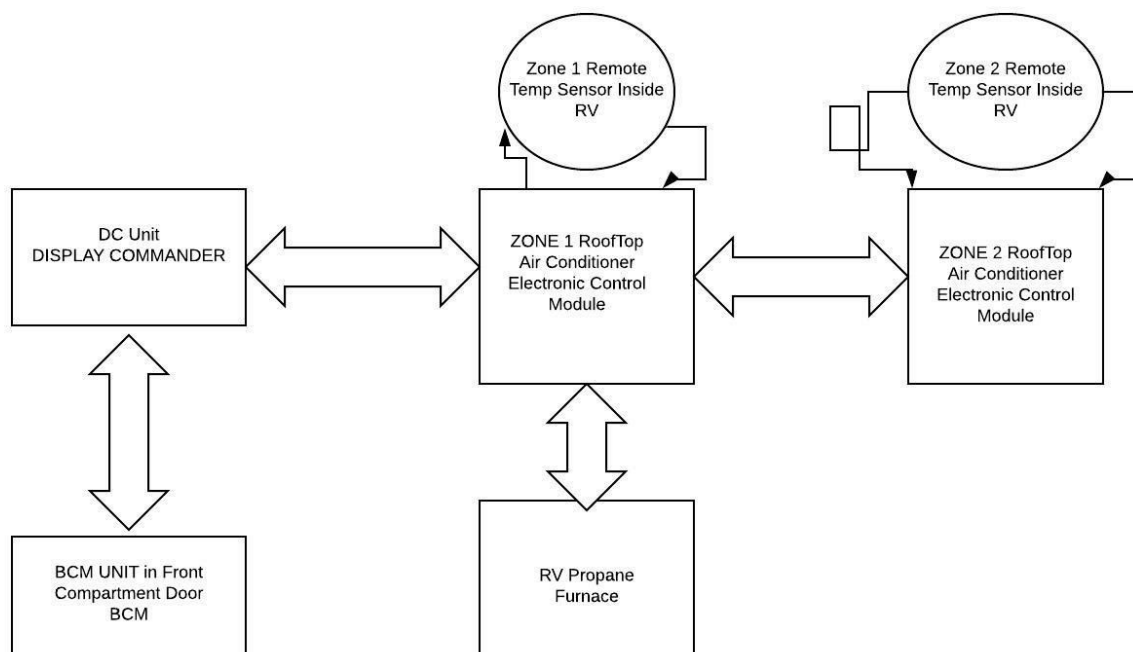


## Overview of How the HVAC (Heating and Air Conditioning Systems) Work in your Alpine

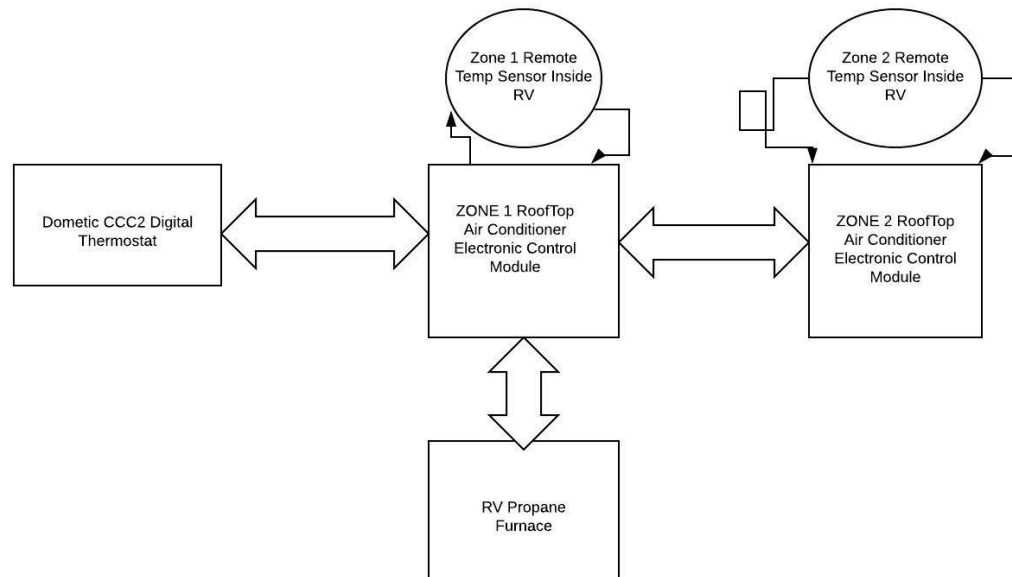


Flow of how the IN Command system communicates back and forth to the Zone 1 and Zone 2 Air conditioner units, Heat Pump on Zone 1, Furnace, and remote temperature sensors for both Zone 1 and Zone 2 located inside your Alpine. DATA commands are sent across the CANBUS on 2 wires from the RJ45 telephone cable connections from the DC to BCM, up to the Zone 1 and Zone 2 AC Unit electronic control modules.

The on/off signal to turn furnace is sent from ONLY Zone 1 AC unit control board. When desired room temp is met in Zone selected then the AC,HP, or Furnace will turn off. Loss of good signal from the DC via that RJ45 telephone line will cause HVAC system to not work or not work correctly

For the HVAC system to work properly you either need to be plugged into shore power, Using a generator, or have good 12 volts DC power available from your batteries.. Of course neither air conditioning nor the heat pump will function without 120 VAC power available.

IF in very cold climates and on battery power only the furnace fan motor will drain batteries a lot depending on how high you set the Desired temperature and what the outside air temp is. If you only have one 12 volt battery and are boon docking the furnace fan will drain your 12 volt DC power down to where the furnace, lights, etc will not work..Two Grp 27,Grp29, or two GC2 6 volt golf cart batteries will carry the load through the night quite well. Of course you will need to run your generator in the morning to power the converter to charge your batteries



Flow of how the Dometic CCC2 Digital thermostat communicates back and forth to the Zone 1 and Zone 2 Air conditioner units, Heat Pump on Zone 1, Furnace, and remote temperature sensors for both Zone 1 and Zone 2 located inside your Alpine. DATA commands are sent across the CANBUS on 2 wires from the RJ45 telephone cable connections from the CCC2 Thermostat, up to the Zone 1 and Zone 2 AC Unit electronic control modules.

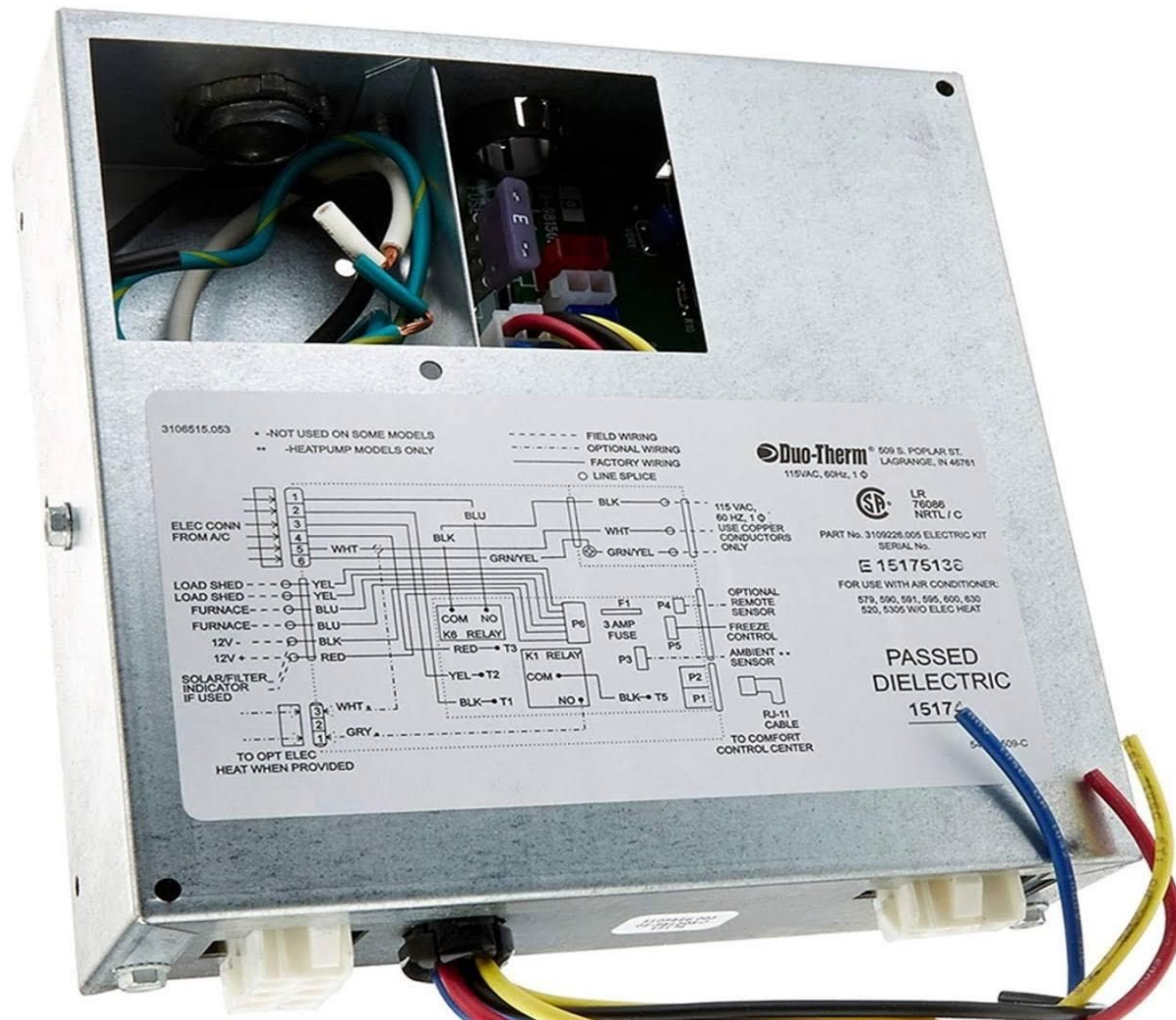
The on/off signal to turn furnace is sent from ONLY Zone 1 AC unit control board. When desired room temp is met in Zone selected then the AC, HP, or Furnace will turn off. Loss of good signal from the CCC2 Thermostat via that RJ45 telephone line will cause HVAC system to not work or not work correctly

Operation of your HVAC system if you have the Dometic CCC2 Digital thermostat is the same as the IN Command system but the CCC2 thermostat is the only device sending those commands across the CANBUS telephone line that is plugged into the backside of the thermostat

The Thermostat gets its 12 volt DC power from the Zone 1 air conditioner Electronic control module mounted up on the rooftop..

12 Volt DC power is always applied up to the Zone 1 control module as long as you are plugged into shore power or your battery disconnect switch is on.. The control module gets its 12 Volt DC source from the DC circuit that usually is labeled "Kitchen or Kitchen" accessories

If your Dometic CCC2 thermostat will not turn on the first thing you need to do is check the RJ45 telephone connection on the backside of the thermostat mount. This cable runs directly up to the Zone1 air conditioner electronic control module.. If there is no 12 Volts DC present at that control module your CCC2 thermostat will not turn on



Typical Air Conditioner electronic control module located underneath each of the roof mounted air conditioner covers. These units always have 12 volts DC supplied to them when either battery switch is on or you are connected to shore power.. If 12 Volts DC is not present at the BLACK/RED 12V lead connections your thermostat or In Command system WILL NOT be able to turn on any of the HVAC (heating and Air) functions

# ELECTRONIC FIELD WIRING DIAGRAM

3108515.053

\* -NOT USED ON SOME MODELS

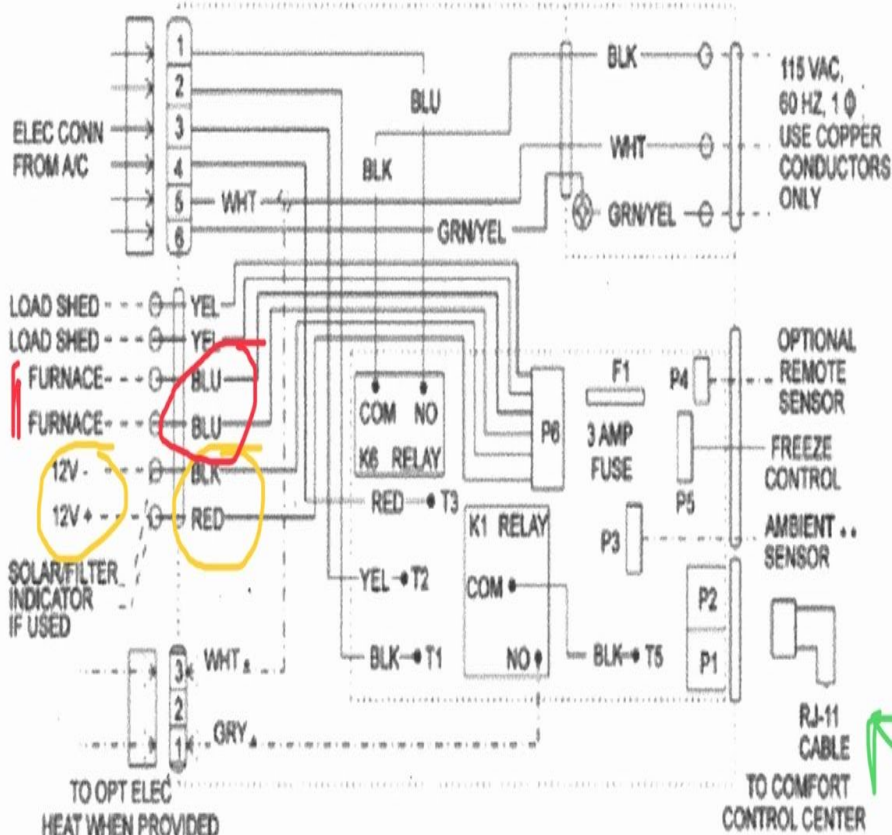
\*\* -HEATPUMP MODELS ONLY

--- FIELD WIRING  
 - - - - - OPTIONAL WIRING  
 \_\_\_\_\_ FACTORY WIRING  
 ○ LINE SPLICE

**Duo-Therm**

© 508 S. POPLAR ST.  
 LAGRANGE, IN 46761

115VAC, 60Hz, 1 Ø



PART No.

SERIAL No.

FOR USE WITH AIR CONDITIONER:

579, 590, 591, 595, 600, 630  
 520, 5305 W/O ELEC HEAT

**PASSED  
 DIELECTRIC**

The TWO connections circled in YELLOW are the RED/BLACK 12 Volts DC power source to the electronic control module. This power comes from your main DC power distribution center and is usually piggy backed onto the 12 VDC circuit that is labeled "Kitchen or Kitchen" accessories.. It is a 12 VOLT DC plug in ATC style fuse...

If you use a multi meter and measure on the roof at this control module and dont have 12 Volts DC at these 2 connections then your problem is either a blown DC fuse or broken 12 VDC power feed from inside your RV up to the roof

Without 12 VDC power your Dometic CCC2 thermostat will not light up and turn on and your In Command.. If equipped will not be able to control the HVAC system

The Green RJ11 connection runs from the control module for Zone 1 down to either your CCC2 or your DC "Display Commander" for your In Command unit..

There will also be another RJ11 connection from Zone1 air conditioner control module over to Zone 2 air conditioner control module.

Sometimes if your system is coming on or not working right you can reseal the RJ11 connections at your DC, the CCC2 thermostat, and air conditioner control boards and this will correct the issue..These connections can become unseated due to rough road vibration, heat and cold, etc

IF your problem is the Furnace won't start then first verify the 12 VDC fuse for the furnace..located in your inside power panel is good..

Next verify the two blue wires up on the roof underneath Zone 1 air conditioner circled in RED on the image above are not loose or corroded. These two blue wires route down to the furnace control module board and turn the furnace on or off.

For any further troubleshooting refer to the applicable Suburban, Atwood, or Dometic service manual for your specific unit installed..

Repairs by yourself are possible if you have mechanical ability, some basic electronic skills, and HVAC skills if problem is related to just an air conditioner unit. Safety precautions must be observed when working around or near live electrical circuits and propane supply lines to furnace

This PDF is a general overview ... if you don't have the needed skill sets and equipment then seek a professional RV repairman