

# Configure Tasmota smart plugs

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Reading time: ~15 minutes · Execution time: ~15 minutes per plug · Audience: anyone who completed [guide 04](#) and wants to automate their tank

**Fundamental Guide** — mandatory onboarding path. Without it, the system will not start.

**Your JoyReef Path:**

1. Shopping list
2. Controller assembly
3. Firmware + WiFi
4. Tank and sensor configuration
5. **Tasmota smart plugs** ← **YOU ARE HERE**
6. Automations (ATO, etc.)

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## 1. What you are about to do

A **Tasmota smart plug** is an adapter that plugs in between your home socket and the device (heater, top-off pump, skimmer, etc.). Once configured, **the JoyReef controller can turn it on and off via WiFi**, automatically based on sensors.

In this guide, you will configure a Nous A1T plug (or pre-flashed Tasmota equivalent) to talk to your JoyReef portal. Configuration is done **only once for each plug**.

The process is:

1. The plug connects to your home WiFi (just like you did with the controller)
2. You go to its web administration page (every Tasmota plug has one)
3. You generate a pre-packaged configuration command from the JoyReef portal
4. You paste it into the plug's Tasmota console
5. The plug announces itself to the portal, and you associate it with the tank

Nothing conceptually different from what you did with the controller: same logic, different tools.

**How many plugs do you need?** One for each device you want to automate: typically 1 for heater + 1 for top-off pump + 1 for skimmer (= 3 minimum). See [shopping list section 4](#) for details.

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## 2. What you need

For each plug you want to configure:

- A **Nous A1T plug** (or Athom EU Plug, see [shopping list](#)) **factory pre-flashed with Tasmota**.  
"Normal" smart plugs (TP-Link, Meross, Tuya, Shelly...) **do not work** with JoyReef
- A **2.4 GHz WiFi** available at home (plugs also have the ESP8266 chip, same constraint as the controller — if you have problems, review the 5 GHz note in [guide 03](#))
- A **smartphone** or **PC** to connect to the plug's network the first time and access its administration page
- A **computer** (can be the same one) with a browser to access the JoyReef portal and generate the configuration command
- Your **JoyReef account** already active with at least one tank created (see [guide 04](#))

**No app needed to find the IP:** at the end of the first WiFi configuration, the Tasmota plug **directly shows** the IP address it obtained from your router. Just write it down. If you accidentally lose it, you can always look for it in the router's administration page ("connected devices" or "DHCP" section) or with an app like **Fing**.

## 3. Step 1 — Connect the plug to your home WiFi

When fresh from the factory, each Tasmota plug creates its own temporary WiFi network (exactly like the controller did with `joyreef-XXXXXX`). You must connect to that network, tell it what your home WiFi is, and write down the IP it obtains.

### Step 1: power the plug

Plug the Tasmota plug into any home outlet. **Do not plug in the device yet** (heater, pump, etc.) — for now, we are just configuring.

You will see a **red** or **blue** LED lit or flashing on the plug: it means it's in setup mode, waiting for a connection.

### Step 2: connect your phone to the plug's network

From your phone (recommended for convenience):

1. Go to **WiFi settings**
2. Look for a network named **tasmota-XXXXXX-NNNN** where `XXXXXX` are 6 characters of letters and numbers (e.g., `tasmota-A1B2C3-4321`)
3. **IMPORTANT: write down the 6 characters XXXXXX** (in the example above: `A1B2C3`). This is the **unique identifier of the plug**; you will need it shortly to configure it in the portal. If you have multiple plugs, also note **what you will use it for** (e.g., `A1B2C3 → heater`)
4. Connect to the network — usually no password is required

Again, the phone might warn "Internet not available." Confirm "**Stay connected**" (Android) or "**Keep connection**" (iOS).

**Disable mobile data** on your phone for the duration of the configuration, as you did with the controller (see [guide 03 section 5](#)). Re-enable them immediately after.

### Step 3: configure your home WiFi

The phone should **automatically** open the Tasmota configuration page (captive portal). If it doesn't open by itself, open the browser and go to `http://192.168.4.1`.

On the setup page:

1. Click on "**Scan for wifi networks**" (or "Cerca reti")
2. Select your **2.4 GHz home WiFi network** from the list
3. Enter your WiFi **password** -
4. Leave the "Hostname" field as it is (default)
5. Click "**Save**"

PLACEHOLDER-TASMOTA-WIFI-SETUP

**Image to insert here (Tasmota WiFi setup):** screenshot of the Tasmota setup page with the "AP1 SSId" field filled in (e.g., "HomeWiFi") and "AP1 Password" showing dots.

### Step 4: write down the plug's IP

After clicking "Save," the plug **reboots itself** and connects to your home WiFi. Immediately after, a confirmation screen is shown with all connection data:

Module: Nous A1T

Hostname: tasmota-XXXXXX-NNNN

SSID: HomeWiFi

IP Address: 192.168.1.42 ← write this number down!

**Write down the IP address** (in the example `192.168.1.42`): you will need it for the next step. It will be unique to your network — every router assigns different IPs.

PLACEHOLDER-TASMOTA-IP-CONFIRM

**Image to insert here (Confirmation screen with IP):** screenshot of the page Tasmota shows after WiFi configuration, with the local IP clearly visible.

**Lost the IP?** You can always retrieve it from the router's administration page ("connected devices" or "DHCP" section) by looking for a name starting with `tasmota-`.

## Step 5: reconnect your phone to your home WiFi

At this point, the `tasmota-XXXXXX-NNNN` network no longer exists (it turned off). **Reconnect your phone to your home WiFi** for the next steps. You can also re-enable mobile data.

## 4. Step 2 — Generate the configuration command from the portal

Now you must tell the Tasmota plug:

- "Talk to the JoyReef MQTT server"
- "When you connect, announce yourself with this unique identifier so I can recognize you"

All these instructions are in a **single long command**, in Tasmota jargon called a **"Backlog"**, which you will paste into the plug's console in the next step. The great part is that the JoyReef portal prepares it for you **already ready and personalized** for your plug: you tell it what the plug is (the 6 ID characters you noted), and it takes care of the rest.

The portal page is organized as a **3-step wizard** that accompanies you to the end: in this section 4, you do the first two (identify the plug and obtain the Backlog), and in sections 5-6, you paste the command and verify.

### Step 1: open the "Add smart plug" page on the portal

On the **JoyReef portal** (from PC, in a browser tab):

1. Open [portal.joy-reef.com](https://portal.joy-reef.com) and log in if you haven't already
2. From the left menu, click on **Config** → **Devices**
3. Once on the devices page, click the **"Add smart plug"** button in the top right (or go directly to `portal.joy-reef.com/devices/add-plug`)

The **"Add Tasmota smart plug"** page opens. At the top, you will see a bar with the three steps: **1. Identify** · **2. Configure** · **3. Done**. You are at step 1.

### Step 2: identify the plug (wizard step 1)

Remember the 6 characters `XXXXXX` you noted from the `tasmota-XXXXXX-NNNN` network in the previous step? Here they are needed.

On the screen you see:

- A **"Device ID"** field ← here you must put the 6 characters

- A collapsible row **"Have a MAC address too?"** ← leave it closed, **you don't need it**

Proceed as follows:

1. **Enter the 6 characters of the ID into the "Device ID" field** (e.g., if the network was `tasmota-A1B2C3-4321`, write `A1B2C3` here). Uppercase or lowercase doesn't matter.
2. Click the **"Generate"** button in the bottom right

The page proceeds to **wizard step 2**: "Configure the plug."

### PLACEHOLDER-PORTAL-STEP1-IDENTIFY

**Image to insert here (Wizard step 1 - Identify):** screenshot of the page at the first step, with the 3-step bar at the top, the "Device ID" field filled in (e.g., `A1B2C3`), and the "Generate" button active at the bottom.

**Forgot to note the ID from the WiFi network?** No problem: go to the plug's IP in the browser (e.g., `http://192.168.1.42` if you remember it, otherwise search for it in the router), on the Tasmota main page at the top you find the plug's **Hostname**, which is precisely `tasmota-XXXXXX-NNNN`. Take the 6 characters.

## Step 3: choose the plug type and copy the Backlog (wizard step 2)

You are in **step 2** of the wizard. At the top you see a question: **"What type of plug are you adding?"** with two options:

- **Generic Tasmota plug** ← your choice in 99% of cases: you bought a Tasmota plug and are configuring it now
- **JoyReef preconfigured plug** ← only if you purchased it from us already ready for use (not currently available for public sale)

**Leave "Generic Tasmota plug" selected** (it's the default choice).

Under the toggle, the following appear:

- A **short numbered list** of what you will do in the next steps (open IP → console → paste → wait for reboot)
- A dark box with the **generated Backlog** in monospace font
- A **"Copy"** button in the top right of the box

Proceed:

1. Click **"Copy"**
2. You will see a brief green confirmation banner **"Copied!"** at the top
3. At this point, the command is on your computer's clipboard, ready to be pasted into the Tasmota console

**Do not close this portal page!** Shortly you will have to click the "Verify" button at the bottom, after you have pasted the command into the plug (see section 6).

#### PLACEHOLDER - PORTAL - STEP2 - BACKLOG

**Image to insert here (Wizard step 2 - Generated Backlog):** screenshot of step 2 with the "Generic Tasmota plug" toggle selected, the numbered list of instructions, and the dark box with the Backlog. The "Copy" button must be clearly visible.

**What does that Backlog command do?** It's a sequence of many Tasmota instructions grouped into a single line, separated by `;`. In practice, it tells the plug: "set the MQTT server, port, credentials, topic, how often to send status data, how to behave after a power outage, and finally announce yourself to the portal." All this in one go, instead of having to configure it in 7-8 different forms.

**Can you go back?** Yes: at the bottom left of step 2 there is a "← **Back**" button that takes you back to step 1 if you entered the wrong ID. The Backlog is regenerated on the fly, **without any side effects on the server side**: the actual MQTT credentials are only created when you click "Verify" later.

## 5. Step 3 — Paste the Backlog into the Tasmota console

Now you have the command on your clipboard. You need to open the plug's administration page and paste it into its console.

### Step 1: open the plug's page in the browser

On the **PC** (the same one you copied the Backlog from), open **a new browser tab** and go to the **plug's IP address** you noted in section 3 (e.g., `http://192.168.1.42`).

The main Tasmota page opens. At the top you see:

```
Tasmota
Module Nous A1T
Hostname tasmota-XXXXXX-NNNN
```

Below you find a large **ON/OFF** button (to manually turn the plug on/off, this is "Toggle1") and a menu with various items.

#### PLACEHOLDER - TASMOTA - MAIN - PAGE

**Image to insert here (Tasmota main page):** screenshot of the plug's Tasmota home in the browser, with the ON/OFF toggle in the center and the menu at the bottom.

## Step 2: open the Console

In the menu under the ON/OFF button, click on "**Consoles**", then on "**Console**" (singular).

A black page opens that looks like a terminal: there are log lines (timestamp + messages) scrolling from top to bottom, and at the bottom an **input line** where you can type commands.

PLACEHOLDER - TASMOTA - CONSOLE

**Image to insert here (Empty Tasmota console):** screenshot of the console with some log lines visible and the empty input line at the bottom.

## Step 3: paste the Backlog and press Enter

1. **Click inside the input line** at the bottom of the console
2. **Paste** (Ctrl+V on Windows/Linux, Cmd+V on Mac) the command you copied from the portal
3. You will see the very long line starting with `Backlog MqttHost ...` appear
4. **Press Enter**

Immediately after, several new lines scroll through the console (Tasmota confirms every single instruction of the Backlog: `MQT: Host set`, `MQT: Port set`, `Topic set`, etc.).

A few seconds later you will see a line like:

```
CMD: Restart 1
```

And the console **freezes** or shows "**Connection lost**": this is normal, the plug is rebooting to apply the new MQTT settings. Wait about **15-20 seconds**.

PLACEHOLDER - TASMOTA - CONSOLE - BACKLOG

**Image to insert here (Console after pasting Backlog):** screenshot of the console immediately after pressing Enter, with the sequence of lines `MQT: Host set`, `MQT: Port set`, etc.

## Step 4: verify that the plug has reconnected

After the reboot, **refresh the page** of the console (F5 or browser "Refresh" button). If the plug's IP has changed (rare but can happen), the browser will fail to load it: in that case, retrieve the new IP from the router and reopen the console.

In the console, you should now see lines like:

```
MQT: Attempting connection...
```

```
MQT: Connected
```

```
RUL: MQTT#CONNECTED performs "Publish newdevice/..."
```

That **MQT: Connected** is confirmation that the plug has contacted the JoyReef MQTT server with the new credentials. The `Publish newdevice/...` line is the **announcement to the portal**: it's saying "Hey, I'm here!".

**Don't see MQT: Connected ?** The plug might not have rebooted, or the credentials didn't go through. Go to the "If something goes wrong" section further down before continuing.

## 6. Step 4 — Verify from the portal and complete association

Go back to the **portal tab** you left open (section 4 step 3). You are still on step 2 of the wizard.

### Step 1: click "Verify"

At the bottom of the page, on the right, is the **"Verify"** button:

1. Click **"Verify"**
2. The button becomes a **spinner** (a circle that spins)
3. The portal queries the MQTT server: "Have you heard a new plug with ID `xxxxxx` announce itself in the last 10 minutes?"

If everything went well, after 1-2 seconds the page proceeds to **wizard step 3**: a large green screen with a icon and the title **"Plug successfully associated!"**.

PLACEHOLDER - PORTAL - STEP3 - SUCCESS

**Image to insert here (Wizard step 3 - Success):** screenshot of the green success screen with the assigned device ID (e.g., `#42`) and the plug's MQTT topic visible in the two boxes.

On the success screen you see:

- **Device ID** (e.g., `#42`): the internal ID the portal assigned to this plug
- **Topic** (e.g., `tasmota_A1B2C3`): the MQTT topic with which the plug talks to the portal
- Two buttons: **"Add another"** (to start over from step 1 with another plug) and **"Open device"** (to go to the configuration page of the plug just created)

## Step 2: click "Open device"

Click **"Open device"**. You land on the **edit device** page ( `/devices/{id}/edit` ), where you will see all the plug's information: online status, last seen time, firmware, etc.

At this point, the plug **already exists in the portal** and is online. However, it still has a generic name (like `tasmota_A1B2C3` ) and is not assigned to any tank. Let's fix this in the next step.

**"Plug not seen" error?** If instead of proceeding to step 3 you see an orange error banner, go to the "If something goes wrong" section further down.

## 7. Step 5 — Name the plug and assign it to the tank

You are on the device edit page. Scroll down to the bottom: you will find a section with two fields:

- **Name** (e.g., currently: `tasmota_A1B2C3` )
- **Tank** (dropdown menu with all your tanks)

### Step 1: assign a meaningful name

Change the **Name** to something that tells you **what it will control**. Examples:

- Heater
- ATO Pump
- Skimmer
- Night light

The name is what you will see everywhere (dashboard, automations, events): the clearer it is, the fewer mistakes you'll make later. **Avoid leaving the technical name** ( `tasmota_A1B2C3` ).

### Step 2: assign the tank

In the **Tank** dropdown menu, select the tank this plug belongs to. If you have only one tank, just choose it.

**If you don't assign the tank, the plug will NOT be controllable by automations** (it will remain visible only in the "Devices" section, without being selectable in rules). You can always change the assignment later.

### Step 3: save

At the bottom of the section is a **"Save"** (or "Update") button. Click it. You'll see a brief "Saved" confirmation banner.

## PLACEHOLDER-DEVICE-EDIT-NAME-TANK

**Image to insert here (Edit name + tank):** screenshot of the "Edit device" section with the "Name" (e.g., filled as `Heater` ) and "Tank" (e.g., selected `Main Tank` ) fields, with the Save button clearly visible.

**You're done.** The plug is configured, online, has a meaningful name, and belongs to a tank. Automations will find it in their menus.

### Step 4 (optional): connect the physical device

Now that the plug is configured and functioning, you can **plug in the device** (heater, pump, etc.) you want to control. From this moment, every time the portal (or you manually) turns the plug on/off, you turn the connected device on/off as well.

**Verify immediately that it works:** from the plug's edit page, look for the ON/OFF toggle (or use the physical button on the plug). Turn it on and off once. The connected device must respond immediately. If it doesn't, it's a power problem (not MQTT): review the connection.

## 8. Have more than one plug?

Repeat the entire procedure (from section 3 to section 7) **for each plug**. Each plug is independent: they don't need to "know" each other.

Practical suggestions to avoid confusion:

- **Configure one plug at a time**, all the way. Don't start the second until the first is completed and named.
- **Note down immediately what each plug will be for** (e.g., on a piece of paper: `A1B2C3` → heater , `D4E5F6` → ATO pump ). The 6 ID characters are different for each plug and easily lost.
- **Physically label the plugs:** a sticky label on the back with the name ("heater," "ATO pump") will save your life the day you need to replace one.

**Multi-channel Tasmota power strips (4 plugs in one):** for now, the portal supports one plug for each device. Managing multi-channel strips (e.g., Athom 4-Plug) is in the works and will arrive in a future version of this guide.

## 9. If something goes wrong

The most common situations that can occur during configuration, and how to get out of them.

### "Plug not seen" when I click Verify

You clicked "Verify" on the portal and an orange banner appears: **"The plug has not yet announced itself to the portal. Wait a few seconds and try again"**.

Possible causes, in order of probability:

1. **The plug has not yet rebooted** after pasting the Backlog → wait 30 seconds and retry "Verify"
2. **The plug is still in the MQTT reconnection phase** → go back to the Tasmota console and verify that there is the `MQT: Connected` line. If it's not there, wait. If it never arrives, go to point 3.
3. **The Backlog was not pasted correctly** → recopy it from the portal (you can go back to the wizard, it's still open) and repaste it into the console
4. **The ID entered in the portal does not match the plug's ID** → go back to step 1 of the wizard by clicking "Back" and recheck the 6 characters

### In the Tasmota console I see `MQT: Failed to connect`

The plug is trying to contact the MQTT server but fails. Typically it's a credentials or network problem:

- **Error code rc 5** = credentials rejected by the server. This means the Backlog was pasted poorly, or you are using a Backlog generated for another account. Regenerate it from the portal and repaste it.
- **Error code rc 4** = username/password empty. Same action: regenerate and repaste.
- **Timeout without error code** = the plug cannot reach the server. Verify that your home WiFi has internet and that the router is not blocking outgoing MQTT ports (port `1883` or `1884` depending on the installation).

### I lost the plug's IP

Open your router's administration page (usually `http://192.168.1.1` or `http://192.168.0.1`, see the label on the back of the router) and look for the **"Connected devices"** or **"DHCP client list"** section. Look for a name starting with `tasmota-`: you'll find the current IP next to it.

Alternatively, you can use the **Fing** app (free, iOS/Android): scan the local network and show all connected devices with their hostnames.

### I regenerated the Backlog by mistake

No problem: the Backlog is calculated client-side (in your browser) every time. **No credentials are created until you click "Verify"**. You can click "Back" and "Generate" as many times as you want without doing damage.

### I clicked "Verify" multiple times and created duplicate devices

Go to the **Config** → **Devices** page, identify the duplicate device (typically the highest ID is the most recent), and delete it from its edit page. The physical plug will remain associated with the last entry created.

## The Tasmota plug froze or reset

This can happen if you sent wrong commands in the console (e.g., a manual `Publish` with incorrect syntax). In these cases:

1. **Reset 2** in the console → clears all MQTT/Backlog settings but keeps the WiFi. The plug returns to "fresh from the factory" state. Repeat from section 4 onwards.
2. **Reset 5** in the console → full factory reset. WiFi is also lost; you will have to redo the procedure from section 3.

If the console no longer responds (browser won't even connect to the IP), unplug the plug from the power for 10 seconds and reinsert it. Often this is enough.

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## 10. Next step

Do you have at least one plug configured, online, and assigned to a tank? Perfect: now we can start **making it work automatically**.

The first automation I recommend setting up is **Automatic Top-Off (ATO)**: the portal keeps an eye on the water level and, when it drops, turns on the top-off pump for a few seconds.

**Go to [guide 06 — Automatic Top-Off \(ATO\)](#)**

If you also configured plugs for the heater and water change, you can tackle them immediately after the ATO: guides 07 (Temperature) and 08 (Water change) follow the same logic.