



MARINE TANK LEVEL TRANSMITTERS 'HYDROBAR'

**Designed
For
Marine**



Accuracy <0.2 %
-High stability!

Strong cable diam. 10 mm
-PE or Hytrel

TITANIUM Body
-Perfect for ballast water

Strong TITANIUM flush diaphragm

- High corrosion resistance
- Fully welded construction
- High overpressure protection

For marine tank level measurements i.e Fresh water, Grey water, Fuel oil, HFO, Lube oil etc. we use SS316L sensor material with a **fully welded strong flush diaphragm**. For submersible level measurement in ballast tanks we use **High grade Titanium** for all wetted parts. All common Marine process connections are available.

Six major Marine Type Approvals available!

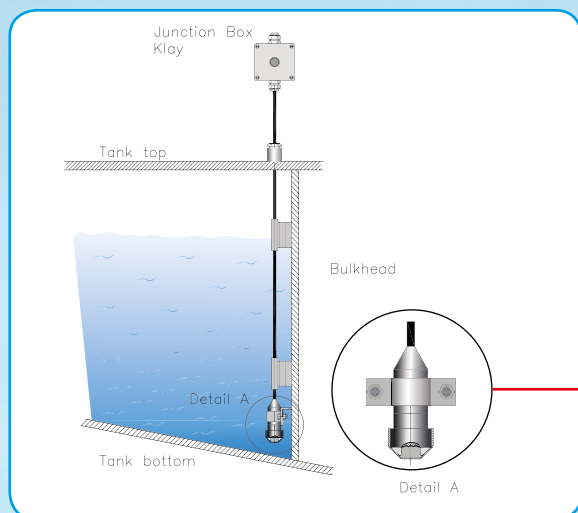


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Application examples Klay Marine Tank level transmitters*



Top mounted Tank Level transmitter (IP68)

Type: Hydrobar-Cable(..m)- FR-range (specify)

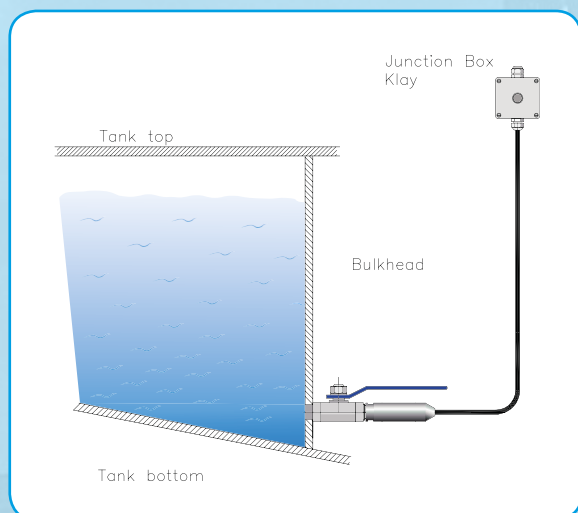
Sensor and diaphragm Material: AISI 316L

For Ballast tanks use Titanium wetted parts (code **G191**)

Cable material: PE Polyethylene or Hytrel/ Arnitel*

*For all oil related tanks use Hytrel / Arnitel cable (code **G10**)

Use the Klay SS316 mounting bracket for sensor mounting (option, see page 4)



Threaded Side mounted Level transmitter

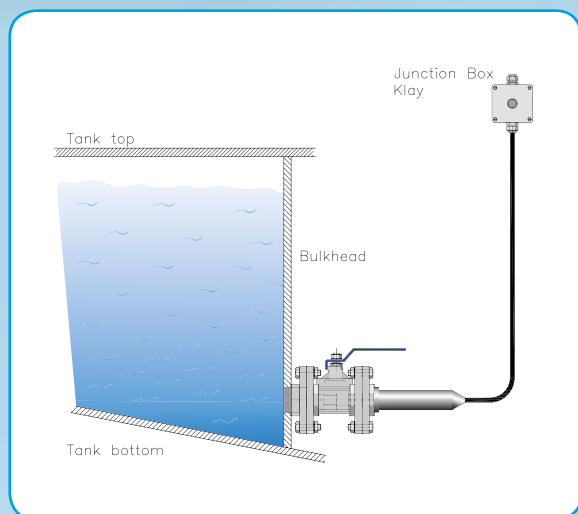
Type: Hydrobar-Cable(..m)- FR-range-G54

Sensor and diaphragm material: AISI 316L

For Ballast tanks use a Gold plated diaphragm (code **G16**)
or Titanium flush diaphragm (code **G75**)

Process connection: Thread G1" (1" BSP) = code **G54**.

Other threads available (i.e. G1 1/2" or 2")



Flanged Side mounted Level transmitter

Type: Hydrobar-Cable(..m)- FR-range-F(size)

Sensor and diaphragm material: AISI 316L

For Ballast tanks use a Gold plated diaphragm (code **G16**)
or Titanium flush diaphragm (code **G75**)

Process connection: Flange All DIN, ANSI and JIS sizes available (specify size in ordercode)



SUBMERSIBLE PRESSURE & LEVEL TRANSMITTERS

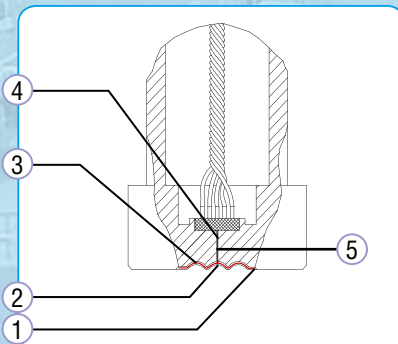


The 'Hydrobar' is a range of submersible (IP68) hydrostatic level transmitters with a **very strong flush diaphragm** from AISI 316L (Option: Gold plated, Hastelloy C or Titanium)

The basic accuracy is 0.2% from adjusted span. The most used version is the FR (Fixed Range) type with a Fixed calibrated range (picture 1). As an option an adjustable type is available with a Stainless Steel electronics housing on top. (Picture 2).

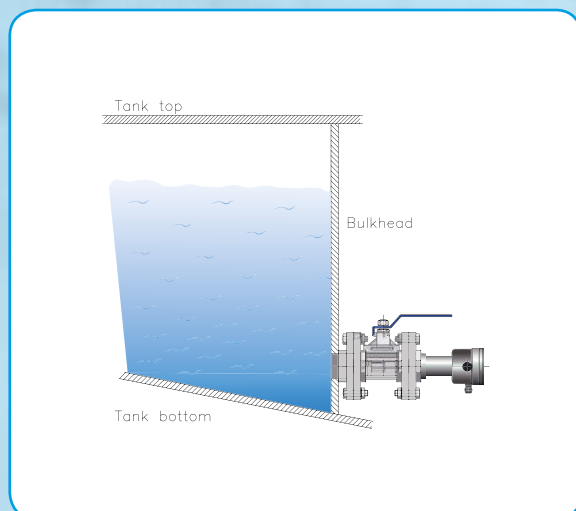
Typical applications are:

- Level measurement in Ballast tanks, HFO tanks, (Grey)water tanks, etc. Pressure measurement on ballast pumps.
- For IP68 pressure measurement on ballast water pumps, the submersible Hydrobar-FR is available with a threaded process connection with a strong flush diaphragm (picture 3). Vacuum / overpressure ranges are also available (i.e. -1 to +10 bar).
- The Hydrobar pressure and level transmitters can also be supplied with a flanged process connection.
- When HART Protocol is required, the 'Intelligent' type Hydrobar 'I' (0.1% accuracy) is available, ask for a detailed brochure. **HART** COMMUNICATION PROTOCOL



Klay Flush Diaphragm Technology.

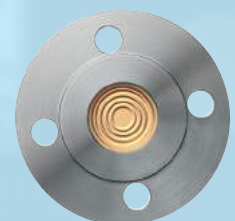
- 1 **Laser welded diaphragm** (helium tested)
- 2 **Strong flush diaphragm** Perfect long term stability
- 3 **Wave structure (back-up) behind diaphragm**
- 4 **Pressure & temperature sensor**
Active temperature compensation
- 5 **Minimum oil filling between sensor and diaphragm**



Compact Flange mounted Level transmitter

The series 8000-SAN is a range of compact and rugged designed 'All Stainless Steel' Pressure and Level transmitters.

Ask for our detailed brochure!



Gold plated diaphragm (option)

Specifications Hydrobar

Accuracy	: 0.2% from adjusted span
Measuring ranges	: 0,1 bar (0 – 1 mH ₂ O) to 40 bar
Output signal	: 4-20 mA / 2-wire
Power supply	: 12 – 36 Vdc (Exi: 13 – 26,5 Vdc)
Adjustment	: Zero & span internally FR (Fixed Range) types not adjustable
Protection grade	: IP 68 (sensor and cable)
Process temperature	: -10°C to +70°C (Option: 100°C)
Wetted parts sensor	: AISI 316L (Option Titanium (for Ballast water)
Diaphragm material	: AISI 316L (Option: Titanium or Hastelloy C)
Cable material	: Polyethylene (PE), option: Hytrel/Arnitel (for oil)



Strong flush diaphragm

Specifications can change without notice

Ordering Information

Ordercode* FIXED Range:		Hydrobar-Cable(..m)-FR-Calibration* (specify)							
Ordercode Adjustable electronics:		Hydrobar-Cable(..m)-							
Adjustable span range (min max.)	Max. overpressure (bar)								
0 - 0,1 to 0 - 0,4 bar	6,4	B							
0 - 0,4 to 0 - 0,7 bar	6,4	C							
0 - 0,7 to 0 - 1,5 bar	10	D							
0 - 1 to 0 - 4 bar	16	E							
0 - 2,5 to 0 - 10 bar	30	F							
0 - 7,5 to 0 - 16 bar	60	G							
PROCESS CONNECTION									
Flange DIN, ANSI or JIS (Specify size) (Example: F(2"/150Lbs)				F(..)					
Threaded connection G1" (1"BSP)				G54					
Threaded connection G1 1/2" (1 1/2"BSP)				X3					
Other process connections, specify X code (Ask for Klay X code list)				X..					
OPTIONS:									
Digital local indicator 3 1/2 digit (Only in combination with Adjustable range)				I					
Intrinsically safe acc. to ATEX and IECEx II1G Ex ia IIC T4 (Ga)					Ex				
Vacuum ranges (Specify Relative or Absolute). Specify Calibrated range (example -1 to + 1 bar)						V			
Hastelloy C flush diaphragm								G7	
Hytrel / Arnitel cable material (For topmounting in All oil related fluids)								G10	
Gold plated diaphragm (Ballast Level / side mounting)								G16	
Process connection 1/2" bsp m (By adapter, No flush diaphragm)								G21	
Titanium flush diaphragm (Ballast Level / side mounting)								G75	
Titanium sensor material (sensor and flush diaphragm) For topmounting in Ballast tanks								G191	

*Always specify calibrated range and cable length

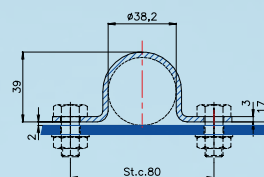
APPROVALS

The following certificates are available:

- Marine Type Approvals, DNV, Lloyds, BV, ABS, CCS, KR
- Intrinsic safe: ATEX and IECEx II1G Ex ia IIC T4
- HART protocol (Ask for Intelligent Hydrobar 'I')



ACCESSORIES



Sensor wall mounting bracket
Material AISI 316L
Art. no. 10744 and 10784



Junction Box FMD (IP67)
Including venting
Art. no. 20171