

ROBUST HIGH QUALITY FLOW MONITORS

Two adjustable alarms
Display LCD, 4 – 20 mA
output and HART



Mechanical Flow Monitor for Liquids & Gases



The D-series has a digital display that can be rotated electronically in 90 degree increments all over a 360 degree angle. The D-series Flow Monitor can then be installed in any position, vertically or horizontally, and with the flow coming from four different directions.

There is also a resettable flow totalizer, which summarizes the flow over time within the chosen measuring range. In order to conveniently set up a flow system at dry conditions, a simulation mode for the analog and frequency output signal as well as the HART protocol can be activated.

- Liquid and gases can be measured
- 4-20 mA output, HART protocol, pulse or frequency
- Two settable local alarms
- Digital back-lit graphic display
- Not affected by static pressure
- Interchangeable control units to fit all pipe sections

The D-Series Flow Monitor

The Eletta Flow Monitors' function is based on the proven and dependable differential pressure principle. This is perhaps the oldest and most widely used principle for flow metering, mainly because of its simplicity and its relatively low cost.

The Eletta D-series Flow Monitor is used to control flow of liquids and gases in pipes from 15 mm to 500 mm. With two relay contacts, independently adjustable within the ordered flow range, you can protect expensive equipment in various piping systems. The switching point is highly repeatable, within <2%. The D-series has the long-standing proven mechanical function with outstanding reliability. The exceptionally sturdy and robust design makes it extremely well suited for difficult environments.

The D-series comes in two measuring ratios which means that the D2 has a measuring span of 1:2 and the D5 has a span of 1:5. The 1:2 measuring D2 also has a Low Pressure variant called D2-LP, which can measure flow at line pressure as low as 100 mbar, as it creates a rather low DP of just 50 mbar at max flow. This is useful for measuring gravitational flows from overhead tanks and Air Blowers kind of low pressure applications. The highest flow measuring range for D2-LP is typically half of the standard D2. Like all Eletta Flow Monitors the D-series can monitor both liquids and gases.

The instrument consists of two parts mainly, i.e. the Control Unit and the Pipe Section. The Pipe Section is to be mounted in the process pipe and comes in different material and sizes. The Control Unit is mounted directly or remote onto the Pipe Section. The Control Unit can also be used independently to upgrade an already installed Eletta Flow Monitor such as the V- or the S-series even after the installation.

The Control Unit contains the display in which you can easily adjust the monitor to your demands in field. Change your output, local alarms, language, the orientation of the display etc. There is also a simulation function that gives you the possibility to create and simulate a real mA-signal from the unit even if you don't have any flow. In this mode HART protocol transmits the simulated values.

The Control Unit is pre-calibrated before leaving our production facilities. You can change the unit in the field without recalibration.

Eletta Specials



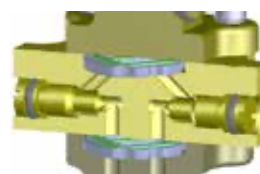
Separate Version

Eletta can also provide several specials, like separate pipe section and Control unit, e.g. to put the display on a better visible place or to avoid vibrations.



Flow Direction change

Easy to change, just unlock 4 screws and turn the flow direction selector to the right direction of your installation. Available on -GL and -FA series.



Shut-off valves

As an option we have a manifold with shut-off valves. This enables you to dismount the Control Unit from the Pipe Section during full operation.



Web Configurator

Visit our website and configure your own Eletta Flow Monitor.
www.eletta.com

Variation of process connections and materials: Steel, Stainless Steel and Brass



D-GL Series

The D-series Flow Monitor with aluminium housing and threaded brass pipe connection. Available in BSP/ NPT threads from 15-40 mm (1/2" - 1 1/2").



D-FA Series

A flanged pipe connection in sizes DN15-400 mm (1/2" - 16") in painted steel. Fits well together with the D-series Flow Monitor with aluminium housing.



D-GSS Series

Also available in a threaded version is the Stainless Steel pipe connection together with the Aluminium housing. It comes with BSP/NPT threads from 15-25 mm (1/2" - 1").



D-FSS Series

Flow Monitor with aluminium housing and Stainless Steel flanged pipe connection (wafer). Available in sizes DN15-500 mm (1/2" - 20").



D-SS-GSS Series

Flow Monitor with Stainless Steel housing and Stainless Steel threaded pipe section with BSP/NPT threads from 15-25 mm (1/2" - 1").



D-SS-FSS Series

Flow monitor with Stainless Steel housing and Stainless Steel flanged pipe section (wafer). Available in sizes DN15-500 mm (1/2" - 20").

All stainless steel

Both housing and pipe-section in Stainless Steel to withstand any harsh environment. This is available to increase the durability of the Monitors when using Stainless Steel pipe sections.

Flow range	0,4-25 000 l/min (liquid), to choose the right range please see table of Measuring ranges.
Flow turndown	D2 and D2-LP - 1:2 D5 - 1:5
Wetted Material	Copper alloy, painted steel. Seaworthy stainless steel 904L, stainless steel 316.
Rubber Parts	Nitrile (HNBR), EPDM and Fluorinated rubber (FPM).
Min. pressure	Appr. 1 bar (14 PSI) / 0,5 bar for LP
Max. pressure	16 bar (232 PSI)
Max. temp. Control Unit	Operating temperature -10 to 65°C
Max. temp. Pipe Section	-GL and -FA: -10 to 120°C -GSS and -FSS: -10 to 250°C
Enclosure	IP65

Display	Backlit graphic display, electronically rotatable 90/180/270/360° 58x30 mm (2,6" FSTN)
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Counter	Re-settable flow volume counter
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Process Connection	DN 15-40 BSP/NPT thread DN 15-500 DIN/ANSI flange (wafer)
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Power supply	24 VDC ± 0,4 V
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Connection cable	Shielded twisted pair, min. 0,2 mm ²
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Current consumption	Max 50 mA
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Output	4-20 mA, HART protocol, pulse or 200-1000 Hz frequency
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Alarm relays	Two relay contacts, independently adjustable within the ordered Flow range. Max. 50 V AC/DC. Min. 1 mA, 5 VDC Max. switching capacity: 30 W
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Accuracy	± 2% F.S. (full scale)
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Repeatability	± 2% actual
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For complete specification of various models please refer to the manual.

Certificates



Measuring Ranges



D2 (50-200 mbar)				
Dim. DN		lit/min		
1/2" DN 15	GL, GSS FA, FSS	0,4 - 0,8		
		0,6 - 1,2		
		1 - 2		
		1,6 - 3,2		
		2 - 4		
		2,4 - 4,8		
		3,2 - 6,4		
		4 - 8		
		6 - 12		
		8 - 16		
		10 - 20		
		12 - 24		
		16 - 32		
3/4" DN 20	GL, GSS FA, FSS	4 - 8		
		6 - 12		
		8 - 16		
		10 - 20		
		12 - 24		
		16 - 32		
1" DN 25	GL, GSS FA, FSS	8 - 16		
		10 - 20		
		12 - 24		
		16 - 32		
		24 - 48		
		36 - 72		
		40 - 80		
		50 - 100		
		1 1/4" DN 32	FA, FSS	20 - 40
				28 - 56
40 - 80				
60 - 120				
80 - 160				
1 1/2" DN 40	GL FA, FSS	20 - 40		
		28 - 56		
		40 - 80		
		60 - 120		
		80 - 160		
2" DN 50	FA, FSS	40 - 80		
		60 - 120		
		80 - 160		
		120 - 240		
		160 - 320		
		2 1/2" DN 65	FA, FSS	60 - 120
				80 - 160
				120 - 240
				160 - 320
				240 - 480
3" DN 80	FA, FSS	120 - 240		
		160 - 320		
		240 - 480		
		320 - 640		
		400 - 800		
4" DN 100	FA, FSS	160 - 320		
		280 - 560		
		400 - 800		
		600 - 1200		
		700 - 1400		
5" DN 125	FA, FSS	600 - 1200		
		700 - 1400		
		800 - 1600		
		1000 - 2000		
6" DN 150	FA, FSS	600 - 1200		
		800 - 1600		
		1200 - 2400		
		1400 - 2800		
		1500 - 3000		
8" DN 200	FA, FSS	800 - 1600		
		1200 - 2400		
		1600 - 3200		
		2400 - 4800		
		2500 - 5000		
10" DN 250	FA, FSS	1600 - 3200		
		2000 - 4000		
		3200 - 6400		
		4000 - 8000		

D2-LP (12,5-50 mbar)				
Dim. DN		lit/min		
1/2" DN 15	GL, GSS FA, FSS	0,2 - 0,4		
		0,4 - 0,8		
		0,6 - 1,2		
		1 - 2		
		1,6 - 3,2		
		2 - 4		
		2,4 - 4,8		
		3,2 - 6,4		
		4 - 8		
		6 - 12		
		8 - 16		
		3/4" DN 20	GL, GSS FA, FSS	0,8 - 1,6
				2 - 4
3,2 - 6,4				
4 - 8				
6 - 12				
8 - 16				
10 - 20				
13 - 26				
1" DN 25	GL, GSS FA, FSS	1,4 - 2,8		
		2 - 4		
		4 - 8		
		8 - 16		
		10 - 20		
		12 - 24		
		16 - 32		
1 1/4" DN 32	FA, FSS	3 - 6		
		6 - 12		
		10 - 20		
		16 - 32		
		40 - 80		
1 1/2" DN 40	GL FA, FSS	4 - 8		
		6 - 12		
		8 - 16		
		10 - 20		
		20 - 40		
2" DN 50	FA, FSS	7 - 14		
		16 - 32		
		36 - 72		
		40 - 80		
		90 - 160		
		2 1/2" DN 65	FA, FSS	10 - 20
16 - 32				
20 - 40				
40 - 80				
60 - 120				
3" DN 80	FA, FSS	14 - 28		
		36 - 72		
		60 - 120		
		120 - 240		
		200 - 400		
4" DN 100	FA, FSS	20 - 40		
		40 - 80		
		80 - 160		
		160 - 320		
		320 - 640		
5" DN 125	FA, FSS	40 - 80		
		80 - 160		
		280 - 560		
		500 - 1000		
6" DN 150	FA, FSS	50 - 100		
		120 - 240		
		280 - 560		
		600 - 1200		
		750 - 1500		
8" DN 200	FA, FSS	80 - 160		
		160 - 320		
		320 - 640		
		600 - 1200		
		1200 - 2400		
10" DN 250	FA, FSS	120 - 240		
		280 - 560		
		600 - 1200		
		2000 - 4000		

D5 (22-550 mbar)				
Dim. DN		lit/min		
1/2" DN 15	GL, GSS FA, FSS	0,4 - 2		
		1 - 5		
		2 - 10		
		4 - 20		
		6 - 30		
		8 - 40		
3/4" DN 20	GL, GSS FA, FSS	4 - 20		
		6 - 30		
		8 - 40		
		15 - 75		
1" DN25	GL, GSS FA, FSS	6 - 30		
		12 - 60		
		16 - 80		
		24 - 120		
1 1/4" DN 32	FA, FSS	30 - 150		
		8 - 40		
		20 - 100		
		40 - 200		
		50 - 250		
		1 1/2" DN 40	GL FA, FSS	8 - 40
				20 - 100
				40 - 200
				60 - 300
		2" DN 50	FA, FSS	20 - 100
40 - 200				
70 - 350				
100 - 500				
2 1/2" DN 65	FA, FSS	20 - 100		
		50 - 250		
		100 - 500		
		160 - 800		
3" DN 80	FA, FSS	40 - 200		
		80 - 400		
		160 - 800		
		240 - 1200		
4" DN 100	FA, FSS	80 - 400		
		160 - 800		
		250 - 1250		
		400 - 2000		
5" DN 125	FA, FSS	100 - 500		
		200 - 1000		
		400 - 2000		
		600 - 3000		
6" DN 150	FA, FSS	200 - 1000		
		400 - 2000		
		600 - 3000		
		900 - 4500		
8" DN 200	FA, FSS	400 - 2000		
		600 - 3000		
		1000 - 5000		
		1500 - 7500		
10" DN 250	FA, FSS	600 - 3000		
		1000 - 5000		
		1600 - 8000		
		2400 - 12000		

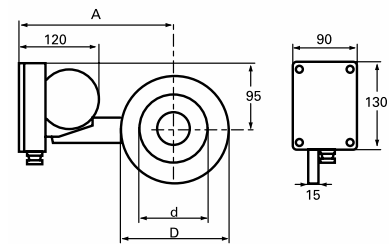
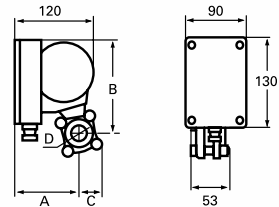
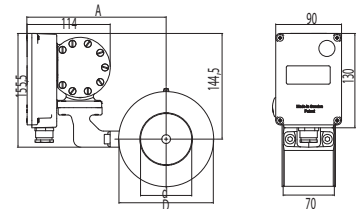
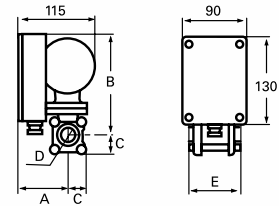
It is possible to order a lower range than indicated. Other ranges can be quoted upon request.



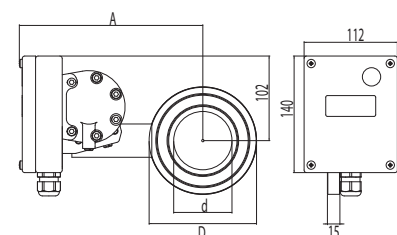
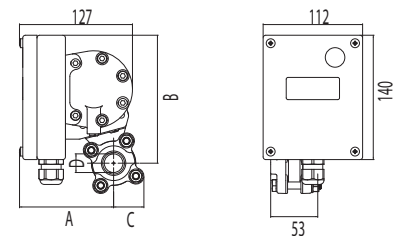
Weight and Dimensions



D - GL						
Type	D	A mm	B mm	C mm	E mm	Weight kg*
-GL15	1/2"	75	150	30	80	3,0
-GL20	3/4"	75	150	30	80	3,0
-GL25	1"	75	150	30	80	3,0
-GL40	1 1/2"	85	160	40	90	4,0
D - FA						
Type	d mm	D mm	A mm	Width mm	Weight kg*	
-FA15	16 (1/2")	53	150	70	4,0	
-FA20	22 (3/4")	63	154	70	4,5	
-FA25	30 (1")	73	161	70	4,5	
-FA32	39 (1 1/4")	84	167	70	5,0	
-FA40	43 (1 1/2")	94	172	70	6,0	
-FA50	55 (2")	109	180	70	6,0	
-FA65	70 (2 1/2")	129	190	70	7,0	
-FA80	82 (3")	144	197	70	8,0	
-FA100	107 (4")	164	207	70	8,0	
-FA125	132 (5")	194	222	70	10,0	
-FA150	159 (6")	219	235	70	11,0	
-FA200	207 (8")	274	263	70	15,0	
-FA250	260 (10")	330	290	70	19,0	
-FA300	310 (12")	385	320	70	21,0	
-FA350	340 (14")	445	345	70	35,0	
-FA400	390 (16")	498	375	70	40,5	
D - GSS						
Type	D	A mm	B mm	C mm	Width mm	Weight kg*
-GSS15	1/2"	100	130	35	53	3,0
-GSS20	3/4"	100	130	35	53	3,0
-GSS25	1"	100	130	35	53	3,0
D - FSS						
Type	d mm	D mm	A mm	Width mm	Weight kg*	
-FSS15	16 (1/2")	53	169	15	3,0	
-FSS20	22 (3/4")	63	175	15	3,0	
-FSS25	30 (1")	73	183	15	3,0	
-FSS32	39 (1 1/4")	84	185	15	3,0	
-FSS40	43 (1 1/2")	94	190	15	3,0	
-FSS50	55 (2")	109	210	15	3,0	
-FSS65	70 (2 1/2")	129	220	15	3,5	
-FSS80	82 (3")	144	228	15	3,5	
-FSS100	107 (4")	164	238	15	4,0	
-FSS125	132 (5")	194	253	15	4,5	
-FSS150	159 (6")	219	266	15	5,0	
-FSS200	207 (8")	274	293	15	6,5	
-FSS250	260 (10")	330	320	15	8,0	
-FSS300	310 (12")	385	350	15	9,5	
-FSS350	340 (14")	445	375	15	14,5	
-FSS400	390 (16")	498	405	15	16,5	

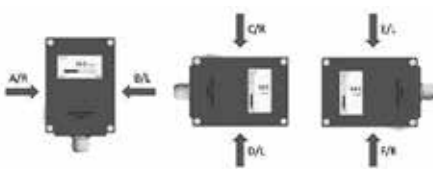


All stainless steel						
D-SS - GSS						
Type	D	A mm	B mm	C mm	Width mm	Weight kg*
-GSS15	1/2"	110	149	35	53	3,5
-GSS20	3/4"	110	149	35	53	3,5
-GSS25	1"	110	149	35	53	3,5
D-SS - FSS						
Type	d mm	D mm	A mm	Width mm	Weight kg*	
-FSS15	16 (1/2")	53	179	15	3,5	
-FSS20	22 (3/4")	63	185	15	3,5	
-FSS25	30 (1")	73	193	15	3,5	
-FSS32	39 (1 1/4")	84	195	15	3,5	
-FSS40	43 (1 1/2")	94	200	15	3,5	
-FSS50	55 (2")	109	220	15	3,5	
-FSS65	70 (2 1/2")	129	230	15	4,0	
-FSS80	82 (3")	144	238	15	4,0	
-FSS100	107 (4")	164	248	15	4,5	
-FSS125	132 (5")	194	263	15	5,0	
-FSS150	159 (6")	219	276	15	5,5	
-FSS200	207 (8")	274	303	15	7,0	
-FSS250	260 (10")	330	330	15	8,5	
-FSS300	310 (12")	385	360	15	10,0	
-FSS350	340 (14")	445	385	15	15,0	
-FSS400	390 (16")	498	415	15	17,0	



*Approximate weight

Ordering code

Serie			
D			
Measuring span			
2	1:2	50-100% of max measuring range e.g. 10-20 l/min	
5	1:5	20-100% of max measuring range e.g. 10-50 l/min	
Indicating unit			
-	Standard, painted aluminium		
SS	All Stainless steel		
Pipe section			
GL	Thread, brass		
FA	Flange painted steel		
GSS	Thread, stainless steel		
FSS	Flange stainless steel		
Dimension			
15	1/2"	Thread GL, GSS or Flange FA, FSS	
20	3/4"	Thread GL, GSS or Flange FA, FSS	
25	1"	Thread GL, GSS or Flange FA, FSS	
32	1" 1/4	Flange FA, FSS	
40	1" 1/2	Thread GL, GSS or Flanged FA, FSS	
50	2"	Flange FA, FSS	
65	2" 1/2	Flange FA, FSS	
80	3"	Flange FA, FSS	
100	4"	Flange FA, FSS	
125	5"	Flange FA, FSS	
150	6"	Flange FA, FSS	
200	8"	Flange FA, FSS	
250	10"	Flange FA, FSS Larger dimensions on request	
Optional			
LP	Low Pressure feature on 1:2 models		
Media			
	Water		
	Oil		
Gas	Please specify: Pressure, working temperature and type of gas		
Other	Please specify: Media, pressure, density, viscosity, pressure and working temperature		
Installation alternative			
A/R			A/R - Left to right in a horizontal pipe
B/L			B/L - Right to left in a horizontal pipe
C/R			C/R - Up to down, display on right side of the pipe
D/L			D/L - Down to up, display on right side of the pipe
E/L			E/L - Up to down, display on left side of the pipe
F/R			F/R - Down to up, display on left side of the pipe
Measuring range			
See separate table			
Options			
A	Chemical nickel plated (for GL only)	E	ANSI connection
B	Customized alarm set point	F	Rubber parts in other material
C	Mark on tag plate	G	Separate mounting kit
D	NPT connection	H	Manifold with shut-off valves

Example of Code

D2-GL40, Water, A/R, 40-80 l/min

All combinations are not possible so please check upon ordering.