

1 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] Application by EnOcean for configuration via NFC:
<https://www.enocean.com/en/product/enocean-tool/>

1.1 Impulse switch FSR61NP

1.1.1 Local settings

The setup is described in detail in product manual, here are briefly described the most important things.

It has two rotary switches (trimmers) for local setup:



1.1.1.1 Adding devices (teach-in):

1. Set **A-LRN** (red LED goes blinking)
2. Select teach-in mode by **B**
3. Trigger a teach-in telegram (LED goes off)

1.1.1.2 Adding an encrypted device:

1. Set **A-LRN**
2. Turn **B** to **B-min** and back three times (red LED starts blinking faster)
3. Trigger a security teach-in telegram (LED goes off) (see note 1)

Now repeat adding the device.

4. Set **A-LRN** (LED goes blinking)
5. Select teach-in mode by **B**
6. Trigger a teach-in telegram (LED goes off)

Note:

1. For example, FTKE transmits with the jumper inserted; button (PTM 215) by pressing the upper and lower buttons at the same time or via NFC app; ... If the device has a dedicated teach-in button and

supports encryption, the security teach-in telegram is usually transmitted together with the data teach-in, in both steps 3 and 5 this button is used.

1.1.1.3 Factory settings:

1. Set **A-CLR** (red LED goes blinking)
2. Turn **B** to **B-max** and back three times (LED goes off)

1.1.1.4 Manually enable/disable status feedback messages:

1. Set **A-CLR** (red LED goes blinking)
2. Turn **B** to **B-min** and back three times (LED goes off)

The status message is also automatically enabled by adding a gateway (EEP A5-38-08).

1.1.2 Communication with the gateway

The switch is controlled via a telegram similar to A5-38-08, command 1:Switching. The switch returns the state as F6 0x70/0x50 (ON/OFF) if enabled. This communication description also applies to other switch types (see [1] > CONTENTS OF ELTAKO WIRELESS TELEGRAMS)

It is compatible with A5-38-08, does not support some parameters.

1.1.2.1 Recommended pairing procedure – EO-BAC-IP

There are more ways to setup the connection:

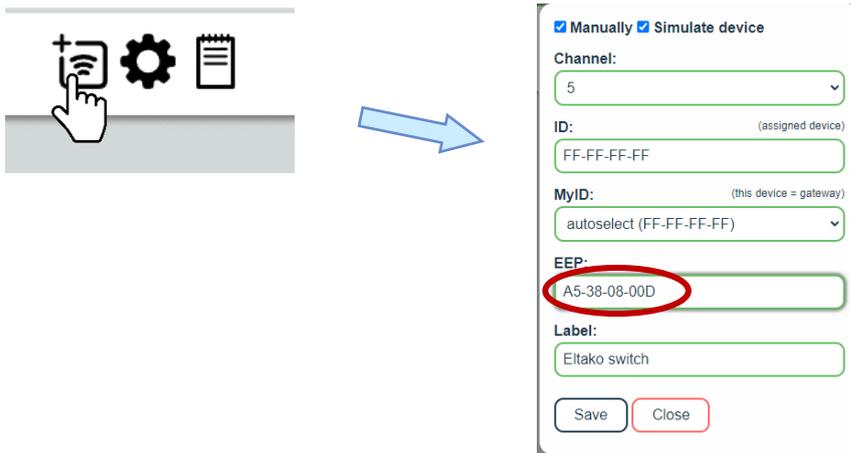
1. Using a channel A5-38-08 for control + receive to another channel as F6-3F-7F
2. Defining a virtual device for control (e.g. D5-00-01, F6-10-00) + receiving to another channel as F6-3F-7F
3. **Using a special interface that is tailored to Eltako switch actuators (A5-3F-00-00D = combination of A5-38-08 transmitting and F6 receiving on one channel) – see below**

Summary of the procedure:

- A. Defining a virtual device channel A5-38-08
- B. Adding the virtual device to the switch (see 1.1.1.1)
- C. Adjusting the channel settings to receive the current status of the switch

Point A:

1. Open the **Add New > Simulate device** box
2. Select a channel
3. Set EEP A5-38-08-00D (0x00D is Manufacturer ID of Eltako)
4. Save



Point B:

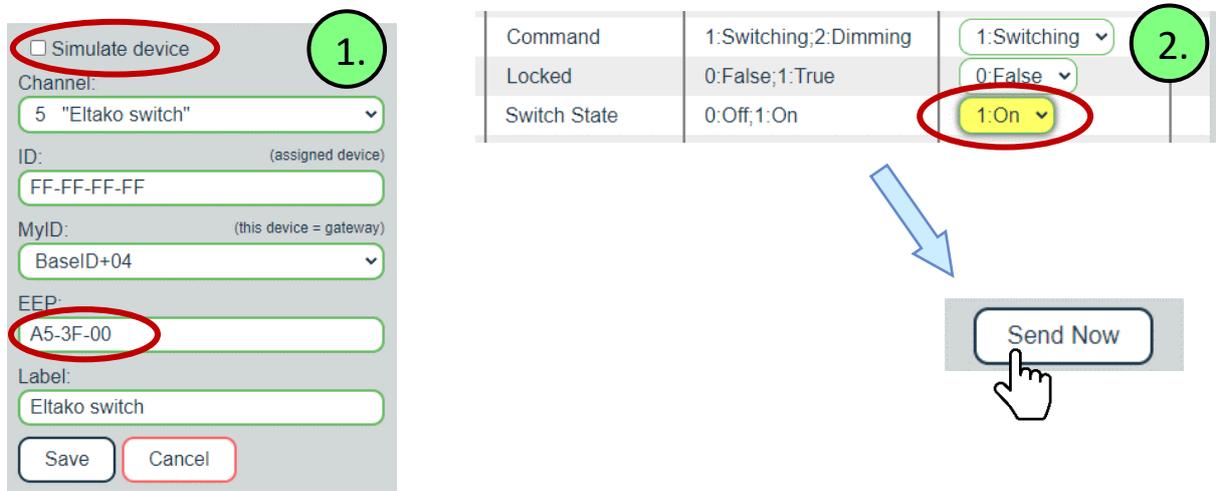
1. Open **Edit channel > Settings**
2. Enable teach-in mode of the switch (set **A-LRN**)
3. Use **Edit channel > Send LRN**
4. Turn off teach-in mode of the switch (cancel **A-LRN**)

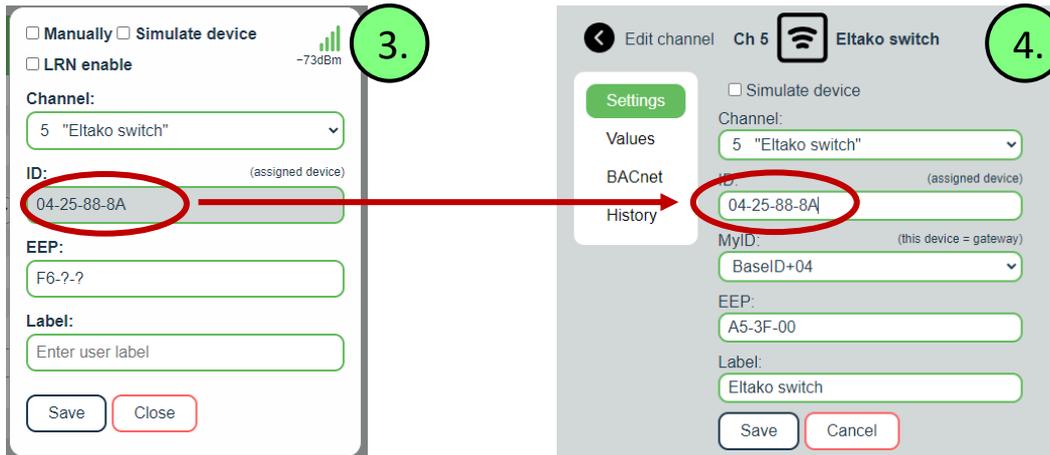


Now the switch has the ID of the gateway stored. We can control it, but we have no feedback about the switch status. The ID of the switch is not stored in the gateway.

Point C:

1. In **Edit channel > Settings** untick **Simulate device** and change **EEP** of the channel to **A5-3F-00**
2. Go to **Edit channel > Values** and send the on or off command. This should cause the switch to send a telegram **F6-?-?**, which will be displayed in **Add New**.
3. Open **Add new** and copy ID of the switch
4. In **Edit channel > Settings** enter this ID





Now, the switch state should update in **Values** when a telegram is received:

Switch State	0:Off;1:On	1:On
Telegram counter	0...65535	1
Telegram age	0...65000 s	3s
Command	1:Switching;2:Dimming	1:Switching
Locked	0:False;1:True	0:False
Switch State	0:Off;1:On	1:On
Telegram counter	0...65535	1
Telegram age	0...65000 s	3s

Description of values:

Value	Meaning	
Switch State	Actual state of the output	Incoming
Locked	True: disable other devices taught-in the switch	Outgoing
Switch State	Turning on/off the switch	

1.2 Dimmer FUD61NP

Most of the stuff already described for FSR61NP (see 1.1)

Very old versions did not report status and B had to be in the **B-min** position to assign gateway as EEP A5-38-08.

1.2.1 Communication with the gateway

The dimmer is controlled via a telegram similar to A5-38-08, command 2:Dimming. The dimmer returns the state as F6 0x70/0x50 (ON/OFF) – dimmer on/off changes and A5 – dimmer level changes, if enabled. This communication description also applies to other dimmer types (see [1] > CONTENTS OF ELTAKO WIRELESS TELEGRAMS).

It is not compatible with A5-38-08, does not support some parameters and has a different value conversion.

1.2.1.1 Recommended pairing procedure – EO-BAC-IP

It is almost the same as for switch actuators. It is defined a special interface **A5-3F-01-00D** (combination of A5-38-08 transmitting and F6+A5 receiving on one channel) – see below

In the point C-1, set A5-3F-01:

The screenshot shows the 'Simulate device' configuration screen. The 'EEP' field is set to 'A5-3F-01' and is circled in red. A blue arrow points from this field to a table of data points.

AI 500	Dimmer State	0:Off;1:On	1:On
AI 501	Dimming Value	0...100 %	50%
AI 590	Telegram counter	0...65535	5
AI 591	Telegram age	0...65000 s	28s
AO 100500	Command	1:Switching;2:Dimming	2:Dimming
AO 100501	Dimming Value	0...100 %	50 %
AO 100502	Dimming Speed	0...255	1
AO 100503	Dimmer State	0:Off;1:On	1:On
	Telegram counter	0...65535	3
	Telegram age	0...65000 s	27s

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. 0: the local dimmer setting made with the lower trimmer is used 1...255: overrides the local setting (1: min speed ... 255: max speed)	
Dimmer State	Turning on/off the dimmer	

1.3 Wireless Pushbutton F4T55E

It uses the wireless module PTM215 with encryption capability. We recommend using of the application EnOcean Tool provided by EnOcean GmGH for setup (see [3]).

1.3.1 Note on PTM215 modes

In factory settings, it is possible to change encryption modes using a special combination of button press. However, once we change settings via the app, this is no longer possible and the settings are changed via the app only. The change using buttons works again after a factory reset.

Factory reset (see PTM manual Ch. 3.4): hold down all four buttons and 7x press the energy bow. The module must be removed from the casing to do this.

Secure teach-in trigger:

- Special button combination (can be disabled by app): hold two buttons of the same channel (BI+B0 or AI+A0) and briefly press energy bow.
- NFC interface: in the app make **Installation > Learn Telegram > Execute** and press any button two times

It can be used as EEP F6-01-01, F6-02-01, F6-02-02, F6-02-03 or F6-04-01.

Its encrypted EEP is D2-03-00. Regarding our gateways, EEP can be changed to any of unencrypted EEPs if necessary.

1.3.2 Teach-in procedure

Unencrypted mode:

1. Open **Add New**
2. Select a channel
3. Press any button shortly
4. Save

Note:

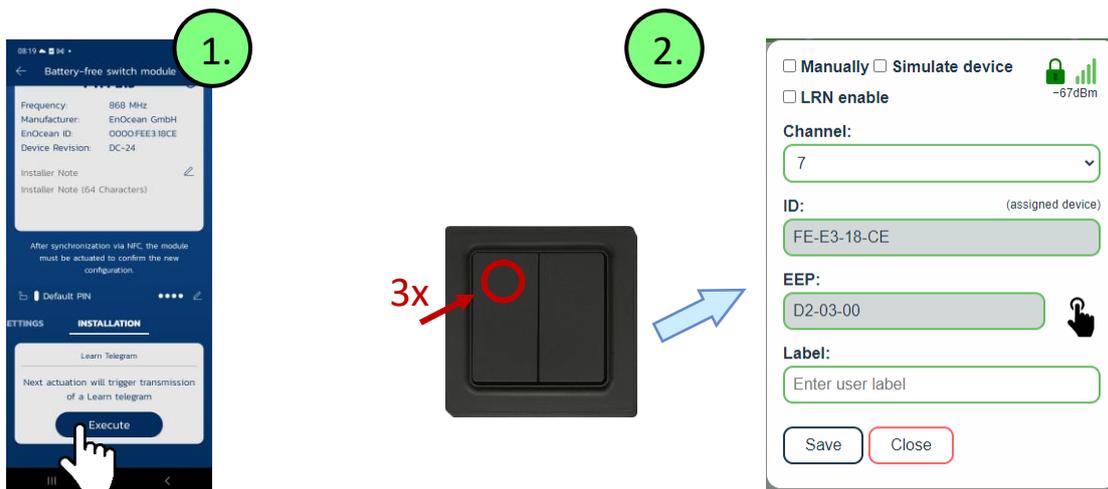
The switch does not have a teach-in telegram, but the gateway detects its type as F6-02-01.

Encrypted mode:

1. Activate teach-in mode using the EnOcean Tool app (Installation > Learn Telegram > Execute)
2. Open **Add New**
3. Select a channel
4. Briefly press any button 3x
5. Save

Note:

On the first press nothing happens, on the second press SEC_TI is sent with encryption parameters and on the third press the application recognizes D2-03-00.



1.4 Door/Window contact FTKE

It has encryption capability. Unencrypted EEP is F6-10-00, encrypted D2-03-10.

Encryption is switched on using a jumper:

1. Insert jumper
2. Press the contact briefly
3. Remove jumper



Note:

- With the jumper inserted, the security teach-in is transmitted as a PTM. Press – first part, release – second part of teach-in telegram (SEC_TI). Without jumper, encrypted data telegram (SEC_D) is sent.
- It uses the implicit RLC (Rolling Code).

1.4.1 Teach-in procedure

Unencrypted mode:

1. Open **Add New**
2. Select a channel
3. Press the contact => release => and press again within 2 s
4. Save

Note:

The contact does not have a teach-in telegram, but the gateway detects its type as F6-10-00 based on the sequence of data telegrams.

Encrypted mode:

1. Open **Add New**
2. Select a channel
3. With the jumper inserted, press and release briefly (see note 1)

Now the application can decrypt data messages.

4. Remove the jumper
5. Press the contact => release => and press again within 2 s
6. The application will recognize the type D2-03-10 and if "LRN enable" is checked, it will automatically save the device to the selected channel.
7. Save

Note:

- 1) This loads the ID and encryption parameters into the application. Shown EEP is 35-?-?, indicating Security Teach-in (SEC_TI). The SEC_TI does not transmit information about the type of device except whether it is a PTM and which PTM channel is transmitting. It must be followed by an encrypted teach-in message UTE or other. FTKE does not have a special teach-in message.

