

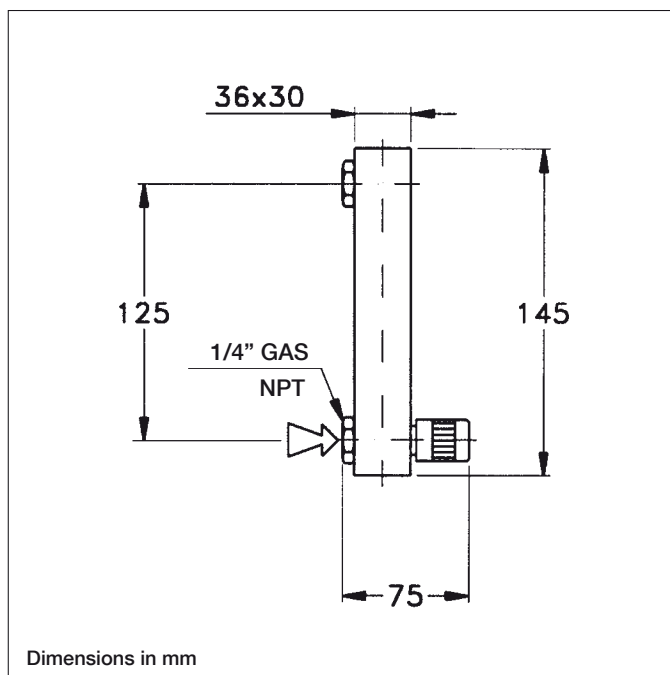
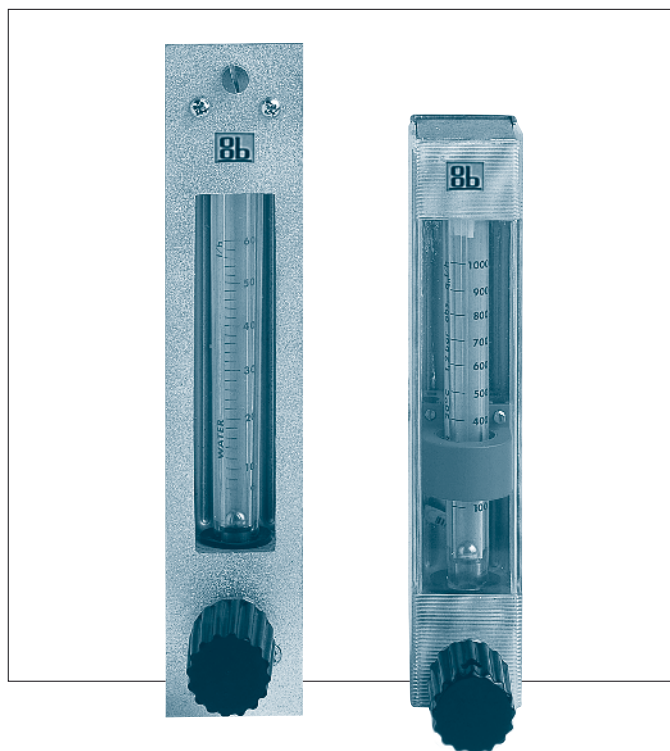
212 SERIES - FLOWMETERS

TECHNICAL FEATURES

- Borosilicate glass tube
- Structure in AISI 304
- Wetted parts in AISI 316
- Spherical float in AISI 316
- Built-in control valve in AISI 316
- Gaskets in Viton
- Float-stop in Teflon
- Length of the scale about 65 mm.
- Accuracy: $\pm 5\%$ full scale value
- Max pressure 16 bar
- Max temperature 100° C
- Quick replacement of the glass
- Protection in plexiglass
- Holes for fixing on panel
- Weight 0,4 kg

ACCESSORIES

- Inductive monostable or bistable alarm NAMUR type
- Aluminium frontal panel



SPHERE Diameter mm	CODE scale	H ₂ O (l/h) 20°C	CODE scale	AIR (NI/h) 20°C 1 bar ass.
4	-	-	H0	0,5 - 5
4	-	-	H1	0,8 - 8
4	-	-	H2	1,6 - 16
4	-	-	H3	2,5 - 25
4	-	-	H4	4 - 40
4	E0	0,25 - 2,5	H5	6 - 60
6	F0	0,5 - 5	G0	10 - 100
6	F1	1 - 10	G1	16 - 160
6	F7	1,6 - 16	G2	25 - 250
6	F2	2,5 - 25	G3	40 - 400
6	F3	4 - 40	G4	63 - 630
6	F4	6 - 60	G5	100 - 1.000
6	F5	10 - 100	G6	160 - 1.600
6	F6	16 - 160	G7	250 - 2.500
6	-	-	G8	400 - 4.000

The alarm contact is not applicable on the flowmeters with scale code “F6” “G7” and “G8”

HOW TO ORDER

Example: 212 - J - 1 - F4 - C0 - XX

212	model
J	wetted parts in AISI 316
1	connections 1/4" GAS-F
2	connections 1/4" NPT-F
F4	Flow range 6-60 l/h H ₂ O (see schedule code)
C0	no sensor
C1	bistable inductive sensor
C2	monostable inductive sensor
XX	speciality to be described separately (ex. aluminium frontal panel)

In case of fluid different from water please specify the type of fluid precising: specific gravity, viscosity, temperature, pressure, at the operating conditions.

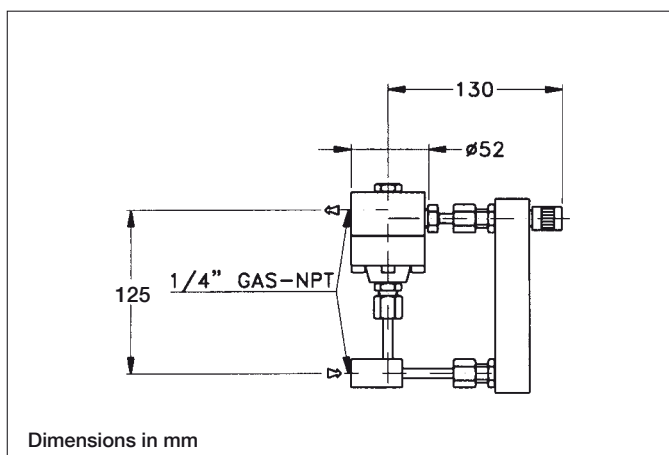
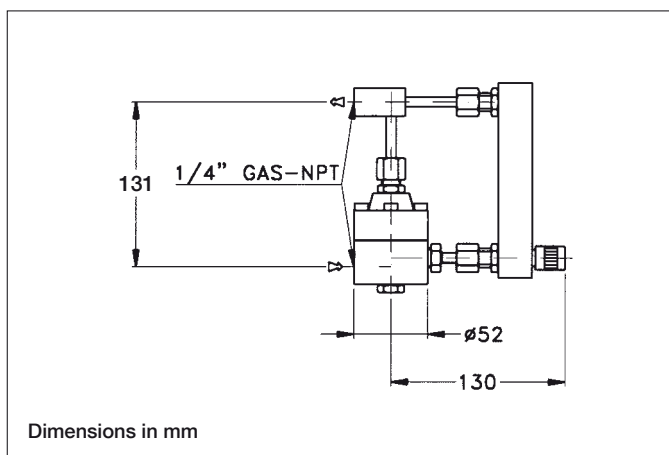
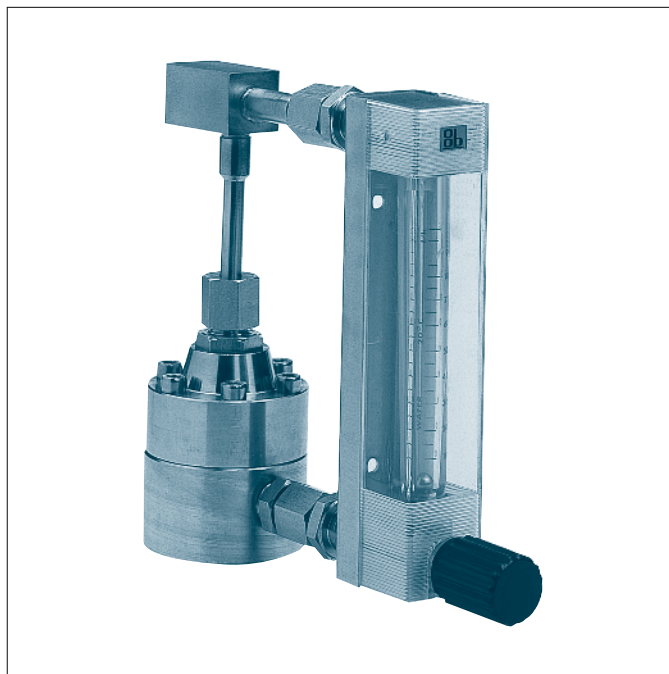
212R SERIES - PURGE FLOWMETERS

TECHNICAL FEATURES

- Borosilicate glass tube
- Structure in AISI 304
- Wetted parts in AISI 316
- Spherical float in AISI 316
- Built-in control valve in AISI 316
- Gaskets in Viton
- Float-stop in Teflon
- Membrane in Viton
- Length of the scale about 65 mm.
- Accuracy: $\pm 5\%$ full scale value
- Quick replacement of the glass
- Protection in plexiglass
- Holes for fixing on panel
- Supply pressure 2 - 8 Bar
- Differential pressure min. 0,5 Bar
- Self-regulator in brass or AISI 316 for flow in input or output from 1/4" up to 3000 NI/h of air
 - Self-regulator in input (RE), is used with variable pressure in input and constant in output (this last value has to be used in the calculation).
 - Self-regulator in output (RU), is used with variable pressure in output and constant in input (this last value has to be used in the calculation).
- Weight 1,4 kg

ACCESSORIES

- Inductive monostable or bistable alarm NAMUR type
- Aluminium frontal panel



SPHERE DIAMETER mm	CODE scale	AIR (NI/h) 20°C 1 Bar
4	H0	0,5 - 5
4	H1	0,8 - 8
4	H2	1,6 - 16
4	H3	2,5 - 25
4	H4	4 - 40
4	H5	6 - 60
6	G0	10 - 100
6	G1	16 - 160
6	G2	25 - 250
6	G3	40 - 400
6	G4	63 - 630
6	G5	100 - 1.000
6	G6	160 - 1.600
6	G7	250 - 2.500
6	G8	400 - 4.000

The alarm contact is not applicable on the flowmeters with scale code "G7" and "G8"

HOW TO ORDER

Example: 212R - J - 1 - G5 - C0 - RPJE - XX

212R model

J wetted parts in AISI 316

- 1 threaded connections 1/4" GAS-F
- 2 threaded connections 1/4" NPT-F
- 3 flanged connections DN 15 PN16 UNI
- 4 connections 1/2" ANSI 150 RF
- 5 connections 1/2" ANSI 300 RF

G5 flow range 100 - 1000 NI/h (see schedule code)

C0 no sensor

C1 bistable inductive sensor

C2 monostable inductive sensor

RPJE self-regulator 1/4" ss 316 in input

RPJU self-regulator 1/4" ss 316 in output

RPOE self-regulator 1/4" in brass in input

RPOU self-regulator 1/4" in brass in output

XX speciality to be described separately

In case of gas different from air please specify the type of gas precising: specific gravity, temperature, pressure, at the operating conditions.

FTV SERIES - FLOWMETERS

Variable area flowmeter with borosilicate glass tube, for high and low ranges of liquids and gases.

APPLICATIONS

Chemical, petrochemical, paper, sacchariferous, food, pharmaceutical, medical, glass manufacture, textile, extractive, mining, iron and galvanic industries, water treatment plant, oenological, thermotechnical and ecological plants.

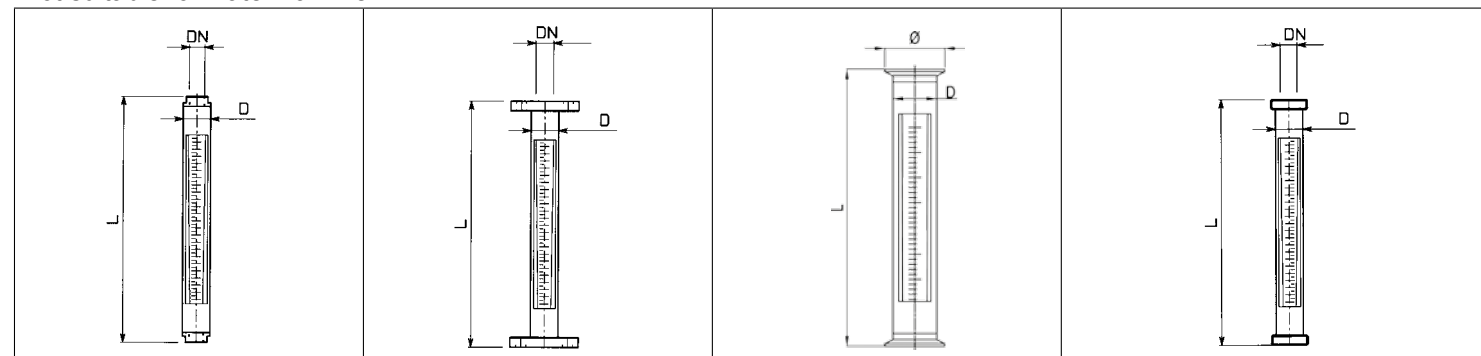
TECHNICAL FEATURES

- Accuracy: $\pm 2\%$ full scale value (3% with spherical float)
- Max temperature 120° C (higher temperatures on request)
- Lenght of reading scale:
 - 220 mm for mod. 210 - 215 - 225
 - 150 mm for mod. 240 - 250
- Measuring range 1 ÷ 10
- Free or guided float
- Vertical mounting with rising flow
- Strong structure in painted carbon steel
- Wetted parts in carbon steel - AISI 316 - PVDF (other material on request)
- Borosilicate glass measuring tube; lenght 300 mm
- Gaskets in Viton (other materials on request)
- Float stop in in PTFE
- Connections:
 - flanged ANSI 150 - 300 RF/UNI PN 10-16 2223/29
 - threaded DIN 11851 (food)
 - threaded GAS-F/NPT-F
 - Tri-Clamp BS 4825 (other standard on request)

OPTIONS-ACCESSORIES

- Guided float
- Plexiglass protection
- Housing in AISI
- Special scale
- Float in special material
- Double window
- Self-regulating for flows in input or output for gas
 - 1/4" up to 3 Nmc/h
 - 1/2" up to 20 Nmc/h
- Self-regulator in input (RE), is used with variable pressure in input and constant in output (this last value has to be used in the calculation).

Not suitable for water hammer



CONNECTIONS		THREADED		FLANGED		TRI-CLAMP		THREADED	
MODEL	D (mm)	DN	L (mm)	DN		Ø (mm)	L (mm)	DN DIN 11851	L (mm)
				UNI	ANSI				
FTV 210	38	1/2"	344	15	1/2"	344	50,4	20	344
FTV 215	38	1/2"	344	15	1/2"	344	50,4	20	344
FTV 225	55	1"	348	25	1"	348	50,4	25	376
FTV 240	70	1 1/2"	370	40	1 1/2"	370	50,4	40	386
FTV 250	90	2"	380	50	2"	380	63,9	50	386





SCHEDULE FOR FLOWS WITH SPHERICAL FLOAT

MOD.	max Press. (bar)	FLOAT. MAT.	H ₂ O F.S. (l/h)	FLOAT. MAT.	AIR F.S. (NI/min.)	PD (mbar)
FTV 210	10	VN	1	VN	0,8	5
	10	VN	3	VN	1,3	5
	10	MD	4 (1)	MD	2,2 (1)	5
	10	VN	4	VN	2,5	5
	10	MD	6	VN	3	5
	10	VN	10	MD	3,5	5
	10	MD	12 (1)	MD	6 (1)	5
	10	VN	12,6	VN	7	5
	10	MD	16	MD	10	5
	10	MD	30	VN	10	5
	10	VN	32	MD	16	5
	10	MD	40	MD	22	5

The alarm contact are applicable only on the flowmeters with float in "MD", excluded scales with note (1)

Flowrange H₂O at 20° C; Flowrange of AIR at 20° C - 1 bar

VN = Black Glass; MD = Hard Metal

SCHEDULE FOR FLOW WITH CONICAL FLOAT

MOD.	Max Press (bar)	H ₂ O Float SS316 F.S. (l/h)	PD (mbar)	H ₂ O Float PVDF F.S. (l/h)	PD (mbar)	AIR Float SS316 F.S. (Nm ³ /h)	PD (mbar)	AIR Float AL ⁽¹⁾ F.S. (Nm ³ /h)	PD (mbar)	AIR Float DISC ⁽²⁾ F.S. (Nm ³ /h)	PD (mbar)
FTV 215	12	40*	10	-	-	-	-	-	-	-	-
FTV 215	12	63*	11	-	-	-	-	1	5	-	-
FTV 215	12	100	12	63	6	3	12	1,6	6	1,2	2
FTV 215	12	160	18	100	9	5	18	2,5	7	1,6	3
FTV 215	12	250	20	160	10	8	20	4	8	2,5	3
FTV 215	12	400	26	250	13	12	26	6,3	9	4	3
FTV 215	12	630	30	400	15	20	30	10	11	6	3
FTV 225	12	630	28	400	14	20	28	10	10	6,3	4
FTV 225	12	1.000	40	630	20	30	40	16	12	10	4
FTV 225	12	1.600	50	1000	25	50	50	25	18	15	4
FTV 240	9	1.600	34	1000	17	50	34	25	14	16	6
FTV 240	9	2.500	40	1600	20	80	40	40	16	25	6
FTV 240	9	4.000	50	2500	25	120	50	63	18	40	6
FTV 250	9	4.000	48	2500	24	120	48	63	16	40	7
FTV 250	9	6.300	65	4000	33	200	65	100	20	63	7
FTV 250	9	10.000	85	6300	43	-	-	-	-	80	7

* Float in Titanium - (1) AL.= Float in Aluminium - (2) DISC= Float in AISI 316 type Disc

Flowrange H₂O at 20°C; Flowrange AIR at 20°C - 1 Bar ass.

In case of fluids different from water or air please specify the type of fluid precising: specific gravity, viscosity, temperature, pressure, at the operating conditions.

HOW TO ORDER Es.: FTV215 - A - A - MD - V - XX

FTV215 model	N	NPT-F threaded connections	VN	float in Black Glass	PT	float disc	
A	ANSI connections	A	wetted parts in	J	float in AISI 316	V	gaskets in Viton
U	UNI connections		Carbon Steel	AL	float in Aluminium	XX	speciality to be
D	DIN connection (food)	J	wetted parts in AISI 316	Ti	float in Titanium		described separately
T	TRI - CLAMP connections	PF	wetted parts in PVDF	Hc	float in Hastelloy c		
G	GAS-F threaded connections	MD	fload in Hard Metal	PF	float in PVDF		



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Information subject to change without prior warning

FD SERIES FLOWMETERS

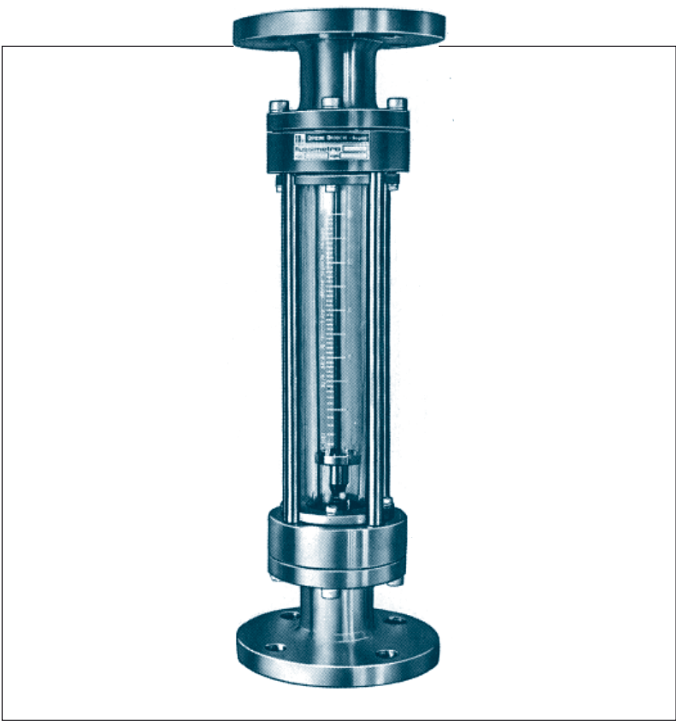
Variable area flowmeters with glass measuring tube for small and large flows, suitable for gases and liquids.

APPLICATIONS

Flowmeters can be used in the following industries: chemical and petrochemical, pulp and paper, food and sugar, pharmaceutical, glass, textile, mining, metallurgical and galvanizing industry. The instruments can also be used by manufacturers of water treatment plants, wine, thermal, hospital and anti-pollution plants.

TECHNICAL DATA

- Accuracy: $\pm 2\%$ f.s. ($\pm 3\%$ with spherical float)
- Max. working temperature: 60°C .
On request, versions can be made for use in temps. up to 200°C .
- Length of reading scale:
 - 230 mm. for all types up to mod. FD-5b
 - 340 mm. for types FD-Z1, FD-Z2, FD-Z3.
- Measuring range: $1:10$
- Guided float (only on metal version):
 - for gases as from mod FD-2b
 - for liquids as from mod. FD-3b.



The direct reading flowmeters of the FD series have a rigid support structure consisting of 4 C/steel columns. The connections to the process can be threaded or flanged. The measuring tube is made of boron-silicate glass which is perfectly calibrated and therefore easily replaced by the user without needing to change the float. It is sealed with adjustable gaskets and glands.

The following table shows, for each type of instrument, the standard flows of water at 20°C and of air at 20°C and 760 mm. Hg.

MODEL	METALLIC STRUCTURE		PLASTIC STRUCTURE
	Std. flows of H_2O (l/h)	Std. flows of air (Nm^3/h) (1)	Std. flows H_2O (l/h)
FD - 0 - 1	1	0,8* - 2,2*	1
FD - 0 - 2	3 - 12	2,5* - 6*	3
FD - 0 - 3	6	1,3* - 3,5*	-
FD - 0 - 4	4 - 16	3* - 10*	4
FD - 1 - 1	10 - 30	7* - 16*	10
FD - 1 - 2	40	22*	12
FD - 1 - 3	50 - 100	1,5 - 2 - 2,5 - 4	35 - 60 - 100
FD - 2	150	3 - 4	130
FD - 2b	200 - 250	5 - 6	200 - 250
FD - 3	300 - 400 - 500 - 600 - 700	7 - 8 - 10 - 12	300 - 350 - 400 - 500 - 600
FD - 3b	700 - 800 - 1000	15 - 20 - 25	900 - 1200 - 1400
FD - 4	1500 - 2000 - 2500 - 3000	30 - 35 - 40 - 50 - 60	1500 - 2000 - 2500 - 3000
FD - 5b	4000 - 5000 - 6000	90	4000 - 5500
FD - Z1	8000	100 - 120	8000
FD - Z2	10000 - 13000 - 16000	150 - 200	10000 - 12000 - 15000
FD - Z3	20000 - 25000 - 30000	300 - 400	18000 - 25000 - 28000

1) Flows marked with * are in NI/min .

STANDARD SIZES AND CONNECTIONS

MOD.	metal struc.			plastic struc.			E (1)			C (2)								P (3) (mm) H ₂ O	1) Standard threading to UNI - ISO/228.1
	A (mm)	D (mm)	B (mm)	A (mm)	D (mm)	B (mm)				DN				ANSI					
FD-0-1	506	378	55	542	412	82	1/4"	1/2"	-	15	-	-	-	-	1/2"	-	-	50	2) Standard flange connection to UNI PN 10, ANSI 150 RF
FD-0-2	506	378	55	542	412	82	1/4"	1/2"	-	15	-	-	-	-	1/2"	-	-	50	
FD-0-3	506	378	55	542	412	82	1/4"	1/2"	-	15	-	-	-	-	1/2"	-	-	50	
FD-0-4	506	378	55	542	412	82	1/4"	1/2"	-	15	-	-	-	-	1/2"	-	-	50	
FD-1-1	506	378	55	542	412	82	1/4"	1/2"	-	15	-	-	-	-	1/2"	-	-	50	3) Pressure drop at max. flow. sime
FD-1-2	506	378	55	542	412	82	1/4"	1/2"	-	15	-	-	-	-	1/2"	-	-	50	
FD-1-3	506	378	55	542	412	82	1/4"	1/2"	-	15	-	-	-	-	1/2"	-	-	50	
FD-2	506	380	65	542	412	82	1/4"	1/2"	-	15	20	-	-	-	1/2"	3/4"	-	50	
FD-2b	506	380	65	556	432	95	1/4"	1/2"	3/4"	15	20	25	-	-	1/2"	3/4"	-	100	
FD-3	510	390	80	556	432	95	1/2"	3/4"	1"	15	20	25	32	1/2"	3/4"	1"	1 1/4"	150	
FD-3b	510	390	80	556	434	100	1/2"	3/4"	1"	15	20	25	32	1/2"	3/4"	1"	1 1/4"	300	
FD-4	510	395	92	556	444	116	1"	1 1/4"	1 1/2"	20	25	32	40	3/4"	1"	1 1/4"	1 1/2"	500	
FD-5b	522	430	112	556	452	140	1"	1 1/4"	1 1/2"	25	32	40	50	1"	1 1/4"	1 1/2"	2"	550	
FD-Z1	625	535	112	677	573	140	1"	1 1/4"	1 1/2"	25	32	40	50	1"	1 1/4"	1 1/2"	2"	600	
FD-Z2	629	535	138	707	573	164	1 1/2"	2"	-	32	40	50	65	1 1/4"	1 1/2"	2"	2 1/2"	400	
FD-Z3	653	580	167	707	593	182	2"	2 1/2"	3"	50	65	80	-	2	2 1/2"	3"	-	500	

MATERIALS

CODE FOR:	Materials	Carbon steel	AISI 304	AISI 316	PVC	MOLEN	PVDF
	Body and wet parts	A	I	J	P	M	PF
	Float	/	/	J (1)	P	M	PF
	gaskets	Neoprene (N)	Viton (V)	Teflon (T)			

1) from models FD-0-1 to fd-1-2 the float is in hard metal or black glass depending on the flow.

Flowmeters in the FD series are usually supplied with structures and connections for a nominal pressure of 10 Bar for metlic versions up to mod. FD-4; 8 Bar for mod. FD-5b, FD-Z1, FD-Z2; 6 Bar for mod. FD-Z3 and all plastic versions.

ACCESSORIES

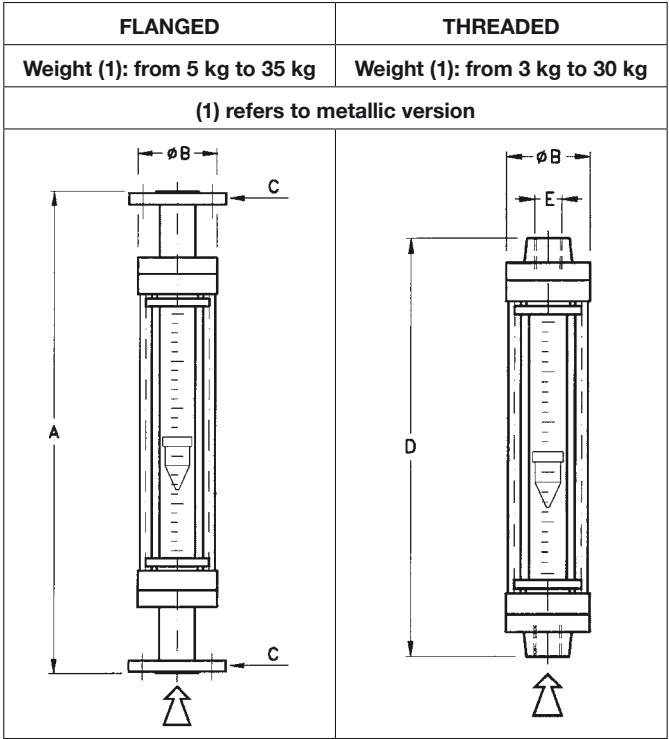
- Min. / Max. flow alarms by inductive proximity transducers (and power supply of 220 V - 110 V - 24 V/50 Hz) with output on SPDT 5 A, 220 VAC switches. Can be used on metal instruments but with the minimum structure of FD-3 (from 10 l/h to 30 m³/h of H₂O).
- Protection in transparent plastic material.

HOW TO ORDER

Example: FD 1 - 3 - I - J - N

FD -1-3 model
I body and wet parts
J float in AISI 316
N neoprene gaskets

Where there are fluids other than water, the following data is required: type of fluid, specific gravity, viscosity, temperature, and pressure under operating conditions.



500 SERIES FLOWMETERS

Variable area flowmeters with glass measuring tube for small and large flows, suitable for gases and liquids.

APPLICATIONS

Flowmeters can be used in the following industries: chemical and petrochemical, pulp and paper, food and sugar, pharmaceutical, glass, textile, mining, metallurgical and galvanizing industry. The instruments can also be used by manufacturers of water treatment plants, wine, thermal, hospital and anti-pollution plants.

TECHNICAL DATA

- Accuracy: $\pm 2\%$ of f.s. ($\pm 3\%$ with spherical float)
- Max. working temperature: 60°C . On request, versions can be made for use in temps. up to 200°C .
- Length of reading scale:
 - 230 mm. for all types up to mod. 505b
 - 340 mm. for types 500-Z1, 500-Z2, 500-Z3.
- Measuring range: $1 \div 10$
- Guided float (only on metallic version):
 - for gases as from mod. 502 - b
 - for liquids as from mod. 503 - b.



The direct reading flowmeters of the 500 series have a rigid support (body) structure, not in contact with the fluid, consisting of 4 C/steel columns. The connections to the process can be threaded or flanged. All parts in contact with the fluid for measuring are made from various materials. The measuring tube is made of boron-silicate glass which is perfectly calibrated and therefore easily replaced by the user without needing to change the float. It is sealed with adjustable gaskets and glands. Not suitable for water hammer.

The following table shows, for each type of instrument, the standard flows of water at 20°C and of air at 20°C and 760 mm. Hg.

MODEL	METALLIC STRUCTURE		PLASTIC STRUCTURE
	Std. flows of H_2O (l/h)	Std. flows of air (Nm^3/h) (1)	Std. flows of H_2O (l/h)
500-1	1	0,8* - 2,2*	1
500-2	3 - 12	2,5* - 6*	3
500-3	6	1,3* - 3,5*	-
500-4	4 - 16	3* - 10*	4
501-1	10 - 30	7* - 16*	10
501-2	40	22*	12
501-3	50 - 100	1,5 - 2 - 2,5 - 4	35 - 60 - 100
502	150	3 - 4	130
502-b	200 - 250	5 - 6	200 - 250
503	300 - 400 - 500 - 600 - 700	7 - 8 - 10 - 12	300 - 350 - 400 - 500 - 600
503-b	700 - 800 - 1000	15 - 20 - 25	900 - 1200 - 1400
504	1500 - 2000 - 2500 - 3000	30 - 35 - 40 - 50 - 60	1500 - 2000 - 2500 - 3000
505-b	4000 - 5000 - 6000	90	4000 - 5500
500-Z1	8000	100 - 120	8000
500-Z2	10000 - 13000 - 16000	150 - 200	10000 - 12000 - 15000
500-Z3	20000 - 25000 - 30000	300 - 400	18000 - 25000 - 28000

1) Flows marked with * are in NI/min .

STANDARD SIZES AND CONNECTIONS

MOD.	A (mm)	D (mm)	B (mm)	E (1)	C (2)					P (3) (mm) H ₂ O	1) Standard threading to UNI - ISO/228.1
					DN			ANSI			
500-1	428	400	54	1/2"	15	-	-	1/2"	-	50	2) Standard flange connection to UNI PN 10, ANSI 150 RF
500-2	428	400	54	1/2"	15	-	-	1/2"	-	50	
500-3	428	400	54	1/2"	15	-	-	1/2"	-	50	
500-4	428	400	54	1/2"	15	-	-	1/2"	-	50	
501-1	428	400	54	1/2"	15	-	-	1/2"	-	50	3) Pressure drop at max. flow.
501-2	428	400	54	1/2"	15	-	-	1/2"	-	50	
501-3	428	400	54	1/2"	15	-	-	1/2"	-	50	
502	428	400	54	1/2"	15	-	-	1/2"	-	50	
502-b	433	400	80	1"	15	20	25	3/4"	1"	100	
503	433	400	80	1"	15	20	25	3/4"	1"	150	
503-b	433	400	80	1"	20	25	-	3/4"	1"	300	
504	433	400	112	1 1/2"	25	40	-	1 1/4"	1 1/2"	500	
505-b	442	400	130	2"	32	50	-	1 1/2"	2"	550	
500-Z1	545	505	130	2"	32	50	-	1 1/2"	2"	600	
500-Z2	608	560	145	2 1/2"	50	65	-	2"	-	400	
500-Z3	608	560	167	3"	65	80	-	2 1/2"	-	500	

MATERIALS

CODE FOR:	Materials	Carbon steel	AISI 304	AISI 316	PVC	MOPLEN	PVDF
	Body	A	I	/	/	/	/
	Wet parts	A	I	J	P	M	PF
	Float	/	/	J (1)	P	M	PF
	Gaskets	Neoprene (N) Viton (V)					
1) From models 500-1 to 501-2 the float is in hard metal or black glass depending on the flow.							

Flowmeters in the 500 series are usually supplied with structures and connections for a nominal pressure of 10 Bar for metallic versions up to mod. 504; 8 Bar for mod. 505-b, 500-Z1, 500-Z2; 6 Bar for mod. 500-Z3 and all plastic versions.

ACCESSORIES

- Min. / Max. flow alarms by inductive proximity transducers (and power supply of 220 V - 110 V - 24 V/50 Hz) with output on SPDT 5A, 220 VAC switches. Can be used on metal instruments but with the minimum structure of the 503 model (from 10 l/h to 30 m³/h of H₂O).
- Protection in transparent plastic material.

HOW TO ORDER

Example: 501-3 - A - I - J - N

- 501-3 model
A body in carbon steel
I wet parts in AISI 304
J float in AISI 316
N neoprene gaskets

Where there are fluids other than water, the following data is required: type of fluid, specific gravity, viscosity, temperature, and pressure under operating conditions.

