

DALI-2 IoT4 EM DALI-2 IoT EM

Datasheet Extension

IoT4 Emergency Lighting API information

Emergency Lighting Version

Art.Nr. 22176625-EM

Art.Nr. 22176625-PS-EM

Art.Nr. 89453886-EM



DALI-2 IoT/IoT4 EM

Overview

- **DALI-2 IoT EM version:** RESTful Endpoints for scheduling and automatization of communication, function and duration tests, Test execution and result analysis of DALI DT1 gears according to DALI EN 62386-202
- General information on specifications, functionality, installation guidelines can be found in the DALI-2 IoT4 datasheet:

https://www.lunatone.com/wp-content/uploads/2024/11/22176625_DALI2_IOT4_EN_D0133.pdf

/ DALI-2 IoT datasheet:

https://www.lunatone.com/wp-content/uploads/2021/08/89453886_DALI2_IOT_EN_D0099.pdf

DALI-2 IoT4 EM specific API Endpoints for Emergency Lighting

available in Art.Nr. 22176625-EM, 22176625-PS-EM, 89453886-EM

In addition to the general RESTful endpoints following additional endpoints are available to control DALI-2 emergency devices (DT1 standard DALI EN 62386-202

Prolong time

POST /broadcast/emergencyLights/prolongTime Set Prolong Time Emergency Lights

Setting a prolong time is used to extend the operation of the emergency lighting even after the main power has been restored (max. 1h), (e.g. to bridge the restart time of high-pressure lamps in the event of brief mains voltage interruptions). The basic setting in most emergency lighting devices is 0 minutes. The prolong time can only be maintained if the battery capacity is sufficient.

Emergency lighting Deactivation

POST /broadcast/emergencyLights/rest Rest Emergency Lights

POST /broadcast/emergencyLights/inhibit Inhibit Emergency Lights

POST /broadcast/emergencyLights/reLightResetInhibit Relight Reset Inhibit Emergency Lights

These commands are used to manually deactivate the emergency lighting, if the main power supply is switched off and the emergency lighting should not to be switched on (e.g. during maintenance, a holiday etc.).

The emergency lighting devices can be deactivated in two ways:

- manually switching off the emergency lighting if the main power is already off
→ *REST*
- preventing the emergency lighting to turn on once the main power is turned off, within the next 15min
→ *INHIBIT*

Important: Deactivated emergency lighting devices will not switch on in an emergency. **Ensure that no emergency lighting operation is required!**

When main power returns the emergency lighting will be activated again.

To activate the emergency lighting devices before switching on the main power supply, select " STOP REST / INHIBIT "

Error Signalling

GET	/automations/emergencyTests/errorSignalling	Get Error Signalling Settings	▼
PUT	/automations/emergencyTests/errorSignalling	Update Error Signalling Settings	▼

Two DALI addresses can be specified for error signalling. This makes it possible to send the error status to a higher-level system via e.g. DALI RM relay modules or indicating the status ("OK"/ "Error") with signal lamps.

Test Notification:

GET	/email	Query Email Settings	▼
PUT	/email	Update Email Settings	▼
POST	/email	Test Email Settings	▼

Notification via email (requires input email server and address) –can be set up for all tests or only when errors are detected.

Automated Emergency Light Tests

GET	/automations/emergencyTests	Get Emergency Tests	▼
POST	/automations/emergencyTest	New Emergency Test	▼
GET	/automations/emergencyTest/{_id}	Get Emergency Test	▼
PUT	/automations/emergencyTest/{_id}	Update Emergency Test	▼
DELETE	/automations/emergencyTest/{_id}	Delete Emergency Test	▼

3 different test types can be created:

- Communication Test: checking if the DALI communication with the device is possible
- Function Test: switching on the emergency lights to test the functionality
- Duration Test: the batteries of the emergency unit will be fully drained to check the battery capacity and discharge behaviour.

Attention: Depending on the emergency lighting device, the duration test can take up to three hours. The batteries should be charged for at least 24 hours before starting the duration test.

For each test the devices that should be tested, a repetition interval and a start date and time can be set. Although each repetition interval option is available for each test type only following reasonable repetition intervals should be chosen

Communication test

No repetition	only tested once on the specified day and time
every 10 minutes	tests periodically: checks all selected devices sequentially within 10 minutes. A new cycle is started after 10 minutes.
daily	the test is carried out daily at the specified time

Function test

No repetition	only tested once on the specified day and time
weekly	the test is carried out once every week – on the weekday specified (input. "weekday")
Jan - Dec	the test is carried out on the selected months on the first occurrence of the selected weekday ("repeated on week day") and the specified time – (enables: monthly, every 2 nd , 3 rd etc. month up to yearly repetitions)

Duration test

No repetition	only tested once on the specified day and time
Jan - Dec	the test is carried out on the selected months on the first occurrence of the selected weekday ("repeated on week day") and the specified time (enables: monthly, every 2 nd , 3 rd etc. month up to yearly repetitions)

The Endpoint "start" and "stop", activate and deactivate the respective test schedule

POST	/automations/emergencyTest/{_id}/start	Start Emergency Test	▼
POST	/automations/emergencyTest/{_id}/stop	Stop Emergency Test	▼

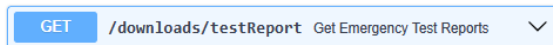
The Endpoint "testNow" allow executing the test immediately in addition to the set schedule.

POST	/automations/emergencyTest/{_id}/testNow	Execute Emergency Tests Now	▼
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The latest test results can be requested via "batches"

GET	/automations/emergencyTests/batches	Get Latest Batches	▼
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The complete Error log book / report can be downloaded via



Or on the IoT webpage tab “Downloads” section “Download Emergency Reports”

Analysis of Test Results

A test batch and downloaded report will contain following information:

Example Duration test batch 1 device:

```
{
  "id": 16,
  "automationId": 4,
  "name": "duration",
  "testType": "duration",
  "deviceStates": [
    {
      "id": 1,
      "address": 0,
      "line": 0,
      "name": "Line 0 - DALI#00",
      "groups": [
        10
      ],
      "lastUpdate": "2026-07-08 09:35",
      "comment": "manualExecution",
      "testState": "busError",
      "durationInMinutes": 44,
      "failMaxDelayExceeded": false,
      "emergencyMode": 32,
      "emergencyStatus": 0,
      "failureStatus": 0
    }
  ],
  "startTimestamp": "2026-07-08 08:49",
  "stopTimestamp": "2026-07-08 09:35"
},
```

Example Function test batch 1 device:

```
{
  "id": 13,
  "automationId": 5,
  "name": "function",
  "testType": "function",
  "deviceStates": [
    {
      id: 1,
      "address": 0,

```

```
    "line": 0,
    "name": "Line 0 - DALI#00",
    "groups": [
      10
    ],
    "lastUpdate": "2026-07-07 15:41",
    "comment": "manualExecution",
    "testState": "success",
    "failLamp": false,
    "failBattery": false,
    "failUnit": false,
    "failDuration": false,
    "failMaxDelayExceeded": false,
    "emergencyMode": 2,
    "emergencyStatus": 6,
    "failureStatus": 0
  }
],
"startTimestamp": "2026-07-07 15:39",
"stopTimestamp": "2026-07-07 15:41"
}
```

Parameter “testState” contains the overall test evaluation and can be “success”, “failed”, “busError” and “unexpected”.

In case of “failed” the underlying parameters will indicate the type of failure, see also the following table for failure interpretations

Parameters: “durationInMinutes”, “emergencyMode”, “emergencyStatus”, “failureStatus” are the direct Answer data from the DT1 gears and interpretation analysis is possible following the DT1 DALI standard.

Parameters: “failLamp”, “failBattery”, “failUnit”, “failDuration”, and “failMaxDelayExceeded”. contain the extracted result of the Answer received (above parameters) and define the error in case of testState: “failed”.

Communication Test

status	description / details
failed	device is not reachable possible reasons: the device is not connected or defective, emergency unit has been replaced but not addressed
bus error	Communication test failed as bus communication not possible Possible reasons: no bus power or bus short, DALI wiring error, or initialize/quiescent mode is active

Function Test

status	description / details
testState = bus error	test could not be started or result could not read, as device is not responding, device is not reachable or commands cannot be sent, possible reasons: bus short, no bus power, device not connected, DALI wiring error, DALI device defective (no communication), emergency unit has been replaced but not addressed
failLamp = true	Test result "lamp failure" received from emergency light device. possible reasons: broken or wrong luminaire, or wrong wiring between emergency light device and luminaire
failUnit = true	Test result "electronic circuit failure" received from emergency light device Possible reasons: emergency unit defective
failBattery = true	Test result "battery failure" received from emergency light device possible reasons: battery capacity too low, battery defective, or battery wiring wrong
testState = failed but none of above are true	The emergency light device reported failed function test, but has not specified the failure specifics (failure cases above)
failMaxDelayExceeded = true	The set maximum delay (configured in the emergency light device) to carry out the function test has been exceeded, the test might have still been carried out afterwards with the respective results. possible reasons: other operation of the device postponed test longer than maximum delay. Corrective action: Try to start the test again Note: the emergency light device will indicate the exceeded maximum delay until a test was carried out within the set time, the next started test might therefore still show "failMaxDelayExceeded" = true.
failDuration = true	The emergency light device returned: function test success, but also duration test: failed. The previous duration test ended with an error (failed to reach full operating time) which has not been corrected Corrective action: replace battery and perform duration test manually
testState = unexpected	The emergency light device reported unusual combination of error messages: parameters emergencyStatus and the failureStatus. Please contact your emergency light device supplier to clarify the returned error bytes.
testState = failedToStart	The emergency light device did not carry out the test. The maximum delay to start the test was exceeded and not carried out after another hour, the queries for test results were therefore stopped possible reasons: other operation of Emergency light device postponed test longer than maximum delay. Corrective action: try to start the test again

Duration Test

status	description / details
testState = success	Test successful: durationInMinutes holds the test result which is above the required time
testState = bus error	Device not responding, device is not reachable, possible reason: bus error or device not connected
testState = failed	Test result "duration test failure" received from emergency light device, durationInMinutes might be below the required time. possible reasons: battery problem
failMaxDelayExceeded = true	The set maximum delay (configured in the emergency light device) to carry out the duration test has been exceeded, the test might have still been carried out afterwards with the respective results possible reason: duration test was interrupted Note: the emergency light device will indicate the exceeded maximum delay until a test was carried out within the set time, the next started test might therefore still show "failMaxDelayExceeded" = true.

testState = unexpected	The emergency light device reported unusual combination of error messages: parameters emergencyStatus and the failureStatus. Please contact your emergency light device supplier to clarify the returned error bytes.
testState = failedToStart	Test could not be performed, maximum time to start was exceeded until battery was fully charged possible reasons: other operation of Emergency light device postponed test longer than maximum delay, battery was not fully charged Corrective action: charge battery for at least 20 hours and start duration test manually

Additional Information and Equipment

DALI-2 IoT4 Datasheet

Art.Nr. 22176625-EM

Art.Nr. 22176625-PS-EM

https://www.lunatone.com/wp-content/uploads/2024/11/22176625_DALI2_IOT4_EN_D0133.pdf

DALI-2 IoT Datasheet

Art.Nr. 89453886 -PS-EM

https://www.lunatone.com/wp-content/uploads/2021/08/89453886_DALI2_IOT_EN_D0099.pdf

DALI-2 IoT Datasheet

DALI-2 IoT API manual

https://www.lunatone.com/wp-content/uploads/2021/08/89453886_DALI2_IOT_API_Dokumentation_EN_M0023.pdf

DALI-Cockpit – DALI system configuration tool, free when using a Lunatone interface device

<https://www.lunatone.com/en/product/dali-cockpit/>

Lunatone DALI products

www.lunatone.com/en/

Lunatone datasheets and manuals

www.lunatone.com/en/downloads-a-z/

Contact

Technical Support: support@lunatone.com

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www.lunatone.com



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Subject to change. Information provided without guarantee.
The datasheet refers to the current delivery.

The compatibility with other devices must be tested in advance to the installation.