



FH83 NEO

ULTRASONIC FLOWMETERS



A Versatile Ultrasonic Flowmeter to Meet Your Process Needs

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

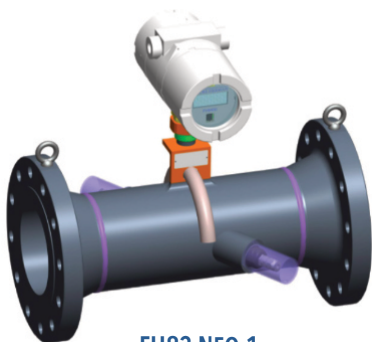
Derived from the latest technological innovations, the transducers on the FH83NEO guarantee excellent measurement reliability.

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

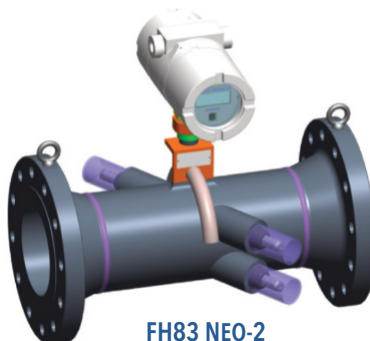
Flexible configurations enable selecting the desired number of chords, as well as the desired accuracy to customize your FH83NEO to your application.

Model	Number of Path	Classe 1	Classe 2
FH83 Neo - 1	1	1 %	2 %
FH83 Neo - 2	2	0.5 %	1 %
FH83 Neo - 3	3	0,25 %	0,5 %



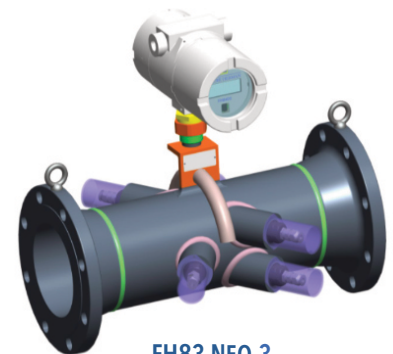
FH83 NEO-1

- 1 Path
- Accuracy $\pm 1\%$
- DN 80 to DN 600 (3" to 24")



FH83 NEO-2

- 2 Paths
- Accuracy $\pm 0.5\%$
- DN 80 to DN 600 (3" to 24")
- Wide dynamic range



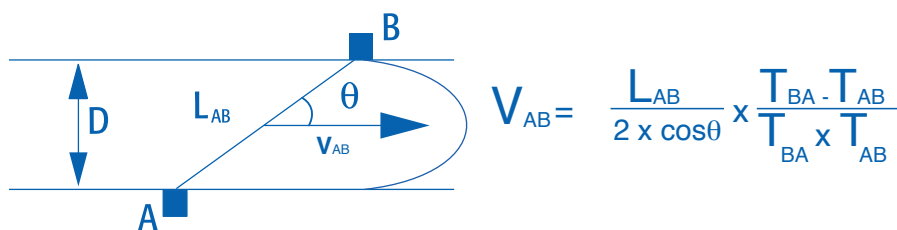
FH83 NEO-3

- 3 Paths
- Accuracy $\pm 0.25\%$
- 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} .

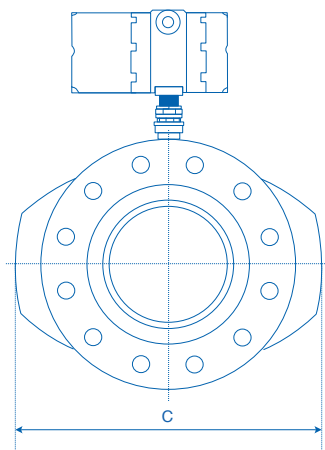
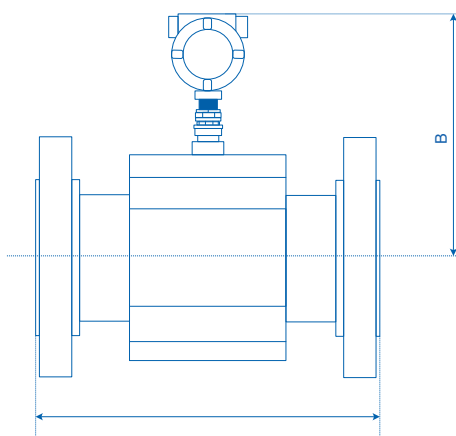
The average velocity V_{AB} along the segment AB is proportional to $(T_{BA} - T_{AB})$.



MAXIMUM VISCOSITY (cST)

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

* For all other applications, please consult your Faure Herman representative



Standard Sizes : Flanges ANSI 150 to ANSI 900

Size		A #150 - #300		A #600 - #900		B		C		Weight (Approx. - ANSI150)	
In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	lbs	kg
3	80	13,8	350	17,7	450	13,2	335	14,6	370	79	36
4	100	15,7	400	19,7	500	14,4	365	15,7	400	84	38
6	150	18,7	475	21,7	550	15,7	400	18,1	460	126	57
8	200	21,7	550	23,6	600	16,7	425	20,1	510	203	92
10	250	23,6	600	29,5	750	17,7	450	22,4	570	271	123
12	300	27,6	700	31,5	800	18,7	475	24,8	630	419	190
14	350	29,5	750	33,5	850	19,7	500	26,0	660	487	221
16	400	31,5	800	35,4	900	20,7	525	28,3	720	635	288
18	450	33,5	850	37,4	950	21,7	550	30,3	770	783	355
20	500	35,4	900	39,4	1000	22,6	575	32,3	820	974	442
24	600	37,4	950	43,3	1100	24,6	625	37,0	940	1 437	652

Flowrates

Size		Minimum (V=0,5m/s)		Maximum (V=10m/s)		Max. Design (V=13m/s)	
In.	mm	BPH	m³/h	BPH	m³/h	BPH	m³/h
3	80	48,5	7,75	975	155	1 250	200
4	100	85	13,5	1 700	270	2 200	350
6	150	190	30	3 800	610	4 500	790
8	200	345	55	6 900	1 100	8 800	1 400
10	250	545	87	11 000	1 750	14 150	2 250
12	300	800	127	16 000	2 550	20 750	3 300
14	350	975	155	19 500	3 100	25 150	4 000
16	400	1 290	205	25 800	4 100	33 650	5 350
18	450	1 665	265	33 000	5 250	43 100	6 850
20	500	2 075	330	41 500	6 600	54 000	8 550
24	600	3 050	485	61 000	9 650	79 000	12 550

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.



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Specifications

Environnement		
Ambiant temperature range		- 40 to + 60 °C (- 4 to + 140 °F)
Process temperature range		- 40 to + 100 °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 (suitable for installation in zone 1, division 1 groups C & D)		
Transducer classification		Ex db IIB T6 à T4 Gb / INERIS 21ATEX0035X
Housing classification		Ex db IIB T6 Gb / INERIS 21ATEX0036X
Télécommande		Ex ib IIC T4 Gb / LCIE 03 ATEX 6240 X
Mechanical specifications		
Standard sizes		DN 80 to DN 600 (3" to 24") (Others on request)
Maximum operating pressure		150 bar (2180 PSI)
Flowmeter body material		Carbon Steel Stainless Steel Others materials on request
Flanges		ANSI 150/300/600/900
Transducer		Removable under operating conditions
Performance		
Precision classes	FH83Neo-1	± 1 %
	FH83Neo-2	± 0,5 %
	FH83Neo-3	± 0,25 %
Repeatability		± 0,1 %
Maximum flow speed		13 m/s
Minimum velocity detection		0,05 m/s
Viscosity range		0,2 à 180 cSt
Density range		400 à 1,500 kg/m ³
Pressure drop		Negligeable
Electronics		
Power supply		24 Vdc 8W - 230 Vac
Inputs		(2x) 4-20 mA
Outputs		(x2) 4-20 mA (Flow and/or Speed of sound) (X1) or (x2) Pulse 0,1 - 1,000 l/imp. with galvanic isolation Frequency 0-10 kHz with galvanic isolation (X1) ou (x2) potential free contacts (alarms)
Local display (LCD)		(X4) Alphanumeric lines
Serial communication		Modbus RTU Through RS 485 with galvanic isolation
Software		FHview configuration & analysis software
Installation conditions		
Standard		Upstream straight length, (x10) to (x30) D depending on the flow conditions Downstream straight length, (x3) D
Options		
Communication		HART
Remote converter		Distance < 5m