

End of Line (EOL) Resistor and Gateway Diagnostics

The information and instructions in a Keystone Service Bulletin (KSB) are intended to inform RV dealership Service Managers/Technicians of situations that may occur with some Recreational vehicles so dealership personnel can perform proper and efficient service. KSB's are intended to be used by trained RV technicians with the knowledge, tools and equipment to do the job properly and safely, not "do-it-yourselfers".

- Information is not presented as a repair guaranteed to be covered by warranty.
- Keystone's P & P (Policy & Procedures) must be followed for any requested warranty work.
- Do not assume this repair is covered by warranty.
- Not every unit listed requires a repair.

Symptom-There is no temperature reading on the iN·Command® LCD Display Commander (DC) or it displays a "-F" zone temperature. All other functions of iN·Command® work as designed.

NOTE: *If any or all other features of iN·Command® display properly on the DC, the issue is not iN·Command® related. It can only be related to the components of the A/C system or the parts, installation and/or wiring by Keystone.*

Model and Serial Numbers Included:

2021 - 2023	Alpine,	All Models
2021 - 2023	Cougar,	All Models
2020 - 2023	Raptor,	All Models
2020 - 2023	Montana,	Legacy Models with iN·Command®

When performing this KSB, please make certain that appropriate Personal Protective Equipment (PPE) is used.

The Gateway is a part of the A/C system that allows its components to communicate with the iN·Command® system. The End of Line (EOL) resistor is installed in the Gateway to provide signal back to iN·Command®, that there are no other A/C's in the chain. If the EOL is missing or in the wrong location, the symptoms described above can occur.

The RVC-Network Cables connects all A/C's together in order to properly communicate with iN·Command®. They should be wired in this sequence:

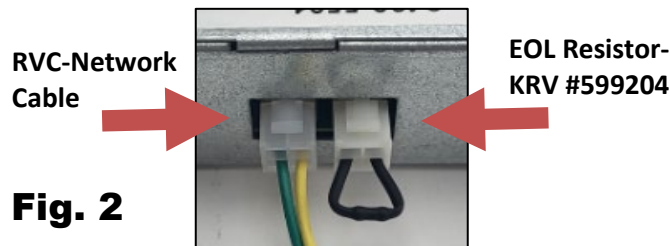
1. DC to Main A/C (typically Center of unit) or Zone 1
2. Main A/C to 2nd A/C (if equipped) or Zone 2
3. 2nd A/C to 3rd A/C (if equipped) or Zone 3

Components involved are located in Roof A/C cavity. See Figure 1.



Note: Do not begin this diagnostic process unless there is no temperature reading or a “-F” zone temperature reading on the DC right now.

1. Power reset. The Gateway can “go to sleep”. To wake it up, remove all power (12V & 120V) from the unit for 60 seconds by unplugging the shoreline cord and turning off the Battery Disconnect (if equipped) or removing the positive cable from the battery. After power is restored, turn on the DC, if the symptom readings remain, proceed to step 2.
2. Verify the EOL Resistor is installed in the last A/C in the chain of A/C's on this unit. (1. Roof A/C-EOL in Gateway of the only A/C; 2. Roof A/C's-EOL in Gateway of 2nd A/C; 3. Roof A/C's-EOL in Gateway of 3rd A/C) See Figure 2.



3. If the EOL is properly located and the conditions still exist, remove the iN-Command® DC from the wall, unplug the RV-C network cable coming from the Zone 1 A/C Gateway to the DC. Check the resistance at the 2-pin connection with a multi-meter for a reading between 117Ω~123Ω (Ohms). This tests the entire chain of RV-C cables and connections for all Zones.
 - a. If not in this range, 1 or more of the RV-C cables is bad and/or 1 or more of the connections is compromised somewhere in the chain. It will be necessary to isolate each RV-C cable/connection, repeat the resistance test to find and correct the defect.

4. If all RVC-Network cables have proper resistance, go to the A/C Controller for the Zone showing ' - F°'. Remove the cover of the A/C Controller and verify the black "Zone Jumper" is installed on the pins for the correct Zone (1, 2 or 3). See Figure 3.

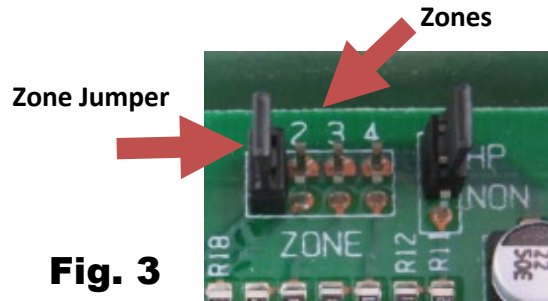
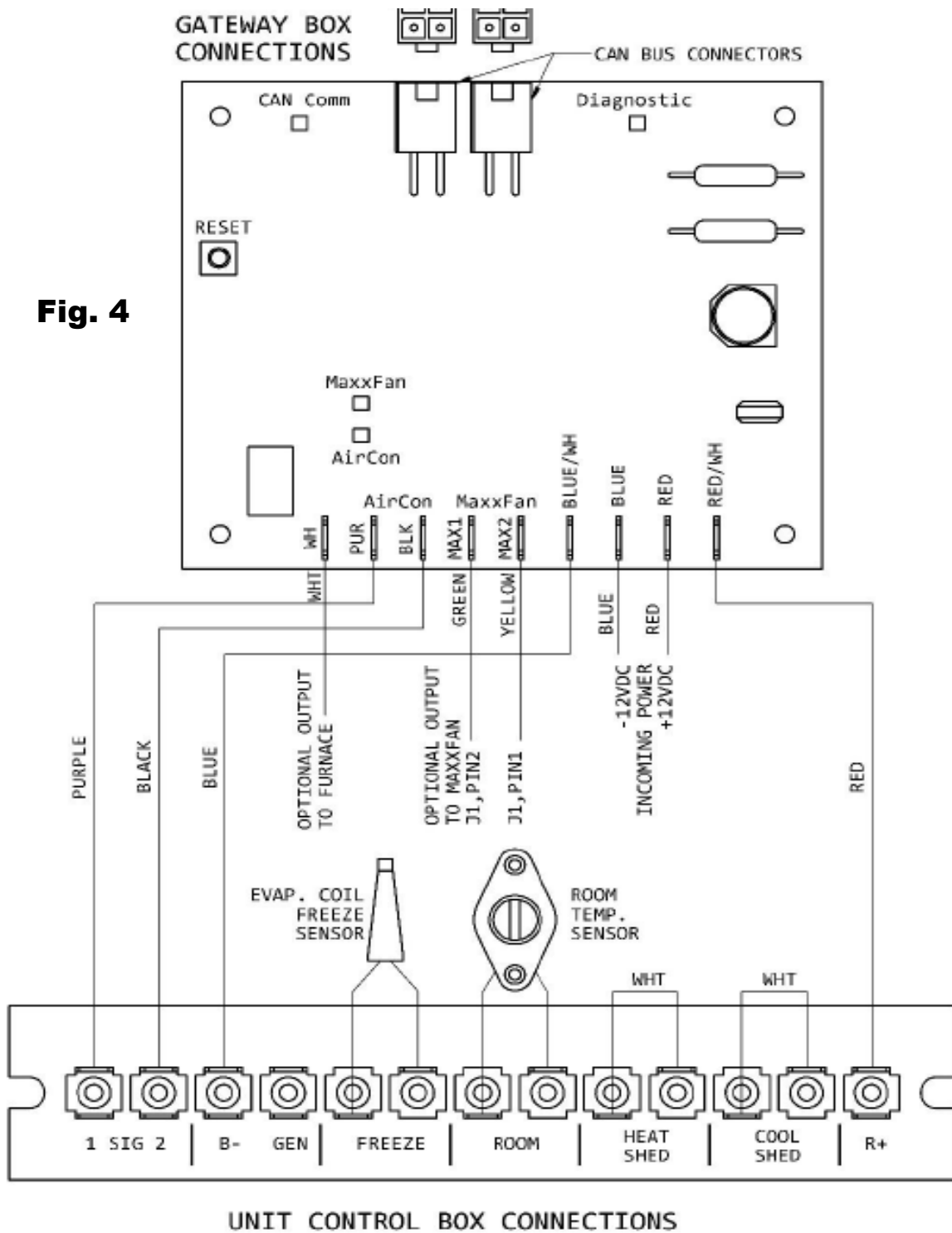


Fig. 3

- 5. If Zone Jumper is in correct Zone, then verify the wiring connecting the A/C Gateway to the A/C Controller are attached to the correct terminals, spades are connected nice and tight, wires are crimped tight to spades. See Figure 4.

Fig. 4



6. If the problem remains, replace the A/C Gateway for the Zone showing the symptom readings on the DC.
7. Last, a "Reset" is needed to clear all systems and components. Remove all power from unit by unplugging shore cord, turning off battery disconnects for a minimum of one minute before restoring all power, turning on battery disconnects. Test to verify symptom(s) no longer exists. Over the next 24 hours, periodically validate correct readings on DC to confirm resolution.

WARRANTY REIMBURSEMENT

This KSB is for repair purposes only. If this is a warranty repair, the flat rate code is **7301642K**

Submit a Pre-Authorization Key Express, **Flat Rate Code # 7301642K** with **KSB # 221025** noted in the customer complaint section and a detailed description of which steps were completed to resolve the complaint. The time authorized is dependent on what diagnostics were required.

If you have questions, please contact your product team with questions:

Luxury	866-273-1450
Toy Haulers	866-273-1452
Cougar	866-273-1454