

Flowmeter, Plastic

Construction

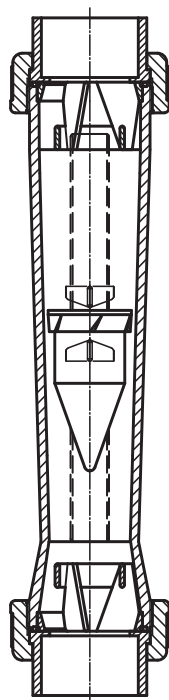
The flowmeter operates according to the variable area principle. Metering tubes are available in Trogamid-T, suitable for inert media, and polysulfone, suitable for corrosive* media (PVC and PVDF tubes on request). Male threads moulded onto the ends of the metering tube allow for easy mounting of unions. O-ring seals at the faces of the tube ensure reliable sealing between metering tube and union and provide stress-free sealing. The floats are available in stainless steel 1.4571, PP or PVDF (depending on flow medium and measuring range). The scale on the metering tube can be suited to the medium and is available e.g. in l/h, m³/h or %. Dovetail sections moulded onto the metering tube allow for easy mounting of adjustable visual flow indicators, limit switches and a continuous readout transmitter.

Advantages

- Good level of accuracy, simple operation
- Impact resistant, corrosion resistant
- Over 500 standard scales and 13.000 special scales are available with further scales on request
- Clear and large size printed scale

* see information on working medium on page 2

Sectional drawing



GEMÜ® 800

805 / 807 / 815 / 817
822 / 825 / 832 / 835

Technical data

Working medium

Inert and corrosive liquid and gaseous media which have no negative impact on the physical and chemical properties of the tube, float, seal and union materials.

Operating pressure*

Tubes with plastic unions	max. 10 bar
Tubes with metal unions	max. 15 bar

*Operating pressure dependent on tube material and operating temperature

Versions

Float material	Working medium	Type
PP	Liquids and gases	805
PP with magnet	Liquids and gases	815
Stainless steel 1.4571	Liquids	807
Stainless steel 1.4571 with magnet	Liquids	817
PP	Gases	825
PP with magnet	Gases	835
PVDF	Liquids and gases	820
PVDF with magnet	Liquids and gases	830

Pressure/temperature correlation - Variable area flowmeter

Temperature °C			-20	-10	±0	5	10	20	25	30	40	50	60	70	80	90	100	110	120
Tube material	Union material		Operating pressure [bar]																
Trogamid T code 21	PVC-U	code 1	-	-	-	-	10.0	10.0	10.0	8.0	6.0	3.5	1.5	-	-	-	-	-	-
	PP	code 5	-	-	-	10.0	10.0	10.0	10.0	8.5	7.0	5.5	4.0	-	-	-	-	-	-
	PVDF	code 20	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.0	8.0	7.1	6.3	-	-	-	-	-	-
	Malleable iron	code 6	15.0	15.0	15.0	15.0	15.0	15.0	15.0	13.5	12.0	10.7	9.5	-	-	-	-	-	-
	Stainless steel	code 7	15.0	15.0	15.0	15.0	15.0	15.0	15.0	13.5	12.0	10.7	9.5	-	-	-	-	-	-
Polysulfone code 22	PVC-U	code 1	-	-	-	-	10.0	10.0	10.0	8.0	6.0	3.5	1.5	-	-	-	-	-	-
	PP	code 5	-	-	-	10.0	10.0	10.0	10.0	8.5	7.0	5.5	4.0	2.7	1.5	0.8	-	-	-
	PVDF	code 20	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.0	8.0	7.1	6.3	5.4	4.7	3.6	2.5	-	-
	Malleable iron	code 6	15.0	15.0	15.0	15.0	15.0	15.0	15.0	14.0	13.0	12.0	11.0	9.7	8.5	7.7	6.0	-	-
	Stainless steel	code 7	15.0	15.0	15.0	15.0	15.0	15.0	15.0	14.0	13.0	12.0	11.0	9.7	8.5	7.7	6.0	-	-
PVC-U, transparent code 3	PVC-U	code 1	-	-	-	-	10.0	10.0	10.0	8.0	6.0	3.5	1.5	-	-	-	-	-	-
	Malleable iron	code 6	-	-	-	-	10.0	10.0	10.0	8.0	6.0	3.5	1.5	-	-	-	-	-	-
	Stainless steel	code 7	-	-	-	-	10.0	10.0	10.0	8.0	6.0	3.5	1.5	-	-	-	-	-	-
PVDF code 20	PVDF	code 20	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.0	8.0	7.1	6.3	5.4	4.7	3.6	2.5	1.7	1.2
	Stainless steel	code 7	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.0	8.0	7.1	6.3	5.4	4.7	3.6	2.5	1.7	1.2

Pressure loss [mbar]

Type	Nominal size					
	20	25	32	40	50	65
805, 815, 820, 830	8	10	13	15	20	24
807, 817	17	19	27	30	41	50
825	2	2,5	3,5	4	5,5	6
835	11	13	18	20	28	34

Order data

Version	
Float material	Type
PP (Liquids and gases)	805
PP with magnet (Liquids and gases)	815
Stainless steel 1.4571 (Liquids)	807
Stainless steel 1.4571 with magnet (Liquids)	817
PP (Gases)	825
PP with magnet (Gases)	835
PVDF (Liquids and gases)	820
PVDF with magnet (Liquids and gases)	830

Nominal size	Code
DN 20	20
DN 25	25
DN 32	32
DN 40	40
DN 50	50
DN 65	65

Body configuration	Code
Straight through	D

Connection	Code
Union ends with DIN insert (socket)	7
Union ends with inch insert (socket)	33
Union ends with DIN insert (IR butt welding)	78

Tube material	Code
Trogamid -T temperature range 0 to 60°C*	21
Polysulfone temperature range 0 to 100°C*	22
PVC-U on request	
PVDF on request	

* Stated temperatures are valid for water

O-ring material	Code
O-ring FPM	4
O-ring EPDM	14

Union material	Code
PVC-U, grey	1
PP	5
GT Malleable iron	6
Stainless steel 1.4571	7
PVDF	20

Tube size	Code
See tables on pages 4 and 5	

Measuring range	Code
See tables on pages 4 and 5	
Always state the maximum measuring range value when ordering.	

Note:

The scale divisions given on pages 4 and 5 correspond to the actual flows.
When ordering, the flow ranges should be stated as follows:
Liquid media: l/h
Gaseous media: Nm³/h

Required information:

The following data are necessary:

1. Type of medium
2. Concentration of medium (%)
3. Required flow range (l/h, m³/h, kg/h)
4. Operating pressure, relative or absolute (bar)
5. Temperature of medium (°C)
6. Viscosity of medium (if available)
7. Medium density (if available)
8. Float with or without magnet

Order example	805	25	D	7	21	14	1	52	250
Version (type)	805								
Nominal size (code)		25							
Body configuration (code)			D						
Connection (code)				7					
Tube material (code)					21				
O-ring material (code)						14			
Union material (code)							1		
Tube size (code)								52	
Measuring range max. (e.g. 250 l/h H ₂ O)									250

Accuracy class: 4 acc. to VDE/VDI 3513, sheet 2, i.e. $\pm 1\%$ of end value $\pm 3\%$ of measured value.

Selection of scales */** (liquid media)												
	Nominal size	Water H ₂ O	Hydrochloric acid HCl 30-33%	Sodium NaOH 30%	Sodium NaOH 50%	Scale	Tube size	PVC-U unions	Malleable iron unions			
		Tube: Trogamid-T Polysulfone	Tube: Polysulfone	Tube: Trogamid-T / Polysulfone				Weight				
	DN	[l/h]				%	Code	[kg]				
GEMÜ 805/815 Float material PP (GEMÜ 815 with magnet)	20	15 - 160	10 - 130	2.5 - 57.5	0.5 -10.0	10 - 100%	46	0.42	0.53			
		20 - 250	20 - 210	5.0 - 115.0	1.0 - 23.0		47	0.42	0.53			
		40 - 400	40 - 340	10.0 - 210.0	2.5 - 57.5		48	0.42	0.53			
		50 - 650	50 - 550	20.0 - 380.0	5.0 - 135.0		49	0.41	0.52			
GEMÜ 820/830 Float material PVDF (GEMÜ 830 with magnet)	25	20 - 250	20 - 210	5 - 125	1.0 - 20	10 - 100%	52	0.57	0.74			
		40 - 400	20 - 350	10 - 200	2.5 - 50		53	0.56	0.73			
		60 - 640	50 - 550	10 - 390	5.0 - 130		54	0.55	0.72			
		100 - 1000	75 - 900	25 - 650	10.0 - 260		55	0.54	0.71			
GEMÜ 822/832 Float material PVDF (GEMÜ 832 with magnet)	32	100 - 1000	75 - 900	25 - 600	10 - 200	10 - 100%	61	0.98	1.25			
		150 - 1600	100 - 1500	50 - 1000	20 - 500		62	0.96	1.23			
		200 - 2500	200 - 2300	100 - 1700	25 - 950		63	0.94	1.21			
		150 - 1600	100 - 1450	50 - 1000	25 - 425		10 - 100%	67	1.24	1.56		
GEMÜ 822/832 Float material PVDF (GEMÜ 832 with magnet)	40	200 - 2500	200 - 2200	100 - 1700	25 - 900	68		1.21	1.52			
		300 - 3300	300 - 2800	100 - 2100	50 - 1250	69		1.20	1.52			
		GEMÜ 822/832 Float material PVDF (GEMÜ 832 with magnet)	50	200 - 2500	200 - 2300	50 - 1700	25 - 800	10 - 100%	71	1.52	2.39	
				400 - 4000	300 - 3600	100 - 2800	50 -1600		72	1.49	2.36	
600 - 6400	500 - 6000			250 - 5000	100 - 3200	73	1.44		2.31			
1000 - 11000	-			-	-	73	1.44		2.31			
GEMÜ 822/832 Float material PVDF (GEMÜ 832 with magnet)	65	750 - 9000	750 - 8000	500 - 6750	250 - 4250	10 - 100%	75	2.42	3.87			
		1500 - 13000	1500 - 11500	750 - 9750	250 - 6750		77	2.42	3.87			
		GEMÜ 807/817 Float material 1.4571 (GEMÜ 817 with magnet)	20	20 - 250	-		5 - 125	1 - 27	10 - 100%	46	0.45	0.56
				40 - 400	-		10 - 240	2.5 - 70		47	0.45	0.56
60 - 640	-			25 - 425	5 - 170	48	0.45	0.56				
75 -1000	-			25 - 725	10 - 350	49	0.44	0.55				
GEMÜ 807/817 Float material 1.4571 (GEMÜ 817 with magnet)	25	0 - 250	-	10 - 240	2.5 - 65	10 - 100%	52	0.62	0.79			
		40 - 400	-	20 - 420	5.0 - 145		53	0.61	0.78			
		60 - 640	-	25 - 700	10.0 - 330		54	0.60	0.77			
		75 - 1000	-	50 - 1200	25.0 - 675		55	0.59	0.76			
GEMÜ 807/817 Float material 1.4571 (GEMÜ 817 with magnet)	32	150 - 1600	-	50 - 1150	25 - 550	10 - 100%	61	1.11	1.38			
		200 - 2500	-	100 - 1900	50 - 1100		62	1.09	1.36			
		400 - 4000	-	200 - 3200	100 - 2000		63	1.07	1.34			
		200 - 2500	-	100 - 1700	50 - 1000		10 - 100%	67	1.42	1.74		
GEMÜ 807/817 Float material 1.4571 (GEMÜ 817 with magnet)	40	400 - 4000	-	200 - 3000	50 - 1900	68		1.39	1.71			
		500 - 5000	-	200 - 3700	100 - 2500	69		1.38	1.70			
		GEMÜ 807/817 Float material 1.4571 (GEMÜ 817 with magnet)	50	400 - 4000	-	100 - 3000	50 - 1800	10 - 100%	71	2.00	2.87	
				600 - 6400	-	250 - 5000	100 - 3300		72	1.97	2.84	
1000 - 10000	-			500 - 8500	250 - 6000	73	1.92		2.79			
GEMÜ 807/817 Float material 1.4571 (GEMÜ 817 with magnet)	65			1500 - 14000	-	1000 - 11500	250 - 8500		10 - 100%	75	3.31	4.60
		2000 - 20000	-	1500 - 16500	500 - 12500	77	3.31	4.60				

* All scales in this datasheet are based on a medium temperature of 20° C.

** For smaller or larger flow ranges see page 5 and datasheets GEMÜ 840, 850.

Other ranges available on request.

Tubes in PVC-U and PVDF on request

Selection of scales (gaseous media)					
	Nominal size	Medium air At 1 bar abs. and 20°C Trogamid-T. Polysulfone	Tube size	PVC-U unions	Malleable iron unions
	DN	[Nm³/h]	Code	Weight	
				[kg]	
GEMÜ 825 Float material PP (without magnet)	20	0.20 - 2.5	46	0.40	0.51
		0.30 - 4.0	47	0.40	0.51
		0.50 - 6.5	48	0.40	0.51
		0.75 - 10.0	49	0.39	0.50
	25	0.4 - 4.0	52	0.54	0.71
		0.5 - 6.5	53	0.53	0.70
		1.0 - 10.0	54	0.52	0.69
		1.5 - 16.0	55	0.51	0.68
	32	1.5 - 16.0	61	0.88	1.15
		2.0 - 25.0	62	0.86	1.13
		4.0 - 40.0	63	0.84	1.11
	40	2 - 25	67	1.10	1.42
		4 - 40	68	1.07	1.39
		5 - 50	69	1.06	1.38
	50	4 - 40	71	1.17	2.04
		6 - 64	72	1.14	2.01
		10 - 100	73	1.09	1.95
	65	15 - 140	75	3.31	4.60
		20 - 200	77	3.31	4.60
GEMÜ 835 Float material PP (with magnet)	20	0.75 - 6.5	46	0.43	0.54
		1.00 - 10.0	47	0.43	0.54
		1.50 - 16.0	48	0.43	0.54
		2.00 - 25.0	49	0.43	0.53
	25	1.25 - 10	52	0.59	0.76
		1.50 - 16	53	0.58	0.75
		3.00 - 25	54	0.57	0.74
		4.00 - 40	55	0.55	0.73
	32	4 - 40	61	1.03	1.30
		6 - 64	62	1.01	1.28
		10 - 100	63	0.99	1.25
	40	5 - 60	67	1.30	1.62
		10 - 100	68	1.27	1.59
		15 - 120	69	1.26	1.58
	50	10 - 100	71	1.69	2.57
		15 - 160	72	1.66	2.54
		20 - 250	73	1.61	2.49
	65	30 - 340	75	3.31	4.60
		50 - 450	77	3.31	4.60

To types 825/835:

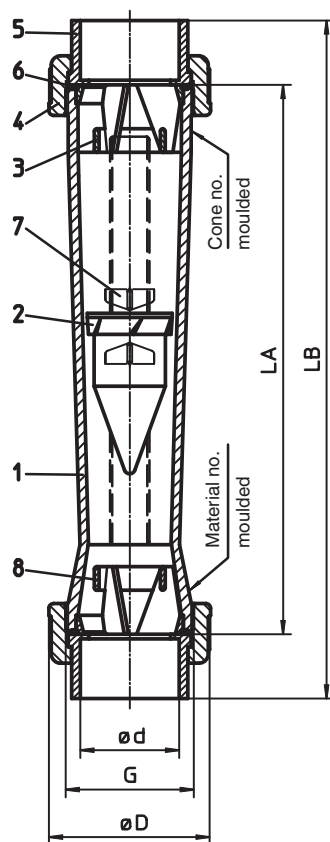
Caution! With gaseous media the scaling alters according to operating pressure. Please state when ordering.

Special scales:

For other media and operating requirements differing from those given for standard versions. special scales are available. Please note the ordering information (see page 3).

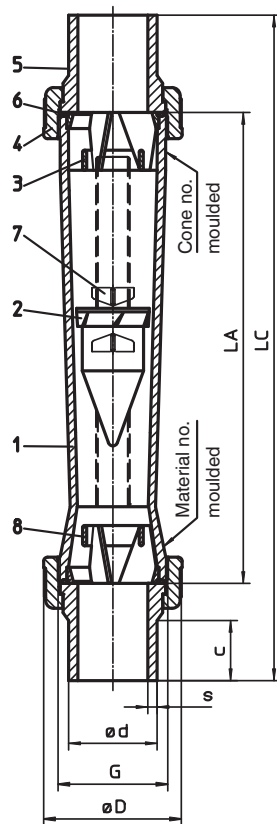
Dimensions [mm]												
				Plastic union Connection code 7 Material code 1, 5, 20					Plastic union Connection code 33 Material code 1			
DN	G	LA	O-ring	ød	øD	LB			DN	ød	øD	LB
Material code							1	5	20			
20	G 1 1/4	350	28.0 x 3.5	25	53	394	388	392	3/4"	26.7	53	394
25	G 1 1/2	350	33.0 x 3.5	32	60	400	392	396	1"	33.6	60	400
32	G 2	350	46.0 x 3.5	40	74	408	397	400	1 1/4"	42.2	74	408
40	G 2 1/4	350	50.4 x 3.5	50	83	418	403	406	1 1/2"	48.3	83	418
50	G 2 1/2	350	68.0 x 3.5	63	103	432	411	414	2"	60.3	103	432
65	G 3 1/2	350	85.0 x 4.0	75	122	444	420	420	2 1/2"	73.5	122	444

Connection code 7, 33

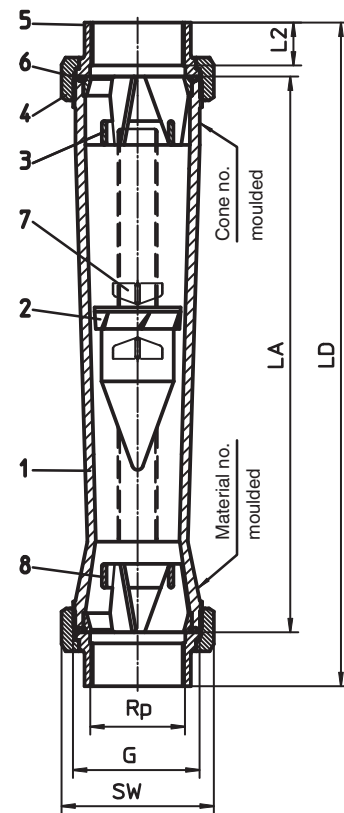


Dimensions [mm]															
				Plastic union Connection code 78 Material code 5, 20							Metal union (DIN 2999 part 1), Con- nection code 7 Material code 6, 7				
DN	G	LA	O-ring	ød		s		c		LC		Rp	SW	L2	LD
Material code				5	20	5	20	5	20	5	20				
20	G 1 1/4	350	28.0 x 3,5	25	2.3	1.9	39	462	Rp 3/4	50	16	395			
25	G 1 1/2	350	33.0 x 3,5	32	3.0	2.4	40	468	Rp 1	55	17	402			
32	G 2	350	46.0 x 3,5	40	3.7	2.4	41	474	Rp 1 1/4	66	19	410			
40	G 2 1/4	350	50.4 x 3,5	50	4.6	3.0	43	480	Rp 1 1/2	74	20	414			
50	G 2 1/2	350	68.0 x 3,5	63	5.8	3.0	43	486	Rp 2	90	24	420			
65	G 3 1/2	350	85.0 x 4,0	60	67	7.3	3.6	91	16	610	466	Rp 2 1/2	110	30	430

Connection code 78



Connection code 7



Spare parts list

Item	Description	Qty.
1	Tube	1
2	Float	1
3	Float stop (upper)	1
4	Union nut	2
5	Insert	2
6	O-ring (see table)	2
7	Flow indicator	2

Accessories for Flowmeter Series GEMÜ 800

To increase the versatility of the GEMÜ 800 flowmeter, numerous accessories have been developed which can be retrofitted onto the tube without modification. The float, however, must be one containing a magnet, in order for these accessories to function.



GEMÜ 1250

Changeover contact
(Switching duty of magnetic switch 10 VA)

GEMÜ 1251

Limit switch (max)
(Switching duty of magnetic switch 10 VA)

GEMÜ 1252

Limit switch (min)
(Switching duty of magnetic switch 10 VA)



GEMÜ 1270

Instrument sensor for continuous flow readout
(resistance 0-10 kΩ)

GEMÜ 1272

Instrument sensor for continuous flow readout
(Output signal 4-20 mA from an integrated 2-wire measuring transducer)



GEMÜ 1275

Digital display unit with or without switch points
Panel mounting acc. to DIN 43700-96x48
Note: The mounting bracket is supplied with the unit as standard.

Separate data sheets are available for the above accessories on request.

Other applicable products:

- Plastic valves, pneumatically, electrically and manually operated
- Metal valves, pneumatically, electrically and manually operated

For further flowmeters, accessories and other products please see our Product Range catalogue and Price List.
Contact GEMÜ.



GEMÜ® VALVES, MEASUREMENT
AND CONTROL SYSTEMS