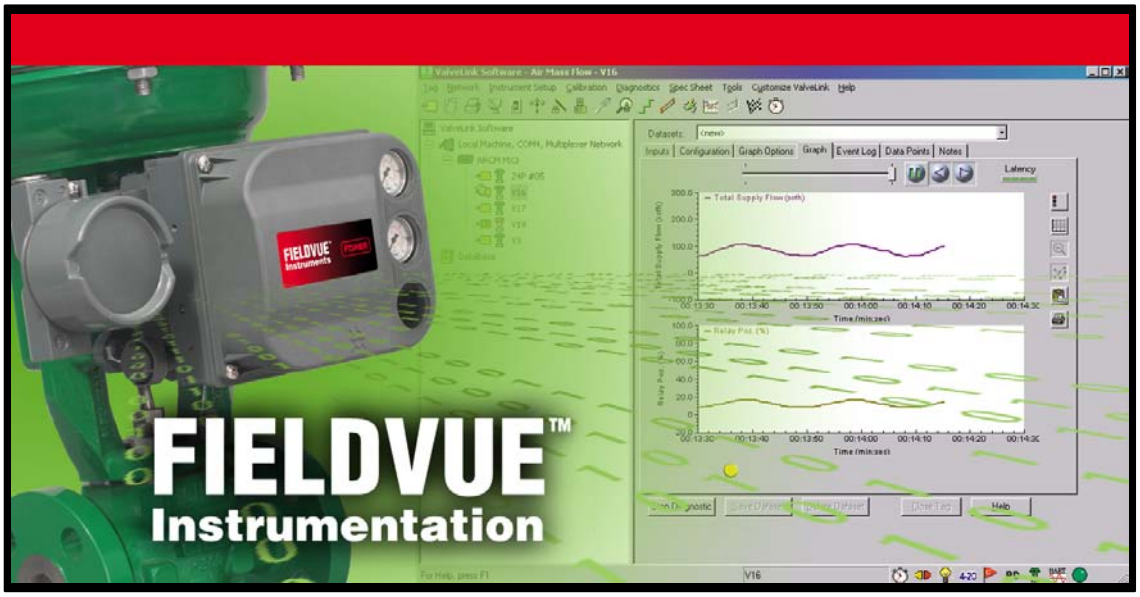
ValveLink™ Software



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)

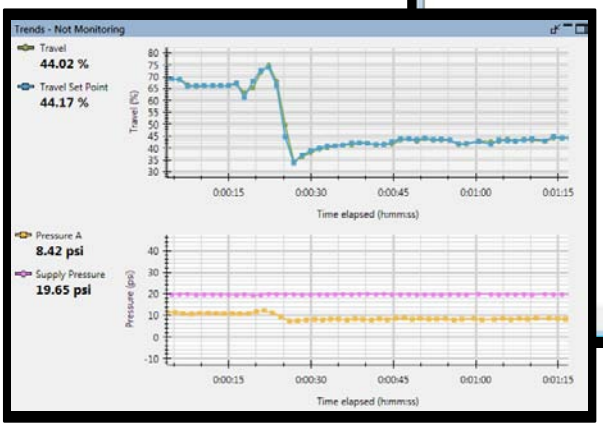
ValveLink PLUG-IN for PRM provides integration with the Yokogawa Plant Resource Manager (PRM). This integration provides PRM users with the ability to launch the ValveLink PLUG-IN for PRM directly from PRM and to communicate with HART and FOUNDATION fieldbus FIELDVUE digital valve controllers through PRM and the Yokogawa CENTUM CS 3000 R3 and CENTRUM VP.

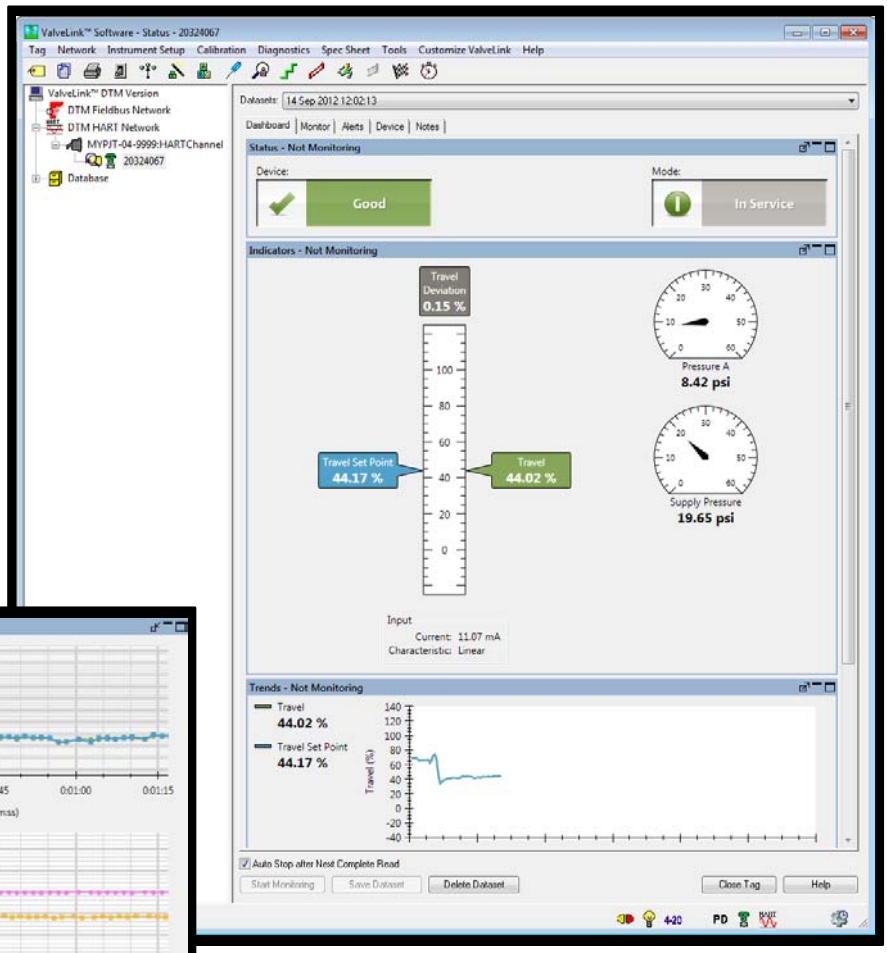
ValveLink software is a core component of the proven PlantWeb™ digital plant architecture. ValveLink software powers PlantWeb through predictive and proactive control valve maintenance using intelligent digital valve controllers to improve availability and performance.

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:

- Dashboard of critical instrument information
- 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





TREND VALVE TRAVEL AND PRESSURE

Use the Performance Tuner to easily optimize tuning

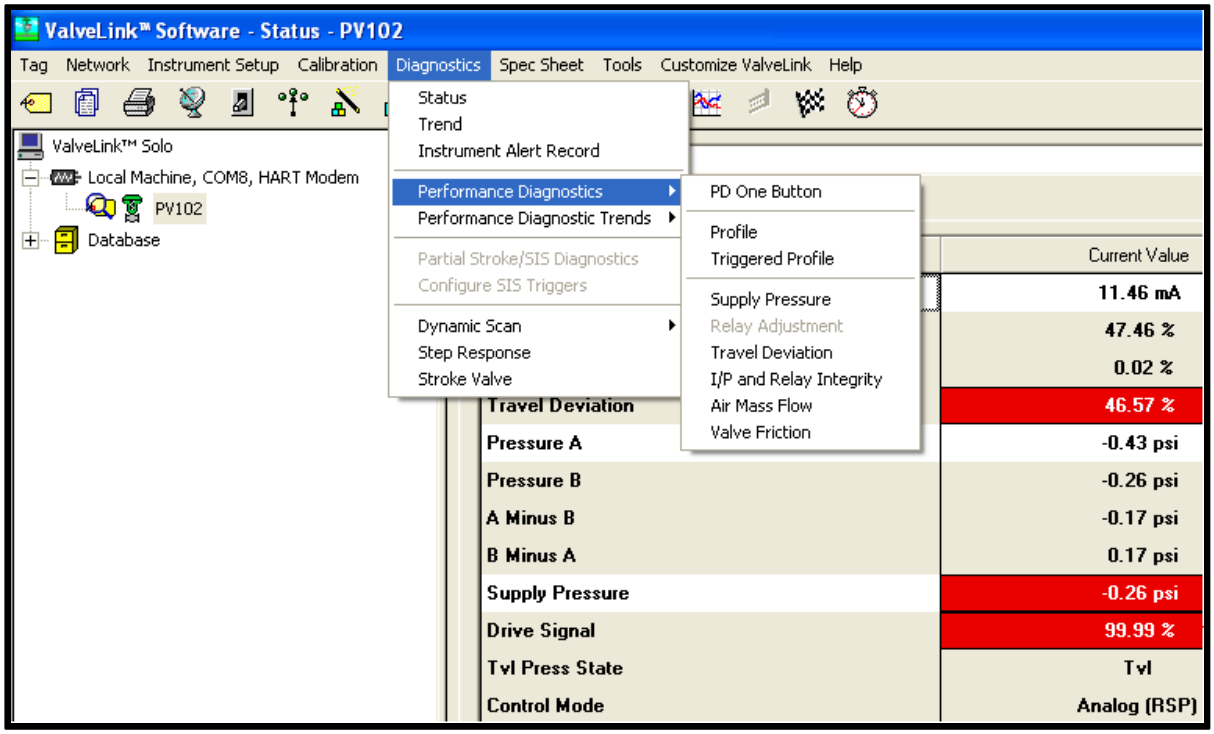
The Performance Tuner lets you easily adjust a FIELDVUE digital valve controller for optimum performance. When mounting a FIELDVUE digital valve controller, to either a Fisher or a non-Fisher valve, the Performance Tuner can optimize valve performance for you.

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.



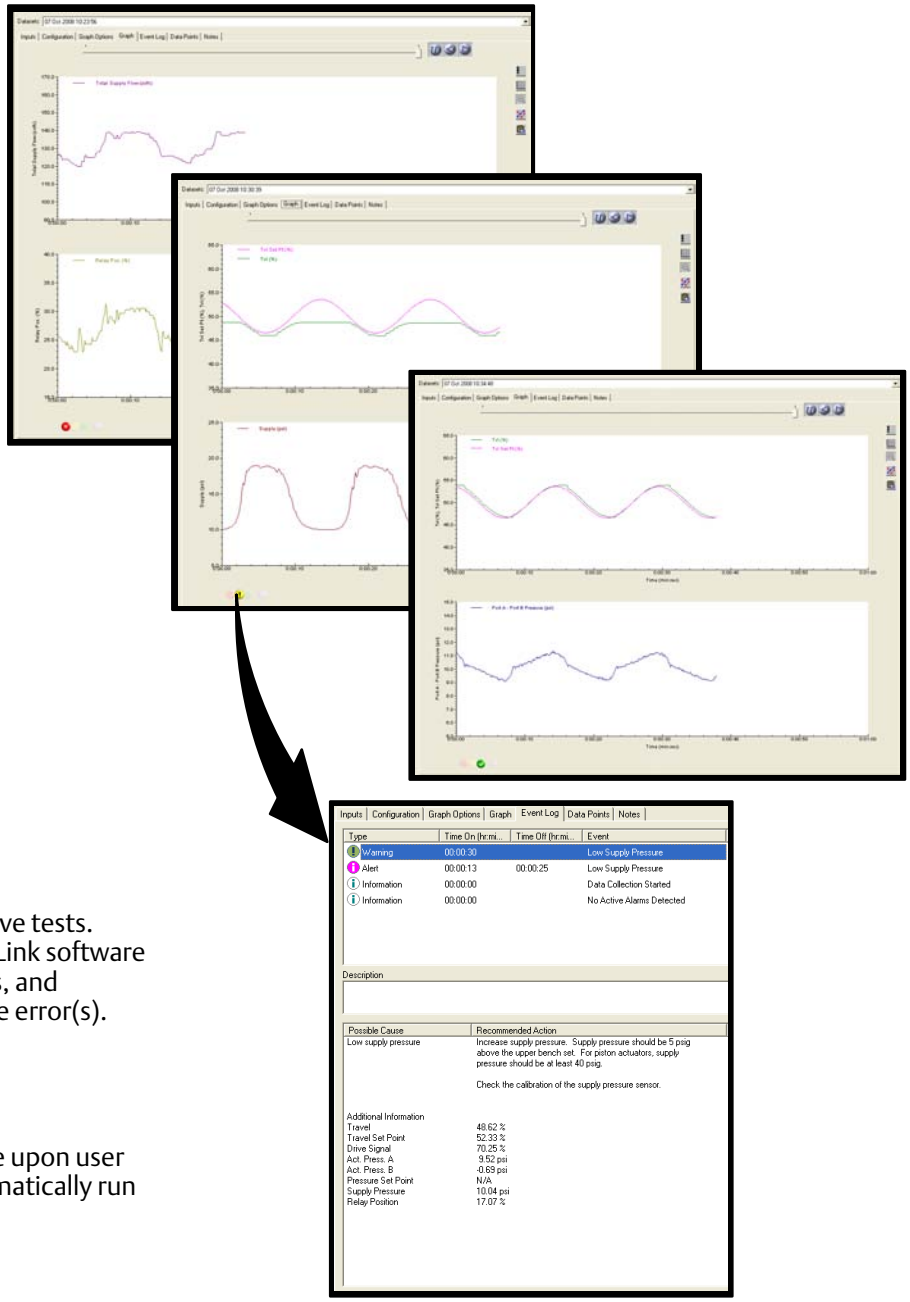
Performance Diagnostics tests are available upon user request or a pre-selected daily, weekly, monthly, or yearly schedule without user intervention

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

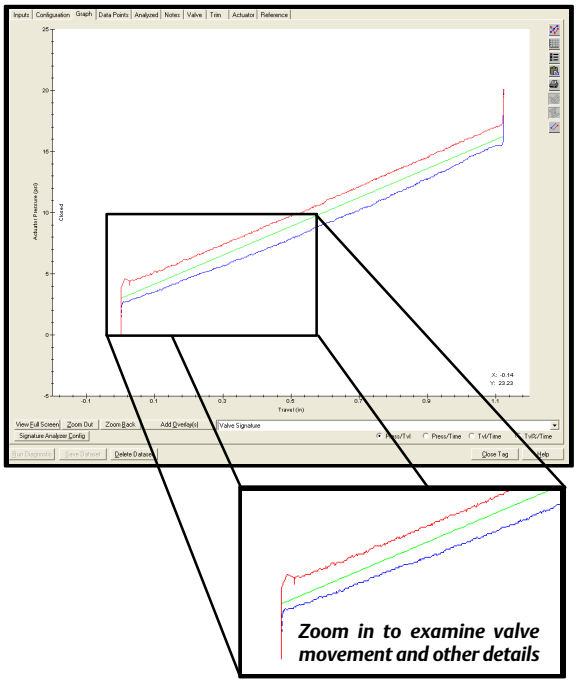
Provide validation of assembly rebuild and detailed insight into the physical condition of the valve/actuator assembly

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.

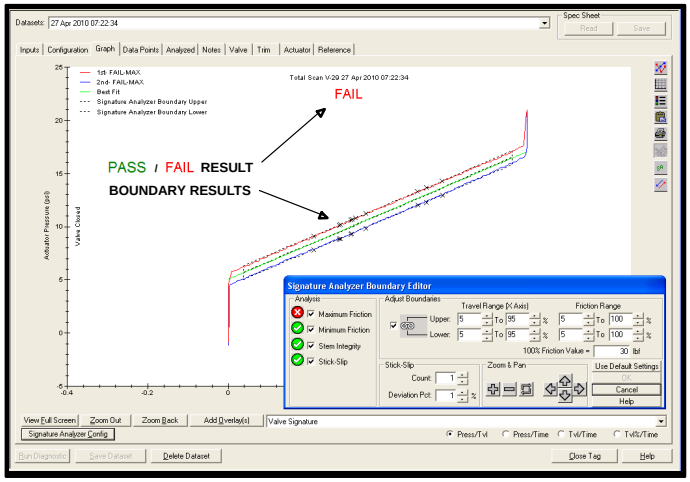
Out-of-service diagnostics are optimally run as part of a plant shutdown.

The Valve Signature diagnostic is used to:

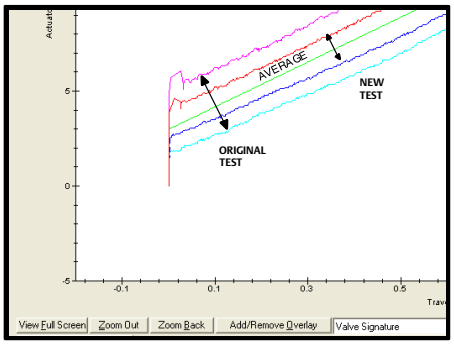
- Evaluate valve friction, deadband, and shutoff capability.
- Calculate actuator spring rate and bench set.
- Identify potential packing problems.
- Compare current condition to previous baseline condition.
- Signature Analyzer enables rapid analysis of the Valve Signature to more efficiently manage 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



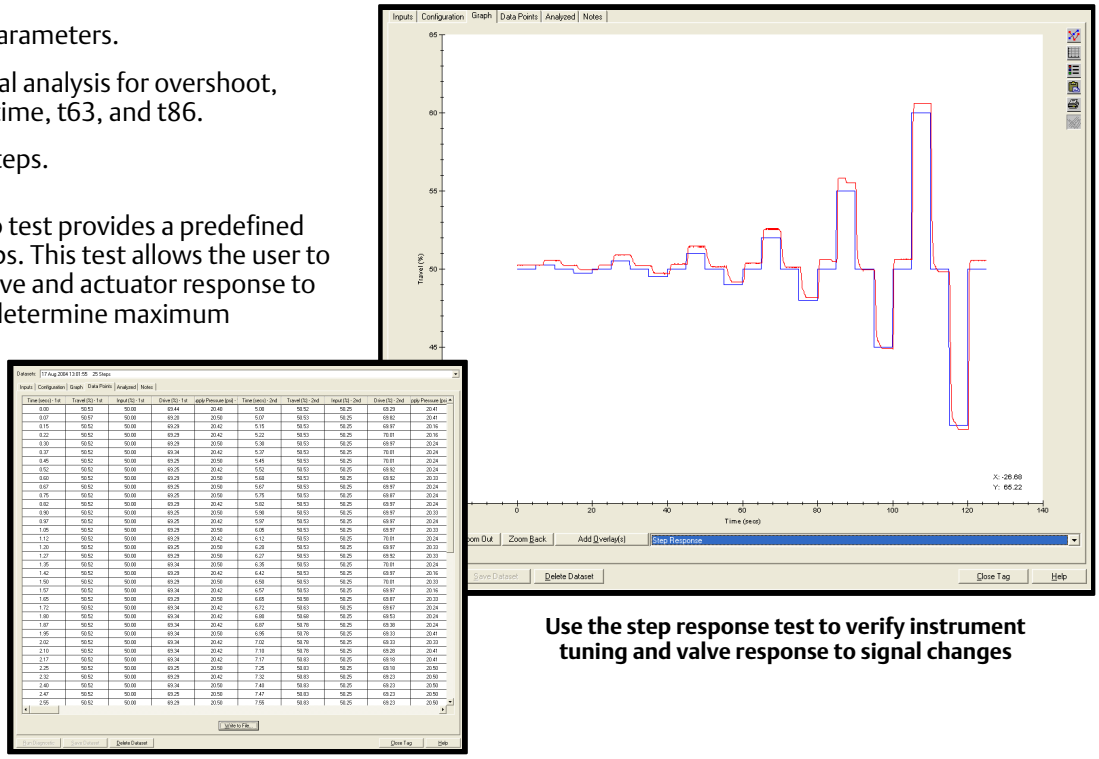
ValveLink software enables simultaneous multiple overlay of tests (up to ten). This allows you to trend valve history.

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.



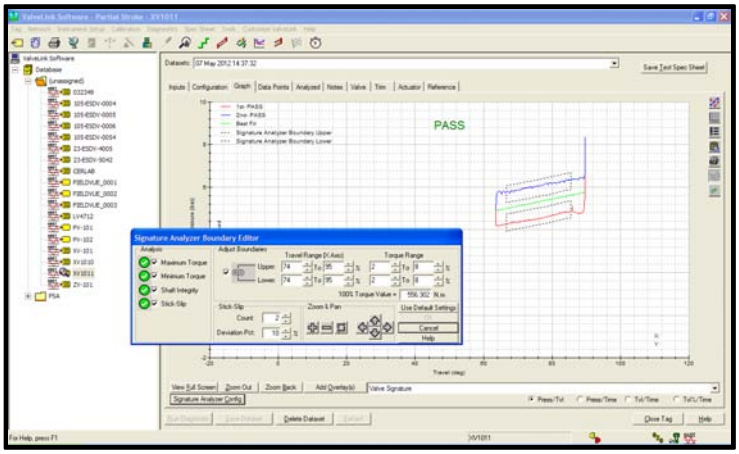
Use the step response test to verify instrument tuning and valve response to signal changes

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.

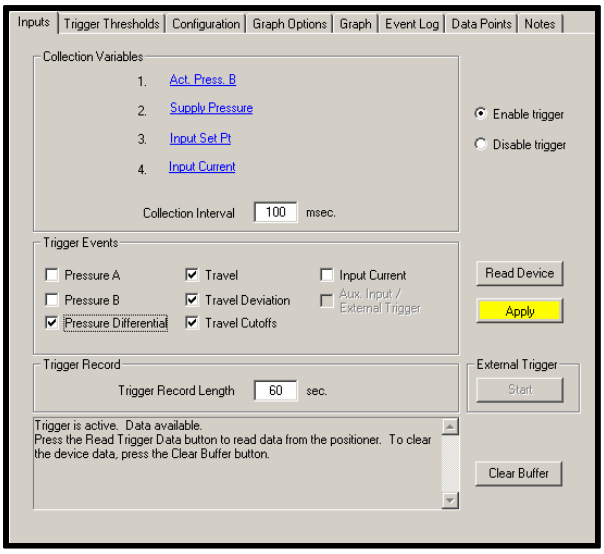
(Setup and test FIELDVUE instruments for Safety Instrumented System (SIS) Solutions continued on next page)

- 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.

  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.

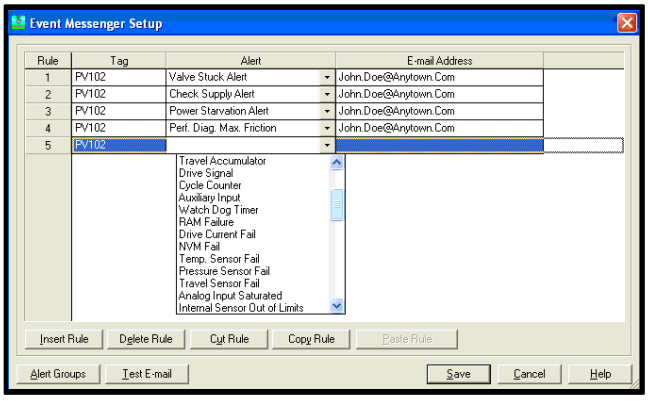


A Trigger event, based on one of eight process variables, documents a “Safety Demand” event when used in a safety instrumented system

- 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.

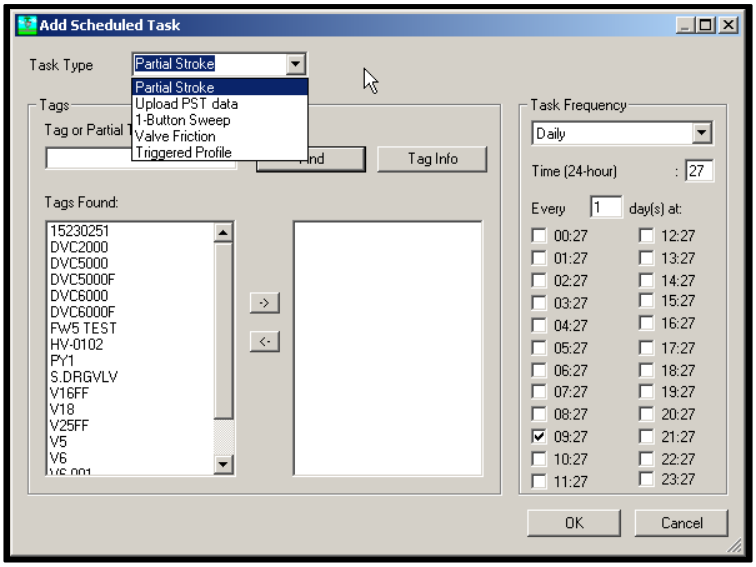
- The capability to monitor the health of a solenoid valve downstream of the digital valve controller. This can improve safety reliability and provide assurance that the solenoid valve is not stuck in the open position.

- 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.

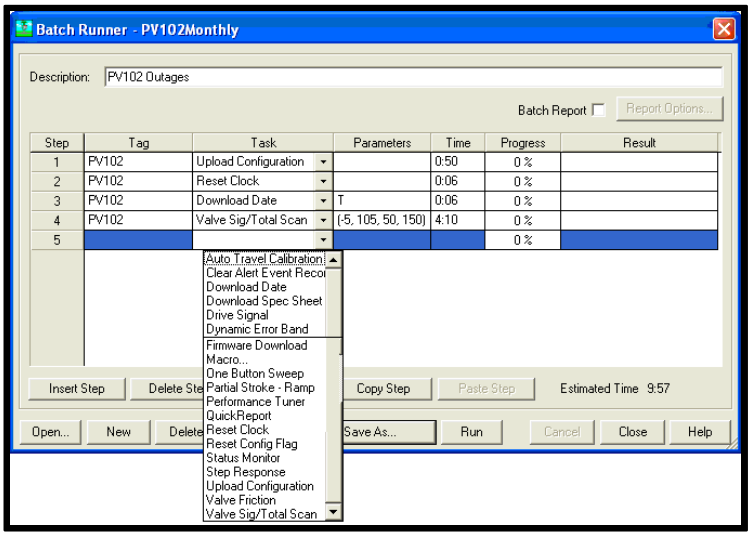


Scheduler allows you to specify a time and date to automatically run tasks on a regular basis

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[1]

Available Configurations

See table 1

Recommended Minimum Hardware Requirements

800 MHz processor (Windows® XP and Windows Server® 2003), or
1 GHz processor (Windows Vista®, Windows 7, and Windows Server 2008)

256 MB RAM (Windows XP and Windows Server 2003, or
1 GB RAM (Windows Vista, Windows 7, and Windows Server 2008)

Video: 1024x768, 256 color VGA
CD-ROM drive
USB Port

Optional Hardware

HART Modem[2]
Standard RS-232, requires a dedicated interrupt
MACTek® VIATOR® USB HART Modem, requires a USB port
MACTek VIATOR Bluetooth® HART Interface, requires Windows 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[3]

ValveLink Solo

Windows XP (32 bit)
Windows Vista (32 bit)
Windows 7 operating systems (32/64 bit)
Windows Server 2003 (32 bit)
Windows Server 2008 (32/64 bit)

AMS ValveLink SNAP-ON

Operating Systems supported by AMS Suite: Intelligent Device Manager v8.0, v9.0, v10.1, v10.5.1, v11.0, v11.1.1, v11.5 and newer

ValveLink DTM

FDT frame applications using:
Window XP (32 bit)
Windows Vista (32 bit)
Windows 7 operating systems (32/64 bit)
Windows Server 2003 (32 bit)
Windows Server 2008 (32/64 bit)

ValveLink PLUG-IN for PRM

Operating Systems supported by Yokogawa Plant Resource Manager (PRM) v3.02 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.
2. ValveLink Solo 64 bit HART modem not supported.
3. ValveLink software is not supported on Windows NT, Windows 95, Windows ME, or Windows 2000.

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	VL2051DTM	VL2021PRM PLUG-IN to PRM
HART Modem			●	●	●	●	●(1)	●(1)		
HART Multiplexer				●		●	●(1)	●(1)		
*Wireless*HART® Communications							●(1)	●(1)		
FOUNDATION Fieldbus PC Card			●	●	●	●				
FOUNDATION USB Interface			●	●	●	●				
Performance Diagnostics	Valve Signature(2)	○	●	○	●	●	●	●	●	●
	Dynamic Error Band(2)	○	●	○	●	●	●	●	●	●
	Drive Signal Test(2)	○	●	○	●	●	●	●	●	●
	Step Response(2)	○	●	○	●	●	●	●	●	●
	Step Response Analysis	○	●	○	●	●	○	●	●	●
	Performance Step Test(2)	○	○	○	●	●	○	●	●	●
	Graph Overlay	○			●	●		●	●	●
	Stroke Valve		●		●	●	●	●	●	●
	I/P & Relay Integrity	○	●	●	●	●	●	●	●	●
	Travel Deviation	○	●	●	●	●	●	●	●	●
	Supply Pressure(3)	○	●	●	●	●	●	●	●	●
	Relay Adjustment(3)	○	●	●	●	●	●	●	●	●
	Air Mass Flow(3)	○	●	●	●	●	●	●	●	●
	PD One Button	○	●	●	●	●	●	●	●	●
	Valve Friction / Deadband Estimation	○	●	●	●	●	●	●	●	●
	Valve Friction / Deadband Trend	○	●	●	●	●	●	●	●	●
	Profiler	○	●	●	●	●	●	●	●	●
	Triggered Profile	○	●	●	●	●	●	●	●	●
Status Monitor		○	●	●	●	●	●	●	●	●
Network Scan(4)			●	●	●	●				
Trending(4)		○	●	●	●	●				
Event Messenger(4)			●	●	●	●				
Modbus(4)			●	●	●	●				
Batch Runner				●	●	●	●	●	●(5)	●
Scheduler			●	●	●	●	●	●	●(5)	●
DataSync		●	●	●	●	●			●	●
Firmware Download(3)			●	●	●	●	●	●	●	●
Temporary Tiering(3)			●	●	●	●	●	●	●	●
Instrument Level StepUp			●	●	●	●	●	●	●	●
Initial Tag Limit		Unlimited	5	125	125	32 or 125	25	100	Unlimited	Unlimited
Max Tag Limit		Unlimited	75	Unlimited	Unlimited	Unlimited	---(1)	---(1)	Unlimited	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.

Emerson Process Management
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Chatham, Kent ME4 4QZ UK
Dubai, United Arab Emirates
Singapore 128461 Singapore

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