West Lake Bay

LEF electric buoy level gauge

Product overview

The LEF intelligent electric buoy liquid level (interface) meter is a key technical problem solving project product of China during the "8th Five-year Plan". It's an intrinsically safe explosion-proof instrument for continuous measurement of liquid level with explosion-proof sign being Exia II CT5 and matches with safety barrier LB830S or LB805 to constitute the intrinsically safe explosion-proof system. It's a flame-proof type instrument and the flameproof mark is Exd II BT4. The transmitter is safe and reliable in the use. It can be used for dangerous places with flammable and explosive gas and is suitable for measurement and control of liquid level in the fluid container in the industrial manufacture process (such as petroleum and chemical engineering).

Product features

- Large measuring range which can reach to 3000mm furthest and special ordering in case of exceeding 3000mm;
- On-site indication and compatible with remote transmission;
- Mechanical shift, and good reliability, improving the measurement accuracy and sensitivity of transmitter;
- High temperature resistance, high pressure resistance and strong decay resistance;
- Convenient site commissioning and easy inspection and maintenance;
- High sensitivity, stable performance, simple commissioning, convenient installation and other characteristics. Applicable to normal temperature, ordinary pressure, high temperature and high pressure liquid level and interface position measurement;
- The HART protocol is used to communicate with equipment by the communication mode HART in the control room, and then the on-site transmitter inquiry or configuration and variable monitoring can be conducted.

Product parameters

- Supply voltage: 24V·DC and power: 0.5; W
- Load capacity: ≤350Ω;
- Ambient temperature: -40～70℃;
- Flange standard: JB / T82.2-94;
- Explosion-proof standard: GB3836-2000;
- Explosive-proof grade: Exia II CT5; Exd II BT4;
- Output signal: 4～20mA·DC (HART protocol intelligent type);
- Measurement scope and buoy specification.

Measuring range:	300	500	800	1000	1200	1500	2000	2500	3000
Buoy length (L)	300	500	800	1000	1200	1500	2000	2500	3000
Buoy outer diameter (D)	62	48	38	34	31	28	24	22	20

- Accuracy grade: Normal Level P0.5, 1.0 and 1.5 and intelligent Level Z0.2;
- Operating temperature: -40～100℃ (normal temperature type) 100～600℃ (high temperature type);
- Operating pressure: 2.5, 4.0, 6.4, 10.0 and 16.0 MPa;
- Connection type: The flange connection can also be prepared according to user requirements;

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Address: 1219, Jinwan Seaview Center, No. 98, Jinwan Road, Jinwan District, Zhuhai City 400-840-8890 Zhuhai Wansi Laibei Technology Co., Ltd.
Fax: 0756-7783693 Tel: 0756-7783608 E-mail: west lake bay@126.com www.wansilaibei.com

- Nominal diameter of flange: DN40, DN50, N65 (overhead) and DN80 (overhead);
- Nominal pressure of flange: PN4.0, PN6.4, PN10.0 (high pressure) and PN16.0 (high pressure);

Product application

Intelligent type

The liquid level in the container is changing in the process control, so the immersion location of the buoy changes, and under the influence of buoyancy, the buoy is affected by buoyancy and the torque on the fulcrum axis of the lever changes. The torsion occurs to one end of the torsion tube, as a result, the torsion bar is driven to produce a tiny angular displacement and the torque sensor fixed at the other end produces the corresponding torque. The torque sensor outputs a voltage variable proportional to the rotor displacement with 4～20mA standard signal output by the conversion circuit, and the HART protocol is used to communicate with the handheld device or PC at both ends.

Ordinary type

The liquid level in the container is changing in the process control, so the immersion location of the buoy changes, and under the influence of buoyancy, the buoy is affected by buoyancy and the torque on the fulcrum axis of the lever changes. The torsion happens to one end of torque tube, as a result, the torsion bar is driven to produce a tiny angular displacement and the differential transformer fixed at the other end produces synchronous angular displacement. The differential transformer outputs a voltage variable proportional to the rotor displacement and the 4～20mA standard signal can be output by the switching circuit.

Product model selection

LEF	Electric buoy level gauge											
	Classification P Ordinary type Z Intelligent type											
		Gauge head location R Right L Left										
			Installation way 0 External buoy side/bottom flange installation 1 External buoy side/side flange installation 2 External buoy top/bottom flange installation 3 External buoy top/side flange installation 4 Internal buoy top flange installation with stable flow sleeve									
				Measurement mode Y Liquid level position J Interface location								
					Measuring height *** (500 indicates measurement height: 500mm)							
						Medium density ***/*** (2.5 indicates 2.5g / cm, 2 medium densities provided at the interface position						
							Medium temperature G High temperature: 100℃～600℃ L Normal temperature ＜100℃					
								Accuracy grade A 0.2% B 0.5% C 1.0% D 1.5%				
									Operating pressure *** (10 indicates nominal pressure: PN1.0Mpa)			
										Liquid receiving material W carbon steel C 1Cr18Ni9Ti B 316L		
											Explosion-proof type I Ordinary type D Intrinsic safety type E Flame-proof type EX intrinsically safe and flame-proof type	
												Tracing heat function R Heating jacket
LEF-												

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