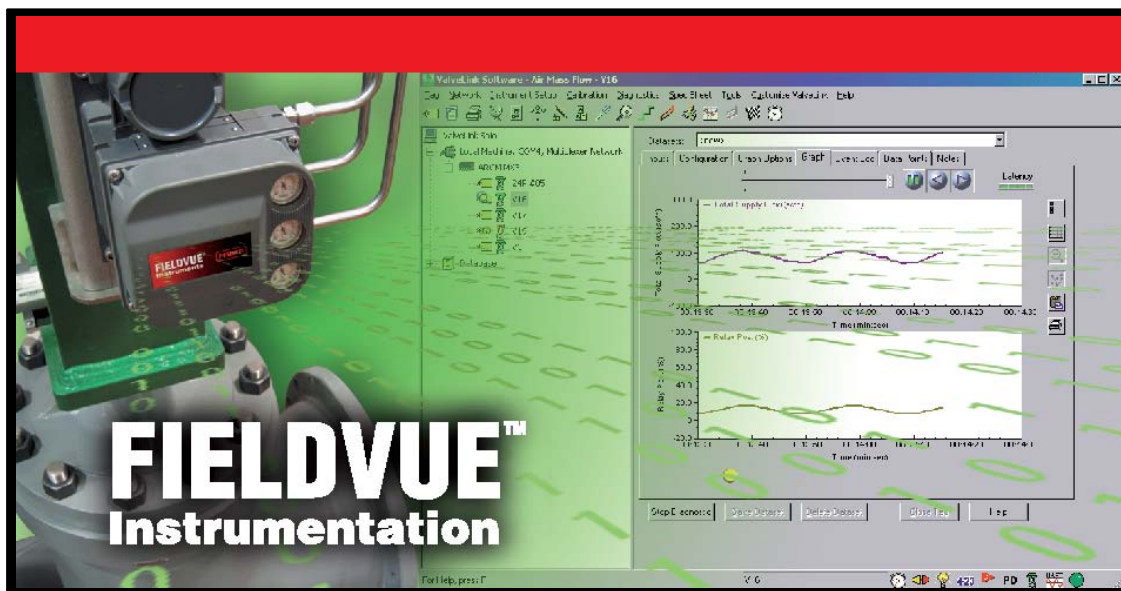


## ValveLink™ Software



ValveLink™ Solo

AMS ValveLink™ SNAP-ON™

ValveLink™ DTM

ValveLink™ PLUG-IN for PRM®

- **Communicate with both HART® and FOUNDATION™ fieldbus FIELDVUE™ digital valve controllers**
- **Configure, calibrate, and diagnose FIELDVUE instruments from one location**
- **Use the Performance Tuner to easily optimize tuning**
- **Performance Diagnostics provide in-service diagnostics for monitoring the health of the valve assembly without disturbing the process**
- **Diagnostics provide validation of assembly rebuild and detailed insight into the physical condition of the valve/actuator assembly**
- **Setup and test FIELDVUE instruments for Safety Instrumented System (SIS) Solutions**
- **Scheduler allows you to specify a time and date to automatically run tasks on a regular basis**
- **Save time by preconfiguring calibration and diagnostics in the shop with Batch Runner**



## ValveLink Software Product Suite

ValveLink software is available in a variety of configurations to allow you to realize the full benefit of FIELDVUE digital valve controllers.

### ValveLink Solo

ValveLink Solo permits users to perform configuration, calibration, and diagnostics on HART and FOUNDATION Fieldbus FIELDVUE digital valve controllers.

### Integrate ValveLink software into AMS Suite: Intelligent Device Manager



AMS ValveLink SNAP-ON provides integration with AMS Suite: Intelligent Device Manager to perform configuration, calibration, and diagnostics. Integration with AMS Device Manager provides the ability to communicate with FIELDVUE digital valve controllers via DeltaV™, Ovation™, PROVOX™, HART multiplexers, and HART modems. Non-Emerson host integration, including Invensys and Honeywell (HART only) systems, can be provided through HSI (Host System Integration).

### Integrate ValveLink DTM into Field Device Tool – FDT



ValveLink DTM provides integration into a Field Device Tool frame application to perform configuration, calibration, and diagnostics on FIELDVUE digital valve controllers. The ValveLink DTM is certified with the FDT group.

### Integrate AMS ValveLink Software into the Yokogawa Plant Resource Manager (PRM) and CENTUM CS



ValveLink PLUG-IN for PRM provides integration with the Yokogawa Plant Resource Manager (PRM). This integration provides PRM users with the ability to launch the ValveLink PLUG-IN for PRM directly from PRM and to communicate with HART and FOUNDATION fieldbus FIELDVUE digital valve controllers through PRM and the Yokogawa CENTUM CS.

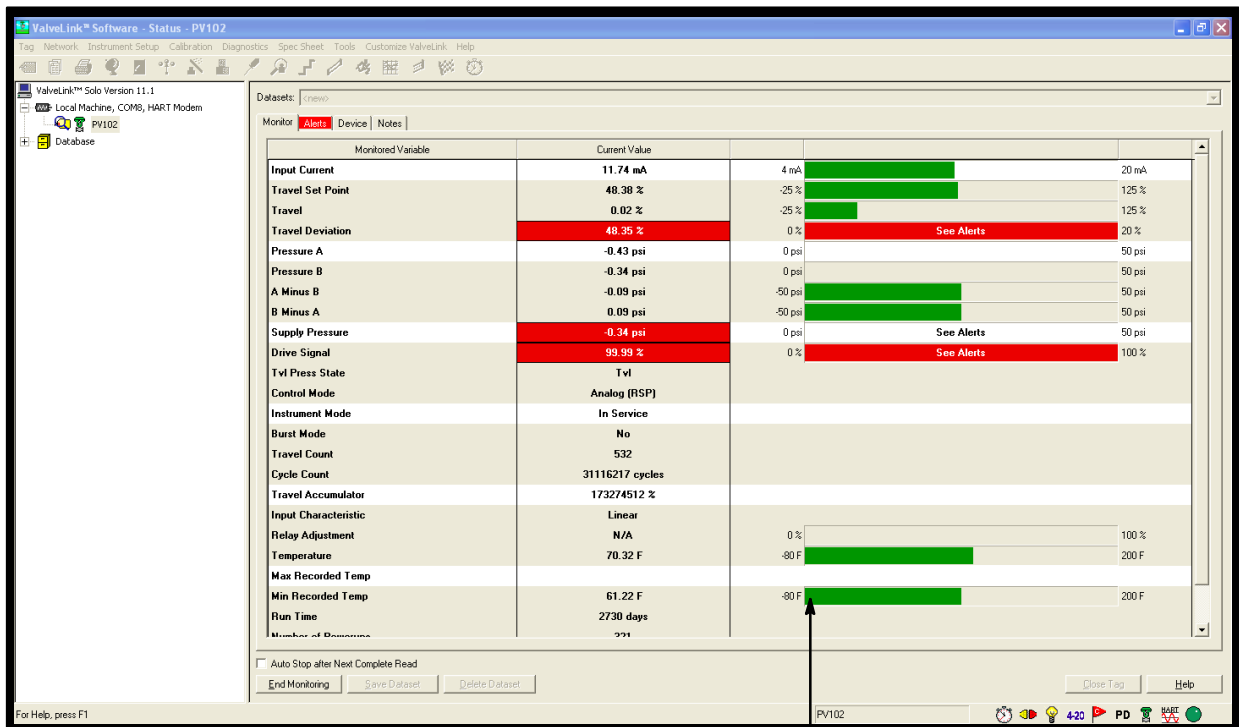


ValveLink software is a core component of the proven PlantWeb™ digital plant architecture. ValveLink software powers PlantWeb through predictive and proactive control valve maintenance using intelligent digital valve controllers to improve availability and performance.

## Communicate with both HART and FOUNDATION fieldbus FIELDVUE digital valve controllers

ValveLink software remotely communicates with HART FIELDVUE instruments over the existing 4-20 mA signal wiring using the HART communication standard. The same software also can communicate with FOUNDATION fieldbus FIELDVUE instruments over the fieldbus H1 segment. Information is presented in a consistent, easy-to-interpret interface that provides the capability to configure, calibrate, and diagnose FIELDVUE instruments from one location:

- A device connection view of all connected instruments
- Monitoring of instrument operational parameters and alerts
- Review and comparison of diagnostic graphs
- Instrument setup and calibration
- Data import and export



VIEW CRITICAL PARAMETERS ON BAR GRAPH FOR INSTANT COMPARISON

Status Monitor Displays Operational Parameters and Alerts

## Use the Performance Tuner to easily optimize tuning

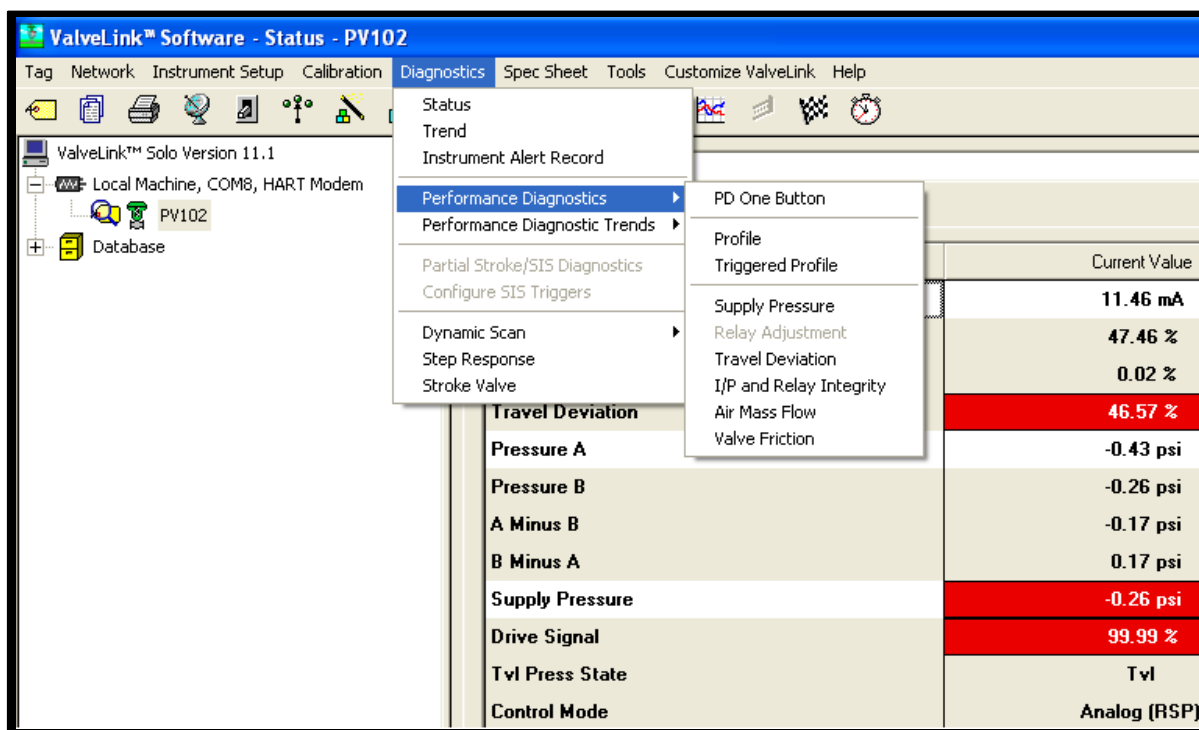
The Performance Tuner lets you easily adjust a FIELDVUE digital valve controller for optimum performance. When mounting a FIELDVUE digital valve controller, to either a Fisher or a non-Fisher valve, the Performance Tuner can optimize valve performance for you.

## Performance Diagnostics provide in-service diagnostics for monitoring the health of the valve assembly without disturbing the process

Performance Diagnostics (PD) provides predictive in-service diagnostics for monitoring the health of the valve assembly and customized diagnostics for advanced troubleshooting. Performance Diagnostics continuously analyze the valve assembly and passively gather data without disturbing or interrupting the control valve while it is in the process.

PD may be used to help detect problems with air leakage, valve assembly friction and deadband, instrument air quality, loose connections, supply pressure restriction, and valve assembly calibration. When a problem is identified, the diagnostic provides a description and severity of the problem, a probable cause, and recommended action.

In-service diagnostics for troubleshooting allow custom diagnostics to be set up to collect data at a high-frequency collection rate and present the data in a graphical format.



*Performance Diagnostics tests are available upon user request or a pre-selected daily, weekly, monthly, or yearly schedule without user intervention*

## Provide Real-Time Notification of Current and Potential Valve and Instrument Problems using Performance Diagnostics

Performance Diagnostics enables the use of diagnostics while the valve is in-service and operating. Tests can be performed to identify problems with the entire control valve assembly, such as:

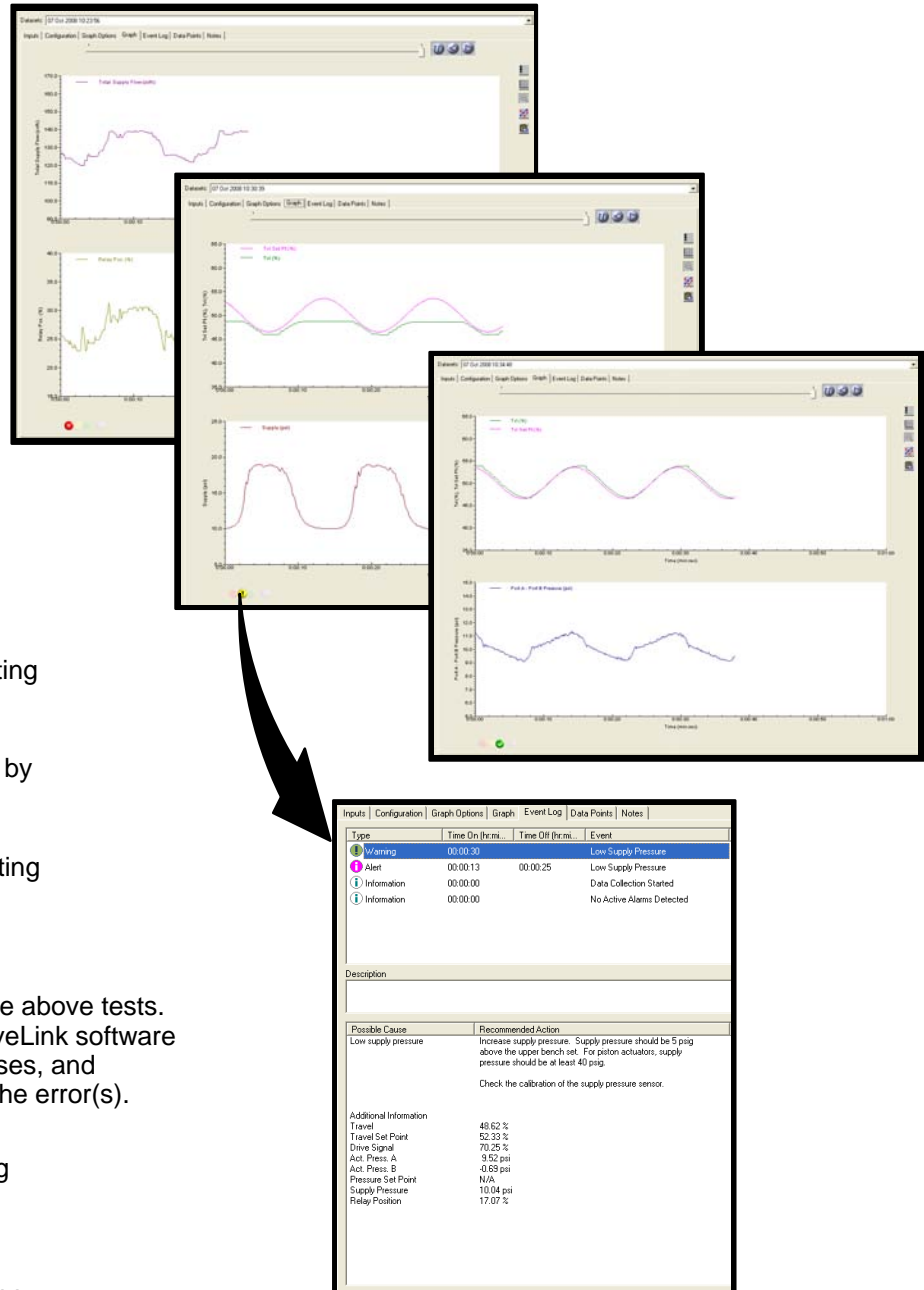
■ Red/Yellow/Green condition indicator – provides a quick visual indication of the following:

- the physical condition of the FIELDVUE instrument I/P and relay components
- instrument air supply pressure and volume
- relay adjustment on double acting piston actuators
- the total air received and used by the instrument, and
- why a valve assembly is deviating from the set point

■ PD One Button is a sweep of the above tests. When the sweep is complete, ValveLink software will show any errors, possible causes, and recommended actions to resolve the error(s).

■ Friction and Deadband Trending

Performance Diagnostics are available upon user request or may be scheduled to automatically run on a daily, weekly, or monthly basis.



**Performance Diagnostics provide on-line/in-service predictive diagnostics to identify faults and list possible causes and recommended corrective actions for each fault**

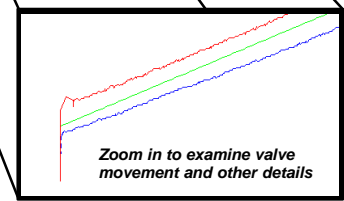
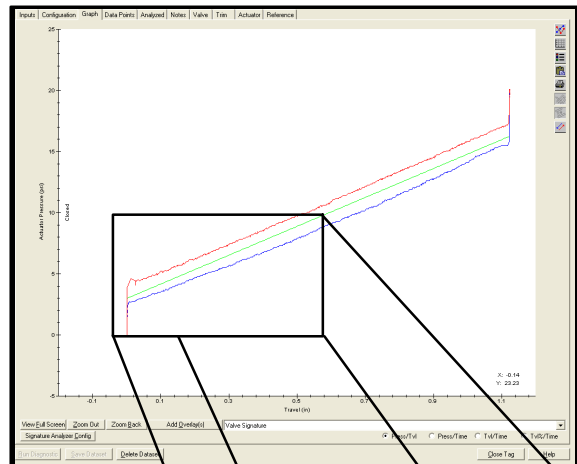
## Provide validation of assembly rebuild and detailed insight into the physical condition of the valve/actuator assembly

Performance Diagnostics vary the digital valve controller set point and plot valve operation to provide insight into the dynamic performance of the valve/actuator assembly. Out-of-service diagnostics such as valve signature, dynamic error band, and step response assist in the identification of emerging valve problems quickly and accurately.

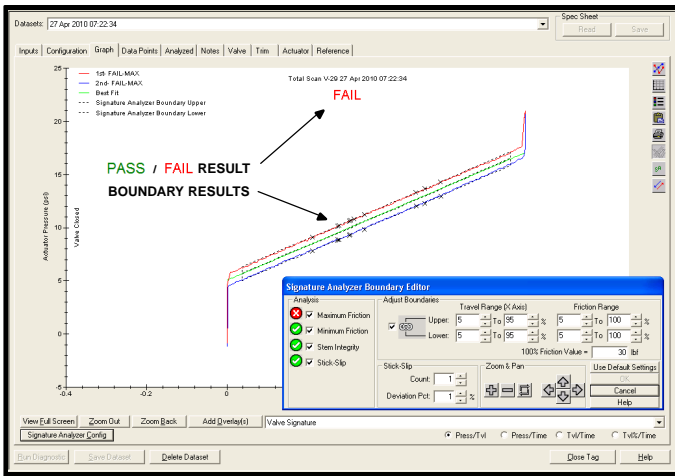
Out-of-service diagnostics are optimally run as part of a plant shutdown.

The **Valve Signature** diagnostic is used to:

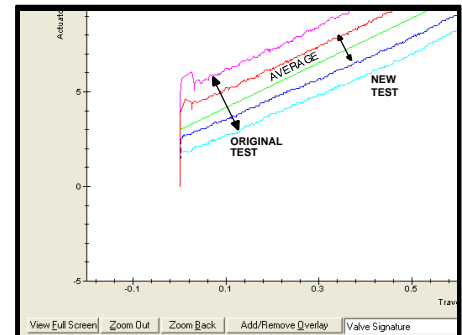
- Evaluate valve friction, deadband, and shutoff capability.
- Calculate actuator spring rate and bench set.
- Identify potential packing problems.
- Compare current condition to previous baseline condition.
- Signature Analyzer enables rapid analysis of the Valve Signature to more efficiently manage your plant assets. Based on default or user defined settings, Signature Analyzer provides pass/fail results for Maximum Friction, Minimum Friction, Stem Integrity, and Stick Slip, enabling better documentation for required maintenance or validation of valve repairs.



**Diagnostic tests, such as the Valve Signature Diagnostic example shown here, help you detect emerging valve repair requirements before they impact performance**



**Signature Analyzer Boundary Editor allows you to use default or customized test criteria**



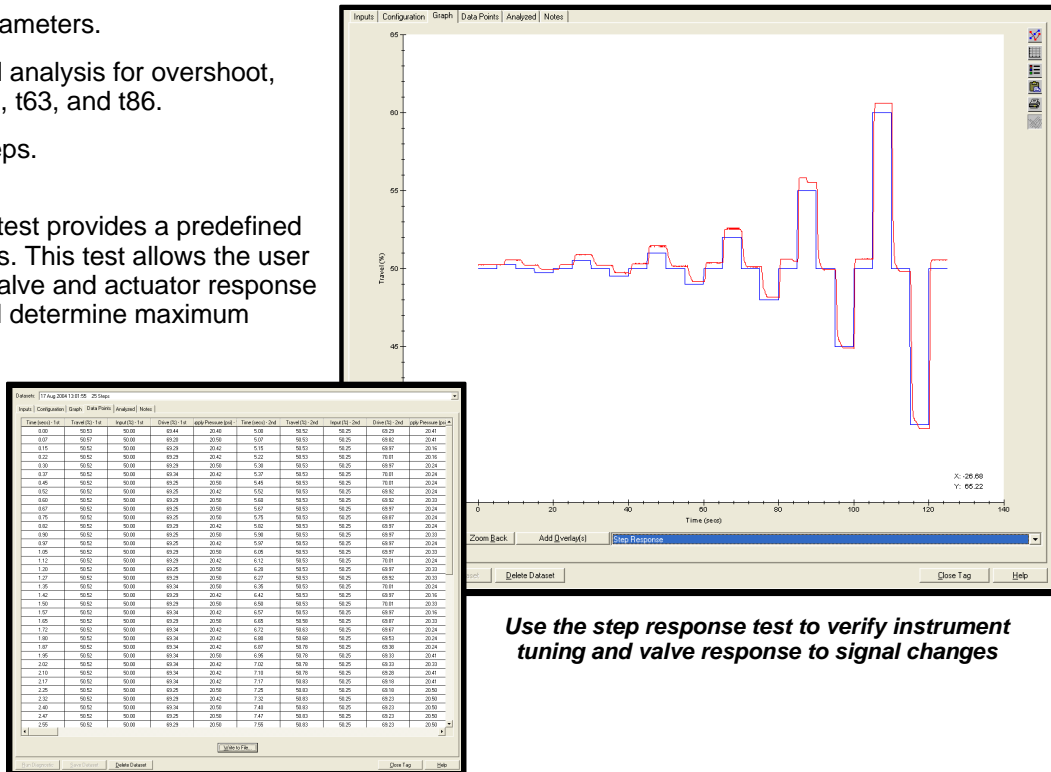
**ValveLink software enables simultaneous multiple overlay of tests (up to ten). This allows you to trend valve history.**

The **Dynamic Error Band** diagnostic is used to analyze hysteresis, deadband, and dynamic error.

The **Step Response** diagnostic allows you to evaluate how well the valve tracks an input change. By minimizing dead time, deadband, and overshoot, process control is greatly enhanced. With the Step Response test you can:

- Validate tuning parameters.
- Obtain a numerical analysis for overshoot, hysteresis, dead time, t63, and t86.
- Define up to 30 steps.

A performance step test provides a predefined sequence of 25 steps. This test allows the user to quickly evaluate valve and actuator response to signal change and determine maximum deadband.

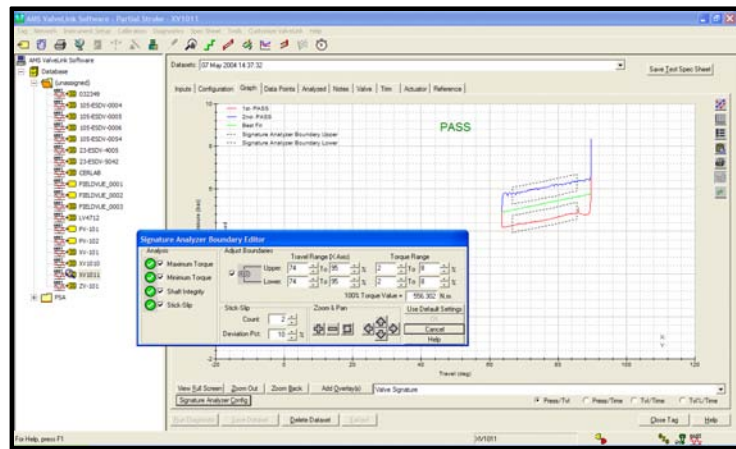


## Setup and test FIELDVUE instruments for Safety Instrumented System (SIS) Solutions

Use ValveLink software to set up and test the final control element in safety instrumented system applications. ValveLink software for DVC6000 SIS digital valve controllers provides:

- A Setup Wizard to set up the digital valve controller for use in a Safety Instrumented System. ValveLink software provides a pneumatic hookup representation to help ensure tubing is correctly connected.

- The capability to initiate a partial stroke test of the final control element without requiring a process shutdown. You can run a partial stroke test to prove the valve will respond on demand. Store partial stroke test results for future comparison and study. You can also initiate the test by shorting the AUX Terminal in the field with a push button located at the device, or remotely from the valve.



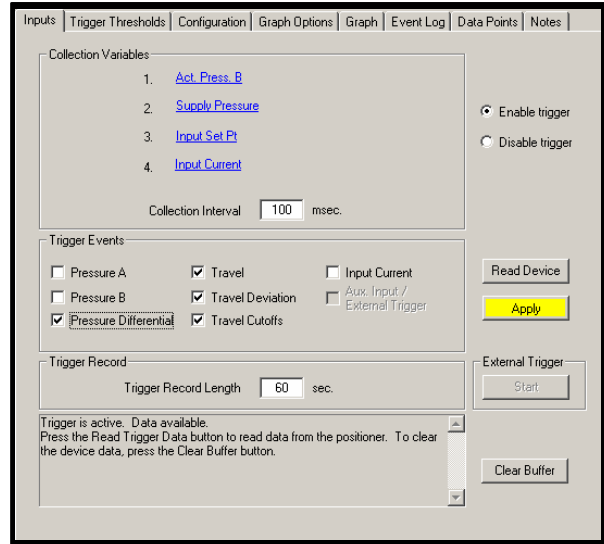
*At the same time the instrument performs the partial stroke test, ValveLink software also gathers diagnostic data. Use this data to evaluate valve performance and determine if maintenance is required.*

*(Setup and test FIELDVUE instruments for Safety Instrumented System (SIS) Solutions continued on next page)*

- A Signature Analyzer to automate diagnostics results of Valve Signature and Partial Stroke diagnostic data. The Signature Analyzer uses a set of user configurable limits to help determine possible issues with the valve assembly, such as a broken shaft or stem.

- A Trigger event that allows you to log the “Safety Demand” event while storing pre-event and post-event data. Trip event data can be accessed for an audit and presented to regulatory or insurance authorities.

The Trigger functionality allows data to be collected and stored in the microprocessor memory of the digital valve controller. Trip event data can be accessed for an audit and presented to a regulatory or insurance authority. The trigger will initiate on-board data collection based on a change in actuator pressure, valve travel, input current, pressure differential, travel deviation, or travel cutoff. The data is stored on board the device for later retrieval, and is retained in the event of a power loss.



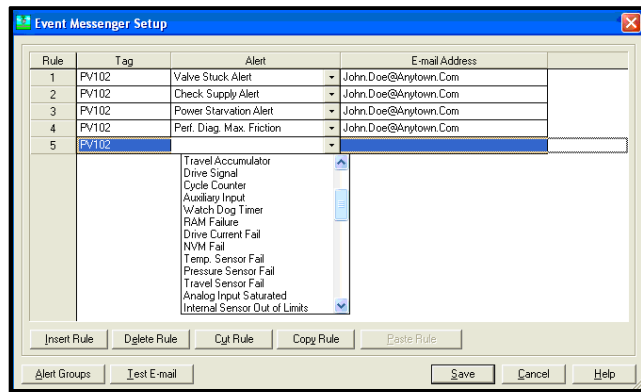
**A Trigger event, based on one of eight process variables, documents a “Safety Demand” event when used in a safety instrumented system**

Every event performed with ValveLink software is logged with a time and date stamp to document that tests were run and how the valve assembly responded.

- Diagnostic information to allow predictive maintenance of the final control element. No need to unnecessarily shutdown the process to perform maintenance on the safety shutdown valve.

- The capability to monitor the health of a solenoid valve downstream of the digital valve controller. This can improve safety reliability and provide assurance that the solenoid valve is not stuck in the open position.

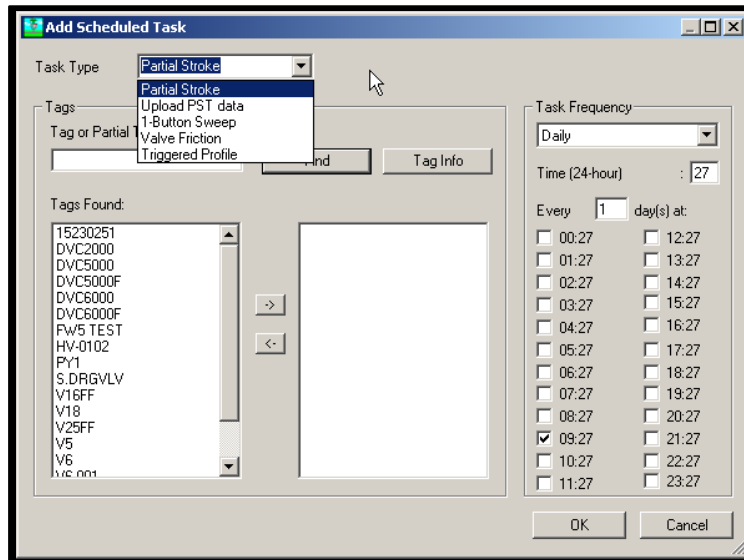
- ValveLink Solo Event Messenger capability to send notification via email, pager, or cell phone if a specific alert, or set of alerts, occurs on a predefined set of safety shutdown valves.



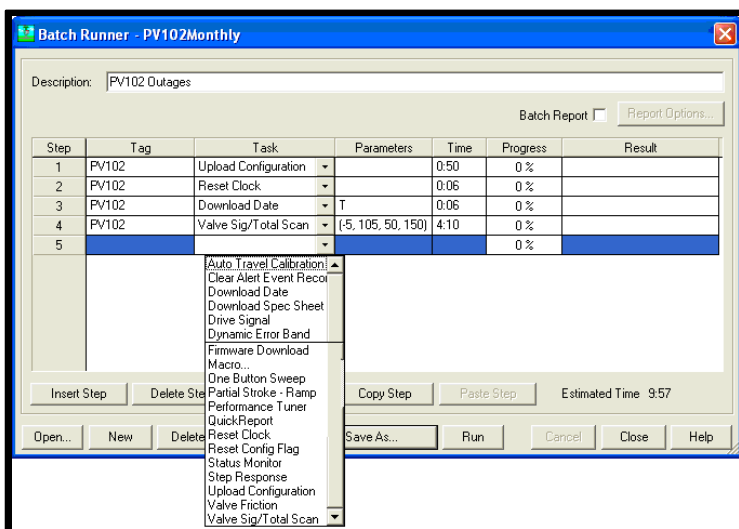


## Scheduler allows you to specify a time and date to automatically run tasks on a regular basis

With Scheduler, you can schedule tasks, such as in-service Performance Diagnostics and SIS Partial Stroke diagnostics to run on a recurring daily, weekly, monthly, or yearly schedule that you specify. A summary of the outcome of scheduled tasks is available from within Scheduler and for complete details you can view the resulting diagnostic graphs and analyses.



## Save time by preconfiguring calibration and diagnostics in the shop with Batch Runner



**Use Batch Runner to automate diagnostic tests and other repetitive activities**

With Batch Runner you can setup ValveLink software to automatically run diagnostic tests, calibrate, or upload configuration data from multiple valves with a user specified routine. During a turnaround or production change, you can download firmware, upload configurations, run the Performance Tuner to optimize tuning, or even reset the instrument clock without any interaction by personnel.

Batch Runner increases efficiency by allowing you to set up a batch once, and repeatedly run that set of actions on different groups of valve assemblies.

## Specifications<sup>(1)</sup>

### Available Configurations

See table 1

### Recommended Minimum Hardware Requirements

800 MHz processor (Windows 2000, Windows XP, and Server 2003), or

1 GHz processor (Windows Vista, Windows 7, and Server 2008)

256 MB RAM (Windows 2000, Windows XP, and Server 2003, or

1 GB RAM (Windows Vista, Windows 7, and Server 2008)

Hard disk:

*No Trending*— 65 MB available storage space

*Trending*— 125 MB available storage space

Video: 1024x768, 256 color VGA

CD-ROM drive

USB Port

### Optional Hardware

#### HART Modem

*Standard RS-232*, requires a dedicated interrupt

*MACTek<sup>®</sup> VIATOR<sup>®</sup> USB HART Modem*, requires a USB port

*MACTek VIATOR Bluetooth<sup>®</sup> HART Interface*, requires Windows<sup>®</sup> Bluetooth Serial Port Profile (SPP)

*ProComSol Bluetooth HART Interface*, requires Windows Bluetooth SPP

#### HART Multiplexer

Standard RS-232 port, requires RS-485 converter

### Fieldbus H1 (NI)

*NI PCMCIA-FBUS Series 2*

*NI PCMCIA-FBUS/2 Series 2*

*NI PCI-FBUS/2*

*NI USB-8486*

### Supported Operating Systems

#### ValveLink Solo and ValveLink DTM

Windows 2000, Windows XP, Windows Vista (32-bit), Windows 7, Windows Server 2003, and Windows Server 2008

#### AMS ValveLink SNAP-ON

Operating Systems supported by AMS Suite: Intelligent Device Manager v8.0 and newer

#### ValveLink PLUG-IN for PRM

Operating Systems supported by Yokogawa Plant Resource Manager R3.02 and newer

### Modbus Interface

#### Modbus Protocol:

RTU or ASCII

Function codes 1, 2, 3, 4, and 8 (subfunction 0)

Slave address 1 to 255 (user selectable)

#### Communication Rate: 300 to 19.2 kbaud

#### Data Types:

Function codes 1 & 2—Alert Status

Function Codes 3 & 4—Analog Values

IEEE double precision floating point

Signed integer

Scaled integer

#### Electrical Connection to Control System:

RS-232 or RS-485

1. Specifications do not apply to AMS ValveLink SNAP-ON.

### Note

**Neither Emerson, Emerson Process Management, nor any of their affiliated entities assumes responsibility for the selection, use, or maintenance of any product. Responsibility for the selection, use, and maintenance of any product remains with the purchaser and end user.**

Table 1. ValveLink Software Capability

CAPABILITY	PRODUCT TYPE										
	ValveLink Solo					AMS ValveLink SNAP-ON		ValveLink DTM		ValveLink PLUG-IN for PRM	
	VL2001 Database Only	VL2005 Lite Version	VL2010 In-Service Only	VL2021 Modem Version	VL2031 Multiplexer Version	AW7070VL00025 SNAP-ON	AW7070VL00100 SNAP-ON	VL2005DTM Lite Version	VL2051DTM	VL2005PRM PLUG-IN to PRM Lite Version	VL2021PRM PLUG-IN to PRM
HART Modem		●	●	●	●	● <sup>(1)</sup>	● <sup>(1)</sup>				
HART Multiplexer			●	●	●	● <sup>(1)</sup>	● <sup>(1)</sup>				
WirelessHART® Communications						● <sup>(1)</sup>	● <sup>(1)</sup>				
FOUNDATION Fieldbus PC Card		●	●	●	●						
FOUNDATION USB Interface		●	●	●	●						
Performance Diagnostics	Valve Signature <sup>(2)</sup>	○	●	○	●	●	●	●	●	●	●
	Dynamic Error Band <sup>(2)</sup>	○	●	○	●	●	●	●	●	●	●
	Drive Signal Test <sup>(2)</sup>	○	●	○	●	●	●	●	●	●	●
	Step Response <sup>(2)</sup>	○	●	○	●	●	●	●	●	●	●
	Step Response Analysis	○	●	○	●	●	○	●	●	●	●
	Performance Step Test <sup>(2)</sup>	○	○	○	●	●	○	○	●	○	●
	Graph Overlay	○			●	●			●		●
	Stroke Valve		●		●	●	●	●	●	●	●
	I/P & Relay Integrity	○	●	●	●	●	●	●	●	●	●
	Travel Deviation	○			●	●	●	●	●	●	●
	Supply Pressure <sup>(3)</sup>	○	●	●	●	●	●	●	●	●	●
	Relay Adjustment <sup>(3)</sup>	○	●	●	●	●	●	●	●	●	●
	Air Mass Flow <sup>(3)</sup>	○	●	●	●	●	●	●	●	●	●
	PD One Button	○	●	●	●	●	●	●	●	●	●
	Valve Friction / Deadband Estimation	○	●	●	●	●	●	●	●	●	●
Valve Friction / Deadband Trend	○	●	●	●	●	●	●	●	●	●	
Profiler	○	●	●	●	●	●	●	●	●	●	
Triggered Profile	○	●	●	●	●	●	●	●	●	●	
Status Monitor	○	●	●	●	●	●	●	●	●	●	
Network Scan <sup>(4)</sup>		●	●	●	●						
Trending <sup>(4)</sup>	○	●	●	●	●						
Event Messenger <sup>(4)</sup>		●	●	●	●						
Modbus <sup>(4)</sup>		●	●	●	●						
Batch Runner		●	●	●	●	●	●	● <sup>(5)</sup>	● <sup>(5)</sup>	●	●
Scheduler		●	●	●	●	●	●	● <sup>(5)</sup>	● <sup>(5)</sup>	●	●
DataSync	●	●	●	●	●			●	●	●	●
Firmware Download <sup>(3)</sup>		●	●	●	●	●	●	●	●	●	●
Temporary Tiering <sup>(3)</sup>		●	●	●	●	●	●	●	●	●	●
Instrument Level StepUp		●	●	●	●	●	●	●	●	●	●
Initial Tag Limit	Unlimited	5	125	125	32 or 125	5	100	5	32 or 125	5	32 or 125
Max Tag Limit	Unlimited	75	Unlimited	Unlimited	Unlimited	--- <sup>(1)</sup>	--- <sup>(1)</sup>	75	Unlimited	75	Unlimited

● Indicates capability available  
○ Indicates diagnostics can be reviewed but not run

1. AMS based capability. AMS ValveLink SNAP-ON does not control or limit this functionality.  
2. Diagnostic can only be run when the instrument is out of service.  
3. DVC6200, DVC6200f, DVC6000, DVC6000f, and DVC2000 only.  
4. HART only.  
5. Limited to Host DDT Frame connected devices.

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**Emerson Process Management**

Marshalltown, Iowa 50158 USA  
Sorocaba, 18087 Brazil  
Chatham, Kent ME4 4QZ UK  
Dubai, United Arab Emirates  
Singapore 128461 Singapore

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