

Installation and Operation Manual

WIKA *FLR-SBDF / BLR-SBDF* Magnetic Level Transmitter

(Please retain for future usage)

Contact:

Gayesco-WIKA USA, L.P.
229 Beltway Green Boulevard
Pasadena, TX 77503
www.wika.com
713-475-0022



INTRODUCTION

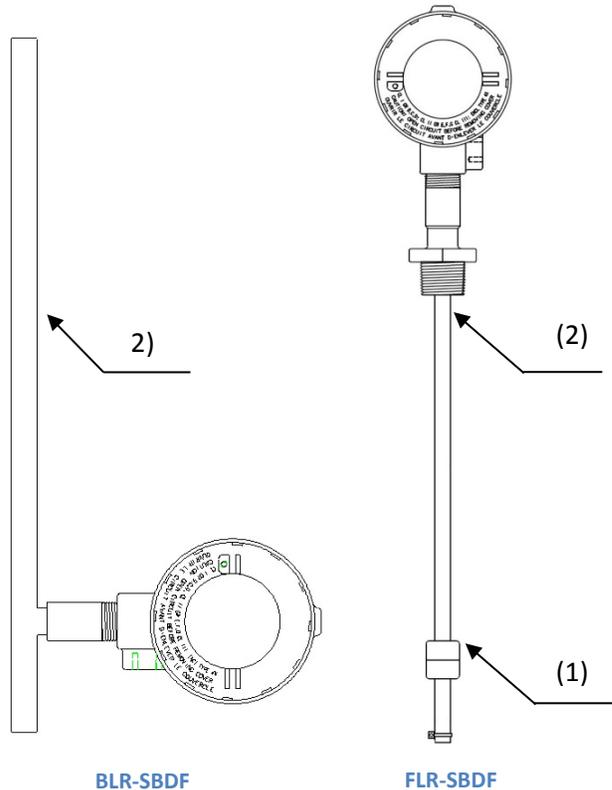
WIKAI level transmitters are primarily used for continuous measurement of liquid levels. They operate by using the field of a magnet inside the float (1) to actuate reed switches inside the device rod (2). A measuring network (reed switches and precision resistors) built into the transmitter rod provides an internal potentiometer-style signal proportional to the position of the float. The resolution of the transmitter is dependent on the number of switches per unit length and is customer specified along with device length at the time of order. The output of the device is two-wire 4 to 20mA and can be configured to increase or decrease with float level.

For your convenience please enter:

Model # _____

Serial # _____

Customer specs:



BLR-SBDF

FLR-SBDF

WIKAI level transmitters have approvals up to Explosion Proof Class 1, Division 1, Group B depending on the ordered configuration. All materials which come into contact with the liquid must be corrosion resistant and are customer specified. The liquid to be monitored must not be heavily contaminated and must not have a tendency to crystallize or solidify. The temperature of the process fluid affects the temperature classification. See ratings within corresponding table. Maximum shall not exceed 149°C (300°F).

T-Code*	Max Process Fluid Temp
T6	70°C (158°F)
T5	85°C (185°F)
T4	120°C (248°F)
T3	149°C (300°F)

* The BLR model, which is not in direct contact with process fluid, has a temperature classification of T6 in all cases. Care should be taken by the end user to consider acceptable process fluid temperature based on the area hazardous location classification.



INSTALLATION NOTES

- **WIKAI level transmitters must be installed within 30 degrees of vertical to function correctly. They must not be installed within 3 feet of strong electromagnetic fields.**
- **When installing a level transmitter in a vessel connection smaller than the diameter of the float requiring removal of the float(s), mark the top of the float(s) and the position of the retaining collar(s). Be sure to replace the float(s) in the same orientation. Reposition and securely tighten the retaining collar(s).**
- **Install a pour-seal fitting within 2 inches of the housing to prevent water from entering the housing and for compliance with the National Electrical Code.**

INSTALLATION

(Transmitters with Integral Electronics)

Install WIKAI level transmitters according to their type (flange, thread, or bracket) using the correct gasket or compound for sealing. Make sure the gasket is installed correctly and tighten all fasteners to the correct torque. Replace the float(s) and retaining collar(s) in the correct orientation if previously removed. Note it may be easier to calibrate the unit before installation if possible.

Transmitters with integral electronics (puck and/or display) must be connected in a series loop with the readout or data acquisition device and the power supply. Shielded cable must be used for noise immunity. A ground wire must be provided and connected to the ground block outside the housing.

The external wiring shall be suitable for the ambient temperature range of the end use application. The maximum ambient temperature for T32 of 85 °C shall be considered. The minimum cross section for external wiring is 0.14 mm². Supply voltage shall be between 14.5 – 29 VDC

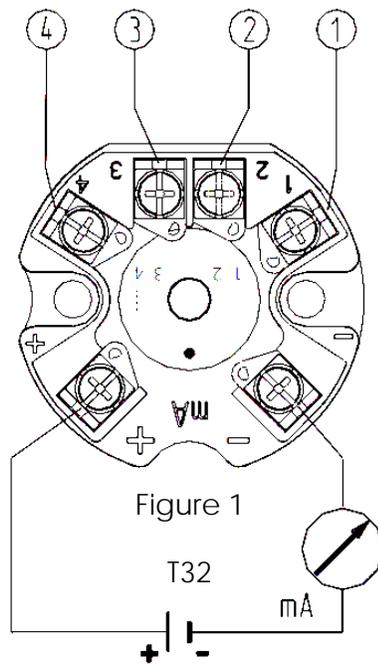
The FLR-SBDF is rated to the following range of environmental conditions:
CL I, Div I, GP BCD, CL II, Div I, GP EFG; Atex II 2G Exd IIC T3...T6 Gb. MAX 29VDC, 130mA, -50°C ≤Ta ≤+60°C ITS16ATEX101104X

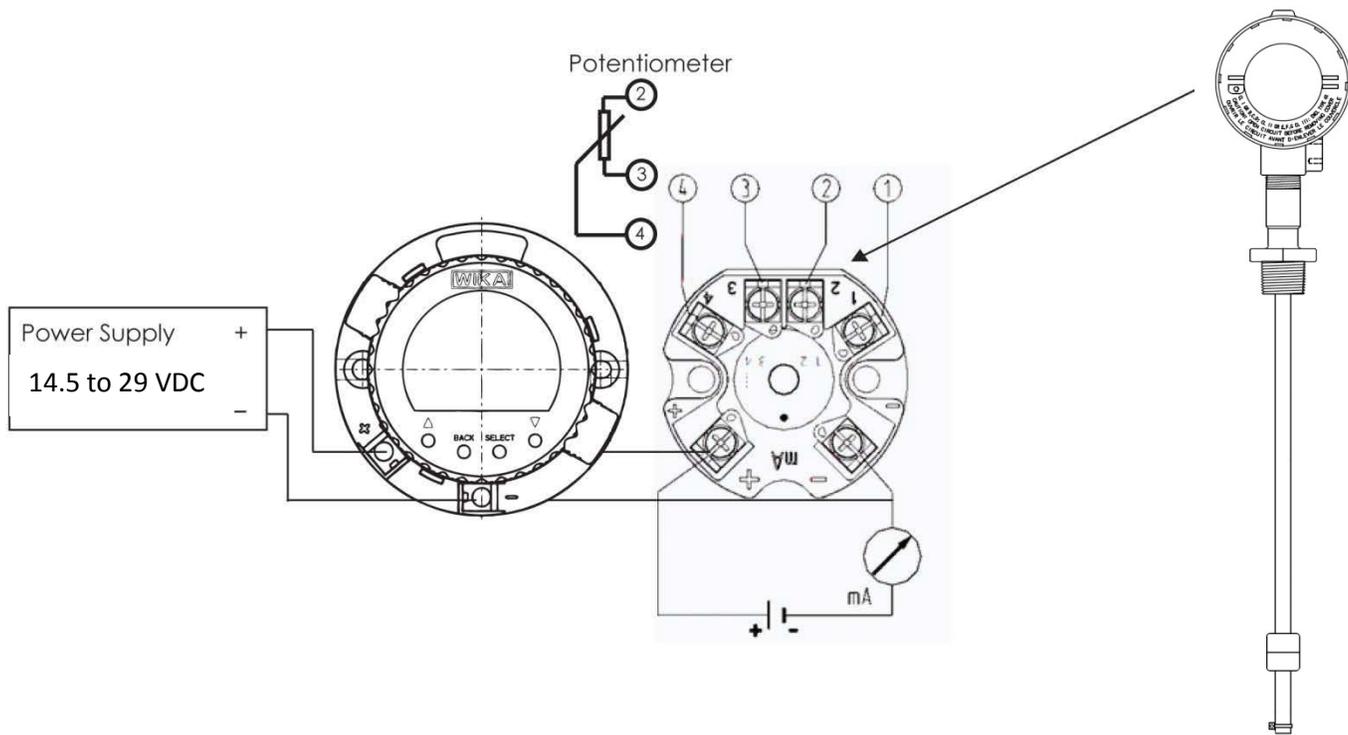
The BLR-SBDF is rated to the following range of environmental conditions:
CL I, Div I, GP BCD, CL II, Div I, GP EFG; Atex II 2G Exd IIC T6 Gb. MAX 29VDC, 130mA, -50°C ≤Ta ≤+60°C ITS16ATEX101104X



To connect a transmitter with a built-in digital display, unscrew and remove the housing cover and carefully remove the DIH-50 digital display from its retaining ring. Thread the electrical connection wires through the 3/4" FNPT housing connection and the T32 transmitter puck. There are two open holes on the DIH-50 retaining ring that the wires can pass through and then connect to the (+/-) poles on the ring. Field wiring connections are made to a two point, compression type, terminal block located on the retaining ring. (See Fig. 2 for Explosion Proof application)

The transmitter comes pre-wired from the factory, however to reverse the reading of the gauge relative to the float position it is necessary to reverse the "2" and "3" connections on the puck (see Figure 1).





QUALIFICATION

WARNING! Make sure any tests performed in qualification do not unintentionally start any processes resulting in loss of control.

WARNING! Never open cover in hazardous areas while circuits are energized. Follow all safety work procedures and lock out circuits before servicing or inspection.

To calibrate units with [built-in display](#), two clip leads are required to connect. Connect to the (+/-) pole terminal blocks located on the DIH-50 retaining ring. Connect the clip leads in the same polarity as the indicator plugs making sure no shorts circuits are created. Power up the device using a suitable calibration source, insuring no processes will be affected during calibration. Move the float to the desired 0% position and adjust the zero from the Submenu. Move the float to the desired 100% position and adjust the span Submenu on the DIH-50 until the display reads 100% or the calibrator indicates 20mA. Move the float back and forth several times to check both settings.

The indicator unit is factory calibrated to read 0% to 100% for 4 to 20mA respectively and can be calibrated with a suitable supply by adjusting the “zero” and “span” from the Measurement menu of the DIH-50.

Carefully Install the DIH-50 digital display in its retaining ring.

Replace and tighten the housing cover and energize the power supply for the connected control unit(s). Fill the tank in order to observe that the readout changes smoothly. The level transmitter can also be tested manually by moving the float by hand and observing the result. The 0% and 100% points should be re-checked to ensure they are set correctly.

The sensor portion of the unit comes from the factory already connected to the transmitter head. The connection has been standardized to always be a 3/4" MNPT on the sensor portion. It should not be removed from the transmitter head unless the transmitter head has been compromised. To disconnect the sensor portion, insure that all wiring has been disconnected, and then back out the sensor from the head. When installing a new head on the sensor, be sure that a sealant (Thread Seal Paste) is used on the 3/4" MNPT on the sensor before threading it back to the housing. (Fig 3)

Electrical connection	Instrument connection
3/4" FNPT	3/4" FNPT

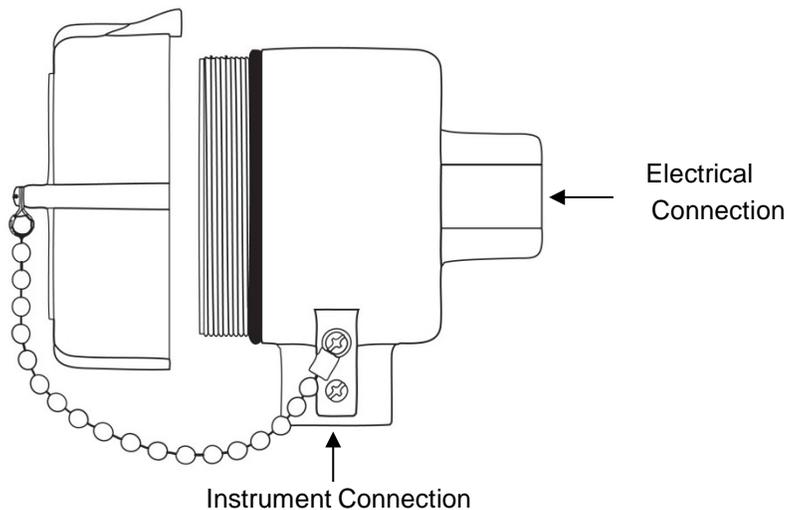


Fig. 3

SPECIAL CONDITIONS

The dimension of the flameproof joints is superior to those specified in tables in the standard IEC 60079-1. Not for repair, consult manufacturer for detailed dimensions.

MAINTENANCE

WIKA level transmitters operate free from maintenance and wear when used properly. A periodic visual inspection and re-qualification test should be performed at a regular interval.

QUESTIONS

For customer support please call 713-475-0022 between the hours of 8:00 a.m. and 5:00 p.m. Central time. Please have your model number and serial number (found on the device label) handy.

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Warranty

Level Products manufactured by WIKA-USA are subject to the following warranties:

- 1. 5-Year Warranty:** Mechanical products including The **WMI** Series Magnetic Level Indicator, **WLC** Series Level Chamber and **WLG** Series Level Gauge.
- 2. 2-Year Warranty:** Switches and Transmitters including Series **WIR, WRS, WCS, WFS, FLR-SBDF, BLR-SBDF, WFC, WFF, WFM,** and **WIM.**

WIKA-USA warrants these products for these periods against manufacturing defect (subject to evaluation). Correction of any manufacturing defect will be F.O.B. Sellers Plant and a minimal evaluation fee (waived if found that the product is a manufacturing defect). In no event shall any claim made by Buyer be greater than the purchase price of the particular product in respect of which damages are claimed. This is provided

WIKA-USA is given immediate written notice of such defect and reasonable opportunity to inspect the alleged defective equipment at the place of its use and under the conditions of its use.

Seller makes no warranties as to the equipment manufactured by it which extend beyond the description of such equipment on the face hereof: WIKA-USA's obligation to correct defects in such equipment by repair or replacement in accordance with

the foregoing provisions is in lieu of any other warranties, expressed or implied, as to such equipment. WIKA-USA makes no warranties whatsoever (including any implied warranty of fitness or merchantability) with respect to any auxiliary apparatus or equipment not manufactured by WIKA-USA.

WIKA-USA shall not be liable in any event for any special, indirect, consequential or coincidental damages of any kind whatsoever, whether growing out of the use, inability to use, failure of, defects in, the condition of, delay in delivery, no-delivery, or otherwise, of the products covered hereby. Buyer assumes all risk and responsibility for the use of the products covered hereby and for the results obtained by any such use and agrees to hold WIKA-USA harmless from any liability arising out of such use by Buyer or by any subsequent purchaser from Buyer.