Faure Herman

Counting every drop

Heliflu™-TZN

Helical turbine meters

www.faureherman.com

We invented the helical turbine meter

Advanced rotor for superior performance and reliability

With our helical rotor, fluid velocity remains parallel to the blades, making it less sensitive to variations in viscosity and density. The helical rotor shape, rounded front edge and light weight materials improve stability and linearity even in high viscosity fluids — while reducing bearing wear. Every Heliflu™ rotor we manufacture is optimized in our world-class calibration FH Lab to fit your specific application requirements.

Removable cartridge technology for easy maintenance

- Interchangeable precalibrated spare cartridges
- Easy cartridge replacement (generally less than an hour)
- Only cartridge return is required for calibration
- Easily maintain meters with minimal spare parts
- Limited downtime & interruption of service
- Lower Total Cost of Ownership (TCO)

Easy to install

The TZN features a plug and play design. The TZN is more compact than other metering technologies. It may also be installed either horizontally or vertically (upward flow).

A flow conditioner is recommended upstream of the meter.

While the TZN accepts bi-directional flow, only the upstream flow can be used for custody transfer operation. It features a simple pulse output that works with any flow computer. The Heliflu™ TZN is available in either of two hazardous area electrical protection modes:
Explosion Proof or Intrinsically Safe.

Product applications

- Custody transfer measurement
- Pipeline measurement
- Marine terminal
- Tanker loading/offloading
- LACT
- Master metering
- Storage management
- FSO & FPSO metering
- Leak detection
- Oil production allocation

Key benefits

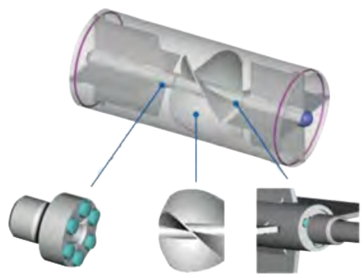
- Custom calibrated to your specified viscosities
- Suitable for high viscosities (greater than 350 cSt)
- Minimal sensitivity to density and viscosity variations
- Superior linearity & repeatability over wide flow ranges
- Addresses production life cycle changes:
  — Downsizing "DS" & Flexible Flowrates "FF"
- Low pressure drop and lower energy consumption
- Low downtime — customer serviceable
- Easy to prove — ideal solution for Master Meters
- Superior pulse stability reduces required prover volume
- Proven robust technology / Long term reliability
- Complies with global certifications and standards
- Faure Herman's 90+ years of metering experience

Lower your total cost of ownership

WITH HELICAL TURBINE TECHNOLOGY

Our innovative measurement solutions provide you the greatest flexibility to address flow rate changes, both within and between pipeline diameters through our flexible flowrate cartridge design.

The Heliflu™ TZN flowmeter is designed for high accuracy liquid measurement from very light LPG products to heavy crude oils. Our advanced design and robust construction of the HelifluTM TZN makes it the perfect choice for use in the world's most demanding applications, environments and industries.



Patented design for severe conditions

Our Patented Heliflu™ TZN CUS handles difficult measurement applications.
Meters are often negatively affected by certain industry contaminants. This can reduce performance and significantly increase operating costs. Faure Herman's patented Heliflu™ TZN CUS rotor and bearing design minimizes the measurement impact of DRA, wax, fibers, chalk, sand and other impurities

Your largest single operating cost is energy

- **Problem: higher pressure drop = higher energy costs**

The energy required to move fluids in any system is directly proportional to the pressure drop across the system. As pressure drop increases, you need more energy to power the flow.

- **Solution: low pressure drop = lower power use**

Our Heliflu™ family of helical turbine meters has significantly lower pressure drop compared to Positive Displacement (PD), Coriolis or conventional turbine meters.

- **Savings: 3x more energy efficient than Coriolis meters**

Using exact operational parameters, annual power operating costs are ~3x higher for a Coriolis meter ($183,168) than a Heliflu™ TZN ($69,120), thanks to lower pressure drop. (see below).

- **Return on investment: increasing ROI & lower TCO**

Your payback on a 10" Heliflu™ TZN is approximately 5 months with annual energy savings of $114,048 — your savings multiply with each additional meter run and compound yearly.

We custom tune & prove every meter at our world-class calibration FH Lab facility

We adjust and optimize each rotor to improve linearity across the widest range of flow rates & fluid viscosities.
We also calibrate with actual hydrocarbons — not water. This distinct step helps ensure every meter performs as expected in the field

Heliflu™-TZN
Helical turbine meters

WITH HELICAL TURBINE TECHNOLOGY

The Original Helical Turbine Flowmeter

Leverage our decades of expertise, innovation and commitment to customer service **to help you lower your total cost of ownership**.

Materials of construction	
Body and Flanges	Carbon Steel or Stainless Steel Options: Low Temp Carbon Steel or Duplex (Other upon request)
Internals Cartridge Rotor Bearings	 316L Stainless Steel , Titanium (optional) Titanium or Aluminium Tungsten Carbide or Graphite
Electrical Enclosure Options	316 Stainless Steel or Aluminium Compliance to NORSOK, NACE

Meter temperature range		
	ATEX/IECEx	**UL/cUL**
Ambient temperature	-50°C to +80°C (-58°F to +176°F)	-50°C to +80°C (-58°F to +176°F)
Process temperature	-50°C to +180°C | (-58°F to +356°F)	-50°C to +150°C (-58°F to +302°F)
Ingress protection	IP66	NEMA 4X
Storage temperature	-50°C to +60°C (-58°F to +140°F)	-50°C to +60°C (-58°F to +140°F)

Meter Specification	
Meter Size Flange Rating	1/2'' to 20'' ANSI 150 to ANSI 2500 (ASME B16.5)
Electrical enclosure - Sensor type - Preamplifier	1 or 2 (3 available on request) Inductive pick-up coil 2 wires | 2 wires NAMUR | 3 wires Open Collector
Optional	Local totalizer available (upon request)

Performance	
Linearity	±0.15% Custody Transfer Applications ±0.10% Premium applications or Master Metering
Repeatability	<0.04% Custody Transfer Applications <0.02% Premium applications or Master Metering
Max flow rate	0.12 to 9,300 m³/h | 0.75 to 58,500 bbl/h
Viscosity range	0.2 to 350 cSt (higher upon request)

Meter approvals	
Electrical	ATEX and IECEx (II2G – IIC T6) | UL/cUL (Class 1 Div 1 Group C, D)
Pressure	PED Directive 2014/68/EU compliant
Electromagnetic environment	EMC Directive 2014/30/EU compliant
Metrology	OIML R117-1 | MID (Class 0.3) Other national approvals (upon request)

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