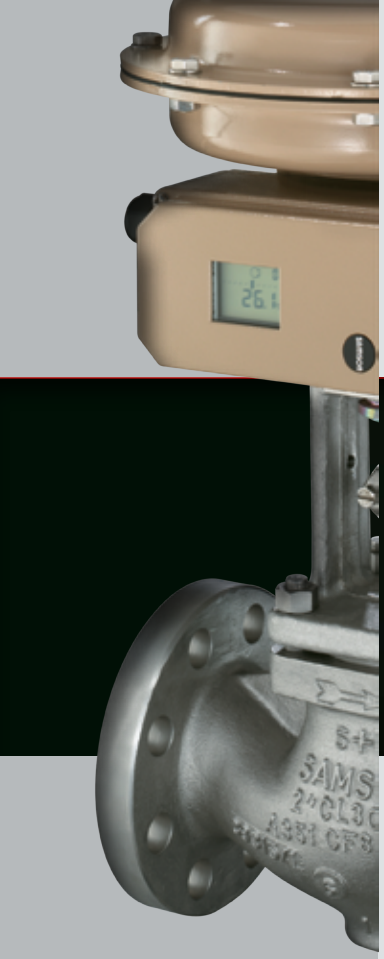
Cost-effective, Flexible and Reliable

Type 3730-6 Positioner with pressure sensors

HART
COMMUNICATION PROTOCOL

SAMSON GROUP

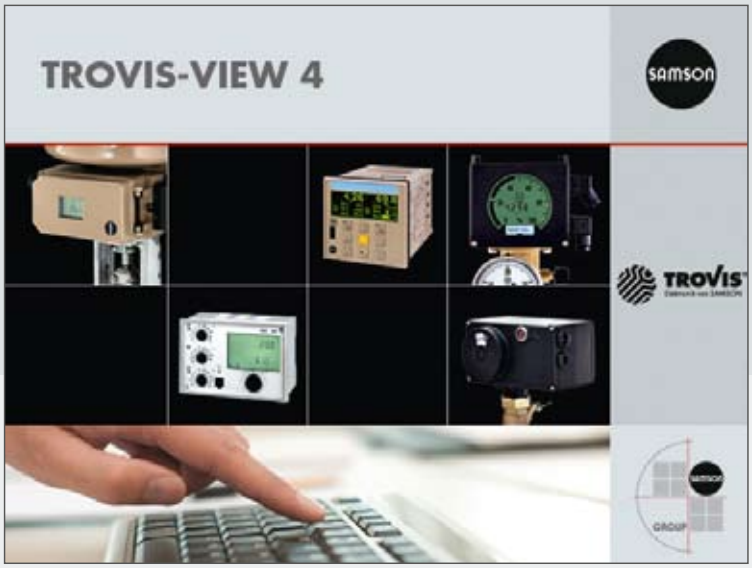


Benefits

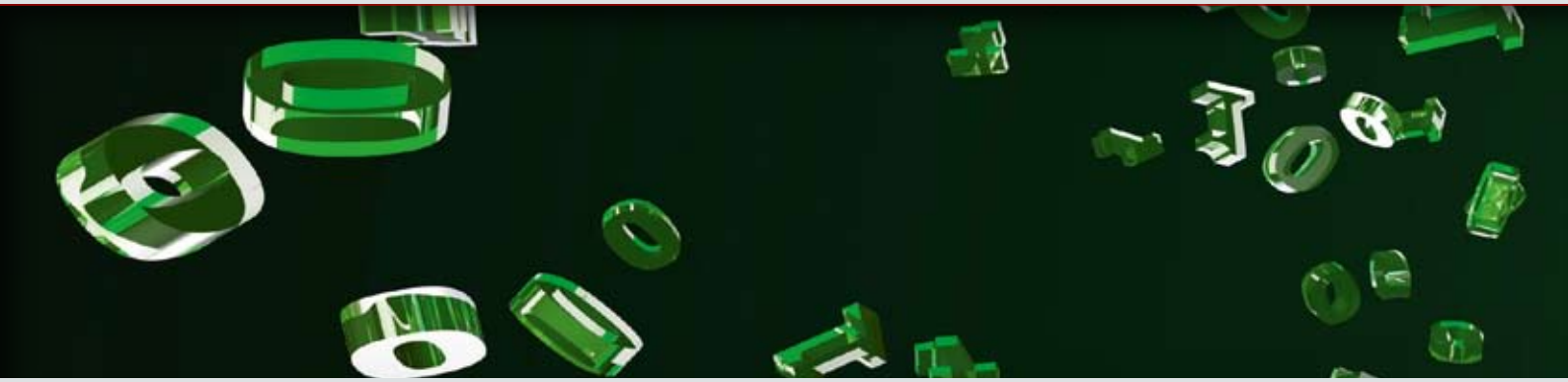
- **Cost efficiency**
  - One positioner for throttling and on/off applications
  - Integrated EXPERTplus valve diagnostics included at no extra charge
  - TROVIS-VIEW 4 software for configuration and operation free of charge

- **Flexibility**
  - HART® communication, device integrations (EDDL, FDT/DTM) free of charge
  - Monitoring of the entire operating cycle with EXPERTplus valve diagnostics

- **Reliability**
  - Monitoring of supply pressure and signal pressure with integrated pressure sensors
  - Automated partial stroke test (PST) suitable for use in safety-instrumented systems according to IEC 61508 up to SIL 3



Basic Functions and Options



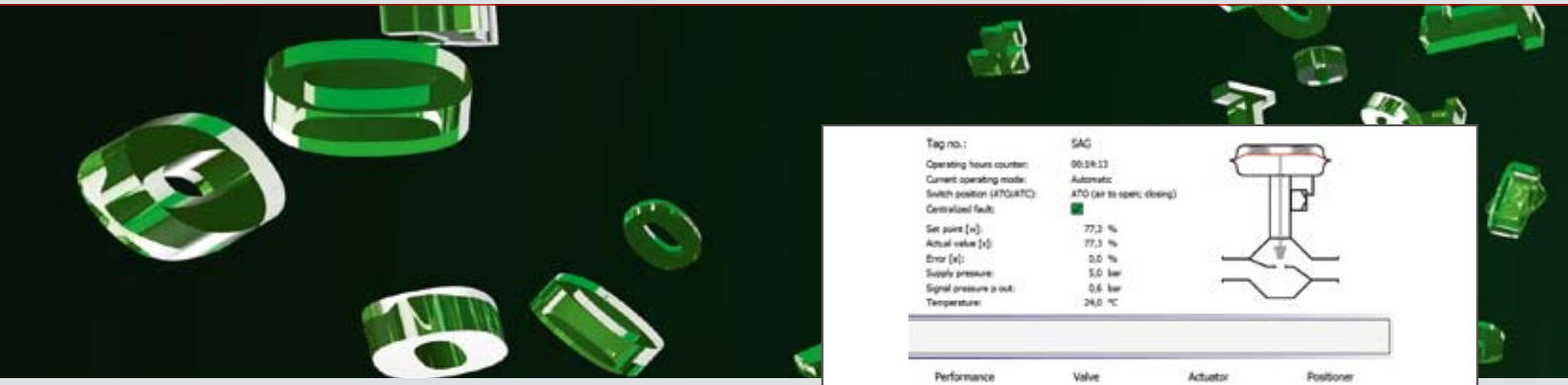
Basic functions

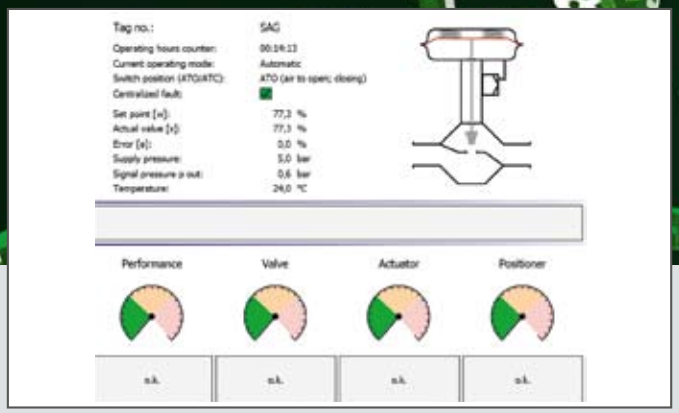
- Convenient automatic start-up
- Start-up monitoring
- Emergency shutdown at 3.8 mA according to IEC 61508 up to SIL 3
- Travel counter with adjustable alarm limits according to NAMUR Recommendation NE 107
- New asset management approach: various valve data can be saved in the positioner
- Dynamic HART® variables (e.g. condensed state according to NE 107, valve position)
- HART® device status issued

Options

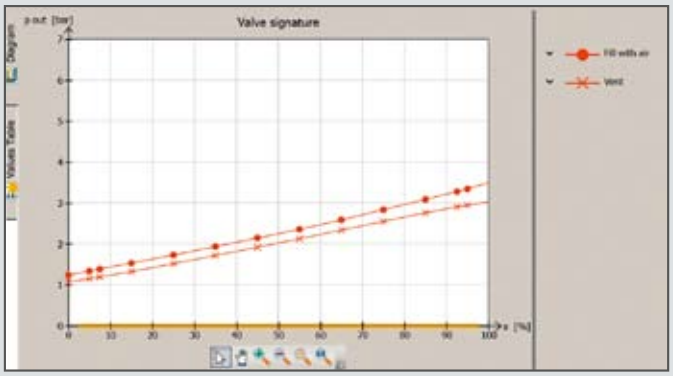
- Leakage sensor to detect seat leakage
- Inductive limit switch for safety-related assessment of the end positions
- Binary input to start diagnostic functions (e.g. start data logger, start partial stroke test (PST), move valve to safety set point)
- Forced venting for emergency actuator venting according to IEC 61508 up to SIL 3
- External position sensor
- Analog position feedback
- Stainless steel housing, e.g. for offshore applications
- Binary contacts for fault indication or limit value assessment

EXPERTplus Valve Diagnostics





Diagnostic overview



Valve signature

Diagnostic functions

- Valve signature (pressure vs. travel graph) for monitoring supply air, signal pressure, friction and spring range
- Data logger for specific monitoring of process states, e.g. solenoid valve energized
- Histograms (valve position, set point deviation) for monitoring the manipulated variable range
- Dynamic load factor including histogram to detect packing wear
- End position monitoring to detect seat and plug wear
- Flow rate calculated without the need for any further sensors
- Static characteristic to determine the valve dead band

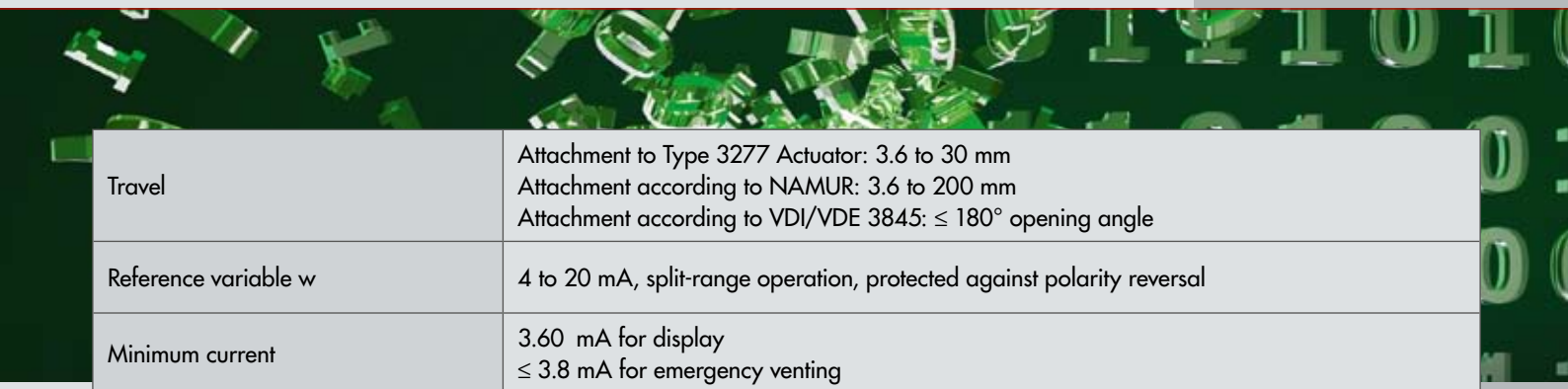
Partial stroke test (PST) and full stroke test (FST)

- PST to check that shut-off valves have not seized up
- FST to assess the dynamic valve performance
- Configurable ramp function
- Scheduled or manual start
- Status classification according to NAMUR Recommendation NE 107

Special functions for on/off valves

- Discrete set point analysis to move the valve to the operating or fail-safe position
- Assessment of the travel end position as well as breakaway and transit times
- Partial stroke test started by the reference variable

Technical Data



Travel	Attachment to Type 3277 Actuator: 3.6 to 30 mm Attachment according to NAMUR: 3.6 to 200 mm Attachment according to VDI/VDE 3845: ≤ 180° opening angle
Reference variable w	4 to 20 mA, split-range operation, protected against polarity reversal
Minimum current	3.60 mA for display ≤ 3.8 mA for emergency venting
Load	≤ 8.8 V (corresponding to 440 Ω at 20 mA)
Supply air	1.4 to 7 bar
Signal pressure (output)	0 bar up to the capacity of the supply pressure, can be limited by software
Characteristic	Adjustable, deviation ≤ 1 %
Hysteresis	≤ 0.3 %
Sensitivity	≤ 0.1 %
Transit time	Up to 240 s separately adjustable for exhaust and supply air
Direction of action	Reversible, set by software
Air consumption	Independent of supply air approx. 110 l_n/h
Influence of vibrations	≤ 0.25 % up to 2000 Hz and 4 g according to IEC 770
Communication	All parameters adjustable at the positioner SAMSON SSP interface (TROVIS-VIEW 4) HART® protocol
Explosion protection	Ⓔx II 2 G Ex ia IIC T6 / II 2 D Ex tD A21 IP 66 T80 °C ATEX (IECEx, GOST) Ⓔx II 3 G Ex nA II T6 / II 3 G Ex nL IIC T6 / II 3 D Ex tD A22 IP 66 T80 °C ATEX (IECEx, GOST)
Degree of protection	IP 66/NEMA 4X
Binary contacts	1 fault alarm contact 2 software limit switches
SIL approvals	Suitable for use in safety-instrumented systems according to IEC 61508 up to SIL 3

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