STRATEGIC PETROLEUM RESERVE

ENGINEERING CHANGE PROPOSAL

SUMMARY SHEET

CLASS I CHANGE

ECP NUMBER	TITLE
SJ-M/O-4637	**Purchase and Install 10" Faure Herman Meter at Sugarland**

BUDGET SOURCE

- ☐ SPR BLI _____
- ☐ CONTRACTOR BASELINE
- ☐ AUD
- ☐ OTHER: Lease Contractor

AUTHORITY

☒ PCCB ☐ ECC

SCHEDULE

☐ YES
MILESTONE NUMBER _____
CMCR NUMBER

☒ NO

TOTAL ESTIMATED COST OF CHANGE

	FY 00
DESIGN	
CONSTRUCTION	
TOTAL	**$50,635**

PCCB/ECC SIGNATURES	DISPOSITION: CONCUR	DISPOSITION: NON CONCUR	DISPOSITION: DATE	COMMENTS CONDITIONS/LIMITATIONS
~~DOE SENIOR SITE OFFICIAL~~ APM Management and Admin				
APM TECHNICAL ASSURANCE E. W. Kelly	✓		3/16/04	Need Dwg ECN'd
APM SYSTEMS AND PROJECTS Warren Poanty	✓		16 MAR 2004	Put Vendor Data into
APM MAINTENANCE AND OPERATIONS Lionel [illegible]	✓		3/15/04	Centra.
~~DEPUTY PROJECT MANAGER~~ APM M&A Michael McNeil	✓		3/17/04	
DOE CMO				
PROJECT MANAGER				
DEPUTY ASSISTANT SECRETARY - SPR				

PCCB/ECC ACTION

☑ FULL APPROVAL ☐ CONDITIONAL/LIMITED APPROVAL ☐ DISAPPROVAL

ECPFM (4)

mpleted 2000

STRATEGIC PETROLEUM RESERVE

ENGINEERING CHANGE PROPOSAL

ECP NUMBER	ECP TITLE	PAGE 1 OF 4
SJ-M/o-4637	**Purchase and Install 10" Faure Herman Meter at Sugarland**	

CONTRACTOR CHANGE NO. / REV.	INITIATED BY	DATE	SUBMITTED BY	DATE
	Richard Krebs	**1/22/03**	**Jill Derise**	**1/22/03**

PRIORITY	ORG / CONTRACTOR	PHONE NO.	ORG/CONTRACTOR	PHONE NO.
☐ EMERGENCY ☐ URGENT ☒ ROUTINE	**Shell Pipeline Company LP**	**(504) 728-3573**	**Shell Pipeline Company LP**	**(504) 728-7366**

VALUE ENGINEERING	DRAWDOWN CRITICAL	ROM ESTIMATE
☐ VEP (MANDATORY) ☐ VECP (VOLUNTARY)	☐ YES ☒ NO	$ **50,635.**

DESCRIPTION:

PROBLEM / EXISTING CONFIGURATION

This ECP is being submitted as documentation for work that was done at Sugarland in 2000. Potential for mis-measurement existed due to various types of crude being moved through the terminal.

PROPOSED SOLUTION / ENHANCEMENT

Purchased and installed 10" Faure Herman Meter (#WI-M2) at Sugarland. The Faure Herman Heli-Flu meter is Model # 12N10-12600 and Serial Number 900752. The Flow-Tech meter that was removed has been reconditioned and is stored at Sugarland.

[Reference Shell AFE 149131]

REASON/JUSTIFICATION

Faure Herman meters are more accurate across a range of crude types (gravity, viscosity) than turbine meters. The work is considered to be a capital improvement (therefore "unfunded liability") because the project entailed upgrading the meter to a more reliable and accurate meter.

CI'S AFFECTED

TECHNICAL ANALYSIS/RECOMMENDATION	IMPLEMENTATION METHOD
	☐ SUBCONTRACT ☐ M&O LABOR (LOE) ☐ COMBINATION

ENGINEERING	DATE	DOE SSR	DATE
			☐ CONCUR ☐ NONCONCUR

STRATEGIC PETROLEUM RESERVE

ENGINEERING CHANGE PROPOSAL
SOFTWARE, HARDWARE, FIRMWARE CHANGE

CONTRACTOR CHANGE NUMBER	REVISION NUMBER	ECP NUMBER	Page 3 of 4
		SJ-M/04637	

SOFTWARE CHANGE ANALYSIS	HARDWARE/SOFTWARE AFFECTED
	(NOTE: REDLINE CI BOM)

DISPOSITION OF PARTS

☐ REWORK SITE COMPONENTS ONLY ☐ REWORK ALL SITE COMPONENTS ☐ COMPONENTS NOT AFFECTED

☐ OTHER (DESCRIBE)_____

COMPONENT COMPATIBILITY (LIST COMPONENTS SEPARATELY IF COMPATIBILITIES ARE DIFFERENT)

☐ INTERCHANGABLE ☐ DRAWDOWN COMPATIBLE ☐ NONCOMPATIBLE

OPCS SUPPORT ENGINEER	DATE	FUNCTIONAL MANAGER	DATE

IMPLEMENTATION/TEST COMMENTS

WITNESSED BY			DATE
TEST APPROVED BY	**DATE**	**CHANGE RELEASE AUTHORITY**	**DATE**

STRATEGIC PETROLEUM RESERVE
ENGINEERING CHANGE PROPOSAL
CONFIGURATION CHANGE AFFECTED REPORT

"TO BE COMPLETED BY TECHNICAL REVIEW PROCESS, ENGINEERING AND CONFIGURATION MANAGEMENT ORGANIZATION DEFINED PROCESS"

ECP NO.	CONTRACTOR CHANGE NO	REV.	CHANGE CLASSIFICATION
SJ-MO-4637			☑ CLASS I ☐ CLASS II

FUNCTIONS AFFECTED

Y	N	ITEM
		LEVEL 1 ☐ II ☒ III ☐ CRITERIA
		PERFORMANCE CRITERIA
		RAM
		INTERFACE CHARACTERISTICS
		I/O POINTS
		DOE LEVEL I, II, III SCHEDULES
		GUARANTEES/DELIVERABLES
		SAFETY/ENV/FP (CIRCLE ONE)
		SECURITY REQUIREMENTS
		OPCS SOFTWARE
		OPCS HARDWARE
		OPCS FIRMWARE
		RANGES/ I/O POINTS
		DIP SWITCH SETTINGS/JUMPERS
		MASTER CI LIST
		WELLHEAD CONFIGURATION
		SPARES/PROVISIONING REQUIREMENTS
		OPERATIONS MANUALS
		MAINTENANCE MANUALS
		GOVERNMENT FURNISHED EQUIPMENT
		ENERGY USAGE
		VALUE ENG. (COST SAVINGS)
		OPERATIONS MODELS
		OTHER

DOCUMENTS AFFECTED

Y	N	ITEMS
		PIPING
		101 - PROCESS FLOW DIAGRAMS
		102 - MECHANICAL FLOW DIAGRAMS
		103 - PIPING AND INSTRUMENTATION DIAGRAMS (P&ID'S)
		104 - UTILITY FLOW DIAGRAMS
		105 - GENERAL PIPING PLANS
		106 - AREA PLANS (MECHANICAL EQUIPMENT LOCATION)
		122 - WELLLHEAD DRAWINGS
		130 - VALVE LIST
		135 - LINE LIST
		140 - PSV LIST
		150 - STANDARDS
		CIVIL/STRUCTURAL
		201 - PLOT PLANS
		202 - SITE WORK, GRADING (ROUGH & FINISH DRAINAGE FENCING
		210 - FOUNDATIONS: LOCATION PLANS
		216 - MINES (WEEKS ISLAND ONLY)
		250 - STANDARDS
		ELECTRICAL
		301 - AREA CLASSIFICATION
		302 - ONE LINE DIAGRAMS
		303 - SCHEMATIC DIAGRAMS
		304 - POWER PLANS AND DETAILS
		305 - LIGHTING PLANS AND DETAILS
		307 - SUBSTATION PLANS AND DETAILS
		308 - WIRING DIAGRAMS
		310 - GROUNDING
		311 - CONDUIT & CABLE SCHEDULES (INCLUDING INSTRUMENTS)
		313 - MCC/SWITCH GEAR EVALUATION & SCHEDULE

DOCUMENTS AFFECTED

Y	N	ITEM
		ELECTRICAL
		315 - CATHODIC PROTECTION
		350 - STANDARDS
		INSTRUMENTATION
		401 - BLOCK DIAGRAM
		402 - LOOP DIAGRAMS
		403 - INSTRUMENT PLANS AND DETAILS
		404 - INSTRUMENT WIRING DIAGRAM
		409 - INSTRUMENT INDEX
		450 - STANDARDS
		MAPPING
		501 - ALIGNMENT SHEETS
		509 - PIPELINE DWGS (MAINLINE VALVES, DRIPS, SCRAPER, TRAPS
		550 - STANDARDS
		ARCHITECTURAL
		720 - ELEVATIONS AND FLOOR PLANS
		750 - STANDARDS
		DOCUMENTATION
		900 - RESERVED
		901 - TECHNICAL/PERFORMANCE/DESIGN CRITERIA
		910 - DESIGN DESCRIPTION/BASIS
		911 - PROCESS SET POINT DOCUMENTS
		912 - EQUIPMENT LIST
		913 - MOV LIST
		915 - ELECTRICAL SAFETY
		920 - I/O DOCUMENT
		930 - OPERATION AND MAINTENANCE MANUALS
		950 - STANDARD SPECIFICATIONS
		970 - TASK SPECIFICATIONS
		990 - CONFIGURATION MANAGEMENT REPORTS 1.B.0.M
		999 - RESERVED

COMMENTS:xn

Engineering	DATE	CONFIGURATION MANAGEMENT	DATE

ENGINEERING CHANGE PROPOSAL
LIFE CYCLE COST FORM

ECP NUMBER: SJ- M/O-4637	ECP TITLE: Purchase and Install 10" Faure Herman Meter at Sugarland

EXECUTIVE SUMMARY:
This ECP is being submitted as documentation for work that was done at Sugarland in 2000. Potential for mis-measurement existed due to various types of crude being moved through the terminal.

IMPLEMENTATION PLAN:
Purchased and installed 10" Faure Herman Meter (#WI-M2) at Sugarland. The Faure Herman Heli-Flu meter is Model # 12N10-12600 and Serial Number 900752. The Flow-Tech meter that was removed has been reconditioned and is stored at Sugarland.

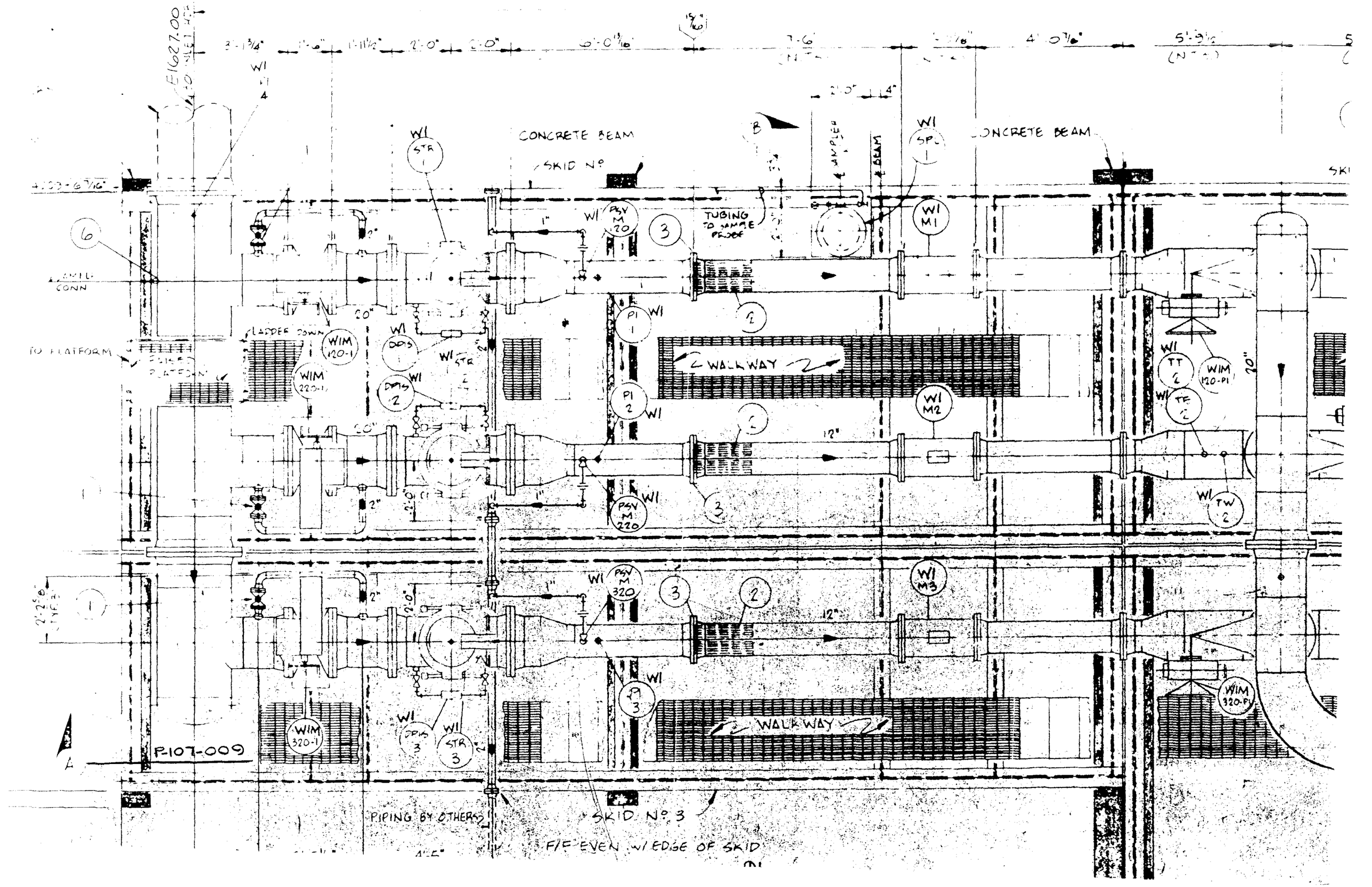
IMPLEMENTATION COST:

DESIGN:	
CONSTRUCTION:	$50,635
TOTAL:	$50,635

LIFE CYCLE COST:
Not applicable. No foreseeable upgrade or maintenance costs associated with the meter.

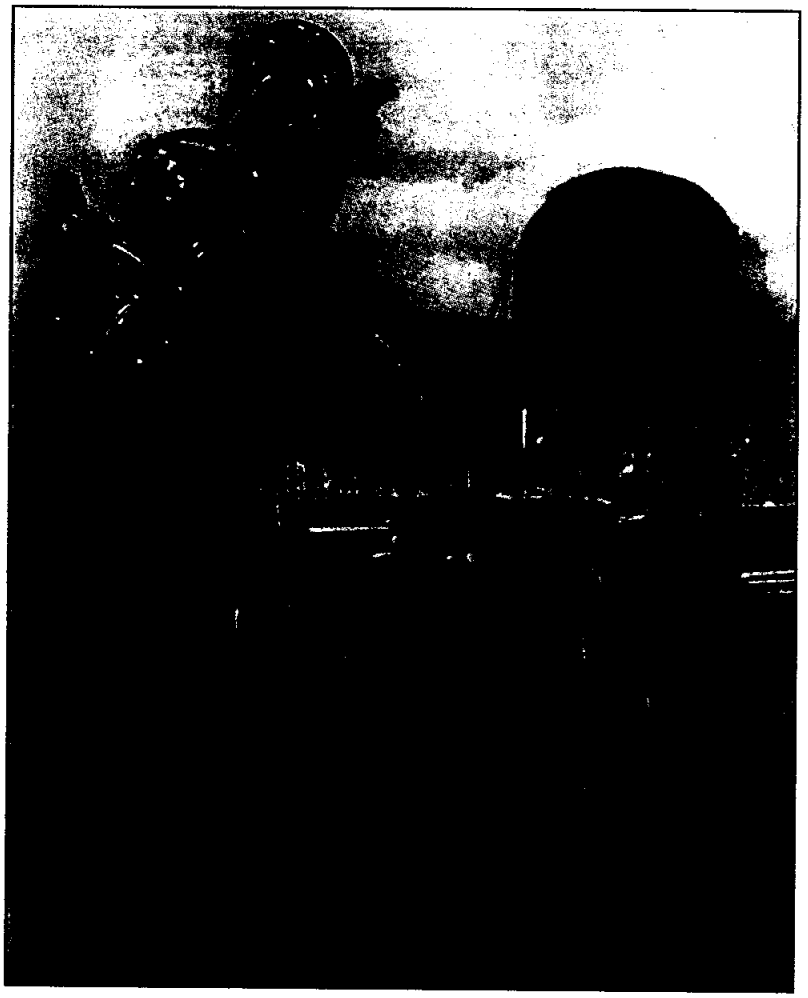
IMPACT SUMMARY:

LEVEL I, II, and III CRITERIA:	CONTRACT COMPLETION DATES:
CODES, REGULATIONS, PERMITS, ETC.:	GOVERNMENT-FURNISHED EQUIPMENT:
SAFETY, ENVIRONMENTAL, FIRE PROTECTION SYSTEMS, SECURITY:	SCHEDULE: Installed in 2000



CONCRETE BEAM
SKID No
CONCRETE BEAM
TUBING TO SAMPLE PROBE
SAMPLER
BEAM
WALKWAY
WALKWAY
LADDER DOWN
TO PLATFORM
CONN
P-107-009
PIPING BY OTHERS
SKID No 3
F/F EVEN W/ EDGE OF SKID

HELIFLU™
Liquid Turbine Meters



FAURE HERMAN
GROUPE INTERTECHNIQUE

HELIFLU™ Turbine Flowmeters

Custody transfer measurement with supreme linearity.

It's our unique, patented two-blade monoblock impeller that makes much of the difference. The helicoidal free-running rotor lies axially in the meter body.

Fluid flowing through the HELIFLU™ meter causes rotation at a speed directly proportional to the flow; each revolution thus corresponding to a precise and constant volume of throughput.

Magnets mounted in the rotor induce electrical pulses in an adjacent pickup coil. These are then processed by an electrical converter and displayed as a flowrate.

Engineered with quality construction in either stainless or carbon steel bodies, the HELIFLU™ turbine flowmeters offer a linearity better than ± 0.15% even in reduced pressure situations, and excellent repeatability, (±0.02%) making them the obvious choice for custody transfer measurement.

The HELIFLU™ measures accurately from very light LPG products (.03 cSt) to heavy crude oil. It performs well in waxy environments and can meter high viscosity products 10 cSt to 1000 cSt.

General specifications

Features

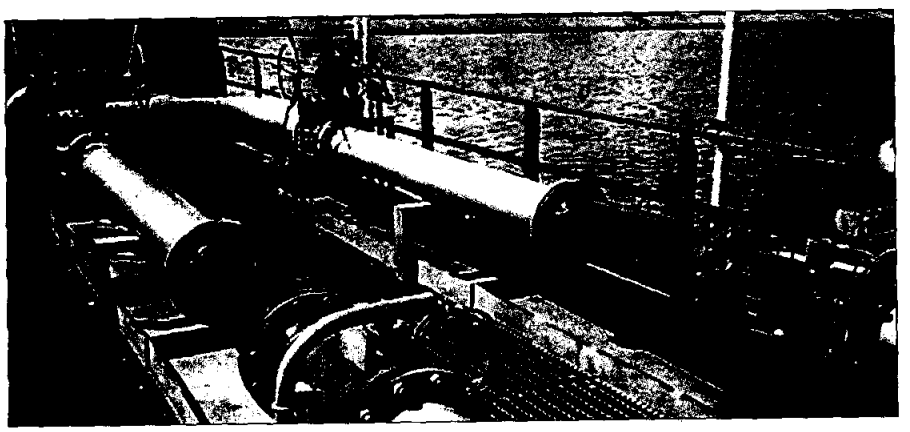
- Accuracy
  Custody transfer ± 0. 15%
  Calibrated on product viscosity
- Repeatability ± 0.02%
- Working pressure
  ANSI class 150 to 2500
- Back pressure as per API guidelines
  Consult FH for special requirements
- Operating temperature
  -30 to +180°C (-20°F to +350°F)
  High temperature on request,
  to 350°C (660°F).
  Low temperature on request,
  -50°C to +180°C.

Construction

- Housing and flanges: Carbon Steel, Stainless Steel 316L, or Duplex Stainless Steel
- Internal parts: 316L SS
- Rotor: Titanium or Aluminum
- Journal bearings : Tungsten Carbide standard; optional graphite sleeve available for LPG applications

Protection

- Weatherproof to IP 65
- Explosion-proof or intrinsically safe:
  To CENELEC STDS.
  (EEx d IIC T6, EEx ia IIC T6)
  UL/CSA, pending: Class 1 Div. 1 groups C and D.



Options for all models according to operating conditions

- Housing and flanges: 316L SS (duplex SS or others: upon request)
- Rotor: Titanium or Aluminum
- Dual pick-up housings
- Working pressure: to 2500# ANSI 6000 psi.
- Special versions on request

Electrical options

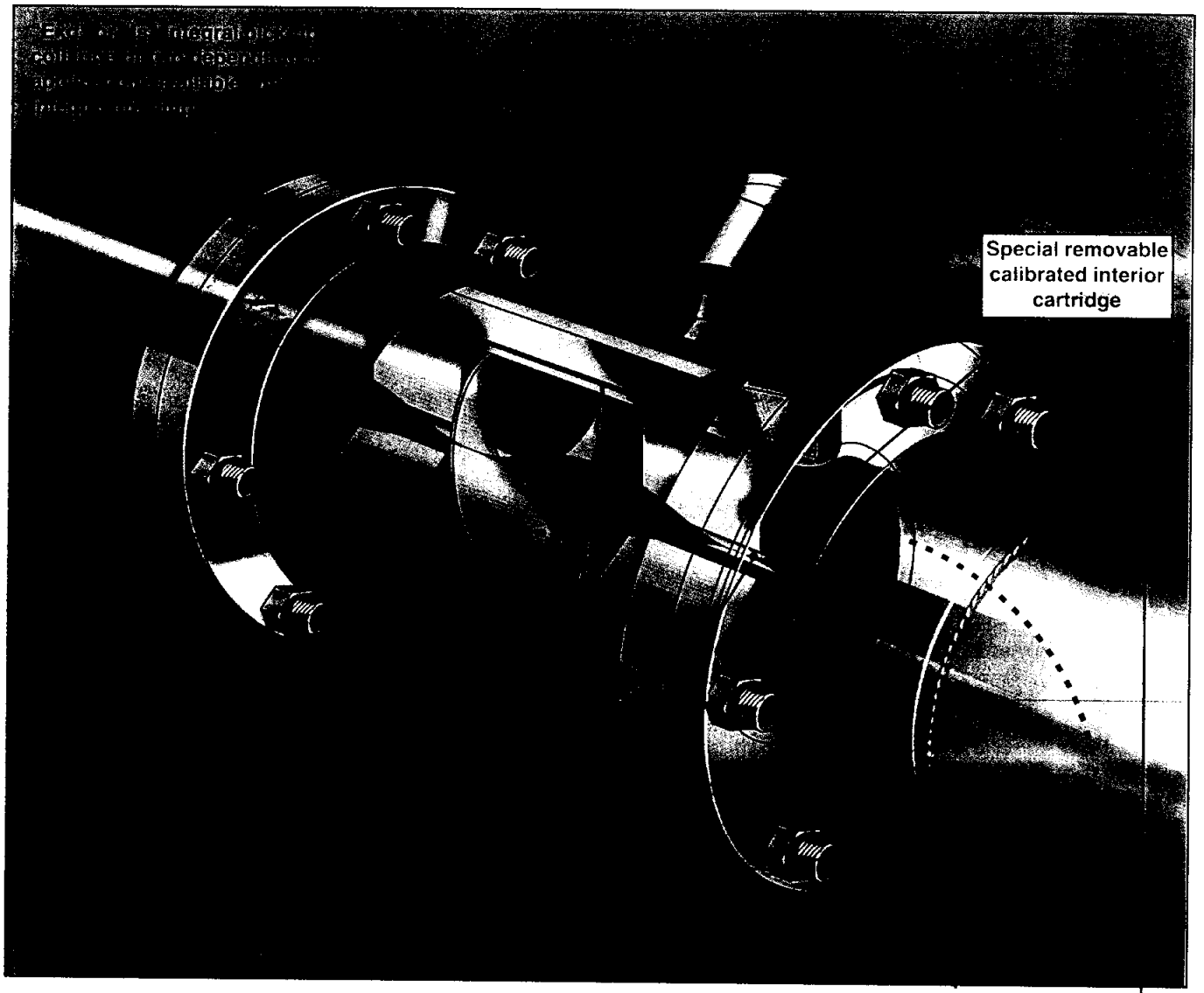
Preamplifier type FH 71/FH 710

- Pick-ups to Ex. d or Ex. ia standard
- Power supply voltage: 12–24 Vdc
- Output signal: current pulses
- Operating temperature:
  -20°C to +70°C (-4°F to 160°F)
  Low temp option to -50°C.
- Available in either the pick-up head or separate remote box

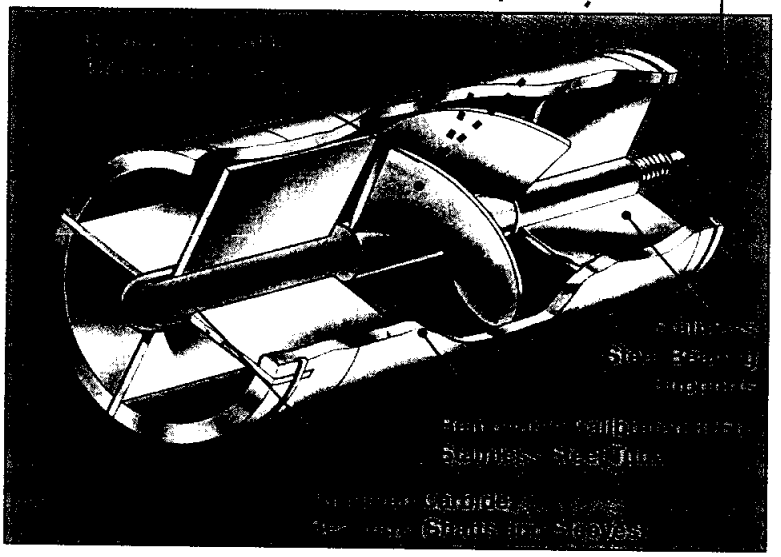
Summary of advantages

- Simple construction, single rotating element.
- Wide measurement range: 10:1 to 15:1 turn down ratio. Depending on viscosity.
- Low pressure drop.
- Continuous flow, even if rotor is blocked.
- Linearity relatively insensitive to viscosity changes.
- Bearing life more than 5 years depending on product and filtration.
- Not affected by pressure surge.
- Rapid response time.
- Good mechanical resistance to high pressures and extreme temperatures.
- Ability to withstand temporary overspeeds (1.2 x Q max).
- Excellent resistance to corrosion.
- Simple and inexpensive to maintain.
- Compact and rugged construction.

HELIFLU™ Model TZ-N



Removable cartridge



Main features

1- Removable cartridge internals

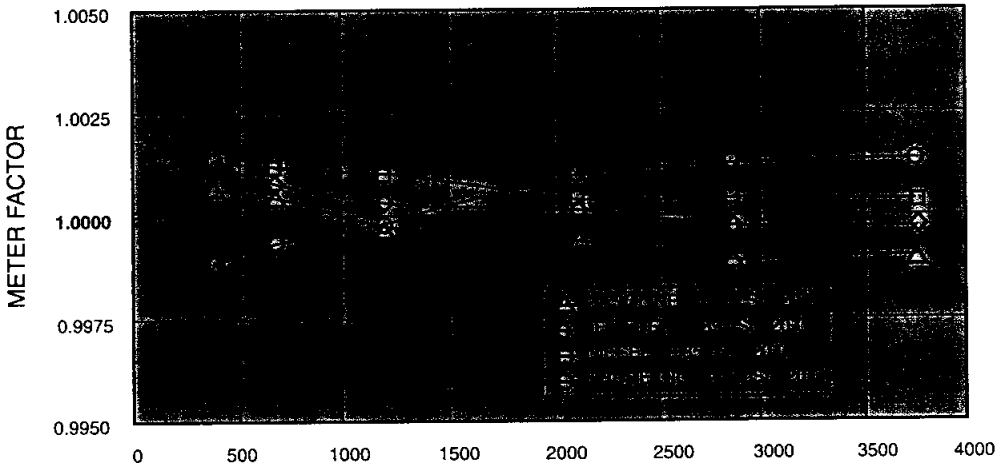
2- Can operate over a wide range of viscosities

3- Low Pressure drop

HELIFLU™ Turbine Flowmeters

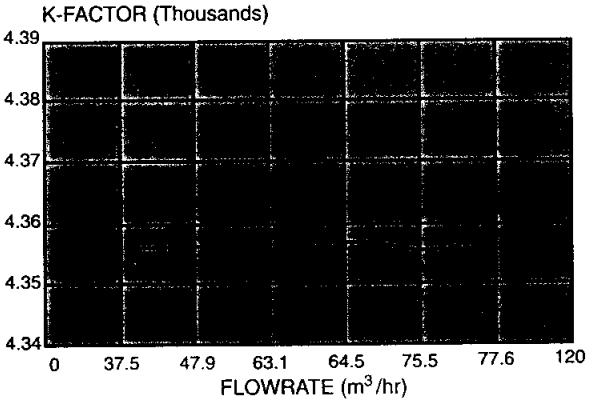
High accuracy flowmeters

6″ HELIFLU™ Model TZN 6-600 - 380 to 3,800 Bbl/hr 60 to 600m³/h



FLOWCHART (Bbl/hr) Fluid viscocity = 0.73 to 34.6 cSt

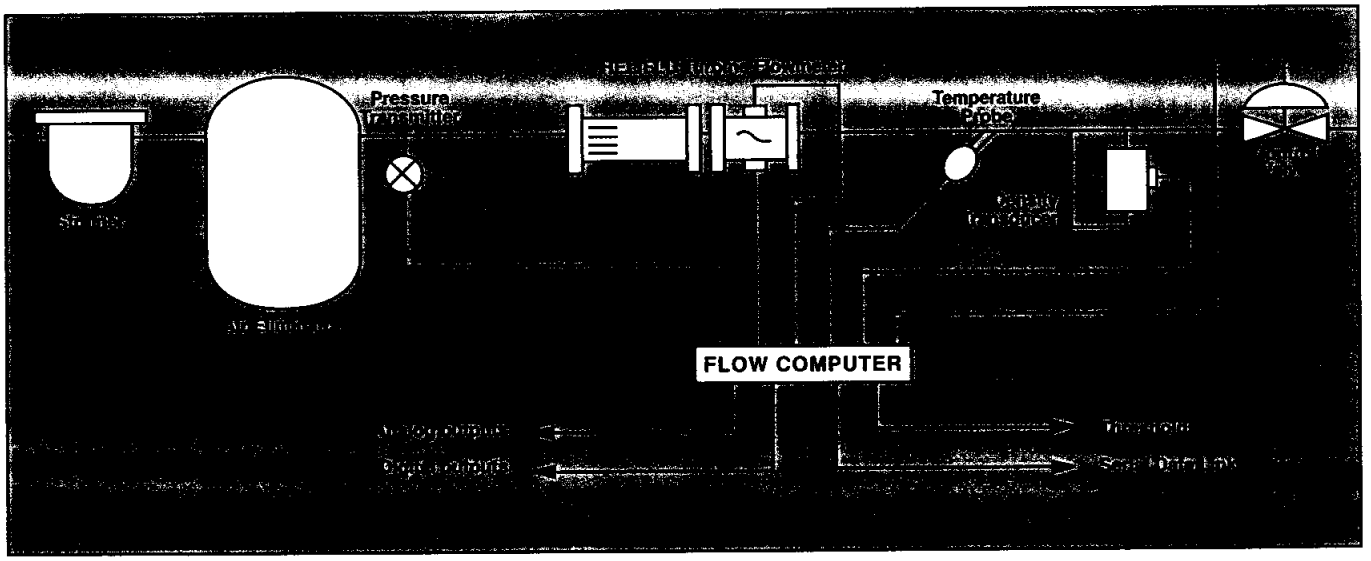
Live calibration data (north sea UK)



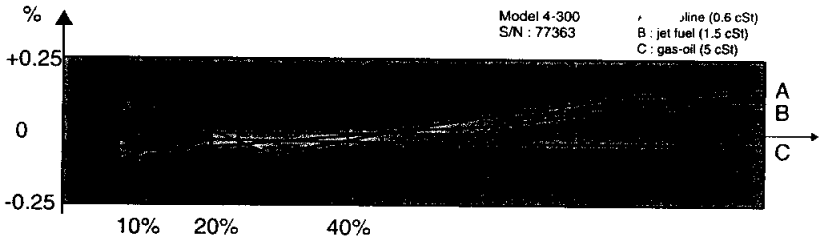
Performance relative to viscosity

Viscosity or Product in CST	Bearing Type/ Material & Designs	Flow range for ± 0.25% Linearity	Flow range for 0.15% Linearity

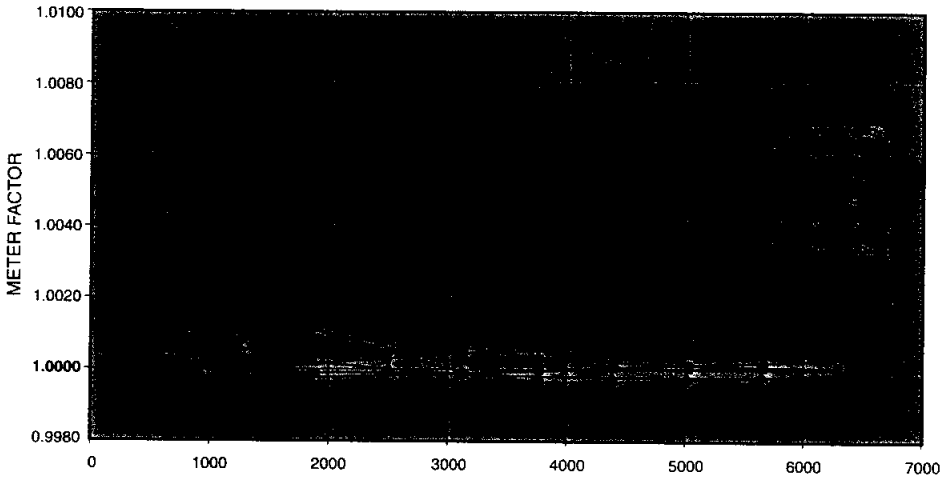
Typical installation diagram



Multi product application

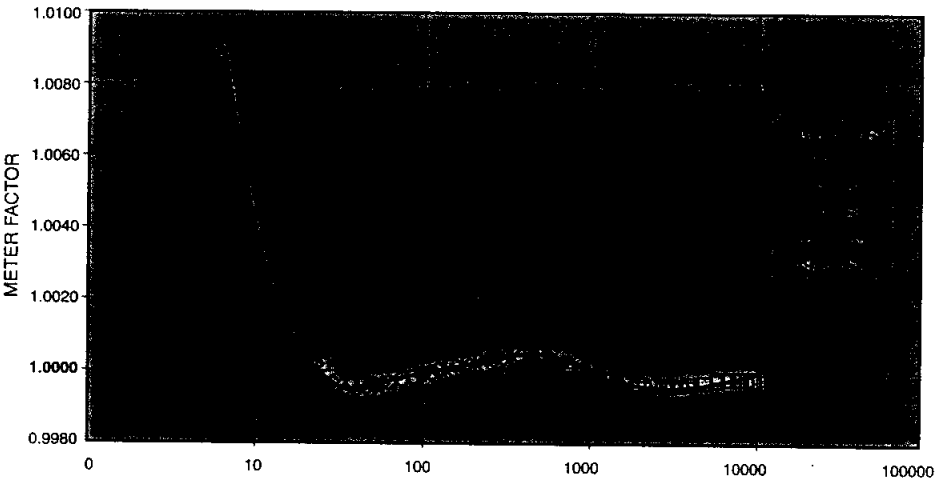


8" HELIFLU™ TZN 8-1000 - 630 to 6300 Bbl / hr - 100 to 1000m³/h



FLOWRATE (Bbl/hr) Fluid viscosity = 0.62 to 108 cSt

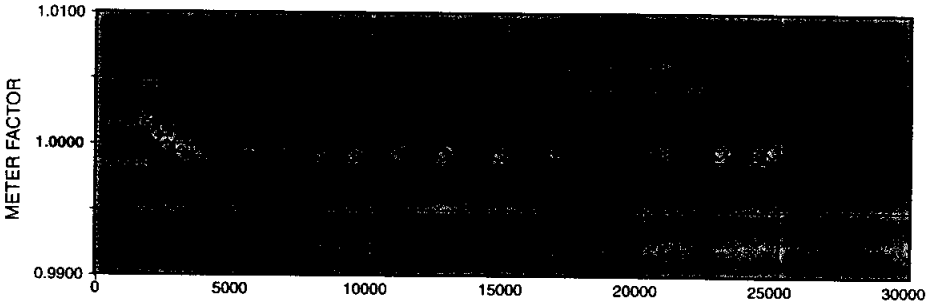
Universal curve for same viscosity compensation



Q/nu INDEX (Bbl/hr/cSt) Fluid viscosity = 0.62 to 108 cSt

16" HELIFLU™ TZ-N 16-4000 - 2500 to 25000 Bbl / hr-400 to 4000m³/h

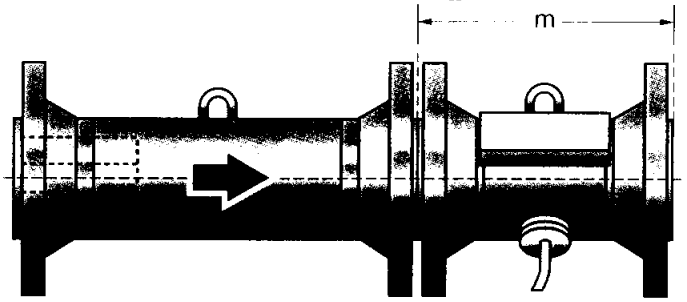
Long-term stability



FLOWRATE (Bbl/hr) Mean fluid viscosity =20.3 cSt

HELIFLU™ Model TZ-N

Technical Specification



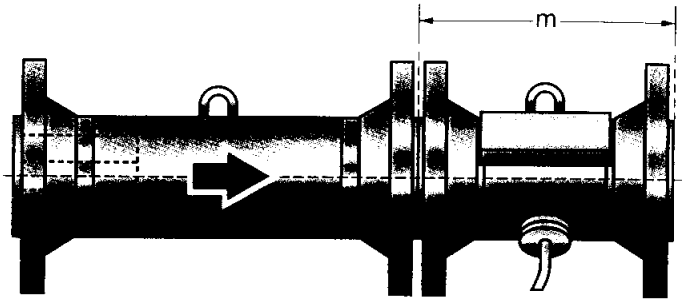
METRIC UNITS & DIMENSIONS

Nominal Bore (n) inch	mm	HELIFLU™ TZ-N model	*Flowrange (m³/h) min at	max	Typical (pulse/m³)	Meter length (m) (mm)	Straightener Length(s) (mm) std des.	API des.	Recommended filtration (mm)	Weight (kg) Meter	Straight
½	16mm	TZ16-012N	0.012	0.12	5500 P/liter	130	N/A	N/A	0.2	3,5	N/A
½	16mm	TZ16-025N	0.025	0.25	2600 P/liter	130	N/A	N/A	0.2	3,5	N/A
¾	20mm	TZ20-05N	0.05	0.5	1900 P/liter	130	N/A	N/A	0.25	4	N/A
¾	20mm	TZ20-1N	0.1	1	512 P/liter	130	N/A	N/A	0.25	4	N/A
1	25mm	TZ25-2N	0.2	2	512 P/liter	130	160	175	0.25	5	2.5
1	25mm	TZ25-3N	0.3	3	150 P/liter	130	160	175	0.25	5	2.5
1	25mm	TZ25-5N	0.5	5	90 P/liter	130	160	175	0.25	5	2.5
1¼	32mm	TZ32-8N	0.8	8	43 P/liter	140	190	224	0.3	6	4
1¼	32mm	TZ32-12N	1.2	12	32 P/liter	140	190	224	0.3	6	4
1¼	32mm	TZ32-15N	1.5	15	25 P/liter	140	190	224	0.3	6	4
1¼	32mm	TZ32-20N	2	20	21 P/liter	140	190	224	0.3	6	4
1½	40mm	TZ40-8N	0.8	8	35 P/liter	156	221	267	0.3	7	4.2
1½	40mm	TZ40-12N	1.2	12	25 P/liter	156	221	267	0.3	7	4.2
1½	40mm	TZ40-15N	1.5	15	18 P/liter	156	221	267	0.3	7	4.2
1¼	40mm	TZ40-20N	2	20	25 P/liter	156	221	267	0.3	7	4.2
2	50mm	TZ50-30N	3	30	25 P/liter	180	270	350	0.5	8.5	4.5
2	50mm	TZ50-50N	5	50	15 P/liter	180	270	350	0.5	8.5	4.5
2	50mm	TZ50- 70N	7	70	10 P/liter	180	270	350	0.5	8.5	4.5
3	75mm	TZ80-70N	7	70	4.5 P/liter	235	365	525	1.0	15	10
3	75mm	TZ80-110N	11	110	4.5 P/liter	235	365	525	1.0	15	10
3	75mm	TZ80-140N	14	140	4.5 P/liter	235	365	525	1.0	15	10
4	100mm	TZ100-200N	20	200	2200	305	450	700	1.5	30	25
4	100mm	TZ100-300N	30	300	1650	305	450	700	1.5	30	25
6	150mm	TZ150-400N	40	400	1650	356	690	1100	1.5	50	40
6	150mm	TZ150-600N	60	600	710	356	690	1100	1.5	50	40
8	200mm	TZ200-800N	80	800	450	406	790	1400	2.0	70	70
8	200mm	TZ200-1000N	100	1000	450	406	790	1400	2.0	70	70
10	250mm	TZ250-1200N	120	1200	240	508	1000	1800	2.0	80	100
10	250mm	TZ250-2000N	200	2000	160	508	1000	1800	2.0	80	100
12	300mm	TZ300-2400N	240	2400	120	610	1200	2100	3.0	130	160
12	300mm	TZ300-3000N	300	3000	80	610	1200	2100	3.0	120	160
14	340mm	TZ340-3000N	300	3000	70	730	1320	2500	3.0	150	180
16	400mm	TZ400-4000N	400	4000	50	800	1500	2800	3.0	170	250
18	440mm	TZ440-4800N	480	4800	40	860	1740	3200	5.0	190	300
20	500mm	TZ500-6000N	600	6000	25	910	1940	3600	5.0	250	350

*Extended flowrange upon request

HELIFLU™ Model TZ-N

Technical Specification



IMPERIAL UNITS & DIMENSIONS

Nominal Size in Inches	Faure Herman NEW Model No.	Faure Herman Heliflu Model No.	Flowrange Bbl/Hr*		Flowrange GPM*		Approximate K-Factor		Meter Length Inches	Approx. Meter Weight (lbs.) 150# ANSI
			Min	Max	Min	Max	P/Gal	P/Bbl		
0.5	TZN 0.5–0.5	TZN 0.5–012	0.075	0.75	0.05	0.5	21000		5.125	8
0.5	TZN 0.5–1.1	TZN 0.5–025	0.157	1.57	0.11	1.1	10100		5.125	8
0.75	TZN 0.5–1.6	TZN 0.75–05	0.314	3.14	0.16	1.6	7150		5.125	9
0.75	TZN 0.75–4.4	TZN 0.75–1	0.63	6.3	0.44	4.4	1935		5.125	9
1	TZN 1.0–9	TZN 1.0–2	1.3	13	0.9	9	1935		5.125	11
1	TZN 1.0–14	TZN 1.0–3	2	20	1.4	14	757		5.125	11
1	TZN 1.0–22	TZN 1.0–5	3	30	2.2	22	337		5.125	11
1.25	TZN 1.25–35	TZN 1.25–8	5	50	3.5	35	165		5.5	13
1.25	TZN 1.25–53	TZN 1.25–12	7.5	75	5.3	53	123		5.5	13
1.25	TZN 1.25–66	TZN 1.25–15	9.4	94	6.6	66	95		5.5	13
1.25	TZN 1.25–88	TZN 1.25–20	12.6	126	8.8	88	79		5.5	13
1.5	TZN 1.5–35	TZN 1.5–8	5	50	3.5	35	165		5.5	13
1.5	TZN 1.5–53	TZN 1.5–12	7.5	75	5.3	53	123		5.5	13
1.5	TZN 1.5–66	TZN 1.5–15	9.4	94	6.6	66	95		5.5	13
1.5	TZN 1.5–88	TZN 1.5–20	12.6	126	8.8	88	79		5.5	13
2	TZN 2–130	TZN 2–30	19	190	13	130	94	3975	7	19
2	TZN 2–220	TZN 2–50	32	320	22	220	56	2385	7	19
2	TZN 2–310	TZN 2–70	44	440	31	310	39	1638	7	19
3	TZN 3–310	TZN 3–70	44	440	31	310	17	700	9.25	33
3	TZN 3–480	TZN 3–110	69	690	48	480	17	700	9.25	33
3	TZN 3–660	TZN 3–140	88	880	66	660	17	700	9.25	33
4	TZN 4–1260	TZN 4–200	126	1260	88	880	8	355	12	66
4	TZN 4–1890	TZN 4–300	189	1890	132	1320	6	260	12	66
6	TZN 6–2520	TZN 6–400	252	2520	177	1770		111	14	110
6	TZN 6–3770	TZN 6–600	377	3770	264	2640		111	14	110
8	TZN 8–5030	TZN 8–800	503	5030	352	3520		72	16	154
8	TZN 8–6290	TZN 8–1000	629	6290	440	4400		72	16	154
10	TZN 10–7550	TZN 10–1200	755	7550	529	5290		40	20	176
✶ 10	TZN 10–12600	TZN 10–2000	1260	12600				24	0	176
12	TZN 12–15100	TZN 12–2400	1510	15100				14	24	287
12	TZN 12–18900	TZN 12–3000	1890	18900				13	24	287
14	TZN 14-22000	TZN 14-3500	2200	22000				11	28	330
16	TZN 16–25200	TZN 16–4000	2520	25200				8	32	375
18	TZN 18–30200	TZN 18–4800	3020	30200				6	36	419
20	TZN 20–37800	TZN 20–6000	3780	37800				5	40	551

*Extended flowrange upon request

FAURE HERMAN
The meter leaders

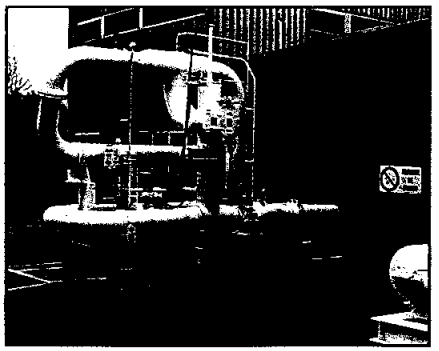
The name behind HELIFLU™

FAURE HERMAN is a leading manufacturer acknowledged as world - leaders in flowmeter measurement technology, and is ISO 9001 certified. Our company, founded in 1925, is known for the quality, accuracy and reliability of all its products. HELIFLU™ turbine flowmeters can be found in a wide range of applications with major companies involved in oil, chemical, nuclear, gas and automotive industries. FAURE HERMAN has a complete network of sales and service agencies covering five continents.

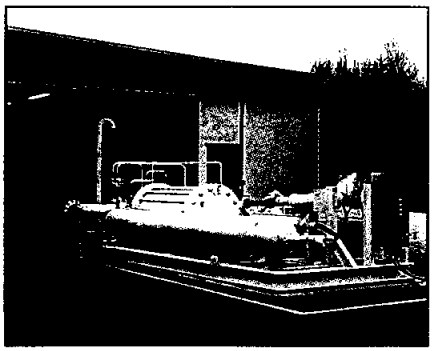
A reputation for service

For over 75 years we've earned a reputation for quality we are extremely proud of.

That's because design, quality and accuracy are primary considerations complimented by service that's second to none.



Uni-directional prover (6300 BPH)



Multi-product compact prover (19,000 BPH)

Approved at the highest levels

FAURE HERMAN has achieved national and international accreditations for quality and integrity. We hold approvals such as: ISO 9001, ASME, AQAP, GOST, and many more covering virtually every industry in most countries. Our products meet all API requirements for custody transfer measurement.

Thoroughly tested

Our laboratory features certified gauges and provers fitted with an analysis unit for density and viscosity.

The factory also includes calibration facilities, providing the following calibration capabilities.

- on water, up to 500 BPH
- on hydrocarbons from .5 to 350 centistokes, up to 19,000 BPH flowrates

HELIFLU™ Typical Applications

The advanced design and rugged construction together with a wide range of available options enables the HELIFLU™ meter to be used under the most severe environmental and process conditions.

On and offshore, HELIFLU™ delivers superior long-term performance and unequalled reliability.

The oil industry

HELIFLU™ meters have an established and enviable track record in the oil industry particularly in the following applications:

- Crude Oil Measurement (on and off-shore).
- Floating & Production Storage Units.
- Loading and Unloading at Refineries.
- Ship and Tanker Loading.
- Multi Product Metering—from crude oil to gasoline.
- Test separators
- Offshore liquid metering
- Chemical plants:
  Ammonia, etylene, propylene, and acids

Other industrial applications

- Nuclear plants
- Food industry
- Iron and steel industry
- Power stations
- Paper and sugar mills
- Automotive and aerospace

Faure Herman has the right to modify without notice certain characteristics • 3/00

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