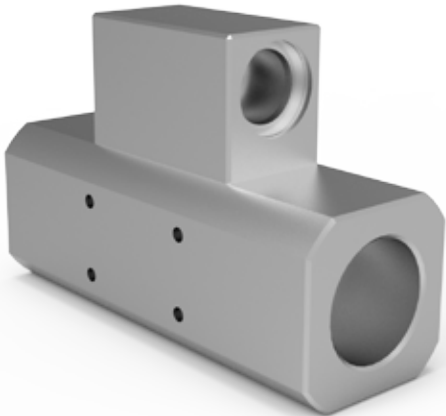


# Subsea Flow Measurement

Whether for subsea drilling operations, blowout prevention, ROV maintenance, valve actuation or subsea chemical injection AW-Lake's subsea flow meters are up to the task. Your offshore mission-critical processes require the most reliable, highest accuracy instruments – those that were designed for the harsh subsea environment. AW-Lake's 20+ years of proven performance in offshore flow measurement gives us the confidence to tackle your toughest subsea applications.

## Subsea Turbine Flow Meter

Our Subsea Turbine Flow Meters are built from standard components that can be customized to match your specific requirements. Details such as construction materials, output signal, connection type, and physical footprint & weight are all adjustable to meet your needs.



### Who We Are?

AW-Lake Company, a TASI Group company, is a leading North American design, manufacturing and service company of flow measurement technology for the fluid control needs of various industries, including oil & gas, chemical processing, paints & coatings, hydraulics & pneumatics, food processing, and fluid power. Together with its European sister companies, KEM-Kueppers, Vogtlin Instruments, and LitreMeter, AW-Lake services and distributes a broad portfolio of flow measurement instrumentation throughout North America, South America, Europe, and Asia.

### Technical Specifications ▼

**Operating Depth:** 20,000 feet (6 km)

**Working Pressure:** Internal up to 15,000 psi (1,035 bar) with 1.4404/ AISI 316L, external 7,800 psi (600 bar)

**Flow Ranges:** .08 to 32 GPM

**Water Temperature:** as low as -40°F (-40°C)

**Turndown:** 100:1 with linearization

**Accuracy:** ±0.5% or better of actual value, repeatability: ±0.1%

**Custom Calibrations:** 0.6 to 100 cPs

**Communications:** Analog (4-20mA), Frequency, Scaled Frequency, and CAN bus. More on request.

### Construction Materials ▼

Below are the standard materials; consult factory for additional "exotic" material offerings.

- **Body:** 316 SS (standard)
- **Rotor:** 329 SS Duplex (standard)
- **Bearings & Shaft:** Tungsten Carbide (standard)

### Design Benefits

**Encapsulated electronics** for shock/vibration resistance and protection from moisture and corrosive agents.

**Machined turbine wheel and flow straightener** for greater strength and product integrity (no soldering or welding).

**Robust tungsten carbide bearing and shaft**, high pressure shock or peak resistance and easy maintenance.

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## Subsea PD Flow Meter

Our Subsea PD Flow Meters are available in a wide variety of flow ranges and electrical outputs, as well as a variety of exotic materials for highest corrosion resistance and material compatibility. Depending on your needs, we offer both spur gear and rotary piston designs. Electronics are bolted on and sealed to withstand external pressures and temperatures.



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### Technical Specifications ▼

**Operating Depth:** up to 10,000 feet (3 km)

**Working Pressure:** Internal up to 15,000 psi (1,035 bar), external up to 8700 psi (600 bar)

**Flow Ranges:** from .001 GPM to 7 GPM @30 cP

**Water Temperature:** as low as -40°F (-40°C)

**Turndown:** 400:1 with linearization

**Communications:** Analog (4-20mA), Pulse and CAN bus

**Connections:** NPT, Autoclave, ANSI flanges, Grayloc Hubs, Galperti Hubs, Techlok Hubs. More on request.

**Accuracy:**  $\pm 0.5\%$  of measured value. *A calibration certificate is provided based on a representative viscosity fluid for the application.*

**Repeatability:**  $\pm 0.1\%$

### Construction Materials ▼

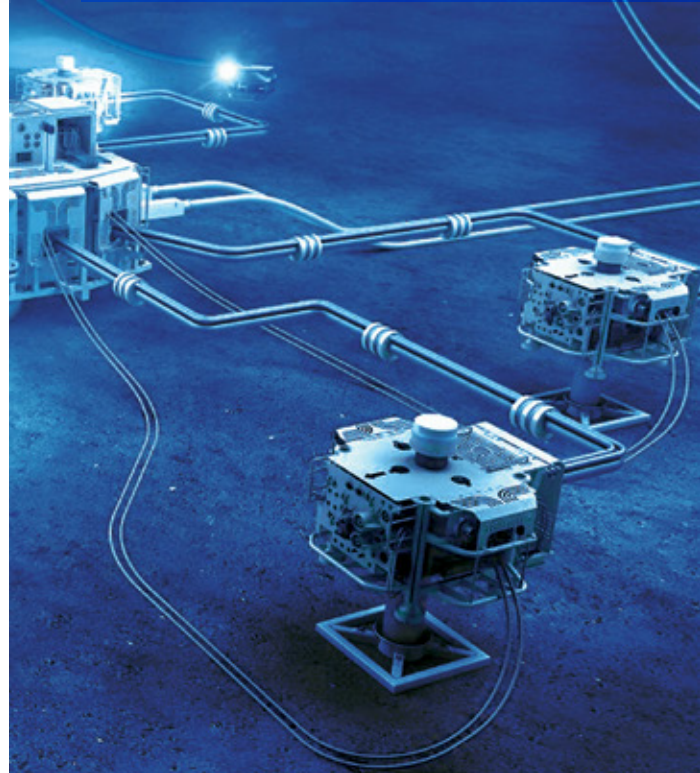
Below are some of the possible materials; consult factory for a complete list of material offerings.

- **Body:** 316L stainless steel, titanium, duplex, super duplex or 17-4PH steel
- **Rotor:** Anti-Galling SS Nitronic 60 (w/ ultra-low PVD coating), Titanium (Ti), super duplex or carbon graphite
- **Seal:** FPM O-rings. Also available in FFKM, FEP-covered silicon, PTFE, Inconel or MSE polymer
- **Bearings & Shaft:** Tungsten Carbide (gear meter only)



## Test Procedures

- Vibration Test
- Dye Penetration Test
- Hyperbaric Pressure Test
- Hydrostatic Pressure Test
- Material Test Certificate
- Positive Material Identification



**MJ Systems, LLC**  
Authorized AW-Lake Representatives  
TX - Off (281) 842-7600  
LA - Off (504) 264-7744  
www.mjsusa.com • sales@mjsusa.com

