

ValveLink™ Mobile Software

ValveLink Mobile software lets you configure, calibrate, and troubleshoot FIELDVUE™ DVC2000, DVC6000, DVC6000f, DVC6200, and DVC6200f digital valve controllers using an Emerson Field Communicator or PDA. See the table below for hardware requirements. Diagnostic and configuration data collected using ValveLink Mobile software can be transferred to ValveLink Solo, AMS ValveLink SNAP-ON™, ValveLink DTM, or ValveLink PLUG-IN for PRM® applications to be analyzed and archived.

Hardware Requirements

Emerson 475 Field Communicator	Easy Upgrade option and System Software Version 3.8 are required to install ValveLink Mobile 4.0. Requires Bluetooth® or an IrDA® interface on the PC to transfer data files. To transfer data files using Bluetooth, the field communicator must be ordered with the Bluetooth option. Both HART® and FOUNDATION™ fieldbus communications are supported.
Emerson 375 Field Communicator	512 MB (minimum) or 1 GB memory card and Easy Upgrade option are required to load ValveLink Mobile software or install updates. Requires an IrDA interface on the PC to transfer data files. Both HART and FOUNDATION fieldbus communications are supported.
PDA	PDA with Windows Mobile® 5, 6.x, or Windows Embedded Handheld 6.5. Requires a Bluetooth HART modem. Bluetooth interface or USB data cable is required on the PC to transfer data files. Only HART communications are supported.



Emerson 475 Field Communicator



PDA with Bluetooth HART Modem

Installation

Field Communicator

ValveLink Mobile 4.0 is automatically installed when the field communicator operating system is updated to System Software Version 3.7 using Easy Upgrade. Refer to the table on the front cover for requirements.

PDA

1. Use a USB data cable to connect your PDA to your PC.
2. Establish a connection to your mobile device using Microsoft® ActiveSync® 4.5 (Windows® XP) or Windows Mobile Device Center 6.1 (Windows Vista®, Windows 7, Windows 8).

ActiveSync 4.5

<http://www.microsoft.com/en-us/download/details.aspx?id=15>

Windows Mobile Device Center 6.1 (32-bit)

<http://www.microsoft.com/en-us/download/details.aspx?id=14>

Windows Mobile Device Center 6.1 (64-bit)

<http://www.microsoft.com/en-us/download/details.aspx?id=3182>

3. Run **VLMobile 4.0 Setup.exe** from your PC to install ValveLink Mobile software on your mobile device.

Pairing a Bluetooth HART Modem to your PDA

1. Turn on the Bluetooth HART modem.
2. Turn on the Bluetooth radio on your PDA.
3. From the Wireless Manager on your PDA, select Bluetooth Setting and add a new device.

4. Select the Bluetooth HART modem from the list and enter the HART modem passcode, which can be found in the modem instruction manual. The default passcode for MACTeck® VIATOR® Bluetooth modems is *mactek*.
5. Find the COM ports selection. Assign the modem to an **Outgoing** COM port (e.g., COM6).

Once the modem and the mobile device are paired you will not need to perform this procedure again.

Connecting to the Digital Valve Controller

The Field Communicator or Bluetooth HART modem may be connected to the loop wiring or directly to the digital valve controller. To connect directly to the digital valve controller, attach the clip-on wires to the Loop + and - terminals located in the digital valve controller terminal box.

Launching ValveLink Mobile Software

Field Communicator

Select the ValveLink Mobile icon from the main menu to launch the software. Select HART or FOUNDATION fieldbus communications to start a session.

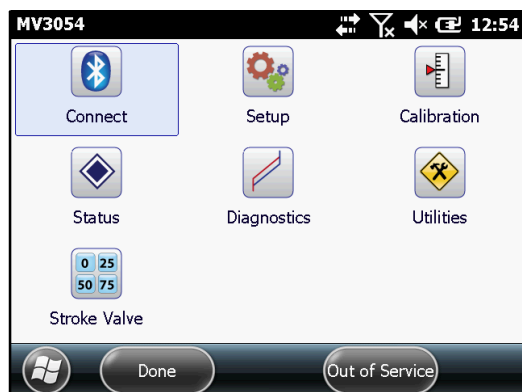
PDA

Select *Start > Programs > ValveLink Mobile* to launch the software.

Establishing a Connection

With ValveLink Mobile software, you can navigate through the menu structure without being connected to a device. This can be used to explore the menu structure, review diagnostic data, or transfer diagnostic data files to a PC while off-line.

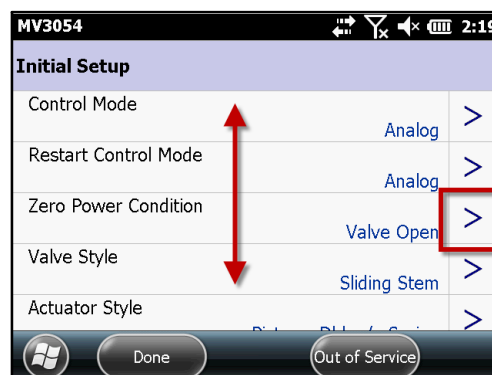
To start communicating with a field instrument, you will need to connect to a device.



Home Screen

Navigation Tips

List controls are scrolled with grab-and-drag input as shown in the list control navigation screen shot.



List Control Navigation

Field Communicator

To connect to a device, select the fieldbus or HART Connect icon from the home screen.

PDA

To connect to a device

1. Turn on the Bluetooth HART modem and the Bluetooth radio on your mobile device.
2. Select Connect > Change > Bluetooth COM Port. Set the COM port as defined in the pairing process above, e.g., COM6.
3. Select Connect.

ValveLink Mobile software will remember the last successful connection and you will not have to set the COM port again.

Once you find a variable that you want to change, you can hit the selection button (>). The selection button may not be visible if you are not connected to a device. Parameters that cannot be changed will have a symbol next to the selection button. This will usually happen when the instrument mode is In Service for HART devices or AUTO for fieldbus devices.

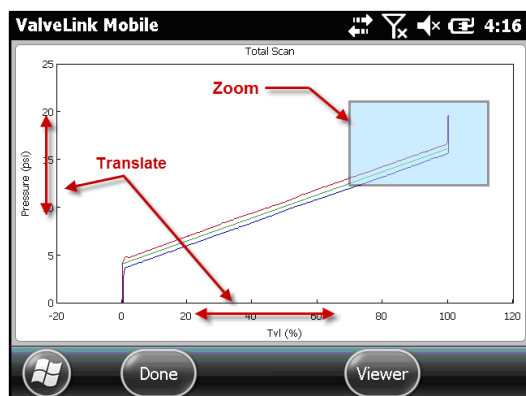
The command bar located at the bottom of the screen has two soft keys. The left Done soft key is used to go back one screen. The right soft key displays instrument mode (In Service, Out of Service, or Not Connected for HART devices; AUTO, MAN, OOS, or Not Connected for fieldbus devices). Select this key to change the instrument mode.

Most tasks will display a green highlighted bar to indicate that the task has completed successfully. For off-line diagnostic tests, wait for the green **Completed** highlight to appear on the graph before moving on to the next task.

Graph Controls

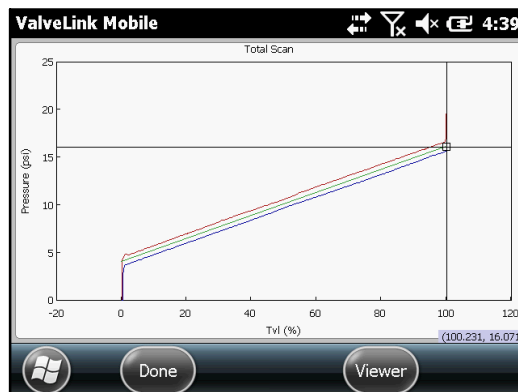
Graphs are displayed in real time or statically after a test has completed. Graph areas can be zoomed in by dragging a selection rectangle around the desired region of interest. Axes can be translated by grabbing the scale and sliding it to the desired position. Zooming and translation are shown in the figure below. To return back to the default view, tap the graph.

When graphs are being drawn in real time, you can zoom in on the data or translate the axes. When this occurs, updates to the display will be paused but data will continue to be collected in the background. Tap the graph to restart the real time display.



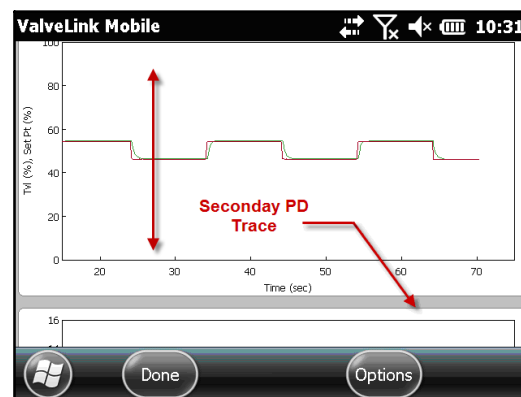
Graph Zoom and Translate Controls

Crosshairs can be displayed by selecting the directional pad (up, down, left, right arrows) “Enter” key until the crosshairs appear. Crosshairs can be moved by grabbing and dragging any point on the screen. X-Y coordinates are displayed in the lower right corner. To clear the crosshairs, press the directional pad “Enter” key again.



Graph Crosshairs and Coordinates

PD graphs can display up to four variables on two graphs. The second graph can be viewed by grabbing a graph anywhere except the y-axis scale and sliding the display up or down. Alternatively, graphs can be moved by pressing the up or down directional pad arrow keys.



PD Real Time Graphs

Other Information

Bluetooth

Bluetooth communications are generally robust, but the radio signal can be absorbed by water.

The most likely sources of water are your hand and people that might be between the handheld computer and modem. Some handhelds have the Bluetooth radio antenna where you put your hand, which can attenuate the signal.

Menu Structure



CONNECT

Connect is the starting place for establishing communications with a FIELDVUE instrument. Select Connect to access valve tag, last calibration date, and other relevant connection information. For fieldbus devices, the instrument must be at a permanent address to connect and change parameters.



SETUP



Setup Wizard

Use the Setup Wizard to guide you through initial instrument setup and calibration. All fields must be filled in before you can select **Apply** to download settings to the instrument. The instrument mode must be **Out of Service** (HART) or **MAN** (fieldbus) before the Setup Wizard can download parameters to the instrument.



Detailed Setup



Initial Setup

Fundamental instrument parameters, such as Zero Power Condition. Once these have been established, they generally do not need to be changed.



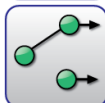
Tuning

Parameters for tuning travel and pressure servo controllers.



Response

Parameters for configuring rate limits, input filter time constant, and input characteristic.



Travel / Pressure Control

Parameters for configuring cutoffs, travel limits, and pressure fallback.



Alerts

Parameters for enabling alerts and setting alert thresholds. Alert states can be viewed using **Status**.

**Engineering Units**

Use Engineering Units to set instrument units. The display of operational parameters in ValveLink Mobile will be consistent with units configured in the instrument.

**Write Protection**

Used to enable or disable Write Protection in the instrument. When enabled, Write Protection prevents configuration and calibration changes to the instrument.

**Save Detailed Setup**

Save Detailed Setup is used to save a record of all device parameters. Saved data can be viewed in Data Set Explorer.

**Spec Sheet**

Reference list detailing valve body, actuator, and trim construction. Used to provide context for diagnostics.

**CALIBRATION**

**Auto Travel**

Auto Travel provides guided procedures for calibrating travel control and pressure fallback.

**Manual Travel**

Manual Travel provides guided procedures for manually calibrating travel feedback. Parameters for pressure fallback can be manually set in Detailed Setup.

**STATUS**

- | | |
|------------------------|--|
| Monitor Tab | Displays operating parameters, such as input current, travel, and supply pressure. |
| Alerts Tab | Summarizes instrument alert states:
<div style="display: flex; justify-content: space-around; align-items: center;"><div> Alert ON</div><div> Alert not enabled</div></div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"><div> Alert OFF</div><div> Alert not read</div></div> |
| Device Info Tab | Shows tag, firmware revision, device ID, etc. |
| Save Data Tab | Save status monitor information. Results can be viewed in Data Set Explorer or transferred to desktop computer using Wireless File Transfer. |



DIAGNOSTICS



Total Scan

Pressure versus travel, travel versus time, and pressure versus time graphs are available using Total Scan. This is an off-line test that must be run with the instrument mode **Out of Service** (HART) or **MAN** (fieldbus). Total Scan tests are used to estimate friction, bench set, and seat load.



Step Response



Stroking Time

Response to target set point values of 0%, 100%, and 0%. Used to estimate the time required to fully open and fully close a valve.



25% Step Study

Dynamic response to target set point values of 0%, 25%, 50%, 75%, 100%, 75%, 50%, 25%, and 0%. Used to check linearity.



Large Step Study

10%, 20%, ..., 80% steps from a baseline of 10%. Used to assess stability of valves with complex accessory configurations.



Performance Step Test

Bidirectional steps with amplitudes of 0.25%, 0.5%, 1%, 2%, 5%, and 10%. Used to estimate valve dead band and dynamic response.



PD One Button

Preconfigured, on-line diagnostic tests for identifying faults. Must be run with the instrument mode set **In Service**.



PD Traces

Real time traces of any device variable. Must be run with the instrument mode **In Service** for HART devices. PD traces can be run in **MAN** or **AUTO** for fieldbus devices. PD Traces are especially useful for tracking down limit cycles or other atypical behavior.



UTILITIES

**Data Set Explorer**

Select Data Set Explorer to view all diagnostic data by tag.

**Wireless File Transfer**

Wireless File Transfer combines selected tag data into a single *VLMobile.exp* file that can be transferred to a desktop computer using IrDA or Bluetooth and imported into ValveLink.

Most desktop Bluetooth software will guide you through the file transfer process. However, If you have the Microsoft Bluetooth software stack on your desktop, you will need to enable file transfer services before you can send a file. To do this, right mouse click on the Bluetooth logo in your icon tray and select *Receive a File* before transferring data. If the desktop software requires a passcode, use **0000** (all zeros).



Fieldbus Tools Fieldbus utilities for Emerson 475 and 375 Field Communicators.

**Set Device Address**

Used to define a permanent or temporary address for the instrument. Device parameters can only be changed when the device is at a permanent address. Use a temporary address to initialize an address on a host system.

**Set Device Tag**

Sets device tag.

**Set Output Block**

Used to define an analog or discrete set point source.

**Restart**

Reboots the microprocessor. This function does not change device parameters.

**Device List**

Scans and displays all device tags and addresses on a segment. The device list can be displayed without being connected to a specific instrument.

**Block Modes**

Displays resource, transducer, AO, and DO block modes.



HART Tools HART utilities for PDAs and Emerson 475 and 375 Field Communicators.



Toggle Burst Mode

Select Toggle Burst Mode to temporarily disable burst communications. This will improve speed and reduce communication errors.



HART Revision

If supported, HART Revision can be used to set HART 5 or HART 7 communications protocol in the instrument.



Instrument Family

For DVC6200 instruments, select DVC6000 for devices with a potentiometer feedback sensor or DVC6200 for devices with a magnetic array feedback sensor.



Instrument Level StepUp

Instrument Level StepUp is used to change the diagnostic tier in the instrument with a device specific 15 digit code.



About

About displays standard software identification information.



STROKE VALVE

Stroke Valve is a routine for moving a valve to 0%, 25%, 50%, 75%, and 100% lifts or by jogging the valve up or down in 2% increments from any starting point.

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