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
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 450°F / -40 to 232°C 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 500°F / -40 to 260°C 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;
  - N/I/2/ABCD/T4 Ta=77°C; S/I,II/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

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 200°F (93°C) Standard or 300°F (149°C) with insulation
L9 Transmitter Mounted to Extended Sensing Tube with 90°, 3” Radius. Required For High Process Temperature up to 300°F (149°C) without insulation, 450°F (232°C) 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
/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.
Contact us

ABB Inc.
18321 Swamp Road
Prairieville, LA 70769 USA
Phone: +1 225 673 6100
Service: +1 225 677 5836
Fax: +1 225 673 2525
Service e-mail: service@us.abb.com

www.abb.com/level

Note
We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents - in whole or in parts – is forbidden without prior written consent of ABB.

Copyright © 2012 ABB
All rights reserved