Data sheet DS/AT600-EN Rev. M

AT600
Magnetostrictive Level Transmitter

Compact magnetostrictive level transmitter for external mount
K-TEK Products

Features

- Designed to mount externally to a KM26 or other Magnetic Level Gauge
- High resolution 4-20 mA output
- Simple mounting and installation
- No process piping or valve required
- Very compact design
- Suitable for high temperature applications
- Calibrates without opening enclosure
- Stainless steel enclosure

Power and productivity for a better world™

SPECIFICATIONS

Electronic Transmitter

Housing type	Explosion Proof 316L Stainless steel with 1/2” FNPT Connection
Mounting	Stainless steel clamps for KM26 chamber
Measuring Range	1 to 16 ft./4.9m (12” increments standard)
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
Polarity Protection	Diode in series with loop
Output	Standard 4-20 mA DC; Calibration via magnets
Failsafe	Field Selectable: Upscale or Downscale
Operating Temperature	-40 to 450ºF / -40 to 232ºC Ambient
Humidity	0 to 100% R.H., non-condensing
Enclosure Rating	IP67

Sensor Tube

Material	316L Stainless Steel standard, 5/8” O.D.
Process Temperature	-40 to 500ºF / -40 to 260ºC with options

Approvals

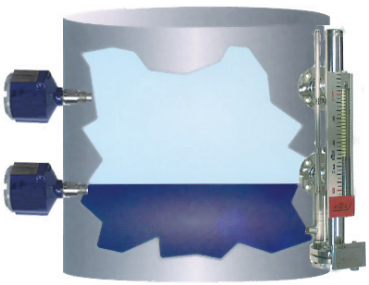
Factory Mutual Research Corporation:
XP/I/1/ABCD/T6 Ta=77°C; I/1/AEx d IIC/T6 Ta=77°C;
DIP / II ,III / 1 / EFG / T6 Ta=77°C
IS/I/1/ABCD/T4 Ta=77°C; I/0/AEx ia IIC/T4 Ta=77°C-ELE 0035/NC; Entity;
NI/I/2/ABCD/T4 Ta=77°C; S/II,III/2/FG/T5 Ta=77°C; NEMA 4X

CSA International:
Hazardous Locations
Class I, Div. 1, Grps A,B,C,D; Class II, Div. 1, Grps E,F,G; Class III;
Class I, Zone 1, Ex d, IIC T6:
Intrinsically Safe Entity - For Hazardous Locations:
Class I, Div. 1, Grps A,B,C,D, Temp. Code T4;
Class I, Zone 0, Ex ia IIC T4 when installed per drawing ELE0035,
Max. operating temp. 77°C, Encl. Type 4X.

ATEX :
Flameproof: EX II 1/2 GD T85C EEx d IIC T6
Intrinsically Safe: EX II 1 GD T85C EEX ia IIC T6

GOST Russia: 1ExdIICT6, 0ExiaIICT6, IP67

Safety — Third Party Safety Integrity Level (SIL) data (FMEDA analysis) for Safety Instrument Systems engineering is available.



Sample Application AT600 Mounted on KM26 Level Gauge for Total Level Indication with RS80 for Hi / Low Alarm

ORDERING INFORMATION

AT600/a/b/c/d/e/f:

/a Mounting (*Not field changeable*)

- **B** Bottom Connected Electronic Housing **Standard**
- **T** Top Connected Electronic Housing

/b Transmitter Configuration

- **L** Local Transmitter; Process Temperature up to 200ºF (93ºC) **Standard** or 300ºF (149ºC) with insulation
- **L9** Transmitter Mounted to Extended Sensing Tube with 90º, 3" Radius. Required For High Process Temperature up to 300ºF (149ºC) without insulation, 450ºF (232ºC) with insulation pad.

/c Probe Type

- **R1** 5/8" OD Probe **Standard**

/d Electrical Connection

- **F5** 1/2" FNPT **Standard**
- **M2** M20 Connection
- **RF** RFI Filter with 1/2 in. MNPT connection and flying leads

/e Approvals

- **FM** Factory Mutual and CSA Canadian Standard Association
- **CEI** ATEX Intrinsically Safe
- **CEX** ATEX Flameproof
- **GR** GOST Russia

/f Measuring Length

- **ML** Specify the measuring length in inches or mm

Available Accessories:

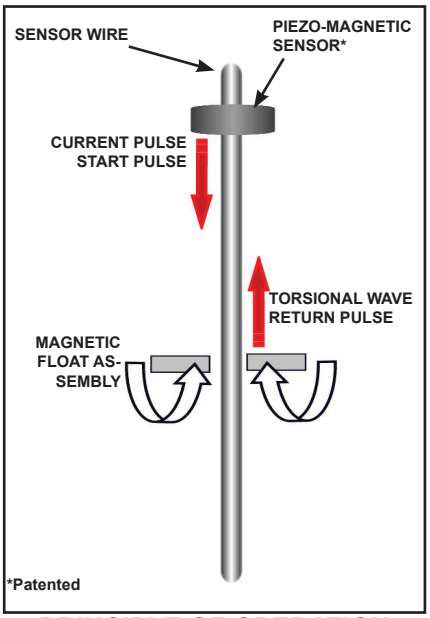
M20: M20 Connection
M20SS: M20 316SS Female Electrical Connection
IHPAD: Insulation Pad for Magnetic Bargraph

PRINCIPLE OF OPERATION:

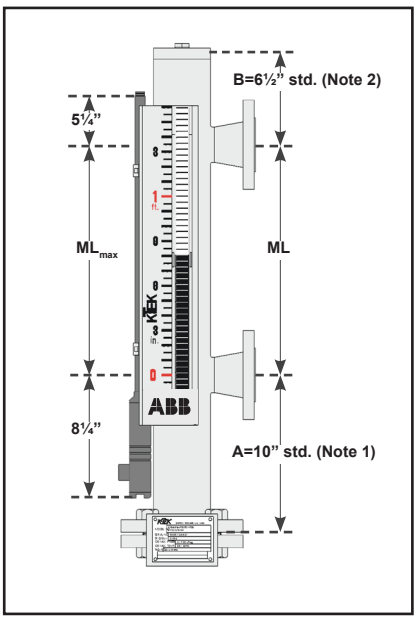
The AT600 is based upon the magnetostrictive principle. The sensing tube contains a wire which is pulsed at fixed time intervals. The interaction of the current pulse with the magnetic field created by the magnetic float causes a torsional stress wave to be induced in the wire. This torsion propagates 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.

NOTE 1: This dimension will need to be extended for:
- a. KM26 with shuttle indicator and ANSI 600# or higher flange rating.
- b. KM26 with magnetic bargraph indicator and ANSI 300# or higher flange rating or 2 ½" float chamber with 150# weld neck flanges.

NOTE 2: This dimension may need to be extended for a KM26 with flanged top closure.



PRINCIPLE OF OPERATION



DIMENSIONS

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