



AIR TORQUE®

TOP SMART' intelligent position monitor:

Air Torque also manufacture the 'Top smart' intrinsically safe compact valve position monitor with integrated diagnostics, self calibrating limit switches, integrated solenoid valve and air lines as well as contactless position sensing (can be fully integrated with intelligent safety plant instrument systems). This unit has smart functions like rotary motion counter, temperature indication and operating hours counter as well as solenoid valve status LED.



Top Smart

Valve Position Monitor 3738



Top Smart 1
Integrated solenoid valve



Top Smart 2
External solenoid valve

Main Features

- Automation of on/off valves
- Compact attachment according to VDI/VDE 3845 with integrated air lines
- Two-wire supply from just one NAMUR contact
- Intrinsically safe
- Wear-free, contactless position sensing
- Self-calibrating limit switches
- Integrated diagnostic functions
- Use in safety instrumented system possible

Technical Data

NAMUR contacts acc. To EN 60947-5-6	Two limit switches for end positions One contact for monitoring the valve movement test One fault alarm contact
Electrical auxiliary power	Supplied by NAMUR contact
Permissible ambient temperature	- 25 to 80° C
Measuring system	Contactless magnetoresistive sensor system
Permissible operating range	30 to 170°
Degree of protection	IP 66
Safety approval (applied for)	TUEV(IEC 61508, can be used up to SIL2 in single-channel version (up to SIL 3 in redundant version)
Type of Protection	II 2 G Ex ia IIC T6, II 2 D Ex ia D 21 T 80°C
Operation	Configuration using rotary pushbutton
Attachment	VDI/VDE 3845, any mounting position

Top Smart 1 - version with integrated solenoid valve suitable for ATPT/201 to AT/PT651	
Version	3/2-way or 5/2-way function (using a molded seal)
K_{VS}	0,32
Supply air	2.4 to 6 bar
Service Life	1.000.000,00
Nominal Voltage	24 V DC

Top Smart 2 - version with external solenoid valve suitable for all the Air Torque actuators range	
Observe manufacturer's specifications for the solenoid valve used Maximum permissible switching capacity of 24 V DC, max 18 W	

Functions
<ul style="list-style-type: none"> • Automatic initialization for simple start-up • Solenoid valve status indicated by LED • Valve movement test (VMT) to verify the operability of the on/off valve • Rotary motion counter, temperature indication, operating hours counter

PNEUMATIC ACTUATOR WITH TOP SMART


Integrated diagnostics
with partial stroke testing



AIR TORQUE[®]



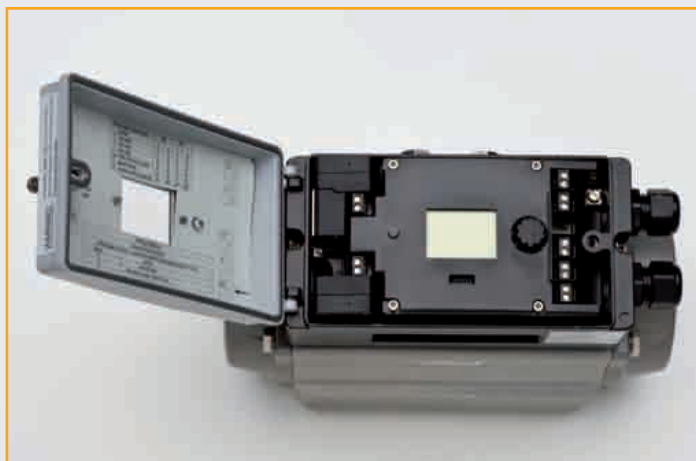
Benefits

- Electronic limit switch with NAMUR contact – solenoid valve with 24V
- FOUNDATION field bus communication 
- Compact, rugged design
- High level of accuracy and reliability
- Easy to operation on site or from a computer
- Integrated diagnostics with partial stroke testing (PST)



Applications

- For demanding ambient conditions, e.g. due to vibrations or dust atmosphere
- With a low-drift and temperature-stable signal
- With exact switching point
- For media with an unknown or varying viscosity
- For plants with documentation requirements
- With wear detection, e.g. by comparing the test results for transit time and dead time with the valve signature



Accuracy and reliability

- High precision, drift free switching point
- Measuring accuracy better than 1%
- Reproducible, precise settings

Design

- Non-contact position feedback
- No mechanical linkage
- Air purging of the actuator's spring chamber
- Wear-free pick-up

Mounting

- Connected over NAMUR interface, with internal air routing, without external hook-up to the actuator (version with integrated solenoid valve).
- Attachment to rotary actuators according to VDI/VDE 3845, level 2

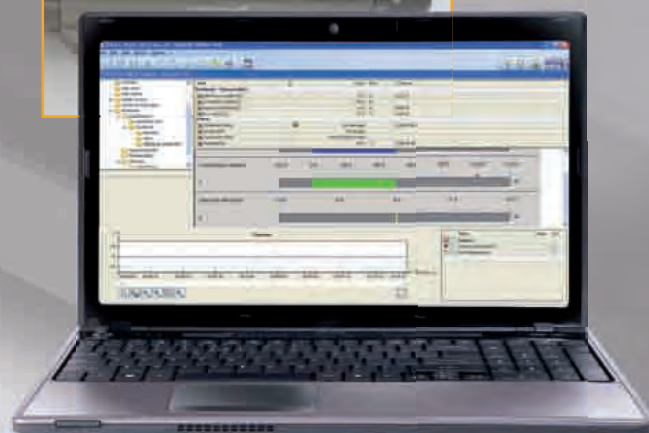


Operation

- Calibration at the push of a button
- On-site operation using a rotary push-button
- Serial interface for convenient operation at a computer (Samson's Trovis-view software)

Diagnostics

- Time-controlled or manual partial stroke testing (PST) to exercise the valve
- Logging of transit time for each valve movement
- Logging of valve movements with time stamp



- Permissible ambient temperature -40°C to 80°C or -25°C to 80°C
- Permissible rotation range of rotary actuators between 30° and 170°
- Three limit contacts and one alarm contact for connection to the NAMUR signal according to the IEC 60947-5-6
- Exclusively powered over the NAMUR signal
- Degree of protection IP66
- Explosion protection EX ia/Ex e
- Safety approval SIL 3
- Integrated solenoid valve Kvs 0.32
- Available options with integrated solenoid valve and with external solenoid valve

Integrated solenoid valve version



Actuator range from AT/PT200 to AT/PT650

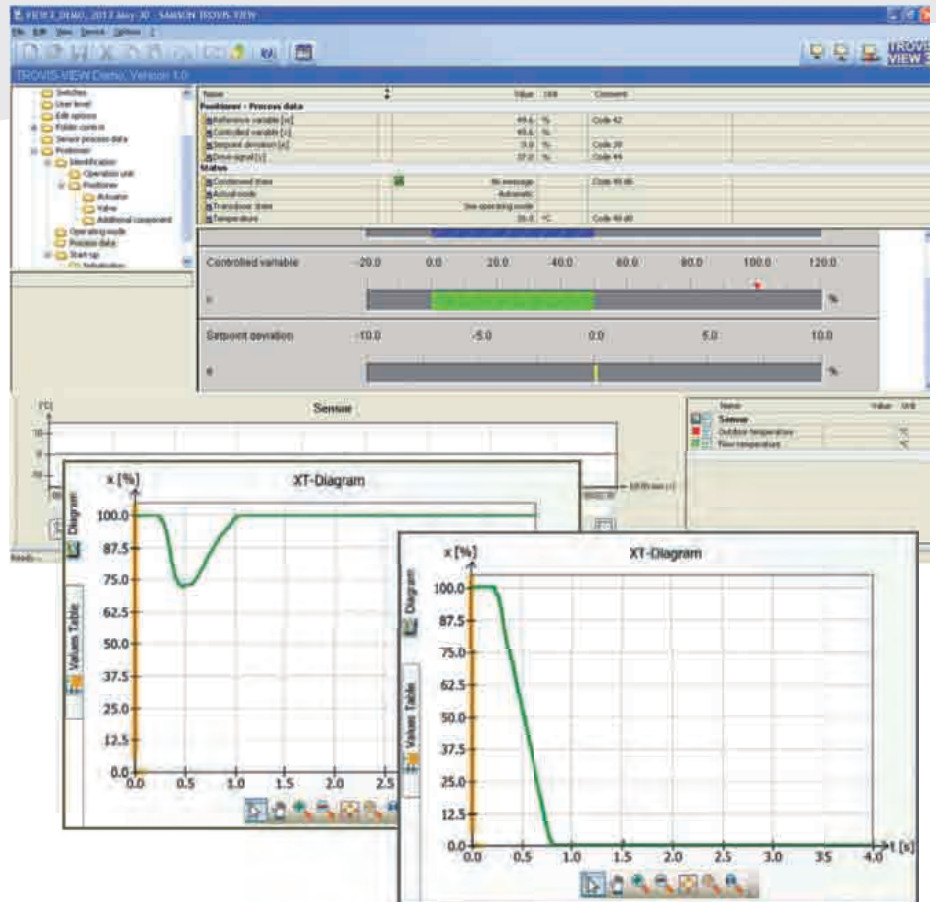
External solenoid valve version



Suitable for standard solenoid valve according to customer specification

A smart interface ...

- Uniform operation
- User-friendly
- Open communication structure
- Object-oriented design
- Online/offline operation
- Security
- Endless possibilities
- Save – Load – Print
- Several languages



... useful for

- Operating and observe
- Parameterizing online/offline
- Function test
- Device-calibration
- Commissioning (start-up)
- Maintenance
- In repair center
- After-sales service



AIR TORQUE®



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ATEX 94/9/EC



SIL3 IEC 61508



GOST-R



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