WHGood Automation

ABB ACTUATORS & POSITIONERS

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ABB INTELLIGENT POSITIONERS

PositionMaster EDP300 - Digital Positioner

Features

- Analog HART communication
- Operation with air, optional with nitrogen or natural gas
- Worldwide intrinsic safety approvals
- Optional stainless steel housing
- Optional non-contact position sensor
- Remote sensor version
  - Advanced vibration resistance 2g, 300Hz
  - Protection Class IP 67
- Low air consumption, independent of supply pressure at 0.015scfm
- Universal analogue input
- Graphical display
- High air capacity
- Extended diagnostics
- Easy plug-in modules
- Easy plug-in modules

The PositionMaster is an electronically configurable positioner with communication capabilities designed for mounting to linear or rotary actuators with advanced performance 4 to 20mA with HART.

The PositionMaster features a small and compact design, a modular construction, and an excellent cost-performance ratio. Fully automatic determination of the control parameters and adaptation to the valve allows for considerable time savings as well as optimum control behaviour. Because of its properties, the positioner is suited for even the most challenging operating conditions and designed for mounting on pneumatic linear or part-turn actuators.

The extended diagnostics feature of the PositionMaster provides the user the opportunity to perform selectable valve performance diagnostics and to schedule control valve preventive maintenance as determined by the results to ensure increased system availability and to minimise unforeseen cost intensive failures.

SIL2 HART COMMUNICATION PROTOCOL

TZIDC - Digital Positioner

Features

- Digital HART communication
- Worldwide intrinsic safety approvals
- Standard performance 4 to 20mA with HART
- Robust design and flexible in use with linear and rotary actuators
- Remote sensor version
  - Advanced vibration resistance 2g, 300Hz
  - Protection class IP 67
- Low air consumption, independent of supply pressure at 0.015scfm

The TZIDC represents the digital, intelligent positioner for communication via HART within the positioner family.

Unmatched shock and vibration immunity of 10g up to 80Hz distinguishes the TZIDC from other manufacturers with its reliable operation in almost all areas under harshest environmental conditions.

Modular configuration according to process requirements
The modular configuration concept makes the TZIDC highly attractive for various industries and diverse applications.

Whether it is needed for standard demands or special complex applications, the TZIDC can be configured individually according to the application.

FOUNDATION PROFIBUS SIL2 HART COMMUNICATION PROTOCOL

Smart Remote Positioners

Features

- Higher vibration immunity
- 10m cable length for high flexibility
- Position sensor and pneumatics/electronics installed in separate housings
- Stainless steel housing
- Increased protection class
- Excellent accessibility

The challenge: applications where there is poor accessibility, increased vibrational loading or particularly harsh environmental conditions. These kinds of applications often involve higher costs due to gaining access and unexpected failures.

The solution: Using TZIDC or EDP300 positioners featuring a separate position sensor housing, which can be up to 10m away from the device.

Call us on **01706 216667**, e-mail us at **instruments@whgood.co.uk** or visit **whgood.co.uk**

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ABB I/P SIGNAL CONVERTERS

TEIP11-PS - I/P Signal Converter for Standard Signals

Features

- Compact design
  - Small dimensions, low weight
- Sturdy construction and solid functionality
  - Influence of shock and vibration < 1% at 10g
- Variety of signal ranges
  - Input, e.g. 0...20mA or 4...20mA
  - Output 0.2...1bar (3...15psi)
- Complies with the following directives
  - EMC Directive 89/336/EEC as of May 1989
  - CE mark meets the EC directive for the CE certificate of conformity
- Additional temperature range
  - From -40 (optional -55) ...85°C (-40 (optional -67) ... 185°F)
- Ex protection approvals
  - ATEX, FM/CSA, GOST for intrinsically safe and explosion proof protection
- Single module
  - For OEM application *(upon request)*

The TEIP11-PS signal converter converts electrical standard signals, e.g. 4...20mA to 0.2...1bar (3...15psi). It is therefore a connecting link between electrical/electronic and pneumatic systems. The signal conversion process is similar to the patented force balance method.

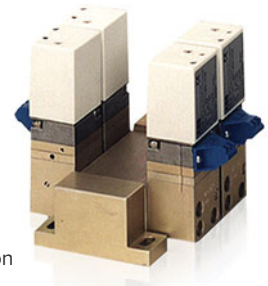
Special features of the TEIP11-PS signal converter are its relatively small dimensions and outstanding operational stability when subject to shock and vibration.

The converter can be subjected to loads up to 10g with less than 1% effect on function.

Control Room Housing Unit for Block Mounting

The control room housing unit for block mounting enables you to install a number of converters in a small space. This design features central air supply via connection block and stop valves in the air connectors of the integrated signal converter.

A maximum of 4 signal converters can be fitted on the connection blocks required for block mounting. If necessary, 2 or 3 (or max. 4) connection blocks can be connected to each other to create block units of 4-8-12-16 signal converters.



Stop valves allow you to mount or remove individual converters during operation. The housing units are available in a variety of models to meet your installation requirements.

For potentially explosive conditions, units that offer intrinsically safe operation or pressure-resistant encapsulation are available with international approval certificates for use worldwide. Various ranges can be supplied on the input side and the output side for signal conversion. A power supply of only 1.4bar (20psi) of compressed air is required.

Material/protection class
IP 20 aluminum housing unit, with plastic cover

Assembly - In block format with special connection block (accessory), max. 4 connection blocks each with 4 signal converters

Electrical connection - 2-pole screw terminal for 2.5mm² (14 AWG)

Pneumatic connection - 3/8 NPT tap hole for air supply (main connection to connection block). 1/8 NPT tap hole for output (on each individual signal converter).

Control Room Housing Unit for Rail Mounting

The control room housing unit for rail mounting is the most user friendly and lowest priced model in the signal converter line.

A mounting base that is compatible with all commercially available EN rails is used for installation.

The housing unit with plastic cap has an IP 20 protection class.

Field Housing Units

The field housing unit is designed for installation on-site or in the field. Housing units are available in the following models and protection classes:

Plastic (IP 54)

Aluminum & Stainless Steel (IP 65)

The housing units are suitable for wall mounting and 2" pipe mounting. A specially designed signal converter in a plastic housing unit enables the use of combustible gas as a power supply instead of the standard compressed air.

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ABB LOAD CELLS

Mini Series PillowBlock Load Cells

Designed to measure either horizontal or vertical forces in both directions on most types of web processing machinery used in the converting, plastic film, printing, textiles, and other industries.

Superior design - ABB's exclusive Pressductor® Technology gives the Mini Series PillowBlocks exceptional sturdiness and makes them highly tolerant of operating conditions.

Rugged construction - Machined from a single block of stainless steel, Mini Series PillowBlocks provide a high level of protection against overloads and shock impact.

Immunity to environmental stress - Load cell performance is unaffected by environmental factors like dust, fumes, fluids, and radio or electromagnetic interference. Sealing is not required.

Overload endurance - The system can handle overloads ranging up to 300% of nominal load without affecting load cell calibration.

Extended range - A standard "extended range" adds another 50% to measurement capacity for more versatile machine operation. Load cells can be specified for the web's normal tension range, but also accommodate occasional peak loads.

Wide measurement range - The capacity to measure web tension variations of up to 30-to-1 provides valuable operating flexibility in processing a wide range of applications.

Vibration-free - High spring constant and low physical deflection reduce any contributions to machine vibration to negligible levels, even at high operating speeds.

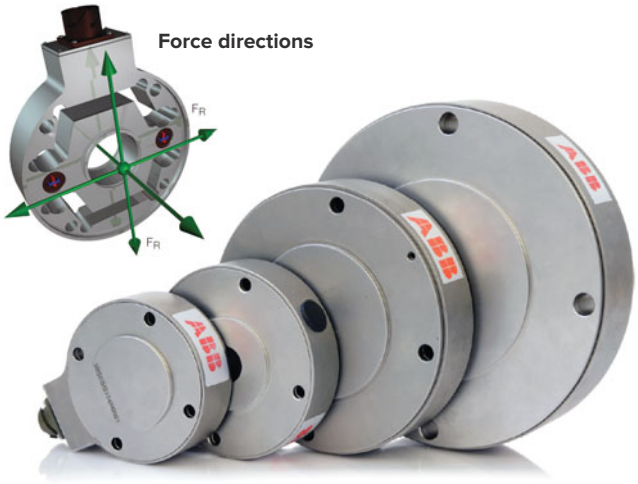
Pressductor® Radial Load Cells (PRT Load Cells)

Features

- Simple to size and easy to apply
- Operators value a load cell with high reliability
- Designers appreciate remarkably high spring constant and very narrow profile

Calculating the forces exerted on load cells in a specific application allows you to determine the ideal load cell size specification.

Force calculations and load cell sizing are typically conducted in collaboration with ABB.



The orientation of PRT load cells on the end of the roll shaft can be adjusted to perform measurements in the most advantageous direction for each application.

In sizing PRT load cells, both the web tension and the weight of the roll and bearings (tare weight) should be considered. If the load cell is oriented vertically or diagonally with respect to the force of gravity, the tare force will contribute to the total force level sensed by the PRT load cell system. If the load cell is oriented horizontally, the tare force will be perpendicular to the measurement axis, and so will not be sensed.

Tension Electronics

Features

- Interactive menu
- Multi-language display
- Filter function
- Analog outputs
- Built-in self diagnostics
- Fieldbus communication
- Commissioning without calibration weights
- Load memory

Covering a wide range of applications the Tension Electronics comes in three versions, with different levels of performance and functionality.

All three versions have multi-language digital display and configuration keys. The configuration keys being used for setting different parameters and to check the status of the tension system. The 2 x 16 character display can present sum, difference or individual load cell signals.

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ABB ELECTRICAL ACTUATORS

RSD50 (Contrac) - Electrical Linear Actuator

Features

- For continuous positioning, rated force 50kN (11240lbf)
- Electrical actuator for continuous positioning or step control
- Internal rotary-linear conversion
- Stallproof without the need of position or torque dependent switch-off
- Three-phase asynchronous motor
- Hand wheel for emergency operation
- Integrated sensors for position and temperature
- Sturdy gear unit with highly efficient design
- Signal and power input only via process-controlled power electronic unit in separate field-mount housing
- Voltage supply 115VAC or 230VAC only via special power electronics

PME120 (Contrac) - Electrical Part-Turn Actuator

Features

- Process optimisation thanks to maximum control precision
- For continuous positioning, rated torque 100Nm (80lbf-ft), with integrated electronics or for use with separate electronic unit
- Electrical actuator for continuous positioning, three-point position control, or bus control
- Stall-proof without the need for position or torque-dependent shut-off
- Adjustable mechanical limit stops for defined operating range
- Maintenance-free up to 10 years
- Signal and power input only via separate, microprocessor controlled power electronics (integrated into PME120-AI)
- Handwheel for emergency operation
- Voltage supply: 115VAC or 230VAC

Efficient Control in Steam Boiler Applications

Superheaters are widely used to help boost the temperature of steam in boiler applications. Spraywater valves control the supply of cooling water that is injected into the superheated steam in the superheater and reheater.

Close control of the cooling water supply helps to achieve the optimum steam temperature inside and at the output of the superheater.

Precise mass flow control of cooling water
To achieve a process with minimum steam cooling, yet at the same time, with a maximum permissible steam temperature requires continuous and precise control of the mass flow of the injected cooling water in the superheater and the reheater.

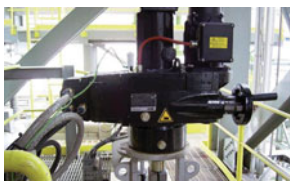
Injecting too much water will cause the steam to over-cool, reducing boiler efficiency. Injecting too little will result in excessively high steam temperatures and pressures, posing the risk of damage to the superheater, turbine and downstream components.

In order to correct the smallest of changes in temperature, the smallest of changes to the water quantity must also be implemented in the valve's disproportionate zone. Any equipment used must be able to withstand the tough operating environment and high ambient temperatures associated with superheater applications.

Highly precise, continuous positioning of spraywater valves
ABB's Contrac continuous electrical linear actuators provide an ideal solution for spraywater valve control applications. Capable of providing full S9-100%ED operation according to IEC 60034-1, even in ambient temperatures up to 85°C (185°F), Contrac actuators enable highly precise, continuous positioning of spraywater valves.

Contrac actuators feature an oil-lubricated spur gear with drive shafts supported by ball bearings. Rotary motion is converted to linear motion in the linear actuator by means of a highly efficient ball screw spindle.

Keeping maintenance costs under control
In many cases, the maintenance intervals for electrical actuatorsare specified according to load, actuator size and the average number of operating cycles/hour. For control loops averaging less than 700 operating cycles/hour, maintenance is advised every seven months.



When longer maintenance intervals are required, for example every two years, the permissible number of operating cycles is reduced to 125 to 250 cycles per hour. The control algorithms of many process control systems take this into account, being designed around the permissible number of operating cycles of the used actuator technology. This can cause maintenance costs to far exceed the cost of the actuator itself.

Up to ten years of maintenance-free operation
Contrac electrical actuators are designed for up to ten years of maintenance-free operation, ideal for demanding applications requiring high plant availability. By using oil-lubricated spur gears rather than the worm gear pairs, where repetitive sliding movements cause greater wearing over a shorter period of time,

Contrac actuators can handle more than 3600 operating cycles per hour, without significant reduction in their lifetime. Contrac offers the lowest cost of ownership of electrical actuators available on the market.

Maintenance work typically requires just changing the gear oil and replacing the shaft seals and gaskets, a quick and easy process that can be performed with little cost.

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