FH83 NEO

ULTRASONIC FLOWMETERS

A Versatile Ultrasonic Flowmeter to Meet Your Process Needs

The Faure Herman FH83NEO is an evolution of the original FH8000 ultrasonic meter series. This ultrasonic flowmeter is designed to measure all types of liquids -both conductive or non-conductive. Thanks to its variety of digital and analog inputs/ outputs, the FH83NEO easily interfaces with any process management system. The capability to provide 1, 2 or 3 beams allows the FH83NEO to adapt to application specific accuracy and flow profile requirements.

LOWER TOTAL COST OF OWNERSHIP WITH ULTRASONIC TECHNOLOGY

APPLICATIONS

- Oil production
- Detection of pipeline leaks
- Refinery, chemical and petrochemical
- Energy generation
- Water treatment
- Industrial process management

KEY COMPETITIVE ADVANTAGES

- High measurement dynamics
- Reduced energy costs
- Low and simple maintenance
- Minimum implementation cost
- Easy integration into industrial management systems
- Measurement of all liquids
- Integrity of production processes
- Easy cleaning

TECHNICAL CHARACTERISTICS

MAIN FEATURES

- Linearization of the calibration curve
- Excellent reliability and stability of measurement
- Bi-directional measurement
- No pressure drop
- Transducers replacement under operating conditions
- Local and remote electronics
- Communication ports

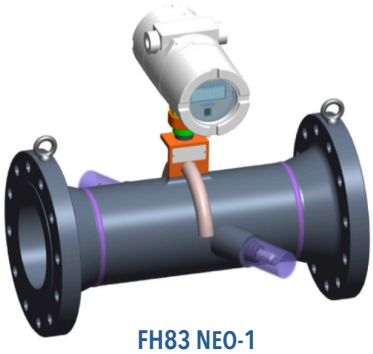
INNOVATIVE TRANSDUCERS

Derived from the latest technological innovations, the transducers on the FH83NEO guarantee excellent measurement reliability. The stability of the measurement over time is a characteristic of capital importance for applications such as leak detection or monitoring of industrial manufacturing processes. The possibility of replacing transducers under load makes it possible to maintain the continuity of production or product transfer by pipeline, thus facilitating on-site maintenance.

MULTIPLE CONFIGURATIONS IN TWO ACCURACY CLASSES

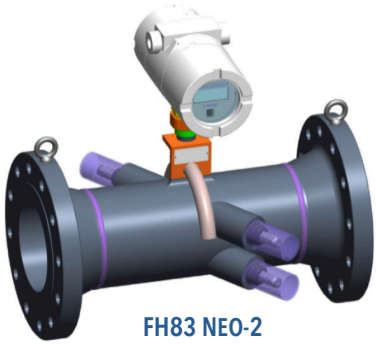
Flexible configurations enable selecting the desired number of chords, as well as the desired accuracy to customize your FH83NEO to your application.

MODEL	Number of Chords	Class 1	Class 2
FH83 NEO-1	1	±1.0%	± 2.0%
FH83 NEO-2	2	± 0.5%	± 1.0%
FH83 NEO-3	3	± 0.25%	± 0.5%



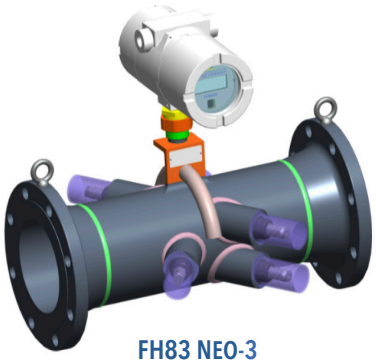
FH83 NEO-1

- 1 chord
- Accuracy ± 1 %
- DN 50 to DN 600 (2" to 24")



FH83 NEO-2

- 2 chords
- Accuracy ± 0.5 %
- DN 80 to DN 600 (3" to 24")
- Wide dynamic range

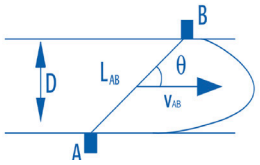


FH83 NEO-3

- 3 chords
- Accuracy ± 0.25 %
- DN 80 to DN 600 (3" to 24")
- Wide dynamic range

FUNCTIONAL PRINCIPLES

This method consists of measuring the difference in transit time between the ultrasonic pulses transmitted in the direction of flow and counter current from A to B and from B to A, respectively T_{AB} and T_{BA}. The average velocity V_{AB} along the segment AB is proportional to (T_{BA} - T_{AB}).

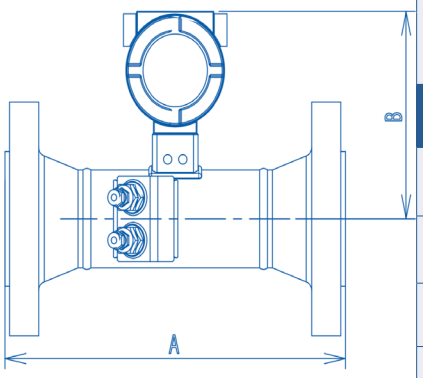


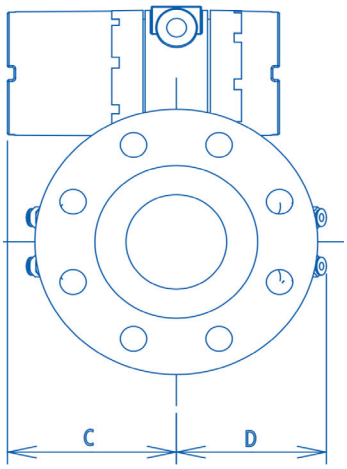
$$V_{AB} = \frac{L_{AB}}{2.\cos\theta} \times \frac{T_{BA} - T_{AB}}{T_{BA} \cdot T_{AB}}$$

MAXIMUM VISCOSITY RANGES: Available by Meter Size, Accuracy Class & Turn Down Ratio (TDR)

TDR	Accuracy	Maximum Viscosity (cSt): Available by Meter Size - Single Product Calibration											
		50 (2″)	80 (3″)	100 (4″)	150 (6″)	200 (8″)	250 (10″)	300 (12″)	350 (14″)	400 (16″)	450 (18″)	500 (20″)	600 (24″)
10:1*	Class 1	1	2	2	3	4	5	6	7	8	10	11	12
	Class 2	5	7	11	14	22	25	30	35	40	48	50	60
5:1*	Class 1	2	3	4	6	8	10	12	14	16	19	22	24
	Class 2	10	14	21	28	44	50	60	70	80	86	100	120
3:1*	Class 1	3	6	7	9	12	15	18	21	24	30	33	36
	Class 2	15	30	35	45	60	75	90	105	120	150	165	180

**For any other applications, please consult your Faure Herman representative.*





STANDARD SIZES: Flanges ANSI 150 TO ANSI 900

SIZES		A		B		C		D		Weight ~ ANSI 150		Flowrates					
												Minimum (0.5 m/s)		Maximum (10 m/s)		Max. Design (13 m/s)	
in	mm	in	mm	in	mm	in	mm	in	mm	lbs	kg	Bbl/h	m³/h	Bbl/h	m³/h	Bbl/h	m³/h
2	50	11.8	300	10.9	278	5.4	138	5.2	133	33	15	2.5	0.4	440	70	570	90
3	80	11.8	300	11.5	292	5.4	138	6.1	155	44	20	5	0.8	1010	160	1320	210
4	100	17.7	450	12.0	305	5.4	138	7.4	187	74.8	34	8.2	1.3	1700	270	2200	350
6	150	21.7	550	13.1	332	5.4	138	9.0	228	114.4	52	18.9	3	3770	600	4910	780
8	200	23.7	600	14.1	358	5.4	138	10.2	260	187	85	34.6	5.5	6920	1100	8990	1430
10	250	29.5	750	15.2	385	5.4	138	12.0	304	253	115	53.5	8.5	10690	1700	13900	2210
12	300	27.6	700	16.1	410	5.4	138	13.0	329	374	170	75.5	12	15100	2400	19620	3120
14	350	27.6	700	16.8	426	5.4	138	13.9	352	462	210	91.2	14.5	18240	2900	23710	3770
16	400	29.5	750	17.8	451	5.4	138	15.5	393	605	275	120	19	23900	3800	31070	4940
18	450	31.5	800	18.8	477	5.4	138	16.6	421	748	340	151	24	30190	3800	39250	6240
20	500	33.5	850	19.8	502	5.4	138	18.0	456	935	425	189	30	37740	6000	49060	7800
24	600	37.4	950	21.8	553	5.4	138	20.5	520	1386	630	267	42.5	53460	8500	69500	11050

LOWER TOTAL COST OF OWNERSHIP WITH ULTRASONIC TECHNOLOGY

THE LOGIC OF FHVIEW Our FHView software is a PC-compatible software for the configuration and operation of the Faure Herman ultrasound product line. This product line includes ultrasonic flowmeters for both custody transfer and non-custody transfer applications. The communication between FHView and the FH83NEO is carried out using the MOD-BUS protocol through an RS485 serial link.

SPECIFICATIONS

Environment		
Ambient temperature range		-20 to + 60° C (-4 to + 140° F)
Process temperature range		-40 to + 120° C (-40 to + 248° F)
Storage temperature		-40 to + 70° C (-40 to + 158° F)
Climate protection		IP 66 / NEMA 4X
Safety: ATEX II 2 G		
Transducer classification		Ex db IIB T6 to T3 Gb / LCIE 04 ATEX 6047 X
Housing classification		Ex db IIB T6 Gb / LCIE 04 ATEX 6071 X
Remote control		Ex ib IIB T4 Gb / LCIE 03 ATEX 6240 X
Mechanical Specifications		
Standard sizes		DN 50 to DN 600 (2" to 24") (Others on request)
Maximum operating pressure		150 bar (2180 PSI)
Flowmeter body material		Carbon Steel Stainless Steel Other materials on request
Flanges		ANSI 150/300/600/900
Transducers		Removable under operating conditions
Performance		
Precision classes	FH83NEO-1	±1.0%
	FH83NEO-2	±0.5%
	FH83NEO-3	±0.25%
Repeatability		±0.1%
Minimum flow detection		0.5 m/s
Density range		400 to 1,500 kg/m^3
Pressure Drop		None
Electronics		
Power supply		24 Vdc 8W - 230 Vac
Inputs		4 -20 mA
Output		(x2) 4-20mA (flow and/or speed of sound) (X1) or (X2) pulse with galvanic isolation Frequency 0 -10 kHz with galvanic isolation
Serial communication		(X1) or (X2) potential free contacts (alarms)
Software		Modbus RTU through RS 485 with galvanic isolation FHView configuration and analysis software
Installation conditions		
Standard		Straight length upstream, (x10) to (x30) D depending on the flow conditions Straight length down stream, (x3) D
Options		
Communication		HART
Local LCD display		(X4) alphanumeric lines
History of events		Flow, speed of sound...
Remote converter		Distance < 5m

FAURE HERMAN Ultraflux Counting every Drop

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