

Ziniko'70 Web interface user manual

How to set Wi-Fi connection and manage the clock, using your phone or computer.

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Before you use the actual clock

While it is technically impossible to make irreversible damages thru the Web GUI, if you're not familiar with the settings and want to just play around with setup and explore it, you can use online web demo, which does not connects to actual clock and can be used for evaluation. It is available at the following address:

<https://www.tiktoki.ge/projects/Ziniko/preview.html>

1. Connecting the clock to your Wi-Fi

Your clock keeps time on its own but joining it to your Wi-Fi lets it correct itself automatically (In case if GPS reception is not available) and gives you a settings page you can open from the sofa. Wi-Fi should be configured only once, after that you access your clock via your favorite web browser.

You will need your Wi-Fi name and password, and a phone, tablet or computer.

1. **Plug the clock in.** Give it about ten seconds to wake up.
2. **On your phone, open the Wi-Fi list** — the same list you use to join any network — and look for one called NixieClock. That is the clock itself. Join it. There is no password.
3. **A setup page should open by itself.** If it doesn't, open your web browser and type 192.168.4.1 into the address bar.
4. **Type in your Wi-Fi name and password.** Copy them exactly, including capital letters — this is where nearly every problem comes from.
5. **Leave the serial number box alone.** It is already filled in and greyed out so it can't be changed by accident. That is normal. The serial number is used for targeted firmware downloads — you might request a specific feature to be implemented in your clock for an extra fee, so serial ensures that only you will get that specific feature.

6. **Press Save.** The clock restarts and joins your network. Your phone will drop back to your normal Wi-Fi on its own, or you can pick it from the list.

Your Wi-Fi must be the 2.4 GHz

The clock cannot see 5 GHz networks at all. Most home routers broadcast both, often under the same name, and it sorts itself out. But if your router has two separate names — something like *MyWiFi* and *MyWiFi-5G* — give the clock the one **without** the 5G. If it simply refuses to find your network, this is almost always why. Also, if you see that clock connects and immediately disconnects to your WiFi, please see the “common questions” at the bottom of this document.

If it can't join

The clock waits about fifteen seconds, then gives up and puts its own NixieClock network back on the air so you can try again. Nothing is broken and nothing is lost — rejoin it and retype the password.

2. Opening the clock's page later

Once the clock is on your Wi-Fi, you reach it from any phone or computer on the same network. Open a browser and go to:

<http://nixie.local/>

That works on iPhones, iPads, Macs and current Windows and Android. If your device is older and gives an error, try these in order:

- **<http://nixie/>** — many routers accept the short name.
- Reach the clock and press lower right button, to enter the maintenance menu. Scroll down with left side keys until you find the “Wi-Fi status” item. You will see your clock's IP address right there, so you can type it into browser.
- Look in your router's list of connected devices. The clock appears there as **nixie**, with a number beside it like 192.168.1.47. Typing that number into your browser always works.

Worth doing once

When the page is open, add it to your home screen or bookmarks. Then it's one tap forever after.

3. Reading the page

At the top you'll see the time the clock is actually showing, and under it a row of small labels. They tell you how the clock is doing right now:

Label	What it means
23.4 °C	The temperature of air is measured by clock's sensor. Measuring units are set within region setting.

Label	What it means
23.88 V	The power going to the tubes. Green is healthy. If voltage is below or above recommended range (12-24V), that field will turn red, and clock tube backlight will flash red and LCD screen will give the warning message too.
GPS: Fix GPS: None	Whether the GPS receiver can currently see satellites. “None” is common indoors, when clock is far away from windows and is not a fault.
NTP: Time NTP: None	Whether the clock has got the time from the internet. This is the one that keeps it accurate. Please note, if both GPS and NTP are enabled, GPS takes priority, since it delivers more precise time signal (NTP might be affected by internet issues)
Tubes: Lit Tubes: Dark	Whether the tubes are on. They go dark on purpose overnight, or when nobody has moved nearby, if you have set that up.
Save pending	You’ve changed something and it hasn’t been written down yet. It will be, in a few seconds.

The “This clock” box at the foot of the page

Scroll to the bottom of the page and there is a short list of facts about this particular clock. None of it can be changed from here — it is what to read out when you need to say what you have, or when you want to know how long the clock has been running. The buttons for updating the clock sit directly underneath it; those are covered in section 6.

Line	What it tells you
Firmware	The version of the software the clock is running, and which board is inside — something like 2.16 · Rev B. The first number is the one an update changes.
Address	The two ways to reach this page: the name and the number. If the name does not work on one of your devices, use the number.
GPS module	Which GPS receiver is fitted, and how fast it talks. “Searching...” means the clock has not found one yet — either it is still looking, or none is fitted.
Wi-Fi module	This line is normally not there at all. It appears only when the Wi-Fi module has restarted by itself, separately from the clock, and says how long ago. Seeing it once means nothing; seeing it often is worth telling us about, because it usually explains a page that keeps dropping out.
Powered on	The date and time the clock was last switched on. It is worked out from how long it has been running, so it stays right even though the clock does not remember being plugged in.

Line	What it tells you
Running for	How long it has been on since then, in days, hours and minutes. Seconds are dropped once there is an hour to show, because a number whose last digit changes every second is harder to read, not more useful.
Serial	This clock's serial number, written once when it was built. It is the number to quote if you get in touch, and the one the update server recognises.

Colour themes

The Web GUI page can be shown in several colour schemes. The chooser is at the bottom, in the This clock box, beside the words **Colour theme**. Pick one and the page changes at once.

The theme is remembered by the browser you chose it in, not by the clock. Your phone and your computer can each show a different one and changing it on one does not change the other. If you clear your browser's stored data the page goes back to Neon glow – default theme.

4. Changing settings

Below that, the settings are sorted into groups you can open and close: **Time**, **Alarm**, **Chimes**, **Tubes**, **Backlight**, **Power saving** and **Other**. Change anything you like — a dropdown, a slider, a switch. The clock does it immediately, so you can watch the tubes as you drag a slider. Most of them are self-explanatory, but if you need additional information, you can refer to the clock main manual for more information.

You don't have to save

About five seconds after you stop fiddling, the clock writes your settings into its memory by itself, so they survive being unplugged. The **Save now** button at the bottom only forces that to happen sooner. You will never lose a setting by closing the page.

Two buttons sit at the bottom of the page:

Button	What it does
Set now	Copies the time from the phone or computer you're holding, straight into the clock. Handy if it has drifted and there's no internet.
Save now	Writes your settings to memory this instant instead of waiting five seconds.

5. What you can't change here

A few things are shown but greyed out. This is deliberate, not a fault.

Setting	Why
Minimum and maximum tube brightness	Set on the clock itself, using its own menu. Turning these up too far can damage smaller tubes, and a slider is far too easy to knock on a phone.
Serial number	Written once when the clock was built. It is how the clock recognizes updates meant for it, so it cannot be changed.
Your Wi-Fi name and password	Not shown on this page at all. To move the clock to a different network, see section 8.

6. Updating the clock

Every so often there is new software for the clock — a new feature, or a fix. The clock can install it over your Wi-Fi. Nothing needs to be plugged in and no computer is involved.

1. **Press “Check for updates”** at the bottom of the page. It will tell you either that the clock is up to date, or that a new version is available.
2. **If there’s an update**, you’ll see its version number and a short note about what changed. Press Install when you’re ready.
3. **Go to the clock and hold the top-right key.** The page will ask you to, and it waits for you. Hold it for about two seconds, until the clock beeps five times.
4. **Wait.** The tubes go dark or freeze and the page shows a progress bar. It takes a few minutes. You can put your phone down; it carries on without you.
5. **The clock restarts and shows the time again.** That’s it.

Along the way the page names what it’s doing: *checking the signature, downloading, verifying, hold the top-right key, restarting, installing, done.*

Why it asks you to hold a key

It’s the safety measure. It means nobody can start an update on your clock from somewhere else in the house, or from anywhere else at all — an update only ever happens because a person was standing in front of the clock with a finger on it.

If the power goes off in the middle

The clock is fine. It is built so an update can’t be left half-finished: if it’s interrupted it simply comes back waiting for the software. Open the page again, press **Check for updates**, and then the button that now says **Send firmware**. It won’t ask you for the key the second time, because it’s already waiting. Nothing is damaged and nothing is lost.

7. Messages you may see

Colored strips sometimes appear near the top of the page. Most are just the clock telling you what it's busy with.

Message	What to do
Waiting for the clock to finish starting up	Nothing. It shows for the first ten seconds or so after the clock is plugged in. The settings appear on their own.
A setup menu is open on the clock	Someone has left a menu open using the clock's own buttons, and while it's open the page can't change anything. Press Close it on the message, or finish the menu at the clock.
Game mode	Someone is playing the clock's built-in game. Settings come back when it ends — any key stops it, or it ends by itself after a minute.
Input voltage too low	The clock isn't getting enough power and has turned the tubes off to protect itself. Check the power supply is the one that came with it and is properly pushed in. If it keeps happening, get in touch.
Bootloader	The clock is waiting for its software. This is normal during an update. If you see it at any other time, an update was interrupted: press Check for updates at the bottom of the page, then Send firmware . Nothing is damaged and nothing is lost.

8. Moving to a different Wi-Fi

If you change your router, change your password, or take the clock to a new home, it will look for the old network, not find it, and put its own setup network back on the air.

1. Unplug the clock and plug it back in.
2. Give it about twenty seconds.
3. Join NixieClock from your phone's Wi-Fi list again, exactly as you did the first time.
4. Type in the new network name and password, and press Save.

The serial number box will already be filled in and greyed out. Leave it as it is.

9. Common questions

Do I have to keep the page open?

No. The clock does everything on its own. The page is only for when you want to change something or check on it.

Can I break the clock from this page?

No. Everything on the page can be changed back, and the settings that could actually harm the tubes aren't on it. The worst you can do is set an alarm you didn't want.

Does the clock need the internet to keep time?

No. It keeps time by itself and remembers it through a power cut. The internet is what lets it correct itself, so it stays right for years instead of drifting by a few seconds a month.

Can other people on my Wi-Fi open the page?

Yes — anyone on your home network can reach it, the same as a printer. It can't be reached from outside your home. And nobody can start a software update without standing at the clock and holding a key.

Why does the time sometimes take a minute to be right after a power cut?

The clock comes back on its own time first, then reconnects to Wi-Fi and corrects itself. Give it a minute.

The tubes are dark, but the clock seems to be on.

Check the Power saving group. The clock can be set to blank the tubes between two hours of the day, or when a motion sensor has seen nobody for a while. Both are normal and both are switched off in the same place.

The clock can't connect to Wi-Fi or frequently disconnects from it.

This is usually caused by weak signal – move clock closer to your Wi-Fi router, or if signal strength is good, but clock immediately disconnects after connecting, then the cause is modern “Mesh” networks with WPA3 authentication. If you're running Wi-Fi6 or Wi-Fi7 router, with or without mesh network and clock keeps disconnecting, you need to do the following:

Go to your router control page and check there Wi-Fi settings. Depending on your router brand and model, different options will be available to fix the issue.

Option 1: Check if your router has “IoT network” or anything like that. If it has one, please enable it – it will appear as another access point and will broadcast internet in format suitable for this clock and any other IoT device.

Option 2: In Wi-Fi settings, check the encryption type -if it is set to WPA3 or any combo with WPA3 present, change it to the option where no WPA3 can be seen.

Option 3: Some high end Wi-Fi routers allow creation of guest network with its own encryption settings. If your router supports such feature, create a guest network with name and password you like to use, and set it's encryption to WPA2 only. Connect to that network using your clock.

I don't like your Wi-Fi module; can I install and use my own?

No, you can't. The Wi-Fi module you're using has encryption key hardcoded into it, which is used to store the serial number and fetch the firmware updates. The main chip on the board and Wi-Fi module is paired initially so you can't match them afterwards. Even if you install other modules and make it work, you won't be able to get firmware updates.