



Cargo tanks on LNG carriers

Reliable

Reliable and safe measurement in all media

Cost effective

Full utilization of the tank volume

User friendly

Simple planning and commissioning

Pressure, level and point level detection in Liquefied Petroleum Gas (LPG) and Liquefied Natural Gas (LNG) applications

Liquefied gas is transported in insulated cargo tanks on LNG carriers at temperatures of $-196\text{ }^{\circ}\text{C}$. The instrumentation used must be specially designed for these extreme temperatures. Pressure, level and point level of LNG in the cargo tanks must be reliably measured for the transport.



VEGAPULS 63

Radar sensor for non-contact level measurement in LNG tanks

- Front-flush PTFE antenna means no additional sealing material is required
- Reliable measurement even at very low temperatures down to $-200\text{ }^{\circ}\text{C}$
- Exact measurement data despite low relative permittivity of the liquefied gas



VEGABAR 82

Pressure transmitter for monitoring the pressure in the liquid gas tank

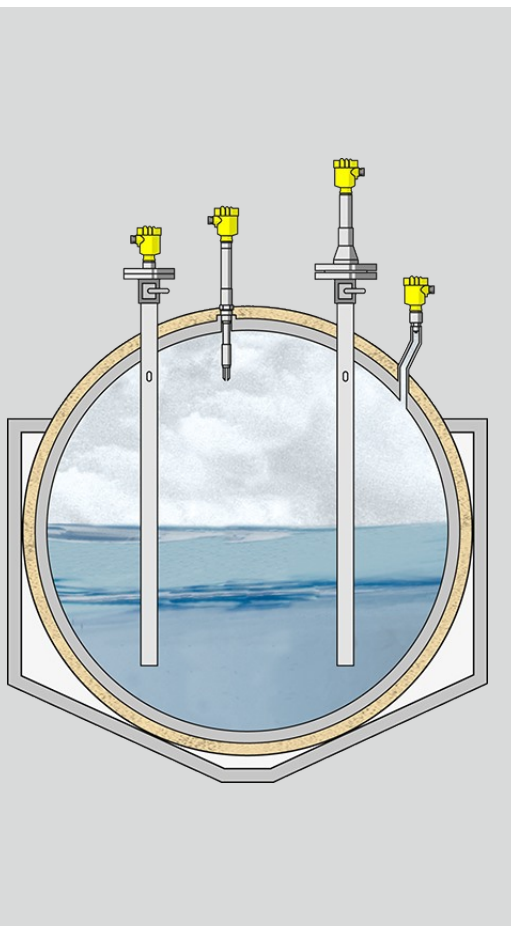
- High plant availability through maximum overload resistance of the ceramic measuring cell
- A special seal material and the dry measuring cell enable measurement at temperatures down to $-50\text{ }^{\circ}\text{C}$



VEGASWING 66

Vibrating level switch for point level detection in liquid gas tank

- Sensor for applications down to a temperature of $-196\text{ }^{\circ}\text{C}$
- Switching point independent of changing media
- Reliable even with adhesive buildup





VEGAPULS 63	VEGABAR 82	VEGASWING 66
Measuring range - Distance 35 m	Measuring range - Distance -	Process temperature -196 ... 450 °C
Process temperature -196 ... 200 °C	Measuring range - Pressure -1 ... 100 bar	Process pressure -1 ... 160 bar
Process pressure -1 ... 16 bar	Process temperature -40 ... 150 °C	Version Compact version with gas-tight leadthrough with tube extension
Accuracy ± 2 mm	Process pressure -1 ... 100 bar	Materials, wetted parts 316L Alloy C22 (2.4602) Inconel 718
Version hygienically encapsulated horn antenna	Accuracy 0.05 %	Threaded connection ≥ G1, ≥ 1 NPT
Materials, wetted parts PFA PTFE 316L TFM-PCTFE TFM-PTFE	Materials, wetted parts PVDF 316L Alloy C22 (2.4602) PP 1.4057 1.4410 Alloy C276 (2.4819) Duplex (1.4462) Titanium Grade 2 (3.7035)	Flange connection ≥ DN50, ≥ 2"
Flange connection ≥ DN50, ≥ 2"	Threaded connection ≥ G½, ≥ ½ NPT	Seal material no media contact
Hygienic fittings Clamp ≥ 2", DN50 - DIN32676, ISO2852 Slotted nut ≥ 2", DN50 - DIN 11851 Varivent ≥ DN25 hygienic fitting with tension flange DN32 hygienic fitting F40 with compression nut Hygienic screw connections ≥ DN50 tube ø53 - DIN11864-1-A Hygienic flange connection ≥ DN50 DIN11864-2 Hygienic clamp connection ≥ DN50 pipe Ø53 - DIN11864-3-A DRD connection ø 65 mm SMS 1145 DN51	Flange connection ≥ DN15, ≥ ½"	Housing material Plastic Aluminium Stainless steel (precision casting) Stainless steel (electropolished)
Housing material Plastic Aluminium Stainless steel (precision casting) Stainless steel (electropolished)	Hygienic fittings Clamp ≥ 1" - DIN32676, ISO2852 Slotted nut ≥ DN25 - DIN 11851 hygienic fitting with tension flange DN32 hygienic fitting F40 with compression nut DRD connection ø 65 mm SMS 1145 DN51 SMS DN38 Swagelok VCR screwing Varivent G125 Varivent N50-40 for NEUMO BioControl D50 PN16 / 316L	Protection rating IP 66/IP 67 IP 66/IP 68 (1 bar) IP 65
Protection rating IP 66/IP 68 (0.2 bar) IP 66/IP 67 IP 66/IP 68 (1 bar)	Seal material EPDM FKM FFKM	Output Relay (DPDT) Transistor (NPN/PNP) Two-wire