



EcoButler Manual

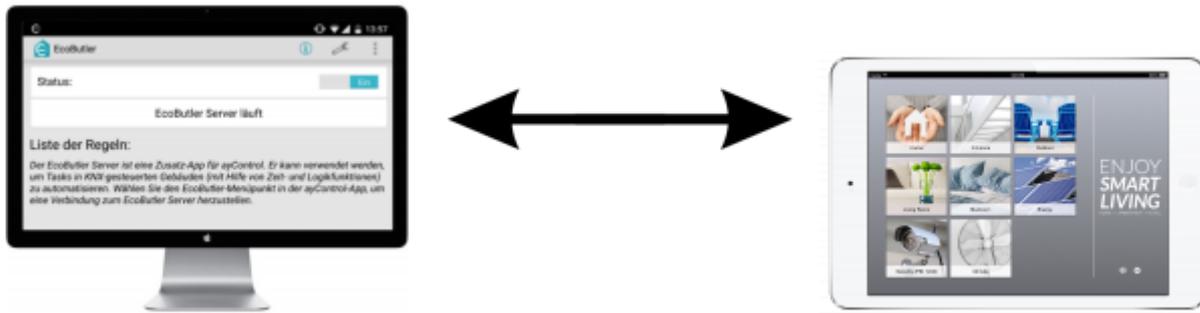
Version 01/2020

Setup, Tutorials, Examples and Troubleshooting

What is the EcoButler and how does it work?

The EcoButler is an application running on an stationary Android device which automates functions in KNX based smarthomes. You can define automation rules and the EcoButler will store and execute them. Rules contain actions which are performed based on a variety of conditions.

Such a rule could be for example: "From Monday to Friday at 8am turn the lights in the corridor on."



Why should you use EcoButler?

- It's a very **cost efficient way** to automate KNX projects without expensive server solutions or touch panels.
- No additional configuration effort for the electrician because the EcoButler uses the **existing ayControl configuration**.
- Even **end users can create or modify rules** in an intuitive graphical user interface directly in ayControl for iOS and Android.
- You create **unlimited rules**¹⁾ with as many conditions and actions as you want.
- You can use **astro clock** functions like "30 minutes after sunset open the blinds".
- **Simple** to use for both end user and electrician.

How does EcoButler relate to ayControl?

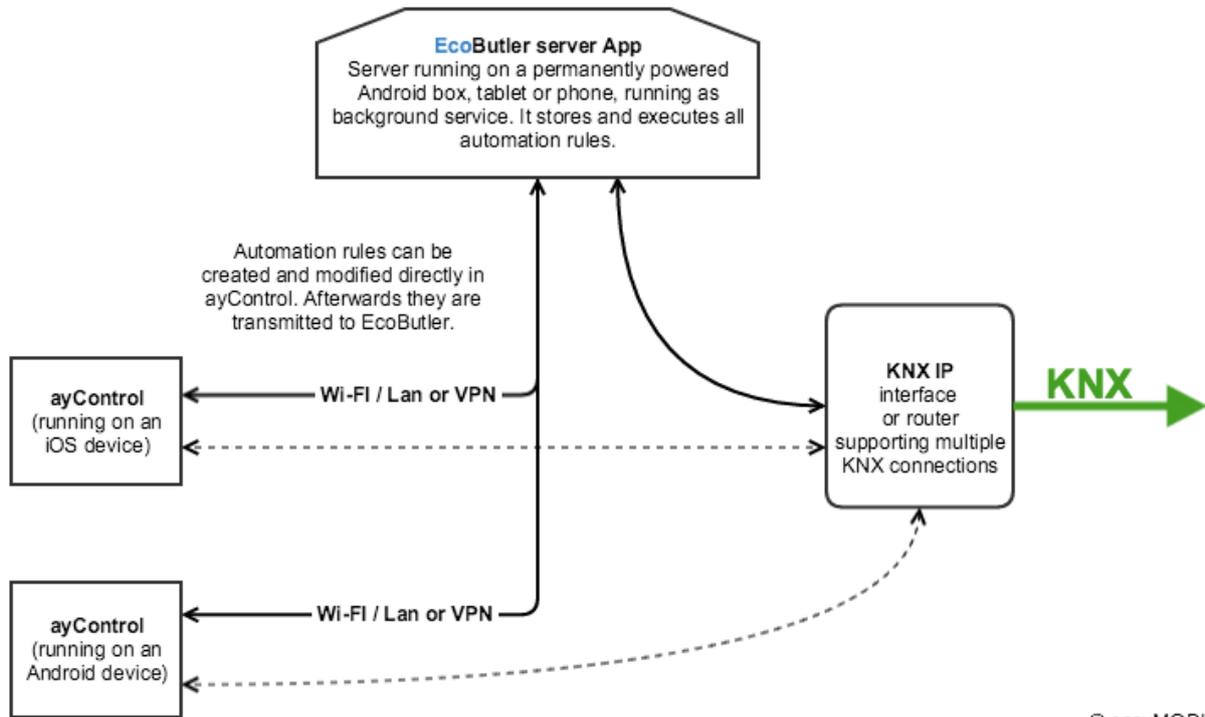
- EcoButler acts as automation server. Once installed on an permanently powered Android device it doesn't need any maintenance.
- ayControl acts as client. All rules are defined in ayControls intuitive graphical user interface.
- Like ayControl the EcoButler connects to the KNX system via KNXnet/IP Tunneling or Routing. Therefore, when using KNXnet/IP tunneling, a separate KNXnet/IP tunneling connection will be used up by the EcoButler.

¹⁾

with Gold or Platinum upgrade package

Functional diagram

ayControl KNX and EcoButler



© easyMOBIZ

Which hardware should be used?

The EcoButler server app runs on every Android 4.1 or above device.

For quick tests you can run it on Android phones or tablets. However, it is strongly recommended to run it on an always-on device which is permanently connected to power, has a wired network connection and stays in your home, so the EcoButler server app can monitor your SmartHome and execute your KNX & IoT rules at all times. The device should also automatically restart in case of a power failure.

We therefore generally recommend Amazon's Fire TV²⁾ devices (Fire TV, Fire TV Stick or Fire TV Cube) with an Amazon Ethernet adapter. Additional to fulfilling all requirements, they are inexpensive, widely available and you can configure the EcoButler server app directly from your TV with the Fire TV Remote.

Important: If you buy other hardware, please make sure that it automatically reboots after a power failure!

²⁾

Available at Amazon

How does the licence system work?

EcoButler server

The EcoButler server can be run in 2 modes:

- In the **demo mode**, without entering your upgrade package credentials in the EcoButler server app, the EcoButler allows **one rule** for free.
- In the **registered mode** the EcoButler will support more rules: 15 if you own a silver upgrade package and **unlimited automation rules** for gold and platinum upgrade packages. Registering the EcoButler works the same way as in ayControl. The EcoButler will also count as one device at the upgrade package. The same limitations for profiles as in ayControl apply (number of controls etc.)

EcoButler client app

Creating and modifying of automation rules is done in ayControl. For accessing the EcoButler client functions, ayControl has to be activated with one of the following upgrade packages: *Silver, Gold, Platinum, Platinum Single* or the *Sales Partner package*.

If you have a *Titanium* or any *older ayControl upgrade package*, you need to upgrade it to one of above packages in order to be able to use EcoButler

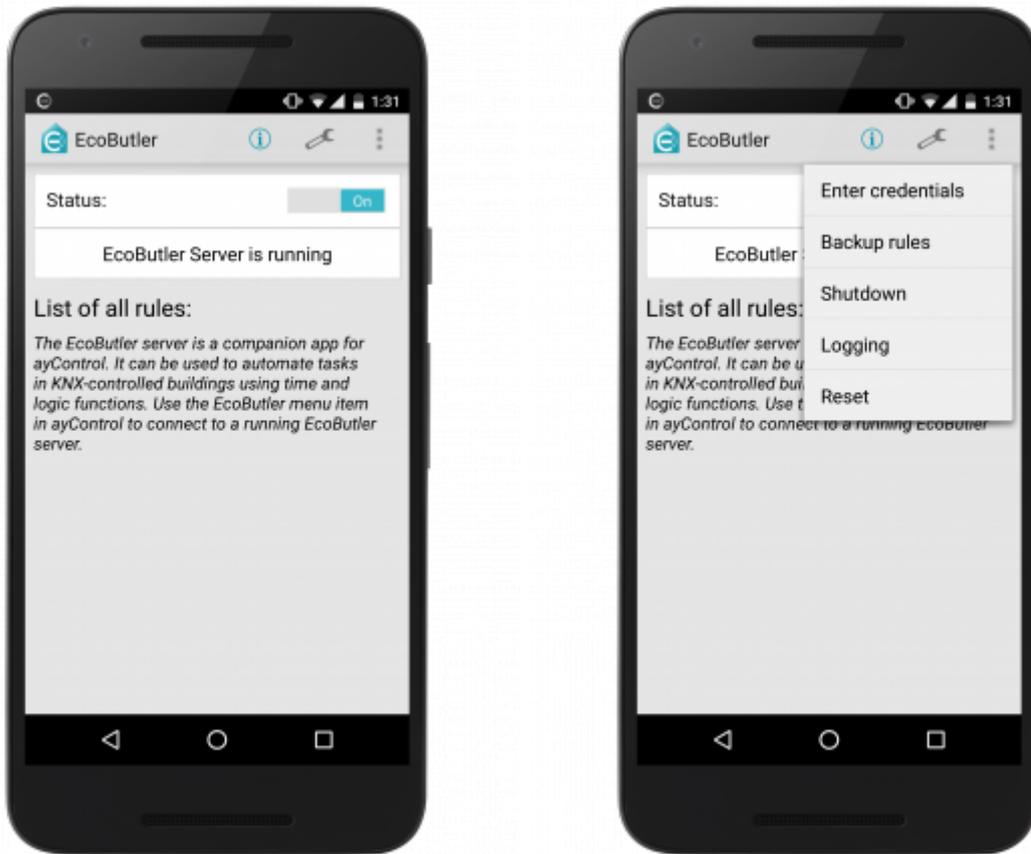
How to set up the EcoButler?

The EcoButler server app is available in the [Google Play Store](#) and in the [Amazon App Store](#).

- Install the **EcoButler KNX Server** app on your Android device via one of the app stores.
- If you want to use more than the one basic rule, enter the credentials for your ayControl Upgrade package in EcoButler: Press the “...” icon in the top right, choose “Enter credentials” and follow the instructions.
- That's it, you're done configuring EcoButler.

Networking note: The device running EcoButler has to be connected to the same network as other devices running ayControl. EcoButler will connect to KNX using the same KNX/IP Interface or KNX/IP Router as ayControl. If you are using the KNXnet/IP Tunneling protocol then you need a KNX IP Interface that supports multiple parallel connections.

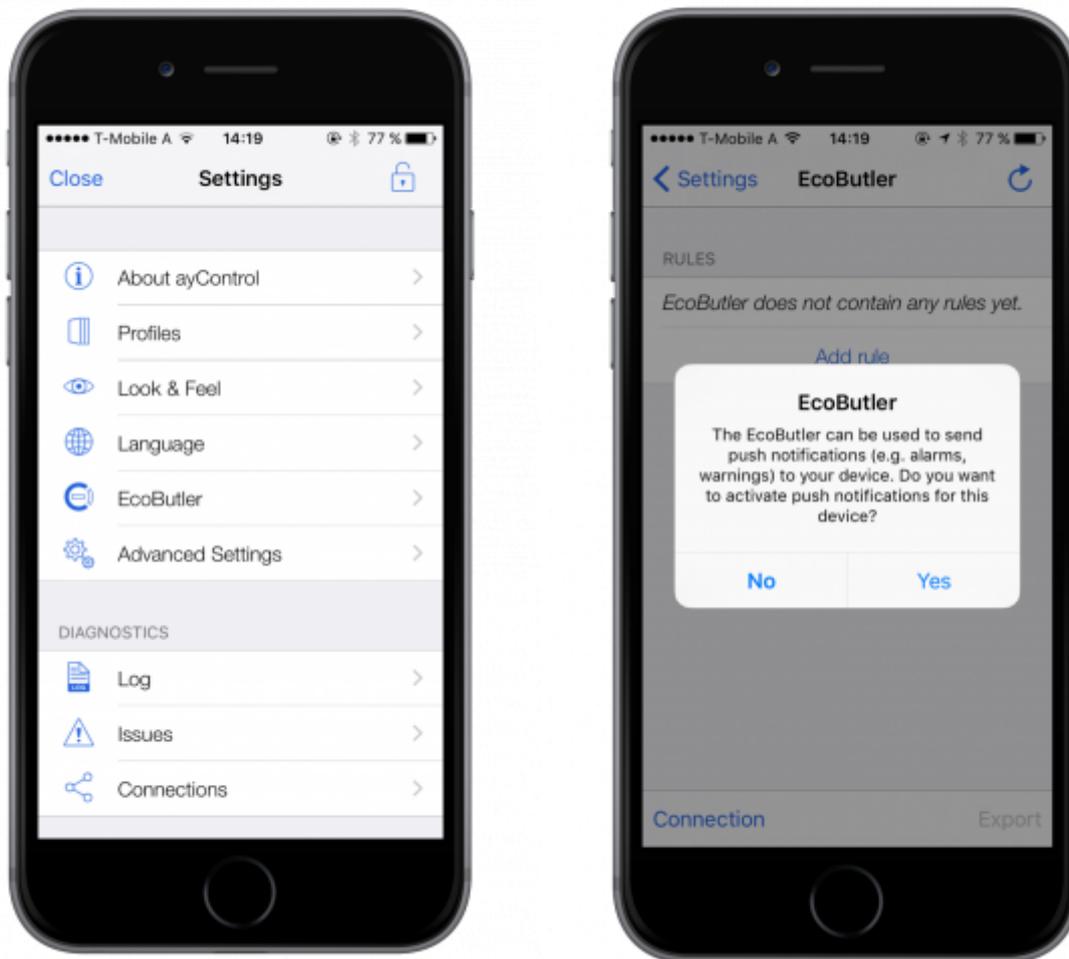
EcoButler User Interface



- **Enter credentials:** Here you can enter the credentials for your ayControl upgrade package.
- **Backup rules:** Export all rules currently stored on the EcoButler Server into a file and send it via mail. There is also an option in the settings to automatically create backups whenever you change rules (see below).
- **Show event log:** Displays a log of the events within EcoButler: When the app was started, stopped or updated, when which rules were triggered and connection losses / restorations. Using this you can monitor if your rules were triggered as expected and whether there were any connection issues.
- **Logging:** Option to turn off/turn on the logging of detailed information in the app. This can help to diagnose and fix problems with the app. On the logging screen you have the option to manually send the logs to the ayControl team via email for troubleshooting. No data are automatically transmitted, the log files remain on your device until you choose to send them.
- **Reset:** Deletes all profiles and rules stored on the EcoButler server. This is useful if you want to change to a different profile or you would like to remove all existing rules and start from scratch. We strongly recommend to create a backup (see above) before you perform a reset.
- **Shutdown:** Shuts down the EcoButler and closes the app. Your rules will not be triggered anymore until you start the app again.
- **“Info” Icon:** Shows the version, name and IP address / port of EcoButler, as well as the active profile and upgrade package.
- **“Wrench” Icon:** Settings:

- **Start EcoButler automatically:** Whether to automatically start the app when the Android device is started or restarted. We strongly recommend to leave this setting on in order to ensure that EcoButler is restarted after a power outage.
- **Automatic rule backup:** If set, EcoButler will automatically create backups of your rules on the SD card, which can later be restored if needed. Backups are created whenever you change a rule. You can find the backup files on your device's SD card in the directory *EcoButler/backups*.
- **Load rule backup:** Restores a previously saved backup.
- **Set location:** Manually set the coordinates of your location. This is only necessary if your Android device can't determine its location using GPS. The location is used for features such as sunrise / sunset criteria.
- **Connections:** Various detailed settings for KNX connection handling. In most cases the default settings should be fine. You should only change them if you have a solid knowledge of KNX or if you're experiencing connection problems.

How to configure EcoButler with ayControl for iOS



Please make sure to use the latest version of ayControl

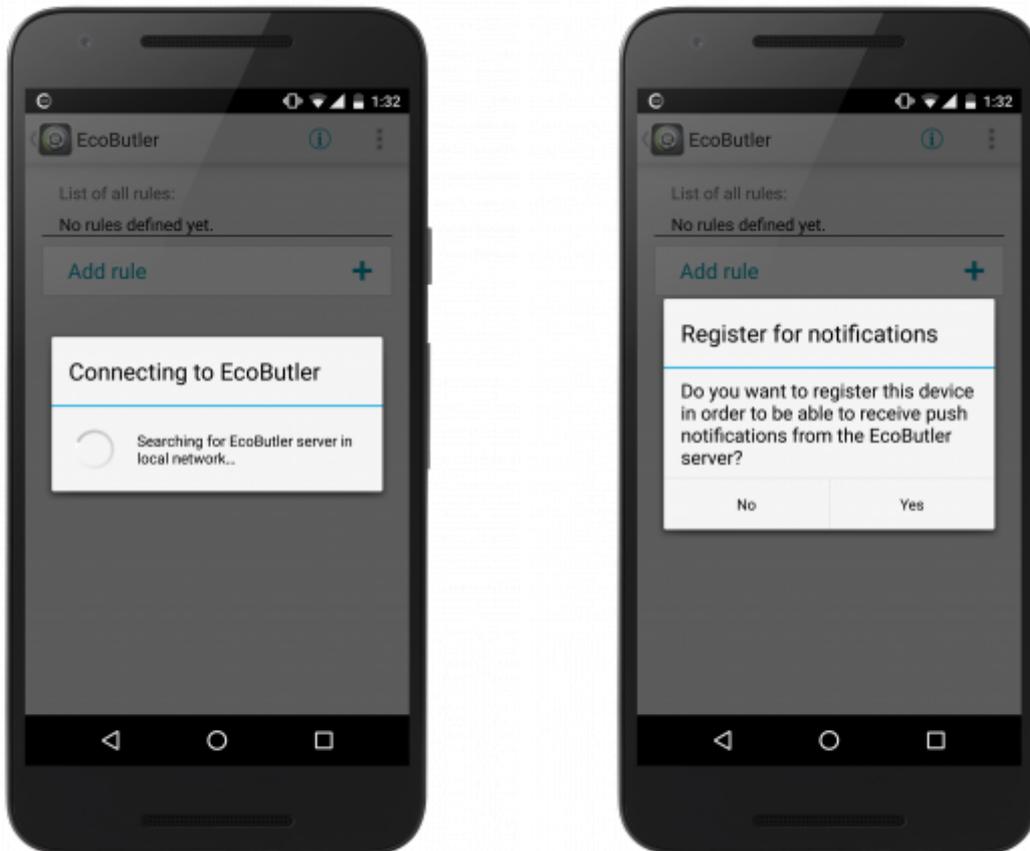
Check if you have an appropriate ayControl upgrade package activated (see [“How does the licence system work?”](#)); The EcoButler option will only be available if a compatible upgrade package is used.

- Open ayControl on your iOS device.
- Make sure to select the ayControl profile used for controlling your KNX smarthome, and not the built in demo profile.
- The EcoButler server will always use the **active profile** of the device which **connects** to the server the **first time**.
- If you want to control the EcoButler server with multiple ayControl installations, make sure all clients are using exactly the same profile. For switching profiles, you can click the “Reset” button in the EcoButler app, switch the profile on the device running ayControl and connect to the EcoButler again.
- To connect with the EcoButler you have to open the menu in ayControl (“Settings” icon) and then choose “EcoButler”. ayControl now automatically searches for an EcoButler server in the local network. Alternatively, you can *connect manually* by entering the IP address and port

shown in the EcoButler server info dialog.

- At the first time connecting with a new device, you will be asked if you want to activate push notifications for this device. This allows the EcoButler to send messages directly to your device triggered by rules. If you choose “Yes”, you will be asked by iOS if you want to allow these notifications. **Make sure you choose “OK” here!**
- When connecting , your current profile is directly stored on the EcoButler. You can always check the connection by tapping “*Connection*” and “*Server info*”.
- Congratulations, you've set up EcoButler and are now ready to create rules!

How to configure EcoButler with ayControl for Android?



Please make sure to use the latest ayControl version.

Check if you have an appropriate ayControl upgrade package activated (see [“How does the licence system work?”](#)); The EcoButler option will only be available if a compatible upgrade package is used.

- Open ayControl on your Android device.
- Please make sure to select the ayControl profile used for controlling your KNX smarthome.
- The EcoButler will always use the **active profile** of the device which **connects to the server the first time**; if you want to control the EcoButler Server with multiple devices, make sure all clients are using exactly the same profile. For switching profiles, you can click the “Reset” button in the EcoButler app, switch the profile on the device running ayControl and connect to the EcoButler again.
- To connect with the EcoButler select the *EcoButler icon* in the title bar of ayControl. ayControl now automatically searches for EcoButler servers in the local network. Alternatively, you can *connect manually* by entering the IP address and port shown in the EcoButler server info dialog. (*Note: It is not possible to connect manually if one or more EcoButler servers are found*)
- At the first time connecting with a new device, you will be asked if you want to activate push

notifications for this device. This allows the EcoButler to send messages directly to your device when rules are triggered.

- When connecting , your current profile is directly stored on the EcoButler. You can always check the connection by tapping the *"Info" icon (I)*.
- Congratulations, you've set up EcoButler and are now ready to create rules!

How to create and use rules ?

Rules are the tasks which are executed by the EcoButler. They consist of **conditions** and **actions**.

Conditions available:

Condition	Example
Time	at 8am
Time range	from 8am to 5pm
Day of the week	on Monday and Tuesday
Date range	between January 9 and January 16
Switch state	if ceiling light in corridor is ON
Slider value	if slider value > 50%
Value display	if temperature > 22.0°C
Variable	Variable 'absent' is on
Time elapsed	60 seconds have passed since 'lights on' has been saved
Sunrise / Sunset	30 minutes after sunset
Sun Azimuth	sun azimuth angle is 120 degrees
Sun Elevation	sun elevation is 25 degrees

Actions available:

Action	Example
Set switch	set corridor lights to OFF
Set slider	set central light to 60%
Push button	arm security system
Move blinds	move blinds in bedroom down
Wait	wait for 10 minutes
Send notificaton	send notification "Alarm triggered!" to my iPhone

Conditions and actions can be combined and used multiple times in a single rule.

If you specify multiple conditions in a rule, the rule will only be triggered if *all* of the conditions are met at the same time.

If you specify multiple actions in a rule, they will be executed sequentially. When actions are executed also the *Wait* action can be used in between.

You can create a variety of automation tasks with rules, from simple to advanced, the possibilities are almost endless. The following 4 examples will show you how rules are created, starting with a simple one up to a more complex rule.

Note: Difference between "time" and "time range"

When "time range" is the only condition specified, it just works like a normal "time" condition.

Example: "If time is between 13pm and 16pm, turn on the ceiling light"

In this case, EcoButler just turns on the light at 13pm (if it is not already on). Nothing happens at 16pm.

To accomplish turning on the light at 13pm and off at 16pm, you need two rules.

Example: *"If time is 13pm, turn on the ceiling light" & "If time is 16pm, turn off the ceiling light"*

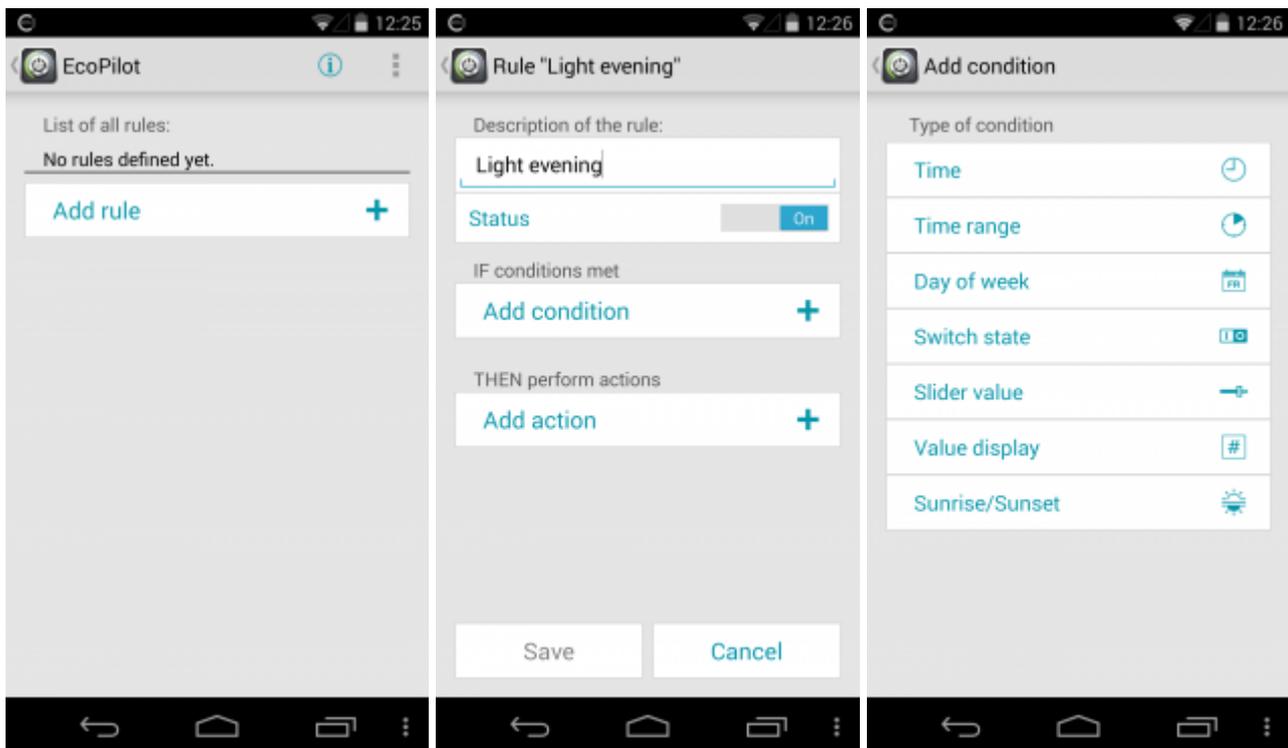
Example rule 1 (turning on a light)

In the beginning, we are going to create a rule which **turns on a light at 8pm**

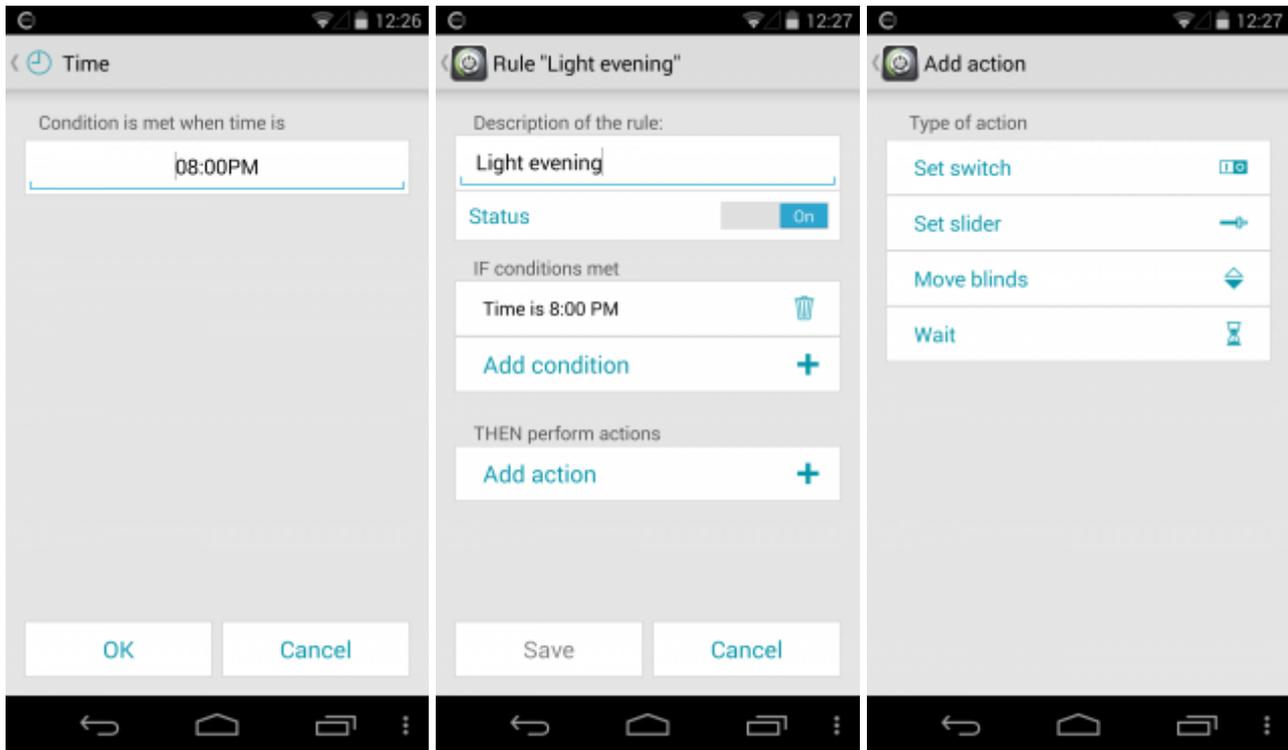
For this example, we are going to use an Android device. To see how it's done on iOS, please refer to [Example rule 2 \(closing blinds after sunset\)](#).

First, tap on *“Add rule”*. You now have to specify a name for the rule, we call it *“Light evening”*. The *“Status”* switch below tells us that the rule will be active once uploaded to the server.

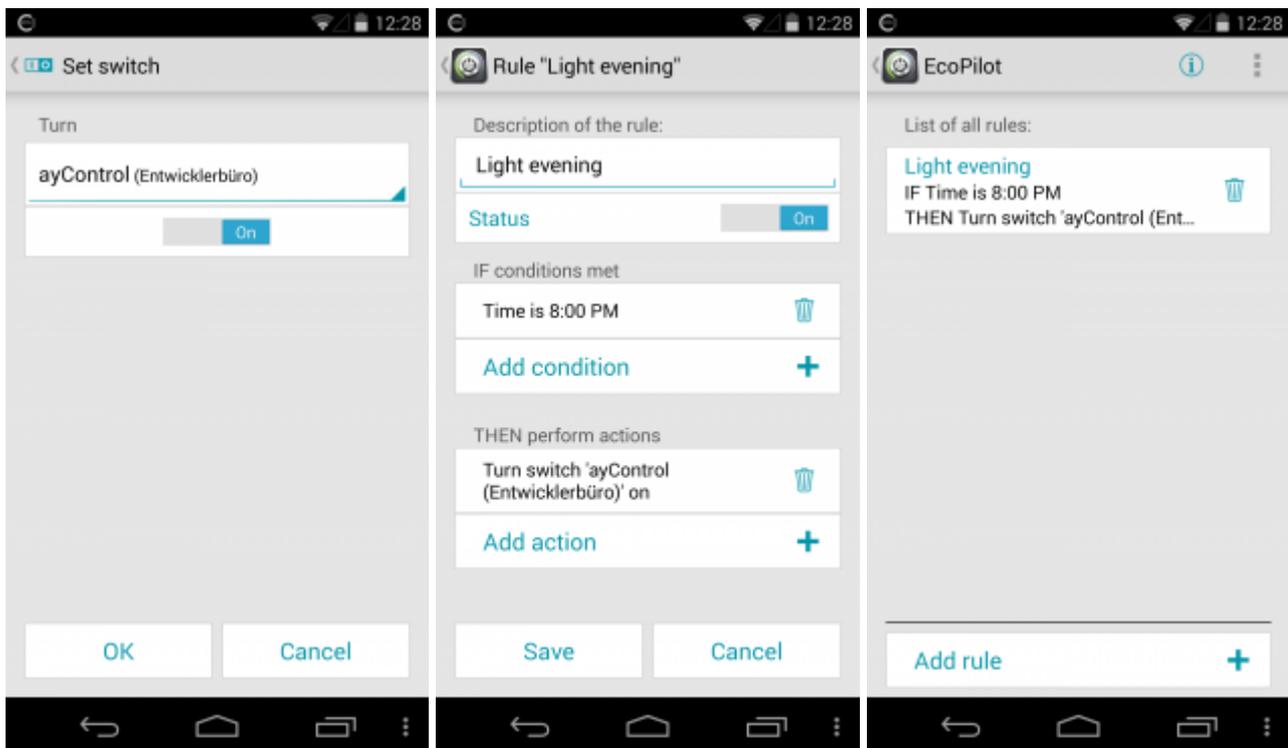
Its time to add the **condition**. Tap on *“Add condition”* and select *“Time”*, since we want EcoButler to do something at a specific time. Select *8pm* and tap OK.



Now that we created our condition, we have to specify an **action**. Tap *“Add action”* and select *“Set switch”*, since we want to switch a light on. In the list, we can see all the switches in our profile. Select the switch for the light we want to turn on. Make sure that you select *“On”* as the desired state for the light and tap *“OK”*.



Finally, we just have to tap “Save”, and the rule will be uploaded and stored by the EcoButler server. On the start screen you will now see, that “Light evening” is added to the list of rules. The EcoButler will now automatically turn on the desired light at 8pm.

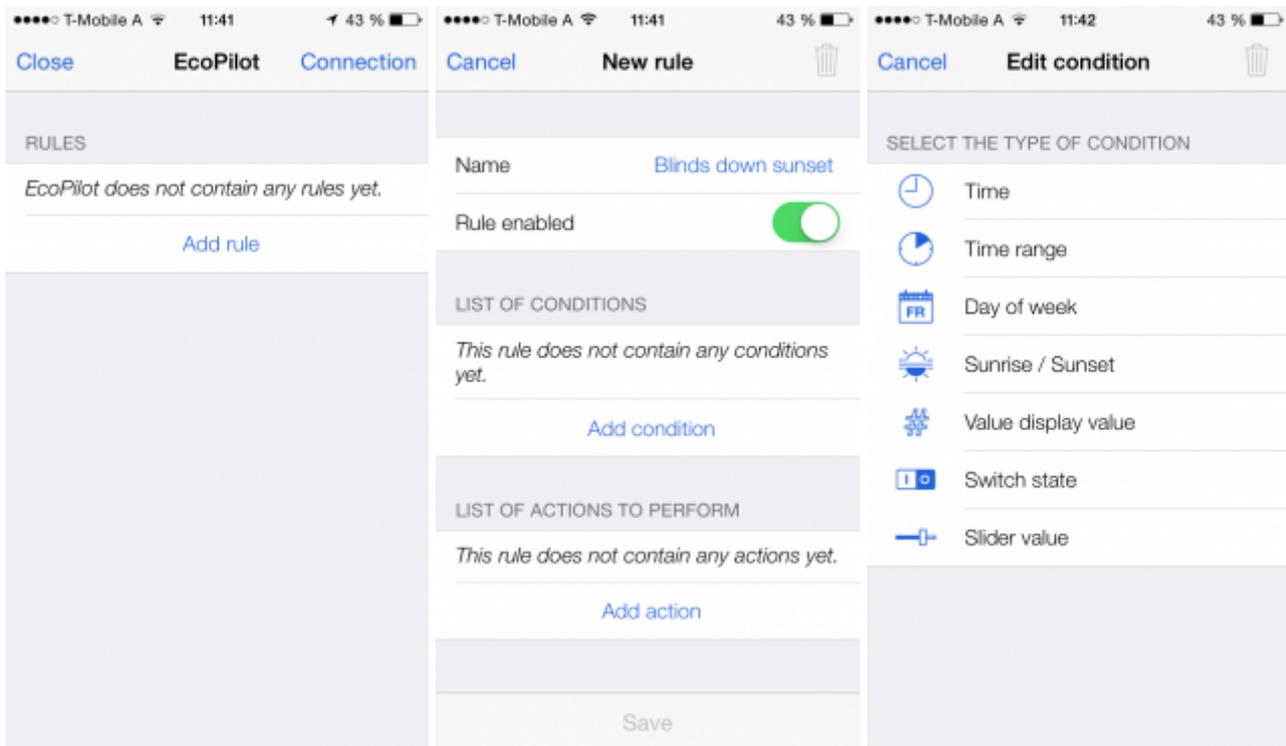


Example rule 2 (closing blinds after sunset)

In the next example we want to create a rule which puts the **blinds down in the bedroom when it is 1 hour after sunset**. This should only happen **on weekdays**.

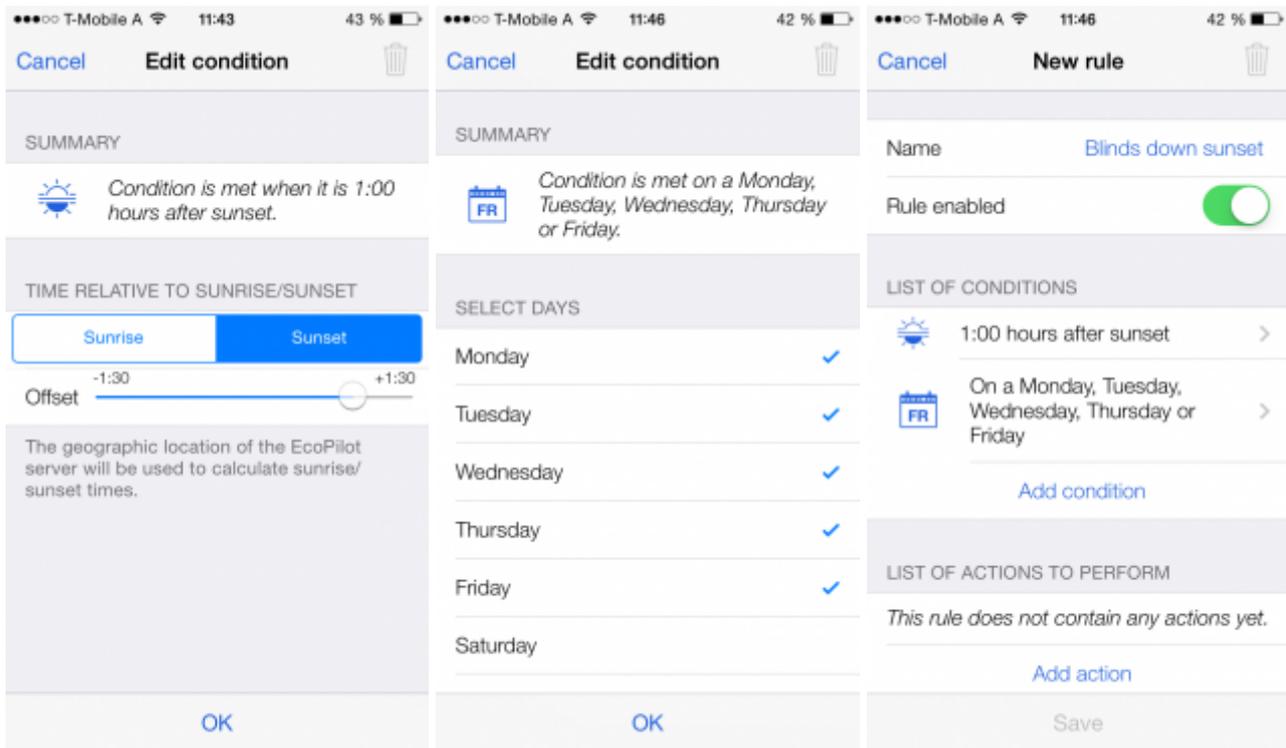
Again, first we create a new rule and name it “Blinds down sunset”.

In this case we have to use the **conditions** *Sunset* and *Day of week*. Click on “Add condition” and on “Sunrise/Sunset”. Since we want the action to be executed 1 hour after sunset, select “Sunset” and set the offset to 60 minutes after sunset.



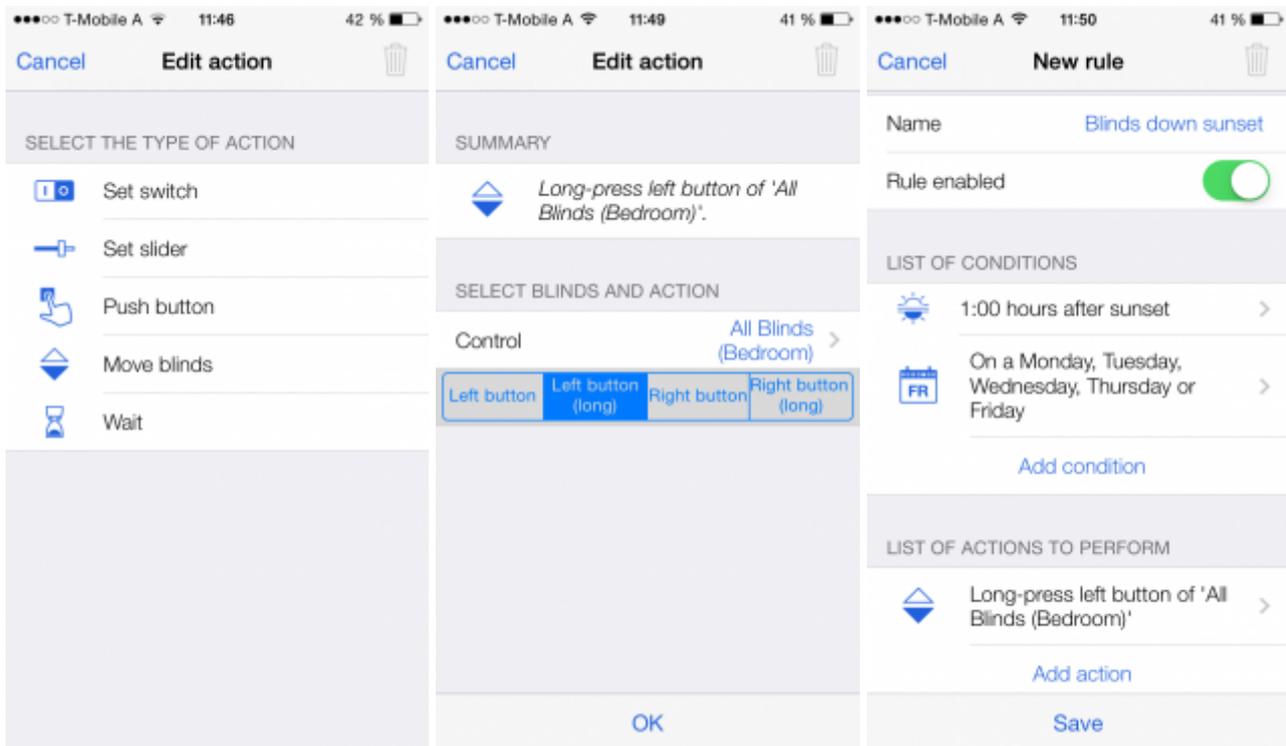
Note: The Sunrise / Sunset function requires EcoButler to have internet connection and the **location services** to be turned on in order to correctly calculate the time of the sunrise / sunset. If you turn these off, this feature might not work properly.

Now we have to add a **second condition**. Select “Day of week” and mark Monday, Tuesday, Wednesday, Thursday and Friday, and confirm with OK.



The rule will be executed one hour after sunset on weekdays. Now we are ready to add the desired **action**. Click “Add action” and select “move blinds”. Now we can select the blinds which should be controlled. In our case we select the ones in the bedroom and choose “press left button (long)” / “press down long”, since we want it to be fully closed.

That's it, tap Save and you're done.



Example rule 3 (switching on light in time range)

In this example, we want to **turn on the outdoor light from sunset to 11pm**. Therefore we need to create **two rules**.

Create the **first rule** by clicking on *"Add condition"* and *"Sunrise/Sunset"* and select *"Sunset"*. Now click on *"Add action"* and *"Set switch"*. Select the control element of the outdoor light and set the slider to ON.

Now we have to create a **second rule**. Add the condition *"Time"* and set it to 11pm. After that, we add the action *"set switch"*, select the control element of the outdoor light and set the slider to OFF.

Congratulations, you've set up an automation consisting of two rules!

Example rule 4 (triggering a silent alarm)

Here we want to create an automation that **arms the alarm from 10pm to 6am and flashes a light whenever the alarm is triggered.**

First we add a new rule and tap on *“Add condition”* and select *“time”*. We set it to 10pm. Now we add the action *“set switch”* and select the control element which arms / disarms the alarm and set to ON. In most cases, arming / disarming is programmed as a standard on / off switch. You can also use a button, with which you will have to use the *“push button”* action.

Now we create a second rule, add a condition and select *“switch state”* and choose the control element for arming / disarming your alarm, which you used above, and set state to ON. Note: In case you are using a button for arming / disarming, you need an additional value display to show the arming status of the alarm system. The value display can be used in a condition with *“Value display value”*.

We add another condition, select *“Value display value”* and select the control element which displays if the alarm was triggered (doors / windows) and set value to 1.

For the alarm, we need to create a few actions: First we add the action *“set switch”* and select our preferred light for the alarm and switch it to ON. Then we add another action *“wait”* and type in 1 second. Then we create the next action *“set switch”* and again we have to choose our preferred light but now we switch it OFF. We add another *“wait”* action with 1 second. Repeat adding these four actions as long as you want the alarm to be displayed.

Finally we need to create a third rule which is disabling the alarm. We just need to create a new rule and add a *“time”* condition and set it to 6am. Then we add a *“set switch”* action and select the control element for arming / disarming the alarm and set it to OFF.

Edit, delete and backup rules

It is possible to edit and delete rules.

- To edit a rule just select it on the list and change it as desired.
- To delete a rule, simply tap on the *“recycle bin”* icon right next to each rule in the list.

If you want to clear all rules and delete the profile from the EcoButler server, tap *“Reset”* in the menu of the EcoButler.

Backup rules

You can backup and export all rules that are currently stored on the EcoButler. Therefore, you just have to choose *“Backup rules”* in the settings screen of the EcoButler App. The, all rules will be put into a file which you can send away via email afterwards.

The same can be done in the EcoButler part of the ayControl App.

To restore the rules, simply open the file on the android system EcoButler is running on.

FAQ / Troubleshooting

When connecting to the EcoButler server, a profile related error pops up

These errors will show up when the EcoButler server has a different profile loaded than the device you are using to connect.

If you have installed the profile of the EcoButler server on your device, but it is not your active profile, ayControl will ask you if you want to activate the profile, so you can connect.

When you do not have the profile of the EcoButler server app installed on your device or have an older version of it, you can not connect. There are three ways to fix this:

- Install the profile (or the version of the profile) the EcoButler uses to your device
- Click the “reset” button in the EcoButler server app. This will delete the profile and all its rules on the server. Then you can connect to the server with any profile, which then will be loaded and used.
- Delete all rules on the EcoButler, this will also remove the profile from the server. This can be done from the ayControl App.

Note: You might need to restart ayControl in order to detect the server correctly again!

What do I have to mind when updating my ayControl profile?

If you updated your ayControl profile (e.g. added a new switch) and installed it to your device, you don't need to reset the EcoButler server. It automatically updates its profile with the version on your device.

Note: The profile needs to have the same profile id (which changes if you save it in a different file in the editor). It is only allowed to differ in the version code. If the profile id changed in the update, you will be prompted with an error and need to reset the EcoButler server and define your rules again.

Error: Too many rules

You've exceeded the basic amount of one rule in the EcoButler server app. You just need to enter your upgrade package credentials in the EcoButler server app to unlock unlimited rules. However, the EcoButler needs a slot in the upgrade package, so make sure it is available.

ayControl does not find an EcoButler server

This can have various reasons:

- Restart the EcoButler server app and click the “Info” icon to check if it is running correctly.
- Make sure that the ayControl app, the EcoButler server and the KNX IP interface are in the same network.
- Check if your router and your network support “IP Multicast”

If none of the above work, you can enter the servers IP manually. Just click the “Info” icon in the EcoButler server app, note IP and port written there and enter them in ayControl.

The Sunrise/Sunset condition does not work

The Sunrise/Sunset function requires the EcoButler server to have internet connection and the location services turned on, in order to correctly calculate the time of the sunrise/sunset. If you turn these off, this feature might not work properly.

The push notifications do not work

Make sure you activated the push notifications for your desired device first:

- iOS: Look in “connection setting” at the EcoButler part of the ayControl App, the slider “push notifications” has to be active
- Android: at the EcoButler part of the ayControl App, in the menu (3 dots), the entry “push registration”

Now you should be able to choose your device as recipient when you create a new rule with push notifications.

Note: If you use iOS, its possible that you didn't allow the system request for push notifications! To do this manually, go to the notification settings of iOS, choose ayControl and activate all notifications.

