# Eltako Support

This document contains application notes on the use of Eltako's EnOcean elements together with our gateways.

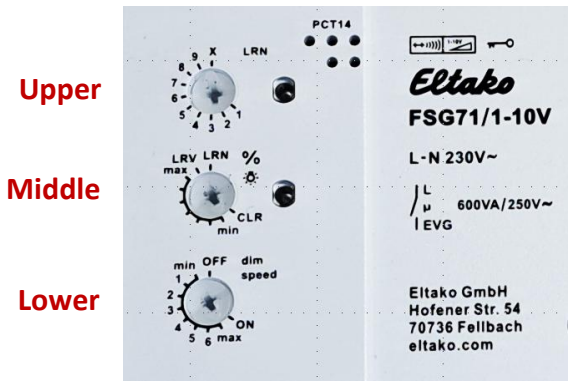
**References:**

[1] Technical data of the wireless actuators, teach-in list, operating distances and contents of Eltako Wireless telegrams: https://www.eltako.com/fileadmin/downloads/en/_main_catalogue/Gesamt-Katalog_ChT_gb_highRes.pdf
[2] EEP Viewer: http://tools.enocean-alliance.org/EEPViewer/
[3] FSG71/1-10V product info: https://www.eltako.com/en/catalog/products/1413/fsg711-10v/

# 1 Dimmer switch controller FSG71/1-10V

## 1.1 Local settings

The controller has three rotary switches used for configuration. They are used during pairing with gateway. All their functions are described in detail in the controller user manual.

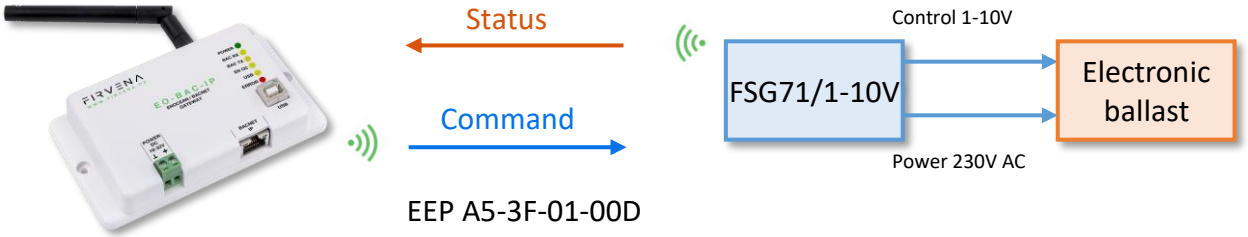



## 1.2 Communication with the gateway – EO-BAC-IP

This communication description also applies to other dimmer types that have the same activation and confirmation telegrams (command and status telegrams), see [1] > CONTENTS OF ELTAKO WIRELESS TELEGRAMS.

The dimmer is controlled via a telegram similar to *A5-38-08, command 2:Dimming*. It reports its state as *F6 0x70/0x50 (ON/OFF) – dimmer on/off changes* and *A5 – dimmer level changes*. The status telegram is disabled by default, but teaching-in a gateway enables it automatically.

It is not compatible with EEP A5-38-08, does not support some parameters and has a different value conversion. The communication is using a special interface tailored to Eltako dimmer actuators, which is identified as EEP A5-3F-01-00D in the gateway (combination of A5-38-08 transmitting and F6+A5 receiving on one channel).



**Command telegram:**

**FDG14, FDG71L, FKLD61, FLD61, FRGBW71L, FSG14/1-10V, FSG71/1-10V, FSUD-230V, FUD14, FUD14-800W, FUD61NP, FUD61NPN, FUD71**

**Direct transfer of dimming value from 0 to 100%, similar to FUNC=38, Command 2 (like EEP A5-38-08).**

| | |
|---|---|
| ORG = | 0x07 |
| Data_byte3 = | 0x02 |
| Data_byte2 = | dimming value in % from 0 to 100 dec. |
| Data_byte1 = | dimming speed<br>0x00 = the dimming speed set on the dimmer is used.<br>0x01 = very fast dimming speed .... to ...<br>0xFF = very slow dimming speed |
| Data_byte0 = | DB0_Bit3 = LRN Button<br>(0 = )<br>DB0_Bit0 = 1: Dimmer ON, 0: Dimmer OFF.<br>DB0_Bit2 = 1: Block dimming value<br>0: Dimming value not blocked |

Teach-in telegram BD3..DB0 must look like this: 0xE0, 0x40, 0x0D, 0x80
only FSUD-230V: 0x02, 0x00, 0x00, 0x00

Data telegrams BD3..DB0 must look like this, for example:

0x02, 0x32, 0x00, 0x09 (dimmer on at 50% and internal dimming speed)
0x02, 0x64, 0x01, 0x09 (dimmer on at 100% and fastest dimming speed)
0x02, 0x14, 0xFF, 0x09 (dimmer on at 20% and slowest dimming speed)
0x02, 0x.., 0x.., 0x08 (dimmer off)

**Status telegram:**

**FDG71L, FRGBW71L, FSG71/1-10V, FSUD-230V, FUD61NP-230V, FUD61NPN-230V, FUD71, FD62NP-230V, FD62NPN-230V**

**Every time the dimmer is switched on or off, a PTM200 telegram containing the unique ID or base ID of the integrated TCM300 is sent after approx. 300-400 ms.**

| | |
|---|---|
| ORG = | 0x05 |
| Data_byte3 = | 0x70 = dimmer ON, 0x50 = dimmer OFF |

**In addition, approx. 1 second after reaching the required dimming value, a 4BS telegram containing the unique ID or base ID of the integrated TCM300 is also sent.**

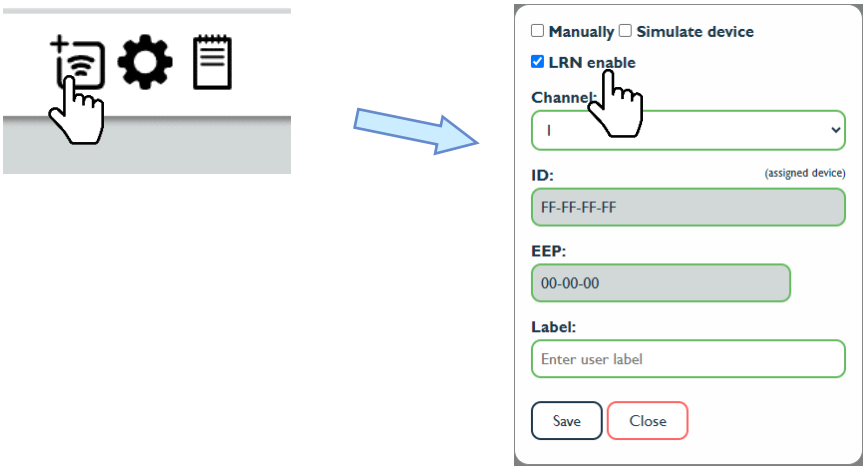
| | |
|---|---|
| ORG = | 0x07 |
| Data_byte3 = | 0x02 |
| Data_byte2 = | dimming value in % of 0-100 dec . |
| Data_byte1 = | 0x00 |
| Data_byte0 = | 0x08 = dimmer OFF, 0x09 = dimmer ON. |

Caution: No teach-in telegram containing ORG=7 can be generated. Caution: Two telegram kinds (ORG=5, ORG=7) containing the same ID are sent!

### 1.2.1 Bidirectional pairing procedure

The pairing procedure for Eltako dimmers and relay switches has been simplified since firmware EO-BAC-IP V1.3.8 to be similar to devices with bidirectional EEPs:

1. Open the **Add New** box, **LRN enable** must be checked
2. Select a channel
3. Enable teach-in mode on the dimmer (FSG71/1-10V: set **upper** rotary switch **to X** and **middle to LRN** position)
4. The gateway should detect EEP A5-3F-01-00D, automatically save the device to the selected channel and send a teach-in query as EEP A5-38-08.
   The dimmer should confirm successful teach-in (FSG71/1-10V: red LED goes off)
5. Disable teach-in mode on the dimmer (FSG71/1-10V: set **middle** rotary switch **out of LRN** position)



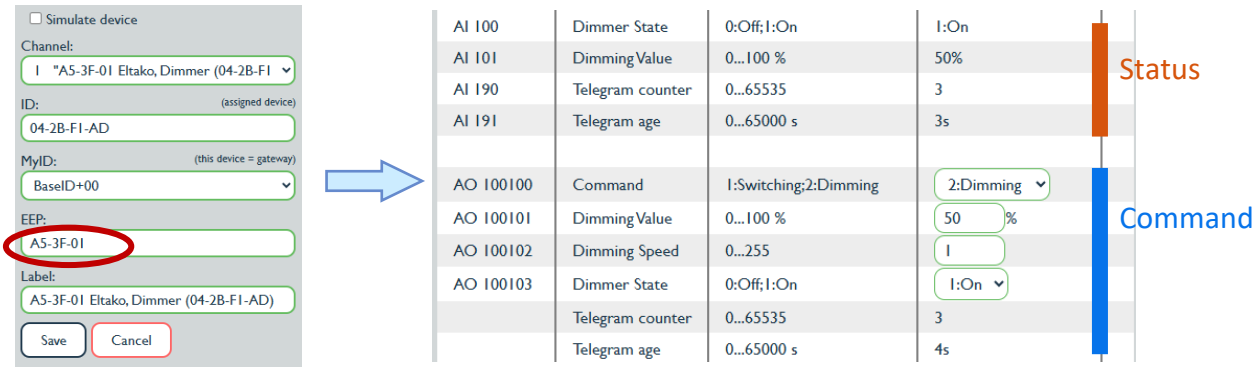

**Notes:**

Check that the correct EEP was detected, otherwise change it in **Edit channel > Settings > EEP**:

- A5-3F-00-00D for relay switch
- A5-3F-01-00D for dimmer

If this procedure does not work for your device (other type or very old device version) use the second procedure.

After pairing, the **Values** view should look like this and dimmer state should update:




Description of values:

| Value | Meaning | |
|---|---|---|
| Dimmer State | Actual output state (updated by the telegram A5 or F6) | Incoming |
| Dimming Value | Actual dimmer level (updated by the telegram A5) | |
| | | |
| Dimming Value | Required dimmer level | Outgoing |
| Dimming Speed | Rate of transition between states.<br>0: the local dimmer setting made with the lower trimmer is used<br>1...255: overrides the local setting (1: min speed ... 255: max speed) | |
| Dimmer State | Turning on/off the dimmer | |

### 1.2.2 Universal pairing procedure

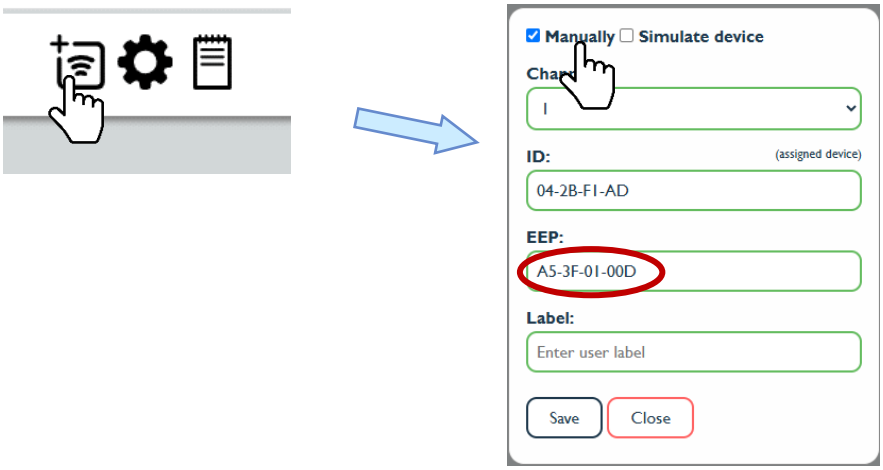
This pairing procedure should work with all types of Eltako dimmers and relay switches that use the same telegrams.

**Summary of the procedure:**

A. Manually configuring a channel in the gateway
B. Teaching-in the gateway in the dimmer

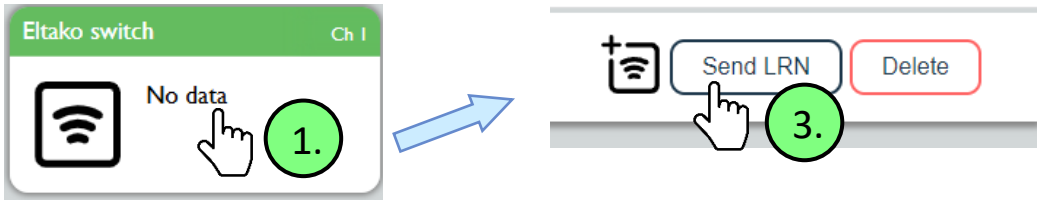
**Point A:**

1. Open the **Add New > Manually** box
2. Select a channel
3. Enter the ID of the dimmer (should be printed on the product)
4. Set EEP:
   - A5-3F-00-00D for relay switch (0x00D is Manufacturer ID of Eltako)
   - A5-3F-01-00D for dimmer
5. Save



**Point B:**

1. Open **Edit channel > Settings**
2. Enable teach-in mode on the dimmer (FSG71/1-10V: set **upper** rotary switch **to X** and **middle to LRN** position)
3. Use **Edit channel > Send LRN**
4. Disable teach-in mode on the dimmer (FSG71/1-10V: set **middle** rotary switch **out of LRN** position)




Now the dimmer has the ID of the gateway stored and we can control it. We also have the dimmer status feedback if the ID of the dimmer is stored in the gateway, **Edit channel > Settings > ID**: