Valve positioner
K-TEK Products

Introduction
The AT200 Valve Positioner is a compact, high accuracy valve position transmitter that uses ABB’s patented Magnetostrictive sensing technology. In the valve positioning application, the transmitter is bolted to the yoke of the actuator with two mounting brackets that are supplied with the transmitter. A third bracket is secured to the stem connector. This bracket holds the magnet that provides the signal to the transmitter. The clearance between the magnet and the sensing tube of the AT200 is approximately 1/4" (6.35mm). This dimension is not critical and can vary slightly along the length of the transmitter. The magnet should not contact the sensing tube at any point in its travel. The brackets supplied with the transmitter do not include mounting holes. These will be drilled in the field to accommodate the various sizes of actuators that will be encountered. The transmitter is calibrated in place by using either the integral pushbuttons or LCD. The vertical alignment of the transmitter is not critical and the zero and span can be set anywhere along the active portion of the transmitter. There is an unusable range of 2" (50.8 mm) at the transmitter and 3.5" (88.9 mm) on the bottom end of the sensing tube.

Features
- High accuracy .01 % of full scale with patented magnetostrictive sensing technology
- No direct connection between valve stem and transmitter
- Microprocessor based
- Simple calibration: pushbutton or HART Protocol
- Never requires recalibration
- Dual compartment housing with separate field terminal compartment
- Field replaceable module
- Built-in RFI/EMI filter

Options
- Local indication with scrolling LCD display
- HART protocol output
- Honeywell DE output
- Foundation Fieldbus output
- Glass viewing window
- 316L SS enclosure
- 21-segment strapping table
**SPECIFICATIONS**

**Electronic Transmitter**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td><strong>Housing Type</strong></td>
<td>Explosion Proof Powder Coated Cast Aluminum, Dual Compartment Standard</td>
</tr>
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<td></td>
<td>Optional 316L Stainless Steel, Dual Compartment</td>
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<tr>
<td><strong>Electrical Connection</strong></td>
<td>1/2” FNPT</td>
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<tr>
<td><strong>Mounting</strong></td>
<td>Includes magnet with valve stem bracket and two (2) activator yoke mounting brackets</td>
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<tr>
<td><strong>Measuring Range</strong></td>
<td>0.5 - 30 ft. (0.15 - 9.1 m)</td>
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<tr>
<td><strong>Repeatability</strong></td>
<td>0.005% of full scale or 0.015”, whichever is greater</td>
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<tr>
<td><strong>Non-Linearity</strong></td>
<td>0.01% of full scale or 0.35”, whichever is greater</td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>0.01% of full scale or 0.050”, whichever is greater</td>
</tr>
<tr>
<td><strong>Loop Supply Voltage</strong></td>
<td>13.5 to 36 VDC</td>
</tr>
<tr>
<td><strong>Polarity Protection</strong></td>
<td>Diode in series with loop</td>
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<tr>
<td><strong>Output</strong></td>
<td>Standard 4-20 mA; Manual field calibration via pushbuttons;</td>
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<tr>
<td></td>
<td>Optional: HART protocol, Honeywell DE, Foundation Fieldbus ITK4.01 Compliant</td>
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<tr>
<td><strong>Dampening</strong></td>
<td>Field adjustable by means of pushbuttons. Range: 0.1 to 36 seconds</td>
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<tr>
<td><strong>Burnout</strong></td>
<td>Jumper selectable upscale (21 mA) or downscale (3.6 mA)</td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>-40 to 170°F (-40 to 77°C) ambient</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>0 to 100% R.H., non-condensing</td>
</tr>
<tr>
<td><strong>Sensor Tube</strong></td>
<td>316L Stainless Steel standard</td>
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**Approvals**

- FM Factory Mutual Research Corp and CSA Canadian Standards Association Hazardous
  - XP / I / 1 / ABCD / T6; DIP / II, III / 1 / EFG / T6
  - IS / I / 1 / CD / T4—ELE0001 / A [excludes RI (secondary analog output) & Honeywell DE option]
  - NII / I / 2 / ABCD / T4

**Type 4X**

**ATEX:**

- Flameproof: II 1/2 GD EEx d IIC T6 T80°C; 02 ATEX 132659
- Intrinsically Safe: II 1/2 GD EEx ia IIB T6; 02 ATEX 132658

[excludes RI secondary analog output) & Honeywell DE option]

**Ingress protection classification:** IP67
ORDERING INFORMATION
AT200/a/b/c/d/e/f/g/h:
/a Mounting
  B  Bottom Connected Electronic Housing
  BW Bottom Connected Electronic Housing with Window cover
  T  Top Connected Electronic Housing
  TW Top Connected Electronic Housing with Window Cover
/b Transmitter Configuration
  L  Standard Local Transmitter
      Process Temperature up to 200°F (93°C)
/c Transmitter Housing
  A  Standard Dual Compartment Aluminum Housing
  S  Dual Compartment Stainless Steel Housing
/d Probe Type
  R1  5/8” OD Probe Standard
/e Electronic Module with One Analog Output
  X  None
  M4A One Level, LCD Indicator. HART Protocol or Honeywell DE Protocol (Default is HART)
      Add “D” suffix to module option for Honeywell DE (class 0 support)
      Add “F” suffix to module option for Foundation Fieldbus ITK 4.01 compliant
      Add “S” suffix to module option for 21 segment strapping table (not available with “D” suffix)
/f Second Analog Output (Hart protocol only)
  X  None
  RI Second Electronic Module with One Analog Output and LCD Indicator
      Notes:  1. Available only with HART Protocol module M4A
              2. Housing type will be the same as primary transmitter housing (/c above)
/g Approvals
  FM Factory Mutual and CSA Canadian Standard Association
  CEX ATEX Flameproof, NEPSI
  CEI ATEX I.S., NEPSI
/h Measuring Length
  ML Specify the measuring length in inches or mm
Available Accessories:
  VP:  Valve Positioning Transmitter (This ordering code is required to order AT200 with positioning capabilities)
  MGT: Magnet Assembly (includes magnet with valve stem bracket and two actuator yoke mounting brackets)
      Note:  This accessory is required. Please specify the following: Valve Type/Size, Actuator Type/Size, and Valve
      Stem length and O.D. dimensions.
  VI-Transmitter: Vibration Isolator (One Isolator includes: one rubber grommet one (1) split ring collar and
      one mounting bracket)
  M20 ISO Fitting: M20 Female Electrical Connection

Example Installation: AT200 Valve Positioner and Hydraulic Control Valve