07 Troubleshooting

AT A GLANCE

For	When a computer can't reach the box, or the box does something unexpected.
You need	The message shown. Most messages say what to do.
Try it	First test: identify the box with the Companion disconnected. Here with the mock; on a real box, drop `--mock-plus` and Port and USB serial fill in.

```
$ ohmstar info --mock-plus
Box:        ohmSTAR+, firmware 6.1
Port:       none (built-in mock box)
USB serial: not known
Range:      1 Ω to 5 MΩ, in steps of 0.01 Ω
```

Connecting

Symptom or message	Fix
App: **Box Not found**	Box on? USB cable in? Press **Detect**: it says why. Try another cable or port.
No box found. Check that it is switched on…	As above. `ohmstar list` shows the ports; pick one with `--port`.
More than one box could be connected	Add `--port` (tool) or name the port in `Box.connect("COM4")`.
Could not open … another program may be using it	One program per box. Press **Disconnect** in the Companion, or close it; close terminals and other serial programs.
Not allowed to open … (Linux)	Join `dialout` (`uucp` on Arch), log out and in. AppImage: install the udev rule (chapter 00).
macOS: "unidentified developer"	Right-click the app, **Open**, confirm. Once.
Windows: SmartScreen warning	The app isn't signed yet. Allow it to run.
The calibration bench is using the serial ports	Go back to the **Companion** tab first.
A timeout; the box was idle	On battery it turns itself off after about 5 minutes, and no command wakes it. Switch it on. It stays on while USB is connected to a computer.

Values and replies

Symptom or message	Fix
Nothing was sent. … is out of reach.	Outside the model: ohmSTAR 1 Ω–25 MΩ, ohmSTAR+ 1 Ω–5 MΩ.
Use a capital M for megohms	`1.5M`, not `1.5m`.
Rounded … to …	Normal: the nearest step, 0.1 Ω (ohmSTAR) or 0.01 Ω (ohmSTAR+).
"pt100" matches several sensors / nothing was chosen	Use a fuller name or the id from `ohmstar sensors`, e.g. `Omega/Pt100_a0.00385`.
… is outside the … table, which runs from …	Sensor values stop at the curve's ends; nothing is extrapolated.
The box reads a different number than sent	A table is active: the number was read in table units. At the box, `table` `0`. Sweeps and sequences refuse to start until then.
Raw serial: no reply	9600 8N1? Line ending on text commands? Another program on the port? Try `Z` first.
Raw serial: `G`	Not understood, or arrived in pieces more than 5 s apart. For `T`: refused.
Raw serial: the value is wrong	Too many digits (chapter 02, digit limits), or a `k/M` suffix: `r10k` sets 10 Ω.

Symptom or message	Fix
Exit code 2 from `ohmstar`	Typed wrongly. `ohmstar <command> --help`.

HTTP API and AI

Symptom or message	Fix
Can't connect at all	Companion open? Server **Running** on the port you use? Changed the port: copy the setup again.
401 A valid token is required.	Token wrong, old or not in `OHMSTAR_TOKEN` where the client runs. A new token stops the old one at once.
403 AI control is switched off	Switch on **Allow AI control (MCP)**. It is off at each start unless **Keep on after restart** is ticked.
403 Requests from web pages are not allowed.	Browsers can't call the API. Use a script or tool.
No box is connected.	Connect it on the Device page.
The box is busy	The reply names what has it: bench, upload, firmware update, sweep or sequence. Wait, or stop the sweep.
Claude Desktop doesn't list the tools	Extension on in **Settings › Extensions**? Token and port match? Logs: `~/Library/Logs/Claude` (macOS), `%APPDATA%\Claude\logs` (Windows).
Claude Code or Codex has no token	Apps started from the Dock don't read `~/.zshrc`. Start them from Terminal.

Still stuck: support@labmetric.com. Include the message, the model and firmware (`ohmstar info`, or the Companion's top bar), and the operating system.