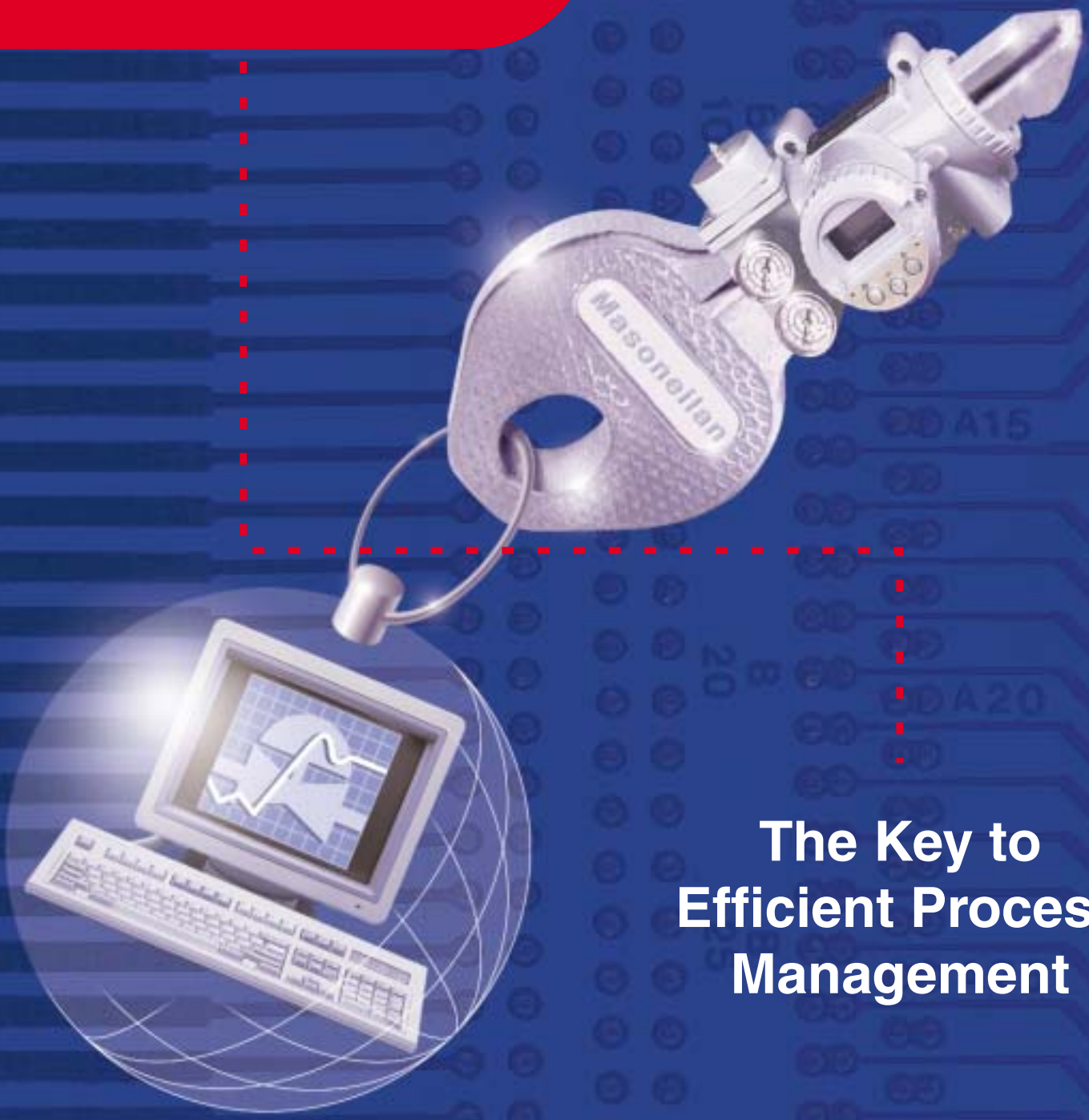
SVI®

The Smart Valve Interface



The Key to Efficient Process Management

Masoneilan

DRESSER
Flow Control

BW1000

Premier Digital Positioning and Control

Dresser Flow Control, Masoneilan Operations, a leading provider of automated process control solutions, extends its capabilities with the introduction of the **SVI®**, the **Smart Valve Interface**.

SVI is an intelligent digital valve positioner and PID process loop controller, efficiently packaged within a single assembly. SVI offers advanced control technology for pneumatically actuated valves, providing higher precision, greater flexibility and ease of use previously unattainable in the marketplace.

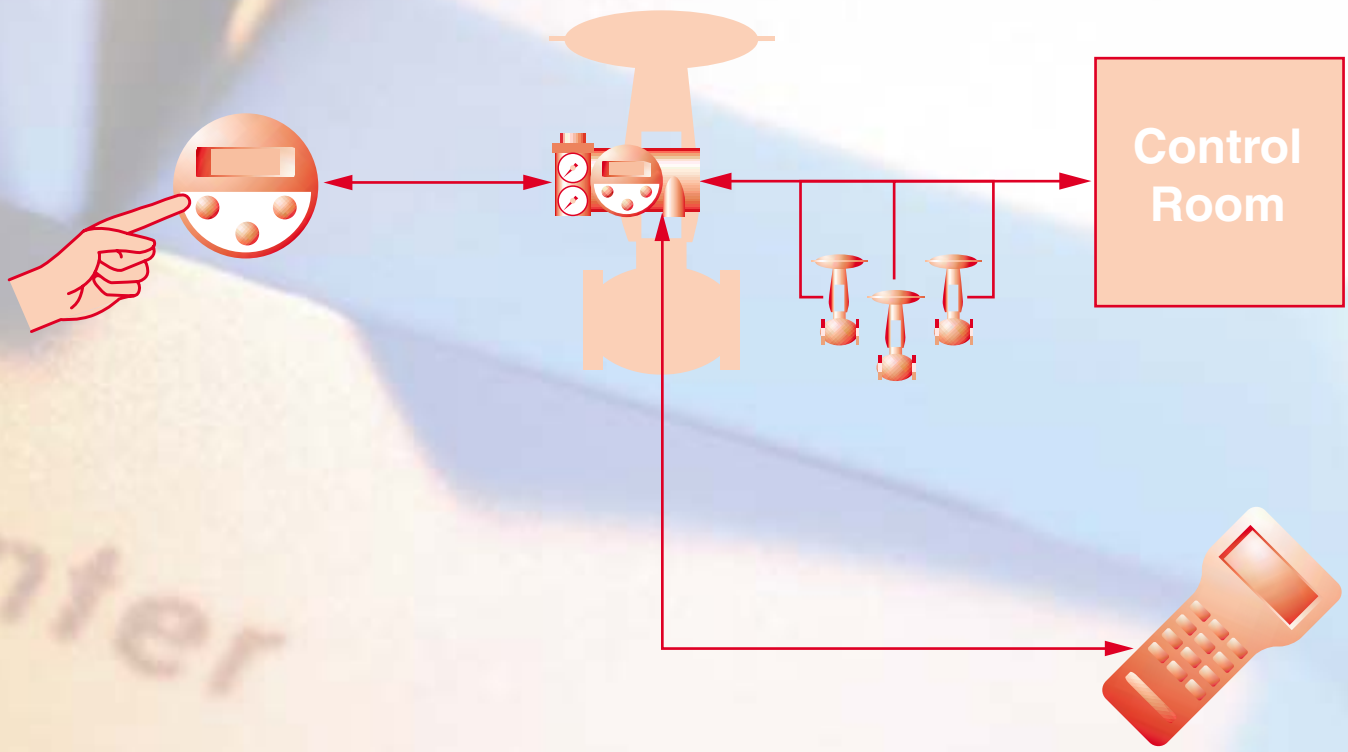
Masoneilan's **ValVue®** software permits the user to effectively configure, calibrate and perform valve diagnostics using the SVI without disturbing the process. SVI and ValVue provide enhanced operational capabilities.

Through the numerous SVI functionalities, the process can be optimized:

- **Versatile Communication**
- **Improved Start-up Conditions**
- **Reduced Process Variability**
- **Easy Predictive Maintenance**
- **Reduced Control Loop Complexity**
- **Integral Position Transmitter**
- **Integral Process Controller**
- **Stores 2 valve signatures right in SVI's non-volatile memory**
- **AMS® Compatible**

SVI, The Key to Efficient Process Management

Versatile Communication Tool



The SVI always provides the option for local or remote communication, even in hazardous environments.

Communication with the SVI can be achieved locally by using the integral explosionproof push-buttons and digital display, or remotely with either a HART® handheld communicator or a personal computer using ValVue. This versatility permits the user to complete or verify valve calibration, and check process variability versus required set points, without ever leaving the control room if they so desire.

Additionally, the SVI offers the potential to communicate with multiple protocol languages, starting initially with HART protocol and following with fieldbus options.

Masoneilan's SVI is a very flexible communication tool and is adaptable to all kinds of plant operations. As a 2-wire loop power instrument, there is no need for separate, and expensive, power wiring.

Customer

Improved Start-up Conditions

- Remote automated calibration helps SVI users realize significant savings. There is no need to send operators into the field anymore. Hence, exposure to hazardous environments is reduced, and operator efficiency is improved.

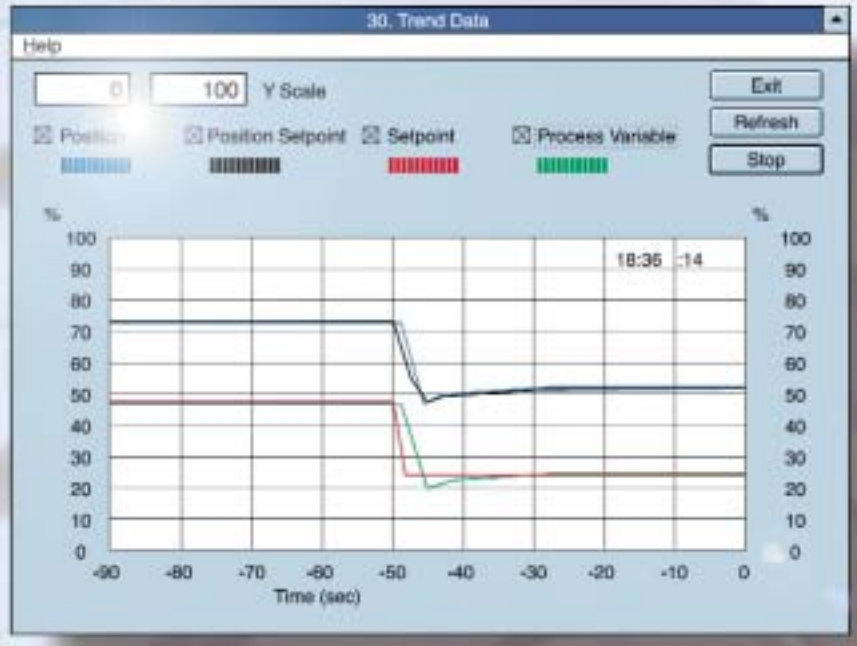
- Automated tuning of control parameters and process trend visualization enable the user to optimize adjustments in much less time.

Reduced Process Variability

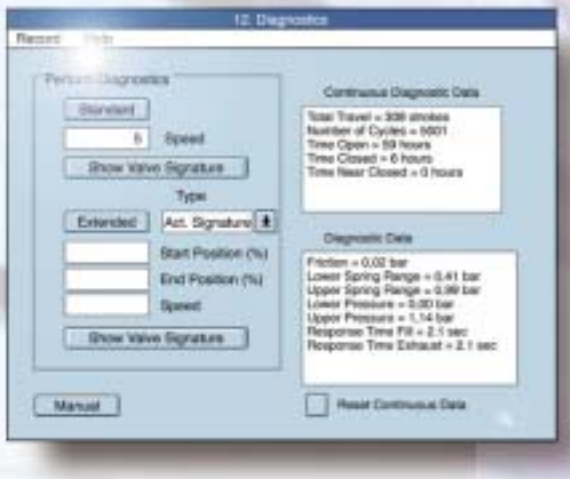
- The valve position control is enhanced by 8 parameters provided by a patented algorithm. Iterative optimization of parameters solves the dilemma between response time and stability as required by the most stringent dynamic control specifications (example: EnTech™ or ISA 75.25).

This improved positioning accuracy allows tighter control of set point, reducing process variability and off-spec production.

- Bumpless transfer and custom valve characterization options provide optimal process control by minimizing disturbance.



Benefits

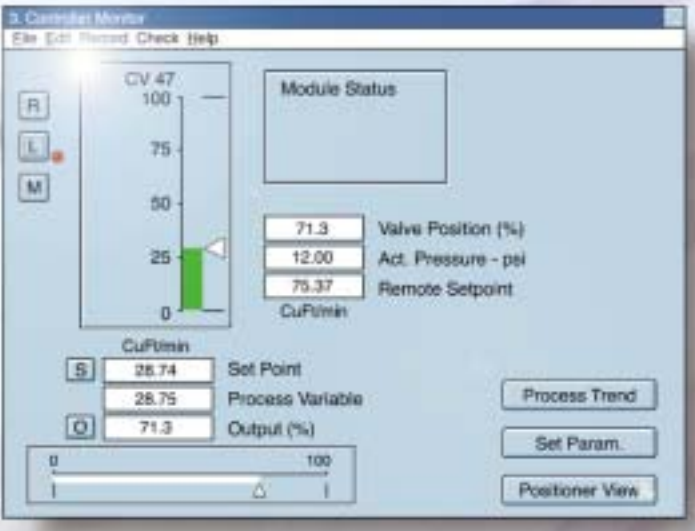


Easy Predictive Maintenance

- Diagnostic capabilities of the SVI allow precise determination of when to perform maintenance on the final control elements. Several sensors provide the necessary position and pressure measurements required for accurate analysis.

- Combined with Masoneilan's breadth of experience with control valve application, a SVI user will be able to successfully complete the valve diagnostic procedure. Most importantly, this is achievable without having to tear the valve down and disturb the process.

- Display of totalized stem travel, number of valve cycles, friction, time near closed, and other data is useful for predicting valve life-cycle and identifying possible reduction of sealing force. Possible drifts or malfunctions can therefore be detected, and maintenance undertaken, before the process is adversely affected.



Reduced Control Loop Complexity

- Integration of a local PID process controller in the SVI eliminates having to run wires back to the control room. Additionally, the DCS capacity and I/O card requirements are reduced.

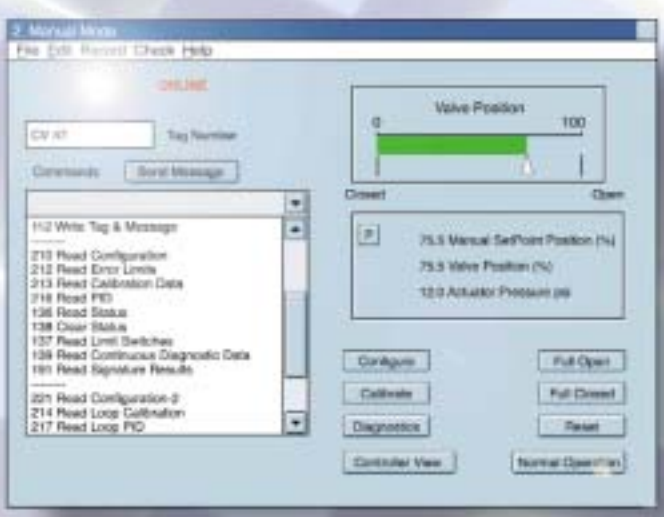
SVI and ValVue Features and Functions

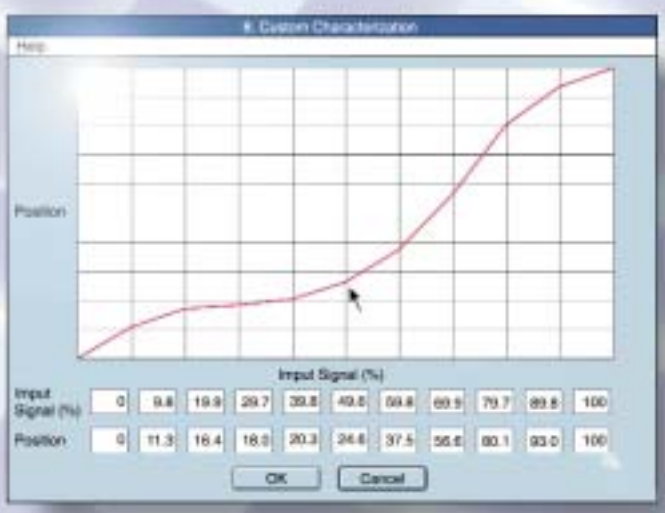
ValVue is the Windows-based diagnostic software for communication with Masoneilan's Smart Valve Interface. This easy-to-learn software with context sensitive help screens provides unparalleled connection to the field and enhanced features and functions.

Configuration	Interface
Air to Open – Air to Close	
Single acting positioner	
Valve cam characterization*	
PID Process Loop Controller	
Upper and lower position limits	
Tight shutoff limit	
Bumpless transfer	
Set positioner and process controller PID parameters	
Set error limits	
Set tag, description	

Calibration	Interface
Auto tune	
Locate upper and lower stop positions	
Set input signal corresponding to open and closed positions	
Calibrate input current and pressure	
Calibrate secondary signal input adjust I/P	
Reset calibrations to factory values	
Set positioner timing parameter	

* "custom" curves can be graphically created from ValVue screen





Diagnostics	Interface
Report total travel, time open, time closed, time near closed, and number of cycles	
Standard diagnostic - complete cycle - report valve friction, response time, spring range, low and high pressure readings	
Extended diagnostic - complete and display valve signature (actuator and positioner) - display step response for dynamic performance analysis	

PID Process Loop Controller	Interface
Display process variable and set point	
Display controller output and valve actuator pressure	
Monitor process variable trends	
Set point tracking	
Set process controller parameters	
Change set point and mode of transfer: local, manual or remote set point	

General	Interface
SVI and restore SVI parameters	
Save and display diagnostic data	
Manual position the valve	
Display position	
Display a list of faults that have occured	

SVI Technical Specification

System Requirements

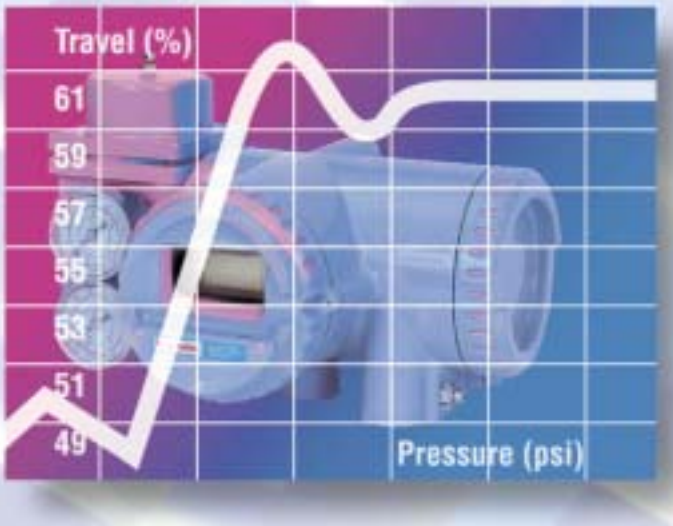
(HART version)

486 processor or higher

4 MB RAM minimum

Windows 3.1 or later

Com port for HART modem connection



Technical Description

Performance

Accuracy: 0.2% typical
Hysteresis plus deadband: 0.2% of span
Repeatability: 0.2% of span
Operating ambient temperature range:
-40° to +80°C (-40° to +176°F)

Input Power and Signal

Supply power: Taken from the 4-20 mA control signal; no external power required

Pneumatics

Supply pressure: 1.4 - 7 bar (20 - 100 psi)
Supply pressure effect: 0.05% of span
Air delivery: 25 m^3/hr (15 SCFM) at 60 psi
Pneumatic ports: 1/4" NPT female

Hazardous Areas Certifications

FM and CSA Certifications:
Explosionproof: Class I; Div 1; Groups B, C, D
Dust-ignitionproof: Class II, III; Div 1; Groups E, F, G
Intrinsically Safe: Class I, II, III; Div 1; Groups A, B, C, D, E, F, G
Non-incendive: Class I; Div 2; Groups A, B, C, D
Suitable: Class II; Div 2; Groups F,G

CENELEC Certifications:
Flameproof: EEx d IIB + H_2 T5 per EN 50014 and EN 50018
Intrinsic Safety: EEx ia IIC T4 per EN 50014 and EN 50020

Electro-magnetic Compatibility

EN 50081-2 and EN 50082-2

Enclosure Rating

NEMA 4X / IP 65 per EN 60529

CE mark: Yes

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Masoneilan is an international leader in the design, manufacture, and support of final control elements and solutions for efficient process automation.
Masoneilan is an integral part of the Dresser Flow Control (DFC), which offers a comprehensive portfolio of valves, pumps, actuators, and instrumentation.