



Heliflu[®]-TZN

HELICAL TURBINE METERS



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 Heliflu™ TZN makes it the perfect choice for use in the world's most demanding applications, environments and industries.

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

OUR HISTORY, VALUES & ENDURING COMMITMENT

Leading Metrology since 1925

Jean Faure Herman was an automobile importer who had a curious & inventive mind. He noticed one of the major challenges facing the nascent airplane industry was trying to reliably measure fuel consumption. So, in 1925, he invented the oscillating piston flow meter and solved that mechanical issue. The adoption of his meter by the airline industry was the inspiration that launched the creation of the Faure Herman company in Boulogne Billancourt, France.

From that first metering solution that enabled the world's earliest flying machines – and aviators – to safely and reliably reach much greater flying distances, we continue Jean Faure Herman's legacy of innovative thinking and precision engineering with an ongoing commitment to inventive and efficient solutions.

The results can be found in the design, manufacture, assembly & calibration of our portfolio of products.

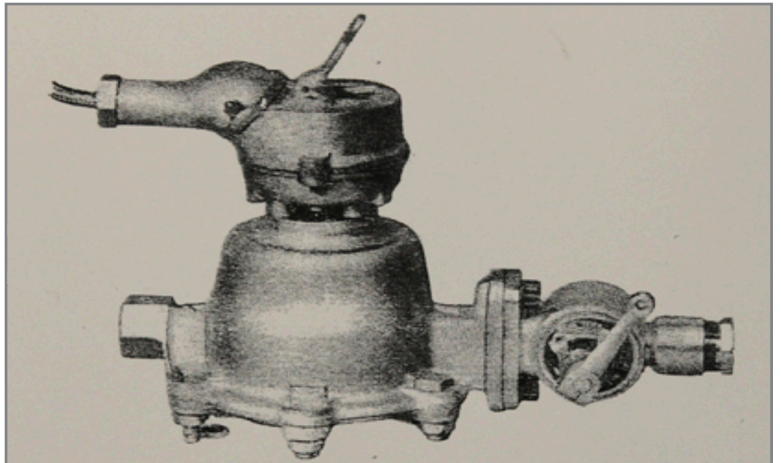
We also recently established a world-class calibration facility with a unique combination of fluids and proving capabilities that help today's clients achieve the highest quality of measurement performance available.

Customer service has been our commitment for almost a century.

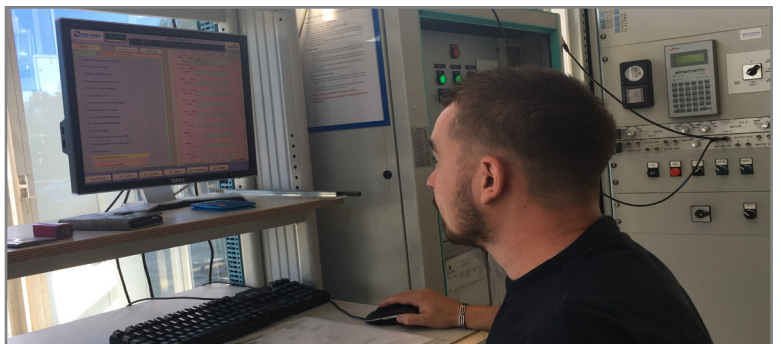
We value your business and work hard to keep it. Our size, agility and expertise allow us to be highly responsive in today's challenging environment. We are ready, willing and able to respond quickly – and efficiently – to your unique manufacturing, calibration and service needs.



Faure Herman's original factory



Initial prototype of oscillating piston meter



Inside our current state-of-the-art calibration laboratory

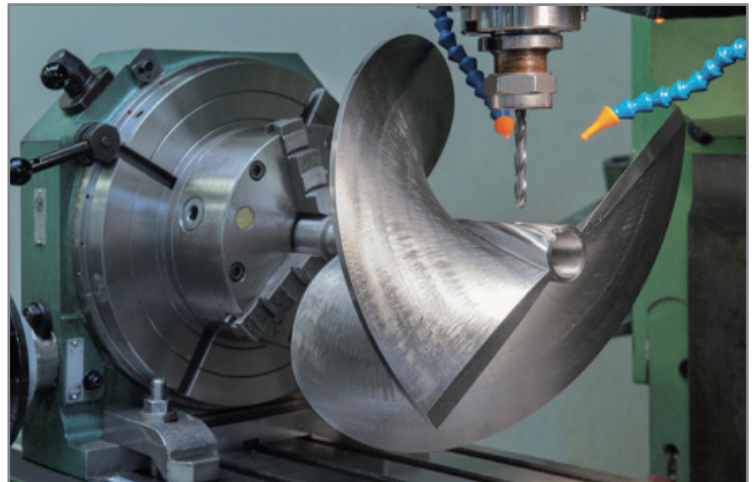
WE INVENTED THE HELICAL TURBINE METER

ADVANCED ROTOR FOR SUPERIOR PERFORMANCE AND RELIABILITY

With our helical rotor, fluid velocity remains parallel to the blade, 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 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)



Each rotor is manufactured from one solid block (no welded parts) of primarily titanium or aluminum. Detailed engineering analysis proves monoblock construction increases reliability and performance.

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 is quantified. 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.

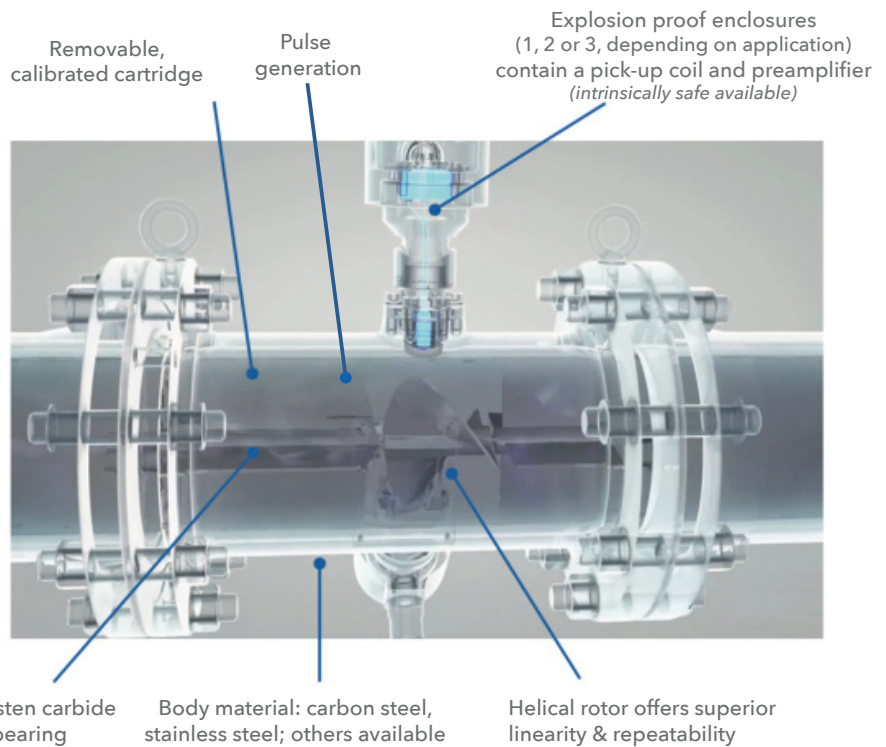


Please consult Faure Herman and the installation manual for full installation instructions.

WE IMPROVE PERFORMANCE – CONTINUOUSLY

Every Heliflu™ measures your product accurately. Fluid flowing through a helical turbine meter turns the rotor at a speed directly proportional to the flow. Each revolution corresponds to a precise and constant volume. Magnets mounted in the rotor induce electrical pulses in an adjacent pick-up coil. These resulting pulses are directly proportional to the rate of flow.

See it in action at: <http://www.faureherman.com/video>

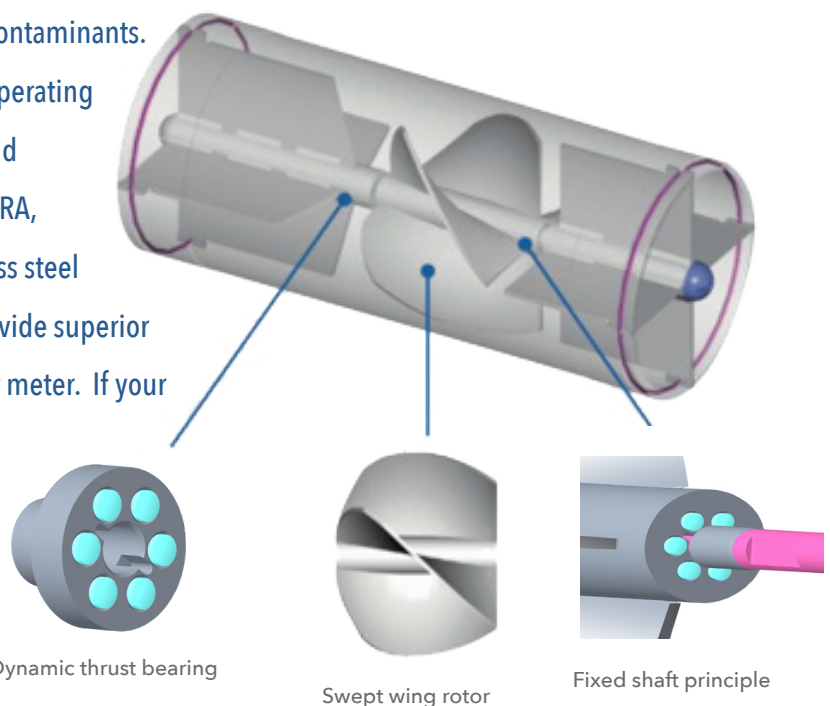


PATENTED DESIGN FOR SEVERE CONDITIONS

PATENT NUMBER:
6164905

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. The stainless steel sleeve, titanium rotor and tungsten carbide bearings provide superior resistance to corrosion and extend the service life of your meter. If your conditions change, the cartridges are interchangeable; a STD meter can be converted to a CUS with ease. Yet another example of how our innovative thinking helps lower your total cost of ownership (TCO).



WE LOWER YOUR TOTAL COST OF OWNERSHIP

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

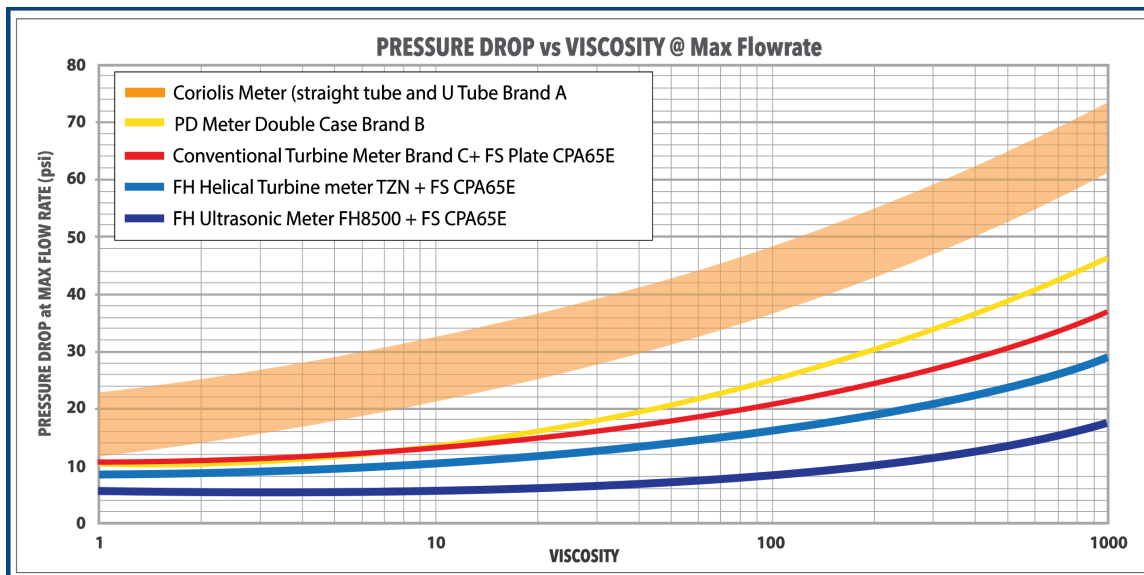
Our Heliflu™ family of helical turbine meters has significantly lower pressure drop compared to Positive Displacement (PD), Coriolis or conventional turbine meters.

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.*



ANNUAL POWER COST

Coriolis:	\$183,168
TZN ¹ :	\$69,120
Difference :	\$114,048

OPERATING PARAMETERS

Cost Assumptions

- Flow rate: 14,500 bph
- Pump Efficiency: 70%
- Motor Efficiency: 95%
- Energy cost: 0.1 \$/kWh
- Viscosity: 10 cSt
- Specific gravity: 0.82
- Pressure Drop:

Coriolis:	32 psi
TZN ¹ :	12 psi

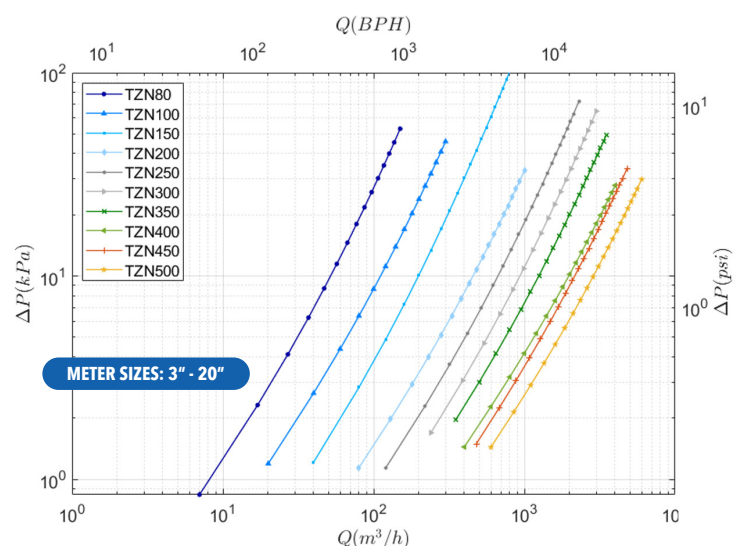
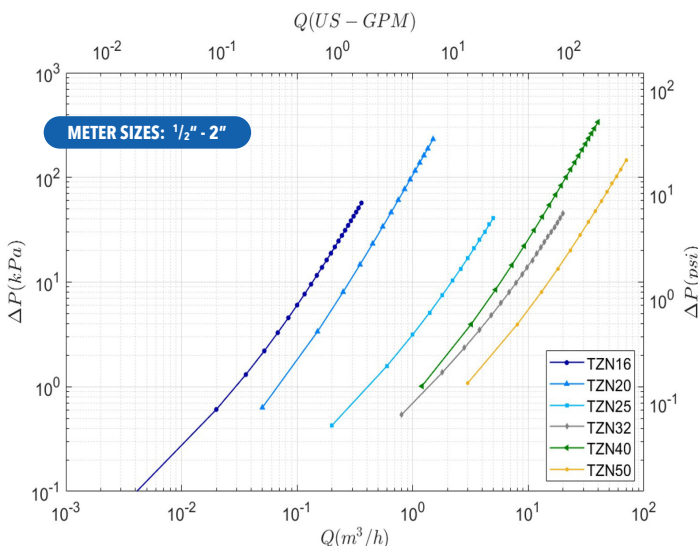
¹ including strainer

CALCULATE THE SPECIFIC PRESSURE DROP FOR YOUR TZN METER:

- Find the theoretical pressure drop for your meter size and flowrate from charts below.
- Use your operating specific gravity and viscosity to calculate operational pressure drop using the formula

$$\Delta P = \Delta P_{\text{theory}} \times \frac{SG}{2} \times \frac{v^{0.2}}{0.65}$$

Where: ΔP = Meter Pressure drop (psi) | ΔP_{theory} = pressure drop from chart | SG = operating specific gravity | v = operating kinematic viscosity (cst)



PREMIER FLOW RATE & VISCOSITY COMBINATIONS

Custom calibration is a critical differentiator at Faure Herman



“If a meter is proved and operated on liquids with inherently identical properties and operating conditions (e.g., viscosity & flow rate), the highest level of accuracy can be anticipated.”

— API MPMS Section 5.3.7.2

We continuously invest in our world class calibration facility, ensuring one of the largest flow rate and fluid viscosity calibration selections on the globe.

WE CUSTOM TUNE & PROVE EVERY METER AT OUR WORLD-CLASS CALIBRATION FACILITY

While we start each meter with a precise machining process on state of the art CNC equipment that delivers the highest compositional integrity and accuracy possible, we complete every meter by customizing its individual performance to your exact intended real-world specifications.

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. With the addition of our thermally controlled fluid system, we now more precisely regulate liquid temperatures during calibrations, resulting in a more stable thermal profile and improved repeatability.

Additionally, our calibration facility is designed so we can respond quickly to customer needs. Unlike other calibration facilities, we can change fluids and line sizes rapidly to provide calibration services on an ‘as needed’ basis. That means you can get immediate service as compared to having to wait for a slot in a fixed production schedule. This results in fast response, quicker equipment deliveries and improved project scheduling timelines.

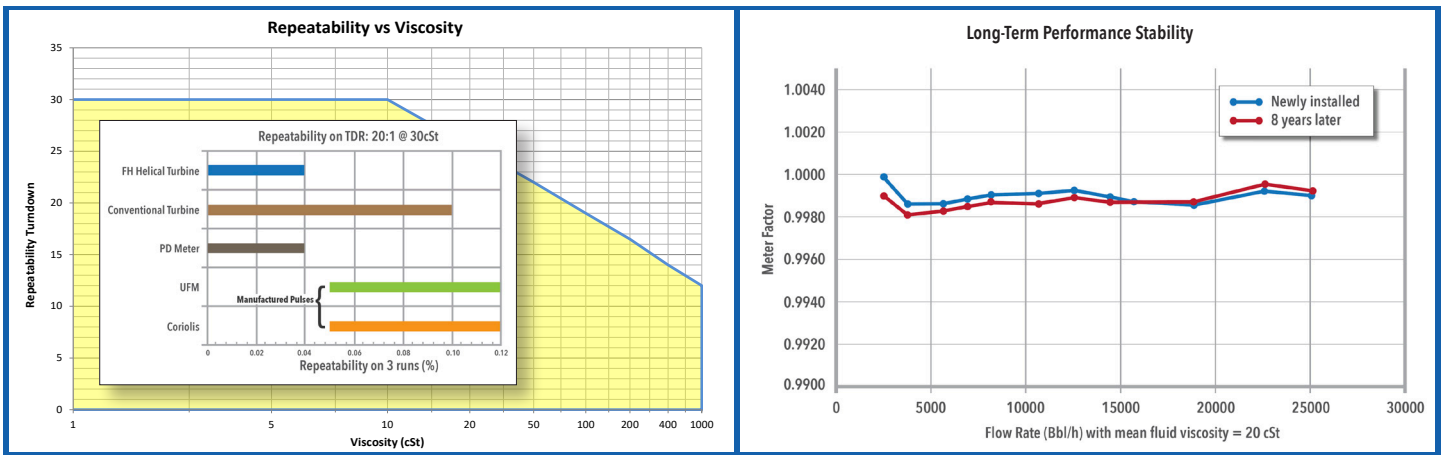
- Flow Rates:** 0.012 – 4,450 m³/hr
0.075 - 28,000 Bbl/hr
- Viscosity:** Gasoline to heavy crudes
0.5 - 1,000 cSt
- Flex Scheduling:** rapid response to meter size & viscosity requests
- Calibration:** bench uncertainties meet most stringent requirements
- Traceability:** fully established to international standards
- Results:** globally-recognized calibrations adhere to ISO 17025 & ILAC MRA
- Proving:** multiple test benches to prove the range of meter line sizes

IF YOU MEASURE IT - CALIBRATIONS MATTER

Superb Repeatability Provides Long Term Performance Stability

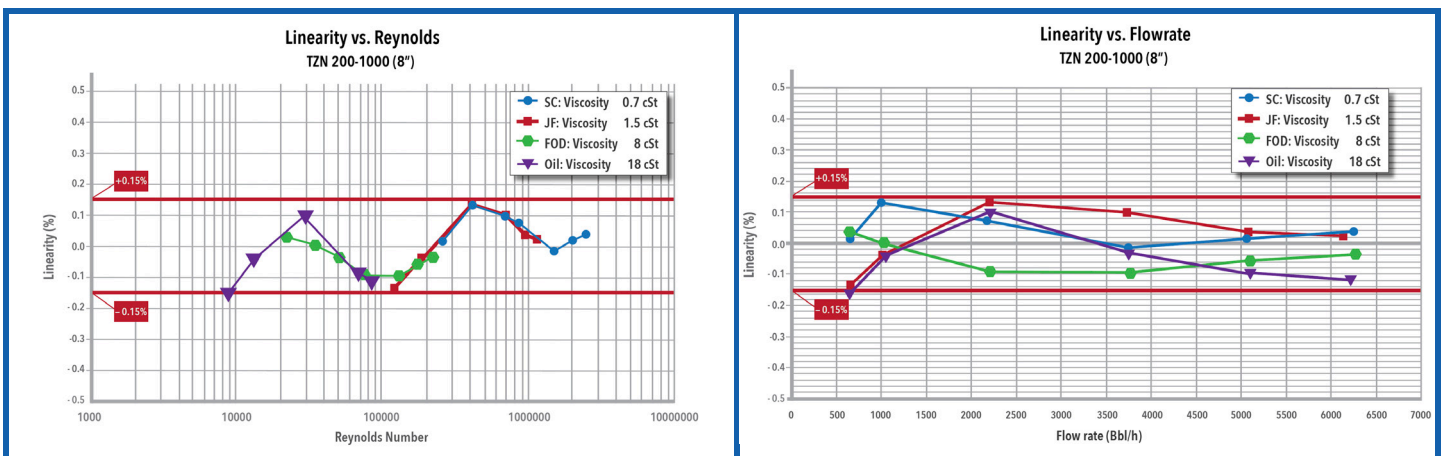
The simplicity and robustness of the Heliflu™, combined with our unique custom calibrations, ensures performance stability over many years. Continuous, repeatable operation and minimal maintenance requirements extend your operational budget and lower your total cost of ownership.

REPEATABILITY: A CRITICAL ELEMENT IN UNCERTAINTY CALCULATIONS



API MPMS & OIML R117-1 recognize repeatable measurement as a critical element of the meter uncertainty calculation. Heliflu™ TZN meters can have 30:1 repeatability turndown ratio at better than 0.04% across a wide range of viscosities. Additionally, the superior pulse stability allows the TZN to easily generate an uncertainty of less than $\pm 0.027\%$ as required by API MPMS 4.5, making the TZN an excellent choice for Master Meter applications.

LINEARITY: EXCEPTIONAL WHETHER CALIBRATED ON SINGLE OR MULTIPLE PRODUCTS



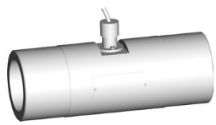
When calibrating your meter over multiple products you can choose either a single calibration curve and K-factor for each product or a linearized K-factor that will maintain custody transfer uncertainty requirements for up to 4 products. This linearization is accomplished by using viscosity indexing on a Reynolds number graph. Viscosity indexing uses a 7 degree polynomial function to linearize individual calibration curves into a single overlapping curve. This generates a single K-factor for multiple viscosity products across the entire flow ranges of the meter.

WE OFFER FLEXIBLE CONFIGURATIONS

Choose From Our Wide Range Of Product Options

Metering Versatility. We work closely with each client to help them choose the best meter configuration for their application. The range of sizes, materials, electrical configurations, ANSI ratings available, etc. are critical to providing flexibility to support our clients' measurement needs.

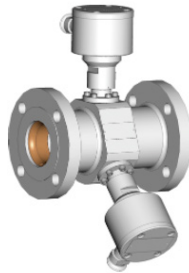
- Heliflu™ meters range in diameters from 1/2" to 20", measuring flow rates from 0.75 Bbl/hr to 58,495 Bbl/hr
- We have multiple materials available for our meter bodies, bearings, and rotors, depending on application
- Our meters are manufactured in ANSI ratings of 150 - 2500
- Each meter may be equipped with 1, 2 or 3 electronic signal outputs
- Totalizers may be mounted on one of the outputs, providing a local meter readout for comparison with readings at the flow computer



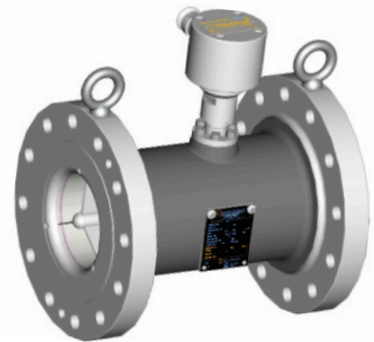
THREADED: ≤ 2"



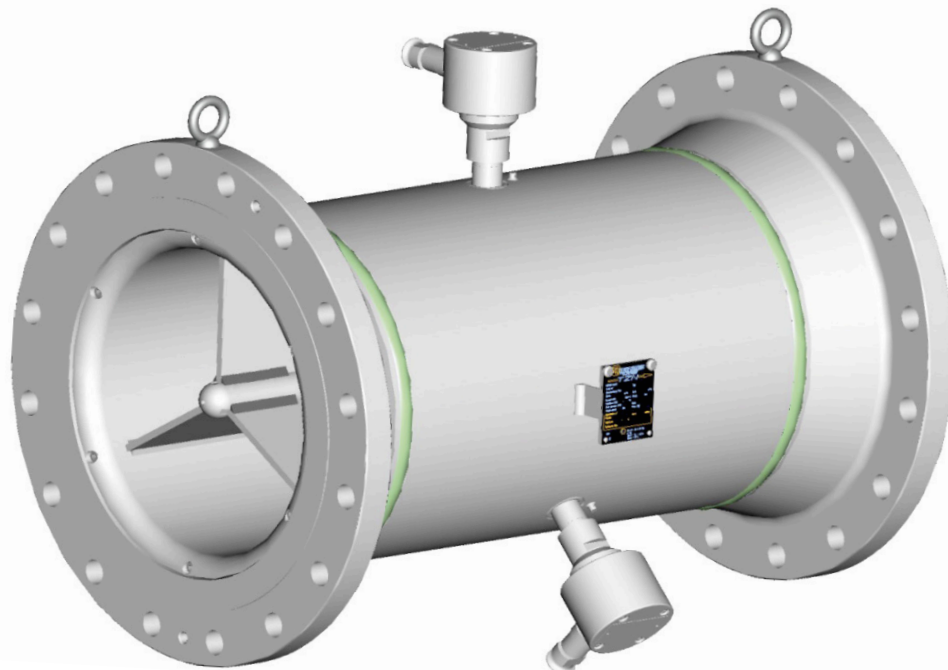
WAFER STYLE: ≤ 2"



1/2" - 3"



4" - 14"



16" - 20"

Downsizing – For Optimal Accuracy

Our Tradition of Inventive Engineering Solutions Continues

Lifecycle Flow Variance. Over a production field's lifecycle it is common to see flowrate reduction, sometimes as much as 80-90%. Such severe reductions in flow pose serious challenges to measurement. Depending on degree of flow reduction, meters and sometimes piping must be replaced to remediate the situation. This remedy is expensive in both capital and operational perspectives, as well as requiring major outages and complex planning to accomplish.

COST EFFECTIVE SOLUTIONS EASILY SOLVE COMMON FIELD ISSUES

Flexible Flow – We offer multiple flow rate cartridges that can be easily substituted for greater flow range flexibility within an existing line size (up to 50% as seen in Tables 2 & 3).

Downsizing – We have designed special meter bodies to address an even greater degree of flow reduction (up to 75%) as seen in Table 1 below.

These options are implemented without requiring any piping changes, and each offers you a cost effective solution with precision accuracy – helping you lower your total cost of ownership

TABLE 1 **DOWNSIZED METER OPTIONS** – Let Us Know If You Have Additional Requirements

DN mm	NPS "	CUS OR STD MODELS		Range						Length ⁽²⁾		Mass ⁽³⁾		Filtration ⁽⁴⁾	
				(m ³ /h) ⁽¹⁾		(GPM) ⁽¹⁾		(BPH) ⁽¹⁾							
				min	max	min	max	min	max	mm	"	kg	Lbs	mm	Mesh
32**	1 1/4	32-2*	1 1/4 - 880*	0.2	2	0.88	8.8	1.26	12.60	140	5 33/64	6	13.5	0.425	40
		32-3*	1 1/4 - 1320*	0.3	3	1.32	13.2	1.90	19.00						
		32-5*	1 1/4 - 2200*	0.5	5	2.20	22	3.15	31.50						
		32-10*	1 1/4 - 4400*	1.0	10	4.4	44	6.30	63.0						
40**	1 1/2	40-8*	1 1/2 - 3500*	0.8	8	3.5	35	5.03	50.3	156	6 9/64	7	15.5	0.5	35
		40-12*	1 1/2 - 5300*	1.2	12	5.3	53	7.55	75.5						
		40-15*	1 1/2 - 6600*	1.5	15	6.6	66	9.45	94.5						
		40-20*	1 1/2 - 8800*	2	20	8.8	88	12.6	126						
50**	2	50-40*	2 - 17600*	4	40	17.6	176	25.2	252	180	7 3/32	12	26.5	0.5	35
		50-45*	2 - 19800*	4.5	45	19.8	198	28.3	283						
80**	3	80 - 30*	3 - 190*	3	30	13	132	19	189	235	9 1/4	21	46	0.85	20
		80 - 50*	3 - 315*	5	50	22	220	31	314						
100	4	100 - 70*	4 - 440*	7	70	31	308	44	440	305	12	25	55	1.4	14
		100 - 110*	4 - 690*	11	110	48	484	69	692						
		100 - 150*	4 - 945*	15	150	66	661	94	943						
150	6	150 - 200*	6 - 1260*	20	200	88	881	126	1,258	356	14	45	100	1.7	12
		150 - 250*	6 - 1570*	25	250	110	1,101	157	1,572						
		150 - 300*	6 - 1890*	30	300	132	1,321	189	1,887						

* Indicate smaller cartridge (one size less than flange interface).

** Standard Model Only

(1) Maximum flowrate should be limited to 80-90% of Max capacity for continuous operations

(2) Flange to flange dimension

(3) Indicated masses are for class #150

(4) After a period of critical monitoring, the filtration degree can be relaxed to reduce strainer maintenance and pressure losses, e.g. MESH 14 to MESH 12 on a 4" meter (consult Faure Herman)

SMALL LINE SOLUTIONS - BIG PERFORMANCE

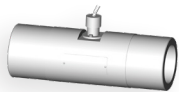
Precision Solutions. Products flowing in smaller line sizes are critical to many refineries applications, offshore production platforms and upstream land-based operations. We offer an array of precision solutions for these applications with several styles of meters, materials and bearings to adapt to fluids other than hydrocarbons.

We offer a 4-bladed aluminum helical rotor with graphite bearings for very light or refined products. Our 2-bladed titanium helical rotor with tungsten carbide bearings is suited for higher viscosity applications.

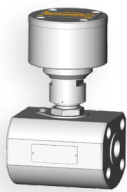
Whether for LACT units, buy-back measurement offshore, butylene and liquid propane transfers, our Heliflu™ family of meters (TZN, TCX, TLM or CTA) offers your the solution you need.

TABLE 2 1/2" - 2" DIAMETER METERS WITH FLEXIBLE FLOWRATE TECHNOLOGY

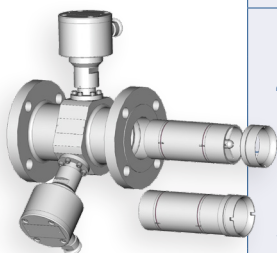
DN mm	NPS "	STD MODEL		Range						Length ⁽²⁾		Mass ⁽³⁾		Filtration ⁽⁴⁾	
				(m ³ /h) ⁽¹⁾		(GPM) ⁽¹⁾		(BPH) ⁽¹⁾		mm	"	kg	Lbs	mm	Mesh
				min	max	min	max	min	max						
16	1/2	16-012	1/2-055	0.012	0.12	0.055	0.55	0.075	0.75	130	5 1/8	3.5	8	0.15	100
		16-025	1/2-110	0.025	0.25	0.110	1.10	0.160	1.60						
20	3/4	20-05	3/4-220	0.05	0.5	0.22	2.2	0.31	3.1	130	5 1/8	4	9	0.355	45
		20-1	3/4-440	0.1	1	0.44	4.4	0.63	6.3						
25	1	25-2	1-880	0.2	2	0.88	8.8	1.26	12.6	130	5 1/8	5	11	0.425	40
		25-3	1-1320	0.3	3	1.32	13.2	1.90	19.0						
		25-5	1-2200	0.5	5	2.20	22	3.15	31.5						
		25-10	1-4400	1	10	4.4	44	6.30	63.0						
		25-15	1-6600	1.5	15	6.6	66	9.40	94.00						
32	1 1/4	32-8	1 1/4 - 3500	0.8	8	3.5	35	5.03	50.3	140	5 33/64	6	13.5	0.50	35
		32-12	1 1/4 - 5300	1.2	12	5.3	53	7.55	75.5						
		32-15	1 1/4 - 6600	1.5	15	6.6	66	9.45	94.5						
		32-20	1 1/4 - 8800	2	20	8.8	88	12.60	126.0						
		32-30	1 1/4 - 13200	3	30	13.2	132	19.00	190.0						
40	1 1/2	40-30	1 1/2 - 13200	3	30	13.2	132	19.0	190	156	6 9/64	7	15.5	0.50	35
		40-40	1 1/2 - 17600	4	40	17.6	176	25.2	252						
		40-45	1 1/2 - 19800	4.5	45	19.8	198	28.3	283						
50	2	50-30	2-13200	3	30	13.2	132	18.9	189	180	7 3/32	12	26.5	0.85	20
		50-50	2-22000	5	50	22.0	220	31.4	314						
		50-70	2-30800	7	70	30.8	308	44.0	440						



Threaded type TZN
(size ≤ 2")



Wafer style
(size ≤ 2")



TZN
1/2" to 3"

(1) Maximum flowrate should be limited to 80-90% of Max capacity for continuous operations

(2) Flange to flange dimension

(3) Indicated masses are for class #150

(4) After a period of critical monitoring, the filtration degree can be relaxed to reduce strainer maintenance and pressure losses

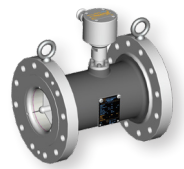
Models in shaded color are approved according to OIML R-117 (Class 0.3)

GREATEST FLOW RATE FLEXIBILITY – PERIOD

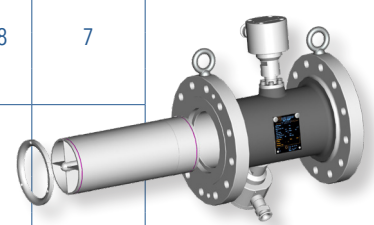
Inventive Solutions. Our Heliflu™ family of liquid measurement products provide you the greatest flexibility in addressing varying flow rates, both within line sizes (Flexible Flow) and between line sizes (Downsizing). These inventive solutions have proven invaluable for our customers the world over, enabling them to address changes in production flow without requiring a change of the entire meter.

TABLE 3 3" TO 20" DIAMETER METERS - FLEXIBLE FLOWRATE TECHNOLOGY

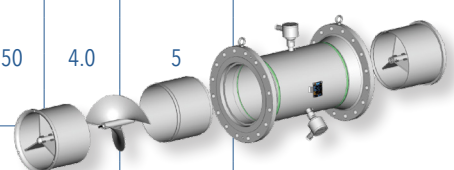
DN mm	NPS "	CUS OR STD MODELS		Range				Length ⁽²⁾ p.10		Mass ⁽³⁾ p.10		Filtration ⁽⁴⁾ p.10	
				(m ³ /h) ⁽¹⁾ p.10		(BPH) ⁽¹⁾ p.10		mm	"	kg	Lbs	mm	Mesh
				min	max	min	max						
80	3	80 - 70	3 - 440	7	70	44	440	235	9 1/4	21	46	1.4	14
		80 - 110	3 - 690	11	110	69	692						
		80 - 150	3 - 945	15	150	94	943						
		80 - 180	3 - 1130	18	180	113	1,132						
100	4	100 - 165	4 - 1040	17	165	104	1,038	305	12	25	55	1.7	12
		100 - 200	4 - 1260	20	200	126	1,258						
		100 - 250	4 - 1570	25	250	157	1,572						
		100 - 300	4 - 1890	30	300	189	1,887						
150	6	150 - 400	6 - 2515	40	400	252	2,516	356	14	45	100	2.36	8
		150 - 600	6 - 3775	60	600	377	3,774						
		150 - 800	6 - 5030	80	800	503	5,032						
200	8	200 - 800	8 - 5030	80	800	503	5,032	406	16	75	165	2.8	7
		200 - 1000	8 - 6290	100	1,000	629	6,290						
		200 - 1200	8 - 7550	120	1,200	755	7,548						
		200 - 1400	8 - 8800	140	1,400	881	8,806						
250	10	250 - 1200	10 - 7550	120	1,200	755	7,548	508	20	115	255	3.35	6
		250 - 2000	10 - 12600	200	2,000	1,258	12,580						
		250 - 2300	10 - 14500	230	2,300	1,447	14,467						
300	12	300 - 2000	12 - 12600	200	2,000	1,258	12,580	610	24	200	440	3.35	6
		300 - 2400	12 - 15100	240	2,400	1,510	15,096						
		300 - 3000	12 - 18900	300	3,000	1,887	18,869						
		300 - 3400	12 - 21400	340	3,400	2,139	21,385						
350	14	350 - 2500	14 - 15700	250	2,500	1,572	15,725	711	28	240	520	3.35	6
		350 - 3500	14 - 22000	350	3,500	2,201	22,014						
		350 - 4200	14 - 26400	420	4,200	2,642	26,417						
400	16	400 - 3400	16 - 21400	340	3,400	2,139	21,385	813	32	295	650	4.0	5
		400 - 4000	16 - 25200	400	4,000	2,516	25,159						
		400 - 4500	16 - 28300	450	4,500	2,830	28,304						
		400 - 5600	16 - 35200	560	5,600	3,522	35,223						
450	18	450 - 4800	18 - 30200	480	4,800	3,019	30,191	914	36	385	850	4.0	5
		450 - 5500	18 - 34600	550	5,500	3,459	34,594						
		450 - 7300	18 - 45900	730	7,300	4,592	45,916						
500	20	500 - 6000	20 - 37700	600	6,000	3,774	37,739	1,016	40	550	1,215	4.75	4
		500 - 7500	20 - 47200	750	7,500	4,717	47,174						
		500 - 9300	20 - 58500	930	9,300	5,850	58,495						



Meter Body 3 - 4 "



Meter with Cartridge 4 - 12 "



3 Piece Design ≥ 14 "



**LOWER PRESSURE DROP MEANS
LOWER ENERGY CONSUMPTION**

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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.

LOWER YOUR TOTAL COST OF OWNERSHIP WITH **HELICAL TURBINE TECHNOLOGY**

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	½" 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 - IICT6) 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)	

* Consult factory for higher pressures requiring other flange types