VMS755/VMS765

Owner's Manual

V1.0

Glass Dash

trillium ELECTRONICS

Replaces Silverleaf VMS765/VMS755

SilverLeaf Electronics

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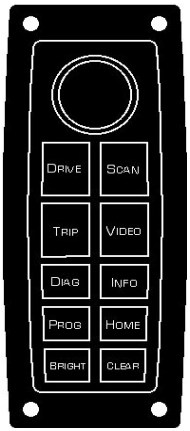
Quick Start Guide



To Operate The Keypad And Knob

Press the corresponding button for the function you wish to perform. For screens with selectable options, turn the **Knob** to highlight the item you wish to change and *press* the **Knob** to select, turn the **Knob** to change, then *press* the **Knob** again to confirm change.

To Start a Trip

Press **Trip**. The Trip Screen will appear.

Pressing **Trip** repeatedly with move the selection frame from one section to another.

Press **Clear**. This will reset Trip (1 or 2) to zero. The VMS will now automatically begin accumulating trip information. The previous trip will be stored in the Trip History.

To Set Your Destination "Miles-To-Go"

Press **Trip**. The Trip Screen should appear.

Turn the **Knob**. The Miles To Go number near the bottom should adjust up or down accordingly. Press the **Knob** to add 100 miles. Press **Clear** to start over.

To Read Diagnostic Information

If the Check Engine indicator on the dash lights up, press **Diag**. The Engine Diagnostics Screen should appear, showing the cause of the problem. Press **Clear** to clear the top of the screen.

If the problem is still occurring, the code will quickly reappear. The dash will also show a log of past diagnostic events on the bottom half of the screen.

To Set the Time

Press **Prog** once, turn the knob to select the feature you wish to change (in this case: Time). Press the **Knob** to select. Turn the **Knob** to adjust the time, and press the **Knob** again to set. The clock is now set.

To Scan Multiple Gauges or Watch a Particular Gauge

Pressing **Scan** on the drive page will toggle the top right gauge to scan though gauges one by one. Pressing **Scan** again will stop it on the gauge being

displayed and instead of an arrow, a stop sign will appear indicating that the VMS is currently stopped on that particular gauge. You can also simply turn the **Knob** to a specific gauge you would like to watch and it will automatically hold on that gauge until **Scan** is pressed again.

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Accessory Screen

When the key is 1st turned to the ignition position, the Accessory Screen will appear. This displays applicable indicator lights as well as a few important gauges and trip info. When the engine is started but the vehicle is in park, this screen can be viewed by pressing the **INFO** button.

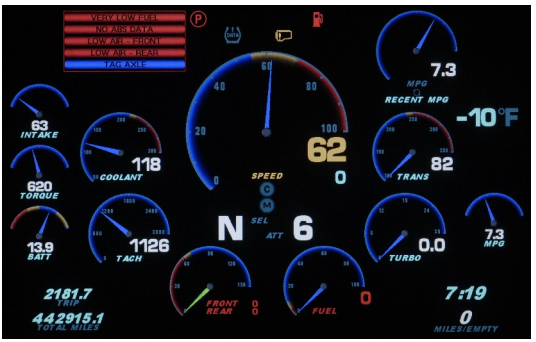
Main Drive Screen

Once the engine is started the Default Drive Screen will appear. The display will default to whichever Drive Layout was chosen when the dash last powered down. You can view each Drive Layout by pressing the **DRIVE** repeatedly. The **BRIGHT** button may also be pressed on the VMS to adjust the brightness of the display. While the vehicle is not in park, the user can only change the sub screen on the Drive Screen, the full screens such as Trip and Diagnostics will be locked out for safety.

The Drive Screen displays status information about the vehicle. This varies from your standard speedometer and battery voltage to less common items like retarder level and oil pressure. The circled "C" icon indicates Cruise Status.

Status Items

The two large numbers in the middle under the speedometer indicate the Gear Selected and Gear Attained by the transmission. This continuously updates as the transmission shifts. The circle with the M indicates transmission Mode. The Mode indicates the aggressiveness of the transmission; on most coaches Mode On (Economy) indicates less aggressive shifting for better fuel economy.



Estimated-Time-of-Arrival

Time, Total Miles Driven, Miles-To-Empty (MTE), and Trip Miles can be display on the Drive Screens. The Trip data is set on the primary Trip Screen (see the Quick Start page), and will slowly count down as you drive.

In this example, the VMS displays most important engine indicators: Speed, Tach, Transmission Temperature, Coolant Temperature, Etc. As well as Trip Data.

Gauge Scanning

To enable optional gauges, press the **SCAN** button. This screen provides the equivalent of over a dozen gauges in one package. The specific gauges that give data depend on the engine model and configuration.

Press **SCAN** to switch between stopped and scanning. At the bottom of the screen is an icon that indicates the screen "Mode"; Scan or Watch. An **arrow** therefore indicates Scan, a **stop sign** indicates Watch.

Scan Mode

The Scan Gauge Display will cycle from gauge to gauge, displaying each one for a set amount of time. You can program the gauges displayed in this mode, and the duration displayed, using the VMS settings and Scan Preference Screens. (See those sections for details.)

The gauge is represented with a Title, and a numeric value. At the top of the screen is the title of the gauge, and beside it is the numeric value.

Gauge Items

All gauge items are obtained directly from the J1939 data bus, and are digitally accurate.

Most gauges are self-explanatory. Some, such as Accelerator Position, are useful only in certain troubleshooting situations. Some duplicate the dash gauges, but are more accurate and precise than the conventional gauge. Others are truly unique.

Horsepower and Torque

These gauges shows the calculated engine output. The VMS cannot compensate for fans, belts, and other parasitic loads on the engine, and this value may be thrown off by a malfunction in the engine. But it does provide an effective indicator of engine performance. Of the two, Torque is more indicative of motive force and efficiency. When working the engine, try to maximize your torque output.

At very low RPMS these values cannot be accurately calculated. Under these conditions both of these gauges will read zero.

Rolling MPG, Recent MPG, and Instantaneous MPG

Instantaneous MPG indicates the fuel economy calculated on a moment-by-moment basis. It generally fluctuates too rapidly to be useful for guiding your driving, so the VMS calculates a Rolling MPG. Rolling MPG considers fuel consumption over roughly a one minute time interval, while ignoring very low

speed driving and idling. Recent MPG is over a 20 minute period. It provides a very good indication of your current fuel economy, and is a useful tool for adjusting your driving to get the best fuel economy.

Trip Screens

Press **TRIP** to activate the Trip Screen. The top portion of the screen show the Distance traveled during this "trip", the number of hours and minutes the engine was running, the average speed, and the gallons of fuel used. The hours and MPH values are based on engine run time, not the total elapsed time. Sitting and idling the engine will affect these values, but sitting with the engine off will not. Trip Miles Per Gallon will be displayed on this screen.

Pressing **TRIP** repeatedly will move the red selection box around the screen to enable clearing of the Trip 1 and Trip 2 sections by pressing the **CLEAR** button. Lifetime totals are also shown on the right side of the screen.

Trip Planning

With the selection box on the top portion of the screen Use the **Knob** to set the expected number of miles you plan to travel today. Turn the Knob for 1 mile increments or press the **Knob** for 100 mile increments. The VMS will slowly count down as you drive, and calculate the gallons of fuel required to reach your destination, and the estimated time of arrival. These will constantly be recalculated as you drive, and are based on your average fuel economy and speed for this particular trip.

Press **CLEAR** to start a new "trip". All values on the screen will reset to zero. The information cleared from Trip 1 will be stored and is available to view on the Trip History Screen at the bottom of the screen.

(Trips of less than .2 miles are not saved.)

Diagnostic Screen

As chassis problems are detected, various dash lights may relay this on the dashboard. The VMS picks up those codes, stores them, and translates them for you to read. These are the same codes a mechanic can pick up using his "scan tool".

Press **DIAG** to activate the Diagnostic Screen to show, at the top, current reported problems and the Engine Diagnostic History--which displays a history of ABS, Engine and Transmission problems, if any. Any *CODE* numbers displayed

are using the universal 'SAE' convention which all chassis report in.

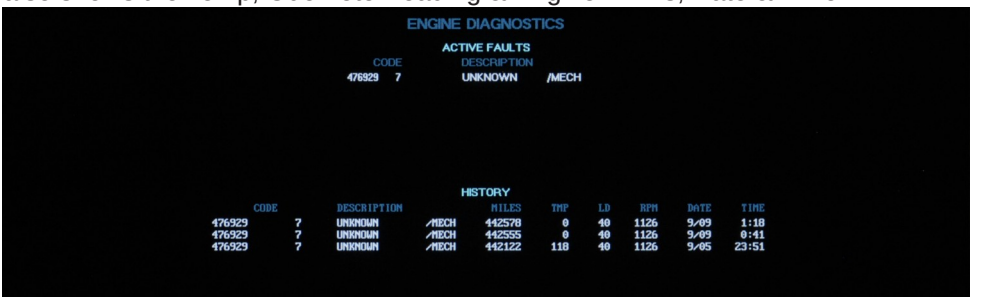
Engine Diagnostic Section

The top section of the screen shows Engine / Vehicle diagnostic messages received. The “scan code” is displayed, along with a plain language interpretation of the code. The VMS does not have to be on this screen to receive and store diagnostic messages. You can activate this screen at any time to see all codes that have been generated. The unit can store up to six recent codes at a time.

Press **CLEAR** to clear out the list of codes. If a problem is still occurring, it should reappear in a few moments.

Diagnostics History Section

This screen shows every diagnostic message ever received by the VMS. It also shows the Temp, Odometer reading & Engine RPMs, Date & Time.



The VMS only stores the first occurrence of each message, unless the codes were cleared on the Diagnostic Screen. The code will be recorded each time the problem reoccurs after having been cleared on that screen.

The list will display the most recent messages at the top. Use the **Knob** to scroll through the history.

INFO Screen

Included on this screen is data on the fuel, miles, and idle time.

The upper section of values are 'as-reported' from the engine's Electronic Control Unit (ECU). The Net MPG value is calculated from the total engine miles and hours, less idle hours. Note that young engines generally perform less efficiently as a diesel engine typically takes about 10,000 miles to "break in".

Programming Screens

VMS Settings Screen

Press **PROG** to activate the Dash Preferences Screen. Here is where a variety of parameters can be adjusted to match your coach configuration and personal preferences.

Use the **Knob** to adjust each item. Turn the **Knob** to highlight the parameter name, press the **Knob** and turn it again to adjust the value. Pressing the **Knob** again returns to the parameter names.

Clock and Alarm

After pressing **PROG** time is highlighted. Press the **Knob**, then turn it to adjust the time, press it again to return to the "TIME" position.

Setting the date by pressing the **Knob** to move the each field and turning the **Knob** to make the adjustment.

Daytime/Nighttime Brightness

If you drive with the head lights on during the day, you may want to adjust to a brighter screen. You may Cycle through all the Brightness Modes by pressing the **BRIGHT** button.

Scanning Speed

This is the number of seconds that the Scan Screen will spend on each gauge when in Scan Mode. A lower number will make it scan faster.

Distance, Fuel, Temperatures, Pressures

These determine whether trip information is displayed in Metric or Standard units.

Daytime / Nighttime Palette

This allows you to select the Color Scheme for your Daytime and Nighttime settings. The Daytime value indicates the Color Scheme when the headlights are *off* - presumably during the day. The Nighttime value

indicates the Color Scheme with the headlights *on.* By default the Nighttime is the same as the Daytime value, thus the VMS can be set to different Color Schemes when the headlights are turned on.

Scan Settings Screen

Press PROG a second time to activate the Scan Preferences Screen. A list of gauges available in the Scan Screen will appear, with their settings for the Watch and Scan modes. Each gauge may be set to Watch or Hide, and Scan or Skip. A gauge set to Hide will not appear in the Watch mode at all, while if it set to Watch it will be accessible in the Watch mode by turning the **Knob**. A gauge set to Scan will appear periodically in the Scan mode. Typically most gauges should be set to Watch, but only the most important should be set to Scan.

Turn the **Knob** to select a particular item - there are more than can fit on the screen at one time. Press the **Knob** to change the values.

Automatic Sensor Detection

No engine supports all the gauge functions the VMS is capable of displaying. The VMS is capable of querying the engine to determine its capabilities and it can automatically set the unsupported gauges to "Hide". To activate the sensor detector, let the VMS run for at least ten seconds while this screen is activated, and press CLEAR. All features supported by the engine should be set to Watch and Scan, while others are set to Hide and Skip.

NOTES

House Monitoring and Control

There are also additional Menu functions to control and monitor many of the “House” systems.

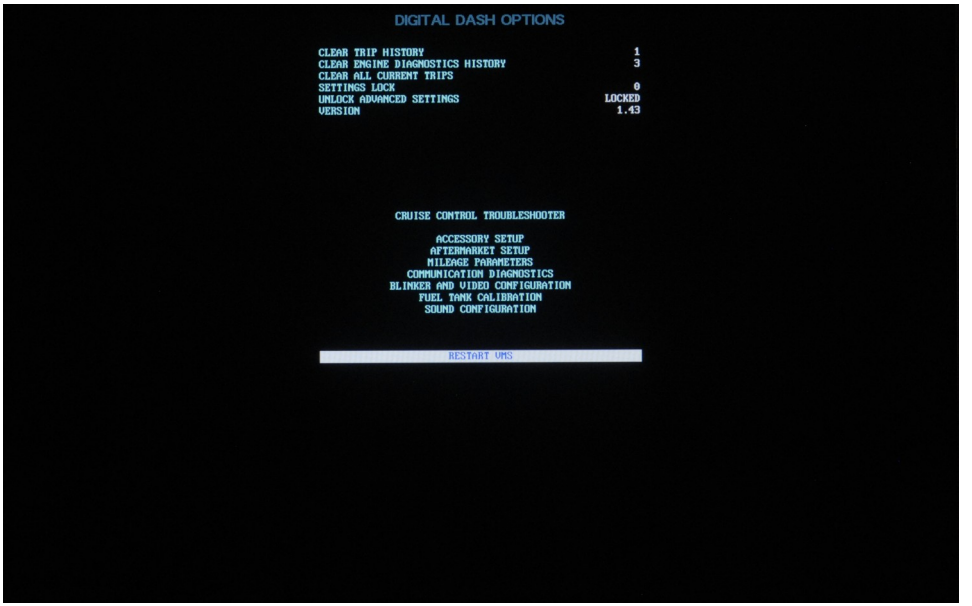
Pressing **Home** brings up the status and control functions for these on-board “House” systems. This screen displays Tank Levels, allows control of the the Generator, Inverter, Autofill, Water pump, and Automatic Generator Start parameters.

As you turn the **Knob**, you will see the highlighter move down the list of features. Just press the **Knob** to select device you want to control and a “Fly Out” menu will appear to the side and you can rotate and press the **Knob** to control any of the items listed.

NOTES

Programming Screens

After holding **DRIVE** and **SCAN** for about 3 seconds, the Digital Dash Options will show up. From here you can clear trip history, engine diagnostics history, and current trips, you can access the cruise control throubleshooting dashboard or the communication diagnostics dashboard, and you can set a wide variety of settings if you have the settings lock code.



NOTES

Warranty

The obligation of Trillium Electronics LLC. under this warranty shall be limited to repair or replacement (at our option) during the warranty period of any part which proves defective in material or workmanship under normal installation, use, and service, provided the product is returned to Trillium Electronics LLC. The warranty period shall be one year from date of purchase of the VMS™, or purchase of the finished coach with the VMS™ installed.

This warranty shall be invalid if the product is damaged as a result of defacement, misuse, abuse, neglect, accident, destruction, alteration, improper electrical voltages or currents, repair or maintenance by any party other than Trillium Electronics LLC. or an authorized service facility, or any use violative of instructions furnished by us.

This one-year warranty is in lieu of all other expressed warranties, obligations, or liabilities. Any implied warranties, obligations, or liabilities, including but not limited to the implied warranties of merchantability and fitness for a particular purpose, shall be limited in duration to the one-year duration of this written limited warranty.

In no event shall Trillium Electronics LLC. be liable for any special, incidental, or consequential damages for breach of this or any other warranty, expressed or implied, whatsoever.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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