

PRECISION CIRCUITS INC

PRECISION₁PLEX™

USER'S MANUAL



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Getting Started

This manual explains the operation of the Precision-Plex Touchscreen and features available on Precision-Plex systems. This document contains Precision Circuits Inc proprietary information. It is intended for authorized users and may not be copied, distributed, disclosed, or reproduced in whole or in part, without the prior written permission of Precision Circuits Inc.

Available features may vary across all manufacturers and model years. This document covers information available across many different products. Some features listed in this document may not be available in your system.

Important Safety Information

The Precision-Plex system may interface with shore power, generator, inverter, solar charging, and 12 VDC battery systems. Multiple power sources may remain energized even when one source has been disconnected. Before servicing electrical equipment, disconnect and verify the absence of all power sources. Only Qualified Technicians familiar with AC and DC Electrical systems should perform installation, diagnostic, or repair services to those electrical systems. Failure to follow proper safety procedures may result in equipment damage, serious injury, or death.

Companion Tools

For installation, pairing, operation, and further instructions on these apps, refer to their user's guides available on our website.

Precision-Plex – Wireless

Provides Bluetooth control over supported Precision-Plex functions.

Precision Wi-Plex

Provides Bluetooth and Wi-Fi control over supported Precision-Plex functions. Only Available for Wi-Fi Enabled systems.

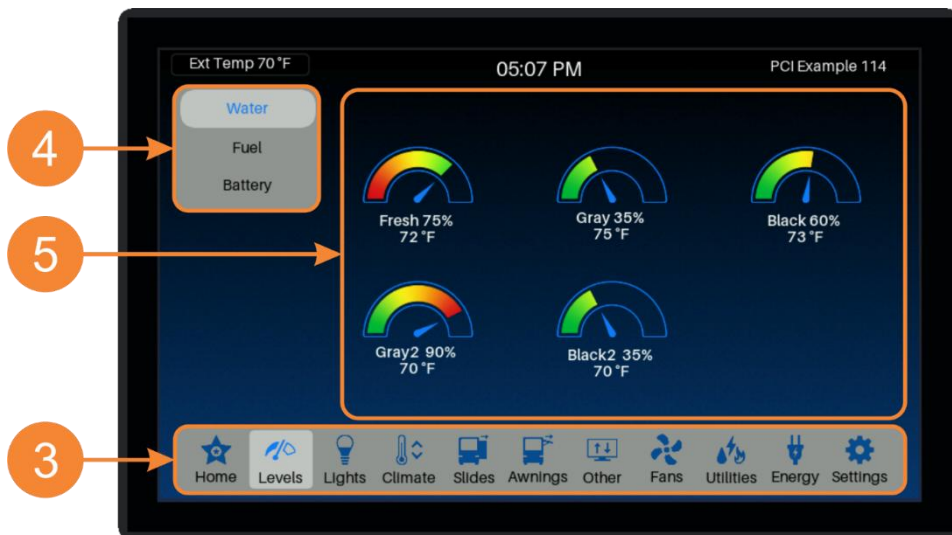
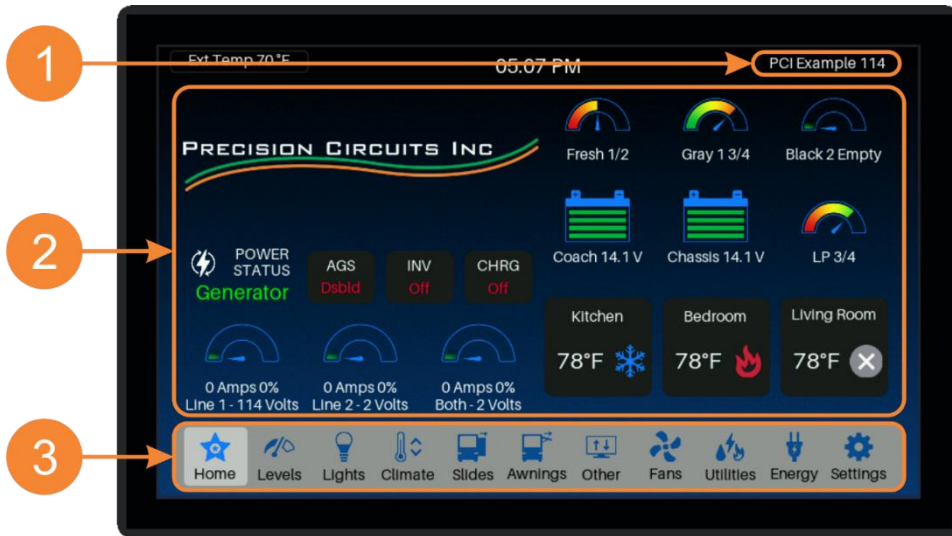
PCI Updater

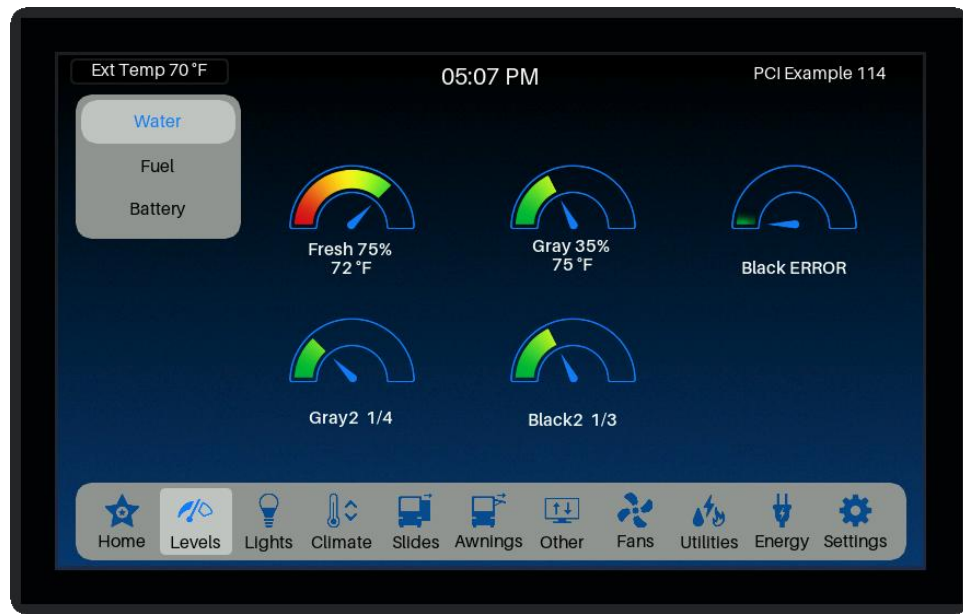
Updates supported devices with the latest software, bug fixes, and new features.



Navigating the Touchscreen

1. **RV Model Name** defines what features are available and what is displayed on the touchscreen.
2. **Home Screen View** provides a quick view of the primary statuses of the RV.
3. **Main Navigation Bar** is used to navigate to the different major screens.
4. **Content Menu** is used to change which information is displayed or which item is controlled.
5. **Content View** is where controls and status information will be displayed.

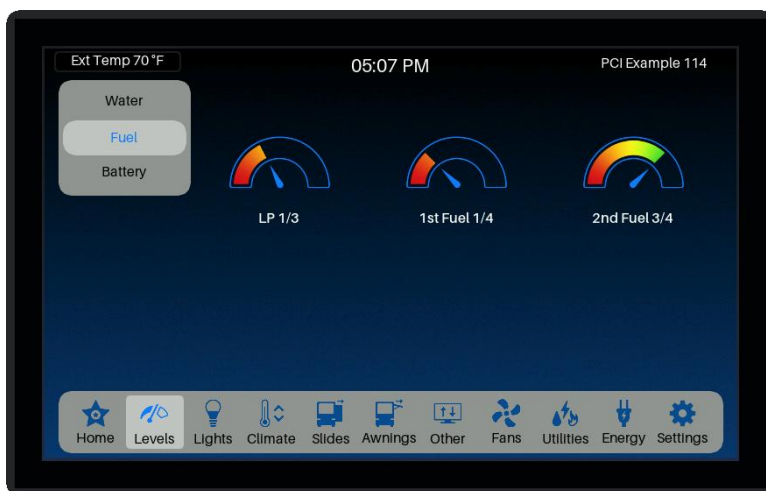


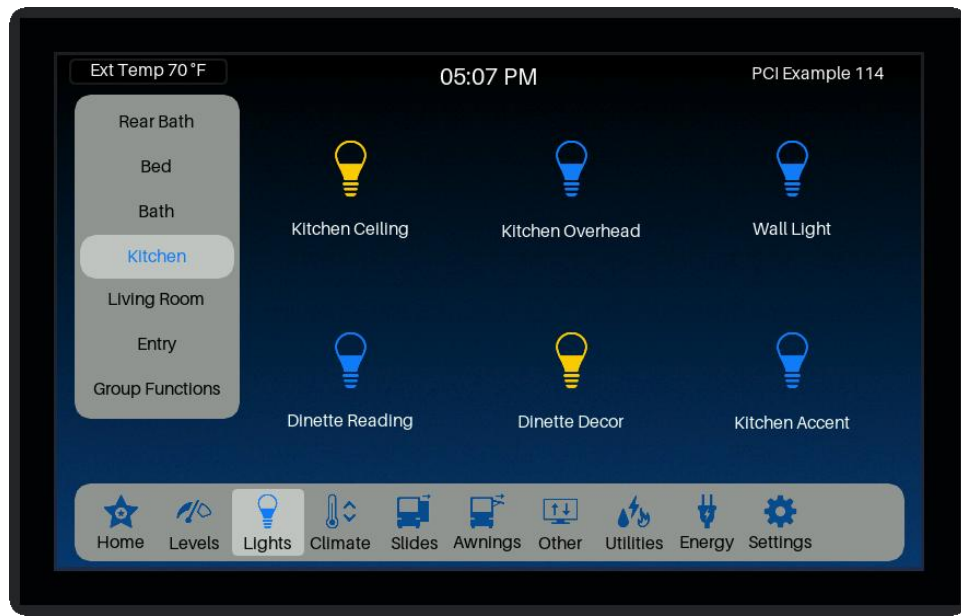


Levels

This screen displays water tank levels, fuel levels, and battery voltages. Tank readings can be in 1/4's, 1/3's, or percentages, depending on which sensor type is installed on the RV. If a tank reading is out of range or a pressure sensor is not communicating, you will see ERROR. If the touchscreen is not communicating with the Digi Level, a No Digi Level Comm error will be overlaid on the screen.

No Digi Module Comm





Lights

Use the Content Menu on the side to navigate to the different rooms. Light types may be toggleable, dimmable, or grouped into functions. Lights' statuses are indicated by Blue (Off) and yellow (ON).

Toggleable Lights only have two states, on and off. toggle the bulbs on or off by tapping the light icon.

Dimmable Lights have adjustable brightness with memory. With every hold and release the light will alternate from increasing and decreasing its brightness. Tap the icon to toggle the light on and off. When toggling the light back on, it will return to its stored brightness. Dim levels will reset back to full brightness after the Precision-Plex enters diagnostic mode or is power cycled.

Special Functions – Functions that group multiple lights together.

All Lights/Master lights – Each tap alternates between turning off interior lights and restoring power to the lights that were turned off. Pressing and holding the button will turn all interior lights on.

Exterior Lights – Each tap will toggle exterior lights on and off. Some systems have a four-part sequence to cycle through all the exterior lights.

Night Master Lights – Turns off all lights inside the RV except for bedroom and rear bathroom lights.



Climate – Fan Controls

Use the content menu to change rooms. Room Temp displays the ambient temperature of the room. When a heating or cooling mode is selected, the set temperature is displayed. Use the up and down arrows to adjust the set temp. To change the heating mode, cooling mode, or fan speed, tap their icons above the main Navigation bar.

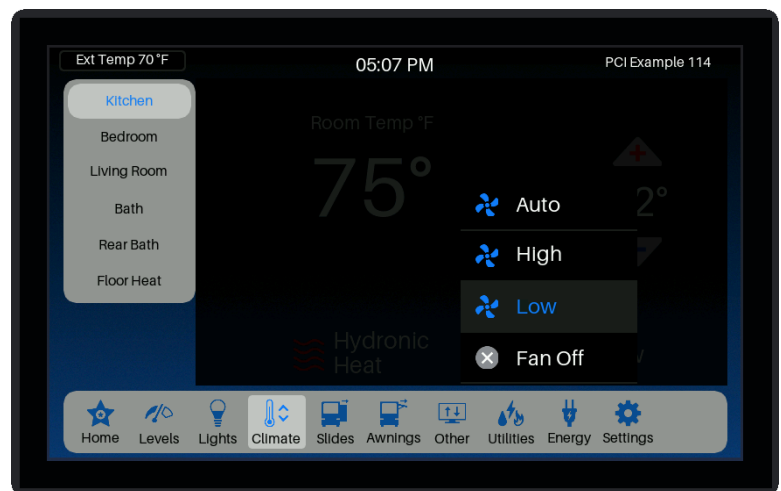
There are 4 different fan functions. Available Fan functions are defined by the RV manufacturer preference and associated mode requirements.

High – Runs the fan speed on high.

Low – Runs the fan speed on low.

Auto – Automatically switches between high and low based on the temperature difference. If it is within three degrees, the fan will run on low. After switching to fan low, it will not return to high unless the temperature difference is greater than 5 degrees.

Off – Turns the fan off.



Climate – Heating and Cooling Modes

Cool – Allows high, low, and auto fan speeds. Once an AC is turned off there is a compressor wait timer to prevent damage to the AC's from cycling too quickly.

Heat Pump – Most Manufacturers require the fan to run on high. Once a heat pump is turned off there is a compressor wait timer to prevent damage to the compressors from cycling too quickly. Some manufacturers disable the heat pump from being selected when the exterior temp is less than 45 degrees.

Furnace – Fan control from the AC's varies across manufacturers.

Hydronic Heat – Uses the RV's Boiler System to provide radiant heat. Some manufacturers allow rooftop AC fan control with hydronic heat.

Hydronic Heat Messages

- Hydronic Heat On: System Is Heating
- Enable Burner: Either the electric element or diesel burner needs to be activated.
- Requesting Heat: Boiler is prioritizing hot water production over radiant heat.
- Low Fluid: Boiler heating solution is low, and the system is shut down.

Auto-Heat – This function uses all available heat modes to heat the coach, prioritizing using the heat pump first. If the temperature difference is greater than 5 degrees or the heat pump has been unable to reach the set temp after 5 minutes, the furnace or hydronic heat modes will be enabled.

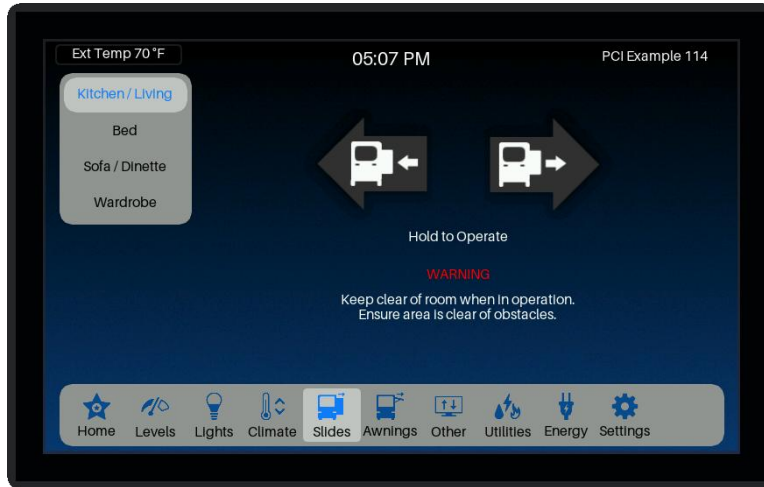
Floor Heat without Temp Sensing- This allows the user to control how long the floor heat is on for. A floor heating cycle is 20 minutes. The user adjusts how long the floor heat is on in 10% increments. If the user sets the floor heat to 40% the floor heat will turn on for 8 minutes, turn off for 12, and repeat this cycle until the user turns floor heat off.

Floor Heat with Temp Sensing – This version will continuously run the floor heat until it reaches its set value. The temperature values associated with each setting are:

0 – Off	4 – 82 °F	8 – 97 °F
1 – 72 °F	5 – 86 °F	9 – 100 °F
2 – 75 °F	6 – 90 °F	10 – 104 °F
3 – 79 °F	7 – 93 °F	

Slides

Slides can be controlled from this screen. Use the content menu's tabs to control which slide is being controlled. Press and hold extend or retract to move the slides. A safety delay is in place that requires the button to be held for one second before movement begins. If slide operation is inhibited, a warning message will display the conditions that must be met before the slide can move.



Awnings

Awnings can be controlled here. There are two types of awnings controlled by the Precision-Plex:

Direct-Controlled Manual Awnings – These connect the awning motors directly to the Precision-Plex's Motor Outputs. These awnings will only move while extend and retract are pressed and typically do not have programmed stops.

Controller Based Automatic Awnings – These use signal controls from the Precision-Plex to communicate with an awning controller. Features vary by controller. Most controller-based awnings support automatic extend and retract functions with programmed stops.

Note: For automatic awnings, releasing the button after movement begins may not stop the awning. The awning may continue until it reaches its programmed stop, the user presses Stop (if equipped), or another Extend/Retract command is issued.

When awning power is disabled, the awning controller will not respond to touchscreen commands.





Other

A wide range of manufacturer dependent accessories can be found here.

- **Entry Step Power** –Locks the Entry Step out to prevent it from retracting every time the door closes.
- **Entry Step Cover** – Extends and retracts the stairwell cover platform.
- **Keyless Entry** –Locks and unlocks the doors. The question mark status icon is used when Precision-Plex system has yet to see the status set to lock or unlock.
 - Keyless Entry - Key Fob** – Using the key fob, press the lock button twice to turn all interior lights off. Pressing the unlock button after will restore all lights to their previous states.
- **TV Lift** – Allows the user to raise and lower the TV Lift.
- **Countertop** - Allows the user to extend and retract the counter for more countertop space. The countertop extension should be retracted before bringing slides in.
- **Bunk Shade** – Allows the user to open and close the Bunk Cab Shade.
- **Bed Lift** – Allows the user to incline and decline the bed. Some configurations require the bed to be fully declined before allowing the bed slide to retract.
- **System Shutdown** – Starts the system shutdown routine. First the inverter will be turned off, then the Precision-Plex will send a signal to the Battery Disconnect to remove power from all equipment connected to the coach batteries. To restore power, use the battery disconnect switch near the entry door.



Utilities

Water Heaters, Tank Heaters, and other utilities are managed here.

- **Water Pump** – Enables and disables the water pump.
- **Tank Heaters** – Tank heat controls vary by manufacturer.
 - o **Voltage Based** – Prevents the tank heaters from turning on when the coach battery voltage is too low.
 - o **Temperature Based** – Prevents the tank heaters from turning on when the exterior temp is greater than 40 degrees.
 - o **Uninhibited Control** – Allows the user to turn the tank heaters on and off without voltage and temperature limitations.
- **L.P. Water Heater** – Enables and disables the propane fueled water heater.
- **Electric Water Heater** – Enables and disables the water heater's electric element.
- **Hydronic Heat / AquaHot / Oasis** – Individual electric and diesel burner controls. This screen also displays important status information about the Hydronic Heat.
- **Engine Pre-Heat** – Enables the hydronic auxiliary pump to flow coolant to the vehicles engine. This allows the boiler to pre-heat the engine or to use engine waste heat to heat the boiler.
- **Block Heater** – Enables and disables the engine block heater.



Fans

This screen allows the user to control up to three fans. Tap the fan icon to toggle the fan on and off. Press and hold the arrows to open and close the lids.



Energy

The Energy screen provides access to the RV's power-management functions, including the Power Control System, Inverter/Charger, Solar, and Automatic Generator Start. Available functions vary by RV configuration.

Power Control System

This screen provides all the status information for the Power Control System (PCS). The PCS watches how much AC power the RV is drawing and removes and restores power to different appliances to ensure the limitations of the power source are not overloaded.

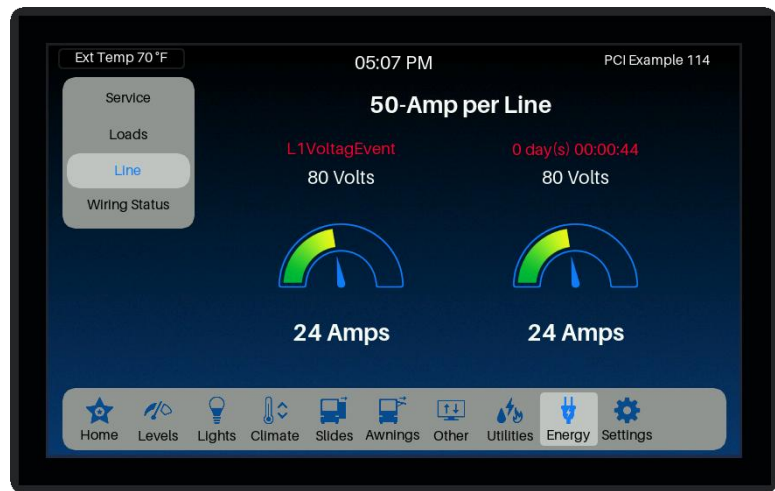
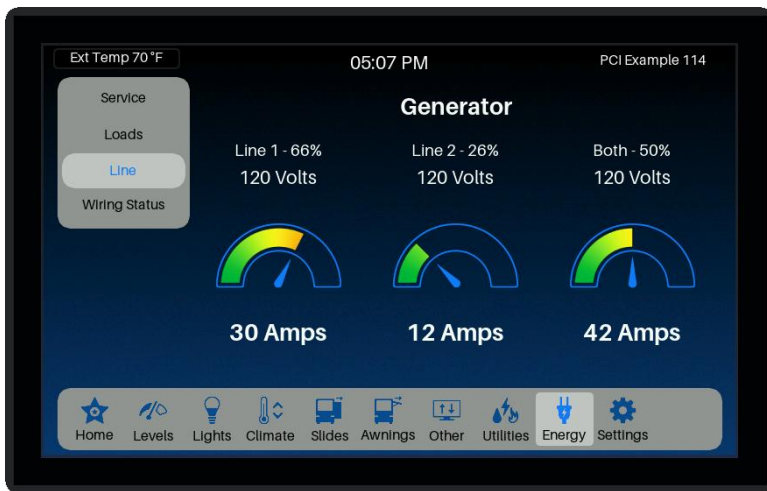
The Service tab Displays the current service type. The Power Control System can detect: 50-Amp service, Generator Service, 30-amp service, and No Service. It does not have the ability to detect less than 30-amp service. When connected to a power source rated below 30 amps, manually select either 15-amp or 20-amp service, as appropriate.

The Loads tab presents all the managed appliances, their learned amp draw, and power state. Appliances can be Powered or Shed. Shed means power has been removed from the device. Powered means that power is available for a given appliance. Learned amp draw is the difference in current consumption before and after the appliance was turned off. Appliances are listed from first to shed, to last.

The Line tab will show the amp draw and percentage of power being used.

Power Control Systems equipped with dual current sensors have more features available, such as voltage detection and monitoring, per line current monitoring, and wiring status monitoring.





Power Control System – Dual Current Sensors

On systems with Dual Current Sensors, the **Line** tab will display individual line: Voltage, total and percentage of current consumption, and voltage event information. A Voltage Event (Brownout) occurs when a voltage reading falls between 12VAC and 90VAC. If an Event occurs, the onscreen voltage reading will be replaced by “Voltage Event”. Press and hold this label to display how long ago the event occurred.

The **Wiring Status** tab works like a household outlet tester and displays if there are any errors with the wiring of the connected shore power.





Inverter – Magnum

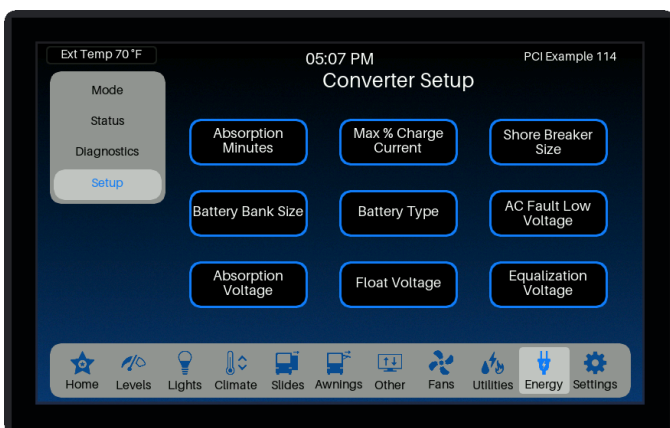
The Inverter page is dependent on which Inverter is configured for the system. Current configurations use either Magnum or Victron Inverters.

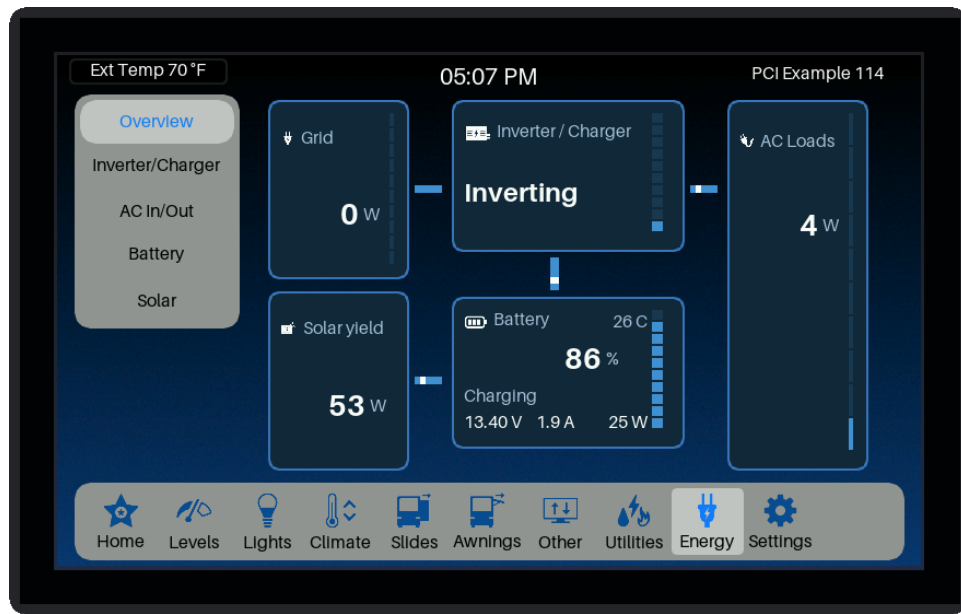
To unhide the Diagnostics and Setup tabs, press and hold the time on the top center of the screen.

The **Mode** tab allows the user to enable and disable the Inverter and Battery Charger.

The **Status** and **Diagnostics** tabs display useful configuration and system information.

The **Setup** tab allows for configuration of many inverter and battery settings. For more information about these settings refer to your Magnum Inverter's User Manual.





Inverter – Victron Energy

Configurations using Victron Inverters may also have solar and battery integrations. Configuration settings must be done on their own devices and cannot be done through RV-C.

Overview tab shows the most important information with extra information available on each specific tab.

Grid displays if pass through power is available and total wattage consumption from that source.

Inverter / Charger displays the status for the inverter.

AC Loads displays the wattage of power being produced by the inverter.

Battery displays the battery temperature, state of charge, voltage, amps, and watts.

Solar yield displays the charging watts going into the battery.

Inverter/Charger tab allows the user to enable and disable the inverter and battery charger.

AC In/Out allows the user to see the voltage, current, frequency, and wattage.

Battery Tab displays the voltage, current, power, state of charge, temperature, and time remaining.

Solar displays voltage, current, and power.

The Power Control System Integrates with the Victron Inverter to keep managed appliances powered for longer by limiting battery charger rate.



Solar – Go Power

Solar systems that are not integrated with the inverter will have a dedicated page on the energy pages.

Mode tab displays the status and controls for the solar charger.

Status Screen shows all possible data communicated by the solar chargers.



Automatic Generator Start

The Automatic Generator Start function is used to automatically start the generator when the batteries need to be charged or when the HVAC systems need 120VAC to operate. AGS can also be used with quiet time to prevent the generator from running during campground quiet hours.

The **Mode** Tab allows the user to manually start and stop the generator, disable AGS, enable AGS, and enable AGS with quiet time. The following six status messages may be displayed above the AGS controls:

- RVIA Lockout – Press Off to Clear
- Setup Enable Conditions
- Setup Evening and Morning Quiet Time
- Enabled on Battery Voltage
- Enabled on HVAC demand
- Enabled on both Battery and HVAC Demand

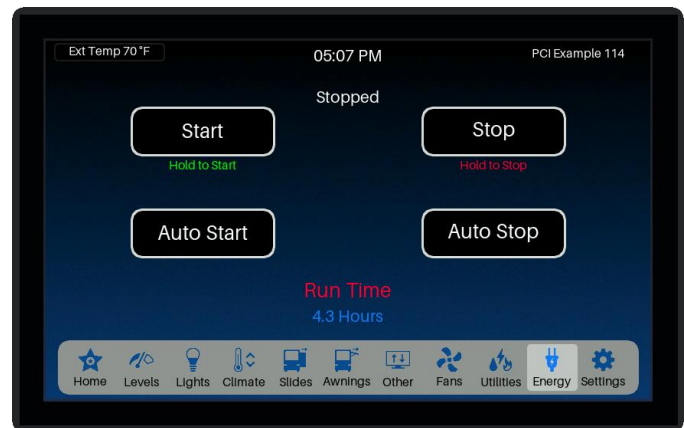
RVIA Lockout occurs whenever there is a change in state for either the Ignition or parking brake, or 30 days have passed without a change in either. This is to prevent the generator from starting after moving the vehicle into storage and cannot be disabled. When the RVIA Lockout occurs, it will set the AGS mode to Off.

If the AGS Detects the generator was turned on or off from any other source, AGS will be disabled and will leave the generator in the state it was put.

The Manual Operation Page allows the user to view run time hours and manually control the generator.

- Start/Stop – Provides Signal to the generator for as long as the user holds the button.
- AutoStart/AutoStop – A Single tap will run through a Prime-Start-Check-Wait Sequence four times before returning the status Won't Start or Won't Stop.

The **Status** page provides useful information regarding AGS systems.



AGS – Setup

Enable On HVAC Demand – Toggleable setting to cause AGS to start if thermostat needs 120VAC to run ACs.

Enable on Battery Voltage – Toggleable setting to cause AGS to start if Battery Voltage falls below configured.

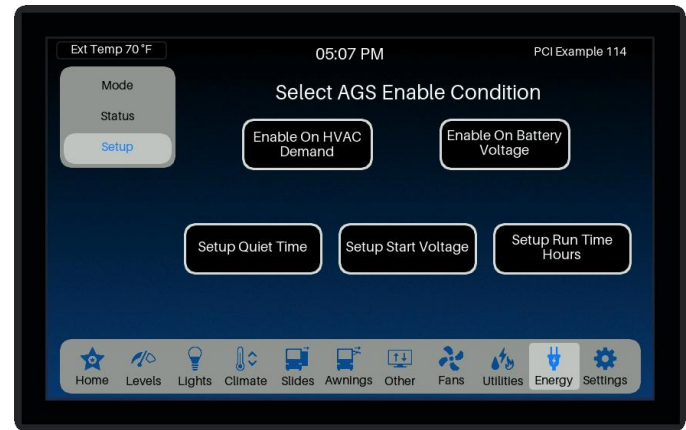
Setup Quiet Time – The Evening Start and Morning Stop times for the time window that the generator is not allowed to run within.

AGS Startup Voltage – If the house batteries fall below this value, AGS will start the generator.

QT Pre-Charge Timer – Sets how long before Quiet Time begins that AGS checks whether the batteries may need additional charging. During this check, Start Voltage is increased by 0.4 VDC to help ensure the batteries last through quiet time.

Run Time – This is the minimum amount of time the generator will run before checking if the startup conditions are still present.

Max Run Time – This is the maximum amount of time the generator will run before AGS will turn off. If the generator is turned off because of max run time the user will have to manually enable AGS again.



Settings

Time – Allows the user to set the time and 12- or 24-hour format.

Display

- **Sleep Timeout** – The amount of time required before the touchscreen enters sleep mode.
- **Sleep Brightness** – The Screen's brightness while in sleep mode.

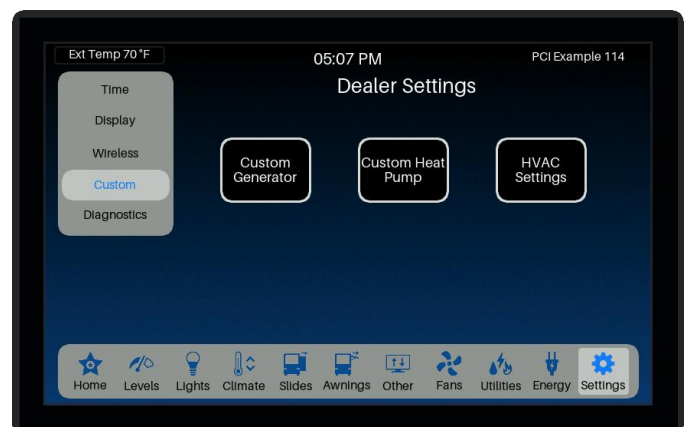
Wireless

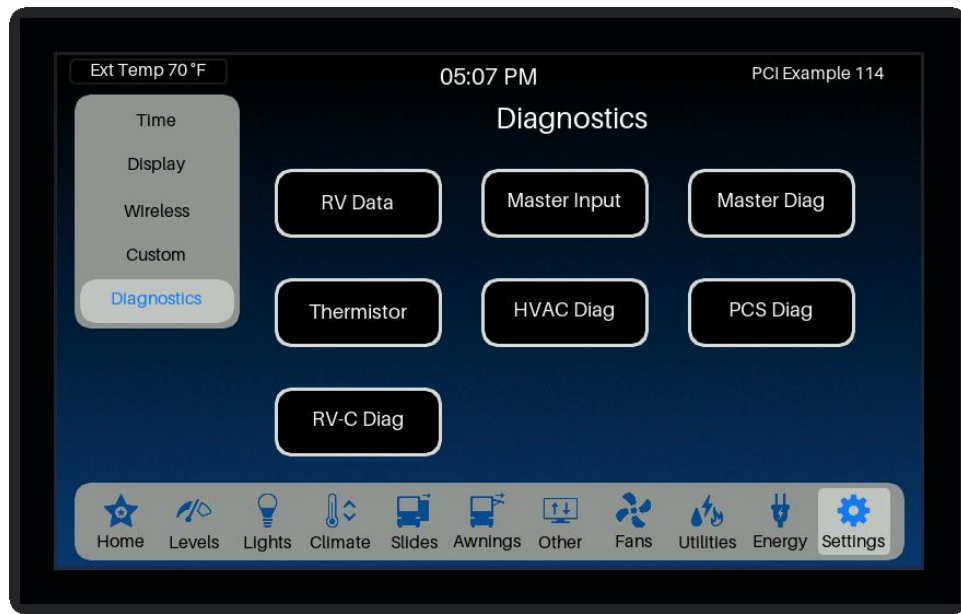
- **Pair With Mobile** – This button puts the Bluetooth Module in Pairing Mode.
- **Forget All** – Clears all previously paired devices from the Bluetooth module.
- **Reset BLE** – Restarts the Bluetooth module.

Custom – Dealer Settings to adjust configuration details.

These settings should only be altered, when necessary, due to alterations to RV Components.

- **Custom Generator** – In the Event of an aftermarket generator installation allows the user to change the amp limits utilized by the PCS to match the new generator.
- **Custom Heat Pump** – Allows enabling heat pump mode selection on climate zones in the event of the installation of a heat pump equipped AC unit.
- **HVAC Settings** – Allows users to toggle AC fan behavior from Dometic to Coleman
- **AquaHot** – Allows users to change from analog controls to RV-C controls. For D02 to D03 upgrades only. When not set correctly AquaHot Controls will not work.
- **Lithium Package** – Toggles between Standard and Lithium Package configuration for Magnum Inverters.





Settings – Diagnostics

Diagnostic Menus are intended for qualified technicians. The remaining pages of this document cover diagnostic screens and functions. Improper use of Diagnostic Functions can cause damage to RV components. If you need support, please call us at (630)-515-9100.

RV Data – This Screen shows important software and configuration info and is made up of three sections: Touch, Power Control System, and (Master) Diagnostic Center.

Ref ID – This is the Reference ID to match your models shed order and other RV Data to our documentation.

CRC16 – This is the checksum of the RV Data being sent to the PCS.

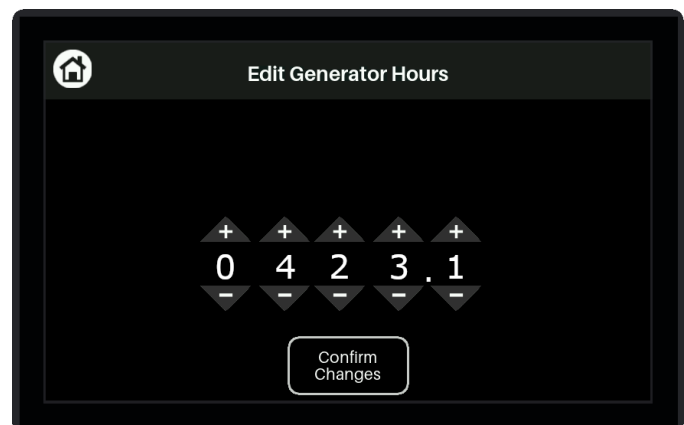
MFG – This is the model's manufacturer.

Date – This is the Date the model was created on.

SW. Version – This is the software version of the device.

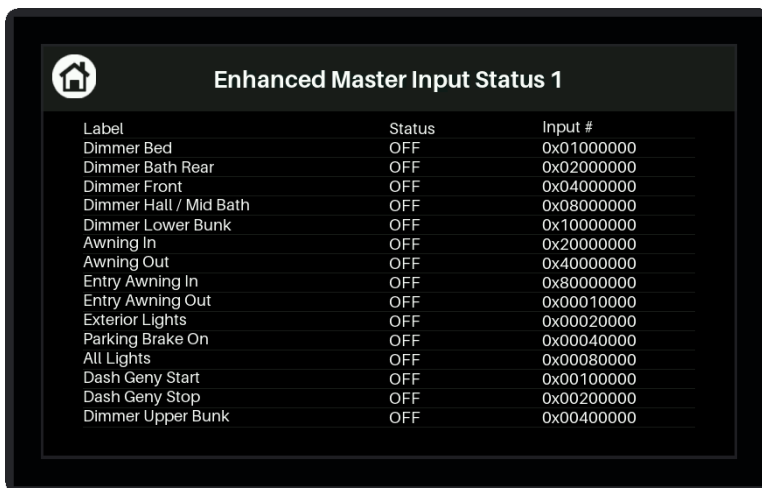
Wireless – This is the software version for the Bluetooth module. “Wi-Fi” indicates the board is equipped for App control of the system over Wi-Fi.

Edit Generator Hours – Press and hold “RV Data” until the screen changes to access the menu to adjust the generators displayed run time:



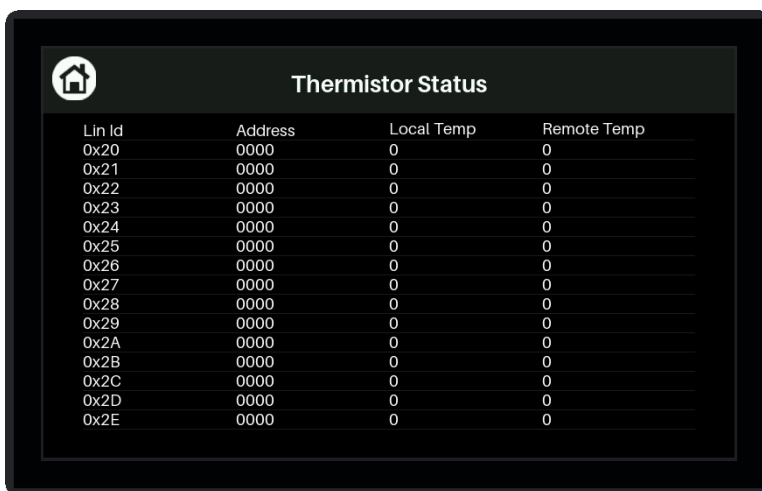
Settings – Master Input

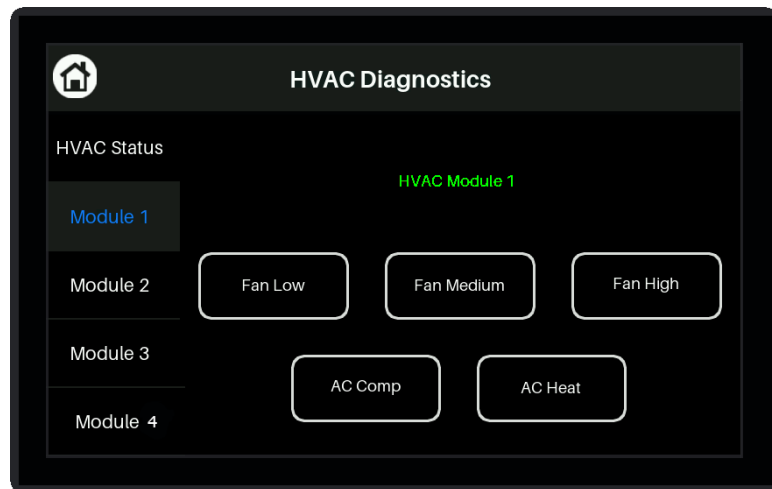
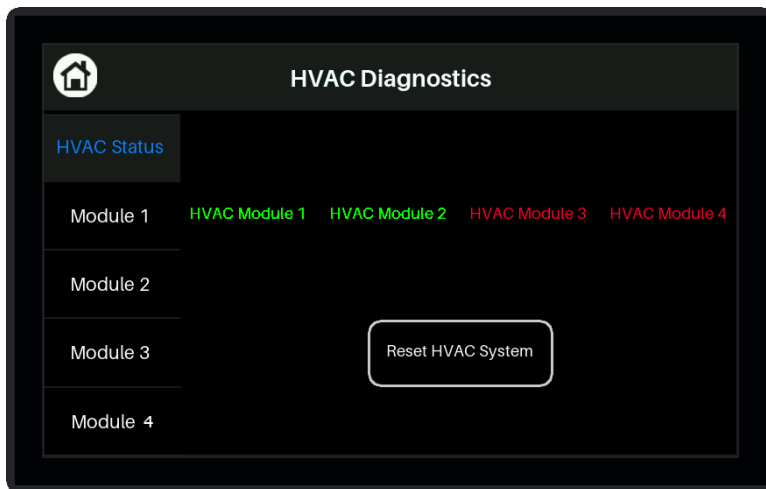
The Master Input diagnostic screens are for models without Bluetooth diagnostic access. This allows the user to view the status of the different rocker switches and other inputs inside the coach connected to the Precision-Plex Diagnostic Center. Tap the top center of the screen to access the different sets of inputs.

A screenshot of a tablet screen displaying the 'Enhanced Master Input Status 1' diagnostic screen. The screen has a dark background with a home icon in the top left corner. The title 'Enhanced Master Input Status 1' is centered at the top. Below the title is a table with three columns: Label, Status, and Input #. The table lists 15 different inputs, all of which are currently 'OFF'.

Settings – Thermistor Diagnostics

This Page allows the user to view all the temperature sensor connections for the system. The Address column is the device the temperature sensors are connected to. Local Temp is the primary connection; Remote Temp is the secondary connection. Utilizing this menu, we can see if a temperature connection is in the wrong spot, not connected to the device at all, or if the device isn't communicating with the system.

A screenshot of a tablet screen displaying the 'Thermistor Status' diagnostic screen. The screen has a dark background with a home icon in the top left corner. The title 'Thermistor Status' is centered at the top. Below the title is a table with four columns: Lin Id, Address, Local Temp, and Remote Temp. The table lists 16 different temperature sensor connections, all of which show a '0' in both the Local Temp and Remote Temp columns.



Settings – HVAC Diagnostics

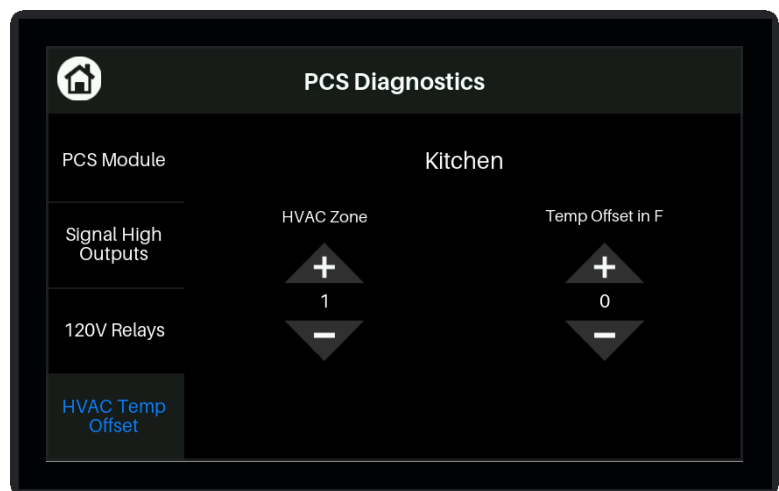
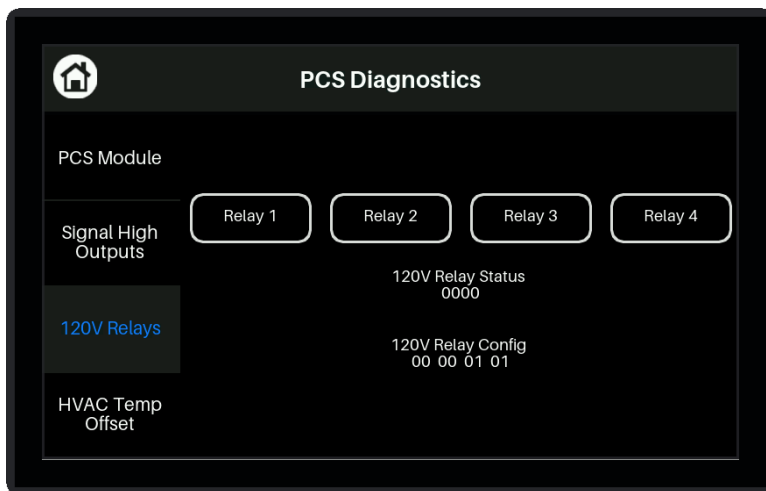
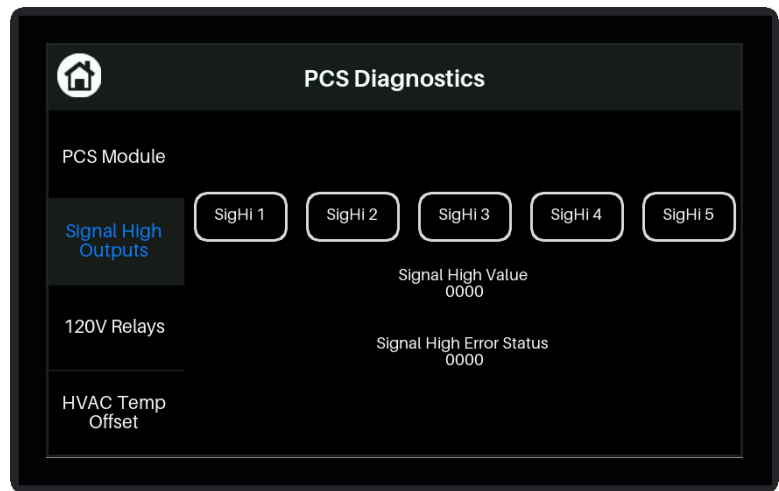
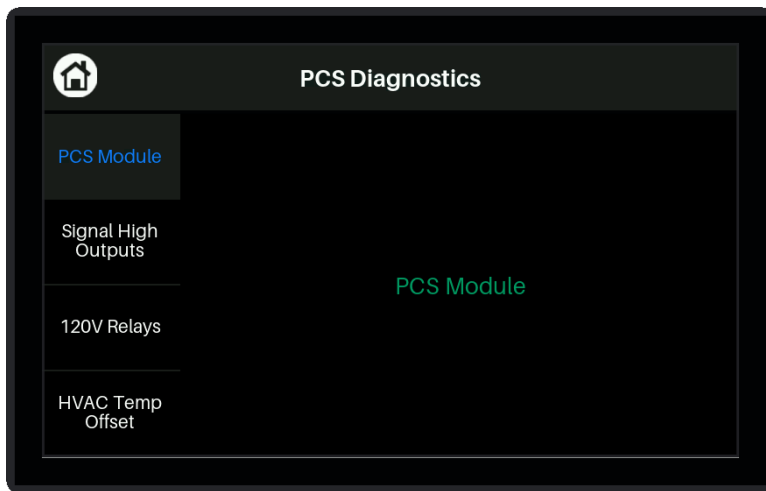
This screen allows for diagnostic control of HVAC functions.

WARNING - Air Conditioners' heat pumps and compressors should not be running without the fans, doing so could result in damage to your RV's AC Units.

HVAC Status – Each HVAC Module's Status will be displayed in green – communicating or red – not communicating.

HVAC Reset – Used only to readdress HVAC Modules. Module addresses are determined by their position in the chain. Do not use HVAC Reset when an HVAC Module is not communicating.

Module 1-4 – This tab is used to manually control the HVAC Outputs for a given module. If the outline for an output is white, the output is off. If the output is blue, the output is on.



Settings – PCS Diagnostics

PCS Module – This Tab displays the communication status of the Power Control System Module.

Signal High Outputs – This tab displays the status of the signal high outputs and allows the user to turn them on and off.

120V Relays – This tab displays the status of the 120 VAC Relays. If the loaded RV Data supports it, allows the user to toggle the Relays on and off.

HVAC Temp Offset – This tab allows you to adjust the room temperature for each climate zone if a temperature sensor reading is off.

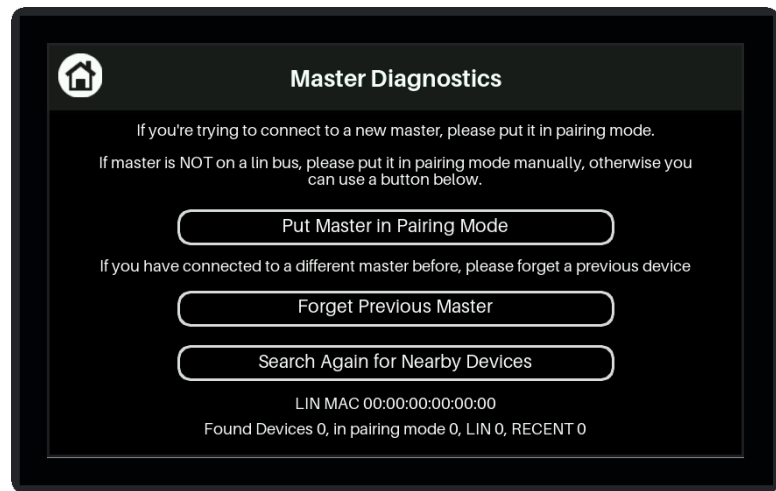
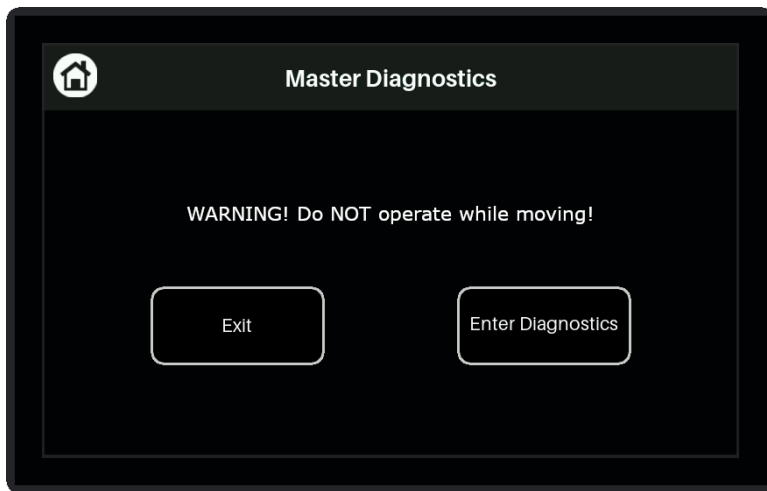


Settings – RV-C Diagnostics

These screens report all the devices on the RV-C communication bus.

Devices – displays an overview of all the devices on the RV-C communication bus including their, source address, age of last data frame sent, total number of data frames, identity, and product name.

Detail – provides a more detailed view of the selected product.



Settings – Master Diagnostics

These menus allow you to control and check statuses of all the inputs, outputs, sensors and modules connected to the Precision-Plex Diagnostic Center. These menus can be accessed through the main touchscreen or the Precision Wi-Plex App. Refer to the Precision Wi-Plex App User Guide for installation and operation. After Tapping “Enter Diagnostics” the touchscreen will automatically put the master in pairing mode and then pair with it. While attempting to Pair the touchscreen will give you additional Bluetooth commands and pairing information.

Put Master in Pairing Mode – This button will put the master in pairing mode.

Forget Previous Master – This button will forget all previously learned devices for both the touchscreen and the diagnostic center. This includes all previously paired phones and tablets.

Search Again for Nearby Devices – This button will have the touchscreen search for the diagnostic center again. Use this button after pressing the “**Put Master in Pairing Mode**” Button.

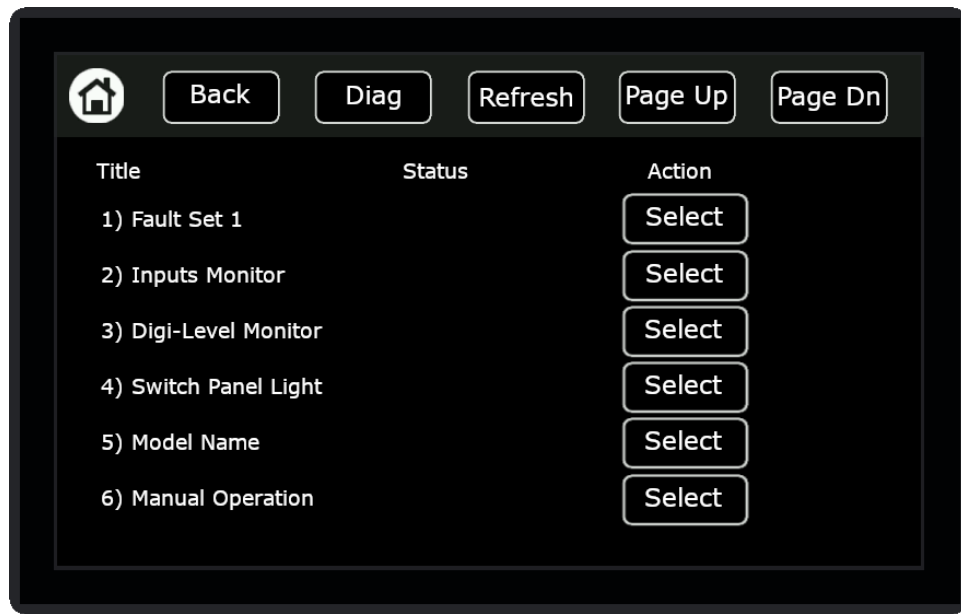
LIN MAC – This is the MAC Address of the Diagnostic Center. If this is all zeros, the LIN Communication Bus is down. The Bluetooth Pairing button on the diagnostic center will need to be used instead of the touchscreen buttons.

Found Devices- This is the number of nearby Precision Circuits Devices.

In Pairing Mode – This is the number of nearby Precision Circuits Devices in Pairing Mode

LIN – This is the number of Diagnostic Centers Available over the LIN communication bus.

Recent – This is the number of recently paired diagnostic centers.



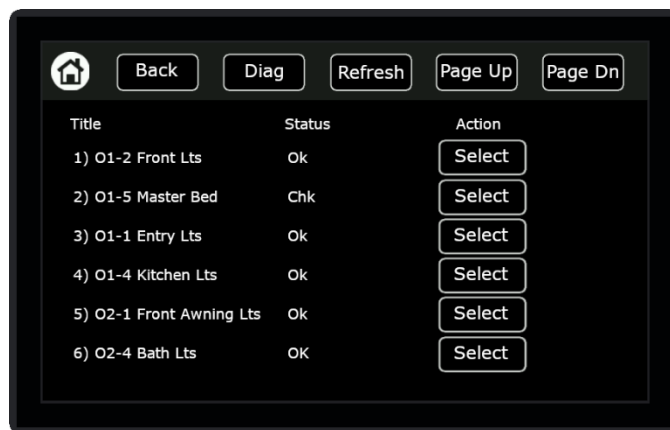
Diagnostics – Normal Operation

The Normal Operation Menus allow viewing of faults, inputs, and extra diagnostic information.

- **Fault Set** – These menus show all possible outputs, their statuses, and allow you to reset their faults.
- **Inputs Monitor** – The statuses for all connected inputs. Inputs can be rocker light switches, awning controls, parking brake, ignition, brake lights, or other signals.
- **Digi – Level Monitor** – Information about tanks, batteries, and temperature sensors connected to the Diagnostic Center.
- **Switch Panel Light** – Allows control over the brightness of switch panels.
- **Model Name** – Shows the selected model name, board configuration, and software details.
- **Manual Operation** – Provides uninhibited control over slides and awnings.

Fault Set

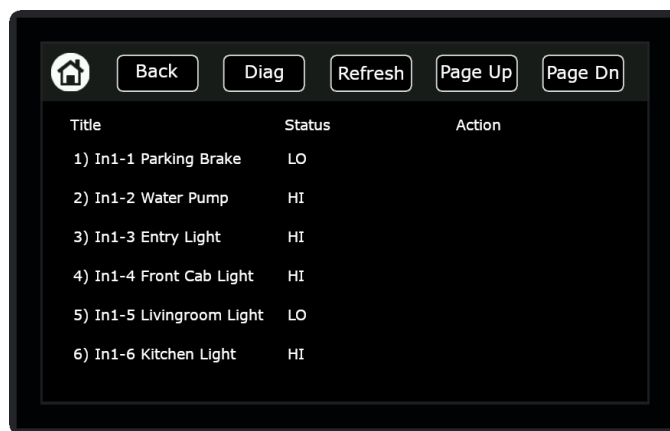
These menus list all Outs' and Motors' pinouts and output statuses. Included in the title section is each item's pinout information. In the example, Item 2, Master Bedroom Lights, shows a fault. To diagnose the output, the technician should check connector O1, socket 5 for a short to ground. If the ground short is no longer present, use the select button to clear the fault.



Title	Status	Action
1) O1-2 Front Lts	Ok	Select
2) O1-5 Master Bed	Chk	Select
3) O1-1 Entry Lts	Ok	Select
4) O1-4 Kitchen Lts	Ok	Select
5) O2-1 Front Awning Lts	Ok	Select
6) O2-4 Bath Lts	OK	Select

Input Monitor

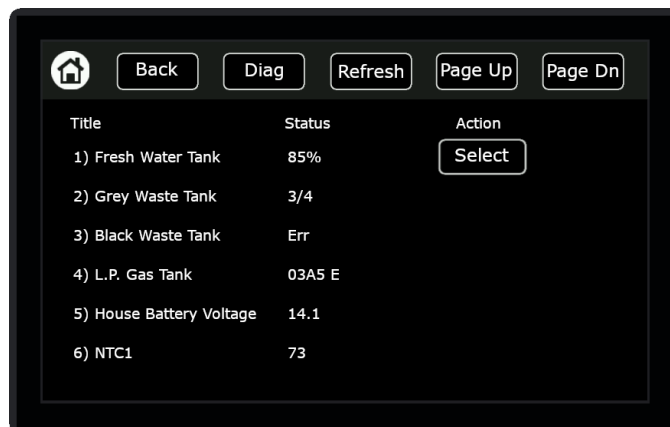
These menus display input status for all connected inputs. Inputs can be rocker switches, parking brakes, ignition, brake lights, or other signals. Signals are either 12VDC (Hi) or Ground Signals (Lo). They can be momentary or togglable. When a Hi Side input is ON the status will go from Lo to Hi. When a Lo Side input is on, the status will go from Hi to Lo. The easiest way to determine if an input is a Hi side or a Lo side input is to remove the connector from the board to see each input in their default state.



Title	Status	Action
1) In1-1 Parking Brake	LO	
2) In1-2 Water Pump	HI	
3) In1-3 Entry Light	HI	
4) In1-4 Front Cab Light	HI	
5) In1-5 Livingroom Light	LO	
6) In1-6 Kitchen Light	HI	

Digi-Level Monitor

All Available Tanks, Batteries, and Temperature Sensors connected to the diagnostic center can be found here. All possible statuses are shown in the example. Using the select button will include diagnostic data for Precision Circuits to identify tank issues. If the status reads Err, the tank sensor is either not communicating or reading outside of normal ranges. NTC is temperature value reported from the temperature sensor.



Title	Status	Action
1) Fresh Water Tank	85%	Select
2) Grey Waste Tank	3/4	
3) Black Waste Tank	Err	
4) L.P. Gas Tank	03A5 E	
5) House Battery Voltage	14.1	
6) NTC1	73	

Switch Panel Light

This menu allows you to adjust the brightness of the connected switch panels' lights. Systems using our push button panels can adjust the backlight and indicator light brightness separately. Systems using our capacitive touch panels can only adjust the total brightness. Use the Left and Right Select buttons to decrease and increase the brightness. The Set Value will be shown in the Status Column.



Model Name

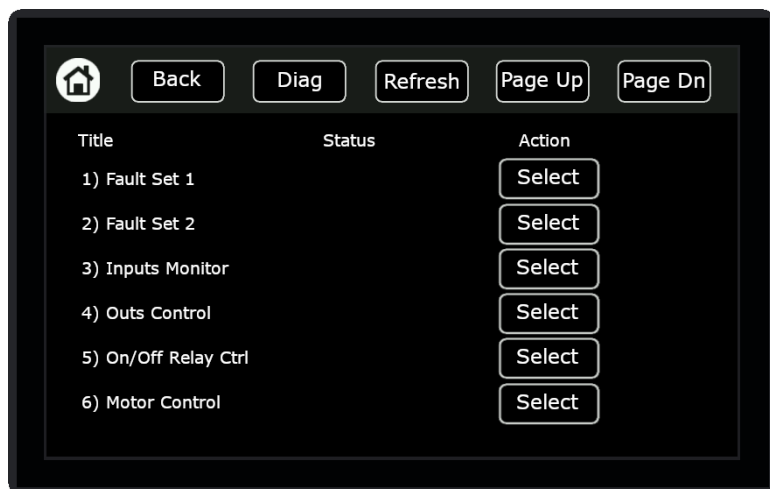
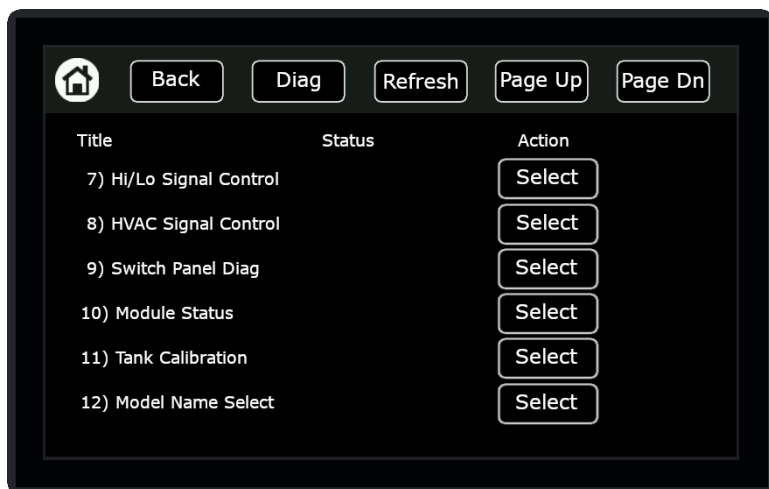
This Menu shows the Configured Model, Software Family, Software Revision, and Hardware Revision.



Manual Operation

This menu allows for uninhibited control of slides and awnings. This allows the user to bypass parking brakes and ignition requirements if a connection was lost to the diagnostic center and slide control is needed. Do not operate slides and awnings while the vehicle is moving. Press and hold the select button to operate the item. The status will display ON if the output is on and CHK if the output has a failure turning on. Master Lights will turn all the interior Lights of the RV on.





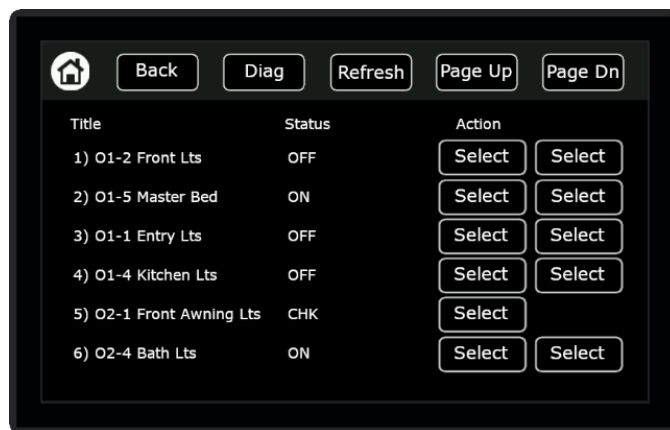
Master Diagnostics – Diag Menus

Use the Diag button on the header to enter diagnostics. The outline will be blue when diagnostics is active. All the outputs will turn off when you enter Diag mode. Fault Set and Inputs Monitor behave identically to their Normal Operation Menus.

- Fault Set 1** – These menus show all possible outs, their statuses, and allow you to reset their faults.
- Fault Set 2** – These menus show all possible motor outputs, their statuses, and allow you to reset their faults.
- Inputs Monitor** – The Statuses for all connected inputs. Inputs can be rocker Light Switches, awning controls, parking brake, ignition, brake lights, or other signals.
- Outs Control** – This menu provides the status and control of all “Outs.” Outs are typically used to control Lights, Fans, other moderately fused items.
- On/Off Relay Control** – This menu provides the status and control of all relay-controlled outputs. These are typically high current, 20 to 30 Amp devices, like Water Heaters, Tank Heaters, or the Water Pump.
- Motor Control** – This Menu provides the status and control over direct Motor Controlled devices. Typically, these are Hydraulic Slides, Electric Slides, and Awnings.
- Hi/Lo Signal Control** – This menu provides the status and control of all signal-controlled outputs. These are low current 12VDC or ground signal driven devices. Typically, these are signals to controllers that manage slides, awnings, and bed lifts.
- HVAC Signal Controls** – This menu provides control over thermostat signals for systems using climate controls without an energy management system.
- Switch Panel Diagnostics** - This menu lists all the connected switch panels, their communication status, their connected temperature sensor reading, and indicates which buttons are being pressed.
- Module Status** – This menu provides the communication status of all devices on the internal communication bus.
- Tank Calibration** – This menu provides additional calibration for tank sensors.
- Model Name Select** – This menu allows you to change the configured Model.

Outs Control

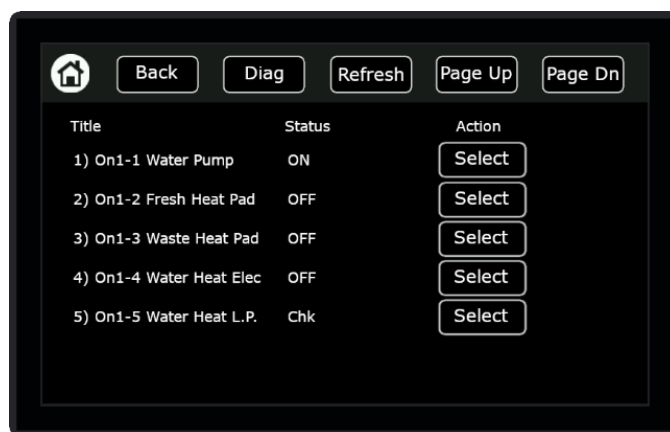
This Menu provides connector pinout, status, and control, of the systems Outs. The status can be On, Off, or CHK. The first select button will turn the output on and off. The second select button will alternate between increasing and decreasing the brightness. If the Out is configured to be toggleable only, only the first select button will be present.



Title	Status	Action
1) O1-2 Front Lts	OFF	Select Select
2) O1-5 Master Bed	ON	Select Select
3) O1-1 Entry Lts	OFF	Select Select
4) O1-4 Kitchen Lts	OFF	Select Select
5) O2-1 Front Awning Lts	CHK	Select
6) O2-4 Bath Lts	ON	Select Select

On/Off Relay Control

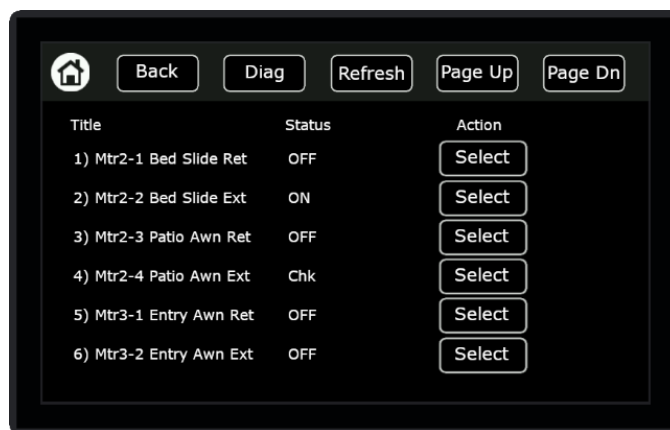
This menu provides connector, pinout, status, and control over all high current, relay-controlled outputs. Statuses can be ON, OFF, or CHK. Use the select button to toggle the output on and off.



Title	Status	Action
1) On1-1 Water Pump	ON	Select
2) On1-2 Fresh Heat Pad	OFF	Select
3) On1-3 Waste Heat Pad	OFF	Select
4) On1-4 Water Heat Elec	OFF	Select
5) On1-5 Water Heat L.P.	Chk	Select

Motor Control

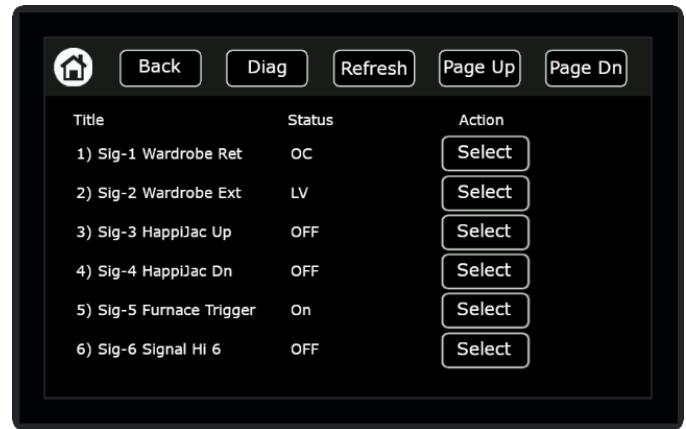
This Menu Provides Connector, Pinout, Status, and Control, of Hydraulic Slides, Electric Slides, Awnings, and other direct motor-controlled devices. Motors are H-Bridge type outputs. To diagnose motor outputs, you need to check both the extend and retract pins are providing 12VDC and ground signals. Statuses can be ON, OFF, or CHK. Motors in the Off Position will be connected to Ground. To use Manual control rocker switches the harness must be disconnected from the Precision-Plex diagnostic center.



Title	Status	Action
1) Mtr2-1 Bed Slide Ret	OFF	Select
2) Mtr2-2 Bed Slide Ext	ON	Select
3) Mtr2-3 Patio Awn Ret	OFF	Select
4) Mtr2-4 Patio Awn Ext	Chk	Select
5) Mtr3-1 Entry Awn Ret	OFF	Select
6) Mtr3-2 Entry Awn Ext	OFF	Select

Hi/Lo Signal Control

This menu provides the status and control of all Signal Controlled outputs. These are low current 12VDC or Ground Signal Driven devices. Typically, these are signals to controllers that manage slides, awnings, and bed lifts. The Status Can be, ON, OFF, Overcurrent (OC), or Low Voltage (LV). If a signal draws more than 900mA an overcurrent will occur. If the house battery of the RV falls below 9VDC any signals on will be faulted to the LV State.



Title	Status	Action
1) Sig-1 Wardrobe Ret	OC	Select
2) Sig-2 Wardrobe Ext	LV	Select
3) Sig-3 HappiJac Up	OFF	Select
4) Sig-4 HappiJac Dn	OFF	Select
5) Sig-5 Furnace Trigger	On	Select
6) Sig-6 Signal HI 6	OFF	Select

HVAC Signal Controls

This menu provides control over thermostat signals for systems using climate controls without an energy management system.

WARNING - Running the AC unit's compressor or heat pump without running the fan on high or low can result in damage to the AC Unit.

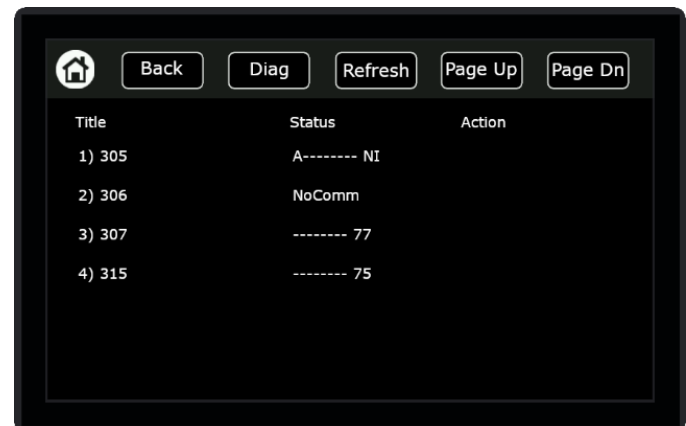
HVAC controls are low current 12VDC or ground signal driven devices. The status can be, ON, OFF, Overcurrent (OC), or Low Voltage (LV). If a signal draws more than 900mA an overcurrent will occur. If the house battery of the RV falls below 9VDC any signals on will be faulted to the LV State.



Title	Status	Action
1) HVAC1 Bedroom Fan HI	OFF	Select
2) HVAC1 Bedroom Fan Lo	OFF	Select
3) HVAC1 Bedroom Fan Off	ON	Select
4) HVAC1 Bedroom Comp	OFF	Select
5) HVAC1 Bedroom Heat	OFF	Select

Switch Panel Diagnostics

This menu lists all the expected switch panels, their communication status, their connected temperature sensor reading, and indicates which buttons are being pressed. Dashed lines represent communication. There are eight dashed lines for each possible button on a switch panel. Letters A-H are used to signify which button is being pressed. Buttons are identified from Left to Right Top to Bottom.



Title	Status	Action
1) 305	A----- NI	
2) 306	NoComm	
3) 307	----- 77	
4) 315	----- 75	

Module Status

This menu provides the communication status of all expected devices on the internal communication bus. The first Select button will send a reset command to the device. The 2nd select button is only used for the wireless TP and will put the Bluetooth module in pairing mode.

Touch Panel 1 – Main Touchscreen in the RV

Touch Panel 2-6 – Auxiliary touchscreens in the RV

Wireless TP – The Bluetooth Module.

Level Monitor – The Digi-Level that provides all tank readings.

TP1 HVAC Info – NoComm Indicates Touchscreen does not support Bluetooth HVAC control.

WTP HVAC Info – Steady NoComm Status indicates Bluetooth Module does not support Bluetooth HVAC control.

Title	Status	Action
1) Touch Panel 1	Pass	Select
2) Touch Panel 2	NoComm	Select
3) Wireless TP	Pass	Select Select
4) Level Monitor	Pass	
5) TP1 HVAC Info	Pass	
6) WTP HVAC Info	Pass	

Tank Calibration

This menu lets the user set an updated zero reference point for empty. If a tank's sensor reading is too close or too far from the ambient sensor, calibration will not be available. Use the Select button to Set or Clear an updated empty Reference Point. Only Set an updated reference point when the tanks are empty.

Title	Status	Action
1) ONLY SET EMPTY TANKS!		
2) Fresh Water Tank	Unavailable	Select
3) Gray Waste Tank	0A	Select
4) Black Waste Tank	04	Select

Model Name Select

This menu allows you to change the configured Model. Use the Select button to Select a model. The “←Manufacturer” Model is used to unselect the model and access the manufacturer selection menu. If the selected model displays CHK instead of Sel, The Diagnostic Center has an internal failure with the onboard memory.

Title	Status	Action
1) PCI Example Model A	Sel	Select
2) PCI Example Model B	Chk	Select
3) Factory Test Model		Select
4) <-- Manufacturer		Select

Contact Us

Precision-Plex systems are configured specifically for different RV manufacturers and their models. Features, wiring, system behavior, and components will vary. For the fastest and most accurate assistance when calling, emailing, or leaving a voicemail, please have the following information:

RV Manufacturer, Floorplan, and Model Year (RV Data Screen)

A brief description of the issue

Photos of the affected screen, if applicable

This will allow our technicians to familiarize themselves with the components utilized in your system to better assist and diagnose problems.

We advise against changing system settings or performing reset commands based solely on advice from internet searches, AI tools, or other unofficial sources.

We encourage all users and technicians with questions about system functionality or need of technical support to reach out by:

Phone: 630-515-9100

Email: Tech@PrecisionCircuitsInc.com

Website: www.PrecisionCircuitsInc.com