

VP-200 Release Notes

As of version 20.6

Experimental Software Notice

With experimental software you should always do your own flight testing in VFR conditions until you are satisfied with the software's stability and functionality. Be sure to read and understand the full software installation AND test procedure described in the Installation Manual.

If you are updating over multiple versions, make sure to read the change notices for all versions between your current version and the version you're loading.

Refer to the VP-200 Installation and Operating Manuals for details on new features.

General Notices

Once you have installed a new version, we do not recommend going back to an older version.

When you export your settings, those settings only work with that specific version of software. So be sure to export your settings after upgrading.

Version 20 new features

- Variable speed pitch trim (triggered by aircraft speed).
- Landing light wig-wag (triggered by aircraft speed)
- Co-pilot trim inputs on DU
- The co-pilot disconnect feature can now activate a power pin (used in conjunction with a relay to disconnect all functions on the co-pilot stick).
- External starter switch
- External switches can turn devices on and off. Switch panel configuration and the external switch inputs are now configured on the device setup page.
- Current fault alarms (open circuit detection)
- EGT peak detection
- Auto-boost feature can turn on the boost pump automatically when the fuel pressure drops in the low red zone.
- Annunciators can be triggered either by "grounded" or "un-grounded" signal. The user can now select the active level on the Annunciator Setup page.
- Built-in demo of the system features Options/Sys Info/Demo
- New serial data protocols: NMEA 183 (9600 baud) and Garmin Aviation II (for G900)
- New Climate Control capabilities for both AC and Heater functionality. See the CCS Operating and Installation Manual for more information.
- Serial Setup Page now has a Packet Count. The count will increment if the system recognizes the protocol correctly.
- Automatically closes the cross-tie during start (for config 4 systems)
- Display of aux battery voltage and symbology on display
- Engine data logging
- The pre-flight screen showing range and endurance calculations can now be set for your specific values for fuel flow and groundspeed.
- TIT, hyd pressure and carb temp display is now supported.

Follow these steps to upgrade to V20

You must be on v17.2 or later software prior to performing this upgrade.

20-.6j fixed a bug in parsing Dynon EMS data. If you have 20.6i installed you do not need to install j unless you are using a Dynon EMS connected to the VP-200 for engine data. The upgrade from 20.6i to j is a simple software upgrade and you only need to perform steps 2 & 3 below.

This upgrade requires re-configuration of engine and serial data settings, and configuring many new features. We recommend performing the upgrade when you have time to do this, and also are able to contact us for any questions that come up if needed.

Press SAVE where it says to do so regardless if you made changes or not.

1. Write down your current settings for the serial ports (what data format is set for each serial port). If you have the Dynon EFIS input turned on, turn it off now. Export your settings and transfer the file to your PC in a folder labeled v17 Settings (or whatever the version is).
2. Verify that both files (2009_11_20r2006j_200VP.tgz and 2009_11_20r2006j_200VP.vpd) from the web site are on the USB flash drive.
3. Install v20.6 from the USB drive using Options->System Setup->Software->Update Software. Press Yes. After the upgrade, hold the green master switch for at least 3 seconds to power down.
4. Power on. You will get an error on restart. Press Ignore Fault then OK and continue to the main screen. (Note: do not ignore this error during normal operations, only during software upgrades)
5. Your engine gauges will not appear on the main screen and must be configured. Ignore the red X for now.
6. RE-INSTALL v20.6 from the USB drive using Options->System Setup->Software & Settings->Update Software. Press Yes. Note: the System Setup button has moved – press 'Options' 3 times.
7. You will again get an error on restart. Press Ignore Fault then OK and continue to the main screen.
8. Go to Options (3x) -> System Setup. Follow these instructions through the setup steps.
9. Go to Electrical System Setup page and verify settings.
 - If you have an aux battery wired for monitoring, enable the aux battery.
 - Press SAVE then EXIT whether or not you made changes on this page.
10. Go to General Setup and verify 'Min Takeoff RPM' is set to 2650 or the right value for you. The system will go into takeoff mode when above the max taxi speed AND this RPM setting.
 - Press SAVE then EXIT.
11. Go to Device Menu.
 - Select Starter & Cross-Tie Setup. Configure the external start switch input and verify the other settings. Config 4 systems: enable or disable automatically closing the cross tie contactor on start. Press SAVE then EXIT.
 - Select Device Setup. Verify the settings.
 - The switch panel switches are now configured from this menu. For each device assigned to the switch panel, verify it is configured correctly (for example, Switch: SP 2 is shown on the top right area of the display) and

- press SAVE. Press SAVE for each device with a switch panel assignment.
 - Configure current fault alerts if desired.
 - SAVE at least one device. EXIT when done verifying all devices.
 - Select Wig-wag Setup. Configure the pins to wig-wag and minimum speed and warm-up time. Press SAVE then EXIT.
 - If you have climate control, go to Climate Control. If it is not there, it must be enabled with a code from Vertical Power. Press Save, then, if needed, set the correct values and press Save then Exit.
 - Press EXIT again to exit the Device Menu and return to the main menu.
- 12. Go to Flap, Trim & Gear Menu.
 - Select Flaps Setup. Enable co-pilot flap inputs if needed. Press SAVE then EXIT.
 - Select Pitch Trim. Enable co-pilot inputs and variable speed trim (we recommend 100 and 70% for starting values) settings. Press SAVE then EXIT.
 - Repeat for Roll and Yaw Trim. Note that variable speed trim is only available on pitch trim.
 - Select Co-Pilot Setup. Select the disconnect power device if needed or leave on None. Press SAVE then EXIT.
 - Press EXIT again to return to the main menu.
- 13. Go to Serial Ports Menu.
 - Select Serial Port Setup. Configure the serial ports based on the notes you took earlier. Press Save then EXIT.
 - Select Data Association. Set each data value (CHT, oil pressure, etc) so that the source of the data is shown.
 - If a field is set to None, the gauge will not be shown
 - If a field is not associated properly or doesn't exist in the serial data stream then the gauge will show a red X
 - This page also contains AUX setup for EIS/EIS format inputs – you will need to re-set those values. For some (like Chelton format), the AUX fields may be pre-defined. Set the aux inputs header as well as the individual items.
 - Press SAVE then EXIT.
 - Press EXIT again to return to the main setup menu.
- 14. Go to Engine Menu
 - Select Engine Setup. Configure the average groundspeed and fuel flow for the calculations in pre-flight mode. Press Save then EXIT.
 - Go to Engine Gauges. Go through each gauge and verify it is set properly, and it is set to alarm during the correct modes. Press Save on each one then EXIT when done.
 - Go to Instrument Layout. Verify the layout for each mode is correct. Press Save then EXIT.
 - Press EXIT again to return to the main menu
- 15. Go to Emergency Setup
 - Auto-boost feature will turn on the boost pump automatically when the fuel pressure drops in the low red zone. Enable this feature and verify the correct boost pump is configured. ONLY enable this feature if turning on the boost pump does not have an adverse affect on the engine under all possible conditions.
 - Set the VMC/IMC location to a switch on the Switch Panel, if needed.
 - Press SAVE then EXIT.
- 16. Go to Annunciator Setup

- Press SAVE then EXIT. If nothing is configured, then you will get an error on save. Ignore it and EXIT.
17. Exit to the main screen and then power cycle the system using the master switch. You will get an error on restart.
 - If you get a “Key Mismatch (XU)” error on startup, then select ‘Push Settings’ soft key and then ‘Yes’. Follow the on-screen instructions and power cycle when the screen says to do so.
 - If you get a “Key Mismatch (DB)” error on startup, then something was not saved. Go back to step 8 and repeat.
 18. You should now be able to start the system and pass all checks. Please call tech support if this is not the case.
 19. If any of the devices on the device list are faulted (red), select those devices and reset the fault.
 20. With the USB flash drive installed, export your new v20 settings. **Do not skip this step!**
 - Go to Options->System Setup->Software & Settings. Then press Export Settings then Yes. These settings can only be used with v20 software, and will over-write your previously-saved settings.
 21. Cycle power and make sure system passes all checks on startup.
 22. Verify that the engine and GPS data is accurate.
 23. Verify all functions operate correctly prior to flight.

Bug fixes

- Factor of ten discrepancies for the left/right fuel levels from the Chelton EIS data format has been corrected. This affects the MVP-50, Chelton EIS and the AFS 3x00 EIS serial inputs to the Display Unit. If you still have this issue, change the format (Decimal/Integer) on the Data Association page and Save.
- A fix for Aviation Data format (Garmin 430/530) for the GPS system. The fault caused the Display Unit to inaccurately determine the (lack of) availability of the serial data stream.

Known bugs as of v20 release:

- If you have to reboot the Display Unit during an emergency, the system will restore in a non-emergency state.
- If a device is turned on or off manually with the switch panel, then a loss of communication occurs, you will not be able to turn the device on or off from the display unit (i.e. you can't override it).
- For Electrical Configuration #4 (dual bus/dual battery/dual alternators/dual Control Units), if both battery contactors fail, all devices will power off.
- Similarly, if one contactor fails, and the cross-tie is opened later, the devices on the control unit whose battery contactor failed will turn off.
- The Switch Panel may not power on when the rest of the system powers on. If this occurs, power-cycle the system and the Switch Panel should power on with everything else. This is a very rare occurrence. Contact tech support if it occurs.
- The Display Unit's screen may not display due to the backlight not turning on. If this occurs, power-cycle the system and the Display Unit should display properly again. This is a very rare occurrence. Contact tech support if it occurs.
- Soft keys will sometimes not display after working with the setup pages for an extended period of time. Cycle power using the master switch. If the problem is repeatable, report the problem to tech support.

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Version 14.3 changes:

- Configuration change: You can now configure which devices remain on if the battery contactor fails. This is in the Device Setup menu, and all devices are set to off by default.
- Circuit protection algorithms have been upgraded to reduce nuisance trips.
- Configuration change: You can now configure a fuse to be standard blow (default) or slow blow (2x delay).
- Load shedding setup has been moved to the device setup menu.
- The starter is now shown in yellow when it is disabled. It is always disabled in pre-flight mode.
- Devices are now yellow when their status is unknown. This occurs when 1) loss of comm. with control unit 2) the CU is not responding to requests to switch a device 3) a device with multiple pins has some on and some off.
- Battery voltage is now read off the e-bus line, giving a more accurate reading.
- The e-bus and battery contactor are now items on the device list, and can be used to reset faults but not turn them on or off manually.
- Flaps device now shows current.

- Configuration change: CU J5-6 can now be configured like any other power pin (for configurations 1, 2, 3). Note this pin is grounded when active (rather than providing bus voltage).
- Serial data communication is more robust.
- Faults are now listed below each pin on a device, so you can see which pin the fault is associated with.

Version 14.3.h updates:

- Configuration change: J4P7 has been inadvertently handled as a 5 amp circuit, when it's only a 3 amp circuit. If you have configured your system to use J4P7 on CU1 and CU2 (for VP-200 duals), then you need to re-configure J4P7 by going into the Device Setup screen, updating the circuit breaker to the desired level, and Saving you changes for each device affected.
- False-positives and multiple-notifications for low voltage alerts have been fixed.
- The MapCom engine data stream input capability from the newer Chelton EFIS systems has been fixed.

Version 15.1 changes:

- Added stronger synchronization capabilities for importing and exporting the settings data.
- Battery and E-bus were removed from the device list. They were first introduced in V14, but found to cause inconsistencies when faults associated with those devices were "cleared". The pilot now needs to cycle power in order to clear these faults; typically this would be performed on the ground while diagnosing the problem with the battery contactor and e-bus fuse(s).
- Configuration Change: Optional Engine Data inputs for OAT, fuel flow, carburetor temperature, and air speed are now enabled for all Engine Data systems. The pilot should verify/set the appropriate YES/NO indicators under the Serial Setup screen. The default value is NO.
- In the Device Setup page, there were two changes of note:
 - The 'auto-save' feature has been removed when the device name changes. The pilot must manually save each device after creating/changing a device.
 - When a 'save' fails, the entry focus does not jump to the Device Name, but stays at the last focus position.
- The system no longer generates spurious low voltage alerts after the system is first powered on.
- The pilot can no longer set the screen dim level to 0% for night conditions; the range is now 5%-100% in increments of 5%.
- Emergency load shed and restores have a faster setup and response time.
- Transition to Taxi mode was occurring when the plane was not moving due to GPS inaccuracies. The transition now has a stronger sense of movement.
- Configuration Change: Auto-dimming for the VP-200 and switch panel has been fixed. Verify proper lighting levels for day and night conditions and adjust accordingly (General Setup->Day/Night Threshold)

Version 16.2 changes:

- The system now verifies that the Display Unit/Control Unit/Switch Panel have the same software version and configuration. If there's a discrepancy, the system queries the pilot for updating the software and/or importing the latest configuration.

- The pilot will want to Export their settings before updating to 16.1. The first time 16.1 boots, the system will see discrepancies; the new keys used for verifying data sets will be invalid. The pilot will want to “Push” their settings when the system detects this ‘failure’.
- If a “Push” fails twice in a row after updating to V16, there may be a defect in your settings file that would have been introduced in a previous version of the software. Send your settings file (VP_Data.tgz) to info@verticalpower.com and we will fix the file and send you an updated version of your settings along with instructions on loading the new settings.
- Configuration Change: You can now add your aircraft’s tail number in Setup->General Setup. The tail number will show up on the initial splash screen.
- Auto-dimming based on the light sensor in the switch panel has been fixed.
- On the Device Setup page, the user must SAVE changes to a device before scrolling to the next device. This used to be an automatic action.
- The total current draw shown on the main electrical diagram screen is smoothed.
- The system does not allow emergency control when in the setup menus or System Info screen.
- An issue was found when saving/canceling from the trim setup where the Control Unit # for another trim could be over-written. The pilot will need to SAVE & EXIT (in the Trim Setup screens) for each trim the pilot has configured after upgrading to V16 to make sure each trim configuration is correct.
- The remote FOB can now power devices in Preflight and Postflight.
- Configuration Change: Go to the Device Setup page and change the Remote FOB Key for each device you want to control from the FOB. The default is None.
- On power-on, the Control Unit(s) will “flash” a device (typically a light of some sort).
- Configuration Change: Go to the General Setup page and set the “Flash Device on Power-up” field.
- The Magneto Switch (on the Switch Panel) is now monitored based on the current Mode:
- Configuration Change: In Engine Setup, you can now specify the number of cylinders your engine has. You can select 2, 4, or 6. The default is 6. The ‘main’ display will only show EGT/CHT values for the desired number of cylinders.
- During an Import Settings, the system clears the state of the power bus (whether the Battery Contactor is closed or open). On the next power cycle, because the system can’t cleanly determine the last known state of the bus, it closes the Battery Contactor. The Battery Contactor typically opens 15 seconds later.

Version 16.2.g updates:

- GPS parsing issues fixed
- Support of new backlight inverter for the display unit
- If you have a DU unit marked with Mod B on the back, do NOT install any version prior to 16.2.G

Version 17.2 Changes:

- New mechanism for displaying Annunciators. This includes annunciators for system faults (e.g. over voltage condition, device short circuit), engine alerts (e.g. oil temp in red zone), and user-based annunciators (e.g. baggage door, co detect).
- Master warning light for when certain faults/user annunciators are active.
- Flap and Trim indicators show YELLOW when they are disabled and RED when faulted
- Backup switch inputs on Control Unit J5 connector reflect their power state on the Device List.
- New setup for Engine Gauges
- Separate Engine Menu
- New format to set up engine gauges
- User-settable parameters for engine annunciator
- Instrument layout for arc gauges moved to Engine Menu
- Stronger engine data filter used to reduce false-positive engine alerts.
- Manifold Pressure and CHT/EGT gauges have settable red/yellow alert zones as well as min/max values.
- Shutdown timer behavior changed
- Timer turns yellow when there is 1 minute left in the countdown; red when there is 30 seconds left.
- Shows timer defer keys when there is less than 30 seconds left in the countdown
- You can 'reset' the timer via the remote fob (press any key) or by changing screens
- Starter safety control.
- On startup, the system closes the EBUS for a half second before anything else is powered. If the starter contactor is failed closed, the starter will draw current through the EBUS fuse and blow it. This protects the prop from spinning un-commanded if you turn the system on while you are outside of your aircraft.
- The new annunciator system will also allow you to set up an alert for whenever your starter is active. We recommend setting this up. See the installation manual for details.
- Clear Fault under the Device List Menu has changed to Reset Fault.
- The fault will clear and the system will restore the power state based on the current mode
- OAT temperature
- Some EIS systems need a 50 degree delta; the pilot will need to specify if this is the case for their EIS.
- Magneto switch
- There's a setting to specify whether your VP200 Switch Panel has a Magneto Switch.