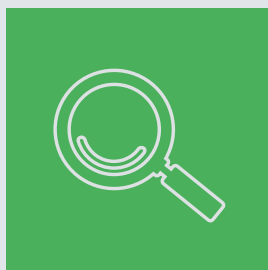
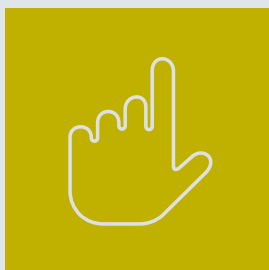
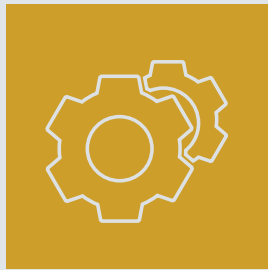
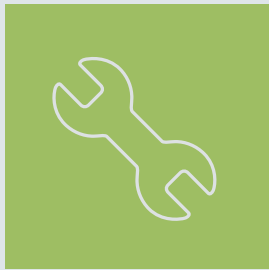
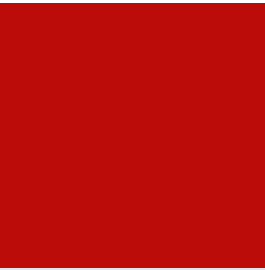




## Positioners

Attachment, Options, Explosion Protection, Operation, Diagnostics, Safety



# Positioners – Overview

Attachment .....



Options .....



Explosion protection .....



Operation .....



Diagnostics .....



Safety .....



# OUR EXPERTISE FOR YOU

## Competence in valve engineering

Founded in 1907, SAMSON has since become a worldwide leader in the manufacture of expertly engineered control valves, positioners and other valve accessories for all industrial processes.



SAMSON has over 50 subsidiaries, amongst them noted manufacturers of special valves, such as AIR TORQUE, CERA SYSTEM, LEUSCH, PFEIFFER, RINGO VÁLVULAS, STARLINE, and VETEC. We are represented in over 80 countries to assist our customers on all continents.

SAMSON provides you with valve engineering and customer service from a single source:

- We support you in planning new installations or overhauling and expanding existing plants.
- We assist you in selecting and configuring the right equipment to suit your control requirements.
- We are close at hand to support your life cycle management, from installation and start-up to maintenance and service.

At SAMSON, we can draw on more than 100 years of experience and expertise in control valve engineering. In 1957, we 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.



The SMART VALVE INTEGRATION CENTER (SVIC), founded in 2009 at our headquarters in Frankfurt, works in close cooperation with the R&D and test facilities departments to provide the foundations for optimal integration of smart SAMSON devices into process control, engineering and asset management systems.

The center performs integration tests of smart devices as well as system tests according to customer specifications in cooperation with

control system manufacturers. We pass on the knowledge we acquire to our customers in hands-on training seminars.

The components used are tested concerning their start-up and interoperability on plant setups in laboratory conditions. Additionally, application-specific solutions and field device improvements are developed.



# FROM ANALOG TO DIGITAL

**1935** – A solenoid valve and a temperature controller are the first electrical devices developed by SAMSON.

**1957** – The first pneumatic positioner, STP 703, is launched onto the German market.

**1973** – SAMSON introduces an i/p and p/i converter functioning as the linking element between pneumatics and electronics.

**1974** – Production of the first electropneumatic positioner, the Type 3762, starts.

**1986** – SAMSON participates in a joint project set up by different industrial companies to define a fieldbus for automation later to become PROFIBUS.

**1987** – Integral positioner attachment with internal air routing is introduced. It sets a benchmark in control valve engineering that operators still benefit from today.

**1989** – The world's first prototype of a fieldbus positioner is presented at INTERKAMA and the ISA show (Philadelphia, USA).

**1995** – Production of the digital Type 3780 Positioner with HART® communication starts.

**1999** – TROVIS-VIEW, a user interface designed to configure and operate various electronic SAMSON products, is introduced.

**2000** – The Type 3787 Positioner with FOUNDATION™ fieldbus communication helps strengthen our sales activities in North America, Asia and the Middle East.

**2001** – The Series 3730 Positioners with hybrid technology and integrated valve diagnostics are presented at INTERKAMA.

**2001** – A leakage sensor to monitor seat leakage is introduced.

**2004** – The Series 3730 Positioners are certified in accordance with IEC 61508 for use in safety-instrumented systems up to SIL 3.

**2006** – News version with partial stroke testing for safety-instrumented systems are added to the Series 3730.

**2006** – Production of flameproof Series 3731 Positioners starts.

**2008** – The enhanced EXPERTplus valve diagnostics allow extensive diagnostic functions to be added to the Series 3730 and 3731.

**2011** – Type 3730-4 is the first PROFIBUS field unit in which the ID number can be adapted. This allows PROFIBUS-PA field devices to be replaced without having to shut down the control system.

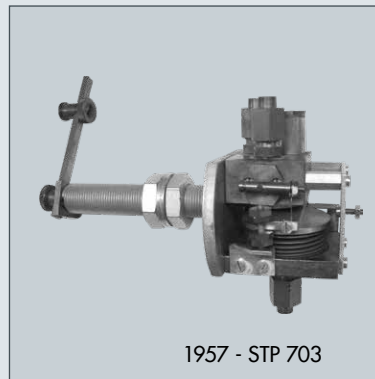
**2011** – Type 3730-6 with HART® communication sets new standards in predictive valve diagnostics with its integrated pressure sensors.

**2012** – SAMSON is partner of the 75<sup>th</sup> NAMUR general meeting, which highlights modern final control elements in the automation of processes.

**2015** – The new TROVIS SAFE series is added to SAMSON's range of positioners. The positioners marketed under the registered trademark TROVIS SAFE have been optimized for use with on/off valves in safety-instrumented systems and are certified to comply with SIL requirements.

**2016** – SAMSON introduces the new positioner generation TROVIS 3793 at the Valve World Expo 2016. These positioners have a modular design. Their high air capacity make suitable them for mounting to large actuators.

**2018** – SAMSON introduces two new positioners from the Series 3730 – TROVIS 3730-1 and TROVIS 3730-3 – at the 2018 Valve World Expo. The new positioners for 4 to 20 mA applications combine the latest technological developments with the proven device base known from the Type 3730-1 and Type 3730-3 predecessor models.



1957 - STP 703



2001 - Series 3730



2016 - Series 3793



# ATTACHMENT

## Easy and universal attachment

Positioner attachment is a complex matter since various mounting interfaces, actuator motions and manufacturer-specific applications exist.

The wide range of high-grade mounting kits allows our positioners to be mounted on many different kinds of linear and rotary actuators by various manufacturers.

Besides the standard mounting kits (IEC 60534-1, VDI/VDE 3847, VDI/VDE 3845) and SAMSON's integral attachment, mounting kits for actuators by other manufacturers are available. They all share the same benefits: they are simple to mount, particularly rugged and durable. The mounting kits modified by SAMSON to meet customer requirements guarantee problem-free operation of the positioners.

Attachment	Type						Series			TROVIS SAFE		
	3730-0	3766	3767	4763	4765	3725	3730	3731	3793	3730-6	3731-3	3793
Attachment to linear actuators												
- SAMSON integral attachment	■	■	■			■	■	■	■	■	■	■
- IEC 60534-6-1	■	■	■	■	■	■	■	■	■	■	■	■
- VDI/VDE 3847-1	■						■		■	■		■
Attachment to rotary actuators												
- According to VDI/VDE 3845		■	■			■	■	■	■	■	■	■
- VDI/VDE 3847-2							■		■	■		■



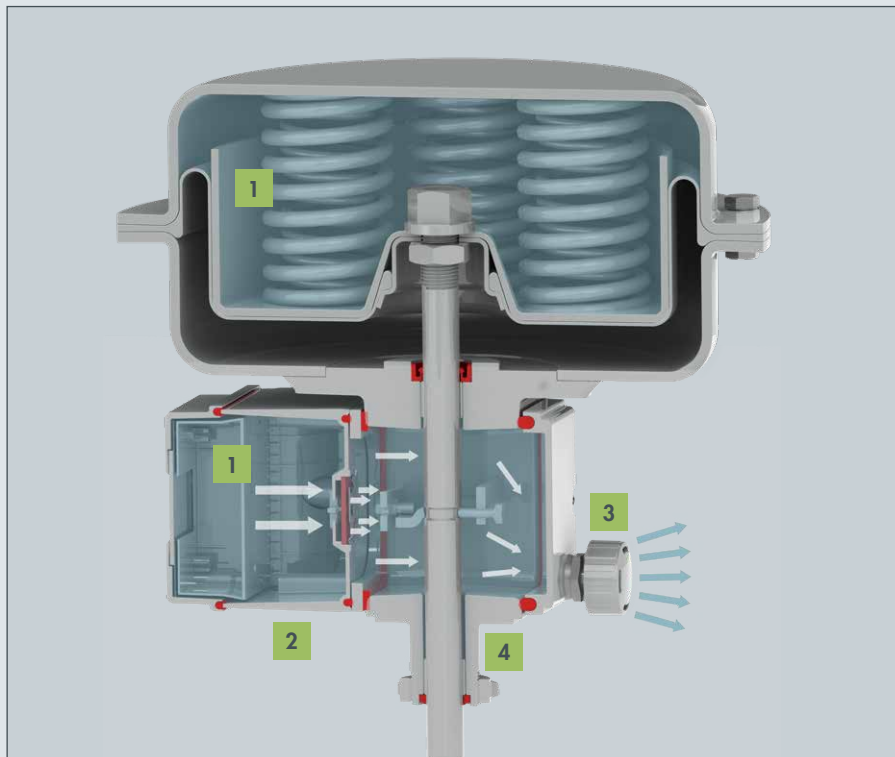
## A closer look at SAMSON integral attachment

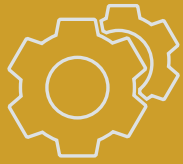
Integral attachment introduced by SAMSON is the best solution for small and medium-sized actuators as far as safety, cost-effectiveness, quality and a long service life are concerned. A rugged, compact valve unit is created by directly attaching the positioner to the actuator yoke. All moving parts are enclosed and the travel linkage is protected against unintentional adjustments during transportation, installation and operation.

An additional benefit is provided by the internal air routing within the actuator yoke. As a result, no expensive external hook-up between the positioner and actuator is required.

On top of this, the purging of the actuator yoke with positioner exhaust air protects the travel linkage from climatic conditions and corrosive ambient air often present in industrial environments.

- 1 Optional purging with positioner exhaust air
- 2 Seals in all gaps
- 3 Vent plug ensures IP rating up to IP 66
- 4 Space sealed on both sides





# OPTIONS

## Options for more performance

Control valves are subject to numerous requirements that vary considerably depending on the application and site of installation. In cases where the standard positioner version cannot meet the control demands, SAMSON positioners can be fitted with an extensive range of accessories. The integration of additional

components into the positioner housing minimizes the need to mount accessories and the complexity of the required hook-up. As a result, the cost of installation is reduced while the operational reliability of the valve is increased.

Options	Type						Series			TROVIS SAFE		
	3730-0	3766	3767	4763	4765	3725	3730	3731	3793	3730-6	3731-3	3793
Software limit switches							■ <sup>1)</sup>	■ <sup>1)</sup>	■	■	■	■
Inductive limit switch		■	■				■ <sup>1)</sup>		■	■		■
Fault alarm output							■ <sup>1)</sup>	■ <sup>1)</sup>	■	■	■	■
Solenoid valve		■	■				■ <sup>1)</sup>			■		
Forced venting							■ <sup>1)</sup>	■	■	■	■	■
Binary input							■ <sup>1)</sup>	■	■	■	■	■
Analog position transmitter							■ <sup>1)</sup>	■ <sup>1)</sup>	■	■	■	■
Leakage sensor							■ <sup>1)</sup>		■ <sup>2)</sup>	■		■ <sup>2)</sup>
External position sensor							■ <sup>1)</sup>		■ <sup>2)</sup>	■		■ <sup>2)</sup>
Analog input for external travel sensor							■ <sup>1)</sup>					

<sup>1)</sup> Not for all versions. See list at the back.

<sup>2)</sup> In preparation



## A closer look at options

**Software limit switches** – These switches signalize that the valve has reached one of the two adjustable limits, e.g. OPEN or CLOSED position or an intermediate position.

**Inductive limit switch** – This switch indicates the end position even after a power failure in a safety-instrumented system.

**Fault alarm output** – Alarms generated by the EXPERTplus valve diagnostics are issued at the fault alarm output as a condensed state.

**Solenoid valve and forced venting** – These options guarantee emergency venting of the actuator in compliance with IEC 61508 up to SIL 3. As a result, the control valve is moved to the fail-safe position determined by the actuator.

**Binary input** – Certain diagnostic functions can be started by the binary input, e.g. data logging or partial stroke testing or the valve is moved to the fail-safe position.

**Analog position transmitter** – The analog position transmitter provides a 4 to 20 mA signal for position feedback indicating the current travel or opening angle of the actuator.

**Leakage sensor** – This sensor enables positioners with integrated diagnostics to detect seat leakage or trigger an alarm after a limit violation.

**External position sensor** – This sensor allows the positioner to be mounted away from the valve (e.g. on a wall). It can be used when the external conditions are unsuitable for the positioner, e.g. extremely high temperatures or increased vibrations at the valve.

**Analog input (4 to 20 mA)** – The analog input allows conventional linear or angle position sensors issuing a 4 to 20 mA signal to be connected to the positioners.



# EXPLOSION PROTECTION

## Reliable safety

The formation of an explosive atmosphere cannot be ruled out in most chemical and petrochemical processes. In this case, the plant components must meet special explosion protection requirements. This also applies to positioners used in hazardous areas. For the use in explosive atmospheres, we offer positioners in type of protection intrinsic safety, in non-sparking, protection by enclosure, and flameproof enclosures.

It is possible to operate SAMSON positioners on site using their rotary pushbutton without posing any risk.

Despite the increased requirements placed on the housing, this also applies to positioners in flameproof enclosures. They are designed to withstand an internal explosion without igniting the explosive atmosphere outside. Various installation methods make it easier to wire the positioner:

- Direct cable entry with terminal compartment in flameproof enclosure (Ex d)
- Indirect cable entry with terminal compartment designed for increased safety (Ex e)
- Conduit system with factory-sealed terminal compartment

Explosion protection	Type						Series			TROVIS SAFE		
	3730-0	3766	3767	4763	4765	3725	3730	3731	3793	3730-6	3731-3	3793
Intrinsic safety (Ex i)	■	■ <sup>1)</sup>	■	■	■ <sup>1)</sup>	■	■	■ <sup>5)</sup>	■	■		■
Non-sparking equipment	■	■ <sup>1)</sup>	■	■	■ <sup>1)</sup>		■		■	■		■
Protection by enclosure	■						■	■	■	■	■	■
Flameproof enclosure	■ <sup>2)</sup>	■ <sup>3)</sup>	■ <sup>2)</sup>	■ <sup>2)</sup>	■ <sup>3)</sup>		■ <sup>2) 4)</sup>	■		■ <sup>2)</sup>	■	

<sup>1)</sup> Purely pneumatic positioner

<sup>2)</sup> Flameproof enclosure in combination with Type 3770 Field Barrier

<sup>3)</sup> Flameproof enclosure in combination with Type 6116 i/p Converter

<sup>4)</sup> Not for all versions. See list at the back.

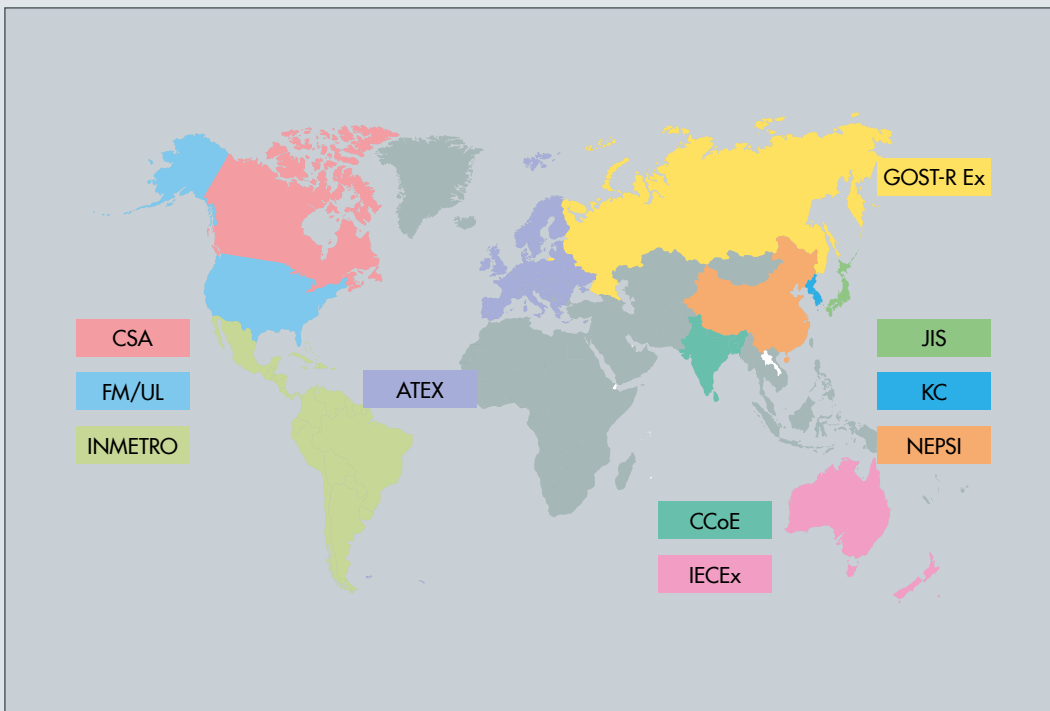
<sup>5)</sup> Type 3731-5 only

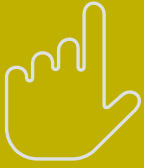


## A closer look at international certification

Positioners cannot be operated in explosive atmospheres until they have been tested and certified by a notified body. International rules on explosion protection are similar. However, national regulations still differ.

SAMSON positioners have the globally accepted IECEx certification. The high level of safety provided by the positioners is also certified by various national and international authorities responsible for markets in North and South America, Asia, Australia and Europe.





# OPERATION

## Intuitive operation

At SAMSON, we focus on the user: automatic start-up and a proven operating structure in all our digital positioners as well as numerous details, such as initialization at the push of a button, convenient operation using one rotary pushbutton, a display that is easy to read and whose reading direction can be turned by 180°, contribute to making start-up and operation easier for the user.

Our positioners are easily adapted to the control task at hand – either on site or, in Series 3730, 3731, and 3793 Positioners with diagnostics, on a computer using our TROVIS-VIEW software.

Operation	Type										TROVIS			TROVIS SAFE		
	3725	3730-1	3730-2	3730-3	3730-4	3730-5	3730-6	3731-3	3731-5	3730-1	3730-3	3793	3730-6	3731-3	3793	
Start-up																
– Automatic initialization	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
– Autotuning	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
– Monitoring	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Operating controls																
– Initialization key			■	■	■	■	■				■	■	■		■	
– Code-based display	■	■	■	■	■	■	■	■	■	■			■	■		
– Plain-text display											■	■			■	
– Rotary pushbutton		■	■	■	■	■	■	■	■	■	■	■	■	■	■	
– Capacitive keys	■															
– TROVIS-VIEW			■	■	■	■	■	■	■	■	■	■	■	■	■	



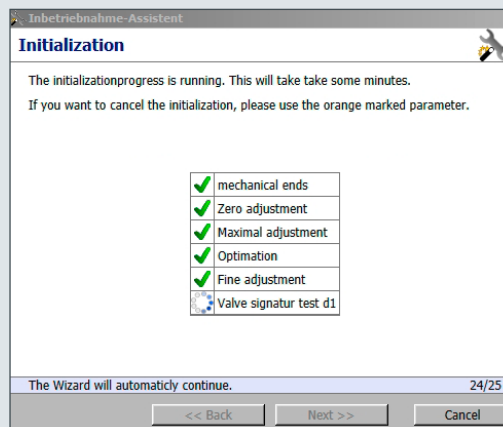
## A closer look at the TROVIS-VIEW software

TROVIS-VIEW provides a uniform user interface that allows users to configure and parameterize various SAMSON devices using device-specific database modules.

Function and parameter settings can be saved to files, archived and transmitted to the positioner over an interface adapter. In online mode, process data of the connected positioner and the device status can be displayed according to a color code system as defined in NAMUR Recommendation NE 107.

Extensive documentation to monitor the valve's condition is achieved by logging positioner data. For example, the Trend-Viewer function tracks process data over time.

A start-up wizard is included in the software for almost all Series 3730 Positioners which guides the user through the process of setting up the positioner step by step.





# OPERATION

## Comprehensive system integration

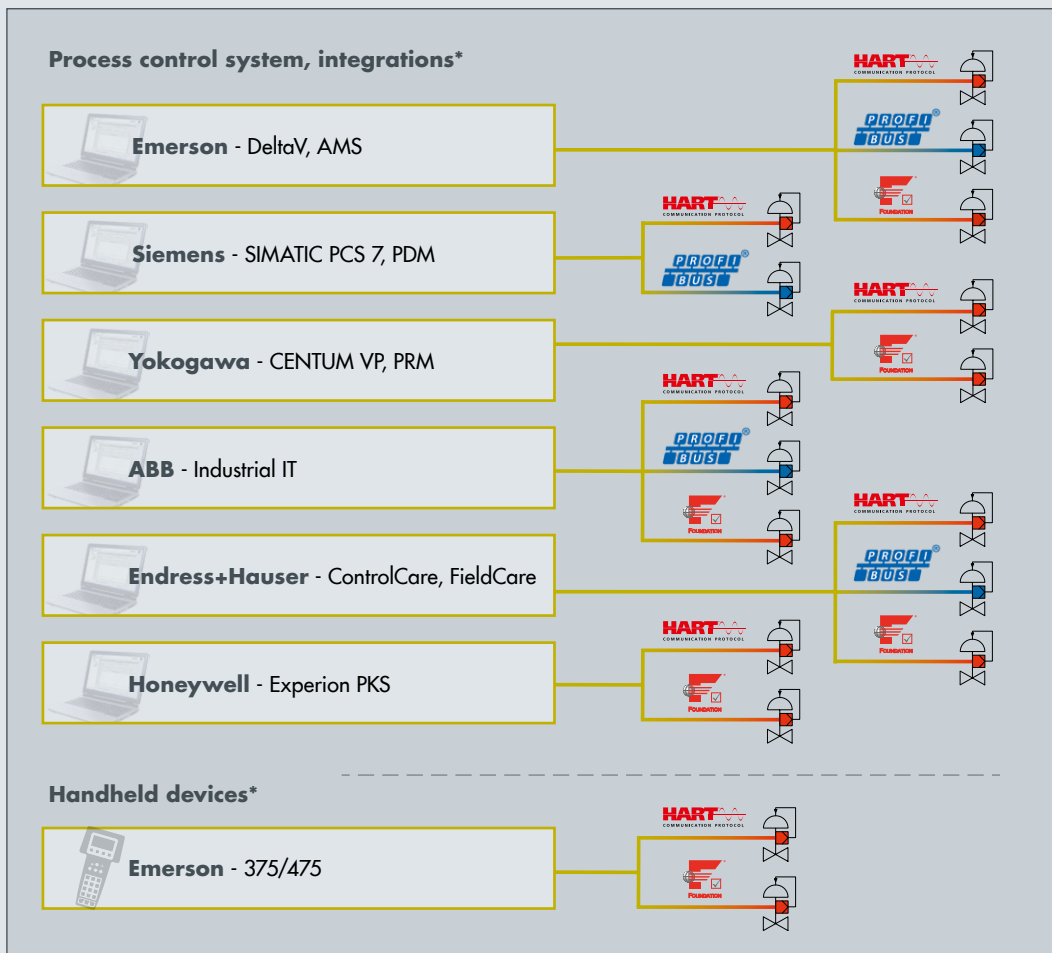
Full integration of the control valve into process control and asset management systems allows the full use of the positioner functions, such as status logging and diagnostics. In addition, this manufacturer-independent integration enables the control valve to be configured and started up from a central location.

Our Series 3730 and 3731 Positioners support standard digital interfaces and protocols, such as HART®, PROFIBUS® PA and FOUNDATION™ fieldbus. Numerous device integration files for engineering tools and systems are available for downloading.

Operation	Type								TROVIS			TROVIS SAFE			
	3725	3730-1	3730-2	3730-3	3730-4	3730-5	3730-6	3731-3	3731-5	3730-1	3730-3	3793	3730-6	3731-3	3793
Communication interface															
– HART®				■			■	■				■	■	■	■
– PROFIBUS® PA					■										
– FOUNDATION™ fieldbus						■			■						
– SAMSON SSP interface			■	■	■	■	■	■	■	■	■	■	■	■	■
Integration using															
– Device Type Manager (DTM)				■	■	■	■	■	■			■	■	■	■
– Device Description (eDD, eEDD)				■	■	■	■	■	■			■	■	■	■
– GSD files					■										



## Supported protocols, process control systems and integrations



\* Others on request



# DIAGNOSTICS

## Predictive maintenance

Due to the increasing automation of plants, positioners are not only used on valves for throttling service but on valves for on/off applications as well. All SAMSON positioners can handle classic analog control loops. TROVIS SAFE positioners can also perform discrete analysis of the set point as well as partial stroke tests, which makes them particularly suitable for mounting on on/off valves. Special positioner versions can also take on the discrete analysis of the set point of mounted on/off valves and partial stroke testing. The EXPERTplus valve diagnostics

are integrated into all positioner versions. They record, save and analyze the data on the valve condition. Critical valve conditions can be detected by performing tests online while the process is running as well as offline to provide predictive maintenance. The condensed state is issued at the fault alarm output. Detailed test results and their analysis can be reviewed using our TROVIS-VIEW operator interface or using the protocols of HART®, PROFIBUS® PA or FOUNDATION™ fieldbus.

Diagnostics	Type									TROVIS			TROVIS SAFE		
	3725	3730-1	3730-2	3730-3	3730-4	3730-5	3730-6	3731-3	3731-5	3730-1	3730-3	3793	3730-6	3731-3	3793
EXPERTplus valve diagnostics			■	■	■	■	■	■	■		■	■	■	■	■
– Initialization result			■	■	■	■	■	■	■		■	■	■	■	■
– Measured process values			■	■	■	■	■	■	■		■	■	■	■	■
– Status messages, condensed state, logging			■	■	■	■	■	■	■		■	■	■	■	■
– Tests to monitor operation in the running process			■	■	■	■	■	■	■		■	■	■	■	■
– Tests to analyze the condition of the entire control valve			■	■	■	■	■	■	■		■	■	■	■	■
– On/off analysis with partial stroke test													■	■	■



## A closer look at monitoring functions and diagnostic tests

**Monitoring functions** keep track of the valve while the process is running without disturbing it.

- **Valve signature/hysteresis test** – These tests form the basis for all diagnostics involving the signal pressure. Such tests include detection of air leakage in the pneumatics or an excessively high or low supply pressure.
- **End position trend** – This function allows an alternating zero point or a creeping zero shift due to seat and plug wear or dirt between the seat and plug to be detected.
- **Statistical analysis** – The statistical analysis of process data pinpoints a changed manipulated variable range, external or internal leakage and an incorrect attachment of the positioner.
- **Data logger** – Process conditions can be monitored and documented by event-triggered data logging.

- **Leakage detection** – The use of an optional leakage sensor allows the detection of seat leakage inside the valve.

- **Diagnostics for on/off valves** – The diagnostics provide information on the valve end positions, transit times and breakaway times of the valve (TROVIS SAFE range).

**Diagnostic tests** are performed to verify the results of the monitoring functions. These tests can only partly be performed while the process is running as the test has priority over the set point:

- **Static characteristic** – This test determines the valve dead band and provides information on the friction hysteresis.
- **Partial stroke test/full stroke test** – These tests check the ability of the valve to move and assess the dynamic control response over a partial travel range or the full travel range.



# SAFETY

## Safety and reliability

We have added the new TROVIS SAFE series to our range of positioners specially for use in safety-instrumented systems. The SIL-certified TROVIS SAFE positioners include partial stroke testing. All diagnostic parameters necessary for on/off valves are ready configured.

In safety-instrumented systems, the control valve acts as a safety valve by opening or shutting off the pipeline in an emergency. High demands are placed on functional safety as outlined in the IEC 61508 and IEC 61511 (SIL) standards.

Smart positioners with diagnostics can be used to enhance or even replace the functions of solenoid valves mounted on shut-off valve assemblies. They also increase the reliability, e.g. by performing regular partial stroke tests.

Use of TROVIS SAFE positioners is possible on observing the requirements of IEC 61511 and the required hardware fault tolerance in safety-instrumented systems up to SIL 2 (single device/HFT = 0) and SIL 3 (redundant configuration/HFT = 1).

Safety	Type									TROVIS			TROVIS SAFE		
	3725	3730-1	3730-2	3730-3	3730-4	3730-5	3730-6	3731-3	3731-5	3730-1	3730-3	3793	3730-6	3731-3	3793
Safety function over power supply		■	■	■	■	■	■	■	■	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■	■	■ <sup>1)</sup>
Safety function over solenoid valve			■	■	■	■	■						■		
Safety function over forced venting							■				■ <sup>1)</sup>	■ <sup>1)</sup>	■		■ <sup>1)</sup>

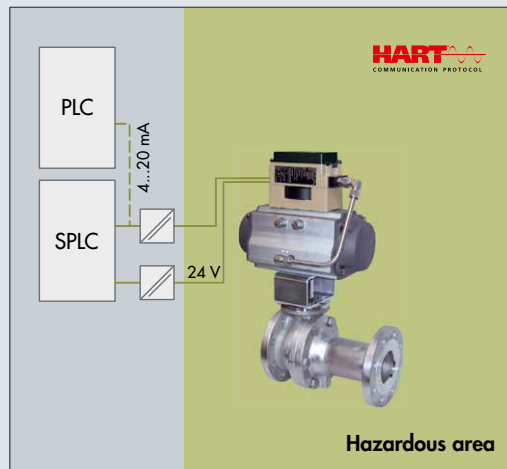
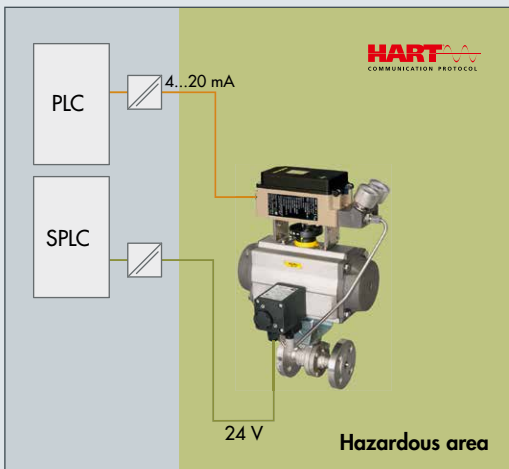
<sup>1)</sup> In preparation



## Safety-instrumented system with TROVIS SAFE positioner

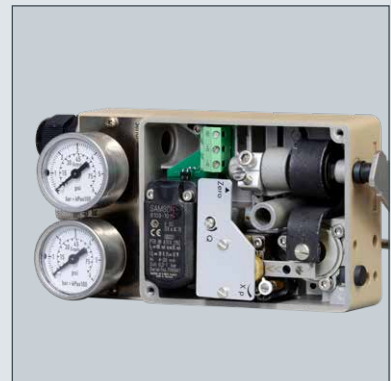
**Actuator and positioner with partial stroke testing function and external solenoid valve** – The solenoid valve triggers the safety function. In the event of a power failure, the actuator is vented and the valve moved to its fail-safe position. The positioner monitors the availability of the valve on demand. Valve diagnostics allow malfunctions to be detected and increase the plant availability. A regularly performed partial stroke test can prevent the valve from seizing up in its operating position.

**Actuator and positioner with partial stroke testing function** – TROVIS SAFE positioners that come with emergency venting have a shutdown function according to IEC 61508. As a result, they can implement the safety function as well as testing the valve's proper functioning. The actuator is vented at an input signal of 0 mA, 3.8 mA or 4.4 mA depending on the version. An external solenoid valve is not required for positioners with 'solenoid valve' or 'forced venting' option suitable for safety-instrumented systems.

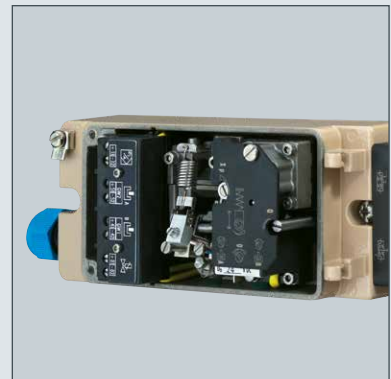


# POSITIONER MODELS

**Types 4763 and 4765** – These positioners with pneumatic or electric input signal have a simple and compact design, making them particularly insensitive to vibration. They use a flapper-nozzle system which operates according to the force-balance principle. They can be applied for both normal and split-range operation.



**Type 3766** – The pneumatic positioner is a true classic among our positioners. It has a low air consumption and uses a linear characteristic. It has a fast and precise control response with a low hysteresis.



**Type 3767** – The electropneumatic positioner is identical to the Type 3766, except for the dependable i/p converter. Positioner features, such as a low load and the ingeniously simple drop of silicone oil to dampen vibrations in the i/p converter, have contributed to the continual success of our electropneumatic positioners.



**Type 3725** – This positioner is a basic digital positioner for processes with high control demands that do not require communication with a process control system or valve diagnostics.

The positioner with a deliberately simple design is operated using capacitive keys. Navigation within the menu on the display has been adopted from other proven SAMSON products, e.g. Series 3730 Positioners.

A non-contact sensor system records the valve position and guarantees precise control. Auto-tuning to calibrate the parameters to the valve is performed during automated initialization of the positioner.

The positioner housing is made of UV-resistant plastic.



# POSITIONER MODELS

**Series 3730/3731** – The Series 3730 Positioners share the same platform: housing, travel linkage and pneumatic components are identical. Accordingly, these positioners have the same high air output capacity. The versions within this series have varying electronic components and, as a result, different features for ease of operation, functions, communication and diagnostics.

While the Type 3730-0 gets by without a micro-processor and is reduced to the essential functions, the Type 3730-1 and higher models use digital signal processing for automatic start-up.

The Series 3731 Positioners with flameproof enclosure have largely the same components inside and use the same hybrid technology as the corresponding positioners of the Series 3730. They are based on the same model platform, which allows favorable integral attachment, and use the same mounting kits for linear and rotary actuators.

The main difference lies in the flameproof enclosure used for Series 3731 Positioners. Despite the enclosure, the positioner can still be easily operated on site using a rotary pushbutton and the readings that can be turned to suit the mounting position can be viewed on the large display.



**Series 3793** – These innovative electropneumatic positioners of the latest generation round off our product range.

The Series 3793 Positioners use the proven mounting kits and have a modular design. High air capacities and variable outputs, e.g. double-acting control, can be achieved by using pneumatic modules that can be exchanged or retrofitted.

Optional additional functions, such as limit switches, position transmitters, or binary inputs and outputs, can be added to the positioners on site as option modules. This allows positioners to be easily adapted to customer requirements at any time.

Extensive diagnostics, communication using the HART® protocol, ease of operation with a multi-lingual plain-text display, and a protected non-contact sensor system contribute to making the positioner a top-of-the-range device.



# OVERVIEW

	Type							
	3766	3767	4763	4765	3725	3730-0	3730-1	3730-2
Input/output signal	p/p	i/p	i/p	p/p	i/p	i/p	i/p	i/p
<b>Attachment</b>								
- SAMSON integral attachment	■	■			■	■	■	■
- IEC 60534-6-1	■	■	■	■	■	■	■	■
- VDI/VDE 3847-1						■	■	■
- VDI/VDE 3845	■	■			■		■	■
- VDI/VDE 3847-2							■	■
<b>Options</b>								
- Software limit switches							■	■
- Inductive limit switch	□	□					□	□
- Fault alarm output								■
- Solenoid valve	□	□						□
- Forced venting								
- Binary input								□
- Analog position transmitter								□
- Leakage sensor								□
- External position sensor								□
- Analog input for external travel sensor								
<b>Explosion protection</b>								
- Intrinsic safety	■	□	□	■	□	□	□	□
- Non-sparking equipment	■	□	□	■		□	□	□
- Protection by enclosure						□	□	□
- Flameproof enclosure	□ <sup>1)</sup>	□ <sup>2)</sup>	□ <sup>2)</sup>	□ <sup>1)</sup>			□ <sup>2)</sup>	□ <sup>2)</sup>
<b>Operation</b>								
- Automatic initialization					■		■	■
- Autotuning					■		■	■
- Monitoring					■		■	■
- Initialization key								■
- Code-based display					■		■	■
- Plain-text display								
- Rotary pushbutton							■	■
- Capacitive keys					■			
- TROVIS-VIEW								■
- Communication interface								
<b>Diagnostics</b>								
- EXPERTplus								■
<b>Safety</b>								
- Emergency shutdown						■	■	■

<sup>1)</sup> With Type 6116

<sup>2)</sup> With Type 3770



# SAMSON AT A GLANCE



## STAFF

- Worldwide 4,300
- Europe 3,300
- Asia 500
- Americas 200
- Frankfurt am Main, Germany 1,800

## MARKETS

- Chemicals and petrochemicals
- Power and energy
- District heating and cooling, building automation
- General industry
- Industrial gases
- Food and beverages
- Metallurgy and mining
- Oil and gas
- Pharmaceuticals and biotechnology
- Marine equipment
- Water and wastewater
- Pulp and paper

## PRODUCTS

- Valves
- Self-operated regulators
- Actuators
- Valve accessories
- Signal converters
- Controllers and automation systems
- Sensors and thermostats
- Digital solutions

## SALES SITES

- More than 50 subsidiaries in over 40 countries
- More than 200 representatives

## PRODUCTION SITES

- SAMSON Germany, Frankfurt, established 1916  
Total plot and production area: 150,000 m<sup>2</sup>
- SAMSON France, Lyon, established 1962  
Total plot and production area: 23,400 m<sup>2</sup>
- SAMSON Turkey, Istanbul established 1984  
Total plot and production area: 11,053 m<sup>2</sup>
- SAMSON USA, Baytown, TX, established 1992  
Total plot and production area: 9,200 m<sup>2</sup>
- SAMSON China, Beijing, established 1998  
Total plot and production area: 10,138 m<sup>2</sup>
- SAMSON India, Pune district, established 1999  
Total plot and production area: 18,000 m<sup>2</sup>
- SAMSON Russia, Rostov-on-Don, established 2015  
Total plot and production area: 5,000 m<sup>2</sup>
- SAMSON AIR TORQUE, Bergamo, Italy  
Total plot and production area: 27,684 m<sup>2</sup>
- SAMSON CERA SYSTEM, Hermsdorf, Germany  
Total plot and production area: 14,700 m<sup>2</sup>
- SAMSON KT-ELEKTRONIK, Berlin, Germany  
Total plot and production area: 1,060 m<sup>2</sup>
- SAMSON LEUSCH, Neuss, Germany  
Total plot and production area: 18,400 m<sup>2</sup>
- SAMSON PFEIFFER, Kempen, Germany  
Total plot and production area: 35,400 m<sup>2</sup>
- SAMSON RINGO, Zaragoza, Spain  
Total plot and production area: 18,270 m<sup>2</sup>
- SAMSON SED, Bad Rappenau, Germany  
Total plot and production area: 10,370 m<sup>2</sup>
- SAMSON STARLINE, Bergamo, Italy  
Total plot and production area: 26,409 m<sup>2</sup>
- SAMSON VDH PRODUCTS, the Netherlands
- SAMSON VETEC, Speyer, Germany  
Total plot and production area: 27,090 m<sup>2</sup>



## SAMSON AKTIENGESELLSCHAFT

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