



AND
EVERYTHING
FLOWS



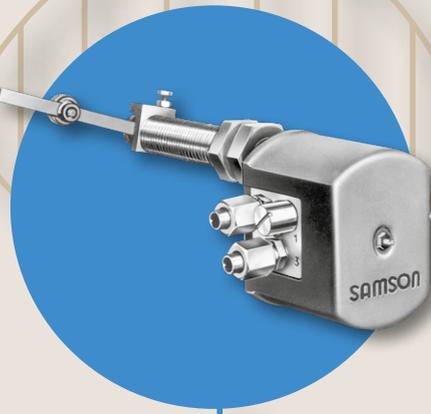
MASTERMINDS BEHIND EVERY VALVE MOTION

Taking a Closer Look at SAMSON Positioners



THE FUTURE OF CONTROL ENGINEERING STARTS HERE

At SAMSON, we can draw on more than 100 years of experience and expertise in control valve engineering. As early as 1957, SAMSON launched the first pneumatic positioner onto the German market. Since then, we have enhanced and perfected our positioners, their attachment and their interaction with a wide variety of valve models and valve accessories.



1953
STP 703



1964
Type 3762



1992
Series 378x

POSITIONERS: PRECISION IN EVERY MOTION

SAMSON is recognized the world over for quality, innovation and precision. Based on our experience and expertise, we are working hard to develop solutions that add greater efficiency, safety and transparency to industrial processes.

SAMSON positioners are at the heart of our product portfolio. They ensure that control valves work exactly as defined by the process control system: reliable, quick and energy efficient. Whether analog or digital, used in chemical, energy supply or water engineering applications: SAMSON positioners, such as the Series 3730, come with the following features:

- Highest control accuracy
- Integrated valve diagnostics
- Easy start-up
- Rugged design for challenging ambient conditions

FUTURE-PROOFED BY SMART INTEGRATION

With our **Smart Valve Integration Center** in Frankfurt am Main, Germany, we are driving the digitalization of valve engineering. Seamless integration into modern process control systems allows for predictive maintenance, shorter plant downtimes and maximum plant availability.



2002
Series 3730



2017
TROVIS 3793



2022
TROVIS 3797



TYPE 3725

Type 3725 is the ideal electro-pneumatic positioner for all applications where a compact design, easy operation and ruggedness are essential. Developed for universal use on linear and rotary actuators, the positioner is intuitive in operation, even under challenging conditions.

- Three capacitive keys and display for convenient operation
- User-friendly, intuitive menu structure
- Automatic initialization
- UV-resistant housing
- Various types of attachment
- Accurate control thanks to protected, non-contact sensor system
- Shipbuilding certificate

Type of service	Throttling service
Attachment	Single- or double-acting linear and rotary actuators
Explosion protection	See table on pages 6 and 7
Communication	Without
Materials	Cover made of polyphthalamide (PPA) with round window made of polycarbonate (PC) approx. 0,5kg

FURTHER INFORMATION



TROVIS 3730-3

Maximum control, minimum complexity. SAMSON's TROVIS 3730-3 is more than a positioner: it is the smart heart of your process automation application. Developed for the highest demands, it combines state-of-the-art technology with intuitive operation and exceptional reliability.

- Communication features and compatibility thanks to HART® interface and SAM DIGITAL ready
- Versatile use in different process environments
- Integrated EXPERTplus diagnostics for real-time data
- No wear thanks to innovative non-contact travel sensing system
- Single-knob operation, rotatable plain-text display and automatic initialization for easy start-up

Type of service	Challenging transit time requirements Challenging ambient conditions Throttling service Use of an external travel sensor
Attachment	Single- or double-acting linear and rotary actuators
Explosion protection	See table on pages 6 and 7
Communication	HART® revision 7
Materials	Aluminum approx. 1 kg, stainless steel 1.4404 approx. 2,2 kg

FURTHER INFORMATION





TROVIS 3793

TROVIS 3793 is a smart, modular positioner for pneumatic control valves featuring a high level of flexibility, easy operation and comprehensive diagnostic functions. It is designed for challenging applications in process automation, particularly difficult ambient conditions.

- High air capacity: no additional booster required in many cases
- Plain-text display according to NAMUR Recommendation NE 107
- Rugged design for extreme operating conditions
- Replaceable options, including binary inputs/outputs, analog position feedback, limit contacts, pneumatic modules

Type of service	Challenging transit time requirements Challenging ambient conditions Throttling service
Attachment	Single- or double-acting linear and rotary actuators
Explosion protection	See table on pages 6 and 7
Communication	HART® revision 7
Materials	Aluminum: 1.4 to 1.6 kg (depending on version); stainless steel 1.4404: 3.2 to 3.4 kg (depending on version)

FURTHER INFORMATION



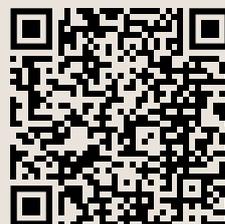
TROVIS 3797

TROVIS 3797 is your partner on the digital transformation journey. By recording and analyzing data in real time, our positioner lays the foundations for networked, efficient and smart production. Benefit from the power of data to improve plant efficiency and minimize downtime. Further advantages:

- Precise control for optimized process performance
- Real-time data transmission using Ethernet-APL
- Developed for challenging industrial environments to maximize your plant's uptime
- Easy integration: using PA Profile 4 and standardized FDI package

Type of service	Throttling service Challenging transit time requirements Challenging ambient conditions
Attachment	Single- or double-acting linear and rotary actuators
Explosion protection	See table on pages 6 and 7
Communication	PROFINET®
Materials	Aluminum: 1.4 to 1.6 kg (depending on version); stainless steel 1.4404: 3.2 to 3.4 kg (depending on version)

FURTHER INFORMATION



Properties	Basic					
	Type 3766	Type 3767	Type 3725	Type 3730-4	Type 3730-5	Type 3731-3
Device	p/p	i/p	i/p	i/p	i/p	i/p
Input/output signal	p/p	i/p	i/p	i/p	i/p	i/p
Attachment						
• SAMSON integral attachment	●	●	●	●	●	●
• IEC 60534-6-1	●	●	●	●	●	●
• VDI/VDE 3847-1/-2				●	●	
• VDI/VDE 3845	●	●	●	●	●	●
Options						
• Software limit contacts						○
• Inductive limit contacts	○	○		○	○	
• Fault alarm output						○
• Solenoid valve	○	○		○	○	
• Forced venting function						○
• Pressure sensors						
• Binary input				○●	○●	○
• Analog position transmitter						○
• External position sensor				○	○	
• Analog input for external travel sensor						
• Fail-in-place module						
Explosion protection						
• Intrinsic safety (Ex i)	○	○	○	○	○	
• Increased safety (Ex e)	○	○		○	○	○
• Protected by enclosure/dust protection (Ex t)				○	○	○
• Flameproof enclosure (Ex d)	○					●
Operation						
• Automatic initialization			●	●	●	●
• Auto-tuning			●	●	●	●
• Monitoring			●	●	●	●
• Initialization key				●	●	
• On site including LCD			●	●	●	●
• TROVIS-VIEW				●	●	●
• Communication interface						
Diagnostics						
• EXPERTplus				●	●	●
• SAM VALVE MANAGEMENT				●	●	●
Safety IEC 61508/SIL						
• Emergency venting				●	●	●
• Safety-related end position monitoring				○	○	

Standard				High-end models		
Type 3731-5	TROVIS 3730-1	TROVIS 3730-3	TROVIS SAFE 3731-3	TROVIS 3793	TROVIS 3797	TROVIS SAFE 3793
i/p	i/p	i/p	i/p	i/p	i/p	i/p
●	●	●	●	●	●	●
●	●	●	●	●	●	●
	●	●		●	●	●
●	●	●	●	●	●	●
	○	○	○	○	○	○
	○	○		○	○	○
		○		○	○	○
○		○	○	○	○	○
		○		○	●	○
○		○	○	○	○	○
	○	○	○	○		○
		○	○	○	○	○
				○	○	○
				○	○	○
	○	○		○	○	○
○	○	○	○	○	○	○
○	○	○	○	○	○	○
●			●			
●	●	●	●	●	●	●
●	●	●	●	●	●	●
●	●	●	●	●	●	●
		●		●	●	●
●	●	●	●	●	●	●
●	●	●	●	●	●	●
						
●		●	●	●	●	●
●	●	●		●	●	●
●		●		●	●	●
●	●	●	●	●	●	●
	○	○				

● Standard
○ Optional

EFFICIENT USE, FLEXIBLE UPGRADES

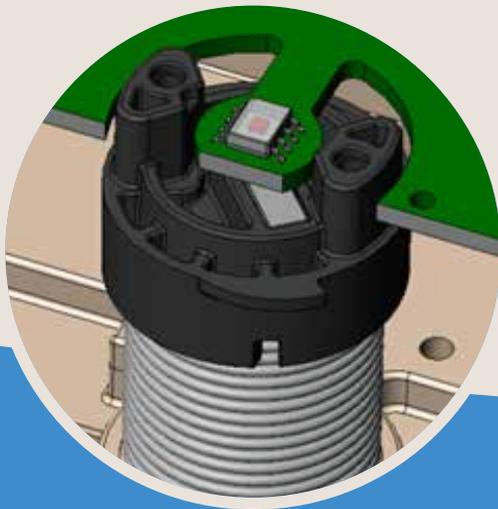
SAMSON positioners can be upgraded with various add-on functions, integrated right under the hood of the positioner housing. As a result, less piping is required, the cost of installation are brought down and the operation of the control valves becomes much more reliable.

NETWORKED THINKING, CENTRALIZED CONTROL

State-of-the-art positioners demonstrate their full performance thanks to their seamless integration into process control and asset management systems. This is where SAMSON comes into play: for different manufacturers, with efficiency and ready for future requirements.

- Centralized start-up and configuration
- Standardized protocols: HART®, PROFIBUS® PA, FOUNDATION™ fieldbus and Profinet over Ethernet-APL
- Compatible with the common engineering tools, such as Emerson AMS/Delta V, Siemens PDM, Yokogawa PRM, Honeywell Expersion
- Device integrations available as free-of-charge downloads

SAMSON: pushing the boundaries of smart automation.



EXCEEDING CONTROL: SMART MONITORING OF ON/OFF VALVES

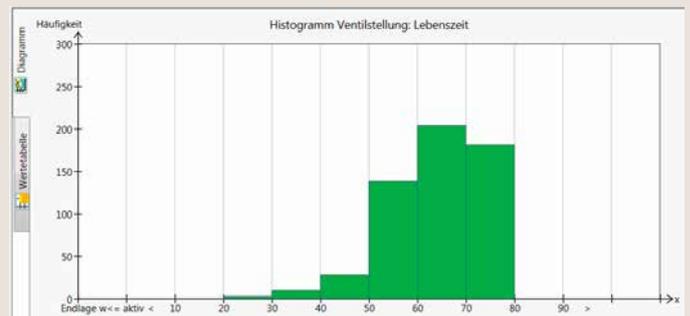
On/off valves come into focus as the level of automation in process plants becomes higher and higher. SAMSON's TROVIS SAFE positioners are the perfect solution. They combine the classic control behavior with discrete set point analyses and integrated diagnostic functions, such as partial and full stroke testing (PST, FST). The possibility to compare the results of two tests (TROVIS SAFE 3793) gives plant operators the chance to detect changes in valve behavior at an early stage.

Perfect for on/off valves thanks to diagnostic features and digital set point processing

ADDITIONAL BENEFITS OF THE INTEGRATED EXPERTPLUS VALVE DIAGNOSTICS:

- Early detection of critical conditions
- Predictive maintenance based on cyclical status monitoring and targeted tests
- Full transparency using TROVIS-VIEW or HART®, PROFIBUS® PA, FOUNDATION™ fieldbus and Profinet over Ethernet-APL

SAMSON: maximum safety and valve availability



POSITIONERS MAKE YOUR PLANT EXTRA-SMART

Where precision meets flexibility

SAMSON positioners are the smart solution for modern process automation. They combine prime control accuracy with versatile adaptability, which makes them ideal for challenging industrial applications. Their flexible **attachment options** allow for seamless mounting on different valve types. They are fit for the digital future with their integrated **communication features** (such as HART®, PROFIBUS® PA, FOUNDATION™ fieldbus), state-of-the-art technologies (such as Ethernet-APL) and their predictive maintenance capabilities.

SAMSON positioners can be integrated seamlessly into existing infrastructures, from stand-alone plants to networked systems. Their **modular design** guarantees maximum flexibility. SAMSON positioners make your control system smart.

FLEXIBLE ATTACHMENT FOR ANY APPLICATION

SAMSON positioners can be mounted on different valve types, offering full compatibility.

SAMSON INTEGRAL ATTACHMENT

Compact and easy to mount on Type 3277 Actuators

ATTACHMENT ACCORDING TO IEC 60534-6-1

For linear actuators with standardized interface

ATTACHMENT ACCORDING TO VDI/VDE 3847-1/-2

Standardized interface with internal air routing and the possibility to replace the positioner during operation

ATTACHMENT ACCORDING TO VDI/VDE 3845

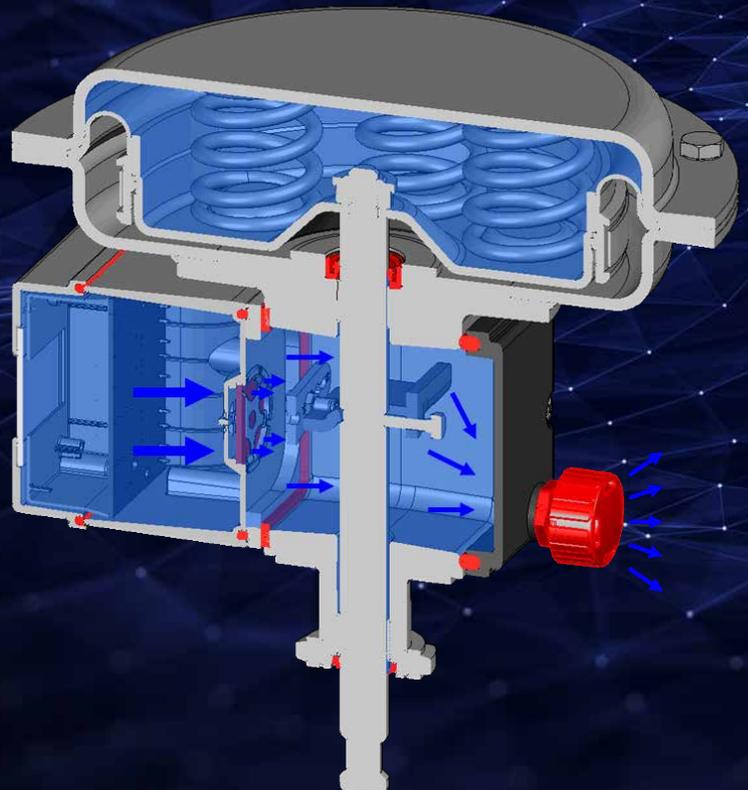
Easy mounting on rotary actuators with standardized interface

These proven attachment options allow for quick, safe and compliant installation anywhere in the world.

For Type 3277 Actuators with 120 to 750 cm² diaphragm area, integral attachment is a future-proof solution for compact, safe, cost-effective and long-term valve operation. Direct positioner attachment to the actuator yoke makes for a particularly rugged control valve where all moving parts are protected. At SAMSON, the durable, precise travel linkage mechanism ensures that control processes function reliably and without trouble even if they are exposed to external influences.

A true technical highlight is the internal air routing through the actuator yoke, which makes external piping redundant in most cases. This makes for lower cost and less installation hassle.

On top, the continuous purging of the travel linkage system with exhaust air reliably protects the positioners against corrosive ambient conditions, making them ideal for use in challenging industrial environments.





MORE SERVICE: DIGITAL SUPPORT FOR ALL POSITIONER ISSUES

Digital services by SAMSON turn positioners into networked sources of data to improve transparency, efficiency and safety in plant operation.

SAM DIGITAL

SAMSON's digital platform for cloud-based services, centralized data analysis and cross-plant monitoring perfectly tailored to IIoT and Industry 4.0 applications

SAM SERVICES

SAM SERVICES stands for digital services and support by SAMSON to combine the benefits of smart positioners with modern after-sales service schemes. The goal of SAM SERVICES is to maximize plant availability, make maintenance plannable and minimize plant downtime.

KEY FEATURES OF SAM SERVICES

Status-based maintenance:

We use diagnostic data from EXPERTplus for targeted service planning without adhering to rigid maintenance intervals.

FAULT ANALYSIS IN REAL TIME

Early detection of anomalies and faults based on continuous positioner data monitoring.

REMOTE SUPPORT AND ASSISTANCE

Get support from SAMSON experts, either directly at your site or through our SAM DIGITAL products.

DOCUMENTATION AND TRACEABILITY

All service and maintenance activities, diagnostic data and test results are documented and archived at one central location.

INTEGRATION INTO SAM DIGITAL

SAM SERVICES is fully integrated into the cloud-based SAM DIGITAL platform to provide cross-plant access to all relevant device and maintenance data.





APL TEST SYSTEM USING TROVIS 3797

CUSTOMER

- TH Köln (Cologne University of Applied Sciences, Germany) in cooperation with renowned companies in the chemicals and plastics industry
- Institute for Automation Technology/Process Control Lab
- Study on test system with TROVIS 3797

APPLICATION

- Implementation of one of the first environments for function and interoperability testing
- Cooperation with and support for certification bodies

CHALLENGE

- Setting up one of the world's first testing sites without reference values and best practices
- Together with manufacturers and plant operators, we are gathering experience in using Ethernet-APL as a tool

RESULT

- The study underlines that Ethernet-APL is technically ready and offers simple solutions.
- Software is available to reduce the workload for staff members and counteract the lack in skilled workers
- Considerable improvements that save time and money can be felt at all stages – from engineering to integration, installation and start-up.
- Much lower number of faults thanks to easier installation and integration: this is a huge benefit particularly during initial start-up in large process industry plants.

WHY CHOOSE TROVIS 3797?

- Digitalization at the field level and real-time communication using PROFINET®
- Real-time monitoring and valve diagnostics in the field unit
- Plug-and-play for easy start-up and maintenance
- Future-proof, standardized integration using FDI
- Certified according to PA Profile 4 and Ethernet-APL physical layer
- Safe, fast and transparent data transmission across distances of up to 1,000 m





AND
EVERYTHING
FLOWS

MASTERMINDS BEHIND EVERY VALVE MOTION

Taking a Closer Look at SAMSON Positioners

SAMSON AKTIENGESELLSCHAFT

Weismuellerstraße 3 · 60314 Frankfurt am Main, Germany

Phone: +49 69 4009-0 · Fax: +49 69 4009-1507

E-mail: samson@samsongroup.com · www.samsongroup.com