



ReadyV Quick Start Card for Self-Contained Sentinel V Systems



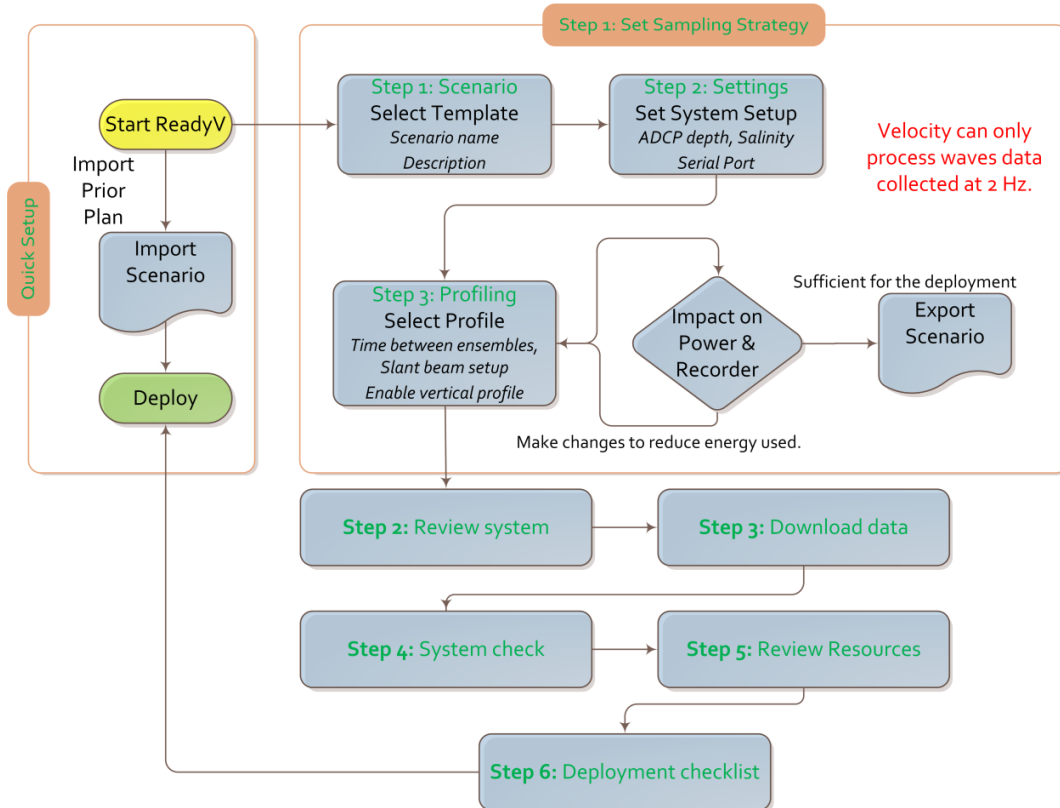
The screenshot shows the ReadyV software interface with several panels:

- Step 1: Set sampling strategy:** Includes 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), and 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:** Shows Sentinel V50 details (Serial number: 17301, Frequency: 500 kHz, Transducer: 5 Beam, Pressure rating: 200 m, Firmware version: 47.17.04.01, Software version: 47.17.1.154) and status (Vertical profiling: checked, Waves: checked, Date: 03/19/2015, Time: 12:36 PM).
- Step 3: Download data:** Shows Data files (Capacity: 14.48 GB, Free: 14.42 GB, Files recorded: 2, Last file recorded: Waves + currents 20150318T082412.pd0, Status: Closed, Size: 19.93 MB, Start date: 03/18/2015 08:24 AM, Stop date: 03/19/2015 06:37 AM, Duration: 22.2 hours).
- Step 4: System check:** Lists System Built-in Tests (Not run), Compass (Calibrated: 03/19/2015 12:22 PM-Default), Pressure sensor (Zeroed), Battery (Last changed: [redacted]), System clock (Last updated: 03/19/2015 12:34 PM), and Other maintenance items.
- Step 5: Review resources:** Shows 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%)), and Battery (Total 510 Wh, Deployment 459.66 Wh (90.13%)).
- Step 6: Deployment checklist:** A 'Next' button.

Labels at the bottom of the screenshot identify the panels: Review System, Download Data, System Check, Review Resources, and Deployment Checklist. A 'Home Panel' label is centered below the screenshot.

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.

Creating a Scenario Overview





ReadyV Quick Start Card for Self-Contained Sentinel V Systems



Step 1: Set Sampling Strategy

Use the **Step 1: Scenario** panel to:

- Select a template using the drop-down list. Name the deployment and enter a description.

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

Use the **Step 2: Settings** panel to:

- Set the ADCP depth, water salinity, magnetic variation, and heading adjustment.
- Enable or disable (default) the Serial port and select the Baud rate to stream the data serial real-time. If the serial port connector is not installed "Serial port not present" is displayed.

Use the **Step 3: Profiling** panel to:

- Select a **Profile** using the drop-down list.
- Select the **Range** to measure. The maximum range is dependent on the ADCP frequency, water salinity, water temperature and the depth of the ADCP.
- Set the **Cell size**. Adjust the cell size as necessary. A larger cell size decreases the standard deviation, but shallow water situations may need to use smaller cells to gather more data points.
- The **Number of cells** value will be calculated based on the Range and Cell size.
- The **Blank** setting moves the location of the first cell away from the ADCP transducer head. *The default value is based on system frequency and is highly recommended to use this value.*
- **Ambiguity velocity** represents the maximum relative velocity (ADCP motion plus the maximum actual water velocity) the ADCP can measure along a beam. Select one of the settings from the drop-down list. This must be set correctly to avoid ambiguity errors. Ambiguity velocity is used to improve the standard deviation: The lower the value of the ambiguity velocity, the lower the single-ping standard deviation.
- Set the profiling **Bandwidth** to Low or High. The Low bandwidth allows the ADCP to profile farther, but the standard deviation is increased by as much as 2.5 times.
- Select a **Time between ensembles** from the drop-down list. Time is based on the start of one ensemble to the start of the next ensemble.
- Set the **Ping interval** (time per ping). For a Waves deployment, the **Ping interval** must be 0.5 seconds. **Velocity can only process waves data collected at 2 Hz.**
- Adjust the **Number of pings** to gather the desired Standard Deviation. To increase the expected accuracy of the velocity measurement (reduce the Standard Deviation), increase either the Number of pings, Cell size, or both.
- Checkbox to enable the Vertical Beam (if feature is enabled).
- Click the **Save** button to return to the **Home** panel.

Step 2: Review System

Use the **Review System** panel to:

- View the configuration including software / firmware version.
- View the sensor data.
- Activate/Deactivate features.

Step 3: Download Data

Use the **Download Data** panel to:

- Check the status of data files.
- Download data files.
- Delete data files.
- Format recorder card.

Step 4: System Check

Use the **Maintenance** Panel to:

- Calibrate the compass.
- Zero the pressure sensor.
- Set the date that the battery was replaced.
- Set the date that the O-Ring was replaced.
- Set the date that the desiccant was replaced.
- Set the date that the silicone oil was replaced.
- Set the date that the battery springs were replaced.
- Update Firmware.
- Shows a report of the factory maintenance performed.

Step 5: Review Resources

Use the **Review Resources** panel to:

- Set the ADCP power source and the deployment duration to estimate power usage and recorder requirements.

Step 6: Deployment Checklist

Use the **Deployment Checklist** panel to:

- View deployment checklist.
- Press Deploy button to start a deployment.
- Once deployed, the Stop Recording button displays on the main page. Click the Stop Recording button to stop the deployment.

Import / Export / Delete

These buttons are located on the **Step 1: Sampling strategy** panel

- Use the **Import/Export** buttons to import or export scenarios.
- Use the **Delete** button to remove scenarios from the ADCP.

The screenshot shows the 'Sampling strategy' configuration window. It is divided into three main sections: Step 1: Scenario, Step 2: Settings, and Step 3: Profiling. At the top right are buttons for 'Delete', 'Import', and 'Export'.
Step 1: Scenario includes a dropdown for 'Waves + currents', a 'Name' field with 'Waves + currents', and a 'Description' field with 'Waves battery deployment'.
Step 2: Settings includes fields for ADCP depth (10), Salinity (35), Magnetic variation (0), Heading adjustment (0), and Serial port (Disabled).
Step 3: Profiling is split into Profile 1 and Profile 2. Profile 1 settings include Range (21), Cell size (0.6), Blank (1), Number of cells (34), First cell (1.87), Number of pings (2100), Ping interval (0.5), Ambiguity vel (1.75), Bandwidth (25%), and Std. deviation (0.26). Profile 2 settings include Range (22), Cell size (0.6), Blank (1), Number of cells (35), First cell (1.87), Number of pings (120), Ping interval (1), Ambiguity vel (1.75), Bandwidth (25%), and Std. deviation (1.1). Both profiles have checkboxes for 'Enable vertical profile'.
 At the bottom, there is a bar chart showing memory usage over time from 00:00 to 01:00. The chart shows a peak in memory usage around 00:10. To the right of the chart are two battery status indicators: 'Memory - Total 14.48 GB' (Used 37.76 MB (0.25%), Deployment 1.5 GB (10.36%)) and 'Battery - Total 510 Wh' (Deployment 464.17 Wh (91.01%)).



See Chapter 2 of the Sentinel V SC_RT Operation Manual for details on each setting.



Sentinel V Real-Time Quick Start Card



Ethernet



Preparing the ADCP

To connect the cable:

1. Remove the dummy plug from the ADCP.
2. Connect the external I/O cable connector to the ADCP.
3. Connect the I/O cable Ethernet connector to your computer.
4. Connect the AC Power Adapter to the power connector or use the banana plugs from cable 73D-6021-00 to power the unit with a different power supply (voltage not to exceed 20V).
5. Plug the adapter into a 100-240 VAC 50/50 Hz source.
6. When power is applied, you should hear a long beep. If you do not hear the beep, check the cable connection and power before continuing.



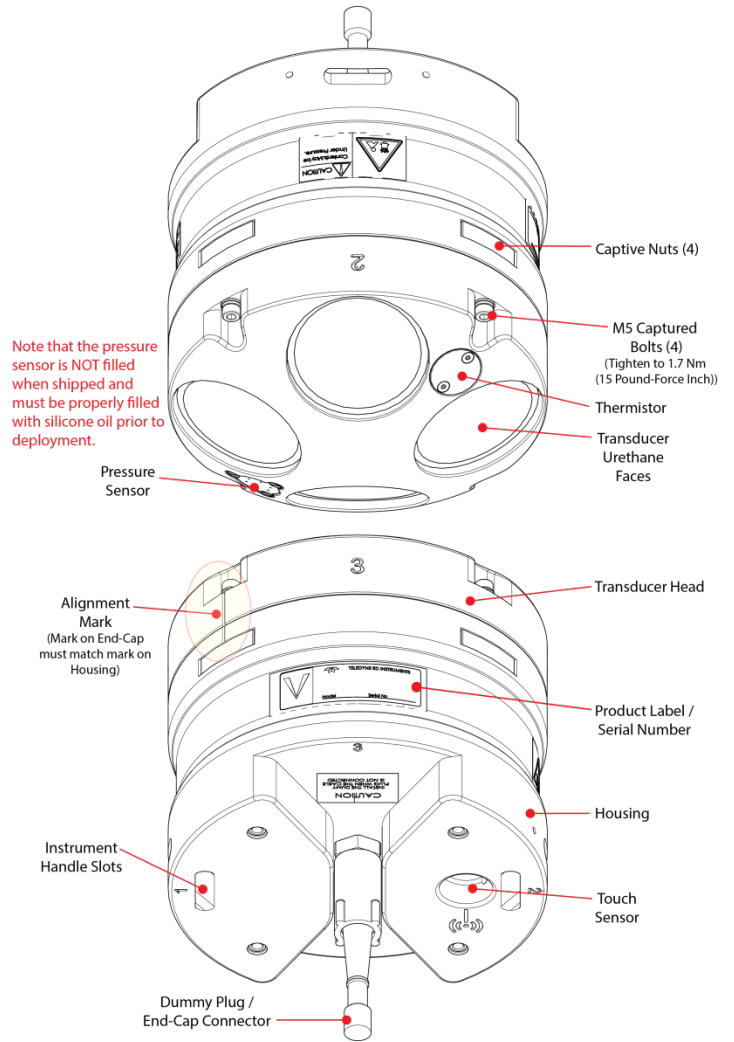
Next step is [connecting to the system](#). Continue to the next page.

If you need help, read the Real-Time Deployment Guide.

How do I know if the system is Ethernet?

Look for the labels next to the product label.

RT = Real-Time, Eth = Ethernet.



Sentinel V Real-Time ADCP with Straight Connector Shown



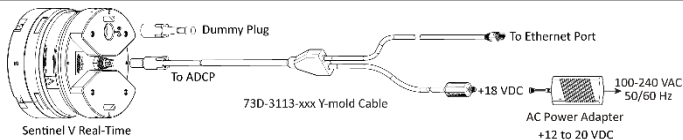
The figure above shows the no battery RT housing, but any V Series housing with End-Cap connector can be used.

If your system uses batteries, see the corresponding Self-Contained Quick Start Card.



Connecting to the ADCP

Connect Cable



Sentinel V RT Utilities

Ethernet Connection

SV17302.adcp | 9000 | TCP | **Connect**

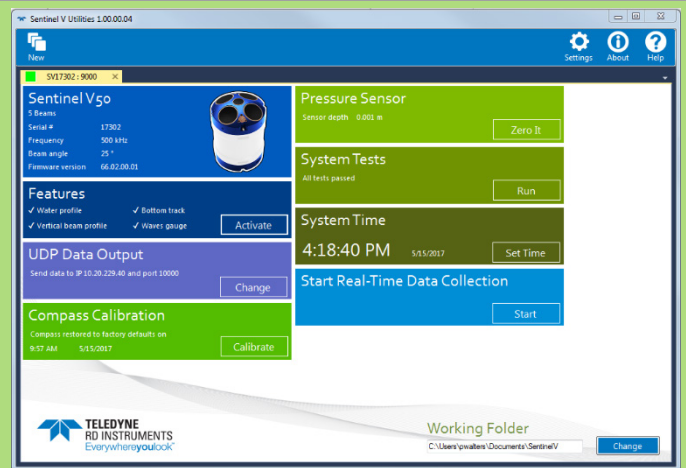
Ethernet Connection

SV17302 | 9000 | TCP | **Connect**

Connect the ADCP to the Ethernet port on the laptop.
 Connect the AC power adapter to cable and to an AC power source.
 You should hear one long beep, a ~15 second delay and then two short beeps.

Enter the **IP or host name**. For example, Sentinel V ADCPs host name is *SVnnnnn.adcp* (where *nnnnn* is the five or six character serial number shown on the product label).
 Use *SVnnnnn* if the network you are connecting to assigns the IP address.
 Enter the **Port Number** 9000.
 Select **TCP**.
 Click the **Connect** button.

Beep(s) heard.



If the beep(s) are not heard, check the AC power adapter voltage.
 Check all cable connections are fully seated.

For more information on *Sentinel V RT Utilities*, click the Help icon (?) to open the Sentinel V RT Utilities software help file.



Continue to the Sentinel V Real-Time Deployment Guide for step-by-step instructions on how to deploy, recover data, and view Real-Time Sentinel V data. See the Sentinel V Operation Manual, Chapter 1a Using Ethernet Communications to see how to view RT data over the ethernet.



Preparing the ADCP

To connect the cable:

1. Remove the dummy plug from the ADCP.
2. Connect the external I/O cable connector to the ADCP.
3. Connect the I/O cable Serial connector to your computer.

Your computer and the Sentinel V Real-Time ADCP must both be set to the same communication setting. Use the RS-232-to-RS-422 converter if the ADCP is configured for RS-422 communications and your computer only has a RS-232 COM port.

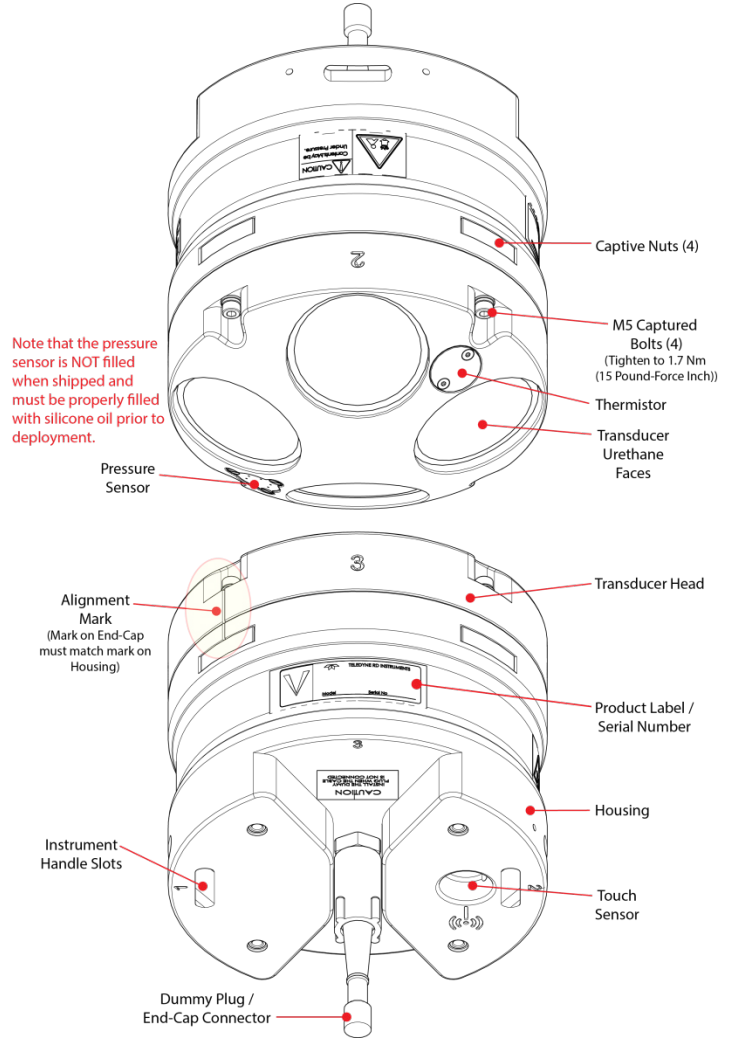
4. Connect the AC Power Adapter to the power connector or use the banana plugs from cable 73D-6021-00 to power the unit with a different power supply (voltage not to exceed 20V).
5. Plug the adapter into a 100-240 VAC 50/50 Hz source.
6. When power is applied, you should hear a long beep. If you do not hear the beep, check the cable connection and power before continuing.

Next step is [connecting to the system](#). Continue to the next page.
If you need help, read the Real-Time Deployment Guide.

How do I know if the system is RS-232 or RS-422?
Look for the labels next to the product label:



If the Sentinel V Real-Time system is configured for RS-422, use a RS-232 to RS-422 converter when connecting to the serial port. The serial port on the computer must match the serial communications of the Sentinel V system.



Sentinel V Real-Time ADCP with Straight Connector Shown

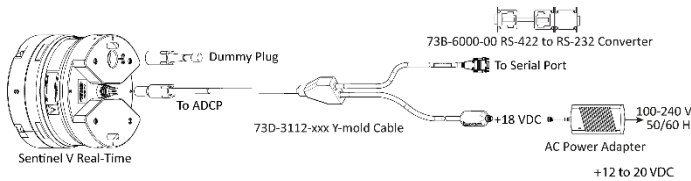
*The figure above shows the no battery RT housing, but any V Series housing with End-Cap connector can be used.
If your system uses batteries, see the corresponding Self-Contained Quick Start Card.*



Connecting to the ADCP

To connect to the Sentinel V Real-Time ADCP using the *Sentinel V RT Utilities* software:

⊖ Connect Cable



Connect the cable to the ADCP and to the serial port on the laptop.
Connect the AC power adapter to the cable and to an AC power source.
You should hear one long beep.

Beep(s) heard.

⊕ Sentinel V RT Utilities

Serial Connection

COM1

115200

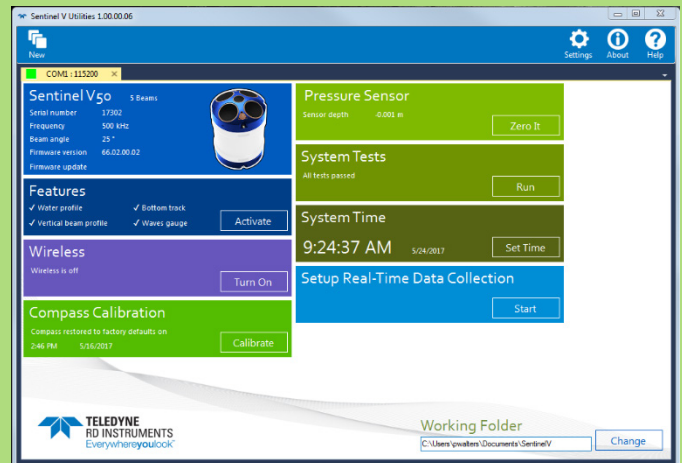
Find

Connect

Select **New, Serial Connection**.

Select the **COM Port** and **Baud Rate** from the drop down lists.

Click the **Connect** button.



If the beep is not heard, check the AC power adapter voltage.
Check all cable connections are fully seated.

If the Sentinel V Real-Time system is configured for RS-422, use a RS-232 to RS-422 converter when connecting to the serial port. The serial port on the computer must match the serial communications of the Sentinel V system.

If you are unsure of the Baud rate, use the default 9600 baud and try to connect. If you can not connect, click **Find**.

For more information on *Sentinel V RT Utilities*, click the Help icon (Help) to open the Sentinel V RT Utilities software help file.



Continue to the Sentinel V Real-Time Deployment Guide for step-by-step instructions on how to deploy, recover data, and view Real-Time Sentinel V data.



Sentinel V Self-Contained Quick Start Card

Wireless with
Battery Pack



Preparing the ADCP

To connect the battery:

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.

To close the system:

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 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.

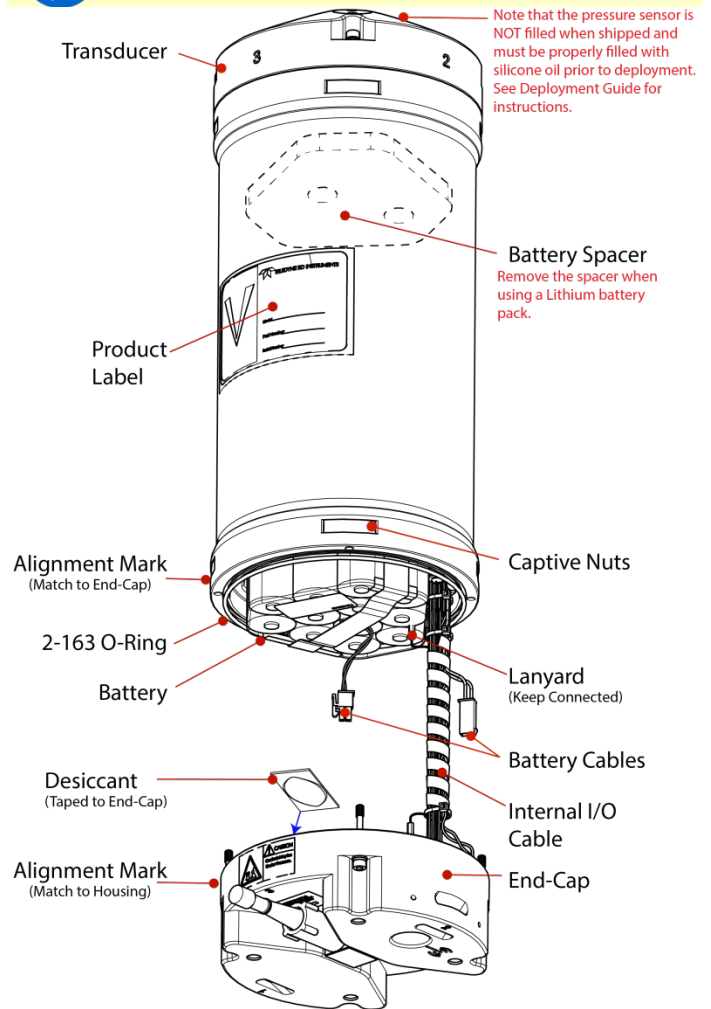
4. Install all four sets of hardware until "finger-tight."
5. Tighten the bolts in small increments in a "cross" pattern until the split washer begins to flatten out.

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.

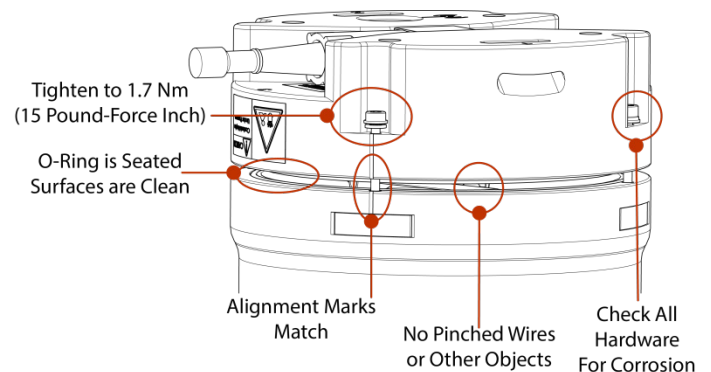
95D-6003-00 (February 2023)



Read the Self-Contained Deployment Guide.



Sentinel V50 Model with Connector End-Cap Shown



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



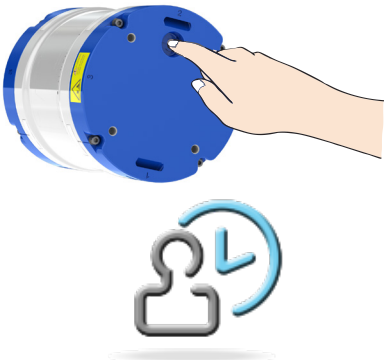
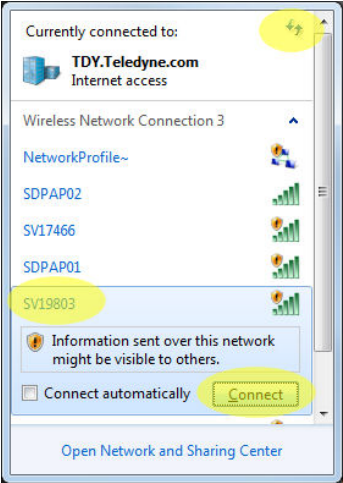

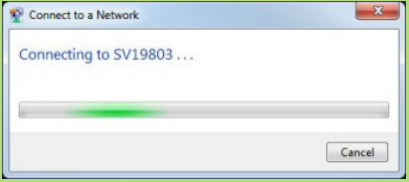




Sentinel V Self-Contained Quick Start Card

Connecting to the ADCP

Wireless with
Battery Pack



Touch Sensor	Connect	Start ReadyV
	 <p><i>Sentinel V ADCPs display as SVnnnnn (where nnnnn is the five or six character serial number shown on the product label).</i></p>	
<p>Touch the sensor</p>	<p>Click the wireless icon (📶) in the system tray. Click the Refresh icon (↻). Locate the ADCP on the list and click on it. Click Connect.</p>	<p>Open a browser. Type 192.168.0.2 in the address bar.</p>
<p>Beep(s) heard.</p>		
<p>If the beep is not heard, check that the battery is installed. Touching the sensor starts the ADCP's WLAN for five minutes.</p>	<p>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.</p>	<p>It can take up to 30 seconds for the ReadyV Home panel to display. As needed, touch the Touch Sensor, listen for the beep, and then refresh the browser page until ReadyV starts. Complete step 3 within five minutes of completing step 2.</p>
<p> Read the Self-Contained Deployment Guide and the Sentinel V Operation Manual, Chapter 1 Wireless Connection Common Issues.</p>		



Sentinel V Self-Contained Quick Start Card

Wireless with
D Cell Batteries



Preparing the ADCP

To install the D cell batteries:

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. Remove the battery cover plate by loosening the knob (rotate counter-clockwise).
6. 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.

To close the system:

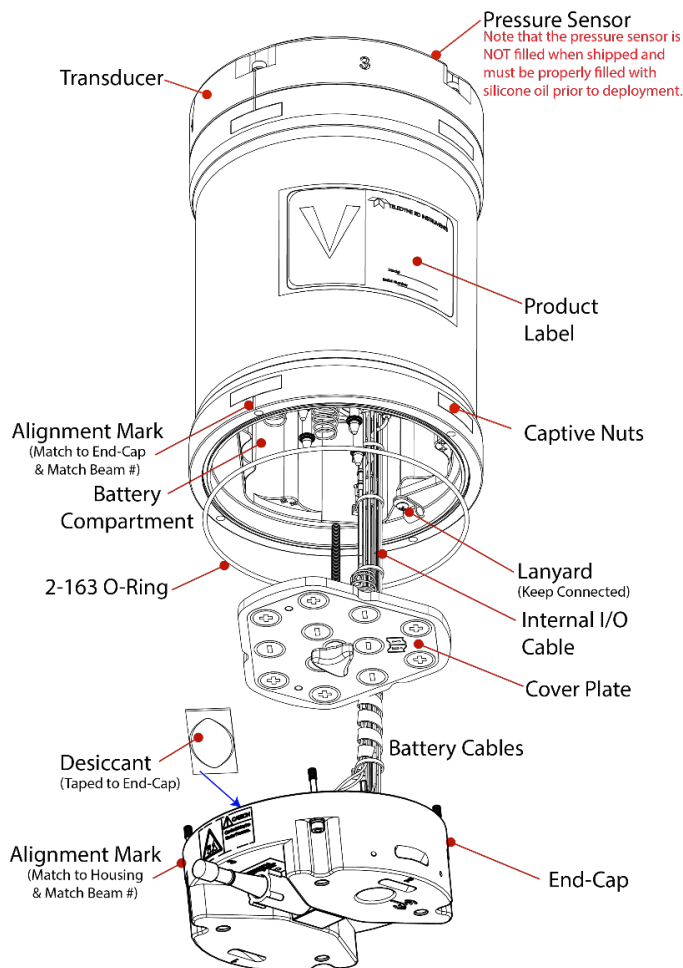
1. Check the O-ring for any fibers or particles. Make sure it is seated in the groove and the surfaces are clean.
2. Verify the desiccant bag is installed and will not interfere with the end-cap when it is installed.

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

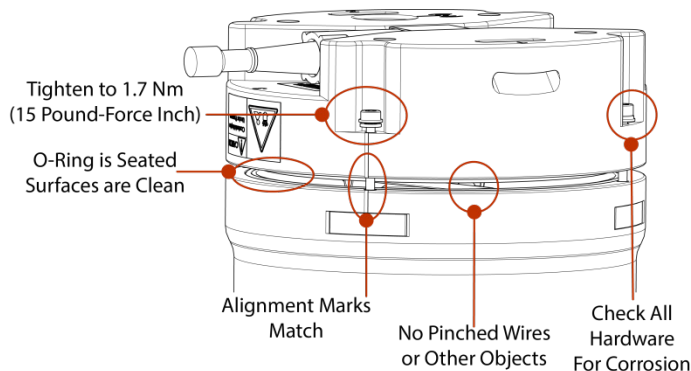
washers are flat, and then turn the bolts ¼ turn more. Do not strip the bolts or captive nut threads.



Read the Self-Contained Deployment Guide.



Sentinel V20 Model with SC End-Cap Shown



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

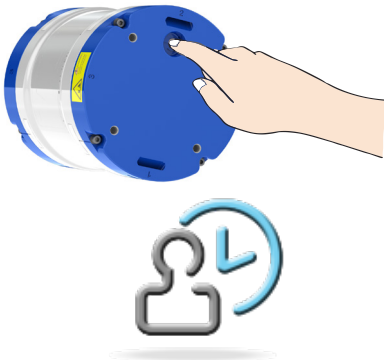
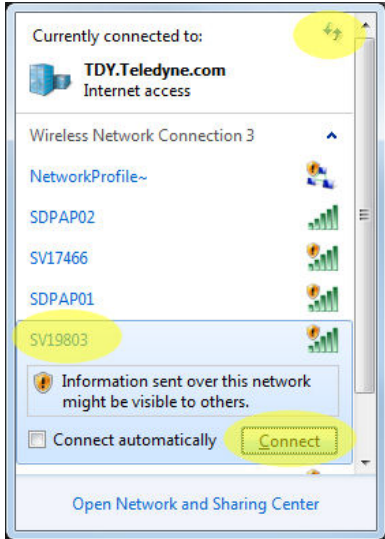

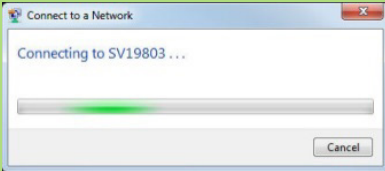




Sentinel V Self-Contained Quick Start Card

Wireless with
D Cell Batteries



Connecting to the ADCP

Touch Sensor	Connect	Start ReadyV
	 <p><i>Sentinel V ADCPs display as SVnnnnn (where nnnnn is the five or six character serial number shown on the product label).</i></p>	
<p>Touch the sensor</p>	<p>Click the wireless icon (📶) in the system tray. Click the Refresh icon (↻). Locate the ADCP on the list and click on it. Click Connect.</p>	<p>Open a browser. Type 192.168.0.2 in the address bar.</p>
<p>Beep(s) heard.</p>		
<p>If the beep is not heard, check that the battery is installed. Touching the sensor starts the ADCP's WLAN for five minutes.</p>	<p>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.</p>	<p>It can take up to 30 seconds for the ReadyV Home panel to display. As needed, touch the Touch Sensor, listen for the beep, and then refresh the browser page until ReadyV starts. Start ReadyV within five minutes of connecting to the WLAN.</p>
 <p>Read the Self-Contained Deployment Guide and the Sentinel V Operation Manual, Chapter 1 Wireless Connection Common Issues.</p>		