

**Masoneilan**



# **SVI<sup>®</sup> II**

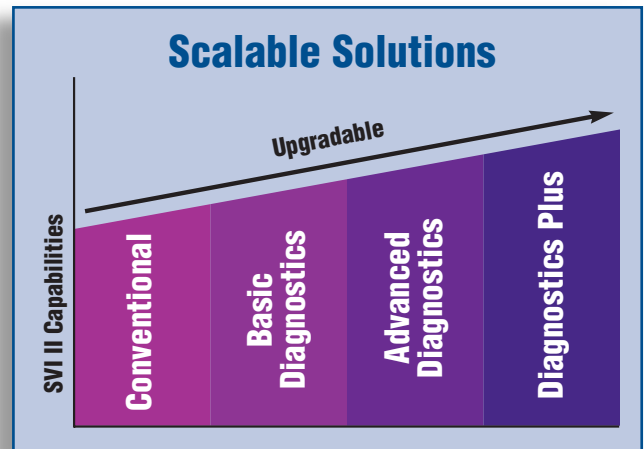
## **Digital Positioner**

**Accurate, Scalable, Robust Control Solutions for Today *and* Tomorrow.**

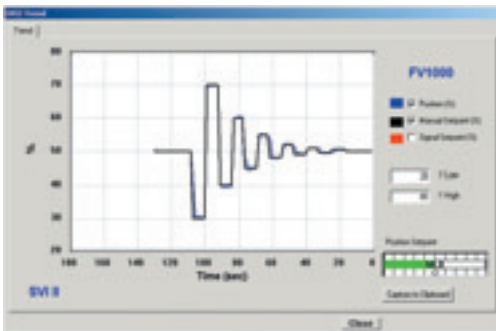


## The Universal Control Solution

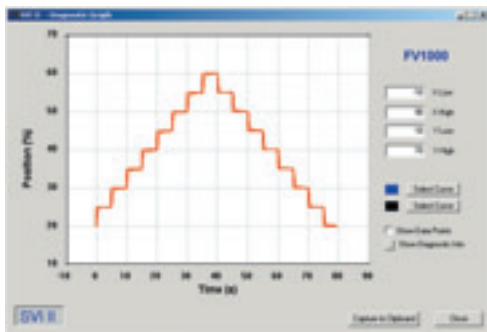
Flexibility and versatility of the Masoneilan SVI<sup>®</sup> II digital valve positioner provides high performance solutions for any process control application. SVI II offers advanced features and functions using the HART<sup>®</sup> Communications protocol. It is designed for use with any control valve system making it a truly universal control solution.



### Precise Valve Positioning

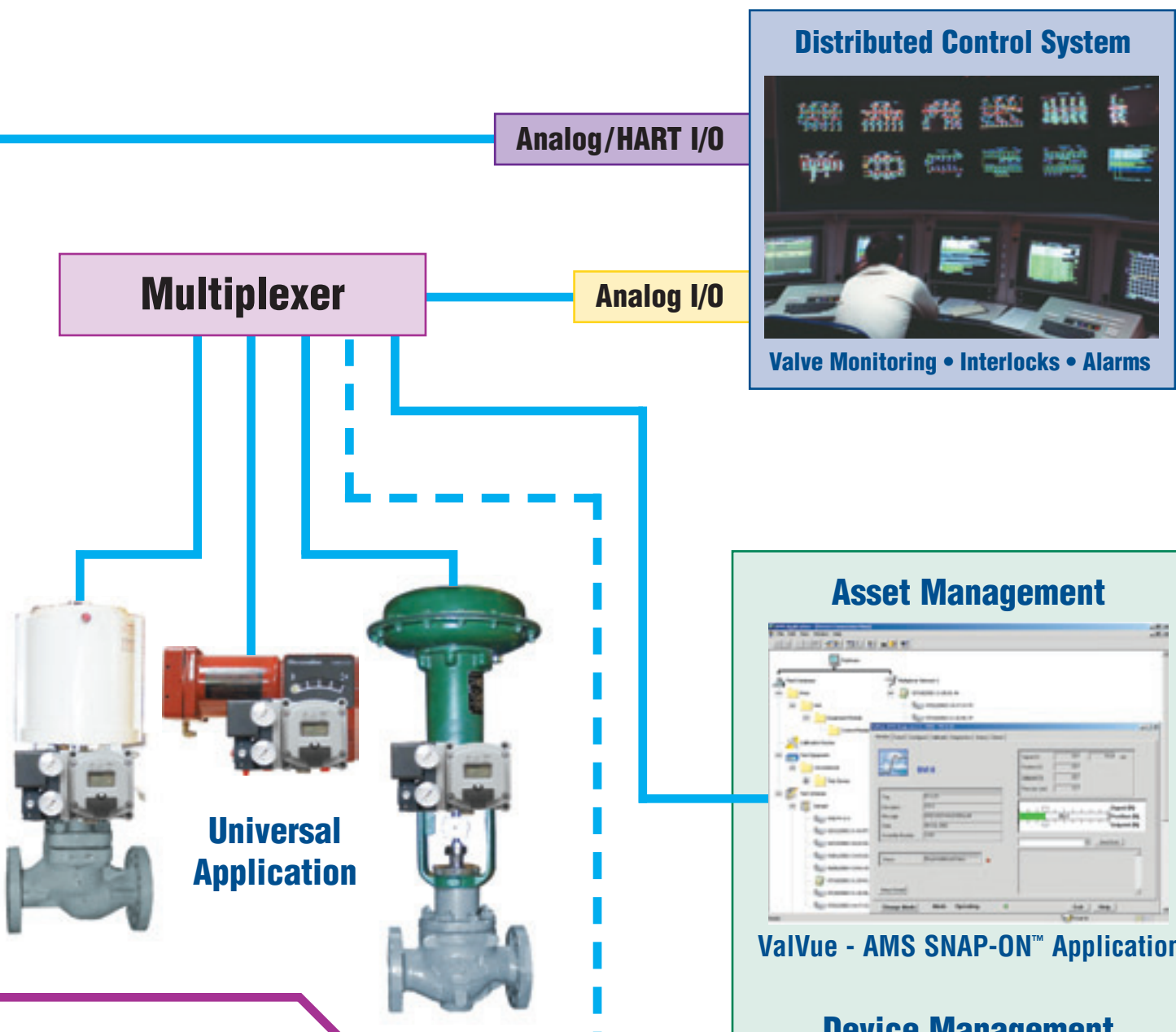


### Improved Process Yields



### Diagnostics





### Distributed Control System

**Valve Monitoring • Interlocks • Alarms**

### Asset Management

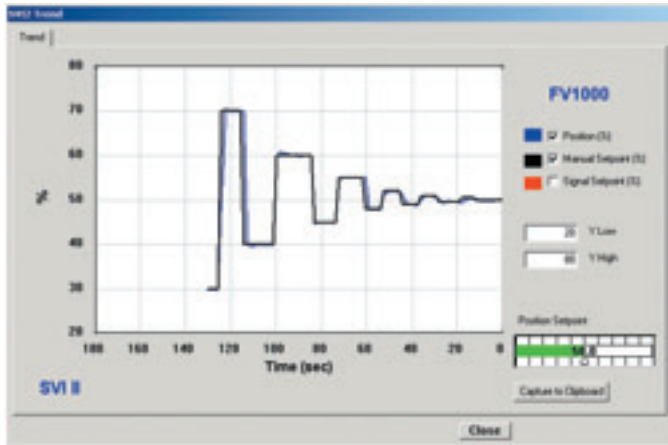
**ValVue - AMS SNAP-ON™ Application**

### Device Management

**ValVue 2**

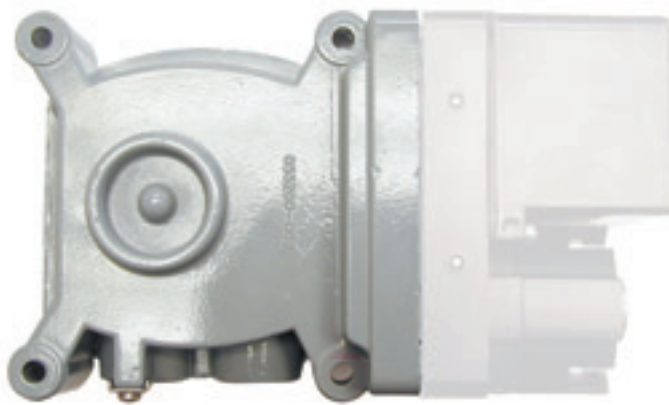
### Multiple Interface Options

## Key Features



### Accuracy and Precision

Performance of the final control element is critical to the overall operating efficiency of any process control system. The SVI II provides extremely accurate and precise control valve positioning, resulting in high process efficiency and excellent product yield. In addition, reliability of all related system components and equipment will increase due to reduced operating loads.



### Non-Contact Position Sensor

Valve position sensing is accomplished using a solid state, Hall Effect sensor. This sensor projects into an extension in the back of the housing, but does not penetrate the body wall. It monitors the position of a magnetic ring attached to the valve shaft/stem producing extremely accurate position feedback to the positioner. This non-contact design dramatically increases lifetime reliability by eliminating sensor wear and a housing penetration.

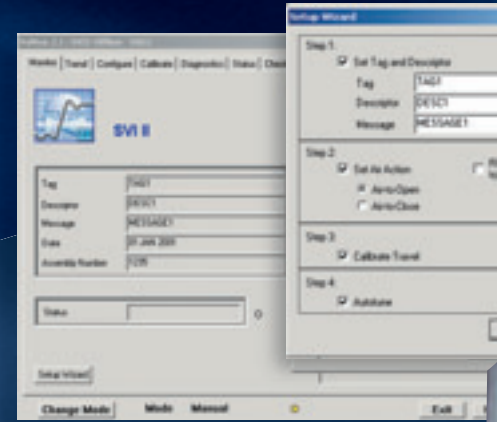
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### Modular Construction

Each major section of the SVI II is designed as a separate module for ease of maintenance and field repair. Separate modules exist for the pneumatic train, electronics section, and mounting system. This modularity also provides a scalable platform for future upgrades as required, such as LCD and Pushbuttons, Position Transmitter, Limit Switches, and Advanced Diagnostics.

# Key Customer Benefits

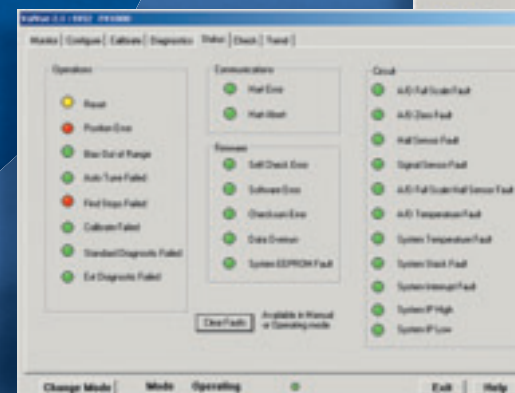


## Improved Reliability & Maintainability

Modular design of the SVI II provides best-in-class dependability and ease of maintenance.

### Features

- ◆ Self-monitoring Functions
- ◆ Minimum Moving Parts
- ◆ Modular Construction
- ◆ Flash ROM Upgrades
- ◆ Changed-out in Seconds



## Reduced Installation and Start-up Costs

Automated calibration and tuning functions help optimize equipment set-up in significantly less time.

### Features

- ◆ Set-up Wizard
- ◆ Auto-Calibrate/Auto-Tune

## Versatile Communication Methods

Various options are available for local or remote communications, providing users with the flexibility to implement the best solution for any process loop.

### Features

- ◆ On-board LCD and Pushbuttons
- ◆ HART 275 Handheld Communicator
- ◆ Masoneilan ValVue 2 Software
- ◆ Asset Management Solutions (AMS) Software
- ◆ ValVue AMS SNAP-ON™ Application
- ◆ Selected Control Systems with HART I/O

## Reduced Process Variability

The SVI II high performance Auto Tuning function results in very tight, accurate valve positioning, and reduced process variability, while increasing process yields and product quality.

### Features

- ◆ Pushbutton Positioner Auto Tuning
- ◆ Enhanced Dynamic Performance
- ◆ Custom Flow Characterization
- ◆ Process Trending
- ◆ Bumpless Transfer
- ◆ Single and Double Acting

## Improved Safety

Minimize and eliminate frequent personnel visits to the field, including hazardous areas, to evaluate or readjust control valves.

### Features

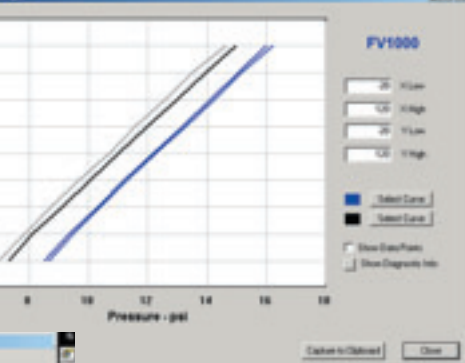
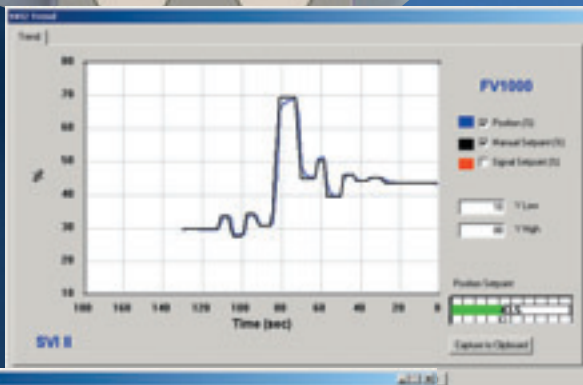
- ◆ Remote Communications

## Easy Predictive Maintenance

Real-time data collection and tracking allows users to accurately monitor and predict equipment performance. Proactive measures can then be implemented to prevent performance degradation.



### Features



- ◆ Diagnostics Capabilities
- ◆ Data Analysis & Interpretation







# Features and Functions

SVI II is an intelligent digital valve positioner. This device provides advanced control performance and uses the HART Communications protocol over existing 4-20 mA wiring. Complete features and functions are readily accessible using various interface methods, including the on-board LCD with pushbuttons, a HART handheld communicator, or a PC running ValVue 2 or ValVue AMS SNAP-ON™ Application.

General	Interface
SVI Parameters Save and Display Diagnostic Data	
Manually Position Valve Display Position Display List of Faults	

Configuration	Interface
Air-to-Open/Air-to-Close Single Acting Positioner Double Acting Positioner Custom Flow Characterization Position Limits Tight Shutoff Limit Bumpless Transfer	
Set Positioner Parameters Set Error Limits Set Tag and Description	

Diagnostics	Interface
<b>Continuous Diagnostics</b> Total Travel Cycle Count Time Open Time Closed Time Near Closed	
<b>Basic Diagnostics</b> Multi-Step Signature Positioner Signature Response Test	
<b>Advanced Diagnostics</b> All Basic Signatures Standard Actuator Test* Friction Stroking Speed Spring Range Pressure Range Extended Actuator Test	

Calibration	Interface
Auto Tune Locate Stop Positions Set Input Signals Corresponding to Open and Closed Positions Calibrate Input Current and Pressure	
Calibrate Secondary Signal Input to Adjust I/P Settings Reset Calibrations to Factory Settings Set Positioner Tuning Parameter	

\* also performed with HART handheld communicator

## Technical Specifications

### Masoneilan ValVue 2 Communications Software



#### System Requirements

- Windows<sup>®</sup> 95, 98, NT, 2000 and XP
- 16MB RAM
- Pentium or better microprocessor
- Serial communications port
- HART modem compatible with available communications port
- CD-ROM drive

### Masoneilan SVI II Digital Positioner

#### Performance\*

Hysteresis + Deadband	±0.2%
Repeatability	±0.2%
Sensitivity	±0.2%
Conformity	±0.3%
Accuracy	±0.5% (typical ±0.25%)
Operating Temperature Range	-58°F to +185°F (-50°C to +85°C)

#### Input Power and Signal

Signal	4-20 mA with HART <sup>®</sup> Communication Protocol
Power Supply	Taken from 4-20 mA Control Signal
Minimum Terminal Voltage	11.2 Volts DC
Minimum Current Signal	3.6 mA

#### Pneumatics

Regulated and Filtered Air (Sweet Natural Gas)	
Double Acting, Single Acting, Supply Pressure	20-100 psi max. (1.4 to 6.9 bar) Regulate 5 to 10 psi above actuator spring range.
Air Delivery	7 scfm (198 l/m) at 30 psi (2.1 bar) supply 20 scfm (566 l/m) at 45 psi (3.1 bar) supply
Air Consumption	0.2 scfm (5.7 l/m) at 30 psi (2.1 bar) supply

#### Control Valve Mounting System

Non-contact Hall Effect Position Sensor  
Universal Design  
NAMUR Mounting for Quarter Turn Valves  
Offshore Corrosion Resistant Configurations

#### System Connectivity

Device Description (DD) Registered  
Asset Management Solutions (AMS) Driver  
ValVue AMS SNAP-ON<sup>™</sup> Application  
Selected Control Systems (DCS, PLC) with HART I/O Modules



\* Performance per ISA S75.13 - 1996

#### Hazardous Area Certifications

Enclosure Rating	NEMA 4X / IP 66
Electro-Magnetic Compatibility	IEC 801-2,-3,-4
CE mark	

#### Hazardous Area Approvals

##### ATEX (CENELEC) Approvals:

Flameproof	According to EN 50014, EN 50018 with ATEX coding of II 2G EEx dm IIB + H <sub>2</sub> T6 at Ta = 75°C
Intrinsically Safe	According to EN 50014, EN 50020 and 50284 with ATEX coding of II 1G EEx ia IIC T6 at Ta = -40°C to 60°C T5 at Ta = -40°C to 80°C
Energy Limited	According to EN 50021 with ATEX coding of II 3G EEx nL IIC T5 at Ta = -40°C to 80°C T6 at Ta = -40°C to 60°C

##### CSA International Certifications:

Explosion Proof	CL I; Div. 1; GR B, C, D T6 at Ta = -40°C to 80°C
Dust Ignition Proof	CL II/III; Div. 1; GR E, F, G T6 at Ta = -40°C to 80°C
Certified	CL II; Div. 2; GR F, G
Certified	CL III; Div. 2
Certified	CL I; Div. 2; GR A, B, C, D T6 at Ta = -40°C to 60°C T5 at Ta = -40°C to 80°C
Intrinsically Safe	CL I, II, III; Div. 1; GR A, B, C, D, E, F, G T4 at Ta = -40°C to 60°C T3C at Ta = -40°C to 80°C

##### FM Approvals:

Explosion Proof	CL I; Div. 1; GR B, C, D T6 at Ta = -40°C to 80°C
Dust Ignition Proof	CL II/III; Div. 1; GR E, F, G T6 at Ta = -40°C to 80°C
Suitable for Non-incendive	CL II, III; Div. 2; GR F, G CL I; Div. 2; GR A, B, C, D T6 at Ta = -40°C to 60°C T5 at Ta = -40°C to 80°C
Intrinsically Safe	CL I, II, III; Div. 1; GR A, B, C, D, E, F, G T6 at Ta = -40°C to 60°C T5 at Ta = -40°C to 80°C



## Model Numbering System

Modular construction of the Masoneilan SVI II provides users with the versatility and flexibility to select the right solution for any process control application. The wide range of available features and functions can also be upgraded for a highly adaptable and scalable solution to meet future process requirements.

Model		Suffix Codes		Description
Style	SVI2 -	1		Conventional
		2		Basic Diagnostics
		3		Advanced Diagnostics
		4		Diagnostics Plus
Pneumatic Train		1		Single Acting
		2		Double Acting
		3		Single Acting with SST Cover
		4		Double Acting with SST Cover
Pneumatic Capacity		1		Standard Flow
Display			1	No Display or Pushbuttons
			2	With Display and Pushbuttons
			3	No Display or Pushbuttons - Offshore Service
			4	With Display and Pushbuttons - Offshore Service
Gauges			1	With Gauges - Triscale
			2	Without Gauges
Communications			1	HART 4-20mA Current Mode
Option Board			1	None
			2	Position Transmitter and Limit Switches
Agency Approval			0	None
			1	FM/CSA/ATEX (GENELEC) - IS & Exprf

Example:

**SVI2- 2 1 1 1 1 1 1 1**

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