

Electromagnetic flow meters with „F“ flow tube - flanged design



The F (flanged) flowtube meter is the FG4000 flow meter's standard design. You can choose a rubber or Teflon liner and from several sensing electrode materials (316L grade stainless steel, Hastelloy C, titanium, ...) to match your application's requirements.

Basic rubber liners are suitable for applications to measure flow in common liquids such as waste water or water for firefighting or cooling purposes in various industrial processes, and similar liquids.

Teflon liners provide high chemical and thermal resistance as well as health safety. They are thus suitable for applications in chemical, dairy, food processing and other industries with similar requirements. They are commonly used to measure flow in drinking water, wine and related products, syrup, milk, whey, beer, and other food consumables. Besides other, they resist cleaning lyes or acids that are used in such applications on a daily basis.

The flange basic dimensions and flowtube installation lengths comply with ISO standards (see the chart below). However, custom specified designs with other types of flanges (ANSI, BS, JIS, ...) and custom installation lengths may be supplied.

Our flanged flowtubes are provided with an earthing electrode in factory while earthing rings can be included on request. This guarantees flawless flow meter operation at all times even for installations in plastic pipework.

We further provide our flow meters with custom specified installation sets. Custom installation lengths and connectors (DIN 11851 threading for food industry, DIN 32676 clamp, etc.) may be specified.

FG4000 flow meter specifications:

• Measure unit:	comfort, economic (without display and keypad)
• Measuring range:	1 :40 ($\pm 0,5\%$ for MPE standard); 1:500 ($Q_0=0,2\% Q_{max}$)
• Accuracy:	$\pm 0.5\%$ ($\pm 0.003\text{m/s}$) in range from Q_{min} to Q_{max}
• Minimum liquid conductivity:	$>5\mu\text{S/cm}$ – common liquids; $\geq 20\mu\text{S/cm}$ – demineralized water
• Power supply:	230 VAC (+10; -15%) 50–60Hz; optionally 120VAC, 24VAC, 24VDC
• Power demand:	10 VA
• IEC 536 protection class:	I
• Ingress protection rating:	IP67
• Meter finish:	powder paint (RAL 8023)
• Ambient temperature range:	0–70°C; recommended 15–55°C
• Pulse output 1:	in range 0.0001–1600 p/dm ³ (maximum value depends on flowtube inner diameter)
• Pulse output 2:	state – signalization of the negative flow; pulse – negative volume (bidirectional flow)
• Pulse inputs:	2× range (0.0001–1000 p/dm ³) to display flow and/or volume measured by external
• Empty pipe detection:	yes (optional)
• Communication modules:	RS485, RS422, RS232, M-Bus, ... (optional)
• Communication protocols:	SIMPLE, ModBUS, BitBUS, ASCII , MBUS
• Analogue outputs:	4–20mA, 0–10V (optional)
• Archive:	hourly, monthly, errors,... (optional)

Flanged flowtube specification:

• Flowtube nominal inner diameter:	DN25 – DN600 (rubber); DN10 – DN350 (PTFE/Teflon); DN400 - DN600 (E-CTFE)
• Flowtube liner:	hard or soft rubber / PTFE / E-CTFE
• Electrodes:	316L grade (1.4571) stainless steel; Hastelloy C; platinum; tantalum; titanium
• Nominal pressure:	DIN, EN1092: PN10, PN16, PN25, PN40; ANSI: 150lb, 300lb
• Flowtube design:	compact; split – 4m cabling (optionally up to 40m)
• Flowtube finish:	epoxy paint (RAL 7043), brushed stainless steel
• Range of measured liquid:	0-150 °C (PTFE); 0-90 °C (rubber)
• Ingress protection rating:	IP67 (IP68 optional)

Table of included inner diameters:

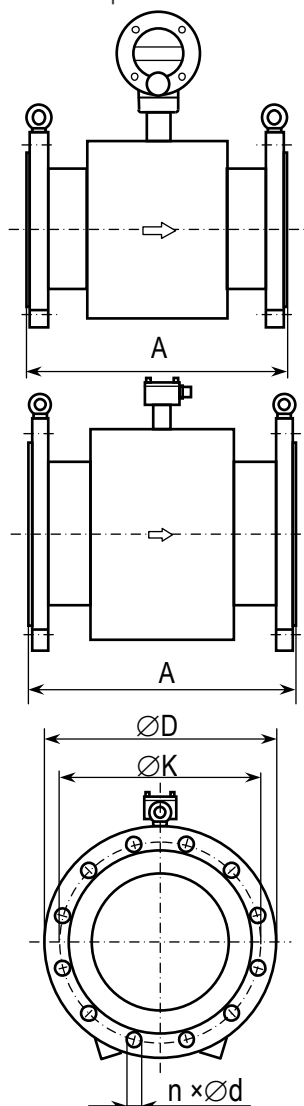
FG 4000	Flanged flow tubes "F" with hard rubber liners																			
	Flanged flow tubes "F" with Teflon (PTFE) liners															Teflon (E-CTFE)				
DN	10	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Q_0 (m ³ / h)	0,01	0,02	0,03	0,04	0,07	0,11	0,17	0,29	0,43	0,68	1,06	1,53	2,7	4,2	6,1	8,3	10,9	13,7	17,0	24,4
Q_1 (m ³ / h)	0,08	0,19	0,34	0,53	0,87	1,36	2,12	3,58	5,43	8,48	13,2	19,1	34,0	53,0	76,0	104	136	172	212	305
Q_3 (m ³ / h)	3,39	7,63	13,6	21,2	34,7	54,3	84,8	143	217	339	530	763	1360	2120	3050	4160	5431	6867	8480	12200
k (Imp/ dm ³)	1600	700	400	200	150	100	60	35	25	15	10	7	4	2,5	1,6	1,25	1	0,75	0,5	0,4

Legends:

DN - Flowtube nominal inner diameter, Q_0 – Starting flow, Q_1 – Minimal flow, Q_3 - Maximal flow, k – Max. constant of flow conversion

Diameters and mass of flanged sensors:

(The table corresponds to the version with DIN flanges EN1092. Dimensions for ANSI flanges and others on request)



DN	PN	A	$\varnothing D$	$\varnothing K$	n	$\varnothing d$	m [kg]
10	10, 16, 40	150	90	60	4	14	4,5
15	10, 16, 40	150	95	65	4	14	5
20	10, 16, 40	150	105	75	4	14	6,5
25	10, 16, 40	150	115	85	4	14	6,5
32	10, 16, 40	150	140	100	4	18	7
40	10, 16, 40	150	150	110	4	18	7
50	10, 16, 40	200	165	125	4	18	8,5
65	10, 16	200	185	145	4	18	12
	40	200	185	145	8	18	12,5
80	10, 16	200	200	160	8	18	12,5
	40	200	200	160	8	18	13
100	10, 16	250	220	180	8	18	14
	40	250	235	190	8	22	16
125	10, 16	250	245	210	8	18	19
	40	250	270	220	8	26	21
150	10, 16	300	285	240	8	22	23
	40	300	300	250	8	26	27
200	10	350	340	295	8	22	39
	16	350	340	295	12	22	39
250	10	400	395	350	12	22	50
	16	400	405	355	12	26	55
300	10	500	445	400	12	22	68
	16	500	460	410	12	26	73
350	10	500	505	460	16	22	95
	16	500	520	470	16	26	110
400	10	600	565	515	16	26	115
	16	600	580	525	16	30	140
450	10	600	615	565	20	26	135
	16	600	640	585	20	30	155
500	10	600	670	620	20	27	155
	16	600	710	650	20	33	180
600	10	600	780	725	20	30	185
	16	600	840	770	20	36	200