

## Flowmeter, Plastic

### Construction

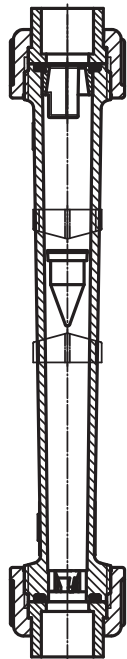
The flowmeter operates according to the variable area principle. Metering tubes are available in Trogamid-T, suitable for inert media, and Polysulfone, suitable for corrosive\* media (PVC and PVDF tubes on request). Male threads moulded onto the ends of the metering tube allow for easy mounting of unions. 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, m<sup>3</sup>/h or in %. 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 upon request
- Clear and large size printed scale

\* see information on working medium on page 2

### Sectional drawing



## 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	855
PP with magnet	Liquids and gases	865
Stainless steel 1.4571	Liquids	857
Stainless steel 1.4571 with magnet	Liquids	867
PP	Gases	875
PP with magnet	Gases	885
PVDF	Liquids and gases	870
PVDF with magnet	Liquids and gases	880

## 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	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	1.2

## Order data

Versions	
Float material	Type
PP (Liquids and gases)	855
PP with magnet (Liquids and gases)	865
Stainless steel 1.4571 (Liquids)	857
Stainless steel 1.4571 with magnet (Liquids)	867
PP (Gases)	875
PP with magnet (Gases)	885
PVDF (Liquids and gases)	870
PVDF with magnet (Liquids and gases)	880

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

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

Nominal size (mm)	Code
DN 10	10
DN 15	15
DN 20	20
DN 25	25

Tube size	Code
See tables on pages 4 and 5	

Body configuration	Code
Straight through	D

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

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

**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: Nm<sup>3</sup>/h

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

\* Stated temperatures are valid for water

**Required information:**  
The following data are necessary:  
1. Type of medium  
2. Concentration of medium (%)  
3. Required flow range (l/h, m<sup>3</sup>/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	855	10	D	7	21	14	1	13	60
Version (Type)	855								
Nominal size (code)		10							
Body configuration (code)			D						
Connection (code)				7					
Tube material (code)					21				
O-ring material (code)						14			
Union material (code)							1		
Tube size (code)								13	
Measuring range max. (e.g. 60 l/h H <sub>2</sub> O)									60

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

Selection of scales \*/\*\* (liquid media)

	Size	Water H <sub>2</sub> O	Sodium NaOH 30%	Sodium NaOH 45%	Sodium NaOH 50%	Hydrochloric acid HCl 30-33%	Tube size	PVC-U unions	Malleable iron unions	
	(mm)	Tube: Trogamid-T Polysulfone	Tube: Trogamid-T Polysulfone	Tube: Trogamid-T Polysulfone	Tube: Trogamid-T Polysulfone	Tube: Polysulfone Polysulfone	Code	Weight (kg)		
<b>GEMÜ 855/865</b> Float material PP (GEMÜ 865 with magnet)	10	2 - 25 l/h	0.25 - 3.75 l/h	0.05 - 0.85 l/h	0.025 - 0.6 l/h	1 - 20 l/h	11	0.07	0.18	
	10	2 - 40 l/h	0.5 - 8 l/h	0.1 - 2 l/h	0.05 - 1.45 l/h	2 - 32 l/h	12	0.07	0.18	
	10	5 - 60 l/h	1 - 20 l/h	0.25 - 4.75 l/h	0.25 - 3.25 l/h	2 - 54 l/h	13	0.07	0.18	
	10	10 - 100 l/h	2.5 - 45 l/h	0.5 - 12.5 l/h	0.5 - 9 l/h	5 - 90 l/h	14	0.07	0.18	
	10	15 - 160 l/h	5 - 80 l/h	1 - 30 l/h	1 - 22 l/h	10 - 150 l/h	15	0.07	0.18	
	15	5 - 60 l/h	1 - 15 l/h	0.25 - 3.25 l/h	0.1 - 2.4 l/h	2.5 - 50 l/h	21	0.12	0.30	
	15	10 - 100 l/h	2 - 34 l/h	0.5 - 8 l/h	0.25 - 5.5 l/h	5 - 80 l/h	22	0.12	0.30	
	15	15 - 160 l/h	2.5 - 67.5 l/h	1 - 18 l/h	0.5 - 13.5 l/h	10 - 130 l/h	23	0.12	0.30	
	15	20 - 250 l/h	5 - 130 l/h	2.5 - 45 l/h	2 - 32 l/h	20 - 220 l/h	24	0.12	0.30	
	15	30 - 320 l/h	10 - 170 l/h	2.5 - 65 l/h	2.5 - 47.5 l/h	20 - 260 l/h	25	0.12	0.30	
	20	15 - 160 l/h	2.5 - 62.5 l/h	1 - 15 l/h	0.5 - 11 l/h	10 - 135 l/h	31	0.21	0.48	
	20	20 - 250 l/h	5 - 115 l/h	2 - 32.5 l/h	1 - 24 l/h	20 - 210 l/h	32	0.21	0.48	
	20	40 - 400 l/h	10 - 190 l/h	2.5 - 70 l/h	2.5 - 50 l/h	25 - 325 l/h	33	0.21	0.48	
	20	60 - 640 l/h	25 - 375 l/h	10 - 180 l/h	5 - 130 l/h	50 - 550 l/h	34	0.21	0.48	
	25	20 - 250 l/h	5 - 110 l/h	2 - 29 l/h	1 - 20 l/h	20 - 200 l/h	41	0.29	0.61	
	25	40 - 400 l/h	10 - 200 l/h	2.5 - 70 l/h	2.5 - 50 l/h	30 - 340 l/h	42	0.29	0.61	
	25	60 - 640 l/h	20 - 380 l/h	10 - 150 l/h	5 - 120 l/h	50 - 550 l/h	43	0.29	0.61	
	25	100 - 1000 l/h	25 - 650 l/h	25 - 350 l/h	10 - 260 l/h	100 - 900 l/h	44	0.29	0.61	
	<b>GEMÜ 857/867</b> Float material 1.4571 (GEMÜ 867 with magnet)	10	4 - 40 l/h	0.5 - 8.5 l/h	0.1 - 2 l/h	0.05 - 1.4 l/h	-	11	0.08	0.19
		10	5 - 60 l/h	1 - 19 l/h	0.25 - 4.5 l/h	0.25 - 3.25 l/h	-	12	0.08	0.19
10		10 - 100 l/h	2.5 - 40 l/h	0.5 - 11 l/h	0.5 - 8 l/h	-	13	0.08	0.19	
10		15 - 160 l/h	5 - 85 l/h	1 - 28 l/h	1 - 21 l/h	-	14	0.08	0.19	
10		20 - 250 l/h	10 - 150 l/h	2.5 - 60 l/h	2.5 - 47.5 l/h	-	15	0.08	0.19	
15		10 - 100 l/h	2.5 - 37.5 l/h	0.5 - 9 l/h	0.25 - 6.5 l/h	-	21	0.13	0.31	
15		20 - 160 l/h	5 - 75 l/h	1 - 22 l/h	1 - 15 l/h	-	22	0.13	0.31	
15		20 - 250 l/h	5 - 140 l/h	2.5 - 50 l/h	2 - 36 l/h	-	23	0.13	0.31	
15		40 - 400 l/h	10 - 250 l/h	5 - 110 l/h	5 - 85 l/h	-	24	0.13	0.31	
15		50 - 500 l/h	20 - 300 l/h	10 - 160 l/h	5 - 120 l/h	-	25	0.13	0.31	
20		20 - 250 l/h	5 - 135 l/h	2.5 - 42.5 l/h	2 - 30 l/h	-	31	0.24	0.51	
20		30 - 400 l/h	10 - 230 l/h	5 - 90 l/h	2.5 - 65 l/h	-	32	0.24	0.51	
20		60 - 600 l/h	25 - 350 l/h	10 - 180 l/h	5 - 135 l/h	-	33	0.24	0.51	
20		100 - 1000 l/h	25 - 650 l/h	25 - 400 l/h	20 - 320 l/h	-	34	0.24	0.51	
25		40 - 400 l/h	10 - 220 l/h	5 - 75 l/h	2.5 - 55 l/h	-	41	0.34	0.66	
25		50 - 650 l/h	20 - 380 l/h	10 - 180 l/h	5 - 135 l/h	-	42	0.34	0.66	
25		100 - 1000 l/h	25 - 650 l/h	25 - 400 l/h	20 - 300 l/h	-	43	0.34	0.66	
25		150 - 1600 l/h	50 - 1100 l/h	50 - 750 l/h	25 - 650 l/h	-	44	0.34	0.66	

\* 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 800, 840. Other ranges available on request.

PVC and PVDF tubes on request

**Selection of scales (gaseous media)**

	Size	Medium air At 1 bar abs. and 20°C Trogamid-T, Polysulfone	Tube size	PVC-U unions	Malleable iron unions
	(mm)		Code	Weight (kg)	
<b>GEMÜ 875</b> Float material PP (without magnet)	10	20 - 360 N l/h	11	0.07	0.18
	10	50 - 550 N l/h	12	0.07	0.18
	10	100 - 900 N l/h	13	0.07	0.18
	10	0.15 - 1.5 Nm <sup>3</sup> /h	14	0.07	0.18
	10	0.2 - 2.4 Nm <sup>3</sup> /h	15	0.07	0.18
	15	100 - 900 N l/h	21	0.11	0.29
	15	0.15 - 1.5 Nm <sup>3</sup> /h	22	0.11	0.29
	15	0.2 - 2.4 Nm <sup>3</sup> /h	23	0.11	0.29
	15	0.4 - 3.8 Nm <sup>3</sup> /h	24	0.11	0.29
	15	0.4 - 4.8 Nm <sup>3</sup> /h	25	0.11	0.29
	20	0.2 - 2.5 Nm <sup>3</sup> /h	31	0.19	0.46
	20	0.25 - 3.75 Nm <sup>3</sup> /h	32	0.19	0.46
	20	0.5 - 5.5 Nm <sup>3</sup> /h	33	0.19	0.46
	20	1 - 10 Nm <sup>3</sup> /h	34	0.19	0.46
	25	0.4 - 4 Nm <sup>3</sup> /h	41	0.25	0.57
	25	0.5 - 6 Nm <sup>3</sup> /h	42	0.25	0.57
25	1 - 10 Nm <sup>3</sup> /h	43	0.25	0.57	
25	1 - 16 Nm <sup>3</sup> /h	44	0.25	0.57	
<b>GEMÜ 885</b> Float material PP (with magnet)	20	0.75 - 6.5 Nm <sup>3</sup> /h	31	0.19	0.46
	20	1 - 10 Nm <sup>3</sup> /h	32	0.19	0.46
	20	1 - 14.5 Nm <sup>3</sup> /h	33	0.19	0.46
	20	1 - 24 Nm <sup>3</sup> /h	34	0.19	0.46
	25	1 - 10 Nm <sup>3</sup> /h	41	0.25	0.57
	25	2 - 16 Nm <sup>3</sup> /h	42	0.25	0.57
	25	3 - 24 Nm <sup>3</sup> /h	43	0.25	0.57
	25	5 - 37.5 Nm <sup>3</sup> /h	44	0.25	0.57

**To types 875 and 885:**

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

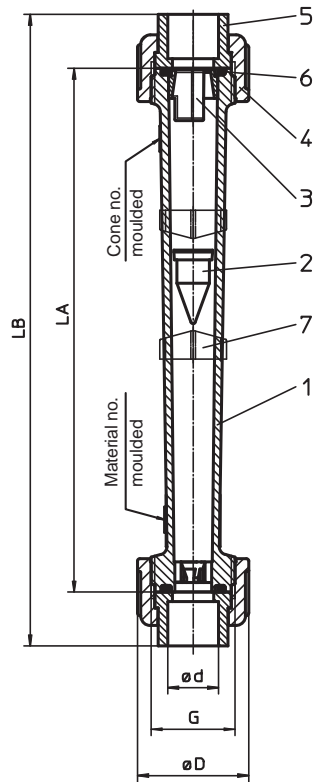
**Special scales:**

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]

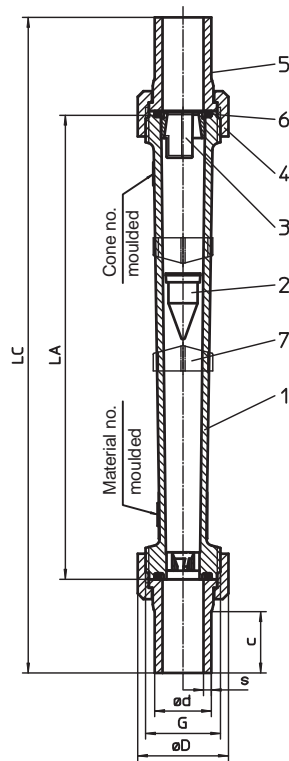
				Plastic union Connection code 7 Material code 1, 5, 20					Plastic union Connection code 33 Material code 1			
DN	G	LA	O-ring	$\varnothing d$	$\varnothing D$	LB			DN	$\varnothing d$	$\varnothing D$	LB
				Material code			1	5				
10	G 3/4	165	15.5 x 2.6	16	35	203	200	203	3/8"	17,3	21,7	22,2
15	G 1	170	20.2 x 3.5	20	43	208	205	208	1/2"	21,4	43	208
20	G 1 1/4	185	28.0 x 3.5	25	53	229	223	227	3/4"	26,7	53	229
25	G 1 1/2	200	33.0 x 3.5	32	59	250	242	246	1"	33,6	60	250

Connection code 7, 33

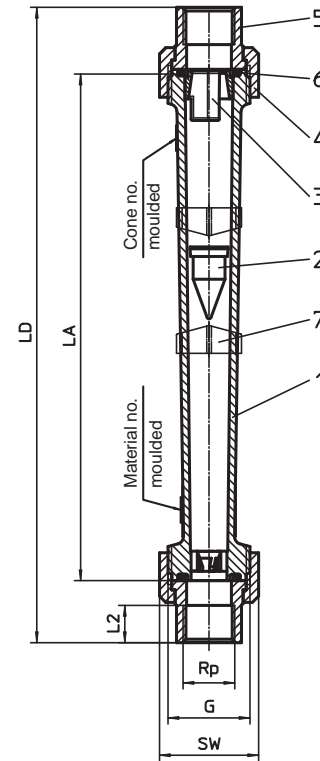


Dimensions [mm]												
				Plastic union connection code 78 material code 5, 20					Metal union (DIN 2999, part 1), connection code 7 material code 6, 7			
DN	G	LA	O-Ring	ød	s		c	LC	Rp	SW	L2	LD
material code					5	20	5,20	5,20				
10	G 3/4	165	15,5 x 2.6	-	-	-	-	-	RP 3/8	32	12	207
15	G 1	170	20,2 x 3.5	20	1,9	1,9	37	276	RP 1/2	41	13	215
20	G 1 1/4	185	28,0 x 3.5	25	2,3	1,9	39	297	RP 3/4	50	16	230
25	G 1 1/2	200	33,0 x 3.5	32	3	2,4	40	318	RP 1	55	19	250

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 GEMÜ 850

To increase the versatility of the GEMÜ 850 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 for DN 25**  
Changeover contact  
(Switching duty of magnetic switch 10 VA)

**GEMÜ 1256 for DN 10, 15, 20**  
Limit switch (max)  
(Switching duty of magnetic switch 10 VA)

**GEMÜ 1251 for DN 25**  
Limit switch (max)  
(Switching duty of magnetic switch 10 VA)

**GEMÜ 1257 for DN 10, 15, 20**  
Limit switch (min)  
(Switching duty of magnetic switch 10 VA)

**GEMÜ 1252 for DN 25**  
Limit switch (min)  
(Switching duty of magnetic switch 10 VA)



**GEMÜ 1271**  
Instrument sensor for continuous flow readout (resistance 0-10 kΩ).

**GEMÜ 1273**  
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