Data Signs VSLS Variable Speed Limit Instruction Manual

Contents

Data Signs VSLS Variable Speed Limit

Product Information

- Model: DataSign-VSLS
- LEDs: Ultra Bright LEDs with auto-brightness
- Features: SIM card for remote monitoring, battery bank for continuous operation, wind-down legs for stability

Product Usage Instructions

Positioning the Sign

When positioning the Sign, ensure the solar panels will not be in shade during the day. Check with local authorities before placement.

Arriving on Site

1. Raise the lid of the VSLS Control Box by sliding the concealed latch to the right.
2. Engage park brake on trailer coupling.
3. Lower the jockey wheel.
4. Unclip the tow coupling and store the trailer cable under the shelf.

5. Undo safety chain from the vehicle and release tow coupling.

Retractable Drawbar

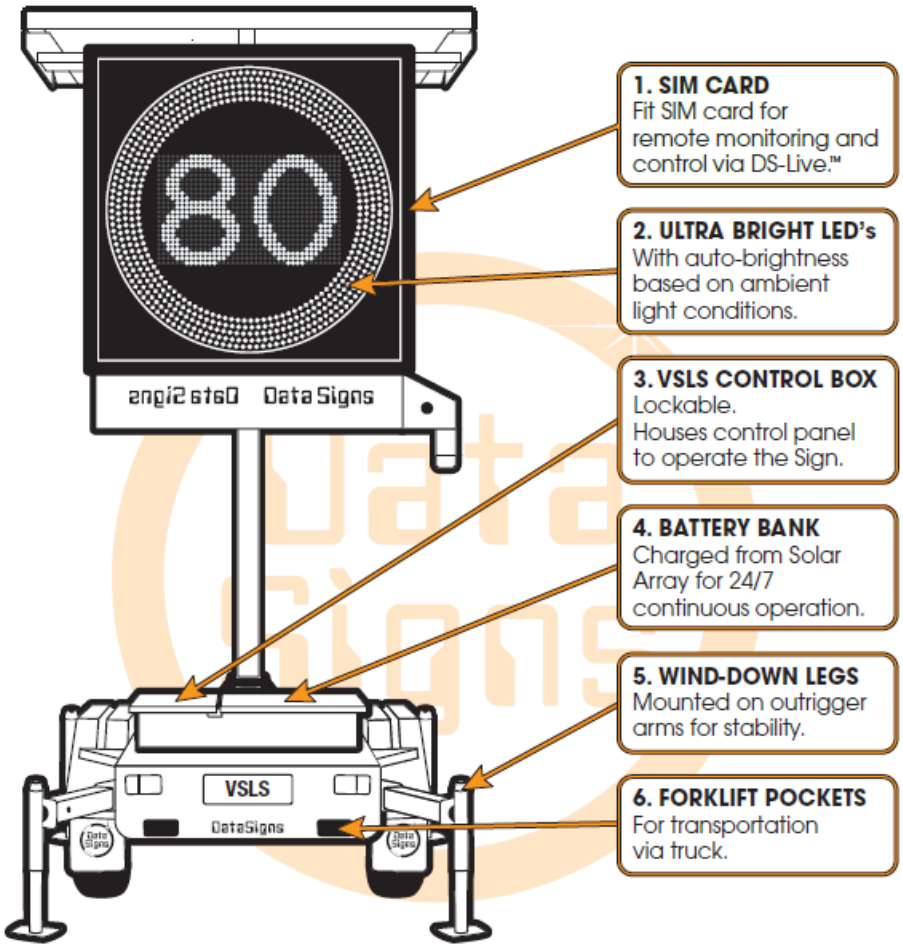
1. Ensure wind-down legs are lowered to prevent tipping.
2. Release wheel brake and retract drawbar.
3. Secure drawbar by moving pin handle accordingly.

FAQ

Q: How do I update messages on the VSLS?
A: Press the SHOW MESSAGE switch on the control panel to display new messages.

DataSign-VSLS Overview

The diagram below shows the location of parts commonly referred to throughout this manual. While some parts change over time, the same concepts apply. Some parts are optional extras and may not be fitted to your Sign.



When positioning the Sign, ensure the solar panels will not be in shade during the course of the day. Check with the local council or road authority before placing the DataSign-VSLS, depending on the road category.

When arriving on site…

1. Raise the lid of the VSLS Control Box by sliding the concealed latch underneath the lid to the right.
2. Engage the park brake on the trailer coupling.

3. Lower the jockey wheel.
4. Unclip the tow coupling. Let the clip rest as shown.
5. Undo the trailer cable and store this under the shelf in the VSLS Control box

6. Undo the safety chain from the vehicle and wind the jockey wheel to allow the tow coupling to be free of the vehicle tow ball.

7. Extend the 4 outrigger arms.
8. Lower the 4 Wind down legs.

   A drill adaptor bit for the wind down legs is also supplied in the plastic pouch under the shelf. To speed up this process a battery powered drill can be used.

CAUTION: If using a drÅ(l, slow it down to avoid kickback as it gets to the end.

9. Release the Mast brake.
   CAUTION: Failure to release the mast brake will cause damage to the mast brake or actuator.
   LOOK UP AND CHECK AREA IS CLEAR.
10. Setting up for Operation: Raise the Sign Head using the Hoist Up Switch to clear the cradle and the control box open lid.
11. Rotate the Sign head to face oncoming traffic and LOCK the mast brake again.
12. Feed the security chains through the wheels and fit the locks
13. Secure all other lock-points.

The Sign is set up.
Please read through the remainder of this document to familiarise yourself with this equipment.

Starting Up
Press the SHOW MESSAGE switch on the VSLS Control Panel. The message will display “DRIVE SAFELY”
It is updated from DS-Live or local controller after this.

Retractable Drawbar

The drawbar can be retracted to reduce the footprint on the ground when setup and to enhance the security of the Trailer.

1. Ensure the two front wind-down legs are lowered in the down position to prevent tipping whenever the drawbar is retracted.

2. Release the wheel brake. The jockey wheel should only just touch the ground so there is no upward pressure on the drawbar; you should be able to wobble the drawbar. This ensures the pin can move freely.
3. Lift the pin and move right to hold in up position, push the drawbar inwards until nearly all the way, then move pin handle back to the left and push the drawbar fully in, the pin will then drop into place again.
4. Slide lock-pin lever into bracket to hold and secure in place with a lock.
   To extend the drawbar again, follow the procedure above in reverse.

Sign Take-down and Safe Transport of the Sign

It is crucial that the Sign is correctly taken down and hitched to the towing vehicle. If the Sign comes loose, serious injury or death may result. The correct take-down and hitching procedures are detailed below.
Trailers are not to be towed behind a truck with 4.5t GVM or higher without a suspension tow hitch/draw bar.
Trailers are designed to be towed on bitumen roads.

1. Remove the security chains from through the wheels.
2. Undo the Mast Brake to lower the Sign Head.
   Lower Sign Head into transport cradle as shown.
3. Lower the Sign Head using the Hoist Down switch on the VSLS
   Control Panel in the VSLS Control box.
4. Shutting Down: The sign MUST be BLANK when towed.
   Blank the sign using the BLANK SIGN switch on the VSLS Control Panel.
5. Retract the Wind down Legs up and slide in the outriggers on all four sides.

CAUTION: If using a drill, slow it down to avoid kickback as it gets to the end.

6. Pull the spring pin and rotate the wind-down legs upside down, ensuring the spring pin goes back in to lock the winddown leg in the upwards position.
7. Use the Jockey wheel to lower the tow coupling onto the tow ball. Ensure the tow coupling fits snugly onto the tow ball of the towing vehicle. This is discussed further in this manual.
8. Do up the safety chain.
9. Wind up the jockey wheel and lift to slot into position. Make sure the jockey wheel does not move once in the towing position.
10. Ensure the Reversing lock on the tow coupling is released before travelling, as shown.
11. Release the hand brake if this is still engaged.

12. Plug the tow cable into the plug on the trailer and the towing vehicle. Check the trailer lights are functioning correctly.
13. Walk around the Sign to confirm that it is ready for transport and that no steps were missed.
    The Maximum recommended tow speed is 80 km/h.

Consider the Sign Height when towing.
When towing the Sign, bridges and other low obstacles may be encountered. Towing Height: 2300mm.

Battery Charger

The Battery Charger is located under the shelf in the VSLS Control box.
To charge the batteries, plug the power cable into 240V Mains power.
It takes about 15 hours to fully charge the batteries from a minimum acceptable charge level.

The Solar Regulator Display Screen
The solar regulator is situated in the VSLS Control box, under the shelf. The Solar regulator screen is fitted to the shelf itself

If the solar regulator does not appear to be on, check the SOLAR fuse is operational. The SOLAR FUSE can be found on the left of the solar regulator.
The Amps will be high when the solar panel are facing towards the Sun, as the Battery charge level goes up the Amps will decrease.
Note: Solar charger may be different than illustrated.

VSLS Maintenance Guide

Solar Array and Batteries

The solar panels are used to charge a 12V battery array via a solar regulator. The battery array powers the Sign. The batteries are considered flat when they get below 10.5 V. Once the voltage on the batteries gets this low, the Sign will go into Battery Recharge mode and the display will blank.

If your batteries are low

- Ensure the solar panels are kept clean and free of dust.
- Check that Sign is positioned so the solar panels receive at least 6 hours of sunlight per day. Otherwise, the batteries will eventually go flat.

Tow Coupling Adjustment

Adjust the tow coupling to fit snugly onto the tow ball of the towing vehicle to improve tow ride. In Australia, the tow coupling is designed to fit a 50mm ball. This adjustment is not completed during manufacture as each tow ball

may be a slightly different diameter due to wear, or other factors. This is a guide only, please view the disclaimer at the end of the document. Additionally, ensure tow ball is at the correct height to tow the trailer.

1. Release the 19mm locking nut.
2. Undo the locking nut to give some leeway.
3. Using a flat-head screw driver on the slot on top of the pin, turn until tight, and then loosen very slightly. This will pull the coupling forward onto the tow ball and grip it.
4. Check that you can still unhook the coupling without too much effort, but maintaining a tight fit on the tow ball when attached.
5. Tighten the locking nut firmly.
6. Note: when towing, ensure the reverse-lock is not engaged. Push out of the way, as shown.






Removing/Restoring Sign Power

Disconnect the power to the Sign for long-term storage (i.e. longer than a month), for long distance transport, or when working on the Sign. To disconnect the power follow the instructions below.

1. Open the VSLS Control box.
2. Lift the shelf to access the fuse board.

3. To remove Sign power, pull out the SIGN SUPPLY fuse.

CAUTION: If working on the Sign for repair (i.e. welding) disconnect ALL fuses.
To restore Sign power, insert the SIGN SUPPLY fuse. Push down to ensure it is properly fitted.

Notes for Undercover storage:
Storage outside is recommended so batteries can maintain charge via the solar array. If storing the Sign undercover for a long-term (i.e over one month), unplug the SIGN SUPPLY fuse. Please be aware that the batteries will drain over time; therefore fitting a battery charger is recommended. Battery warranty is voided if batteries allowed to completely drain.

Electric Actuator – Manual Hand Crank

The electric actuator is used to raise and lower the Sign Head. In the event of low voltage, defective batteries or actuator failure, the electric actuator can be manually lowered.
The service tools for this maintenance function may be purchased from Data Signs. The M5 and M6 Hex tools bits must be 250mm in length.

1. The power supply MUST be disconnected during manual lowering operation, pull out the ALL the fuses found under the shelf in the VSLS Control Box.
2. Release the Mast brake.
   Complete the following underneath the trailer chassis.
3. Remove the cover screw using the M5 HEX TOOL BIT from underneath the actuator. (keep it safe to put it back in again afterwards)
4. Insert the M6 HEX TOOL BIT in 10mm past the cover screw thread section and begin winding down the actuator SLOWLY!Otherwise there is a potential risk of electricity being generated as it winds and may damage the actuator.

5. Before lowering completely, make sure the Sign cradle is lined up as shown.
6. Stop winding when lowered to the base.

CAUTION: Manually lowering too far will cause mechanical damage.

7. Once completed, lock Mast brake.
8. Put back the cover screw using the M5 HEX TOOL BIT into the actuator.
9. Effect service to sign as necessary

Trailer Wheels and Wheel Bearings

Regularly check the tyre pressure. At the same time check tyre condition and that the wheel nuts are tight. Every 6 months—and after a few months of use have a qualified mechanic check the wheel bearings. Grease the wheel bearings every 12 months under normal operating conditions. More frequently for adverse/harsh road or operating conditions. Further, check after having travelled 1500 km.

Torque setting for wheel nuts: 65ibs.ft or 90Nm
The tyre pressures for each Sign model are detailed on the VIN plate. Ensure wheel nuts are tightened according to manufacturer specifications for this trailers' tyre size. If unsure, contact your local mechanic. Tire pressure of 55 PSI is recommended.

General Cleaning

The front of the Sign head (poly-carbonate screen) and trailer can be hosed. No abrasive solvents or thinners can be used anywhere on the Sign.
The back of the Sign head should be carefully hosed as water ingress through fan ventilation louvers may cause water damage to the internal electronics.
Avoid the fan ventilation louvers when hosing the back of the Sign head, as shown.

Light Sensor Lens
The light sensors (photo-electric cells) lens is located on the back of the Sign head. This should be kept clean. The amount of light entering this lens affects the level of Sign display brightness.

DS-Live™ – Remotely programming the sign
Data Signs Web-based Sign Programming.

Data Signs DS-Live™
Data Signs DS-Live™ runs on all web browsers (it is optimized to work best on Google Chrome & Microsoft Edge). It is best suited to run on a PC or Laptop.
It can also work with various popular devices such as iPad, Samsung tablet, etc, however the screen may need to be scrolled to see different items due to the smaller screen size).

VSLS Computer
-For local programming QuickStart Guide

VSLS Computer

For this manual convention, Sign means Data Signs Variable Message Signs or VSLS.

VSLS Computer

For this manual convention, Sign means Data Signs Variable Message Signs or VSLS
The VSLS COMPUTER is used as a manual method of setting the Speed limit as part of the Australian Standards AS 5156-2010 Electronic speed limit sign. It is purchased at customer discretion.
It is used to program, monitor and facilitate changing settings at the VSLS Sign.

Start-Up
If the VSLS COMPUTER is plugged in but not used for a period of 2 minutes or more, the display and the LCD backlight will go to STANDBY MODE, to reactivate the VSLS COMPUTER, push the **MENU** button.

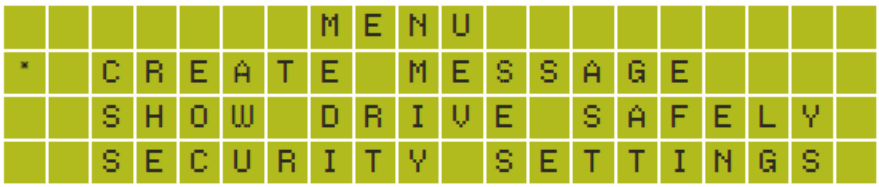
The MENU button**MENU** is also used to return back to a fixed starting point

If the security features are activated, the VSLS COMPUTER will ask you to enter a 4-digit pin number and the VSLS login. Refer to “Security Settings” section of this guide.
After the Start-Up screen, Pin and VSLS login entries (if enabled), the Menu is displayed.

Creating a VSLS Message

The following is a step-by-step tutorial detailing how to use the VSLS COMPUTER to create a message and show it on the Sign.

1. Navigate the Menu screen using the and and keys to select the ‘Create Message’ option. Once the asterisk is beside the ‘Create Message’ option, push the **ENTER** button.



The message creation screen will appear as shown below.

   To create a message, select the speed or Image, Frame Time or Annulus setting in any order then press the **NEXT** key to select the next frame. Up to 9 frames maximum can be selected.

   Note Conspicuity feature not enabled and buttons ignored.

   You can move backwards or forwards though the message using the or buttons.
2. The creation of our first message is complete.

   Now we want to show the message **NEXT** on the Sign.

Push the button. After this the message is shown on the sign and the main menu is displayed again.
If images other then what is shown on the keyboard are required, press the button.
A list of other images is show and can be selected using the the and keys and **ENTER** button.

Scheduling a Message

The following is an example of how to Schedule a message. Complete the following steps from the MENU screen.

1. Select ‘Create Message’ and create your message as per previous page.

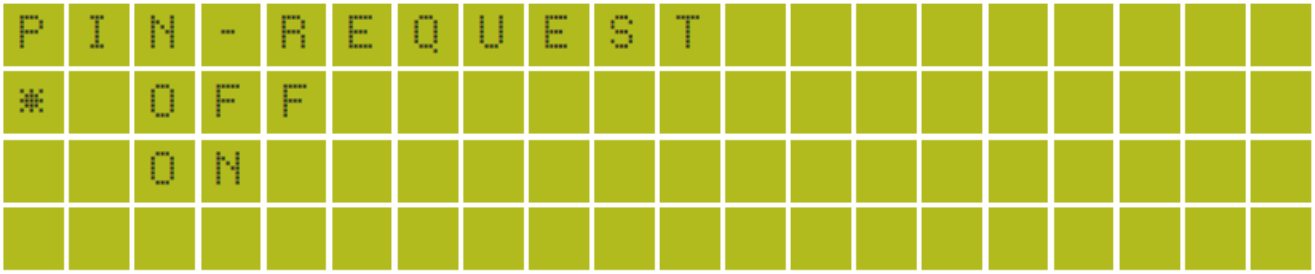
2. After you have created your message, press the button.
3. Use the buttons and to adjust the date and time.
4. Once that is done **ENTER** press the button and then press button
5. The display will show “schedule message running” and then return to the main menu.
   NOTE: if there is a message running it will continue to run until the scheduled message you programmed.
6. Use DS-Live to check and keep track of the scheduled message.

Security Settings

This allows you to set the Security Settings between the VSLS Computer and the VSLS Sign. A two-tier password scheme is provided for maximum security.
As a newly purchased VSLS Keyboard, the pin is set to ‘0000’. If the pin is changed but you do not remember the new pin and it is entered incorrectly 5 times, the VSLS COMPUTER will lock you out and display a challenge Code. Contact your Company’s DS-Live™ Administrator who can provide the code to reset the VSLS Computer pin back to 0000.
Also, as a new purchased unit, the VSLS sign login is set to ‘123456’

Change Pin Setting

You can change the pin for the VSLS COMPUTER using the menu below.



If you select ON, enter a new PIN number and **ENTER** press the button, this PIN must be entered each time the keyboard is switched on. If OFF is selected no PIN is required.

Data Signs recommends leaving the PIN enabled for greater security and preventing unauthorised persons from changing messages on your Sign.

Change VSLS Login

This is the second-tier security login for allowing messages to be sent to the Sign. If the VSLS login set on the VSLS COMPUTER does not match the VSLS login on the Sign, then you will not be able to update messages.
To set the VSLS login on the VSLS COMPUTER, complete the following steps:

1. Select Login setting.
2. If you select ON, enter a 6 digit login number and press the button. This login must be entered each time the keyboard is switched on. If OFF is selected no login is required Note the Login is saved to the VSLS sign, not the VSLS keyboard, thus the PIN is to gain access to the VSLS Keyboard.

If no response from Sign

- Ensure your Sign is switched on if you want to communicate from the VSLS Computer to the Sign.
- DS-Live™ communication is currently in progress.

Incorrect VSLS login. See Security Settings section.

- Ensure SD card is correctly inserted

Documents / Resources

	Data Signs VSLS Variable Speed Limit [pdf] Instruction Manual VSLS Variable Speed Limit, VSLS Variable Speed Limit, Variable Speed Limit, Speed Limit, Limit

References

- User Manual