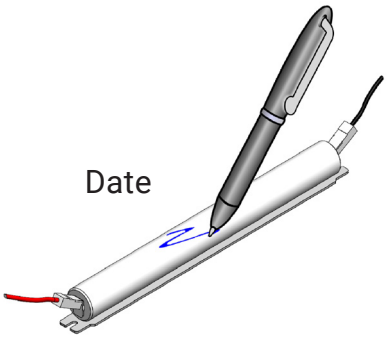
Logbook

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

1



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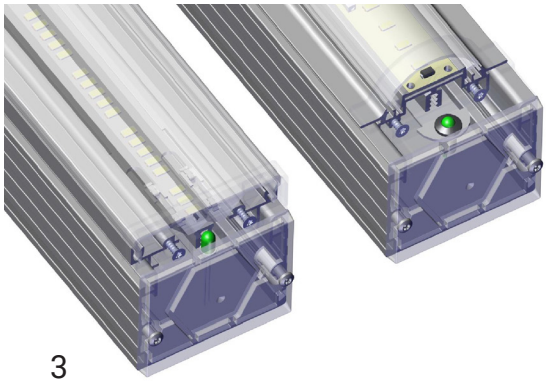

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LED color / flashing	Error condition	Cause	Solution
Green / no flashing		System OK, battery fully charged	
Off		Main off, EM mode, Rest mode, test in progress	
Green / slow (0,25s on, 1,25s off)		System OK, battery is charging	
Green / fast (0,25s on, 0,25s off)		System OK, recently tested (<5 days, Australia mode only)	
Red / no flashing	Battery voltage too high or too low	No battery connected	Connect battery
		Wrong or bad battery connected	Replace battery
		Battery pack replaced with different type	Reset driver
Red / slow (0,25s on, 1,25s off)	Failed test due to battery	Battery end of life	Replace battery and preform duration test
		Charger failure	Replace driver
Red / fast (0,25s on, 0,25s off)	Output voltage too high or to low	Wrong LED load connected	Connect right load and preform functional test
		Wrong connection	
Red-Green/fast (0,25s on, 0,25s off)		Dali device identification	
Green / short (50ms on, 0,95s off)		Battery detection	

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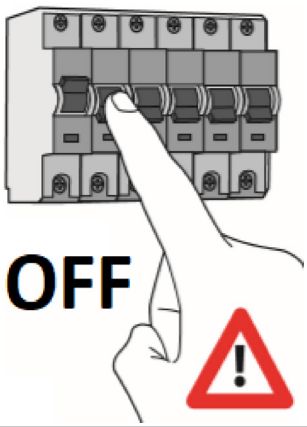

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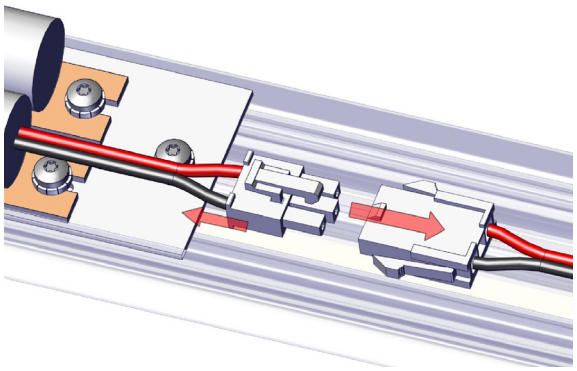

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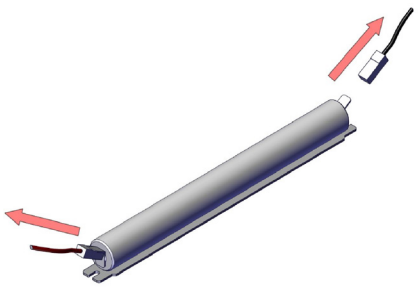

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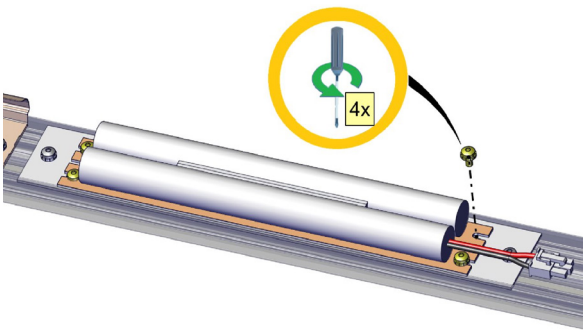

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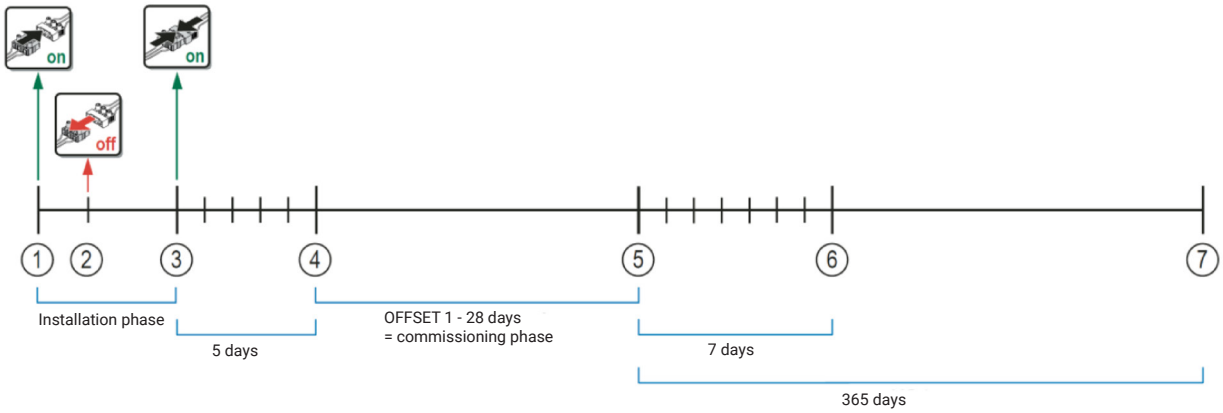
1 Owner of the building/ luminaires (or acting party) is obliged to keep a logbook according to NEN-EN 1838 & NEN-EN-IEC 60598-2-22.
2 Before installing the emergency unit or replacing the battery, write the installation date onto the battery.
3 Example of emergency unit indication LED.
4 LED status indicator - table of contents.
5 Disconnect the mains before operating the linear lighting system.
6 Disconnect the battery from the emergency module.
7 Type and/or quantity of batteries may vary as well.
8 Unscrew the battery from the mounting plate and replace. Re-tighten screws and reconnect the battery wires with the emergency module. Replace emergency unit as described in section 6 of this manual.

CLEVER
SWIFT
SOLID

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.

EMERGENCY SYSTEM INFO & DISCLAIMER

Emergency lighting Notes

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. The logbook should state at least:

- Installation date of luminaires;
- Document regular inspection routines;
- Document replacements and/or maintenance;
- Logbook should be available for a minimum period of three years;
- 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.

In case of self-contained emergency:

- The emergency luminaire(s) can operate between +5 °C to +25 °C with a maximum humidity of 65 % ± 5 %;
- Before installing the emergency luminaire(s) write the installation date on the battery;
- The luminaire(s) must be installed within a period of 3 months after production of the luminaire(s);
- If the luminaire(s) is not connected within a period of 1 month, disconnect the battery from the luminaire;
- 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;
- Repeated power outages will reduce the lifespan of the batteries dramatically;
- The emergency luminaire(s) may be discharged max. 4 cycles per year plus 2 cycles during commissioning.

DALI

Each DALI emergency gear is individually addressable on its DALI bus and each gear can be commanded individually to carry out an emergency test. So rather than testing all the emergency luminaires in one zone together each emergency luminaire in the zone can be tested at a different time, therefore ensure the safety of the zone at all times.
If the emergency and normal drivers in a luminaire are both DALI gear, then each can be separately addressed on the same DALI bus. This allows common wiring to be used for both normal lighting control and emergency test control. During a failure of the permanent mains supply, the TrustSight driver acts autonomously to provide escape lighting, regardless of the state of the DALI bus.
The TrustSight DALI version is equipped with a self-test functionality according to IEC 62034. Automatic tests will be preformed according to the duration test (every 52 weeks) and functional test (every 7 days) programmable interval times. DALI standard operating mode the duration test will be preformed as long as the rated duration time (3 hours). The automatic duration test will always run until the battery is fully discharged. Full discharges are recommended for battery maintenance.

Conditions for self-test

The TrustSight driver must be permanently connected to mains power whenever a duration test or functionality test is executed and the battery must be charging or fully charged. When scheduling a duration or functionality test the operation of the AC-driver is also checked. When the AC-driver is powered up, the test can be postphoned up to 3 days (in 24/7 lighting situations). When the AC-driver is off for at least 2 hours the test will be started.

Reset to factory default

In certain cases, it may be required that the TrustSight driver be reset to factory default settings.
This can be achieved in the following way:

1. Apply mains power and apply 12Vdc on battery input (apply at the same time or within 2s).
2. After 1s the LED indicator will start flashing fast RED for 2s (4 times).
3. Remove 12Vdc on battery input while the LED is flashing.
4. After 1s the LED indicator will light up continuously GREEN for 2s.
5. Disconnect main power. The driver has now been reset to its factory default settings.

LED status indicator

The LED status indicator shows whether:

- The system is in charging mode;
- Batteries are fully charged;
- A system error had occured, see also the overview table in section 2 of this manual.