

# iN·Command™

## CONTROL SYSTEMS

### JRVCS105 TROUBLESHOOTING GUIDE

This guide is made to ease troubleshooting the iN-Command system. It will cover the wiring code and where those wires are connected to the Body Control Module (BCM) and Display Commander (DC), system functions, and what to look for to discern where a problem could be.



Body Control Module (BCM)



Display Commander (DC)

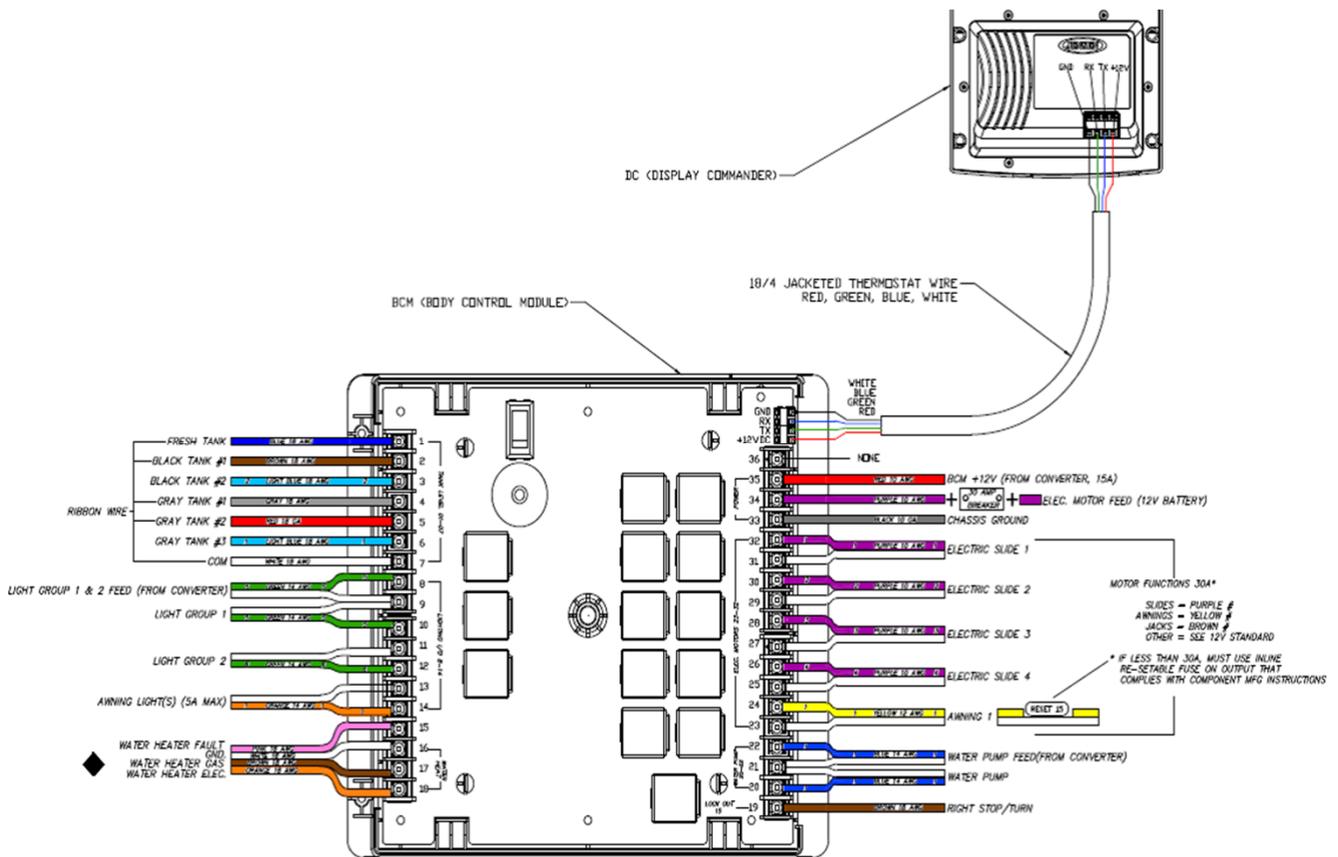
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# Keystone 12 VDC Wire Standard

Item	Color	Wire Ga & # Label	
(+) 12 VDC Positive Conductor	RED	2 ga, 4 ga, 6 ga, 8 ga, 10 ga	
(-) 12 VDC Negative Conductor Return	BLACK	2 ga, 4 ga, 6 ga, 8 ga, 10 ga	
(+) 12 VDC Electric Slide-Out Power	PURPLE	10 ga.	
(+) 12 VDC Power Awning	Yellow	10 ga.	
(+) 12 VDC Awning Light	Orange	14 ga.	
(-) 12 VDC Negative Conductor Return	White	10 ga, 14 ga	
Marker, Tail, & License Lights	7-Way RV Trailer Connector	GREEN	16 ga
Left Stop & Turn		RED	16 ga
Right Stop & Turn		BROWN	16 ga
Electric Brake		BLUE	Varies (Use Existing)
Common Ground		WHITE	10 ga
Battery Charge		BLACK	10 ga
Center Auxiliary		YELLOW	16 ga
Gray Tank #2 Fresh Tank Gray Tank #1 Tank Level Ground Black Tank #1	BONDED RIBBON		RED BLUE GRAY WHITE BROWN 18 ga 18 ga 18 ga 18 ga 18 ga
Gray Tank #3		1 1 1 LT BLUE 1	18 ga
Black Tank #2		2 2 2 LT Blue 2	18 ga
Water Heater GND Water Heater Gas Signal Water Heater Electric Signal Water Heater Fault Signal	BONDED RIBBON		WHITE BROWN ORANGE PINK 18 ga 18 ga 18 ga 18 ga
Generator Start Generator Prime/Stop Generator Service Generator Hours Generator GND	ONAN HARNESS		RED GREEN BLUE ORANGE BROWN OEM Harness Come in various Lengths.
<b>Numbered Circuit Groups:</b>			
The following Color Groupings are numbered per Circuit. The Positive Conductor (Colored Conductor) will indicate the circuit number for the group. Numbers are repeated down the entire length of the wire. The numbers correspond to the items on that circuit.			
Interior 12 VDC Zone Circuits	(+) (-)	GREEN/WHITE w/#	10 ga - 1 14 ga - 1, 2, 3, 4, 5, 6, 7, 8
12 VDC Accessory Circuits	(+) (-)	PINK/WHITE w/#	10 ga - 1 14 ga - 1, 2, 3
Holding Tank Heaters	(+) (-)	TAN/WHITE w/#	10 ga - 1, 2, 3, 4
Bed Lift Circuits	(+) (-)	DK GREEN/WHITE w/#	10 ga - 1, 2
12 V Relay Signal	(+) (-)	PINK/BLACK w/#	18 ga - 1, 2, 3, 4, 5, 6, 7, 8
Electric Slide	(+) (-)	PURPLE/WHITE w/#	10 ga - 1, 2, 3, 4, 5
Electric Awning	(+) (-)	YELLOW/WHITE w/#	12 ga - 1, 2, 3
Electric Stabilizer Jacks	(+) (-)	BROWN/WHITE w/#	10 ga - 1, 2
Exterior Light Circuits	(+) (-)	ORANGE/WHITE w/#	14 ga - 1, 2, 3, 4, 5
Hydraulic 12VDC Control Circuits	(+) (-)	GRAY/WHITE w/#	16 ga - 1, 2, 3
Fuel Tank Level (Sending Units)	GND Signal (+) (-)	RED/BLACK w/#	14 ga - 1, 2
Water Pump	(+) (-)	BLUE 1/WHITE	14 ga
<b>Interior 12 VDC Zone Circuits:</b> Zone Order is Front (Zone 1) to Back <b>Electric Slide:</b> Slide Order from Front, Start (Slide 1) Front ODS then counterclockwise to Front DS <b>Electric Awning:</b> Order Front to Back <b>Electric Stabilizer Jacks:</b> Order Front To Back			

# Electric Wiring Guide for the BCM

BCM Pins 1-18 are on the Left side, ascending from Top to Bottom.  
 BCM Pins 19-36 on the Right side, ascending from Bottom to Top.  
 BCM Pins GND, RX, TX, and +12V DC (DC RX/TX wires) are at the Top Right side.



# BCM Pin Values

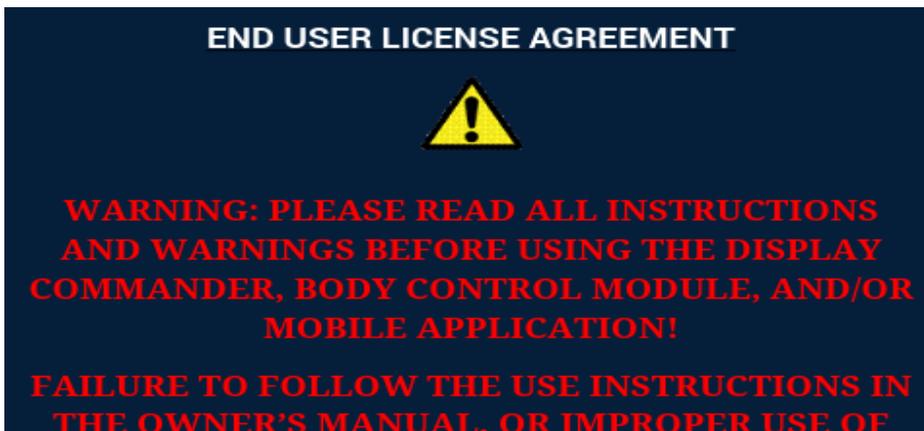
	Pin	NAME	BCM FUNCTION	NOTE	A	DMM
<b>TANK LEVEL</b>	1	FRESH 1 TANK IN 0-185KOHM	INPUT FROM SENDING UNIT SINGLE WIRE WORKS ON RESISTANCE	0-.74V = EMPTY (ooo) .75-1.74V= 1/3 (●oo) 1.75-3.59V = 2/3 (●●o) 3.6V = FULL (●●●) MEASURE FROM PIN 9 TO EACH INPUT		VDC
	2	BLACK 1 TANK IN 0-185KOHM	INPUT FROM SENDING UNIT SINGLE WIRE WORKS ON RESISTANCE			VDC
	3	BLACK 2 TANK IN 0-185KOHM	INPUT FROM SENDING UNIT SINGLE WIRE WORKS ON RESISTANCE			VDC
	4	GREY 1 TANK IN 0-185KOHM	INPUT FROM SENDING UNIT SINGLE WIRE WORKS ON RESISTANCE			VDC
	5	GREY 2 TANK IN 0-185KOHM	INPUT FROM SENDING UNIT SINGLE WIRE WORKS ON RESISTANCE			VDC
	6	GREY 3 TANK IN 0-185KOHM	INPUT FROM SENDING UNIT SINGLE WIRE WORKS ON RESISTANCE			VDC
		7	7 VDC COMMON	OUTPUT TO TANK SENDING UNITS	MEASURE FROM PIN 33	
<b>LIGHTING I/O</b>	8	LIGHT GROUP 12V 15A IN	INPUT	FROM MAIN BREAKER BOX	15A	12VDC
	9	LIGHT GROUP1 GND	JUST A TERMINAL NO PCB TRACE NEEDED			GND
	10	LIGHT GROUP1 12V 15A OUT	OUTPUT 12VDC FROM PIN 8 LIGHT IN 12V			12VDC
	11	LIGHT GROUP2 GND	JUST A TERMINAL NO PCB TRACE NEEDED			GND
	12	LIGHT GROUP2 12V 15A OUT	OUTPUT 12VDC FROM PIN 8 LIGHT IN 12V			12VDC
	13	AWNING LIGHT GND	GND PASS THROUGH CONNECTION			GND
	14	AWNING LIGHT 12V 5A OUT	POWER FROM 15A INPUT			12VDC
<b>Water Heater</b>	15	+12V WATER HEATER FAULT IN	RECEIVE 12V FAULT SIGNAL			12VDC
	16	WATER HEATER GND	GND PASS THROUGH CONNECTION			GND
	17	WATER HEATER GAS +12V 1A OUT	OUTPUT 12VDC TO GAS			12VDC
	18	WATER HEATER ELECTRIC +12V 1A OUT	OUTPUT 12VDC TO ELECTRIC			12VDC
<b>TRAVEL LOCK</b>	19	LOCKOUT SIGNAL IN 12V	12V INPUT FROM TOW VEHICLE BRAKE	LOCK OUT SLIDES, JACKS & AWNINGS WHEN PRESENT		12VDC
<b>Water Pump</b>	20	WATER PUMP +12V OUT 10A	Output 12V to WATER PUMP			12VDC
	21	WATER PUMP GND	JUST A TERMINAL NO PCB TRACE NEEDED			GND
	22	WATER PUMP +12V IN 10A	INPUT	FROM MAIN BREAKER BOX		12VDC
<b>AWNING</b>	23	GND OUT (AWNING#1)	OUTPUT 12V POWER & GROUND	REVERSING POLARITY DC MOTOR	15A	12V/GND
	24	12V OUT 15 AMP (AWNING#1)	OUTPUT 12V GROUND & POWER	REVERSING POLARITY DC MOTOR		12V/GND
<b>Slides</b>	25	GND OUT (SLIDE#4)	OUTPUT 12V IN POWER & GROUND	REVERSING POLARITY DC MOTOR	30A	12V/GND
	26	12V OUT 30 AMP (SLIDE#4)	OUTPUT 12V IN GROUND & POWER	REVERSING POLARITY DC MOTOR		12V/GND
	27	GND OUT (SLIDE#3)	OUTPUT 12V IN POWER & GROUND	REVERSING POLARITY DC MOTOR		12V/GND
	28	12V OUT 30 AMP (SLIDE#3)	OUTPUT 12V IN GROUND & POWER	REVERSING POLARITY DC MOTOR		12V/GND
	29	GND OUT (SLIDE#2)	OUTPUT 12V IN POWER & GROUND	REVERSING POLARITY DC MOTOR		12V/GND
	30	12V OUT 30 AMP (SLIDE#2)	OUTPUT 12V IN GROUND & POWER	REVERSING POLARITY DC MOTOR		12V/GND
	31	GND OUT (SLIDE#1)	OUTPUT 12V IN POWER & GROUND	REVERSING POLARITY DC MOTOR		12V/GND
	32	12V OUT 30 AMP (SLIDE#1)	OUTPUT 12V IN POWER & GROUND	REVERSING POLARITY DC MOTOR		12V/GND
<b>Power</b>	33	CHASSIS GROUND	GROUND			GND
	34	+12VDC IN	ELECTRIC MOTOR FEED FROM BATTERY		30A	12VDC
	35	+12 VDC IN	BCM POWER FROM CONVERTER		15A	12VDC
	36	EMPTY TERMINAL	NONE			

The BCM should be wired correctly, without loose connections, and +12 VDC connected at pin 35.

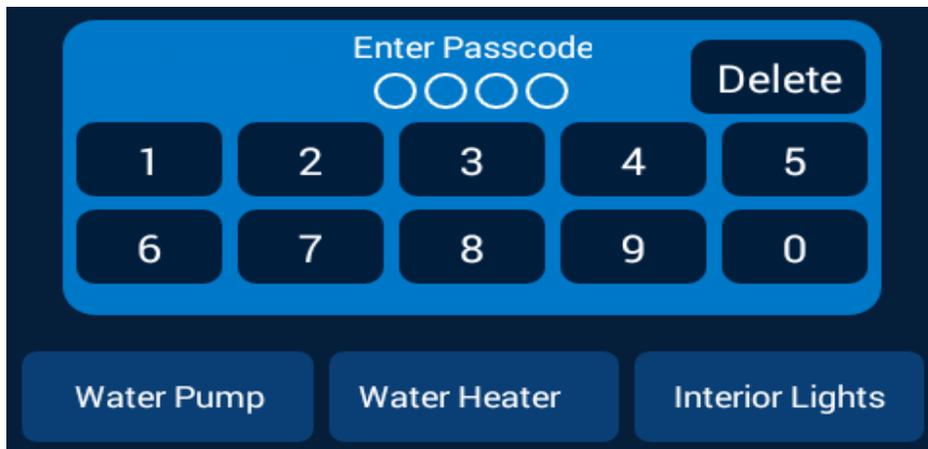
A **RED** LED will indicate that the BCM is powered and receiving 12 VDC. The DC is connected to the BCM with 4 wires in the upper right corner of the board: ground, receive, transmit, and 12 VDC power in (Gnd, RX, TX, and +12VDC).

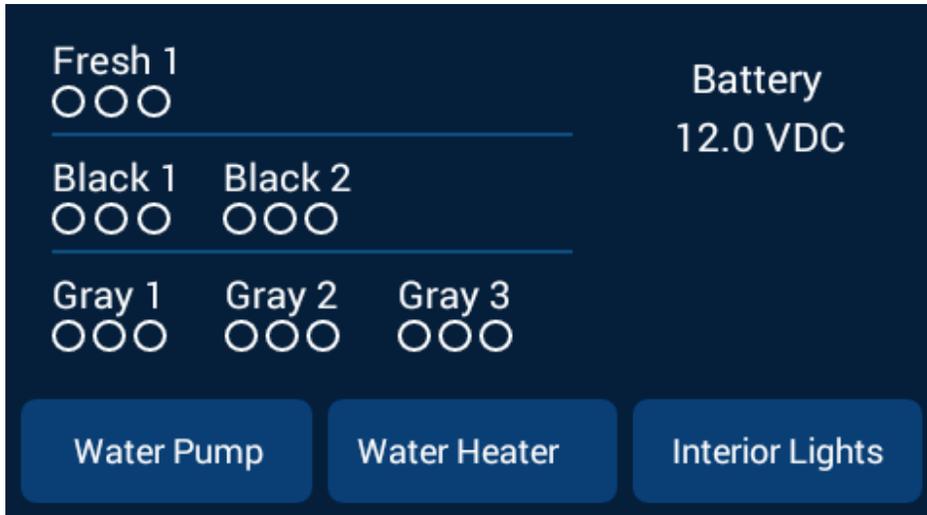


The toggle switch on the BCM corresponds to the dial underneath it. (In the event where communication between the DC and BCM is lost or the DC is damaged, this switch will enable "manual" functions of the selected devices) The switch and knob are used for Motors 1-5 (which could include slide outs, and awnings)



The DC will be mounted in a "all access" area near the entrance. On the DC, hold down the Power (  ) button for 5 seconds. After a moment, the Passcode Screen will appear. Enter your Passcode . If this is the first time the DC has been powered on, an End User License Agreement (EULA)screen will appear. Upon accepting the EULA, the Enter New Passcode screen will appear. Enter your new passcode twice.





The DC will now bring up the Home Screen. If the Floor Plan has been loaded, all the available water tanks, battery voltage, and 3 "Hotkeys" will appear. The hotkeys will turn on the Water Pump, Water Heater, and Interior lighting groups.

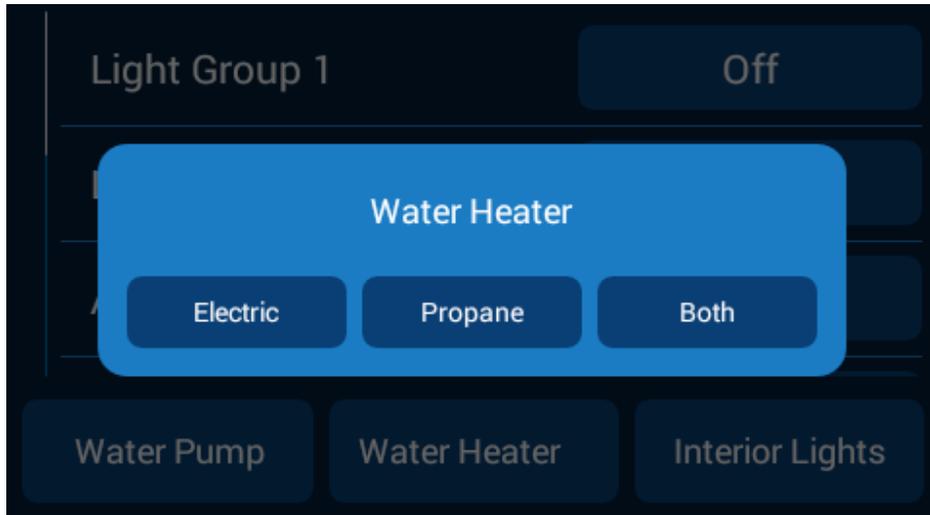


The DC has 4 physical buttons underneath the LCD Display. These are (from left to right) the Power, Pages, Home, and Return buttons. To power on or off the DC, hold the Power button down for 5 seconds. Touch the power button, and the DC will activate (if powered on). The Pages button will cycle the pages on the DC; from Home, to the Functions page, to the Menu page. The Return button will take you to the previous page.

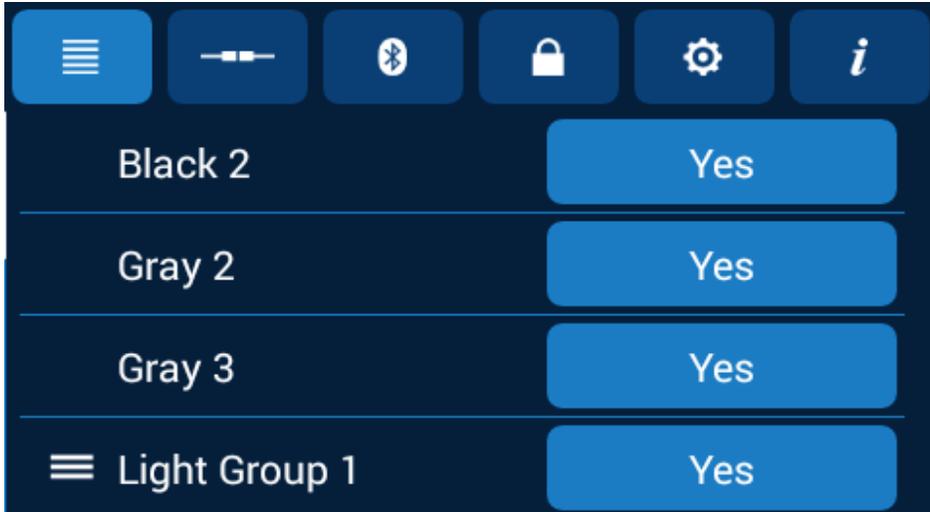


Press the Pages button and observe the Functions Page. Here all the available functions for the RV will be listed. Cycle each function and ensure it works smoothly and corresponds to the correct device. Ensure all the Home Screen "Hotkeys" actuate/turn on the corresponding devices.

When turning on the Water Pump, open the Kitchen Faucet and listen for the pump to turn on. The Water Pump is pressure controlled and will cycle based on demand. During this time the Water Pump button will stay highlighted. The Interior Lights button will turn on all interior lights and stay highlighted when the lights are on.

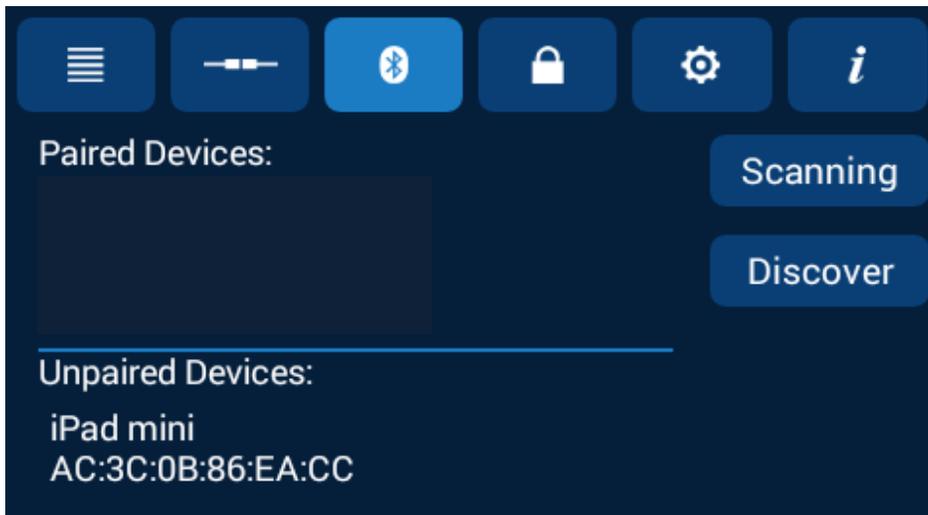


Selecting the Water Heater button will offer 3 settings: Electric, Propane, or Both. When the desired selection is made, the Water Heater button's label will change to reflect the selection and stay highlighted. Select the Water Heater button again to turn it off.



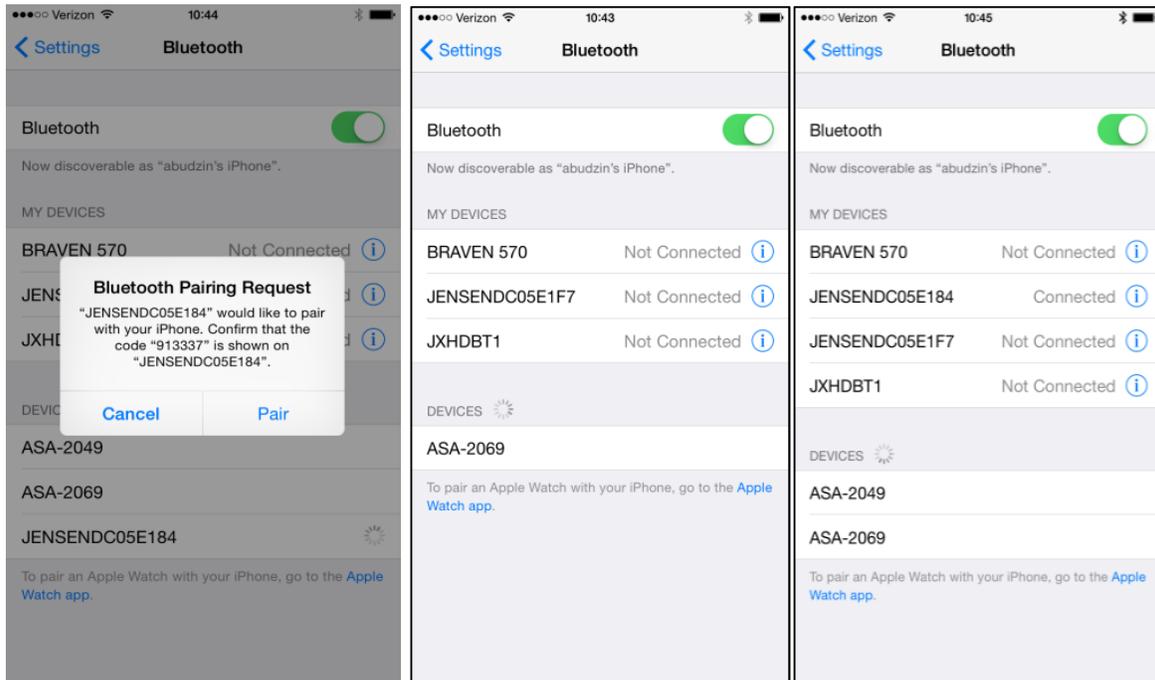
Pressing the "Pages" button a second time will take you to the Menu Page. The Buttons on top of the page represent (from left to right): the Function List Menu, Connected Devices List, Bluetooth Menu, Password Menu, Settings Menu, and Information Page .

Time to pair a device. Select the Bluetooth Menu (  ).



The Pairing Screen will appear:

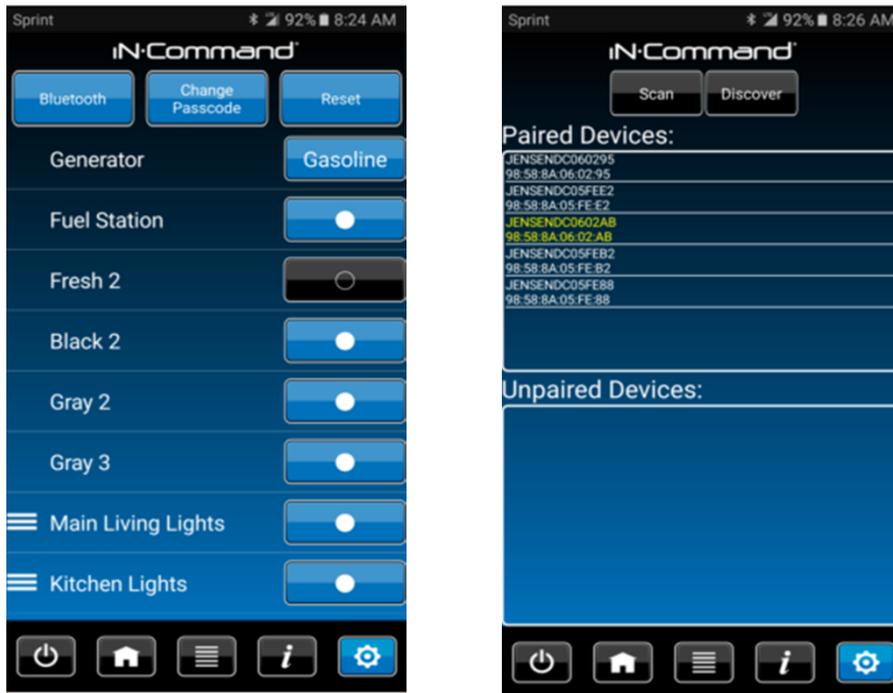
On the **iOS Device**, go to Settings and turn on Bluetooth. The iOS device will automatically begin broadcasting a signal and it will show up in the Unpaired Devices list. Select the device. On both the iOS device and the DC, a Pairing Request screen will appear. Accept the pairing request. The DC will now be listed in the iOS Device's Bluetooth menu (i.e.: JENSENDC05E1F7). Select the DC on the iOS device, it will show "Connected" on the device's Bluetooth list, and the iOS device will show up in the DC's Paired Devices list. Now open the iN-Command App on the device. It will pair and show the Home screen.



iOS (Apple) Device

The **Android Devices** pair a little differently:

When the Pairing Screen is open on the DC, ensure that Bluetooth is functioning on the Android device, and open the iN-Command App. Select the Menu button in the Android App and then the Bluetooth button. On the DC press Discover and on the Android device press Scan. The BCM (i.e.: JENSENDC05E1F7) will show up in the Android's Unpaired list. Select the DC. A Pairing Request will show up on the DC and the Android device, accept both. The DC will now appear in the Android's Paired List with yellow font (indicating that it is **Actively** paired with the DC. There can be more than 1 DC paired to a Android OR iOS device). Select the Home button, the DC Pairing screen will appear, then the App will show the Home screen.



Android Device

The iOS and Android device Apps need to have the correct floorplan downloaded from the DC to display the Trailer's functions. On either device (iOS or Android) go to the Settings screen and select the Reset button. The Reset Menu will appear. Select Floorplan. The functions will populate on the App's Menu screen. Press the Home button. Tank levels and Battery charge will be listed. Press the Function List button. The Functions will be listed with an activation button next to them. The iOS or Android Device is now ready for use.

The iN-Command system can only be paired to 7 devices (4 Android and 3 iOS) and only 4 of them can be active (3 Androids and 1 iOS). "Active" meaning they can activate functions and receive data. *Apple programming dictates that only 1 iOS device can be actively paired.* To use another iOS device that is paired to the iN-Command system, simply push the iOS App's Power button and shut the App down. This will disconnect the device from the BCM without having to go to the iOS device's Bluetooth list and disconnecting it. The new iOS device will need to have the DC selected in its Bluetooth settings before opening the App.

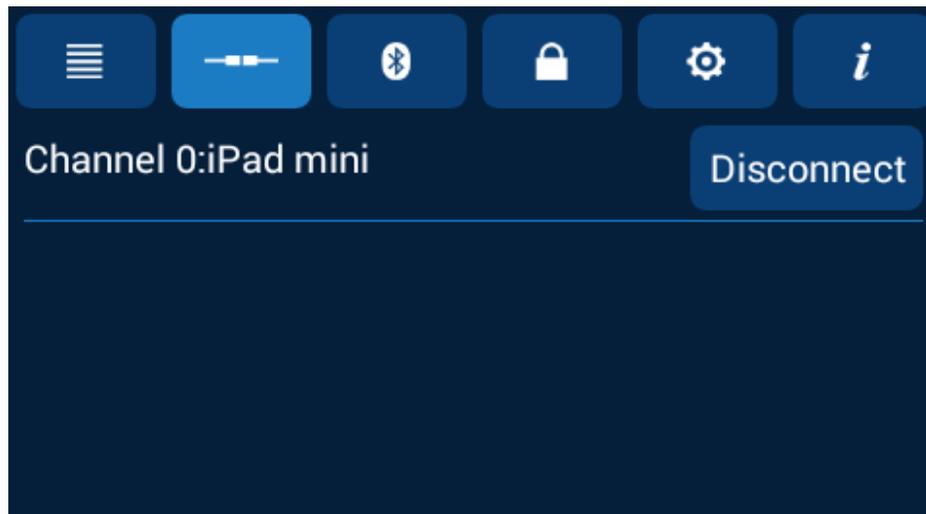
3 Android devices are able to be actively paired at one time. If a user wishes to use the 4th paired Android device, simply use the Power button on the device's App that the 4th device will be replacing. The Android device will disconnect to allow the other device to be active.

To verify that the Handheld device is connected to the DC, select the Interior Lights button. All the Interior Lights should cycle with each button press and the corresponding buttons on the DC, and other devices, should cycle from OFF to ON and vice versa.

Using the handheld device, cycle through all the functions previously tested on the DC. Ensure the DC display correlates with the handheld device's. While testing the handheld device, push buttons on the DC. Lights should function while using a Motor Function (slide, awning, etc.). Other Motor Functions should NOT be able to actuate while a Motor Function is in use. A "System Busy "message should appear.

When connecting multiple handheld devices, connection should be smooth, no other devices should be kicked off, actuation of systems on one device should correspond to the buttons on other devices, and only the non-motorized functions should be able to be actuated by any device while motorized functions are being actuated on another.

Next, go to the Connected Devices List (  ).



The list should contain all Actively Paired devices with the option to "disconnect" them. Ensure the devices can be disconnected .

Last, let's test the Lock Out feature. Apply +12 VDC to the Lock Out circuit by using a wire with clips. Attach one end to Pin 35 and the other to Pin 19. This represents the driver of the tow vehicle stepping on the brake. On the Home page, a Red button will appear with "Travel Lock " on it. All motorized functions are now disabled, but the Hotkeys and lights will still work.

Carefully remove the wire attached to Pin 35 and Pin 19. The Red button on the DC's Home page will turn light blue with "Unlock" written on it. To unlock the Travel Lock, this button on the DC must be selected. the Travel Lock cannot be removed with a handheld device for safety reasons.

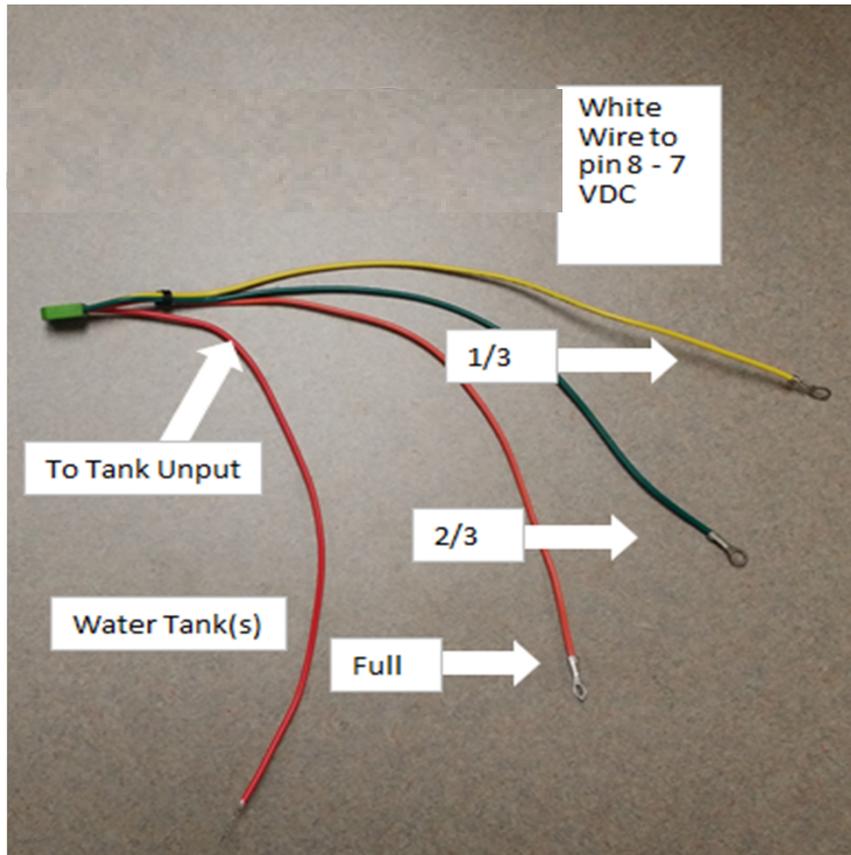
# Troubleshooting

Symptom	Solution
Display Commander (DC) will not turn ON or no front panel operation	Try cycling the DC with the Power button.
	Check main fuse in Distribution Panel.
	Press Reset button on BCM.
	Check for 12V+ on +12VDC wire to DC using a Digital Multi-meter.
	Check ground wire connection to DC.
No power to the Body Control Module (BCM), The Red Light is off	Try cycling power using the RV main breaker.
	Check if the Red power LED is off,
	Check the fuse in the Distribution Panel.
	Check 12V+ on wire at pin 35.
	Disconnect wire from pin 7, if BCM powers up, there is a short on the wire. Correct wiring.
Check Ground wire at pin 33.	
DC screen flashing on and off after installation	Disconnect and reconnect 12V+ and Ground wires from the back of DC.
	Cycle power to the BCM and DC.
	Check wire connections to DC.
	Ensure Battery is charged. Plug in shore power.
DC not controlling light or motor functions, and DC is showing 0VDC	Swap the TX and RX wires either at the BCM or back of the DC.
Electric motors do not move	Check for 12V+ at Pin 34. Ensure the relay activates*.
Travel Lock is on	Ensure 12V+ is removed from pin 19. Press Reset button
*Relay not activating	Replace the relay with one from an unused circuit by gently pulling it off the board. Relay is an automotive standard at 12VDC coil, 40/30Amp 14VDC contact

Troubleshooting The iN-Command system is pretty painless. The BCM and DC simulate all the lights, gauges, and switches on the old control panels. The **BCM Pin Vales** portion of this guide will clear most issues. Basically, if the BCM does not have the desired voltage, or signal input, it will not be able to function or read tanks correctly. Also, if the BCM has the correct output voltage or signal, but nothing is functioning, the problem lies in the wiring leading to the malfunctioning component or the component itself.

Any issues that are related to iN-Command that cannot be cleared using the above list will be tied to the BCM and DC hardware and software. Careful inspection of the BCM will need to be done (possibly blowing the BCM board with air to remove any dust, debris, or conductive material). If the BCM looks clean and undamaged (without burnt or cracked components) with all the wires secure and not touching each other, troubleshooting the program is needed.

Contact an ASA representative 1-877-845-8750 for questions regarding iN-Command software or hardware



Above is the Water tank sending unit. The sending unit runs on 7 VDC supplied by the BCM. The 7 VDC signal runs to a sensor embedded into the side of the water tank. The 1/3, 2/3, and Full sensors are then aligned in an ascending diagonal line from the 7 VDC sensor. The "To Tank Input" line runs to the BCM and terminates at Pins 1-7 depending on the tank. When water or waste starts to fill the tank, it contacts the 7 VDC sensor and the 1/3, 2/3, and Full sensors. The Voltage travels through the 1/3, 2/3, and Full sensor leads to a resistor bank, then out the red wire to the BCM. If the BCM is not receiving the correct voltage (seen on Page 4 BCM Pin Values/Tank Levels in the Notes section) on Pins 1-7, it will not reflect the correct tank level.

Should the incorrect voltage be coming from the tank, there could be debris on the sensor (for the Gray and Black tanks) , the line to the 1/3, 2/3, or Full sensors are not terminated correctly, the sensors are not installed at the desired angle, or the sensor is bad.