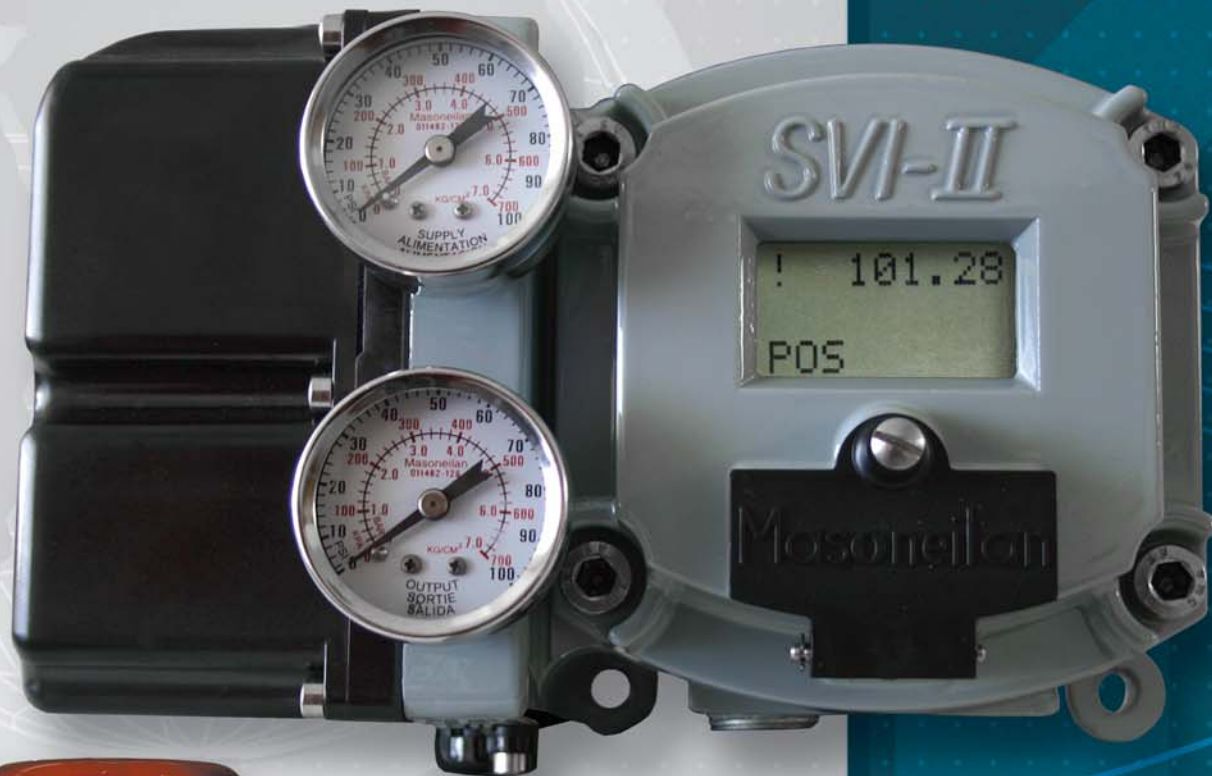# SVI® II AP
Advanced Performance

An Extremely Reliable Digital Positioner with True System Interoperability

SVI® II AP

Performance

Superior Control Accuracy, Resolution Sensitivity, and Speed

Reliability

Effortless Installation and Years of Reliable Service From the Most Durable Digital Positioner

Intelligence

Ultimate Diagnostic Tool for High–End Component Health and Predictive Valve Maintenance

Advanced **P**erformance

TOTAL PLANT REVENUE ENHANCEMENT

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

Integration Options
- Control Systems with HART® I/O
- Emerson® - ValVue 2 AMS™ SNAP-ON™
- Honeywell® - ValVue for Experion®
- Yokogawa® - PRM® Plug-In
- Others - FDT/DTM

Interface Options
- On-board LCD (Explosion Proof)
- HART® Handheld Communicators (HHC 375 and others)
- Masoneilan ValVue 2 Software

IMPROVED INSTALLATION AND START-UP COSTS

Easy Commissioning - Simple installation, combined with automated calibration and tuning functions significantly reduces set-up time and optimizes equipment performance.

- Set-up Wizard
- Auto-Calibrate
- Autotune Without Entering Valve Data
- No Special Tools or Jigs Required for Mounting
- No Sensor Over-Rotation
- One Model Fits Both Rotary and Reciprocating

BENEFICIAL IMPACT ON OPERATING COSTS

Reliability - An optimized design, leveraging Material Selection, Component Architecture and Production Processes to consistently ensure reliable performance over the life of the product.

- Minimum Number of Moving Parts
- Non-Contact, Hall Effect Position Sensor
- Vibration and Wear Resistance
- Over Power Protection
- Low Compliance Voltage
- Designed in Accordance with IEC 61508 per SIL 2

FINANCIAL RISK MANAGEMENT

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.

- 7 Critical Built-In Sensors
- Non-intrusive Diagnostics for valve condition monitoring (VCM)
- Valve Trending
- Data Analysis and Interpretation
- Control Valve Signatures and Device Alarms Embedded in Non-Volatile Memory
- High Resolution Signatures with Seating Analysis
- Accurate Positioner and Valve Component Diagnostics through 5 Pressure Sensors
- Continuous Online Health with Alarms Provided via HART and Discrete Out
- Local Fault Indicator of Active Alarms on LCD

LOOP REVENUE ENHANCEMENT

Reduced Process Variability - The
SVI II AP advanced performance Autotuning
function results in very tight, accurate valve
positioning, and reduced process variability, while
increasing process yields and product quality.

- Pushbutton Positioner Autotuning
- Enhanced Dynamic Performance
- Custom Flow Characterization
- Valve Trending
- Position Error Alarm
- Enhanced Autotune
- Power-up less than 150ms

REDUCED MAINTENANCE COSTS

Robust Construction - The rugged design is
modular in construction providing superior
performance and extended service life under
extreme conditions, lowering total maintenance
expenditures.

- Housing Designed with Captured Cover Seals
- Stainless Steel Housing Option
- Separate Field Replaceable Modules
- Water Tight Electronics Module
- Explosion Proof and Water Tight Pushbuttons Module
- Gauges with Stainless Steel Cases
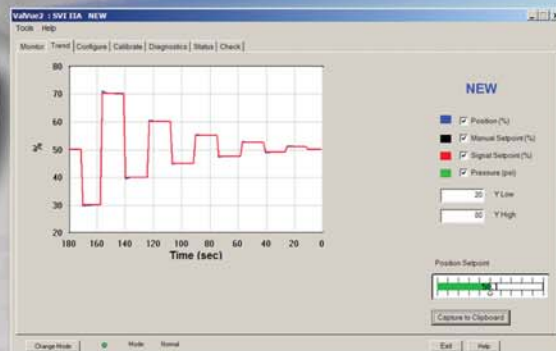
Advanced Performance

PERFORMANCE

RELIABILITY

INTELLIGENCE

SVI® II AP

Key Features:
- Extreme Accuracy
- Universal design (linear or rotary applications)
- Selectable position feedback (non-contact sensor or Remote-mount position feedback)
- AO: Position transmitter 4-20mA Output
- DO: Two Discrete Outputs
- Explosion proof external LCD & buttons
- Valve position Autotune (self calibration) with user selectable valve response
- Upgradeable Flash firmware
- Split-Range
- High-speed response for Surge-Control applications
- Upgradeable options

Safety Compliance:
- SIL2 Per IEC61508 section 2-3

Diagnostics:
- 5 Pressure Sensors
- Total Travel
- Number of Cycles
- Time Open/Time Close/Time Near Close
- Online Diagnostics
- Upgradeable diagnostic levels

Housing Material:
- Case/Cover: Low copper aluminum (standard), 316L (optional)
- Paint: Grey Polyurethane

Input Power and Signal:
Power supply (taken from 4-20mA)
Required terminal voltage: 9Vdc at 20mA
Minimum current signal: 3.2mA

Output Signals:
- AO (Valve Position): 4-20mA - 2 wire loop powered with 10-24Vdc compliance voltage
- DO (1 & 2): Configurable solid state switch
    - 1A – 30Vdc

Input Signals:
- Valve Setpoint: 4-20mA
- DI (discrete input): Un-powered contact closure
- Remote position sensor

Communication:
- HART® Protocol

Ambient Temperature Limits:
- –58 to 185 °F (–50 to 85 °C)

Ambient Humidity Limits:
- 10 to 95% RH non-condensing

EMC Conformity Standards:
- EN 61000-4-2, 3, 5, 6, 8
- IEC 801-2,-3,-4
- CE MARK

Actuator Travel Range:
- Linear Motion: 0.25" to 4" (standard mounting)
                    > 4" (extended mounting)
- Rotary Motion: 18 to 140 deg
- Travel sensor resolution: 0.0015%

Pneumatics:
Air or sweet natural gas - regulated and filtered
Air supply pressure:
- Single-Acting: 20 to 100 psi max (1.4 to 6.9 bar)
- Double-Acting: 20 to 150 psi max (1.4 to 10.3 bar)
Air Delivery
Single Acting Pneumatics:
- 10.0 scfm (280 l/m) at 30 psi (2.1 bar) supply
- 16.6 scfm (470 l/m) at 60 psi (4.2 bar) supply
- 23.3 scfm (660 l/m) at 90 psi (6.3 bar) supply
Double Acting Pneumatics:
- 7.2 scfm (200 l/m) at 30 psi (2.1 bar) supply
- 12.8 scfm (360 l/m) at 60 psi (4.2 bar) supply
- 18.3 scfm (520 l/m) at 90 psi (6.3 bar) supply
- 23.8 scfm (675 l/m) at 120 psi (8.4 bar) supply
Materials:
- I/P Motor and Relay are constructed of composite polymers and stainless steel (300 and 400 series)

Control Valve Mounting System:
- Material:
    - 300 Series SST standard
- Valve Type:
    - Linear or Rotary Motion Control Valve
    - Single or Double-Acting Actuator
- Remote-Mount System Kit:
    - Remote position sensor assembly
    - Cabling for up to 30 meters (100')
    - 2" Pipe mount bracket

Hazardous Area Certifications:
- FM, CSA, ATEX, JIS and Others Available
- Explosion Proof, Intrinsically Safe, FlameProof
- NEMA 4X / IP66

Digital Communication Interface Solutions:
- ValVue® Communication software:
    - Serial Port or USB Modem
    - MTL Multiplexor
- Control System Integration:
    - Emerson®
        - AMS™
        - AMS™ ValVue SNAP-ON™
    - FDT-DTM
        - Any FDT-DTM compatible Host
    - Honeywell®
        - FDM
        - ValVue For Experion™
        - Asset Manager PKS™
    - Yokogawa®
        - PRM®
        - ValVue PRM Plug-In
- HART® Configuration Tools:
    - Compatible with any certified configurator using DDL technology such as:
        - Handheld 375

Performance per ISA S75.13 – 1996:

Accuracy	+/- 0.5% Full span
	(typical +/ - 0.10% or better Full span)
Conformity	+/- 0.5% Full span
Hysteresis + DeadBand	+/- 0.3% Full span
Repeatability	+/- 0.3% Full span
Power-Up with position control	<150ms
Power Interruption without causing reset	<100ms

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