



AccuTrak™ Model AT100S

SANITARY HIGH ACCURACY MAGNETOSTRICTIVE LEVEL TRANSMITTER

FEATURES

- High Accuracy: .01% of Full Scale
- Superior Piezo Ceramic Sensor (Patent # 5,473,245)
- Single & Double Tri-Clamp Installations
- Suitable for CIP & SIP Applications
- 180 Grit Polish Standard
- Simple Calibration
- Never Requires Re-Calibration: Set It & Forget It
- Dual Compartment Housing with Separate Field Terminal Compartment
- Pressure to 1750 psig (120.7 bar)
- Temperature Range: -320 to 450° F (-196 to 232°C) with options
- Field Replaceable Module - No Recalibration Necessary
- Built In RFI / EMI Filter

OPTIONS

- Local Indication with Scrolling LCD Display
- 240 Grit & Electropolished Finish
- 20 Point Strapping Table
- Temperature Indication
- HART Protocol, Foundation Fieldbus Output or Honeywell DE Output
- Glass Viewing Window
- 316L Stainless Steel Enclosure
- Flexible Waveguide for Low Headroom Applications

SPECIFICATIONS

Electronic Transmitter	
Housing type	Explosion Proof Powdered Coated Cast Aluminum or Stainless Steel, Dual Compartment
Electrical Connection	1/2" FNPT or M20
Repeatability	0.005% of full scale or 0.015", whichever is greater
Non-Linearity	0.01% of full scale or 0.035", whichever is greater
Accuracy	0.01% of full scale or 0.050", whichever is greater
Supply Voltage	13.5 to 36 VDC - Loop Powered; 9 to 32 VDC - Foundation Fieldbus
Reverse Polarity Protection	Diode in series with loop
Output	Standard 4-20 mA DC Loop HART protocol (optional) Foundation Fieldbus (optional) <ul style="list-style-type: none"> • ITK4.01 Compliant • 5 AI and 5 PID blocks • 12.5 mA Quiescent Current Draw • LAS Capable Honeywell DE (optional)
Damping	Field adjustable by means of pushbuttons. Range: 0.1 to 36 seconds
Burnout	Jumper selectable upscale (21 mA) or downscale (3.6 mA)
Temperature	-40 to 170°F (-40 to 77°C) Ambient
Humidity	0 to 100% R.H., non-condensing



SPECIFICATIONS

Sensor Tube

- Material: 316L Stainless Steel
- Process Temp.: -320 to 450°F (-196 to 232°C) with options
- Max. Press.: 1750 psig @ 450°F (120.7 bar @ 232°C) actual rating will be determined by process connection
- Probe Length: 1 to 30 feet (304.8mm to 9.14m)
- Mounting: Tri-Clamp fitting standard; Refer to ordering information for options.

Approvals:



FM Factory Mutual Research Corporation
 XP / I / 1 / ABCD / T6; DIP / II, III / 1 / EFG / T6 ¹
 IS / I / 1 / CD / T4 - ELE0001 ²
 IS / I / 1 / ABCD / T4 - ELE1036 ^{2,3}
 NI / I / 2 / ABCD / T4
 TYPE 4X



CSA Canadian Standards Association
 XP / I / 1 / ABCD / T6; DIP / II, III / 1 / EFG / T6 ¹
 IS / I / 1 / CD / T4 - ELE0001 ²
 NI / I / 2 / ABCD / T4
 TYPE 4X



ATEX
 FP: II 1/2 GD EEx d IIC T6 T80°C; 02 ATEX 132659 ¹
 IS: II 1/2 GD EEx ia IIB T6 T80°C; 02 ATEX 132658 ²
 IS: II 1/2 GD EEx ia IIC T4 T80°C; 02 ATEX 132658 ^{2,3}
 Ingress protection: IP67



GOST Russia
 FP: 1ExdIIC T6 ¹
 IS: 0ExialIB T6 ²
 Ingress protection: IP67
 Sanitary Hygienic Certificate



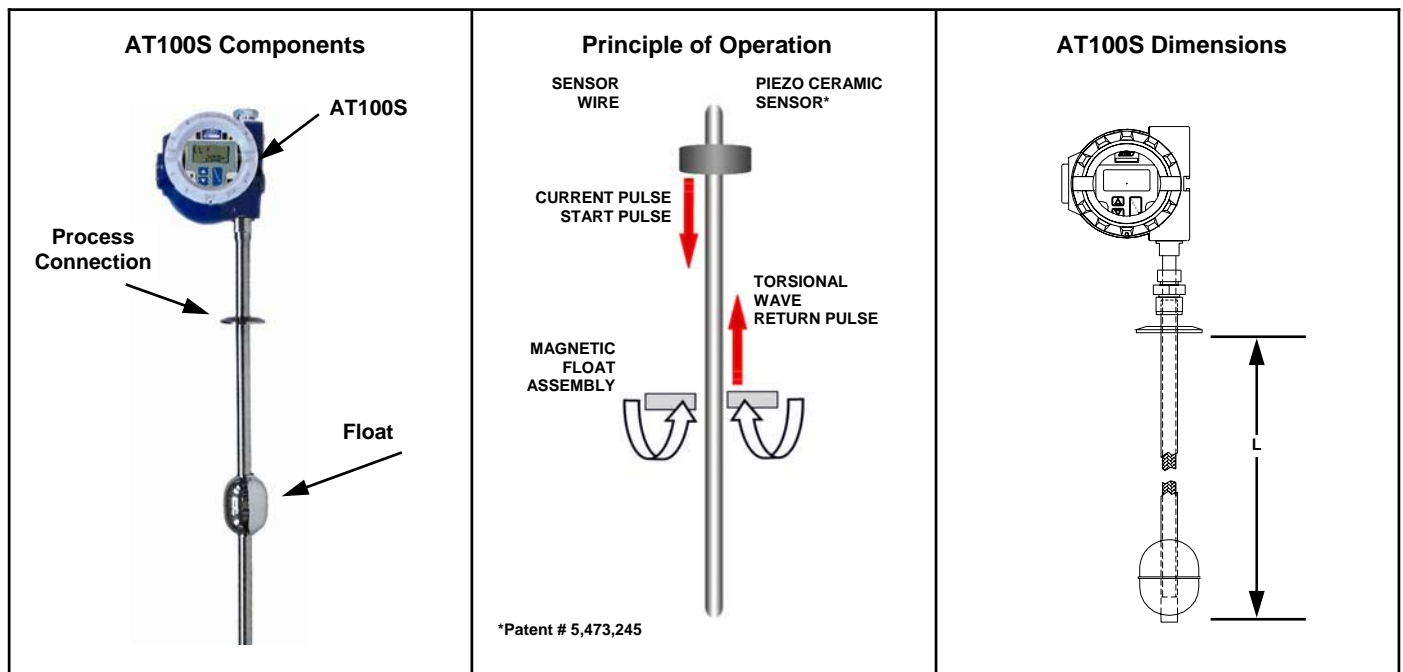
IEC International Electromechanical Commission
 IS: EX ia IIB T4 ; IECEx ULD 06.0013X ²

- Notes: 1. Excludes Probe SW3 options.
 2. Excludes RI (secondary analog output) & Honeywell DE options.
 3. Fieldbus & FISCO

Safety Third Party Certified Safety Integrity Level (SIL) data (FMEDA analysis) for Safety Instrument Systems

PRINCIPLE OF OPERATION:

The AT100S is based upon the magnetostrictive principle. The sensing tube contains a wire which is pulsed at fixed time intervals creating a magnetic field around the wire. The interaction of the magnetic field around the wire and 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 ceramic 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 position measurement which is proportional to the level of the float.



ORDERING INFORMATION

AT100S/a/b/c/d/e/f/g/h/l/j/k/l:

/a Probe Material

S6 316L Stainless Steel Standard

/b Transmitter Configuration

L Standard Local Transmitter

LW Standard Local Transmitter with Window Cover

T Local Transmitter with Top Access or Readout

TW Local Transmitter with Top Access or Readout and Window Cover

C Offset Transmitter with Vapor Seal for Service Below Ambient

CW Offset Transmitter with Vapor Seal for Service Below Ambient and Window Cover

/c Transmitter Housing

A Standard Dual Compartment Aluminum Housing

S Dual Compartment 316L Stainless Steel Housing

/d Probe Type

5/8" OD Rigid Probes specify end of probe design

CP Clean in Place with Float Retaining Clip

DN Drain in Place, No Through Hole, No Float Retainer

DP Drain in Place Sensor with Non-Removable Float

3A 3A Sensor with Non-Removable Float

SW1 1/2" OD Rigid Probe for Insertion into 5/8" OD x 0.049" Wall Sensor Well

Note: Order sanitary sensor well separately (ACS-0002-1)

SW3 1/2" OD Flexible SS Braided Probe for insertion into 5/8" OD x 0.49" wall Sensor Well

Notes: 1. Max 300°F (149°C) @ 1 hour Clean.

2. 15 ft. (4.5m) maximum probe length.

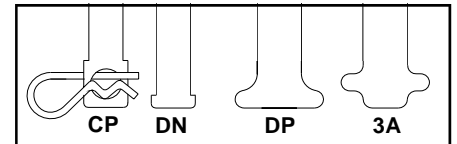
3. Available with /S6 probe material only.

4. Not suitable for explosion proof service.

5. Probe is not hermetically sealed. For use in conditioned (non-condensing) indoor locations only.

6. Only available with H0 process temperature option.

7. Order sanitary sensor well separately (ACS-0002-1)



/e Probe Finish

X None, use this selection with /SW1 & /SW3 probe types.

1F Standard 180 Grit Mechanical Finish (Suitable for 3A Service)

2F 240 Grit Mechanical Finish

EP 240 Grit Mechanical and Electro-polished Finish

Note: Certificates of RA and Passivation available upon request

/f Process Temperature Options

H0 170°F (77°C) Maximum; Top of transmitter is 8" (200mm) above tank nozzle

Note: Max 300°F (149°C) @ 1 hour Clean; Performance not guaranteed during 1 hr. cleaning cycle

H1 250°F (121°C) Maximum; Top of transmitter is 16" (406mm) above tank nozzle

Note: Max 300°F (149°C) @ 1 hour Clean; Performance not guaranteed during 1 hr. cleaning cycle

H2 450°F (232°C) Maximum; Top of transmitter is 26" (660mm) above tank nozzle

/g Electronic Module With 1 ea. Analog Output

X None

M3 One level, and HART Protocol

M4A One level, LCD indicator, and Communications^{1,2,3,4}

M5A One level, One temperature point, LCD indicator, and Communications^{1,3,4,5}

Notes: 1. Default Communication is HART Protocol

2. Add "D" suffix to module option for Honeywell DE (class 0 support)

3. Add "F" suffix to module option for Foundation Fieldbus ITK 4.01 compliant

4. Add "S" suffix to module option for 20 Point Strapping Table (not available with "D" suffix)

5. Not available with SW1 or SW3 options.

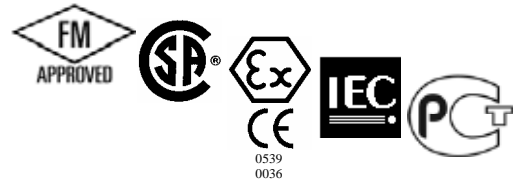


ORDERING INFORMATION (continued)

- /h Second Analog Output
- X Not available
 - RI Second electronic module with 1 ea. Analog output and LCD indication
Notes: 1. Only available with M5A modules
2. Only for use with HART Protocol equipped electronics modules
3. The RI100 is only approved as an Explosion Proof device
4. Analog output field selectable to level or temperature
5. Housing type will be same as primary transmitter housing (/c above)

/i Approvals ^{1,2}

- FM Factory Mutual
- CSA Canadian Standards Association
- CEX ATEX Flameproof
- CEI ATEX I.S.
- IEI International Electromechanical Commission I.S.
- GR GOST Russia



- Notes: 1. All Explosion Proof Approvals exclude Probe SW3.
2. All Intrinsically Safe Approvals exclude RI (secondary analog output) & Honeywell DE options.

/j Process Connection

- Tnn Tri-Clamp: welded to the sensor
Notes: 1. Specify "nn" as follows: 10 = 1", 15 = 1.5", 20 = 2.0", 25 = 2.5" up to 6"
2. Tri-clamp size and type will determine the maximum probe pressure rating
- CF Adjustable 1/2" to 5/8" compression fitting
For use with SW1 and SW3 sensor well
- WP Flange or plug welded to the sensor tube
Specify type, material and rating from SLG-0001-1 Flange Designation Chart

/k Float Type

- X None; Use this selection with /SW1, & /SW3 probe types
- Fnn Selection from Standard Float Chart (SLG-0003-1) or specify /FXX for custom float

/l Insertion Length

- L Specify inserted length from top of tank nozzle in inches or millimeters or meters
Consult factory for transmitter measuring length. There is an unusable range of 2.5 inches minimum at the bottom of the sensing tube (which can be reduced depending upon float dimensions). The unusable range at the top is affected by the float dimensions.

NOTE: Consult factory for special application requirements.

Available Accessories:

- M20 ISO FITTING: M20 Female Electrical Connection (MM - Brass or MMS - Stainless Steel)
- FINISH CERT: Certificate of RA and Passivation (specify required RA finish for electro-polished probes only)