AMS ValveLink™ SNAP-ON™ Application

The AMS ValveLink SNAP-ON application provides advanced information on the health of your valves so you can use your aintenance resources where they are needed most.

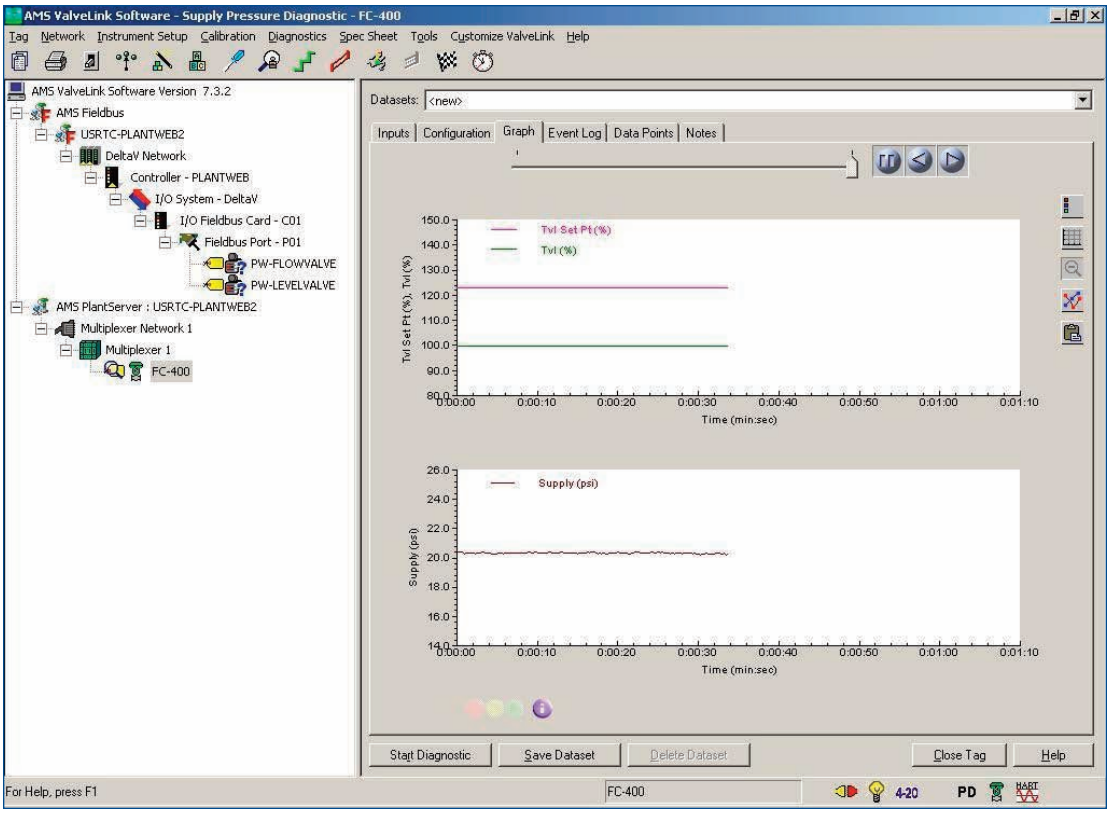
- *Communicate with both HART® and FOUNDATION™ fieldbus FIELDVUE® Digital Valve Controllers in the same application*
- *Online, in-service performance diagnostics identify faults, list possible causes, and recommend corrective actions*
- *Schedule automatic valve tests and generate detailed diagnostic reports*
- *Reduce time to complete commissioning and turnarounds*

The Power of Diagnostics

AMS Suite: Intelligent Device Manager allows easy access to powerful device diagnostics for configuration, calibration, and documentation of the operating characteristics of HART and FOUNDATION fieldbus Fisher® FIELDVUE Digital Valve Controllers.

Using the AMS ValveLink SNAP-ON application, an instrument engineer, maintenance technician, or operations supervisor can obtain the information needed to solve problems before they affect the process.

AMS Suite: Intelligent Device Manager



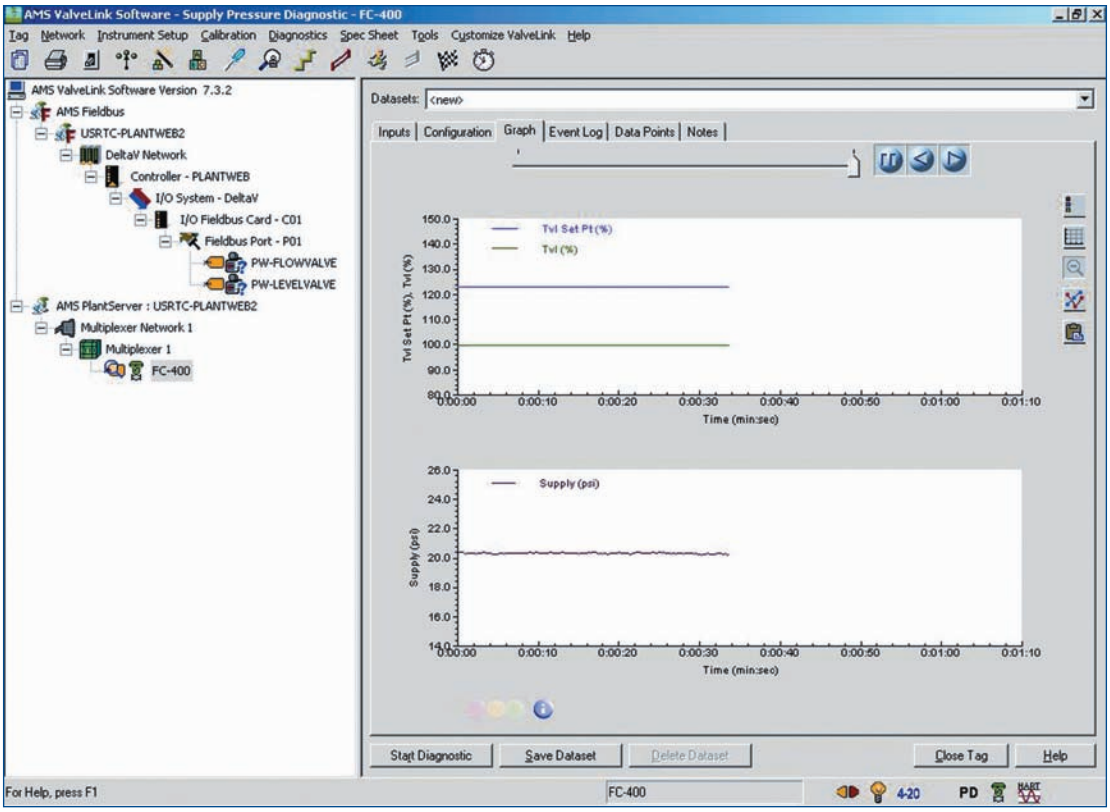
In-service performance diagnostics go beyond just telling you about problems - they recommend actions to correct faults.

The AMS ValveLink SNAP-ON application's diagnostic capabilities permit you to select only those control valves that need to be rebuilt during plant turn arounds to optimize use of your valuable maintenance resources.

Communicate with a Single Application

The AMS ValveLink SNAP-ON application remotely communicates with HART FIELDVUE instruments (DVC2000, DVC5000 and DVC6000 Series) over the existing 4-20 mA signal wiring using the HART communication standard. The same application also remotely communicates with FOUNDATION fieldbus FIELDVUE instruments (DVC6000f and DVC5000f Series) over the fieldbus H1 segment. Information for all series of instruments is presented in a consistent, easy-to-interpret interface that provides:

- 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



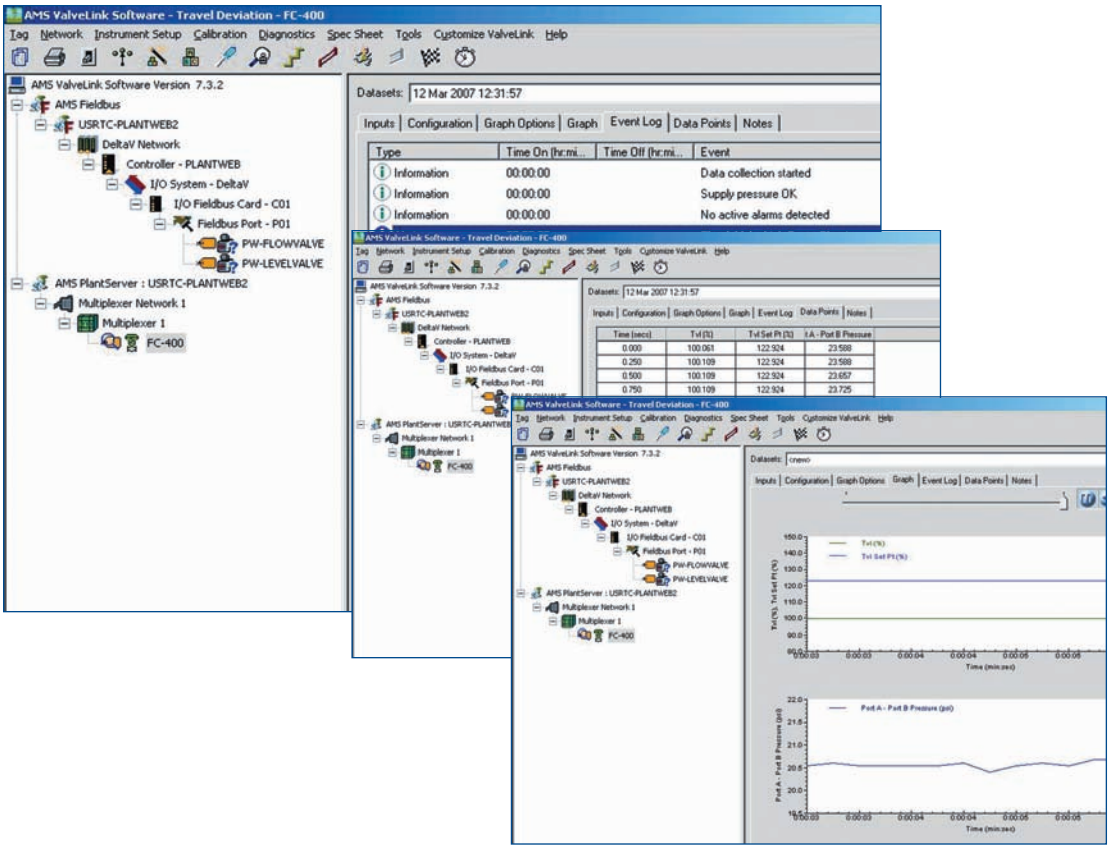
Performance Diagnostics tests are available upon user request or a pre-selected daily, weekly, or monthly schedule without user intervention.

Performance Diagnostics

Predictive in-service diagnostics monitor thehealth of the valve assembly and provide customized diagnostics for advanced troubleshooting.

Performance Diagnostics tests 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 rate and present the data in a graphical format. When an issue is so complex that external expertise is required, the data may be exported from the custom diagnostic and sent to an expert for evaluation, thereby minimizing the need for an onsite visit.



Performance Diagnostics provide online, in-service predictive diagnostics to identify faults and list possible causes and recommended corrective actions for each fault.

Real-Time Notification of Problems

Performance Diagnostics enable 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, including:
  - I/P and Relay Integrity
  - Supply Pressure
  - Relay Adjustment
  - Air Mass Flow
  - Travel Deviation
  - 1-Button Sweep

Performance Diagnostics are available upon demand or can be scheduled to automatically run on a daily, weekly, or monthly basis.

Advanced Diagnostics

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

The Valve Signature diagnostic is used to:

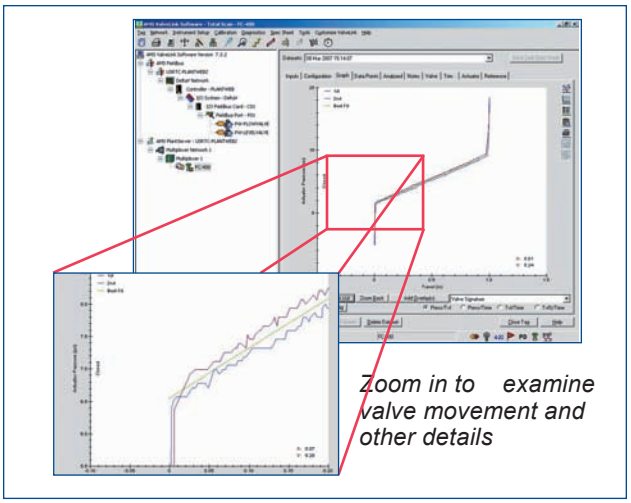
- Evaluate valve friction, deadband, and shutoff capability.
- Calculate actuator spring rate and bench set.
- Identify potential packing problems.
- Compare current condition to previous baseline condition.

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

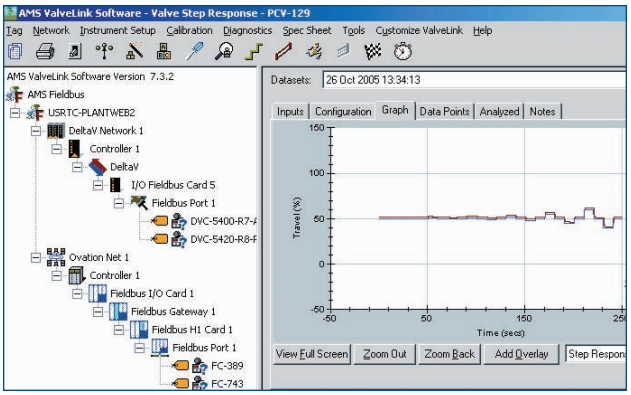
The Step Response diagnostic allows you to evaluate how well the valve tracks an input change. By minimizing dead time, deadband, and overshoot, process control is greatly enhanced. With the Step Response test you can:

- Validate tuning parameters.
- Obtain a numerical analysis for overshoot, hysteresis, dead time, t63, and t86.
- Define up to 11 steps.

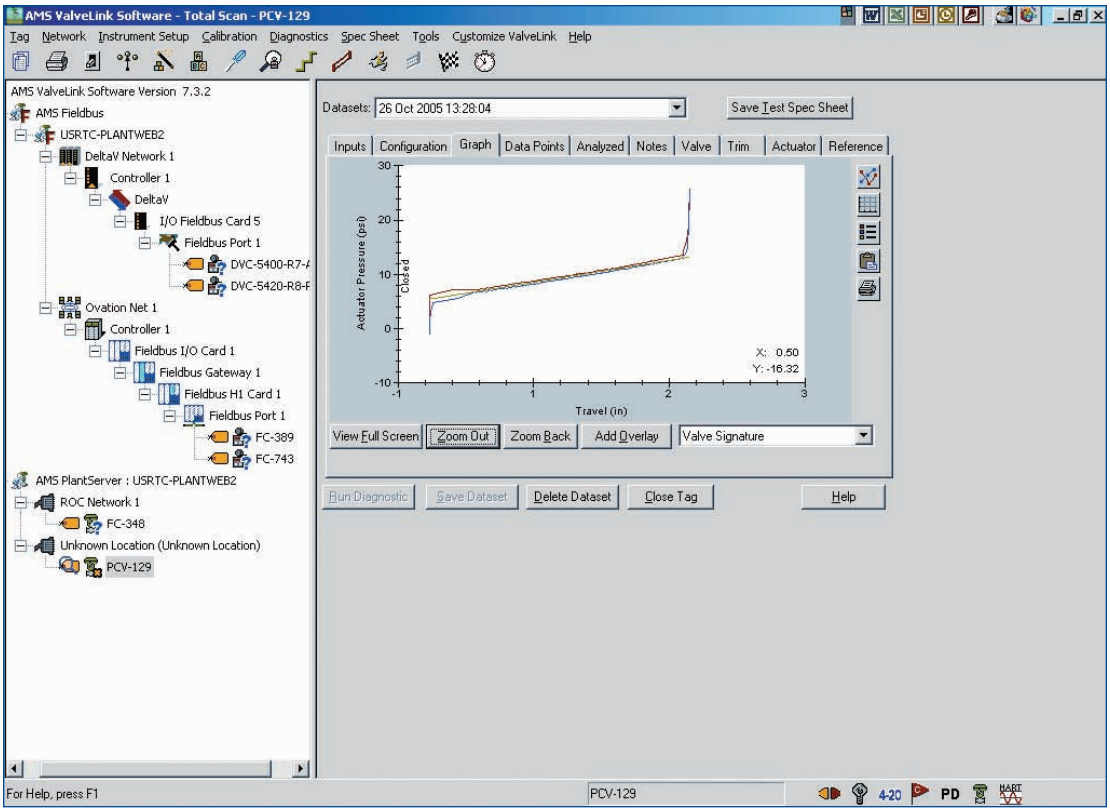
A performance step test provides a predefined sequence of 29 steps. This test allows you to quickly evaluate valve and actuator response to signal change and determine maximum deadband.



Diagnostic tests help you detect emerging valve repair requirements before they impact performance.



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



Use total scan information to evaluate valve performance and determine if maintenance is required.

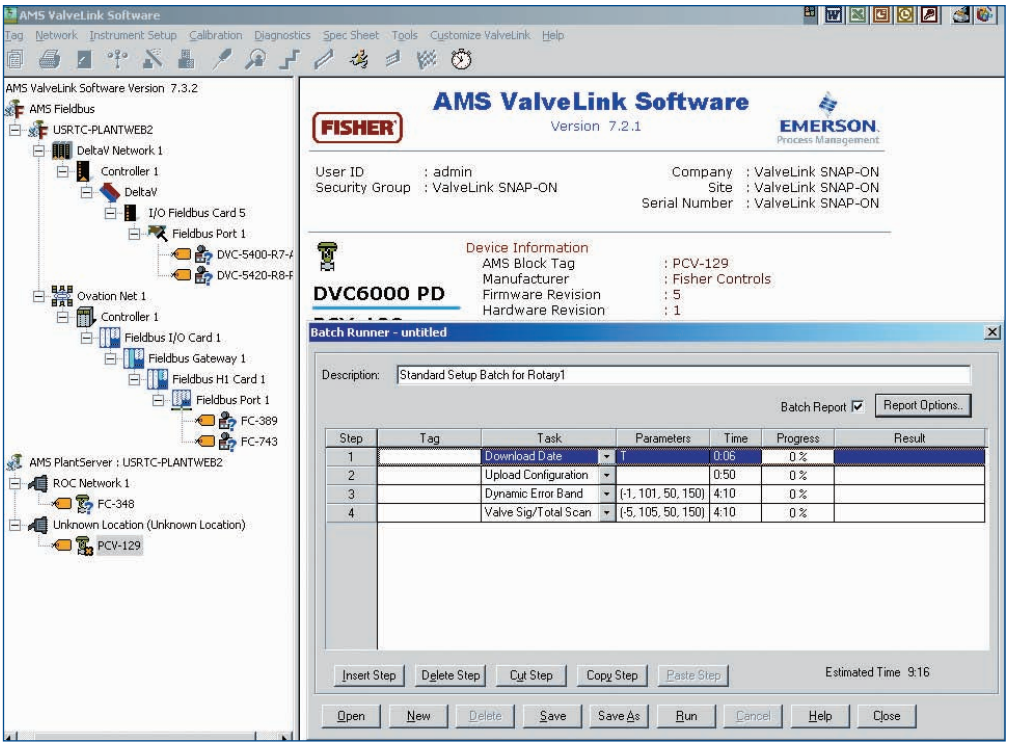
Setup and Test FIELDVUE Instruments for SIS Applications

Use the AMS ValveLink SNAP-ON application to setup and test the final control element in Safety Instrumented System (SIS) applications. The AMS ValveLink SNAP-ON application for SIS-tiered digital valve controllers provides:

- A wizard that sets up the digital valve controller for use in an SIS application.
- The capability to initiate a partial stroke test of the final control element without requiring a process shutdown. Without disturbing the process, 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.
- Documentation for statutory authorities. Every event performed with the AMS ValveLink SNAP-ON application 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 shut down the process to perform maintenance on the safety shutdown valve.

Schedule Performance Diagnostics and SIS Partial Stroke Diagnostics

With the Scheduler, you can schedule Performance Diagnostics and SIS Partial Stroke diagnostics to run on a specified recurring daily, weekly, or monthly schedule. A summary of the outcome of scheduled tasks is available from within the Scheduler. For complete details you can view the resulting diagnostic graphs and analyses. Using the AMS ValveLink SNAP-ON application, any resulting alerts will be visible from Audit Trail, Alert Monitor, and AMS Suite: Asset Performance Management.



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

Automate Repetitive Actions by Setting Up Batches

With Batch Runner, you can set up the AMS ValveLink SNAP-ON application to automatically run diagnostics tests, calibrate, or upload configuration data to multiple valves with a specified routine. During a turnaround or production change, you can upload configurations, run the Performance Tuner to optimize tuning, or even reset the instrument clock without any interaction by personnel. Batch Runner reduces redundancy and increases consistency by allowing you to set up a batch once, and repeatedly run that set of actions on different groups of valve assemblies.

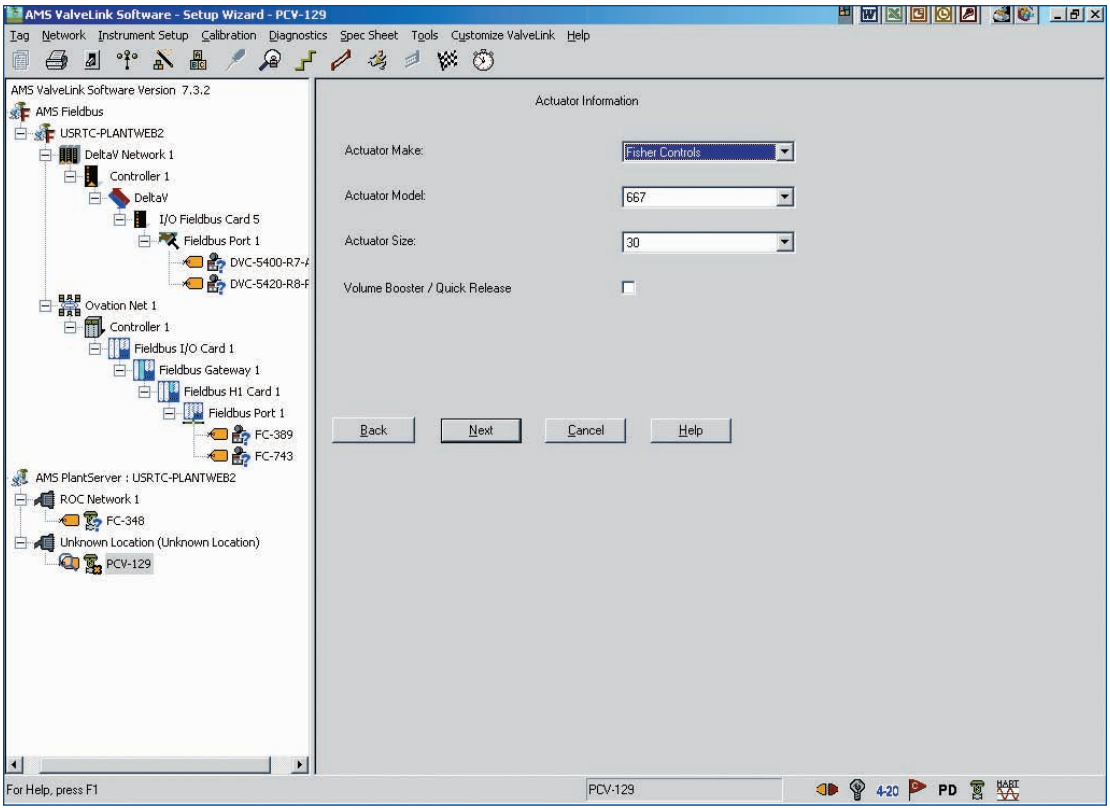
Use Signature Series Tests to Benchmark Valve Performance

Current diagnostic tests can be overlaid with Signature Series tests performed by the factory when the valve was manufactured. AMS ValveLink Signature Series tests are performed on Fisher control valves equipped with the FIELDVUE digital valve controller when specified as part of the original valve order. To order Signature Series testing, simply specify your Signature Series testing requirements on all Fisher control valve orders. By importing Signature Series data into the AMS ValveLink SNAP-ON application, you can compare the as-shipped performance with the valve's current operating condition.

Reports

Reports can be generated that include Performance Diagnostics and Advanced Diagnostics data. These reports can be generated from various locations in the AMS ValveLink SNAP-ON application.

- Quick Report
- Current Dataset Report
- Custom Report
- Batch Report (available in Batch Runner)



The Setup Wizard makes setting up your valves fast and easy.

Reduce Commissioning Time

Save time by using the configuration and calibration capabilities of the AMS ValveLink SNAP-ON application to perform these commissioning tasks online:

- Automatically calibrate travel
- Verify dynamic response to input changes
- Step-by-step instrument setup and calibration

The Setup Wizard asks basic questions about the valve and actuator to simplify and speed commissioning. You can even customize the Setup Wizard so that:

– Instrument configurations are optimized for specific applications.

– Alert points, travel cutoffs, travel limits, and characterization are consistently applied.

– Manual entry is eliminated.

Automatically Optimize Valve Performance

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 third party valve, the Performance Tuner can optimize valve performance for you.

Table 1: AMS ValveLink Software Capability

Description		Product Type AMS ValveLink SNAP-ON AW7071VLxxxxx
HART Modem		■ (4)
HART Multiplexer		■ (4)
DeltaV HART I/O		■ (4)
Ovation HART I/O		■ (4)
Provox HART I/O		■ (4)
PRM/Cetum HART I/O		
FOUNDATION fieldbus H1 PC Card		
FOUNDATION fieldbus Ovation® H1		■
FOUNDATION fieldbus DeltaV™ H1		■
FOUNDATION fieldbus PRM/Centum H1		■
Advanced Diagnostics	Valve Signature	■
	Dynamic Erros Band	■
	Drive Signal Test	■
	Step Response	■
	Step Response Analysis and Overlay	■
	Performance Step Test	■
	Status Monitor	■
	Stroke Valve	■
Performance Diagnostics	I/P & Relay Integrity Diagnostic	■ (5)
	Travel Deviation Diagnostic	■ (5)
	Supply Pressure Diagnostic	■ (2)
	Relay Adjustment Diagnostic	■ (2)
	Air Mass Flow Diagnostic	■ (2)
	One-Button Diagnostic	■ (5)
	Valve Friction/Deadband Estimation	■ (5)
	Valve Friction/Deadband Trending	■ (5)
	Profiler	■ (5)
	Triggered Profile	■ (2,5)
	SIS Partial Stroke	■ (2)
Network Scan	Trending	
	Event Messenger	
	Modbus	
Batch Runner		■
Scheduler		■ (1)
Data Sync		
Firmware Download		■ (2)
Temporary Tiering		■ (2)
SIS Support		■ (2)
Instrument Level StepUp		■
Minimum / Maximum Tag Limit		5 / 2000 (Unlimited)

■ Indicates capability available.

(1) HART only.

(2) DVC6000 only.

(3) FOUNDATION fieldbus only.

(4) AMS Device Manager - based capability. AMS ValveLink SNAP-ON does not control or limit this functionality.

(5) Performance Diagnostics are available for the DVC5000 and DVC6000 instruments through the AMS Device Manager HART multiplexer interface. Performance Diagnostics are available for DVC6000 instruments through the Sstem Interface to PROVOX® or DeltaV but not for DVC5000 instruments. Performance Diagnostics are available for the DVC5000 and DVC6000 instruments through the System Interface to a Westinghouse Ovation system.

Product Data Sheet
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AMS Suite: Intelligent Device Manager

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PlantWeb

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