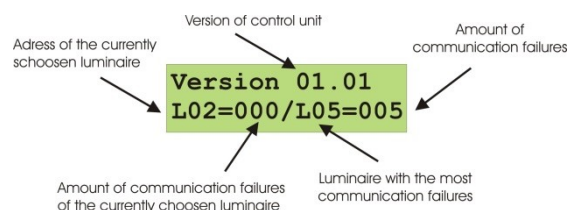
Message	Meaning
Lxy ⁾ Charge Error	Luminaire with address xy has a battery failure or a charging fault in power failure.
Lxy ⁾ OK	Luminaire with address xy is ok again after a failure.
Lxy ⁾ miss.	Luminaire with address xy does not answer anymore. (Maybe there is a power failure of the luminaire)
Lxy ⁾ Emerg.Mode	Luminaire with address xy has a power failure and is in emergency mode.
Restart	Contro device has been re-started.
Lxy ⁾ Lm Err.	Luminaire with address xy had a defect illuminant in the last test.
Lxy ⁾ BattCap.	Luminaire with address xy had a defect battery in the last test.
Test Start	There has been started a function test / a endurance test / or a manual test.
Test Stop	There has been finished a function test / a endurance test / or a manual test.
Bus Error	The bus line has a failure. Maybe there is a short circuit.
Bus OK	The bus line is ok again after a failure.
Test delayed	A function test or an endurance test has been delayed.

⁾ Lxy represents a luminaire address , e.g. L01, L02 etc.

System Info

The menu >System Info< serves for the purposes of service. There the quality of the data communication to the luminaires can be rated. The number of failed addressings of luminaires will be shown.

Display example:



Select a luminaire address by turning the control button to see the state of data communication.

Functions

Test Programming

General information

During an already running test a second test cannot be started. Therefore when programming, the test dates must be set in a way that even an automatic test delay about 24 hours or more does not overlap other test dates.

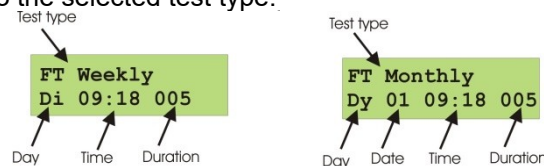
The simultaneous execution of an endurance test of test group 1 and test group 2 is possible, but the same test duration is mandatory because a premature end of the test of one of them is not possible.

Function test

The control unit automatically executes a weekly or monthly function test at a programmed date.

To program the test date select >Test Time> in the main menu by turning and pressing the control button and then in the same way >Program FT<.

Select a weekly test by turning the control button (FT weekly) or a monthly test (FT monthly). The display will adjust the setting parameters to the selected test type.



By pressing the control button you will reach the first adjustable parameter of the selected test type. Turn the control button and set the test parameter according to your requirements. Act in the same way with the other settings.

For the weekly test the following settings are possible:

Test weekday, test hour, test minute and test period in the range of 5 to 10 minutes (every minute).

The test will be executed at the stated weekday at the programmed time with the programmed test duration.

For the monthly test the following settings are possible:

Test weekday from Monday to Sunday and the setting „exact to day (tg) “.

Furthermore you can set the test date from 1 to 22 from Monday to Sunday and 1 to 31 on “exact to day”, the test hour, minute and period in the range of 5 to 10 minutes (in steps of 1 minute).

As far as you set a weekday from Monday to Sunday the test will always be executed on or after the indicated weekday.

Set the weekday on „exact to day“ to execute the test on this exact day.

Please note that not every month consists of 31 days. Please use always a valid date.

During a running function test you can see „FT“ or „DF“ for a delayed test on the main display, including the remaining time in minutes.



You can prematurely terminate the test by pressing the control button.

⚠ An prematurely termination can lead to wrong test results and should only be done in exceptional cases.

Endurance Test

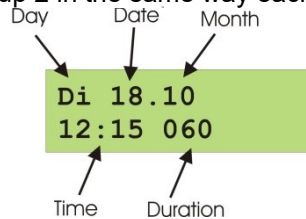
The control unit executes a yearly endurance test automatically at a programmed date.

You have the possibility to program 2 test dates.

The connected luminaires can be allocated to test group 1 or test group 2 to get different dates.

To program a date select the item >Test Times< in the main menu by turning and pressing the control button. Afterwards you act in the same way by choosing >Program BT G1< for test group 1 and >Program BT G2< for test group 2.

Set the time for test group 1 and test group 2 in the same way each.



Set weekday by turning the control button.

By pressing the control button you move to the next parameter and select the required value. Act in the same way with the remaining parameters. After setting the last value you get back to the submenu >Test Times< by pressing the control button.

You can program the following values:

Test weekday from Monday to Sunday and the setting „exact to day (tg) “.

Entry of test date from 1 to 22 from Monday to Sunday and 1 to 31 on “exact to day” , month, hour, minute and period, adjustable in the range of 15 to 480 minutes (in steps of 15 minutes).

As far as you set a weekday from Monday to Sunday the test will always be carried out on or after the indicated weekday.

Set the weekday on „exact to day“ to execute the test on this exact date.

Please note that not every month consists of 31 days. Please use always a valid date.

After that, assign the luminaires to a test group.

During a running endurance test you can see „E1“ or „E2“ resp. „D1“ or „D2“ for a delayed test on the main display including the remaining time in minutes.

E1...018

Running endurance test,
test group 1
indicating remaining minutes

E2...018

Running endurance test,
test group 2
indicating remaining minutes

D1...018

Running delayed endurance test,
test group 1
indicating remaining minutes


D2...018

Running delayed endurance test,
test group 1
indicating remaining minutes

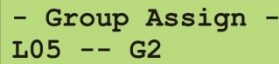
You can prematurely terminate the test by pressing the control button.

⚠ An prematurely termination can lead to wrong test results and should only be done in exceptional cases.

Test Group Assignment

 For the group assignment an active data to the luminaires link is necessary.

Select >Test Group< in the submenu >Test Times< by pressing the control button. By turning the control button you can see now the luminaire currently registered with its actual group membership.



- Group Assign -
L05 -- G2

Select the desired luminaire address and press the control button. So you get into the editing mode of the group assignment.


By turning the control button you can select one of 2 groups (G1 or G2). Press the control button at the desired group. On display appears „writing...“ and the group membership of the luminaire will be set.

You get back to the menu >Group Assign< automatically. After a little while, the new assigned test group appears.

Repeat the process for all registered luminaires as far as a reprogramming is desired.

If you want to finish group assignment select >Cancel< instead of a luminaire. You get back into the submenu >Test Times<.

From there you can go back to the main display.

 When you change a luminaire with using an already existing address you have to allocate the group assignments newly as the group information is saved within the luminaire.

Manual test execution

If required you can execute a manual test. The duration of the manual test corresponds to setting of the programmed function test.

Select >Start man.Test< in the submenu >Test Times< by pressing the control button.


An automatic return to the main display takes place with the advice „MT“... plus the remaining time of the test in minutes.



MT . . . 003

Running manual test
indicating remaining minutes

You can prematurely terminate the test by pressing the control button.

 **An prematurely termination can lead to wrong test results and should only be done in exceptional cases.**

Test Delays

A communication failure or emergency operation of a luminaire for more than 15 minutes up to 24 hours before an automatic test causes a test to be postponed by 24 hours.

If communications and network operation are restored within the 24 hours prior to the test, no test will be postponed.

If the time until the test is more than 24 hours, no postponement will be carried out. The last 15 minutes before the start of the test are therefore decisive.

The postponement of the test is repeated again and again until the causal fault is remedied. This keeps blocking a test trigger, so it needs to be fixed.

An automatic test is also postponed if the control unit is restarted up to 24 hours before or during a test.

In the event of a delay, at the time of the original test triggering, the control unit automatically programs a new test time.

After completion of the postponed test, the control unit automatically restores the originally scheduled test time, even in the case of multiple postponements.

An initiated shift will be shown on the display, on the red LED and in the message storage. The postponed tests are marked as such in the protocol.

Programming a new test time, or confirming the time currently stored in the menu, deletes a programmed test shift and the displayed data is accepted.

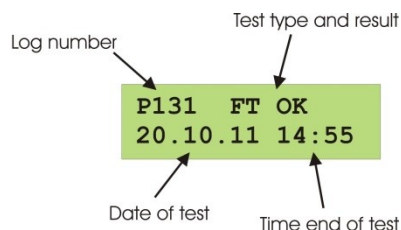
Test Log

At the end of each test a report will be written on an internal storage. When the storage is full the control device always overwrites the oldest report.

The test log consist of of a report overview in which you can see the overall result, and a single overview where you can see the results of the single luminaires.

Report Overview

Select the item >Log < in the drop-down menu. Turn the control button to see the test results one by one.



Following test types are possible:

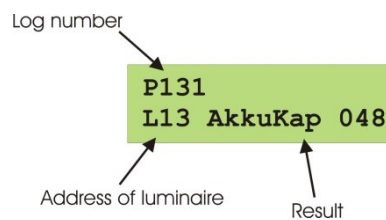
- E1 = endurance test group 1
- E2 = endurance test group 2
- FT = function test
- DF = delayed function test
- D1 = delayed endurance test group 1
- D2 = delayed endurance test group 2
- MT= manual test

To see single results of the luminaires select the desired report by turning the control button and then press the control button.

„Reading ...“ appears on the display and single results get loaded.
After that the control device changes into the single overview.

View of Single Report

Turn the control button to see the test results one by one.
Each entry contains the address of the luminaire and its individual test result.



The single results have the following meaning:

Single result	Meaning
-----	Luminaire was not registered or did not belong to the related test group when endurance test took place.
miss. or Com.Error	Test result could not be detected. The luminaire does not answer. (Maybe there is a power failure)
BattCap xxx	There was a battery fault within the test which has been noticed after xxx minutes operating time.
Lm Err.	There was a defect illuminant in the last test
No Test	Communication is still working but the luminaire did not trip test mode. Maybe there was a power failure.
OK	There was no known fault in the test.

Note for the display of battery operating time:

Depending on state of battery and type of luminaire a defect battery can result in a re-start of the luminaire's electronic. In this case it is possible that the operating time shows 000 although the battery run a longer time before. But in no case the completely required operating time was reached.

Deleting Test Log

⚠ In case of deleting the test book, message storage will be deleted concurrently.

Select the item >Clear logs< in the main menu.

A submenu appears where you have the possibility to terminate the process selecting >Cancel<.
Otherwise select >Clear logs< again. Deleting process will start.

The display shows you the process of the deleting progress.
Afterwards the program switches back to the main menu.

Lighting Control

⚠ To use the lighting control and the external continuous light-switches, the continuous light-switching-inputs of the luminaires have to be running. Hereto please pay attention to the guidance and the connection instructions of the used luminaires.

⚠ The inputs S0 to S4 must only be switched potential-free. Switching on any voltage inevitably leads to the destruction of the control center..

Usage of External Switching Inputs

The control unit has 5 inputs which can be short-circuited via an external switch. Depending on your requirement connect one switch each with one of the CL-control inputs S0 to S4.

When the switch of S1 is closed, all luminaires of the CL-group 1 will be switched on.
 When the switch of S2 is closed, all luminaires of the CL-group 2 will be switched on.
 When the switch of S3 is closed, all luminaires of the CL-group 3 will be switched on.
 When the switch of S4 is closed, all luminaires of the CL-group 4 will be switched on.
 When the switch of S0 is closed, all luminaires independent of their CL-group will be switched on.

Switch 0 acts as main switch and switches the light on even if a possibly set lighting control function has switched the luminaire on stand-by. The switching inputs S1 and S2 can't be used in an active lighting control. In this case the light remains switched off even when the switch is closed.

Group Assignment of Continuous Light

To switch the CL of the luminaires group controlled you have to assign each luminaire to a CL-group. Therefor change to the item >Light Control< via the main menu and then to >Group Assign<.

By turning the control button you can see the actual group assignment for each registered luminaire.

```
- Group Assign -  
L05 -- G2 -- --
```

Select the required luminaire and press the control button. So you get to the editing mode of the group assignment.

Set one of the 4 groups (G1 to G4) by turning the control button.
 Press the control button at the desired group.
 On display appears „writing...“ and the group membership of the luminaire will be set.
 You get back to the menu >Group Assign< automatically. After a few seconds, when the new value of the luminaire was read, there appears the new assigned luminaire group.

Repeat the process for all registered luminaires as far as a reprogramming is desired.
 If you want to finish group assignment select >Cancel< instead of a luminaire. You get back into the submenu >Light Control<.

⚠ When you change a luminaire with using an already existing address you have to assign the group assignments newly as the group information is saved within the luminaire.

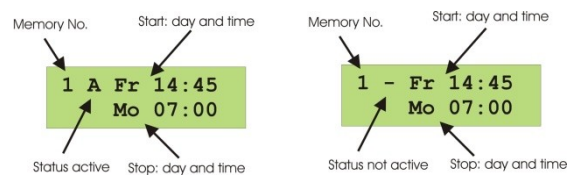
Lighting Control Function

For energy saving you can switch off the continuous light (CL) of the luminaires via the bus connection during break periods of the building.

Therefore 3 different possibilities are available.

Setting a break per week

You can set a time for 7 memory locations spread over one week. Between start and stop time the CL will be switched off. Select >Light Control< in the main menu and then >break per week<. Now you are on the first of 7 memory locations.

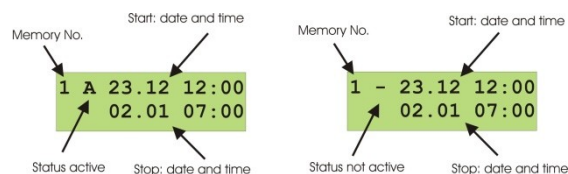


Select a memory location via the control button to program a break. Switch to the editing mode by pressing the control button. Now the currently selected position which has to be edited flashes. By turning the control button you can set the desired value. By pressing the control button once again you get to the next position.

When you have programmed all positions according to this (no position flashes) you can select and program now another memory location by turning the control button or you can leave via the menu entry >Return < back to the superior menu.

Setting a break per year

You can set date-related times for 7 memory locations. Between start and stop time/date CL will be switched off. Select >Light Control< in the main menu and then >Break per year <.




Now you are on the first of 7 memory locations. Select a memory location with the control button to program a break. Switch to the editing mode by pressing the control button. Now the currently selected position which has to be edited flashes. By turning the control button you can set the desired value. By pressing the control button once again you get to the next position.

When you have programmed all positions according to this (no position flashes) you can select and program now another memory location by turning the control button or you can leave via the menu entry >Return< back to the superior menu.

Switch off the continuous light manually

Select >Light Control< in the main menu and then >Manual<.
Turn the control button and select between >Automatic< or >Manual Off<.
Press the control button at the desired function.

At >Manual Off< CL will be switched off, independent of the settings in breaks per week or year.
At >Automatic< the settings in breaks per week and year are valid.

 A manually switched off CL has priority over a programmed breaks per year.
The breaks per year have priority over a programmed break per week.
If the external CL-main switch (S0) is activated, the CL is switched on in spite of a programmed lighting control.
As soon as the CL has been switched off by a lighting control, all yellow LEDs of the control device are flashing.

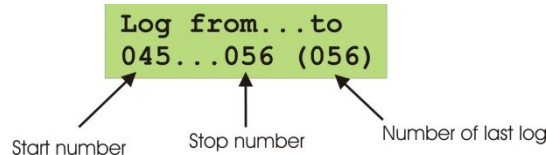
USB Flash Drive

You can transfer all generated reports, messages and the current state of the luminaires to the USB flash drive.

Connect an USB flash drive with the USB port in the front of the control unit. From main menu switch to submenu >USB< and then to >Write Log<.

Note:

The menu >USB Update< is intended for the purposes of service only and is inessential for handling.



Now you can enter a range for the report readout with help of the control button. Turn the control to enter the lowest report number you want to write. By pressing the control button you get to the highest report number you want to write. Turn the control button once again to enter a number.

To start writing process press the control button. The writing process starts.

While writing you can watch the progress on the display. Writing has finished when the device jumps to the main menu and the LED at the USB port turns off.

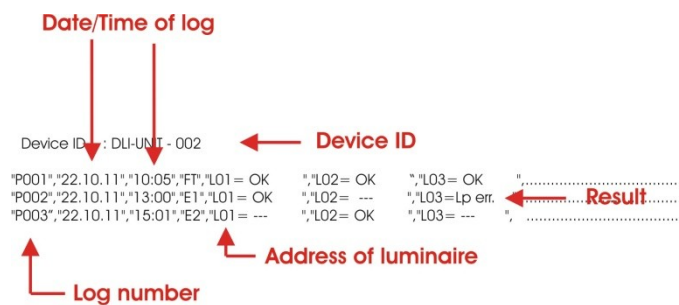
Due to the kind of data access in the control unit writing takes some time. The writing process of the complete message storage with 250 messages takes approx. 70 seconds. The writing process of the complete log with 208 messages takes approx. 30 minutes.

In case of an writing error, the display shows the message „USB Error“, supported by an acoustic alert.

Remove the USB flash drive and connect it with a PC to have a look at the written files.

Per writing two files can be found on the USB flash drive. The files have the ending CSV and TXT. The file name consists of a character string made by the system, e.g. in the form KJQG5810.TXT or KJQG5759.CSV, so that already generated file names cannot be overwritten.

You can find the saved log in the CSV-file which can be imported e.g. into a text editor or spreadsheet. Due to different procedures regarding the CSV-import please consult the instruction of your spreadsheet.



You find an image of the message storage and of the current luminaire statuses in the TXT-file. This file can be read for example with the Windows text editor „Notepad“.

```

Date/Time of message
Device ID : DLI-UNIT - 002 ← Device ID
***** Messages *****
22.10.11 10:00 Test Start
22.10.11 10:04 Test Stop
22.10.11 12:00 Test Start ← Message
22.10.11 13:00 Test Stop
22.10.11 13:01 L03 Lp err.
22.10.11 14:00 Test Start
22.10.11 15:01 Test Stop
22.10.11 15:01 L06 Lp err.
Luminaire address
***** Status *****
L01 OK
L02 OK
L03 Lp err. ← Actual status
L04 OK
L05 OK
L06 Lp err.
L07 OK
L08 OK
L09 OK
L10 OK
L11 OK
L12 OK

```

In the first line of each file you find the device identification which you can use to assign the corresponding control unit to a file (provided that you have entered a device identification on the control unit).

Note:

Due to the variety of different USB flash drives there is no guarantee that every type is usable without stint. Despite all efforts there are discrepancies between single brands and types which cannot be covered by the firmware of USB port.

Network Connection

To use the controller with the optional visualization, connect the controller to a computer network. The control unit has an interface connection with a RJ-45 socket.

For the integration into a network, an adaptation of the IP address in the interface is necessary. You can call the configuration of the interface via the default address 192.168.168.200.

A detailed description of the interface configuration of the control unit can be found in the manual of the visualization software.

⚠ When the control device is integrated in the network, it can be possible that that you can't handle it for a little while because of network hits.

Bus Connection of the luminaire

Depending on the type of the luminaire, the bus connection is on an interface module in the housing or on the module or the luminaire itself. The interface module acts as a translator between the luminaire's electronic and the bus line.

A foil switch with LED is attached to the module and leads to the outside of the housing. With the help of the foil switch you can carry out the programming of the addresses (see chapter "Starting Up"). Via LED different statuses of the luminaires are shown.

Led display	Meaning
Flashing green	Single-battery in initial charge / luminaire ok
Flashing green, fast	Communication failure between interface module and electronic of the luminaire
Permanently green	Luminaire in trickle or permanent charging / luminaire ok
Flashing red, fast	Battery failure in test mode
Flashing red, slow	Illuminant failure in test mode / Illuminant failure in mains operation
Permanently red	Charging failure or defect battery
Permanently orange	Initialization, common fault or foil switch is pressed
Flashing orange, slow	Endurance test
Flashing orange, fast	Function test
Red, green, orange, fast repetition On some luminaires interrupted by an orange 3 second break	Missing bus communication Depending on the luminaire type, it can take up to 60 seconds until the missing communication is displayed.
Green, orange	Display of an address in addressing mode
Green, red, fast	No address programmed

Connect the bus lines to the terminals provided on the luminaires.
For this purpose, observe the operating instructions of the respective luminaire.

Starting up

Registration and Addressing of Luminaires

Mount the luminaire according to its installation advice.

Connect the luminaire with help of the bus line.

Don't connect the bus line to the control device yet.

Switch on control unit.

On the display the current program version appears.

The software of the device is getting started now.

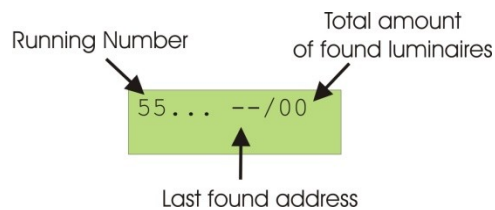
After a few seconds the currently saved configuration will be read in.

When the main display appears with date and time the control device is ready.

Switch to >Registration< via the main menu and then to >Address Reg.<.

A registration is getting started.

On the display an information appears (example)



The total number of luminaires has to be 00 at this search.

Wait until the registration process has finished and you can see the submenu >Registration< again.

As you have not connected any luminaires to the control unit at the moment, already existing registrations will be deleted and you will get a defined starting configuration for starting up.

Now connect the bus lines of the luminaire to the control unit.

Switch to the main menu and select >Registration< again.

Go to the submenu >Phys.Reg.<.

„ --/–“ appears

Now the luminaires are giving out their currently programmed addresses.

At this time you can program the new address at the luminaire.

The address is shown by a multi-colored LED on the luminaire.

Each color refers to a position of the address.

Orange is for the unit position and green for the decade.

The number of the switched on LED refers to the digit of a position.

With a short pause between the flashing LED the display starts again.

Example:

LED twinkles 5 times green and 2 times orange = $5 \times 10 + 2 \times 1 = 52$

LED twinkles 3 times green and not orange = $3 \times 10 + 0 \times 1 = 30$

The control unit allocates the addresses automatically in the order 1 to 64. Already used addresses get skipped. But as you have deleted all addresses before, this is not the case at the moment. If you want to reach a certain address-order of the luminaires you will have to step off the luminaires in this order and program them.

Go to the first luminaire to allocate the first new address.
Press the switch of the luminaire and hold it down.
The LED now flashes green and red fast in turns.
As soon as the LED is not flashing anymore let the foil switch go.
Depending on the type of luminaire the continuous light switches on and off automatically for one time.
Shortly afterwards the LED shows the just programmed address.
Please check with the help of the flashing sequence if the address displayed is in accordance with the address you wanted to allocate.

Go to the second luminaire and act in the same way for the next address.
Repeat these steps for all luminaires connected to the control unit.

Go back to the control unit. There you see the address of the last registered luminaire.
For luminaire 64 for example, the display shows „reg.: L64“.

Now press the control button. The control device switches back.
Turn the control button and select the submenu >Show Reg< .
Please check, if all desired addresses have been allocated.
A registered luminaire is displayed with „reg.“, a not registered luminaire with „-----“.

By pressing the control button again you switch back to the submenu >Registration< and afterwards to the main menu. Go back to the main display and registration is finished.

Entering Identification of Devices

When you write a report-copy on an USB keychain, the ID of the device will be written into the first line of the files. In this way you can assign the control unit to a file.

Switch to >Device ID< via the main menu.

In the submenu >Device ID< you can select 16 characters between „A...Z, 0 ... 9“, blank character and minus sign to identify the control central.
Select a character by turning the control button. By pressing the control button you switch to the next character.

After entering all 16 characters you go back to the main menu automatically.

Entering Operation Settings

Check the current date and time.
Program the desired test times for the function test, endurance test 1 and endurance test 2.

Set the test group assignment of the luminaires.
Set the continuous light group assignment of the luminaires.

Set breaks per week and breaks per year of the lighting control as required.

Execute a manual test to check the function of the luminaires

With this, starting up is finished.

Removal and addition of single luminaires (manual registration)

When you want to remove single luminaires from the system you can log them out manually so that it does not come to any fault reports.

⚠ At least one luminaire has always to be logged in the bus. In case of any absence of registrations this could lead to a deadlock of some functions.

Switch to >Registration< via the main menu and then to >Man. Reg.<.

Select the affected address by turning the control button.

By pressing the control button you can switch between „registered“ and „-----“.

Repeat this process for all affected luminaires.

Afterwards turn the control button until you see “Return”.

By pressing the control button the new configuration gets saved.

Switch back to the main display. Registration is finished.

If you want to add luminaires to the system you will have to act in the same way.

⚠ The address of the additional luminaire has to be known and is not allowed to be already in the system because otherwise this leads to a double-addressing. In this case the luminaires can't be approached by the control device anymore.

If you want to add luminaires with an unknown address you will have to act in the following way:
Install the luminaire into the bus system.

Switch to >Registration< via the main menu and then to >Phys.Regist.<.

„---/ ---“ appears on the display.

Select the address you want to allocate by turning the control button.

⚠ The address is not allowed to be already in the system because otherwise this leads to a double-addressing. In this case the luminaires can't be approached by the control device anymore.

Go to the luminaire and program the selected address like you did in the chapter **Starting up**.

Press the switch of the luminaire and hold it down.

The LED now flashes green and red fast in turns.

As soon as the LED does not flash anymore let the foil switch go.

Depending on the type of luminaire the continuous light switches on and off automatically for one time.

Shortly afterwards the LED shows the just programmed address.

Go back to the control unit. There you see the address of the last registered luminaire.

For luminaire 64 for example, the display shows „reg.: L64“.

Registration of already addressed luminaires

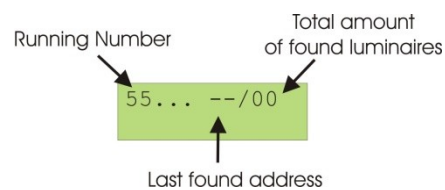
If you want to add luminaires which already have an address, e.g. when changing control device, you can let the control device search automatically for already existing addresses.

⚠ You have to ensure that every luminaire is connected only once to the control device. Otherwise the luminaires can't be approached by the control device anymore.

Switch to >Registration< via the main menu and then to >Address Reg.<.

A registration is getting started.

On the display the following information appears (example)



Wait until the registration progress has finished and you can see the submenu >Registration< again.

Please check if the control device has found all installed luminaires.

Turn the control button and select >Show Reg.<.

Please check if all installed luminaires are listed there.

A registered luminaire is displayed with „reg.“, a not registered luminaire with „-----“.

Afterwards switch back to the main menu.

Trouble Shooting

Fault	Solution approach
Luminaires cannot be not registered	Please check if every bus address exists only once. Check wiring of the luminaires.
Tests get delayed	Maybe some luminaires or the control device had a power failure. Regarding to this please check the message storage.
Test not executed	Overlapping of programmed test dates
The light of the luminaires is not switched on.	Check power supply wiring of the luminaires. Is the cable for the continuous light connected ? Note that the light can be switched on by the external switch inputs only.
Luminaires don't react on switching the CL	Check CL group assignment of the luminaires.
Luminaires don't execute a endurance test	Check the test group assignment of the luminaires.
Luminaires don't have a bus connection.	Check the unique addressing of the luminaires. Ensure that the bus line has no short circuit.
You can't operate the control device anymore	May be no luminaire is registered. Re-start the central (switch power supply off and on) and register a participant.