

Troubleshooting Guide

tekmarNet (tNt)

General Steps for Trouble Shooting tekmarNet Systems

Helpful Tips

- Create a list of tekmarNet address & physical location. Keep this on-site. If you have to come back in a year and see error at device b:01 you will know where that stat is located
- Use fixed addressing. The default is 'AUTO' addressing which means an address is assigned on power-up. If left in 'AUTO' once the system loses power, the address may change when powered back up. This means that if the dining room is b:01 and the power goes out it may then be assigned b:02. Using fixed will keep the address list always the same. If a gateway is being used, it's critical to the programming that the dining room stays at b:01
- For devices on a 'Boiler bus' the address displayed starts with a lowercase 'b'. This is often mistaken for the number '6'

Error at Device b:XX, 1:XX, etc.

- If you check the error code in the manual and it says error at device and gives an address this code means you must track down the device and clear the error on that device:
- Go to each device on the network and check the address
- If the device's address doesn't match make a note of address and location in the building and keep going until you find the device with the error address
- When you do find the device check the error codes. When you know the code troubleshoot the issue. It could be as simple as configuration setting (e.g. a sensor setting or schedule setting) or something deeper. When the error is fixed the 'error at device' will auto clear from the system

Error at Ctrl

- Some stats will give the code for error at main system control. You may see this on multiple stats
- Locate the main system control. It will be something like a 40X series House Control, 42X Universal Reset Control
- Check the error and troubleshoot the code. It could be as simple as an open sensor, setting, or losing communication with a device
- Once the error is cleared on main control, the error will be cleared system wide

WARNING

As with any electrical product, care should be taken to guard against potential risks, including electric shock or personal injury.

Device Lost Error

- Start with checking the device count on each tN4 bus
- Does the number of devices match what's in the building?
- Do all the devices communicate and make heating/cooling calls?
- If they do was a zone decommissioned and device disconnected?
- Was there a power outage and auto addressing gave new addresses?
- Did someone change a device address?
- If all devices are accounted for and they all communicate then it's likely a historical error. The system control remembers all addresses ever connected to it
- To reset its history, go to the system control, ensure the Device Lost error is showing on the screen. Then proceed to press and hold the 'Up' & 'Down' arrow buttons together for 5 seconds. The system control will forget all device addresses that are no longer 'active'

Finding Out Why a Device Is Not Communicating

- Is the polarity (C&tN4) reversed?
- Are the C&tN4 shorted together or is there a wire break?
- You can use an ohm meter to test for continuity on a tekmarNet system but even if the continuity checks out, nearby high voltage wires can cause noise on tN4 wires
- You can not reliably measure voltage amounts to check tekmarNet health because it will be seen jumping up and down with the communication signals
- If a zone is decommissioned and stat removed intentionally, clear the device lost error using the steps found in this guide

tN4 Network Issues

- In rare cases, if a device fails internally, it can bring down the entire tekmarNet communication network
- Start with disconnecting all tekmarNet devices at zone controller. The control will throw a device lost error but these can be cleared when we are done. The device count for the bus should be 0. Connect the first device and check the device count. If the device count increased by one then it is not likely the culprit
- Connect the next device and keep repeating until you find the device that brings down the network. Note that the issue may not be in the stat but a zone controller. If all the devices connected to a zone controller bring down the network take the zone controller out of the network and connect stats to another zone controller to check this

Checking a Single Device

- If you've isolated the issue down to a single device here are a couple of tests to further see what the issue is
- If there is another thermostat of the same model somewhere else in the building swap thermostat faces. Does the problem follow the thermostat or stay with the base. If it follows the thermostat face, we likely have a bad thermostat
- If it stays at the base put stats back and bring stat into mechanical room. Connect to the zone controller. With a length of known good wire. If the thermostat connects and makes calls the issue is likely in the wall wiring
- If the thermostat still does not connect try it in a different zone that you know works. This will tell you if it's the thermostat or an issue with the zone terminals of the zone controller

Checking a Zone Controller / Wiring Center

- If the testing shows that all devices connected to a zone controller bring the network down try the following:
- Disconnect the C & tN4 expansion connections on the zone controller leaving the others in the network. If the network comes back, label the thermostat wiring and remove them. Reconnect the C & tN4 expansion terminals. If the network goes down verify that C & tN4 are not shorted. You may have to replace the wiring center
- If the network comes back connect thermostats, one at a time, to see which one(s) bring down the network

Notes

- In some larger systems there may be multiple tekmarNet busses. Test one bus at a time
- On some controls you will may not see all the settings listed in the manual. This is because they are only shown in certain configurations. A good example is you will not see the mixing settings on a 670 it isn't in a mixing App Mode
- Remember to unlock controls and set their Access Level to the highest level (ie. depending on the control: Ad=Advanced or INST=Installer) to have access to all the settings & information. If the control is locked or has a lower access level, restore this when you are done
- With some systems, the thermostat access level can't be changed (via the Toolbox or Misc menu) if the main system control is not in the advanced/installer access level
- If there is a gateway, you may label & disconnect all C & tN4 wires on the gateway to isolate the system for testing. The gateway is not a control but a bridge that lets the tekmarNet controls talk to the outside world
- When using shielded wire make sure proper grounding is followed
- When disconnecting devices the main control will show a device lost error. You can either clear the error right away or wait until all the devices have been reconnected and clear the remaining errors

