Liquid Level Sensor Model BI-2000 Series

Features

The Bintech 2000 series level sensor with a programmable head mounted transmitter unit provides a linearised 4 to 20 mA output of tank volume. The Bintech 2000 sensor is designed and manufactured in Australia, to suit your tank gauging requirements.

The Bintech 2000 series level sensor features:

- Local or remote display
- Wide range of operating temperature and pressure
- Floats to suit various liquids

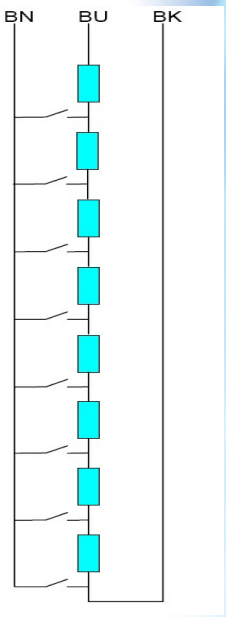
Specifications

Characteristic	Detail
Electrical Enclosure:	Stainless steel IP66 rated Ex d or Aluminium IP65 rated
Mounting Options:	Screwed / flanged
Cable access:	M16 Cable Gland (other options available)
Electrical connection:	2 wire connection to the transmitter
Electrical output signal:	4 to 20 mA 2-wire loop power 8—35VDC
Guide Tube:	13 mm diameter x 1.2 mm wall
Float:	V44 316 SS SG 0.63 min
Sensor Length:	500 to 3000 mm
Contact Separation:	18 mm (10 mm option for shorter sensors)
Resolution:	Typically better than ±□9 mm (depends on the contact separation)
Operating Temp range	-20 to +60ºC (depends upon electrical enclosure and float type)
Optional Certification:	Ex s d IIB T6 IP66 Zone 1 Head, Zone 0 Probe ANZ Ex 09.4087X

Theory and operation of sensor

Resistor - Reed Switch Chain

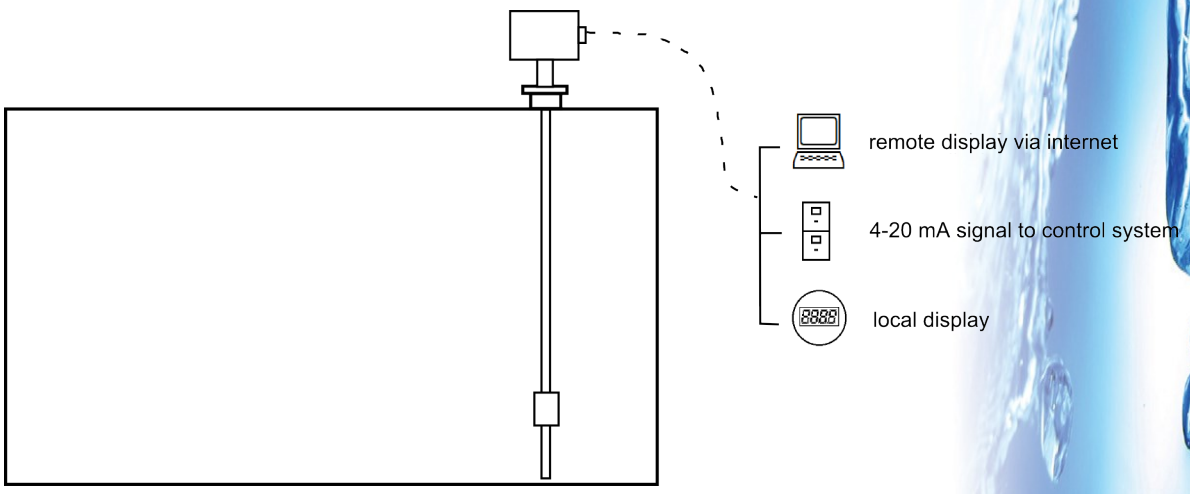
The sensor operates using the float principle with transmission in a 2- or 3-wire circuit. A series of reed switches and resistors built into the sensor are operated by a permanent magnet enclosed in the float. Changes in level are translated into a linear change in resistance. The switches are spaced 10 or 18mm apart. In operation, the magnet fitted in the float rises with the liquid and operates the reed switches sequentially increasing the resistance. The three wires may be connected as a simple resistive or a potentiometer circuit. The changes in resistance are detected in the transmitter and are converted to a 4 to 20 mA current.



With the tank empty the resistance is factory set, giving a 4 mA current. The resistance at maximum level is dependent on the length of the sensor and is calibrated to provide 20 mA. The sensor is mounted on the turret of the tank.

Configuration

The movement of the float along the sensor shaft produces a linear change in resistance. Using the head mounted transmitter unit this change in resistance can be programmed to produce a current that is linear with change in volume. A 4 to 20 mA display will therefore directly indicate the contents of the tank. Bintech will program the transmitter using the key dimensions of the tank. Both vertical and horizontal bullet tanks may be programmed as required.



Ordering Information

Model Code: BI-2000-*A-B-C-D-E-F*

A - Mounting	*B* - Housing	*C* - Float	*D* - Contact Separation	*E* - Transmitter	*F* - Sensor Length
40 ANSI Range*	**10** Stainless Steel Ex d	**SB40/14/R**	**K10** 10mm reed chain	**TA** PR5343B	**L** xxxx mm
50 NPT Screwed **	**20** Aluminium Ex d with LCD	**SVK44/15/R**	**K18** 18mm reed chain	**TD** PR5335D (HART)	
60 BSP Screwed **	**30** Aluminium IP65	**Other** Specify			
70 Other—specify	**40** Other—Specify	**N** None			
80 Bypass gauge (side mounting)	**50** None—flying lead				

* Specify size & rating, e.g. 3" ANSI 300lb

** Specify thread size (BSP or NPT)

Example:

A 2400mm sensor with an 2" BSP screwed mounting, aluminium housing, stainless steel float with 18mm reed chain and PR5343B transmitter:

BI-2000-60(2"BSP)-30-SVK44/15/R -K18-TA-L2400

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