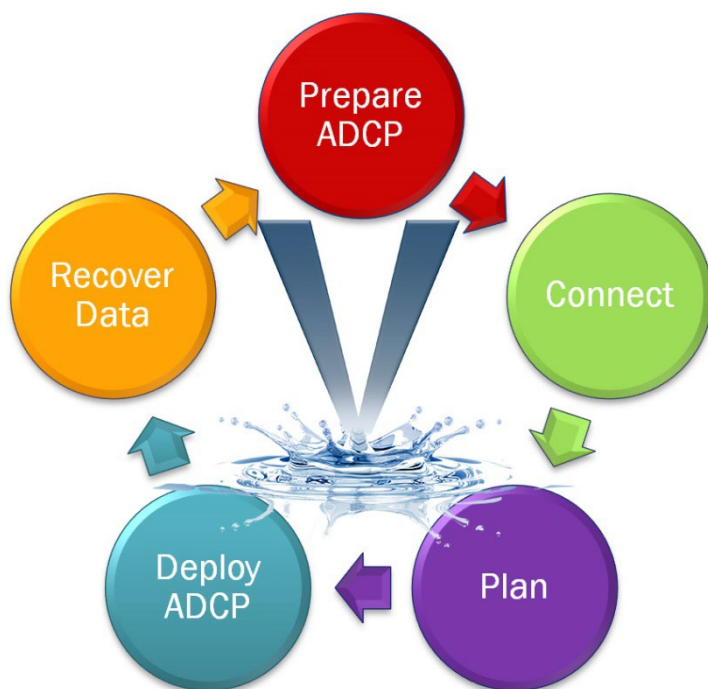


SENTINEL V

SELF-CONTAINED DEPLOYMENT GUIDE



**TELEDYNE
MARINE**
Everywhereyoulook™



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HOW TO CONTACT TELEDYNE RD INSTRUMENTS

If you have technical issues or questions involving a specific application or measurement with your instrument, contact our Field Service group:

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For all your customer service needs including our emergency 24/7 technical support, call +1 (858) 842-2700

Self-Service Customer Portal

Use our online customer portal at <https://www.teledynemarine.com/support/RDI/technical-manuals> to download manuals or other Teledyne RDI documentation.

Teledyne Marine Software Portal

Teledyne RD Instruments Firmware, software, and Field Service Bulletins can be accessed only via our Teledyne Marine software portal.

To register, please go to <https://tm-portal.force.com/TMsoftwareportal> to set up your customer support account. After your account is approved, you will receive an e-mail with a link to set up your log in credentials to access the portal (this can take up to 24 hours).

Once you have secured an account, use the Teledyne Marine software portal to access this data with your unique username and password.

If you have an urgent need, please call our Technical Support hotline at +1-858-842-2700.

Preparing the ADCP



PREPARING THE ADCP INCLUDES THE FOLLOWING STEPS:

- ✓ Checking you have all the Sentinel V Real-Time parts
- ✓ Installing the documentation and software
- ✓ Registering Velocity software
- ✓ Installing the batteries and listening for beeps
- ✓ Checking the system is closed properly


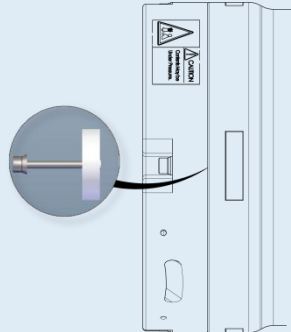
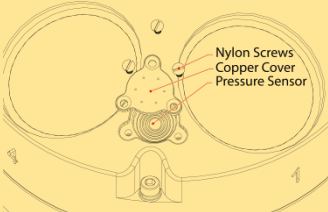
Identifying what's in the Box

Included with the Sentinel V system:

Kit	Part Number	Name	Description
Configuration	S20 S50 S100	Sentinel V SC or RT ADCP with transducer cover	Sentinel V Self-Contained (SC) or Real-Time (RT) ADCP. Depending on housing type: <ul style="list-style-type: none"> • Sentinel V battery packs are shipped inside the system but not connected. • Sentinel V with D cells are shipped without batteries inside the system. • Sentinel V with no battery housing uses external power.
	See the packing slip for more information on system configuration		SC systems use wireless communications for setup and deployment. This means the system only requires battery power to operate the system. RT systems use serial or Ethernet communications for setup and deployment. This means an end-cap with connector, an underwater cable, and DC power are required to operate the system.
Accessories Kit	97D-7000-00 or 97D-7002-00	Shipping Case	Shipping case with foam inserts.
	81D-6002-00	Handle	The handle makes it easier to carry the Sentinel V ADCP. Attach it to the slots on the ADCP's end-cap.
	75DK6001-00	Tools and Spare Parts kit	See Tools and Spare Parts for a list of parts included in this kit.
	95D-6037-00	Sentinel V SC and RT Roadmap	Use this sheet to determine where to start on setting up the Sentinel V SC and RT system.
Documentation Kit	95Z-6007-00	Download instructions	This sheet has instructions for downloading the software and manuals.
	95D-6016-00	Compass Calibration Guide	Printed sheet with instructions on how to calibrate the compass.
	95Z-8005-00	Velocity Activation Code	Activation code that unlocks the Velocity software. Waves processing requires a waves enabled activation code.

Tools and Spare Parts

A set of tools and spare parts are included with the system (located in the canvas bag).

Part Number	Description	Where Used
81D-6003-00	O-ring tool	Use the O-Ring tool to remove the 2-163 housing O-ring. 
2-163	2-163 O-ring	The housing O-rings (one each end) prevent the system from flooding.
5020	Silicone lubricant, 4-pack	Lightly coat the 2-163 O-ring with lubricant before installing the O-ring on the housing.
DES2	Desiccant bag	Used inside the housing to prevent water condensation.
6958A14	4mm Hex key	Used to attach the end-cap to the housing. 
81D-4002-00	Captive Nut	
81D-4003-00	M5 Captured bolt with washers	
75DK6009-00	Silicone oil fill kit with syringe, needle, needle cover, and 1 oz. of silicone oil.	Used to fill the Pressure Sensor with oil. Note that the sensor is NOT filled when shipped and must be properly filled with oil prior to deployment.
3/16BLADE	Screwdriver	Used to remove the Pressure Sensor cover.
M3X0.5X8FHN	Black nylon flat head screw	Used to hold the pressure sensor cover in place 

Installing Documentation and Software

The Sentinel V Self-Contained system documentation and software are downloaded.

1. Follow the instruction sheet on downloading TRDI software and manuals.
2. Software is available on <https://tm-portal.force.com/TMsoftwareportal>. Install *Sentinel V RT Utilities* if you will be switching between Self-Contained and Real-Time modes. Install *Velocity* for post-processing data.
3. Use our online customer portal at <https://www.teledynemarine.com/support/RDI/technical-manuals> to download manuals or other Teledyne RDI documentation. Download the Sentinel V Operation Manual. PDF versions of all Sentinel V documentation are available for download.



Sentinel V Operation Manual

Registering Velocity

When you purchase the *Velocity* software, you will receive an Activation code that unlocks the software.

To activate *Velocity*:

- On the License Registration screen, enter your activation code (xxxx-xxxx-xxxx-xxxx). Click the **Activate** button. Click the **OK** button and then **OK** once more to close the License registration screen.



The Velocity Activation Code sheet is in the documentation kit.

Installing Batteries

To connect the battery pack:

Note that the pressure sensor is NOT filled when shipped and must be properly filled with silicone oil prior to deployment. See Deployment Guide for instructions.

Remove the spacer when using a Lithium battery pack.

Desiccant (Taped to End-Cap)

Alignment Mark (Match to Housing)

Alignment Mark (Match to End-Cap)

2-163 O-Ring

Battery

Battery Cables

Lanyard (Keep Connected)

Internal I/O Cable

End-Cap

Captive Nuts

Product Label

Battery Spacer


Transducer

1. Place the Sentinel V ADCP with the end-cap facing up. Use a soft pad or the transducer cover to protect the ADCP.
2. Using a 4mm hex key, loosen the four M5 captured bolts on the end-cap.

A 4mm hex key is provided in the canvas bag. The end-cap hardware will stay attached to the end-cap.
3. Carefully lift the end-cap away from the housing. Observe how the internal I/O cable is coiled inside the housing. It must be coiled exactly the same way when replacing the end-cap.

A lanyard connects the end-cap to the housing to protect the internal I/O cable. Leave the lanyard connected.
4. Let the end-cap hang from the lanyard to the side of the ADCP.
5. Connect the Red/Black 2-pin battery cable to the 2-pin battery cable connector.

After power is applied (long beep), there is a 10 to 15 second delay before the network is available (short beep); If you do not hear the beeps, repeat/check step 5 before continuing.

 Sentinel V battery packs are shipped inside the system **but not connected**. Connect the battery and seal the Sentinel V before deployment.

To install the D cell batteries:

Pressure Sensor
Note that the pressure sensor is NOT filled when shipped and must be properly filled with silicone oil prior to deployment.

Transducer

Product Label

Captive Nuts

Alignment Mark
(Match to End-Cap & Match Beam #)

Battery Compartment

2-163 O-Ring

Lanyard
(Keep Connected)

Internal I/O Cable

Cover Plate

Desiccant
(Taped to End-Cap)

Battery Cables

Alignment Mark
(Match to Housing & Match Beam #)

End-Cap

6. Place the Sentinel V ADCP with the end-cap facing up. Use a soft pad or the transducer cover to protect the ADCP.

7. Using a 4mm hex key, loosen the four M5 captured bolts on the end-cap.

A 4mm hex key is provided in the canvas bag.
The end-cap hardware will stay attached to the end-cap.

8. Carefully lift the end-cap away from the housing. Observe how the internal I/O cable is coiled inside the housing. It must be coiled exactly the same way when replacing the end-cap.

A lanyard connects the end-cap to the housing to protect the internal I/O cable. Leave the lanyard connected.


9. Let the end-cap hang from the lanyard to the side of the ADCP.

10. Remove the battery cover plate by loosening the knob (rotate counter-clockwise).

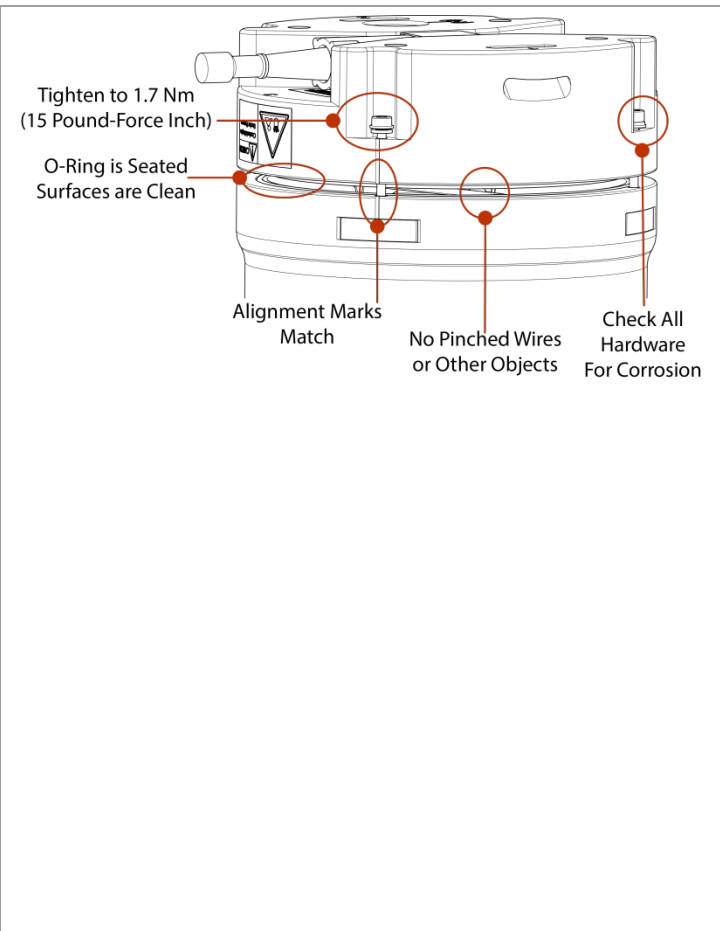
11. Use the battery cover diagram for battery orientation and slide in the D cell batteries. Ensure all batteries are fully seated by pushing them down into the battery cavity. Position the cover plate over the batteries and tighten the knob until the cover plate is flush with the surrounding surface.

As the cover is installed, there is a long beep, a 10 to 15 second delay, and then a short beep. If you do not hear the beeps, repeat/check steps 5 and 6 before continuing.

If the battery cover is loose, the D cell batteries may make intermittent contact or it may interfere with the end-cap properly closing. Tighten the knob until the cover plate is flush with the surrounding surface.

 Sentinel V with D cells are shipped without batteries inside the system. Install the batteries and seal the Sentinel V before deployment.

To close the system:



The diagram shows a cylindrical housing with an end-cap being installed. Red circles highlight specific areas for inspection and tightening. Labels include:



- Tighten to 1.7 Nm (15 Pound-Force Inch)
- O-Ring is Seated Surfaces are Clean
- Alignment Marks Match
- No Pinched Wires or Other Objects
- Check All Hardware For Corrosion

1. Check the O-ring for any fibers or particles. Make sure it is seated in the groove and the surfaces are clean.
2. Verify the desiccant bag is installed and it will not interfere with the end-cap when it is installed.

TRDI recommends replacing both the O-ring and desiccant before each deployment.

3. Match the alignment mark and beam numbers embossed on the end-cap with the alignment mark/beam numbers embossed on the housing to place the end-cap on the housing. Check the cables are coiled around the inside of the housing and do not become pinched.
4. Install all four sets of hardware until “finger-tight.”
5. Tighten the bolts in small increments in a “cross” pattern until the split washer begins to flatten out.
6. TRDI recommends using a torque wrench to tighten the bolts to the recommended torque value of 1.7 Nm (15 Pound-Force Inch). If a torque wrench is not available, tighten the bolts until the split washers are flat, and then turn the bolts ¼ turn more. Do not strip the bolts or captive nut threads.

Quick Review

	
<p>✔ Check that you have all the Sentinel V parts.</p>	<p>🔗 If you are missing parts, contact TRDI support rdifs@teledyne.com or call +1 (858) 842-2700.</p>
<p>✔ Check that the software and documentation is installed.</p>	<p>🔗 Install Velocity and Sentinel V RT Utilities.</p>
<p>✔ Check that you heard the long and short beeps when the battery was connected, or the D cell battery cover plate was installed.</p>	<p>🔗 If you did not hear any beeps when the battery was connected, read Chapter 5 in the Sentinel V Operation Manual.</p>
<p>✔ Check that the system is closed properly.</p>	<p>🔗 For more information about installing the battery and system close-up, see chapter 4 in the Sentinel V Operation Manual.</p>

Connecting to the ADCP



CONNECTING TO THE ADCP INCLUDES THE FOLLOWING STEPS:

- ✓ Using the touch sensor
- ✓ Connecting to the WLAN
- ✓ Starting ReadyV

Connecting to the ADCP

STEP 1

Touch the sensor
Beep(s) heard.

If the beep is not heard, check that the battery is installed.

Touching the sensor starts the ADCP's WLAN for five minutes.

STEP 2

Click the wireless icon (📶) in the system tray.

Click the Refresh icon (↻).



Locate the ADCP on the list and click on it.

Click **Connect**.



As needed, touch the Touch Sensor, listen for the beep, and then click ↻ until the ADCP appears on the list.

It may take several attempts of clicking Refresh before the ADCP appears on the list.

Sentinel V ADCPs display as SVnnnnn (where nnnnn is the five or six character serial number shown on the product label).

 	<p>STEP 3</p> <p>Open a browser.</p> <p>Type 192.168.0.2 in the address bar</p> <p>It can take up to 30 seconds for the ReadyV Home panel to display.</p> <p>As needed, touch the Touch Sensor, listen for the beep, and then refresh the browser page until ReadyV starts.</p> <p>Complete step 3 within five minutes of completing step 2.</p>
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Quick Review

	
<p>✔ Verify ReadyV started.</p>	<p>🔗 If ReadyV does not start, see the Wireless Connection Common Issues section in Chapter 1 of the Sentinel V Operation Manual for more information.</p>
<p>✔ Use the quick reference cards.</p>	<p>🔗 Use the Sentinel V SC quick reference cards to help remember how to connect the Sentinel V system.</p>

Planning the Deployment



PLANNING THE DEPLOYMENT INCLUDES THE FOLLOWING STEPS:

- ✓ Creating or Importing a Scenario using ReadyV

ReadyV Overview

Each section on the ReadyV Home panel acts as a link to a secondary control panel with a specific purpose. As the mouse is hovered over a section, it will change to a lighter blue and the mouse pointer will change to the hand icon (☞). Click to go to the panel. To return to the Home panel, click the button.



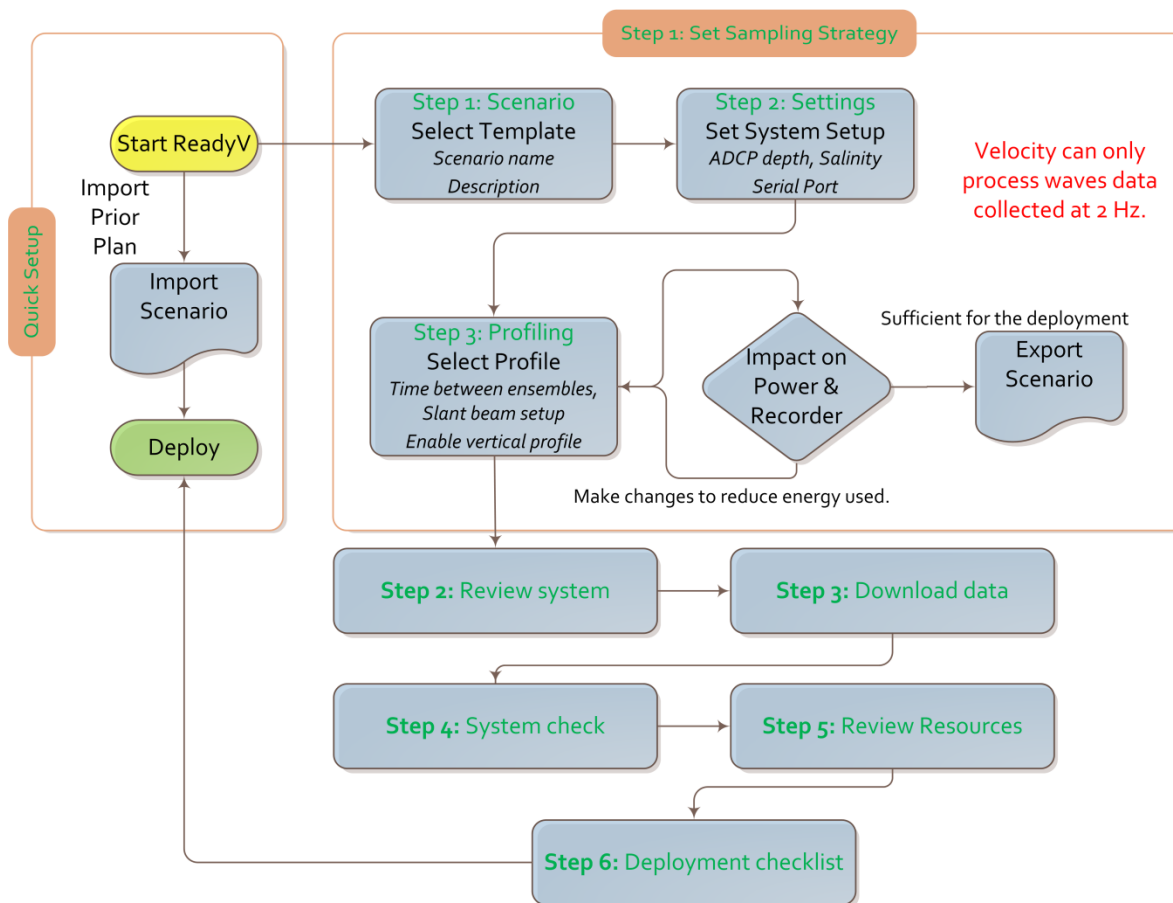
Home Panel
 Each section on the Home panel acts as a link to a secondary control panel with a specific purpose. The panels can be accessed only when the system is not deployed and when connected to the system. To save ReadyV to your local computer, click the Offline button and download ReadyV onto the computer.

ReadyV lets you enter known or “best-guess” values for the various ADCP profiling parameters and shows predictions of expected results. This lets you play “what if?” with the input parameters to evaluate trade-offs you may have to make with regard to standard deviation, profiling range, and timing.

While entering parameters in ReadyV, if a value is entered outside the normal range, a message will appear when the box is selected. In the example shown here, selecting 1 minute for the **Time between ensembles** displays an error because the **Number of pings** is too large (180 pings @ 1 second each = 3 minutes). To correct the error, reduce the number of pings or select a larger time between ensembles. Errors must be corrected before the setting can be saved.

Scenarios with two water pings may have a ping collision error. To clear a ping collision, change the time between pings to the recommended value and then change the time between profile groups so that there is enough time for profile type 1 to finish before profile group 2 starts.

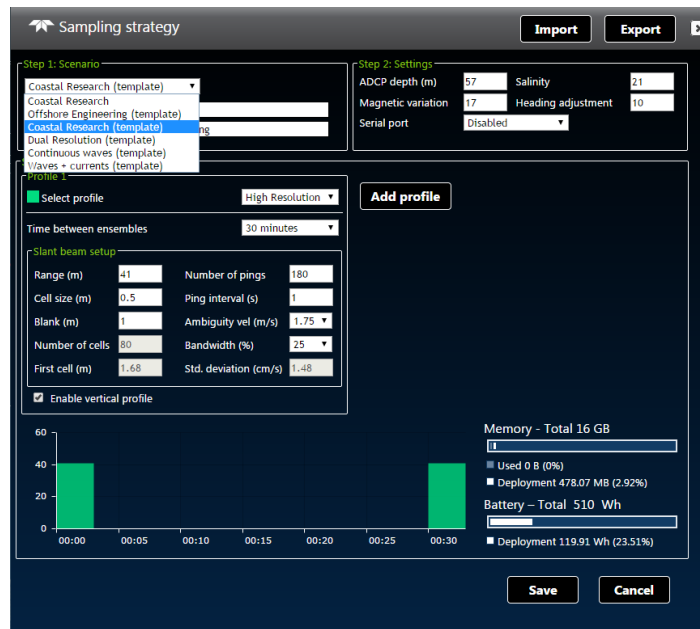
Creating a Scenario Overview




Creating a Scenario


To create a new scenario:

1. Start ReadyV (see [Connecting to the ADCP](#), page 8).
2. Click anywhere on the **Step 1 Set sampling strategy** section on the **Home** panel. This will open the **Sampling strategy** panel.
3. For this example, select the **Costal Research** template using the drop-down list.
4. Click the **Save** button to save the scenario.





 When a scenario is first created, it will use a default name. For example, selecting the **Coastal Research Template** and clicking **Save** will save the scenario as Coastal Research. Make sure to change the name of the scenario and add a description for future use.

Note how this template includes a High Resolution Profile that sets the Range and the Cell size (based on system frequency).

 The Waves feature must be installed in the ADCP and your Velocity registration code must include Waves in order to collect and process Waves data.

Quick Review

	
<ul style="list-style-type: none"> ✓ Use a template to create a scenario. 	<ul style="list-style-type: none"> For more information on ReadyV, see Chapter 2 in the Sentinel V Operation Manual.
<ul style="list-style-type: none"> ✓ Name the scenario file and add a description. 	
<ul style="list-style-type: none"> ✓ Check that the resources for the deployment are acceptable. 	<ul style="list-style-type: none"> The Ping interval must be set to 0.5 s for Water Profile 1.
<ul style="list-style-type: none"> ✓ If you are collecting Waves data, <i>Velocity</i> can only process waves data collected at 2 Hz. 	

Deploying the ADCP



DEPLOYING THE ADCP INCLUDES THE FOLLOWING STEPS:

- ✓ Setting the ADCP clock
- ✓ Testing the ADCP
- ✓ Checking all maintenance items were performed
- ✓ Calibrating the Compass
- ✓ Filling pressure sensor with oil
- ✓ Clicking the **Deploy** button

Pre-Deployment Checks

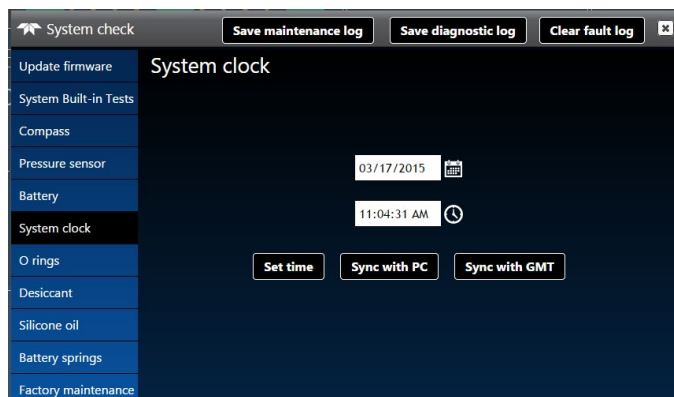
ReadyV has a user-friendly interface for running the pre-deployment tests and setting the Sentinel V real-time clock.

Setting the ADCP Clock

The real-time clock (date and time) within the Sentinel V maintains the correct time while system power is removed. The clock will continue to maintain the date and time during power outages of 16 to 24 hours. If power is removed from the ADCP for a longer period of time, then the clock reverts to the default value of January 1, 1970 and needs to be reset to the correct time.

To set the date and time:

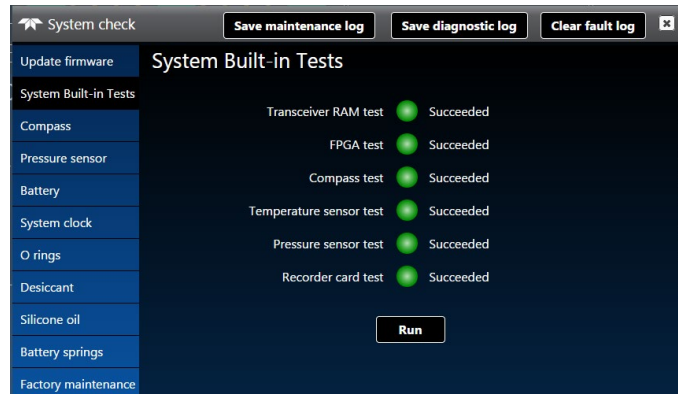
1. Start ReadyV and [Connect](#) to the ADCP.
2. Click the **Step 4: System check** panel; this will open the **System check** panel.
3. Click on **System clock**.
 - To manually set the time, click on the clock icon. Click on the calendar icon to set the date. Press the **Set Time** button.
 - Use the **Sync with PC** button to set both the time and date of the ADCP to match the time and date on the PC.
 - Use the **Sync with GMT** button to set both the time and date of the ADCP to match the GMT time and date.
4. Click the **Close** button (✕) to return to the Home panel.



Testing the ADCP

To run the Built in tests:

1. Start ReadyV and [Connect](#) to the ADCP.
2. Click the [Step 4: System check](#) panel; this will open the **System check** panel.
3. Click on **System Built-in Tests**.
4. To run the tests and view the test results, click the **Run** button.
5. Click the **Close** button (✕) to return to the Home panel.

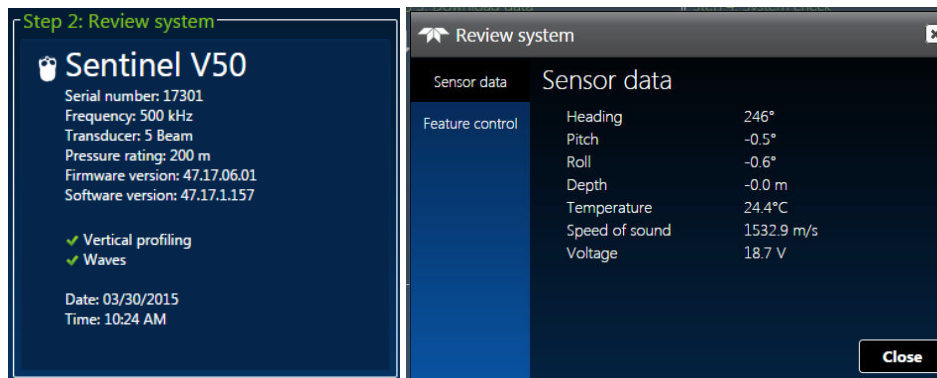


If any of the tests fail, read Chapter 6 in the Sentinel V SC_RT Operation Manual.

Testing the Sentinel V Self-Contained Sensors

To test the sensors on a Self-Contained system:

1. Start ReadyV and [Connect](#) to the ADCP.
2. The System panel shows an overview of the Sentinel V ADCP configuration. Click on the [Step 2: Review system](#) panel to open the **Review system** panel as shown below.
3. Use the **Sensor data** panel to display the sensor values. Rotate and tilt the system and verify the Pitch and Roll sensor data is reasonable. Rotate the system clockwise and verify the heading increases. Validate the accuracy at 0, 90, and 180 degrees. If the heading is off by more than 2 degrees, calibrate the compass. If the Depth sensor is not zero, zero the pressure sensor.
4. If a sensor fails, contact TRDI Field Service.

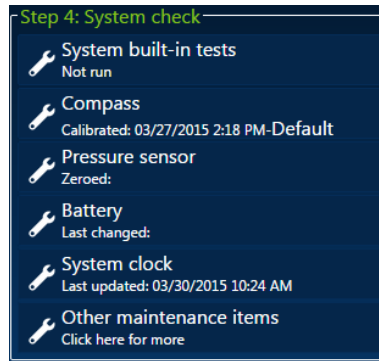


Checking the Maintenance Items

Before deploying the ADCP, use the System checks panel to check that the ADCP is ready for deployment.



Read the Sentinel V SC_RT Operation Manual, Chapter 5 Periodic Maintenance section. Make sure all maintenance items are completed as needed.



Zero the Pressure Sensor

Use the **Pressure Sensor** panel to zero the pressure sensor at the deployment site, prior to deploying the Sentinel V ADCP in the water.

1. On the **System checks** panel, click the **Pressure Sensor** panel to zero the pressure sensor.
2. Click the **Close** button (⌵) to return to the **home** panel.

Setting the Battery Replacement Date

Use the **Change** button to set the battery replacement date.

1. On the **System checks** panel, click the **Battery** panel. Set the date the batteries were replaced.
2. Click the **Close** button (⌵) to return to the **home** panel.

Calibrating the Compass

The compass calibration is a sequence of 12 rotations and tilts used to correct for distortions in the earth's magnetic fields caused by permanent magnets or ferromagnetic materials near the Sentinel V. These magnetic field distortions, if left uncorrected, will create errors in the heading data from the Sentinel V.

1. Start ReadyV and [Connect](#) to the ADCP.
2. Click the **Step 4: System check** panel; this will open the **System check** panel.
3. Click on **Compass**.
4. Use the Compass Calibration Guide and ReadyV to calibrate the compass.
5. Click the **Close** button (⌵) to return to the **home** panel.



For a detailed explanation of the calibration procedure, see the Sentinel V SC_RT Operation Manual, Chapter 5.



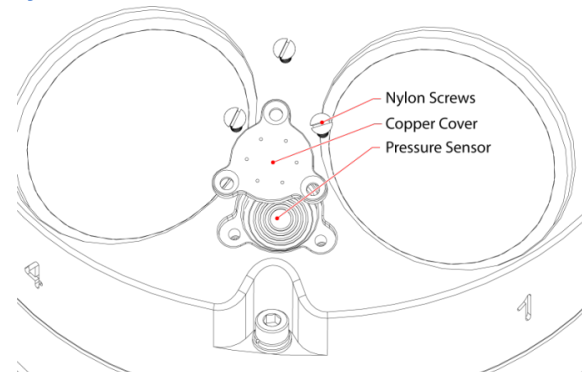
A compass calibration should be conducted at each measurement location, and whenever the mounting fixture or ancillary equipment such as batteries are changed or rearranged.



Use the Compass Calibration Guide 11x17 laminated quick reference card included with the Sentinel V system.

Filling the Pressure Sensor Cavity with Oil

The pressure sensor cavity needs to be filled with oil before deployment to deal with both trapped air and long-term reliability of the pressure sensor. Use Dow Corning Q7-9120 Silicone fluid, 12,500 CST oil. A plastic bottle with silicone oil (part number 75BK6004-00) and a syringe with 10-gauge needle are included in the spare parts kit. The sensor cavity can be filled any time before system installation; however, care should be taken to keep the ADCP from high temperature during this time. High temperatures may cause the oil to leak.



The pressure sensor cavity is not filled with oil when shipped. This must be done before deploying the Sentinel V ADCP. The pressure sensor cavity should be checked and if needed refilled between deployments.

Removing the Transducer Cover

The Sentinel V Self-Contained ADCP is shipped with a transducer cover to protect the transducer faces. Remove the cover when deploying the ADCP.

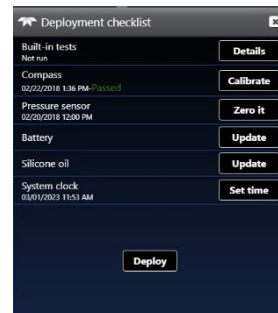
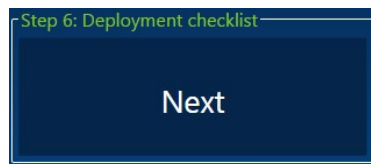


You **MUST** remove the cover to collect good data.



Deploying the ADCP

Click the [Step 6: Deployment checklist](#) panel to open the Deployment checklist.





To start the deployment:

1. Click the **Deploy** button to start the ADCP pinging.
2. On the **Home** panel, verify that it shows **Stop recording**.
3. Close the browser page.



Quick Review

	
<ul style="list-style-type: none"> ✓ All maintenance items (as needed) were done including filling the pressure sensor with oil, zero pressure sensor, and compass calibration. 	<ul style="list-style-type: none"> ⓘ TRDI recommends that if you are having trouble calibrating the Sentinel V compass that you move the system and/or ensure the area around the system is clear of electrical equipment and ferrous materials.
<ul style="list-style-type: none"> ✓ The transducer cover is removed. 	
<ul style="list-style-type: none"> ✓ Verify ReadyV shows Stop recording on the Home panel. 	<ul style="list-style-type: none"> ⓘ You MUST remove the transducer cover to collect good data. ⓘ Read Chapter 3 in the Sentinel V Operation Manual for information on how to install/mount the ADCP for a deployment.

Recovering Data



RECOVERING DATA INCLUDES THE FOLLOWING STEPS:

- ✓ Stopping the deployment
- ✓ Downloading data files
- ✓ Viewing data using the *Velocity* software

Stopping a Deployment

To stop a deployment:

1. Connect to the system (see [Connecting to the ADCP](#), page 8).
2. Click the **Stop recording** button to stop the ADCP pinging.
3. The data file being recorded will be closed.



If the deployment was long enough to completely drain the battery, see [Installing Batteries](#), page **Error! Bookmark not defined.** to change the battery and then resume the process to stop the deployment.

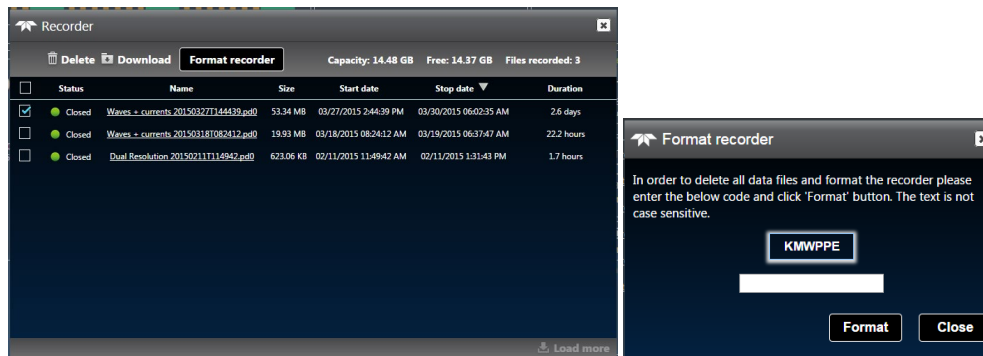
The screenshot shows the ReadyV software interface with the following details:

- Top Bar:** TELEDYNE RD INSTRUMENTS logo, 'Everywhereyoulook' tagline, 'ReadyV' title, signal strength icon, and a red 'Stop recording' button.
- Step 1: Set sampling strategy:**
 - Scenario:** Waves + currents, Waves battery deployment.
 - Settings:** ADCP depth: 10 m, Salinity: 35, Magnetic variation: 0 deg, Heading adjustment: 0 deg, Serial port: Disabled.
 - Profile 1: Waves:** 2100 pings per ensemble, Duration 17 minutes, Time between ensembles 1 hour, Range: 25 m, Cell size: 0.6 m, Number of cells: 40, Vertical profiling: On.
 - Profile 2: Waves:** 120 pings per ensemble, Duration 120 seconds, Time between ensembles 10 minutes, Range: 25 m, Cell size: 0.6 m, Number of cells: 40, Vertical profiling: Off.
- Step 2: Review system:** Sentinel V50 details including serial number (17301), frequency (500 kHz), transducer (5 Beam), pressure rating (200 m), firmware version (47.17.04.01), and software version (47.17.1.154). Status: Vertical profiling and Waves are checked.
- Step 3: Download data:** Data files section showing capacity (1448 GB), free space (1442 GB), files recorded (3), and last file recorded (Waves + currents 20150319T124152.pd0).
- Step 4: System check:** List of system components: System Built-in Tests (Not run), Compass (Calibrated: 03/19/2015 12:22 PM-Default), Pressure sensor (Zeroed), Battery (Status: Open, Last changed: --), System clock (Last updated: 03/19/2015 12:41 PM), and Other maintenance items.
- Step 5: Review resources:** Power source: Battery Pack (Deployment duration: 30 days, Max. duration recorder: 258.9 days, Max. duration power: 33.3 days). Memory: Total 14.48 GB (Used 57.64 MB (0.39%), Deployment 1.67 GB (11.59%)). Battery: Total 510 Wh (Used 459.66 Wh (90.13%), Deployment 50.34 Wh (9.87%)).

Downloading Data Files

To download a data file:

1. Click the **Step3: Download data** panel. This will open the **Recorder** panel.
2. To select a data file, click on it.
3. Click the **Download** button to save the data file to a folder on the computer. For Windows 7®, click on the ▼ triangle next to the **Save** button to select the folder where the data will be written.



Once the data has been recovered, the recorder can be erased by clicking the **Format recorder** button. Enter the code and then click the **Format** button at the prompt. *Once erased, the data is not recoverable.*

Opening a Data File with Velocity

When a *.PD0 (pd zero, not the letter o) file is opened, *Velocity* creates a matching *.pdv and *.pju files depending on the options selected. The *.pdv file is used to process data and the *.pju file contains the latest information about user selections for processing parameters and data displays.









The original *.pd0 file is never changed, moved, or overwritten.

To open a data file:

1. Click the **Home** button (🏠) located in the top left corner.
2. Click the **Options** button and select the options. Data averaging is on by default.
3. Do one of the following:
 - Drag a data file onto the *Velocity* desktop icon. This will start *Velocity* and open the data file.
 - With the **Start** menu selected, on the **Starting actions** area, click **Open a data file** button.
 - Click the **Open** menu button.
4. After the file is opened, a mini preview of the data file will display at the top of the *Velocity* screen. Click the preview to switch to the session (if other files are opened).

Quick Review

	
 Download the data.	 See the Sentinel V Operation Manual, Chapter 2 for information on using download managers.
 Check and process the data	 Read the Velocity Software User's Guide for information on how to check and process data.

PDDecoder Library in C language

The Teledyne Marine PDDecoder library is an open-source library written in C language to decode the PDO data formats that are commonly output by Teledyne Marine/Teledyne RD Instruments ADCPs. The definition and details of the PDO format can be found in the Sentinel V SC_RT Operation Manual.

Available for download from the Teledyne Marine software portal:

<https://tm-portal.force.com/TMsoftwareportal>

Conclusion

Congratulations! You have completed the Sentinel V Self-Contained Deployment Guide. Read the following chapters in the Sentinel V SC_RT Operation Manual for more detailed information.

Chapter 1 – Self-Contained Sentinel V Overview

This chapter includes an overview of the Sentinel V features, options, computer and power requirements, and connecting to the Sentinel V ADCP.



See the Self-Contained Quick Start Card PDF files included at the end of the Operation Manual (available for download).

Chapter 1a – Real-Time Sentinel V Overview

This chapter includes an overview of the Sentinel V Real-Time features, options, computer and power requirements, and connecting to the Sentinel V ADCP.



See the Real-Time Quick Start Card PDF files included at the end of the Operation Manual (available for download).

Chapter 1c – Switching RT and SC Modes

This chapter shows how a V Series Self-Contained (SC) ADCP can be converted to a Sentinel V Real-Time (RT) and vice versa.

Chapter 2 – Using ReadyV

This chapter covers each ReadyV panel in detail. ReadyV is only used when the system is configured for Self-Contained mode.



See the ReadyV Quick Start Card PDF file included at the end of the Operation Manual (available for download).

Chapter 3 – Installation

Use this chapter to plan your installation requirements.

Chapter 4 – Maintenance

This chapter covers Sentinel V ADCP maintenance. Use this section to make sure the Sentinel V is ready for a deployment.



Use the Compass Calibration Guide 11x17 laminated quick reference card included with the Sentinel V system.

Chapter 5 – Troubleshooting

This chapter covers how to troubleshoot the Sentinel V ADCP. If the Sentinel V fails a built-in test or you cannot communicate with the system, use this information to help locate the problem.

Chapter 6 – Returning Systems to TRDI for Service

Use this information to obtain a Return Material Authorization (RMA) number if the Sentinel V ADCP needs to be returned to TRDI.

Chapter 7 – Specifications

This chapter includes specifications and dimensions for the Sentinel V ADCP (including outline installation drawings).

Chapter 8 – Commands

This chapter defines the Real-Time commands. This is only used when the system is configured for Real-Time mode.

Chapter 9 - Output Data Format

This chapter explains the output data format used by the V Series ADCPs.

NOTES