Application Note

Schneider Electric

KNX DALI-Gateway Basic REG-K - Firmwareupdate 0.2 Release 8
Release Note

Subject

The KNX-DALI gateways Basic are designed to perform firmware updates easily without having to dissemble the device. The update is performed via an SD card and the corrresponding SD card slot on the device. Any new developments or improvements that may be required can be easily loaded onto the device via updates.

This application note describes the procedure for updating a device to a new firmware version.

This firmware is the last version that works together with the ETS applications 7308/1.0 for MTN6725-0003 and 7309/1.0 for MTN6725-0004. The applications use the DCA: "KNX DALI Gateway Basic REG-K".

For newer firmware versions the ETS applications 7312/1.0 for MTN6725-0003 and 7313/1.0 for MTN6725-0004 must be used. These applications use the DCA: "SpaceLogic KNX DALI Gateway Basic Plus". .

Requirements for a firmware update – Formatting the SD card

A firmware update can only be performed via a flash memory card of the type microSD (measurements: 11 x 15 mm). Please purchase the correct card with at least 1GB memory from a computer or photo shop.

An update is only possible if the SD card has the FAT32 format.
Most cards today are sold with the formatting FAT by default.
It is therefore necessary to change the format of the card to FAT32 first.

Simply use any Windows File –Explorer to change the format.

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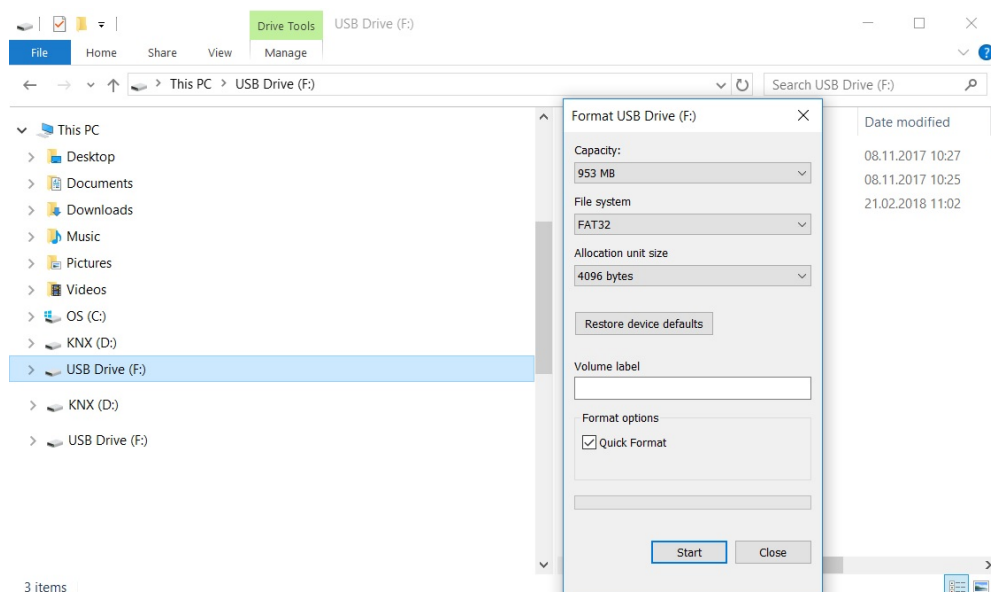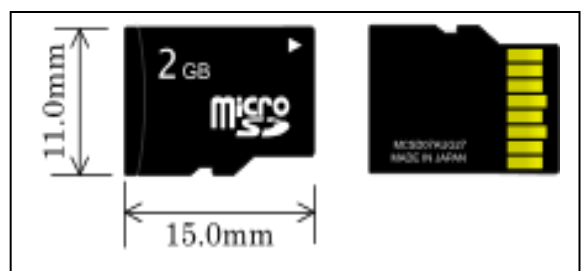
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Update procedure

To update the firmware version, please first unzip the zip archive that is available with this application note. Depending on the device type, you will have access to file D1_0xx.bin for the KNX DALI-Gateway Basic REG-K/1/16/64 or file D2_0xx.bin for the KNX DALI-Gateway Basic REG-K/2/16/64. Please copy the required file directly into the root directory of the SD card.

Attention: Please remember to follow all safety regulations when working on an already installed gateway. The gateway, the connected ECGs and any other devices in the system need to be disconnected from the power supply before any work is carried out.

For update purposes, the DALI Gateways Basic are equipped with an SD card slot in the top right-hand corner. On delivery the opening of the slot is covered with an adhesive label. To insert a card, please carefully remove the label.
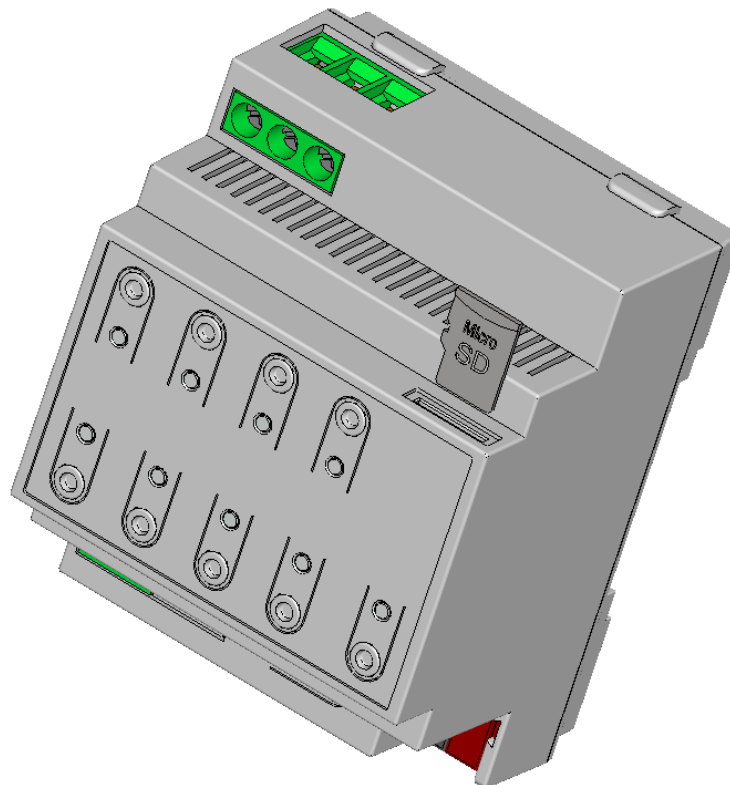
After the label has been removed, carefully insert the SD card into the disconnected gateway in such a way that the row of contacts points downwards and the recess in the card points towards the left. Please make sure to insert the card straight into the slot without any angle or bend. You will notice a slight pressure when the contact row has snapped into place.

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After the card has been inserted, re-connect the gateway to the power supply whilst simultanously keeping the programming button pressed down. After a few seconds, the programming LED starts flashing. You can now let go of the programming button and the update process will start. The process takes only a few seconds. At the end the LED briefly lights up once.

After the update, disconnect the gateway from the power supply and remove the SD card. Please remember to cover the card slot with the previously removed adhesive label before re-connecting the power.

After the update is performed, the device is ready for use again.

The current firmware version can also be checked by exporting the device info:

Revision tracking

Firmware version 0.1.0   released 15 October 2017   **delivered with pilot series**

Firmware version 0.1.1   released 21 February 2018   Firmware version: 0.1.1

Problem:
- RGB, HSV and RGBW control via Broadcast does not work for Blue=100% (DALI 254 not 255!) → corrected
- Saving scenes via an object with MSB set does not work → corrected
- After a power cut, the operating hours are not correctly exported from memory -> corrected
- The plug-in display "operating hours" shows seconds → corrected and changed to hours

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Firmware Version 0.1.2   released 06 April 2018   Firmware Version: 0.1.2

Problem:
- If an RGB colour is loaded via scenes and the colour subsequently set via value (single objects) or dimming, an incorrect colour is displayed → corrected
- If the colour values of several groups are dimmed simultanously via a central object, only the last group reacts → corrected
- If the colour values of several groups are dimmed simultanously via different objects, only the last group reacts → corrected
- A running dim process "colour dimming" does not stop when a scene is recalled → corrected

Firmware Version 0.1.3   released 16 May 2018   Firmware Version: 0.1.3

Problem:
- If a HSVW colour is programmed via ETS in a Scene the adjusted colour is not correct → corrected

- If RGBW colour is adjusted by a Scene the status object is not correct (Byte position mismatch) → corrected

- If RGBW colour is adjusted via Broadcast 6 Byte Object in status 6 Byte Object the Bits for validity are not correct (Bit position mismatch) → corrected

Firmware Version 0.1.4   released 03. September 2018   Firmware Version: 0.1.4

Optimized:
- Some DALI-2 Osram ECGs generate short Interruptions on the DALI Bus. Due to this there can appear problems in new installation process → optimized and adapted to DALI-2 standard
- TPUART driver may loose very rarely telegramms or send busy telegrams → optimized
- Max. APDU-Length modified from 15 to 55 → download will become faster → optimized
- If ECG mains power is switched OFF and scenes are activated sometimes scene is not started correctly → optimized, scenes activate ECG power before sending DALI telegram
- If ECG mains power is switched OFF and device is controlled by time control templates ECG power is not switched on → optimized, time control templates activate ECG power before sending DALI telegram

Problem:

- **Only in 2 channel device:** Saving scenes via an object with MSB set does not work → corrected
- On color control via broadcast-object RGBW / HSVW device is not reacting on white telegramm, if white is sent first -> corrected
- Parameter setting „Cycle time for DALI failure request = 0,5 sec." is not working → corrected
- RGBW control via time control (Templates) works only partially → corrected

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Firmware Version 0.1.5   released 03. December 2018   Firmware Version: 0.1.5

Problem:
- If Switch-On-Value for groups is adjusted to „Last Value" and additionally behavior on KNX recovery is adjusted to „Go to Switch-On Value" after KNX recovery light is Off, not On-Value → corrected
- If failure object for groups is adjusted to 1 Bit and additional failure objects are used (parameter setting) value of failure object is wrong → corrected

- **Only in 2 channel device:** Communication Object Table is initialized twice. This can cause occasionally problems. Objects "ECG power control" is not sent for all groups → corrected

Firmware Version 0.1.6   released 16. December 2018   Firmware Version: 0.1.6

- For internal usage only

Firmware Version 0.1.7   released 06. February 2019   Firmware Version: 0.1.7

Optimized:
- Adaptation of Firmware to new Hardware Rev. 0B → Downward compatible to Hardware Rev. A as well
- Extended Watchdog activated → Improves reliability on serious interferences

Problem:
- On parameter setting „Send Status Value During Dimming = inactive" status is not sent after stopp object → corrected, Status value is sent correct now

Firmware Version 0.2.0   released 05. April 2019   Firmware Version: 0.2.0

Optimized:
- In connection with the DCA Vers. 2.1.0.0 or greater, the KNX scenes 1 – 64 can be assigned to the DALI scenes 1 to 16.
- More and more problems with ECGs from China, which are not DALI conform (ballasts are deleted on post installation) → Bugfix delete of short address if long address 0xFFFFFF is not performed anymore, with new DCA Version 2.1.0.0 or greater this feature is adjustable

Problem
- On Post Installation emergency ballasts and LED ballasts are not detected with the correct type information → corrected

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Firmware Version 0.2.1   released 31. July 2019   **Firmware Version: 0.2.1**

- Problem: Latest KNX Interfaces (i.e. Zennio) are using Long Frame KNX Telegrams up to 256 Byte length. Those frames cannot be handled by the KNX driver. If such a telegram appears the gateway will generate a reset. → corrected.
- Optimisation: If scenes are used and at the same time the energy save function (switch off ECG power with switching actuator) is used, all ECGs which are switched OFF are activated and switched to ON again. Whether the ECG is used in the scene or not. → optimized, only ECGs which are used in the scene are switched ON
- Optimisation: If time programs (for colour control) are used and at the same time the energy save function (switch off ECG power with switching actuator) is used, all ECGs which are switched OFF are activated and switched to ON again. Whether the ECG is used in the time programm or not. → optimized, only ECGs which are used in the time programm are switched ON
- Optimisation: When colour control via HSVW is used, the white channel cannot be controlled individually, because there is only one common value object in the DALI standard for all colour channels. If saturation is 0% usually all channels RGB are set to 100%. That means white can never adjusted individually → optimized: If saturation = 0% all RGB channels are switched OFF (0%) and white is switched ON (100%). With the object white can be adjusted independently.

Firmware Version 0.2.2   released 12. November 2019   **Firmware Version: 0.2.2**

- Optimisation: In the definition of datapoints for RGBW (DPT 251.600) there is a failure in KNX documentation. In a new release the byte order has changed. → object is now adapted to the new definition.

Firmware Version 0.2.3   released 19. November 2019   **Firmware Version: 0.2.3**

   Only in 2 channel device:
- Problem: Change of dimming curve linear and logarithmic is not working, logarithmic curve is always active → corrected

Firmware Version 0.2.4   released 06. March 2020   **Firmware Version: 0.2.4**

   Only in 2 channel device:
- Problem: A high telegram volume in the initialization phase of the KNX stack after a device reset can cause a blocking of the status objects of a channel → corrected
- Problem: Under certain circumstances a triggering of the watchdog and thus an unintentional device reset can occur → corrected

Firmware Version 0.2.5   released 12. April 2020   **Firmware Version: 0.2.5**

- Problem: Error objects of ECGs are only sent after bus reset if ECGs are assigned to a group not for for individual ECGs → corrected
- Problem: Initial value of the communication objects for operating hours is not correct, only after the luminaire is switched on for the first time → corrected, value is also correct when the luminaire is off
- Optimization: When defining the data point types for XY (DPT 242.600) there is an error in the Konnex documentation, in a new revision the byte order in the object was changed → corrected, the object was adapted to the new data point definition.

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Firmware Version 0.2.6   released 13th July 2020   **Firmware Version: 0.2.6**

- Optimisation for DALI-2 compatibility: Ping-Command implemented
- Optimisation for DALI-2 compatibility: Timing for DALI short circuit detection adjusted to 600 msec. and for re-start after short circuit adjusted to 5 sec.
- Optimisation: Some DT-8 ECGs (Lumitech, Bega) react only when receiving second OFF-telegram, because dimming process is stopped by ACTIVATE → modified, for colour adjusting no ACTIVATE is used anymore
- Problem: 4 byte object for on/off status (object 20) are not sent automatically after device reset and corresponding setting → corrected
- Problem: Failure status objects (Lamp- / ECG-Failure) are not sent automatically after device reset and corresponding setting → corrected

Firmware Version 0.2.7   released 26th January 2021   **Firmware Version: 0.2.7**

- Optimisation: If the time programmes (templates) are used for colour control and the energy-saving function (switching off ECGs via switching actuator) is used at the same time, the gateway switches all switched-off ECGs ON regardless of whether they are used in the time programme or not → optimised, only the ECGs that are used in the time programme are switched ON.
- Optimisation: After a device reset, all energy-saving objects are switched ON and the energy-saving function is first activated when the light is switched OFF for the first time → optimised:: 5 minutes after switching on, the energy-saving function is automatically activated and the channel is switched off when the light is OFF.
- Optimisation: The energy-saving objects are not switched on when an ECG is set to the blinking mode for identification via DCA → corrected, ECG energy-saving object is switched on.
- Optimisation: Time Programms (Templates) are prepared for an additional action „Set Switch-On Value"

Firmware Version 0.2.8   released 27th April 2021   **Firmware Version: 0.2.8**

- Problem: If DT-8 XY-Subtype is used, with PowerOn colour adjusted by parameter in ETS, colour is not correct → corrected, ETS PowerOn colour is adjusted