

Airobot Thermostat firmware 2.0

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Firmware 2.0 is the biggest update to the Airobot Thermostat so far: heating now keeps working when the display, Wi-Fi or cloud fail, and the thermostat gains frost protection, new comfort features and Wi-Fi setup over Bluetooth. Thermostats update over the air; you don't need to do anything.

Highlights

- **Heating that doesn't stop.** Heating control now runs on its own, so a display, Wi-Fi or cloud problem no longer affects whether your room is heated.
- **Frost protection.** The thermostat keeps the room above 5 °C, even when it is switched off.
- **Wi-Fi setup with the Airobot app over Bluetooth.** No more joining a separate Wi-Fi network from your phone.
- **New comfort features:** window-open detection, adaptive start, holiday mode and a floor minimum temperature. All are off by default.
- **Clearer device menu** with a Diagnostics page that shows active error codes and today's heating time.

Safer heating

Heating now depends only on the temperature sensors and the control logic. Everything else may fail without changing whether the room gets heat.

- **Control comes first.** Heating is decided every second by its own task. After a power cut, control is back within a few seconds, before the display and Wi-Fi start.
- **Self-recovery.** If the control stops responding, the thermostat restarts itself within 15 seconds.
- **Safe mode.** After three unexpected restarts in a row, the thermostat keeps heating, the cloud connection and updates running, and turns the rest off for up to an hour. The screen shows E10.

- **No heating on a guess.** If a sensor the thermostat needs gives no reading or an implausible one three times in a row, heating stops and an error code shows. Heating resumes on its own when the sensor works again.
- **Frost protection.** Below 5 °C the thermostat heats in every mode, including Off. Installers can raise the limit to 10 °C or switch it off.
- **Floor limit that cuts heat.** With a floor probe installed, heating stops when the floor reaches its maximum (30 °C by default) and resumes 1 °C below it.
- **Valve exercise when off.** With water heating, the valve is opened for 10 minutes after 14 days without heating, also when the thermostat is off, so valves don't stick over the summer.

New comfort features

Four new features are built in and switched off by default. Support in the Airobot app follows in a later app update.

Feature	What it does	Switch it on
Window-open detection	When the room temperature drops 1.5 °C or more within 5 minutes, the thermostat stops heating for 30 minutes or until the temperature recovers. Works when the thermostat controls by room temperature.	Installer > Heating > Open window, or the Local API
Adaptive start	Learns how fast your room warms up and starts heating up to 3 hours early, so the next scheduled temperature is reached on time.	Installer > Heating > Adaptive start, or the Local API
Holiday mode	Holds a holiday temperature (or the Away temperature) until an end date, then returns to normal. The home screen shows "Holiday until ...". Choosing Home or Away, or changing the temperature on the thermostat, ends it.	The Local API

Feature	What it does	Switch it on
Floor minimum	Keeps the floor at or above a set temperature (15–30 °C) for comfort, even when the room is warm enough. Needs room control with a floor probe; stays at least 2 °C below the floor limit.	Installer > Limits > Floor minimum, or the Local API

Easier Wi-Fi setup

The Airobot app now sets up the thermostat's Wi-Fi over Bluetooth: the app finds the thermostat, lists the networks it sees, and sends your network and password.

- **First setup:** the setup wizard ends with a "Wi-Fi and app" step.
- **No Wi-Fi yet:** the home screen shows "No Wi-Fi: hold OK". Hold OK to start setup with the app.
- **Changing network:** Settings > Wi-Fi > New network, with the app or with a browser. Your current network stays until the new one works, so a typo in the password doesn't leave the thermostat offline.
- **After connecting,** the thermostat checks for a firmware update, then registers. An "Add to app" code appears on the screen and stays available in Settings > Mobile app.
- **Setup closes by itself** after 15 minutes without activity. Bluetooth is only on during setup.

On the thermostat

The menu is reorganised and the buttons respond faster.

- **Menu:** Home, Away, Schedule on/off, Lock and Settings. **Settings:** General, Wi-Fi, Mobile app, Diagnostics, About and Installer.
- **Off is no longer in the device menu.** Switch the thermostat off and on from the app. On the Off screen, OK or BACK switches it back on.
- **Restart:** hold BACK for 10 seconds, on any screen. Holding OK no longer restarts the thermostat.
- **Faster buttons:** left, right and BACK act as soon as you touch them. Hold left or right to change the temperature quickly.

- **PIN lock** locks again by itself when the thermostat returns to the home screen after you unlock it on the device.
- **Screen:** the e-paper display does one full refresh a day, so it stays sharp without flashing during the day.
- **Error codes** show on the home screen and in Settings > Diagnostics, never as a screen that blocks the thermostat. Diagnostics also shows today's heating time and the number of heating starts.

Code	Meaning	Heating
E1	Room sensor fault	Stopped
E2	Floor probe not connected	Stopped
E3	Floor probe short circuit	Stopped
E10	Repeated restarts: safe mode	Continues
W3	Time unknown: schedule paused	Continues at the current mode's temperature

Safer firmware updates

A new firmware version is kept only once it has proven it can reach Airobot's servers; otherwise the thermostat goes back to the previous version by itself.

- **When it checks:** after each power-on, then about every 30 days. Airobot can also send an update to your thermostat directly.
- **Before first registration:** a new thermostat checks for updates as soon as it is on Wi-Fi, so it starts on current firmware.
- **Automatic rollback:** if the new version restarts unexpectedly in its first minutes, or cannot reach a server within 30 minutes, the thermostat returns to the previous version. Heating continues throughout.
- **One update at a time:** a second update request during a download is ignored.

For installers

The Expert menu is now **Settings > Installer**: a short press on OK shows an installation summary, holding OK opens it. It has Heating, Sensors, Limits, Calibration, PIN lock and System (Local API, Modbus TCP).

- **Setup wizard** asks for the heating type (water or electric), whether a floor probe is installed (suggested when one is detected) and the limits.
- **Electric heating** must be connected through an external relay; the thermostat output is rated 3 A. Choosing Electric shows a warning that must be accepted by holding OK.
- **NO actuators** work correctly now. Choose Installer > Heating > Actuator type (water heating only). This can only be set on the thermostat.
- **Smart Control** uses a new algorithm tuned for thermal actuators (20-minute cycle). Hysteresis stays the default.
- **Frost protection:** Installer > Limits > Frost protection, 5-10 °C or off.
- **Room temperature calibration** is in the Installer menu only.
- **Factory reset** now also clears the weekly schedule, the actuator type and the frost settings. It keeps the device password and time zone.

Check after the upgrade:

- ☐ **NO actuators:** the actuator type is NC after the first start on 2.0. Set NO again on the thermostat where needed.
- ☐ **Floor limit without a probe:** the floor limit now cuts heating and needs a working floor probe. A thermostat with a floor limit set but no working probe stops heating and shows E2 or E3. Install or check the probe, or answer No to the floor probe in Installer > Sensors.
- ☐ **Settings out of range** are set back to their defaults at the first start on 2.0. Check limits and setpoints on installations configured over the cloud or Local API.
- ☐ **Boost is removed: take it out of any automations or instructions that use it.**

For Local API and Modbus integrators

Most integrations keep working unchanged, but the changes below can affect yours. New keys and registers are additions; ignore the ones you don't use.

Area	Change in 2.0	What to do
Local API login	A thermostat without a device password refuses every login (before, the ID alone was enough).	Contact Airobot support to have the password set.

Area	Change in 2.0	What to do
Local API temperatures	<code>TEMP_AIR</code> and <code>TEMP_FLOOR</code> are signed: -5.0°C reads -50 (was 65486).	Read them as signed values.
Local API setSettings	Whole numbers only; flag keys take 0, 1, true or false; <code>HYSTERESIS_BAND</code> is 0–5. Invalid values are refused.	Send integers as JSON numbers.
Local API setpoint limits	The four empty-named keys in <code>getSettings</code> are now <code>SETPOINT_TEMP_AIR_MAX</code> , <code>SETPOINT_TEMP_AIR_MIN</code> , <code>SETPOINT_TEMP_FLOOR_MAX</code> and <code>SETPOINT_TEMP_FLOOR_MIN</code> ; <code>SETPOINT_TEMP_SLEEP</code> is added.	Use the new names.
Heating on	<code>HEATING_ON</code> (Modbus coil 5001) means "heat demand". On NO actuators the output is the reverse.	Treat it as "heating on".
Setpoint in force	<code>SETPOINT_TEMP</code> (Modbus 1022) is the temperature the thermostat heats to now, including window open, holiday and adaptive start.	Read your own setpoints from the settings.
Holiday	While a holiday is set, mode and setpoint writes are stored but apply only after it ends.	Send <code>HOLIDAY_END: 0</code> first to end a holiday.
Boost	<code>BOOST_ENABLED</code> is always 0 and ignored; Modbus coil 4015 is ignored.	Remove Boost.
PIN lock	The PIN lock can only be switched on when a PIN is set; PIN 0 removes the PIN and the lock.	Write the PIN (Modbus 8036) before the lock (coil 4016).
Modbus password	Registers 8020–8023 are ignored on write and read 0. Modbus can no longer change the Local API password.	Set the password through Airobot.

Area	Change in 2.0	What to do
Modbus writes	Every coil of a multi-coil write is applied (was only the first). 8027 and 8028 accept 0-1; 8029 is read-only; coils 4004, 4008, 4011 and 4014 are ignored.	Check writes to these addresses.
Modbus register map	The old spreadsheet named input registers from 1003 one address too early. The registers did not move.	Check against the updated register map.
Safe mode	The Local API and Modbus are off while the thermostat is in safe mode (E10, at most an hour).	Expect them to be briefly unavailable.
Browser Wi-Fi setup page	<code>/echo</code> , <code>/ctrl</code> and <code>/get_ip</code> are removed; the page only answers devices on the thermostat's setup network.	Only relevant if you scripted the setup page.

New: `getStatuses` `FAULTS`, `HEATING_REASON`, `RELAY_STARTS`, `HOLIDAY_ACTIVE`, `BUILD_ID`, `BUILD_TYPE`; `settings` `WINDOW_OPEN_DETECTION`, `ADAPTIVE_START`, `HOLIDAY_END`, `HOLIDAY_SETPPOINT`, `FLOOR_MINIMUM`; the endpoint `getLogs`; Modbus fault bits in 1024 and registers 1100-1108.

Fixed

- Summer and winter time changed an hour early in Estonia (UTC+2), so the schedule and the clock could be an hour off twice a year.
- A stuck display could make the thermostat restart over and over without heating.
- Smart Control could leave the output on or off when the room sensor failed.
- The schedule was switched off for good after 15 minutes without internet.
- Temperatures below 0 °C were reported as very large numbers.
- Hysteresis could be set to a negative value from the app or Local API, which stopped heating.
- Button presses during a screen update were lost.
- Repeated wrong Local API logins could use up memory and restart the thermostat; the login is no longer written to the device log.

- The browser Wi-Fi setup page could crash on unusual input or with about 30 networks in range.
- CO2 recalibration did nothing on thermostats with the STCC4 CO2 sensor.
- Modbus showed the Home setpoint in Sleep mode, and a shorter new name left part of the old one behind.