

Positioner Solutions

Versatility with High Performance



- Complete digital and conventional solutions
- TZID-C digital solution at a conventional price
- AUTOSTROKE for automatic calibration and adaptation
- Integrated options to minimize costs
- Solutions and products for all applications

instrumentation

understanding measurement analysis control integration **optimization**

ABB Positioners

World Class Conventional and Digital Solutions

The integration of companies like Bailey, Hartmann and Braun, and Sensycon has enabled ABB to bring high quality innovative positioner solutions to the marketplace. ABB positioners are extremely reliable at work in many processes. From chemical processing to petroleum processing, pharmaceutical to pulp and paper, power utility to food and beverage. The heritage products initially set the standard, with thousands of installations worldwide. ABB - a \$25 billion technology company - has the resources and industry knowledge to build upon these earlier successes and can anticipate the demands of our customers.

Broad Product Range to Meet Your Needs

No requirements are too big or too small. Whether your needs run to valves with less than a 1/4" stroke or to large actuators, ABB leads the market with a winning line of conventional and digital solutions. Positioners are available for pneumatic inputs, 4-20 mA inputs and fieldbus installations.

Our multi-industry scope and product depth makes ABB the solutions provider of choice for any environment. You can expect high performance and reliability, whether you're operating in general purpose, harsh or even explosive atmospheres. ABB positioner products offer approvals from multiple agencies, stainless steel, and EXP housings with a temperature range of -40° F to 185° F, with the added flexibility to go as high as 250° F.

Integrated Options Minimize Costs

With integrated options like position feedback and alarm/limit outputs, the need for additional external devices is eliminated. This reduces not only the initial cost, but also the cost of installation and maintenance and the need to calibrate individual products.

Ready for the Future - Part of ABB's Field^{IT} Suite

ABB positioner products are members of ABB's new Field IT Solutions Suite. Field IT products incorporate a Device Type Manager (DTM) into their design. This enables each device's embedded intelligence to be utilized and integrated into plant and business systems, enabling chemical, oil & gas, power utilities, and other industries to streamline work processes for lower deployment costs, better process/product quality, improved availability, reduced maintenance costs and greater throughput. As a subset of ABB's comprehensive family of Industrial IT solutions, Field IT provides the opportunity to integrate Industrial IT throughout the life cycle of your field devices.

Another important component of Field IT is the Field Device Tool (FDT). The primary goal of the FDT concept is a plantwide configuration of DCS, fieldbus and field instruments. Supported by DTM-embedded field devices, the FDT enables the engineering system to handle field instruments like function blocks.



TZID/TZID-C Positioners – The Intelligent Dig

SMARTVISION®, a Windows®-based single management software tool for all field devices is the third tool supporting Field IT. Its modular structure allows it to be used as a stand-alone configuration tool or to be integrated as an engineering tool in a control system. SMARTVISION® enables the transfer of application-specific device data, including calibration, commissioning, diagnostics, and maintenance. Its file management capabilities make storing and downloading preconfigured files possible.

TZID-C: the Digital Solution at the Conventional Price



The TZID-C is the newest member of the TZID Intelligent Digital Positioner family. It is compact and flexible. It features local keyboard configuration of all operating parameters, mechanical position feedback, and LCD display. As a single unit, it provides rotary and single or double acting application control. It has standard digital input and output with optional position feedback cards. All at a new competitive price.

Digital Electronics + Intelligence = Versatility in Motion

If it's versatility you want, look no further. ABB's intelligent digital positioners offer the broadest range of capabilities and are adaptable to every industry. To achieve this flexibility, these positioners are not designed around an individual valve configuration or around a single industry segment. Instead, they are specifically engineered to meet all demands and to provide the most convenient application as determined by the end user.

Housing options are also versatile. Epoxy coated, stainless steel or even explosion proof are available, all easily set up with the unique *AUTOSTROKE* function. On any valve assembly, at any time, the *AUTOSTROKE* function can be initiated and calibrated. Set-up is completed in less than five minutes. The beginning algorithms for the *AUTOSTROKE* function conveniently determine the size and dynamics of the valve assembly. In doing so, optimum control algorithms can be applied specifically for small or large valve assemblies.

Single acting, double acting. Linear or rotary. The TZID family of positioners meets all of your basic needs, plus gives you the power of digital control. It measures stroke speed, enabling you to reduce it as desired. This feature is available independently in

both directions for better control. It even establishes separate PID parameters for set point control in both directions. It's not just digital, it's truly intelligent!

Enhanced Control, Diagnostics and Communications

Microprocessor-based digital electronics result in higher accuracy and control over conventional devices. The embedded intelligence of the TZID family and configurable operating parameters make enhanced control a reality, with features like configurable soft stops on operating range, shut-off value, and custom characteristic curves.

Diagnostic capabilities are in high demand, especially when faults or limits can be conveyed via bidirectional communication or alarm outputs. The TZID family has the ability to provide self-monitoring and logging functions, count strokes and total travel, monitor its ability to reach changes in set point, monitor ambient temperature, detect leakage, and communicate all this data to the user. Communication of alarms can be conveyed by digital outputs or via digital communication using HART®, FOUNDATION™, Fieldbus or PROFIBUS protocols.



Digital Solution Built on Innovation

TZID-C Digital Features and Benefits

Microprocessor-Based

- Highest Operating Accuracy

AUTOSTROKE

- Automatic Calibration and Adaptation to Any Size Valve in Less Than Five Minutes

Configurable Operating Parameters

- Easy Set-Up and Commissioning

Adjustable Motion Characteristics

- Soft Stops
- Shut-Off Value
- Split-Range
- Reverse/Direct Action
- Eliminates Mechanical Adjustments and Related External Devices Such as Mechanical Stops

Expansive Diagnostic and Self-Monitoring Capabilities

- Stroke Counter
- Total Travel
- Set-Point Time Out
- Actuator Leakage
- Device Temperature
- Easy Trouble-Shooting and Preventative Maintenance

Digital Communication: HART and Fieldbus Compatible

- Remote Configuration and Monitoring

Integrated Position Feedback

- Analog and/or Digital Feedback without Additional External Devices to Install, Calibrate and Maintain

Choice of Fail Safe Modes on Loss of Input Signal

- Choose Either Fail Open/Close or Fail-In-Place Without the Need for Costly External Devices

Low Compliance Voltage: TZID-C = 8.7 V; TZID = 9.8 V

- Minimum Load on Control Circuits

FM/CSA Approved: Intrinsically Safe; Non incensive; Explosion Proof

- Variety of Options for Installations in Hazardous Environments

Immunity to Shock and Vibration

- Installation in High Vibration Areas

Low Air Consumption

- Reduces Demand in Steady-State Mode, Providing Cost Savings



The TZID is a robust epoxy coated die-cast aluminum housed unit with separate compartment for electrical connections.



The TZID EXP is a durable epoxy coated die-cast aluminum housing, featuring bullet-proof glass with LCD display and external operator keys.



The TZID SS features rugged housing constructed of 316 stainless steel and is ideally suited for offshore applications and other aggressive environments.



AV Positioners: the Conventional Solution Built on Experience

The innovative pilot valve design was first patented in 1953 by Bailey Instruments. ABB has built on that heritage by producing AV Positioner products that continue to set the pace in the industrial marketplace by providing uncompromising value and performance. Recent enhancements have been made to effectively eliminate air clogging and to ensure exceptional reliability and simplified maintenance.

The AV Positioner series provides the highest throughput air capacity in the industry with 27 scfm at 90 psi air supply pressure. Ruggedly designed, these positioners have built a widespread reputation for providing long-life service. The AV is standard for either single or double acting applications with mechanical position indicator and independent zero and span adjustments. An optional feedback position transmitter is available for further flexibility.

AV1 Pneumatic Positioner

– accepts linear or nonlinear pneumatic input signal ranges to provide sensitive, accurate positioning of a pneumatic final control element. A feedback cam in the positioner establishes the actual position on the final control element and can be characterized to provide a square root, square, or linear relationship to the input signal. An option is available for applications up to 250°F.



AV 1&2



AV 27

AV2 Electropneumatic Positioner

– accepts a 4-20 mA input from a controller and converts the signal via a SENSYCON I/P Converter to a pneumatic output that positions a power actuator. The AV2 can be adjusted by the user to fail safe upon loss of input signal, to either a fully open or fully closed position.

AV27 Positioner

– same as the AV2 except that the I/P is in an explosion proof housing and is mounted in press-fit fashion to the outside of the positioner housing. The result: a complete integrated explosion proof positioner. The need for plumbing and for a separate I/P is eliminated.

AV Positioner Features

- **High throughput capacity** - up to 27 scfm at 90 psi air supply pressure
- **Characterizable output** - large positioning cam contains linear, square and square root relationships
- **Accurate calibration** - independent zero and span adjustments eliminate interaction and provide fast, accurate calibration
- **Simplified reverse operation** - action can be reversed in the field simply by changing cams and reversing O1 and O2 connections. Reverse acting cam is conveniently located on the inside of the front cover
- **Split range service** - split range capability allows sequencing of multiple actuators using a single control signal
- **Adjustable speed control** - speed of actuator can be reduced to desired speed using the pilot valve stroke adjustment screws
- **Continuously adjustable zero and span** - capable of 100 per cent stroke for 50 per cent signal span or 50 per cent stroke for 100 per cent signal span



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