



#### Reliable

Detection of leaks, corrosion prevention and safe operation

#### Cost effective

High-resistance materials for uninterrupted operation

#### User friendly

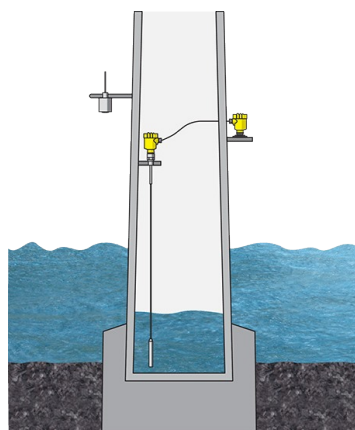
Simple mounting and setup

## Wind turbine in an offshore wind farm

### Measurement of water level

Wind turbines in offshore wind farms operate in an extremely harsh environment. Besides the buffeting of constant waves and often exceedingly strong winds, they have to withstand the corrosive effects of salt water. Due to the way the turbines are constructed and their location, it is inevitable that some seawater will enter the turbine tower. The water level inside the tower must be continuously monitored in order to detect any leaks at an early stage that can cause corrosion. To determine the mechanical loads and the generating capability of a wind power array, the tidal and wave height measurements on the outside are also required.

[More details](#)



### VEGAFLEX 81

Level measurement with guided radar inside the tower of a wind turbine

- Easy setup and commissioning thanks to factory calibration
- User-friendly operation through separate electronics
- Corrosion-resistant materials guarantee a long service life

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### VEGAPULS C 23

Non-contact level measurement with radar for determining tidal and wave heights

- Maintenance-free operation ensured through non-contact measuring method
- Fast measurement data logging guarantees high reliability
- Small sensor size and weight allow simple, one-man installation

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PRO

**VEGAFLEX 81**  
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**Measuring range - Distance**  
 75 m

**Process temperature**  
 -60 ... 200 °C

**Process pressure**  
 -1 ... 40 bar

**Accuracy**  
 ± 2 mm

**Version**  
 Basic version for exchangeable cable ø 2; ø 4 mm  
 Basic version for exchangeable rod ø 8 mm  
 Basic version for exchangeable rod ø 12 mm  
 Coax version ø 21.3 mm for ammonia application  
 Coax version ø 21.3 mm with single hole  
 Coax version ø 21.3 mm with multiple hole  
 Coax version ø 42.2 mm with multiple hole  
 Exchangeable rod ø 8 mm  
 Exchangeable rod ø 12 mm  
 Exchangeable cable ø 2 mm with gravity weight  
 Exchangeable cable ø 4 mm with gravity weight  
 Exchangeable cable ø 2 mm with centering weight  
 Exchangeable cable ø 4 mm with centering weight  
 Exchangeable cable ø 4 mm without weight  
 exchangeable, PFA-coated cable ø4 mm with non-coated centering weight

**Materials, wetted parts**  
 PFA  
 316L  
 Alloy C22 (2.4602)  
 Alloy 400 (2.4360)  
 Alloy C276 (2.4819)  
 Duplex (1.4462)  
 304L

**Threaded connection**  
 ≥ G¾, ≥ ¾ NPT

**Flange connection**  
 ≥ DN25, ≥ 1"

**Seal material**  
 EPDM  
 FKM  
 FFKM  
 Silicone FEP coated  
 Borosilicate glass

**Housing material**  
 Plastic  
 Aluminium  
 Stainless steel (precision casting)  
 Stainless steel (electropolished)

BASIC

**VEGAPULS C 23**  
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**Measuring range - Distance**  
 30 m

**Process temperature**  
 -40 ... 80 °C

**Process pressure**  
 -1 ... 3 bar

**Accuracy**  
 ± 2 mm

**Frequency**  
 80 GHz

**Beam angle**  
 4°

**Materials, wetted parts**  
 PVDF

**Threaded connection**  
 G1, 1 NPT, R1

**Protection rating**  
 IP66/IP68 (3 bar), Type 6P

**Output**  
 4 ... 20 mA/HART  
 Modbus  
 SDI-12