AT500
Magnetostrictive Level Transmitter

Compact magnetostrictive liquid level transmitter for direct insertion
K-TEK Products

Features
- Mounts from Top of Tank
- High Resolution 4-20 mA Output
- Simple Mounting and installation
- Very Compact Design
- Calibrates Without Opening Enclosure
- Stainless Steel Enclosure
- Custom Floats Available
- Measurement of Total or Interface Level
SPECIFICATIONS

Electronic Transmitter
- Repeatability: .01% of full scale or 0.030”, whichever is greater
- Non-linearity: .02% of full scale or .07”, whichever is greater
- Accuracy: .02% of full scale or .10”, whichever is greater
- Loop Supply Voltage: 13.5 to 36 VDC
- Housing Type: Explosion proof 316L SS with 1/2” FNPT Electrical Connection
- Polarity Protection: Diode in series with loop
- Output: Standard 4-20 mA
- Calibration via magnets
- Failsafe: Field Selectable: Upscale or Downscale
- Operating Temperature Electronics: -40 to 170ºF (-40 to 77ºC) Ambient
- Humidity: 0-100% R.H. non-condensing
- Electrical Connection: 1/2” FNPT Standard; M20 Optional
- Enclosure Rating: IP67

Sensor Tube
- Material: 316/316L Stainless Steel, 5/8” OD
- Operating Temperature: -40 to 170ºF / -40 to 77ºC Standard
- Max Pressure: 1800 psig @ 250ºF Standard
- Measuring Range: Up to 250ºF / 121ºC with 10” extension (H1)
- 124.1 bar @ 121ºC Standard
- Mounting: Standard 3/4” MNPT compression fitting
  (refer to ordering information for options)
**PRINCIPLE OF OPERATION**

The AT500 is based upon the magnetostrictive principle. The sensing tube contains a wire which is pulsed at fixed time intervals. The interaction of the current pulse with the magnetic field created by the magnetic float causes a torsional stress wave to be induced in the wire. This torsion propagates along the wire at a known velocity, from the position of the magnetic float and toward both ends of the wire. A patented piezo-magnetic sensing element placed in the transmitter assembly converts the received mechanical torsion into an electrical return pulse. The microprocessor-based electronics measures the elapsed time between the start and return pulses and converts it into a 4-20 mA output which is proportional to the level being measured.

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**Dimensions**

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ORDERING INFORMATION

AT500/a/b/c/d/e/f/g/h/i/j:

/a  Probe Material
    S6  316L Stainless Steel  **Standard**

/b  Transmitter configuration
    L  Local Transmitter  **Standard**

/c  Transmitter Housing
    S  316L Stainless Steel Housing  **Standard**

/d  Probe Type
    R1  Rigid Probe 5/8 in. O.D. (16 ft./ 4.87m maximum probe length)  **Standard**
    SW1  1/2” OD Probe for Insertion into 5/8” OD x 0.049” Wall Sensor Well
         Note: Specify and order sensor well separately.
    SW2  5/8” OD Probe for Insertion into 3/4” Sch. 40 or Sch. 80 Sensor Well
         Note: Specify and order sensor well separately.

/e  Process Temperature Options
    H0  170ºF / 77ºC Maximum  **Standard**
    H1  250ºF / 121ºC. Maximum (Top of transmitter is 17 in. / 43 cm above tank nozzle)

/f  Electrical Connection
    F5  1/2 in. FNPT  **Standard**

/g  Approvals
    FM  Factory Mutual and CSA Canadian Standard Association
    CEI  ATEX Intrinsically Safe
    CEX  ATEX Flameproof
    AAR  AAR Association of American Railroad Certification with FM Approval
    M2  M20 Connection
    RF  RFI Filter with 1/2 in. MNPT connection and flying leads

![FM Approved](image1)
![CSA](image2)
![ATEX](image3)
![CE](image4)
Process Connection
- **CF**: 3/4 in. MNPT x adjustable compression fitting
- **FL**: Flange with 3/4 in. NPT tap shipped loose; Specify from Flange Selection chart (SLG-0001-1).

Float Type
- **Fnn**: Selection from Standard Float Chart (SLG-0003-1) F1B, F2B, F17B, F15B Standard or specify /FXX for custom float

Length
- **L**: Standard lengths:
  - 15.5 in. / 394 mm 27.5 in. / 698 mm 39.5 in. / 1003 mm
  - 51.5 in. / 1308 mm 63.5 in. / 1613 mm 75.5 in. / 1918 mm
  - 87.5 in. / 2222 mm 99.5 in. / 2527 mm 111.5 in. / 2832 mm
  - 123.5 in. / 3137 mm 135.5 in / 3442 mm 147.5 in. / 3746 mm
  - Custom Lengths to 16 ft. / 4876 mm specified in inches or millimeters

Available Accessories
- **CD**: Centering Disk: specify stilling well inside diameter
- **M20 ISO FITTING**: M20 Connection
- **CONHEA4F**: 3 pin female cable connector with weatherproof cap rated for general purpose & intrinsically applications only.
- **CONHEA4M**: 3 pin male cable connector with weatherproof cap rated for customers cable at loading station. General purpose & intrinsically safe applications only.