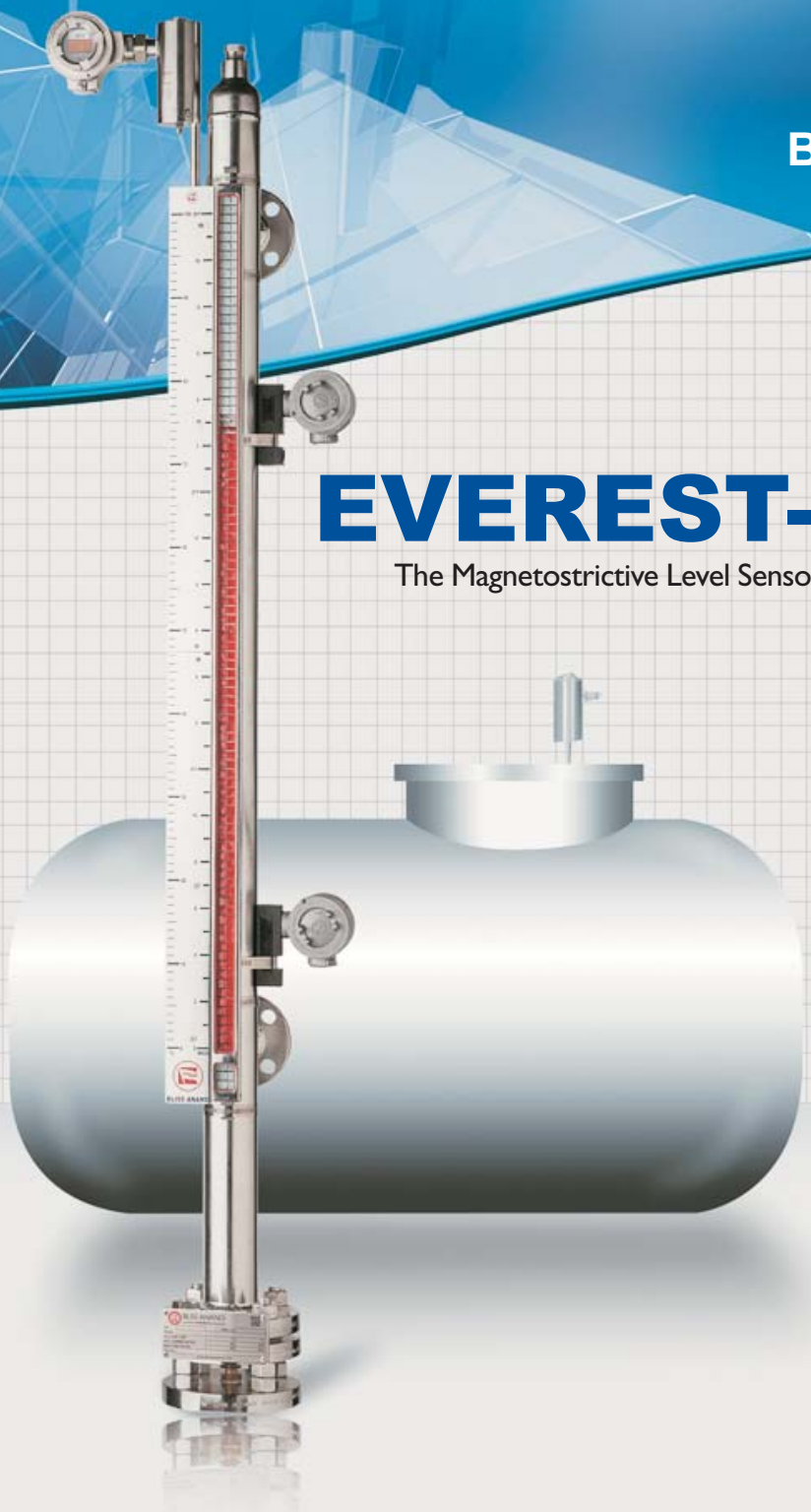
BLISS ANAND

EVEREST-HART

The Magnetostrictive Level Sensor with HART Protocol



Magnetostrictive Level Sensor

Index:

Note: Shown with EVEREST Transmitter on MLG & GWR in the external chamber.

EVEREST

Magnetostrictive Level Sensor

The most versatile level sensor in our range, it is easy to install and reliable throughout its lifetime. Forget complicated installations and time consuming and costly troubleshooting, EVEREST is very easy to use and to troubleshoot. With its high-precision magnetostrictive measuring principle, it archives an accuracy of up to ±0.3 mm, and is among the very best in its class.

Highly Effective Solution

- **A solution for the most difficult installation conditions**
  Due to the small sensor head and a small tube diameter of only 12mm / 0.47in, the EVEREST can be installed almost anywhere.
- **The solution for interface layer measurement**
  Equipped with two floats, the sensors measures both the filling and the interface layer very precisely, even when an emulsion layer is present at the interface.

Broad range of applications

Installed and tested in the following industries

Oil and gas, petrochemical, liquid gas, pharmaceutical, laboratory, o-shore, ship building, power plants, energy systems, mechanical engineering, process and drinking water treatment.

Just get started

Easy to install and easy to use. EVEREST saves your time and even if you have a challenging application, troubleshooting is very easy. The sensor can even be dry tested without liquids before installation.

EVEREST level sensor in brief

Easy to install and to configure

Measurement of the separation layer and the filling level via HART

2-wire terminal (4 to 20 mA)

Optional HART R protocol

Robust long life design

Resistant to shock and vibration (OIML D11)

Measuring range freely configurable along the entire probe length

Use in Ex zone 0 (ATEX and IECEx approval)

EVEREST Advantage

EVEREST on Magnetic Level Gauge

The EVEREST transmitter may be strapped to the side of BAM Mag-gauge series magnetic level indicator.

In such an installation, it is used as an accessory transmitter for the visual level gage. The same float used to activate the magnetic is also used to transmit a signal to the magnetostrictive sensor of the EVEREST.

In the shown installations, the transmitters may be calibrated for the same range as the visual indicator on the Mag-gage.

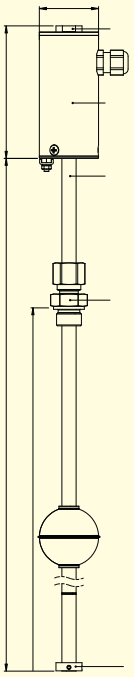
Storage Tanks and Storage Containers

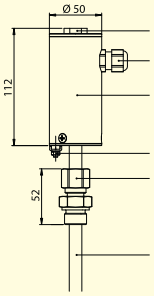
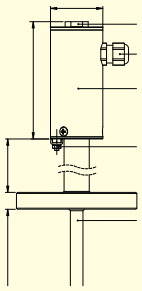
EVEREST is ideally suited for measuring in all non-adhesive liquids and almost all tank geometries. There is no need to adjust the sensor to the liquid or the shape of the tank. Another advantage is that there are no dead zones in the upper and lower areas. The starting point of the measurement is only defined by the size of the float; therefore the entire volume can be measured and used.

Interface layer measurements where emulsions are present

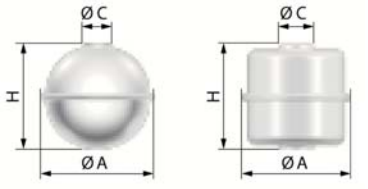
When used with HART* protocol, EVEREST can measure both the interface level and the overall level of a tank. Unlike sensors that operate on the guided microwave principle, the interface layer can be easily recognized even when emulsion is present.

EVEREST Technical Data



Name	EVEREST	EVEREST Flange
Technical Drawing		
Process connection*	Height adjustable with cutting ring coupling: all common threads.	Welded: all common threads and flanges
Probe head Protection class Material Cable terminal Ambient temperature	IP68 Standard: Stainless steel 303: optional: Stainless steel 316 L M16 x 1.5 cable gland for cable diameter 5 to 10 mm; optional: ½" NPT threads for conduit cabling; M12 plug -40°C to 85°C / -40°F to 185°F	
Probe tube Material Diameter Length	 Standard: Stainless steel 316 Ti; optional: Stainless steel 316 L, Hastelloy * , titanium, tantalum, stainless steel 316 Ti coated 12 mm / 0.47 inch 200 mm / 7.87 inch to 6,000 mm / 236.22 inch Highest temperature versions up to 3,000 mm / 118.11 inch	
Accuracy Filling level	± 0.5mm / ±0.019in or ± 0.025 %, optional ± 0.3mm / ±0.012in or ± 0.01 % Resolution (HART*) 0.1mm / 0.004in	
Electrical connection Connection Voltage Signal HART	 2-wire 8 to 30 V DC, Ex version 10 to 30 V DC Power output: 4 to 20 mA / HART* functions Float position in mm, cm, m, inches or feet; positioning of second float; separation layer (dierence between floats); sensor status information	
Process conditions Temperature	 Normal temperature (NT): -40°C to 125°C / -40°F to 257°F High temperature (HT): -40°C to 250°C / -40°F to 482°F Highest temperature (HHT): -40°C to 450°C /-40°F to 842°F Low temperature (LT): -65°C to 125°C / -85°F to 257°F	
Pressure**	0 bar to 120 bar / 1740 PSI (room temperature) 0 bar to 95 bar / 1377 PSI (250°C / 482°F) 0 bar to 82 bar / 1189 PSI (450°C / 842°F)	
Options	Vibration resistant design (to OIML D11) High pressure version up to 200 bar / 2900 PSI ATEX and IECEx approval Material and calibration certificate	

Floats Selection and Process Connections



Floats

(Other floats on request.)

For medium density	Temperature range	Max. operating pressure	Dimensions in mm			Shape	Order number
			A	H	C		
Stainless Steel 316 Ti							
0.95 SG	- 200°C /-392°F to +250°C /+482°F	50 bar / 725 psi	43.0 / 0.14	40.0 / 0.13	15.0 / 0.04	Sphere	909115
0.85 SG	- 200°C /-392°F to +250°C /+482°F	20 bar / 290 psi	43.0 / 0.14	40.0 / 0.13	15.5 / 0.05	Sphere	909130
0.70 SG	- 200°C /-392°F to +250°C /+482°F	40 bar / 580 psi	52.0 / 0.17	52.0 / 0.17	15.5 / 0.05	Sphere	900013
0.60 SG	- 200°C /-392°F to +250°C /+482°F	20 bar / 290 psi	52.0 / 0.17	49.0 / 0.16	15.5 / 0.05	Sphere	909109
0.45 SG	- 40°C /-104°F to +250°C /+482°F	25 bar / 362 psi	83.0 / 0.27	82.0 / 0.26	15.0 / 0.04	Sphere	909229
0.70 SG	- 200°C /-392°F to +250°C /+482°F	16 bar / 232 psi	43.0 / 0.14	43.0 / 0.14	15.5 / 0.05	Cylinder	909119
0.70 SG	- 200°C /-392°F to +250°C /+482°F	5 bar / 72 psi	29.5 / 0.09	40.0 / 0.13	12.5 / 0.04	Cylinder	908495
0.70 SG	- 200°C /-392°F to +250°C /+482°F	1 bar / 14.5 psi	29.5 / 0.09	40.0 / 0.13	12.5 / 0.04	Cylinder	908528
Titanium							
0.50 SG	- 200°C /-392°F to +250°C /+482°F	20 bar / 290 psi	50.0 / 0.16	48.0 / 0.15	15.4 / 0.05	Sphere	909113
0.40 SG	- 40°C /-104°F to +125°C /+257°F	25 bar / 362 psi	83.0 / 0.27	81.0 / 0.26	15.0 / 0.04	Sphere	909140
0.50 SG	- 40°C /-104°F to +125°C /+257°F	25 bar / 362 psi	98.0 / 0.32	96.0 / 0.31	23.0 / 0.07	Sphere	909177
0.69 SG	- 200°C /-392°F to +450°C /+842°F	200 bar / 2900 psi	60.0 / 0.19	59.0 / 0.19	14.5 / 0.04	Sphere	909205
Hastelloy* C 276							
0.70 SG	- 200°C /-392°F to +250°C /+482°F	10 bar / 145 psi	46.0 / 0.15	48.0 / 0.15	15.2 / 0.04	Cylinder	909096
Buna							
0.45 SG	- 40°C / -104°F to + 80°C /+176°F	16 bar / 232 psi	40.0 / 0.13	120.0 / 0.39	15.0 / 0.04	Cylinder	909183

Process Fittings

(Other fittings and flanges on request.)

Fittings, Flanges and Threads			
Description	Material	Thread	Order number
Fittings for EVEREST (Ø 12 mm probe tube)			
Screw-in unit	Brass	R 1½"	909097
Screw-in unit	316 Ti	G ½"	909092
Screw-in unit (Swagelok®)	316	NPT ½"	909117
Screw-in unit (Swagelok®)	316	G ½"	909093
Flange			
2" ANSI, 150 lbs	316 Ti		909245
DN 25, PN 6, DIN 2527, Form B	316 Ti		909238
DN 50, PN 16, DIN 2527, Form C	316 Ti		909243
DN 63, PN 16, DIN 2527, Form C	316 Ti		909247

EVEREST

Order Code

Version									
	EVEREST (order code)								
Material	Stainless Steel 316 Ti	SS							
(probe tube)	Stainless Steel 316 L	SC							
	Hastelloy® C276	C4							
Surface treatment	none		N						
Version	Standard (12mm/0.47in) for variable screw connection			SV					
	Standard (12mm/0.47in) for welded screw connection or flange			SF					
	Bypass (12mm/0.47in probe tube) for magnetic level indicator			SB					
Length / Extra charge for probe or fitting length more than 1,000 mm / 39.37in per 100 mm / 3.93in)									
Temperature range	Normal temperature (-40°C to 125°C / -40°F to 257°F)				NT				
	High temperature (-40°C to 250°C / -40°F to 482°F)				HT				
	Highest temperature (-40°C to 450°C / -40°F to 842°F)				HH				
	Low temperature (-65°C to 125°C / -85°F to 257°F)				LT				
Approvals	CUSA / CSA					CS			
	Ex (ATEX and IECEx)					Ex			
Electrical output	4 to 20 mA / HART®						HA		
Cable terminal	Cable gland (M16 x 1.5)							CC	
	M12 connector							M2	
	½ NPT female thread							NM	
	½ NPT male thread							NF	

Accessories (Please indicate in addition to standard order code)

Description						
TORRIX accessories --						
Spring for extending the measuring range at the probe end	S					
Vibration-resistant version (in accordance with OIML D11)		V				
Increased accuracy ± 0.3 mm / ±0.012in			P			
Standard field display, 24V$_{DC}$ (908047) (Special on Request)						UM-S

Certificates

Description	Order number	
Inspection certificate 3.1 in accordance with EN 10204:2004	904495	
Inspection certificate 3.1 with supplier report in accordance with EN 10204:2004	904496	
EVEREST calibration protocol	904498	

Special designs for process connection

When ordering please specify (nominal diameter DN, nominal pressure PN, ANSI standard, shape etc).

Variants
All common flanges
Other fittings on request
Specify

EVEREST 90

Order Code

Version									
	EVEREST 90 (order code)								
Material (probe)	Stainless Steel 316 Ti	SS							
Surface Treatment	none		N						
Version	Standard : Sensor tube centered Bypass : Sensor tube off-centre			SV SB					
Length	Max 500mm / 19.68in								
Temperature Range	Normal temperature (-40°C to 125°C / -40°F to 257°F)					NT			
Approvals	CVSA/ SA Ex (ATEX and IECEx)						CS Ex		
Electrical output	4 to 20 mA/HART Serial Protocol for LOGI-X							HA SC	
Cable terminal	Cable gland (M16 x 1.5) M 12 connector ½ NPT internal thread (female) ½ NPT extrenal thread (male)								CC M2 NM NF

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#13-081-BA

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