

SELF-CONTAINED EMERGENCY LIGHTING INSTALLATION / MAINTENANCE INSTRUCTIONS



NEN-EN 1838 & NEN-EN-IEC 60598-2-22

This documents needs to be printed in color to avoid confusion.

STORAGE

The luminaire(s) must be installed within a period of 3 months after production of the luminaire(s). Storage of emergency luminaire(s) should be between +5°C to +25°C. with a maximum humidity of 65% ± 5%

The emergency luminaire(s) are not suitable for an environment with corrosive gasses. Long term storage of disconnected batteries will result in battery self-discharge. Multiple charging-discharging cycles are required to bring back the original capacity.

Notice:

If the luminaire(s) is not connected within a period of 1 month, disconnect the battery from the luminaire.

INSTALLATION

(1) The emergency luminaire(s) can operate between +5°C to +25°C. Before installing the emergency luminaire(s) write the installation date on the battery.

(2) Owner of the building / Luminaires (or acting party instead) is obliged to keep a logbook according to NEN-EN 1838 & NEN-EN-IEC 60598-2-22 of their Emergency Installation. Within the logbook should be noted including findings:
 - Installation date of luminaires
 - Document regular inspection routines
 - Document replacements and or maintenance
 - Logbook should be available for a minimum period of three years.

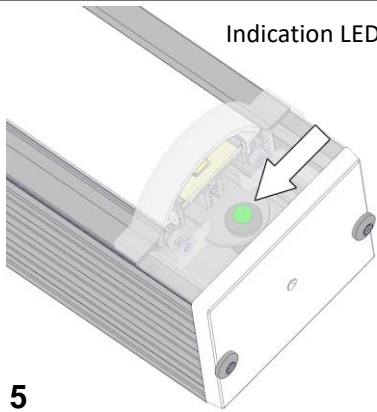
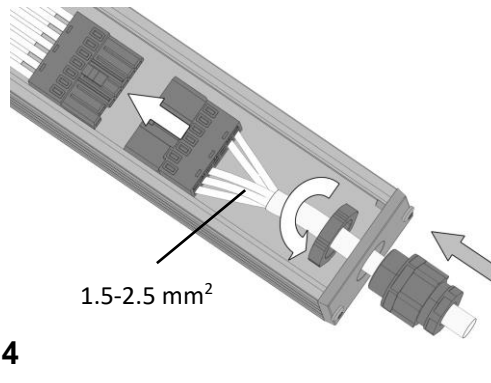
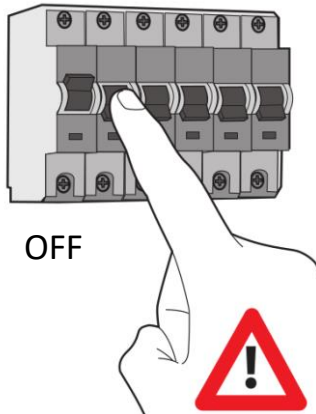
(3) Before any work is done on the installation make sure that the power is switched of in the main cabinet. Install emergency luminaire(s) to a permanent phase only.

(4) Emergency fittings are foreseen with at minimum one continues power circuit (phase) connection, when installing emergency luminaire(s) make sure there is a continues power supply available and connected. After installation it should be avoided that there are any interruptions in this continues power supply, repeated power outages will reduce the lifespan of the batteries dramatically.

(5) The Emergency Luminaires are equipped with an Indication LED to show the status of the emergency functionality, see table and explanation for more details.

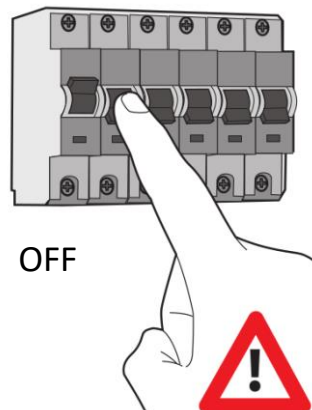
(6) To clean the luminaire(s) use only a cloth and a little water. Do not use chemicals or a dry cloth.

After full installation of all the emergency luminaire(s) a period of 48 hours is required to fully charge the batteries, afterwards document the functioning of all luminaire(s) for the building operator. See Led indication table (5) for detailed information about system operation.

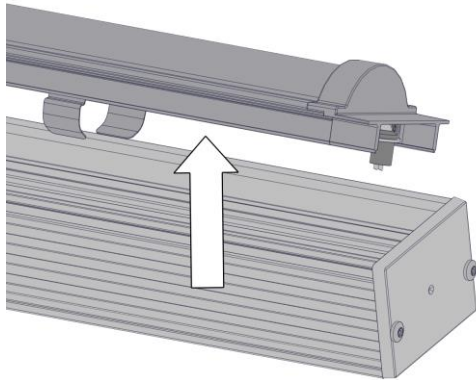


Indication LED

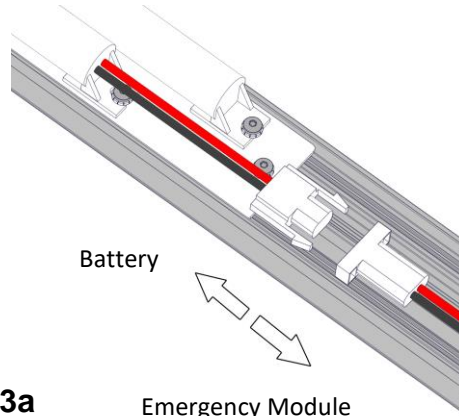
LED indication	Status	Comment
Permanent green	System OK	AC mode
Fast flashing green (0,1 sec on – 0,1 sec off)	Function test underway	
Slow flashing green (1 sec on – 1 sec off)	Duration test underway	
Red LED on	Load failure	Open circuit / Short circuit / LED failure
Slow flashing red (1 sec on – 1 sec off)	Battery failure	Battery failed the duration test or function test / Battery is defect or deep discharged/ Incorrect battery voltage
Fast flashing red (0,1 sec on – 0,1 sec off)	Charging failure	Incorrect charging current
Double pulsing green	Inhibit mode	Switching into inhibit mode via controller
Binary transmission of address via green/red LED	Address identification	During address identification mode
Green and red off	DC mode	Battery operation (emergency mode)



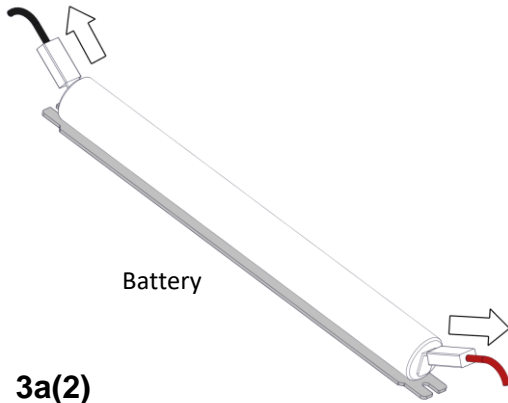
SELF-CONTAINED EMERGENCY LIGHTING INSTALLATION / MAINTENANCE INSTRUCTIONS



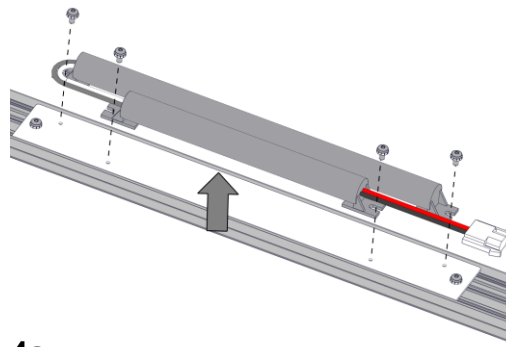
2a



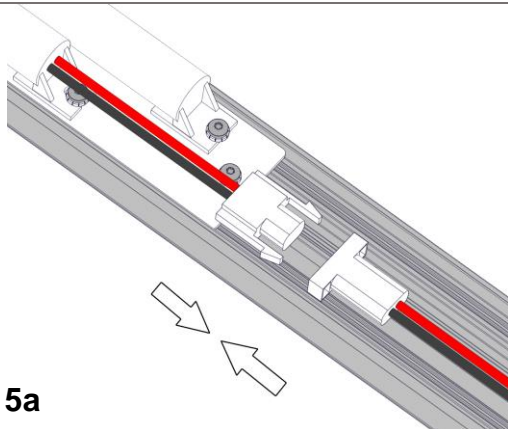
3a



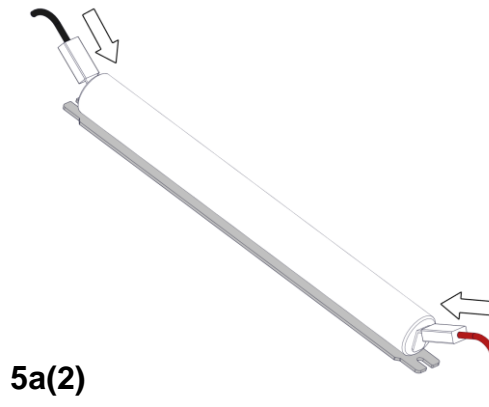
3a(2)



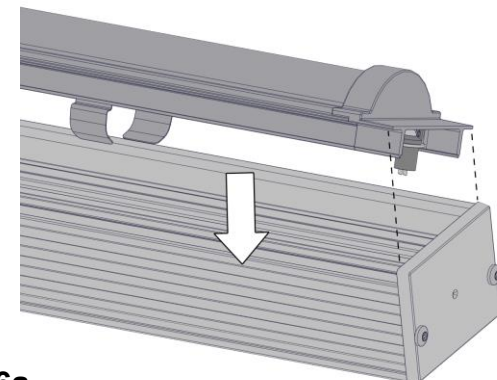
4a



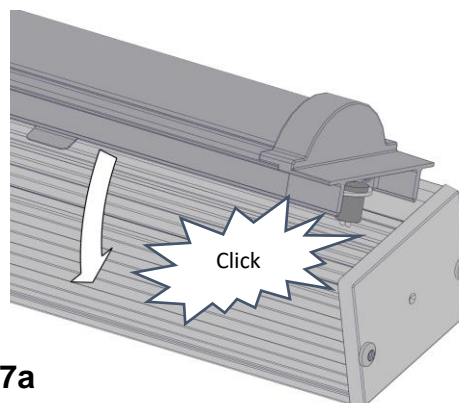
5a



5a(2)



6a



7a

MAINTENANCE

Emergency luminaire(s) need to be checked regularly by the building operator for proper function, this can be done by checking the indication led, deviations should be noted. See Led indication table (5) for detailed information about system operation. System operation of 3 years must be documented and inspected.

If the emergency operating time is not reached, the emergency luminaire battery must be replaced. otherwise battery must be replaced at least every four years, only use original batteries obtained from the manufacturer.

When replacement of the battery is required see step 1a, when reaching the end of this manual restart from begin of the document.

The light source contained in this luminaire shall only be replaced by the manufacturer or his service agent or a qualified person.

The emergency luminaire(s) may be discharged max 4 cycles per year plus 2 cycles during commissioning.

Keep at least one copy of this document as future reference material.

TECHNICAL SPECIFICATIONS

Mains voltage: 230 - 240 V, 50/60 Hz
Emergency battery operation 1 to 3 hours depending on type chosen.

SAFETY

Disconnect the mains before connecting the LED line lighting. Any work on the 230V mains and/or the installation of the LED line must be carried out by qualified electricians only. All installation instructions must be followed. When connecting the wiring, always take special note of corresponding colors. Take all technical specifications of the appliance into consideration.

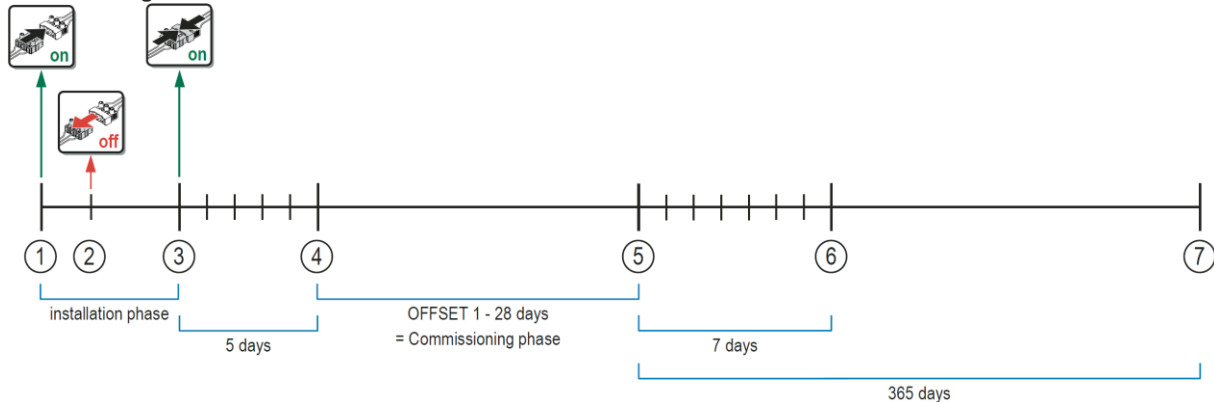
If in any doubt, please contact Veko Lightsystems Technical Department. Or If you have any questions about the installation e-mail service@veko.com or call +31 (0)768705891

Subject to changes in design

SELF-CONTAINED EMERGENCY LIGHTING INSTALLATION / MAINTENANCE INSTRUCTIONS



Self-test according IEC 62034



Intelligent multilevel/pulse battery charging system

The multilevel/pulse battery charging system minimizes charging time while maximizing battery life. In normal, efficient network operation, the module charges the batteries using a specially developed charging algorithm, NiMH batteries are charged with pulse charging.

Initial charging mode

Increased charging current at the beginning of 48 hours to properly prepare and fully charge the new battery cells.

Trickle charge mode

Continuously low charge to maintain battery life and reduce battery temperature.

Fast charge mode

10 or 15-hour fast charge after a discharge to provide the full operating time quickly available again.

Commissioning test

A full commissioning check is automatic if the mains voltage (unswitched phase) has not been interrupted for 5 days. The function for easy commissioning sets date and time for the initial test firm to ensure random testing of the units.

Functional test

Functional tests are performed weekly for 5 seconds and controlled by the microprocessor. The initiation and date / time of these exams are set at commissioning of the luminaire.

Duration test

To check the battery performance is a full annual endurance test carried out (1 or 3 hours).

Delay Timer (1-28 days)

To prevent that all the luminaires perform the emergency test at the same time, each luminaire has a pre-programmed code with a value of 1-28, which delays the test time of that luminaire for a specified time.

Devices with code 1 will be tested one day after the completion of the 5 day long monitoring of the power supply (that is 6 days after the uninterrupted connection to the supply).

Devices with code 2 will be tested two days after the completion of the 5 day long monitoring of the power supply (that is 7 days after the uninterrupted connection to the supply).

Devices with higher code numbers will be tested with a delay that corresponds to that code number.

28 days after the start of the commissioning all devices will have completed the required commissioning test. The day of the commissioning test serves as a reference point for all further function and duration tests times and test intervals. Function tests will be performed on the same day in a weekly interval, duration tests will be performed on the same day in an annual interval.

(1) First connection to the power supply

(2) Phase, in which the power supply is switched on and off (possibly numerous times)

(3) Phase, in which the power supply is "permanently" connected (no interruption for at least 5 days)

(4) Delaying the commissioning test for 1-28 day

(5) Commissioning test begins

(6) First function test

(7) First duration test

Weekly function test

The 5 second long, weekly function test serves to check the functionality of the emergency unit, the batteries and the LED module. The first function test after the commissioning test would normally take place one week after the start of the commissioning test. In the actual implementation of this and all further functional tests two aspects must be considered, however:

To prevent that people are on the site and are disturbed by the test, the start of the function test is delayed until the switched phase is switched off. If this is the case, the function test will be carried out 10 seconds later. If this is not the case, because the switched phase remains permanently switched on, the function test will be carried out exactly 24 hours later, regardless of whether the switched phase is then turned off or not.

Annual duration test

The annual duration test checks whether the batteries are able to ensure the required operating time of 1, 2 or 3 hours.

The first duration test after the commissioning test would normally take place exactly one year after the start of the commissioning test. In the actual implementation of this and all further duration tests two aspects must be considered, however: To prevent that the duration test is carried out at a time of maximum hazard or highest presence density, the device automatically uses the adaptive test mode to determine a suitable test time.

Furthermore, the test time can be set manually, please refer to "setting the test time".

Adaptive test mode sets the time for the duration test to a time of minimum risk and minimum presence. This is achieved by monitoring the switched phase of the lighting. This tells the emergency lighting unit which times the lighting is switched off (i.e. no one is in the room) and the unit stores these times. If non-presence of more than five hours is detected the start time for the duration test is set to two hours after the start of the non-presence time.

Setting the test time

The time and day for the function and duration test is stored in the internal timer. To change the test time, the timer needs to be reset. The previously stored test time will be deleted and replaced by the time of resetting. If the unswitched power supply of an emergency lighting circuit is switched on and off 5 times within 60 seconds, the timers for all the emergency units in the emergency lighting circuit is reset (to the current time). The adaptive memory will be also deleted.

SELF-CONTAINED EMERGENCY LIGHTING INSTALLATION / MAINTENANCE INSTRUCTIONS



DALI Control

A DALI command from a suitable control unit can be used to initiate function and duration tests at individually selected times. Status flags are set for report back and data logging of results.

When a DALI bus has not been connected or when a DALI bus is connected but the DALI default DELAY and INTERVAL times have not been re-set by sending appropriate DALI commands, then the EM PRO G2 will conduct self- tests in accordance with the default times set within the EEPROM. These default times are factory pre-set, in accordance with the DALI standard EN 62386-202, to conduct an automatic function test every 7 days and a duration test every 52 weeks. Since the DELAY time is factory pre-set to Zero, all units are tested at the same time. Test times can be changed with a command over the DALI bus.

The DELAY and INTERVAL time values must be re-set when the emergency system test times are to be scheduled by a DALI control and monitoring system.

Note that once the default values have been set to Zero, tests will only be conducted following a command from the control system. If the DALI bus is disconnected the EM PRO G2 does not revert to self-testing mode.

Note: If the battery is connected the DALI communication is only possible after power reset.

Addressing

The EM PRO G2 includes the EZ easy addressing system which allows

addressing and identification by using the bi-color LED in conjunction with the EM PRO addressing tool. Binary address codes given by the LED can be simply converted to the DALI addresses 0 to 63. For single handed addressing using this method it is necessary to send a broadcast ident command every 3 to 9 seconds. During this command the main light source will be switched off and the indication LED will flash the 6 bit binary address preceded by a 3 second start indication period.

Commissioning

After installation of the luminaire and initial connection of the mains supply and battery supply to the EM PRO G2 the unit will commence charging the batteries for 48 hours (initial charge). Afterwards the module will conduct a commissioning test for the full duration. The 48 hours recharge occurs also if a new battery is connected or the module exits the rest mode condition. The following automatic commissioning duration test is only performed when a battery is replaced and fully charged (after 48hrs) and the interval time is not set to zero, otherwise the system is expected to perform the testing.

Functional test

The time of day and frequency of the 30 seconds function test can be set by the DALI controller. The default setting is a 30 seconds test on a weekly basis.

Duration test

The time of day and frequency of the duration test can be set by the DALI controller. The default setting is a duration test conducted every 52 weeks.

Prolong time

Prolong time can be set by the DALI controller. This is the delay time between return of the mains supply and the end of the emergency operation. The default prolong time is set as 0 minutes as specified within the DALI standard.

Rest Mode / Inhibit Mode

Emergency operation is automatically started when the mains supply is switched off. If the Rest Mode is activated, the discharging of the battery will be minimized by switching off the lamp. If the Inhibit Mode has been activated before the mains supply is switched off, Rest Mode will be automatically switched on if the mains supply is switched off within 15 minutes