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BT21 Thermostat Troubleshooting Guide

Issue	Possible cause	Things to check/try
Thermostat won't switch on and the screen is blank	Brightness setting	Is the thermostat showing in the app? Yes means it has power but the display is not visible. Turn the dial to activate the display. Set brightness to 100% in the app. Send us a technical report from the app to check settings have been changed.
	Power supply	Check that the thermostat is connected to a 230V power supply and that the power supply is switched on. Check the MCB at the consumer unit is suitably rated (high enough Amps) and is switched on. Check that the fuse in the spur is suitably rated (high enough Amps) and in working order. Check that the fused spur for the EUFH circuit is switched on. Use an electrical meter to check that there are 230V going into the thermostat. Only do this at your own risk and if you are confident and have done it before! If you are not sure how to do any of this please consult a professional electrician.
Can't connect to the app	Bluetooth not on	Check that your phone is not on flight mode and that Bluetooth is switched on.
	Range	Make sure that you are standing next to your thermostat. You can't control your thermostat with Bluetooth from outside your home.
	Location services	Check that you have location services enabled for the BT21 app. We don't track you, but Android needs location services on to use Bluetooth.
Error 1 (Sensor)	Sensor no connected	Check that a sensor probe is connected to the correct terminals in the back of the thermostat.
	Incorrect sensor installed	Use an electrical meter on the 200K Ohms setting to check the resistance of the sensor probe. It should be somewhere between 8K and 12K Ohms depending on the temperature (table on back page).
	Incorrect sensor selected in app	Open the app and perform a Factory Reset. This will erase all of your heating schedules, presets and settings from this thermostat but it will also reset the sensor modes and automatically recognise whether there is a floor sensor installed. If the error persists, send us a technical report from the app and give us a call.
Error 10 (Clock de-sync)	Internal clock issue	This can sometimes happen if the power is interrupted for more than 3 hours. Simply connect to your phone via bluetooth to reset the clock.

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BT21 NTC 10K Floor Sensor Resistance Data

Temperature (°C)	Resistance (KΩ)	Resistance (Ω)	Min Resistance (Ω)	Max resistance (Ω)
0.0	33.47	33466.15	32796.83	34135.47
5.0	25.83	25830.95	25314.33	26347.57
10.0	20.12	20120.88	19718.46	20523.30
15.0	15.81	15809.52	15493.33	16125.71
20.0	12.52	12524.57	12274.08	12775.06
25.0	10.00	10000.00	9800.00	10200.00
30.0	8.04	8043.81	7882.93	8204.69
35.0	6.52	6516.16	6385.84	6646.48
40.0	5.31	5314.26	5207.97	5420.55
45.0	4.36	4361.91	4274.67	4449.15
50.0	3.60	3602.18	3530.14	3674.22
55.0	2.99	2992.17	2932.33	3052.01
60.0	2.50	2499.34	2449.35	2549.33

You can use this table to verify that your temperature sensor is the correct model (as shipped with each BT21 thermostat) and whether it is working.

Measure the temperature of the medium in which your sensor is located. Find the temperature in the left hand column and the manufacturer's resistance value.

Use a multimeter to measure the resistance of the sensor probe and compare it with the expected value. Your sensor's resistance reading should be within the min/max range shown in the table above, at the current measured temperature.

If your sensor's resistance value is different than it must be a different sensor and must be replaced for a ThermoSphere BT21 floor sensor.

If your multimeter does not read any resistance then the sensor had been damaged or developed a fault and must be replaced.

If your sensor cannot be replaced due to being embedded in tile adhesive or similar, then the thermostat must be used in ambient sensing mode.

If your floor finish requires a temperature limit then you can purchase a wireless temperature sensor which can be positioned near to or on the floor and provide a floor temperature reading.