

# Pressure relief valve, Plastic

## Construction

The pressure relief valves GEMÜ N085 and N185 protect the plant and the piping system against gauge pressure and reduces pressure peaks. The third pipe spigot enables the valve to be installed in the main pipe. If the pressure increases, the spring is raised and the valve opens. The pressure is reduced to the preset value and can escape via the third pipe spigot into an adjacent pipe. If the pressure falls, the spring force presses the diaphragm in the direction of the seal seat and it is closed. The spring force can be adjusted as required using a set screw.

## Technical specifications\*

- Nominal sizes: DN 10 to DN 100
- Connections: Spigots, flanges, union ends with insert
- Body materials: PVC-U, PP-B, PVDF
- Seal materials: EPDM, PTFE
- Media temperature: -20 °C to +100 °C
- Setting range: 0.5 to 10 bar

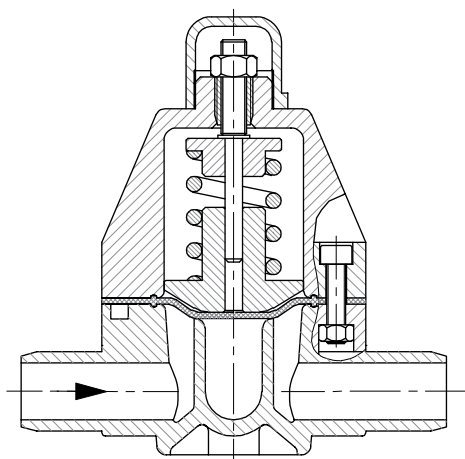
## Advantages

- Valve adjustments can also be made under working pressure.
- The optimization of piston, springs and control face ensures good control characteristics.
- The actuator is hermetically separated from the medium.

\*Dependent on version and/or operating parameters



Sectional view



## Technical data

### Working medium

Corrosive, inert, liquid media which have no negative impact on the physical and chemical properties of the body and seal material. Approved for fluids of Group 1 in accordance with directive 2014/68/EC Article 13 ature is a maximum of 0.5 bar above the normal atmospheric pressure (1013 mbar).

### Working medium temperature

Valve body PVC-U	0 to 60 °C
Valve body PP-B	0 to 80 °C
Valve body PVDF	-20 to 100 °C

The permissible operating pressure depends on the working medium temperature.

### Ambient conditions

Ambient temperature	0 to 60 °C
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## Technical data

Type	Nominal size	PN	Setting range [bar]
GEMÜ N185	DN 10 - 50	10	0.5 - 10
GEMÜ N085	DN 65 - 80	6	1 - 6
	DN 100	4	1 - 4

### Pressure / temperature correlation for N185 (DN 10 - DN 50)

Temperature in °C (plastic body)		-20	-10	±0	5	10	20	25	30	40	50	60	70	80	90	100
Valve body material		Permissible operating pressure in bar														
PVC-U	Code 1	-	-	-	-	10.0	10.0	10.0	8.0	6.0	3.5	1.5	-	-	-	-
PP-B	Code B5	-	-	10.0	10.0	10.0	10.0	10.0	8.5	7.0	5.5	4.0	2.7	1.5	-	-
PVDF	Code 20	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.0	8.0	7.0	6.3	5.4	4.7	3.6	2.5

Data for extended temperature ranges on request. Please note that the ambient temperature and medium temperature generate a combined temperature at the valve body which must not exceed the above values.

### Pressure / temperature correlation for N085 (DN 65 - DN 80)

Temperature in °C (plastic body)		-20	-10	±0	5	10	20	25	30	40	50	60	70	80	90	100
Valve body material		Permissible operating pressure in bar														
PVC-U	Code 1	-	-	-	-	6.0	6.0	6.0	4.8	3.6	2.10	0.90	-	-	-	-
PP-B	Code B5	-	-	6.0	6.0	6.0	6.0	6.0	5.1	4.2	3.30	2.40	1.62	0.90	-	-
PVDF	Code 20	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.4	4.8	4.26	3.78	3.24	2.82	2.16	1.50

Data for extended temperature ranges on request. Please note that the ambient temperature and medium temperature generate a combined temperature at the valve body which must not exceed the above values.

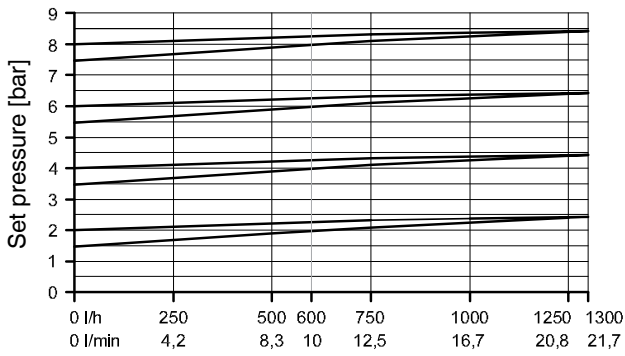
### Pressure / temperature correlation for N085 (DN 100)

Temperature in °C (plastic body)		-20	-10	±0	5	10	20	25	30	40	50	60	70	80	90	100
Valve body material		Permissible operating pressure in bar														
PVC-U	Code 1	-	-	-	-	4.0	4.0	4.0	3.2	2.4	1.40	0.60	-	-	-	-
PP-B	Code B5	-	-	4.0	4.0	4.0	4.0	4.0	3.4	2.8	2.20	1.60	1.08	0.60	-	-
PVDF	Code 20	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.6	3.2	2.84	2.52	2.16	1.88	1.44	1.0

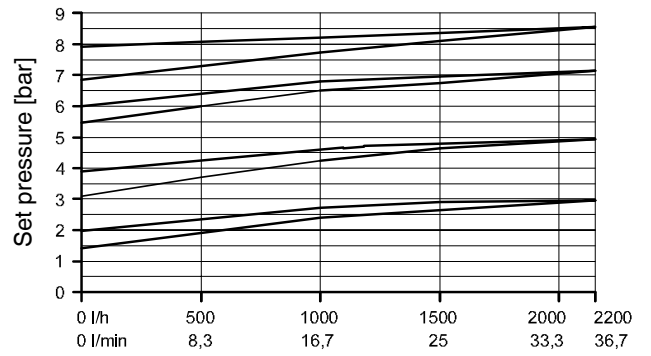
Data for extended temperature ranges on request. Please note that the ambient temperature and medium temperature generate a combined temperature at the valve body which must not exceed the above values.

## Diagrams - N185

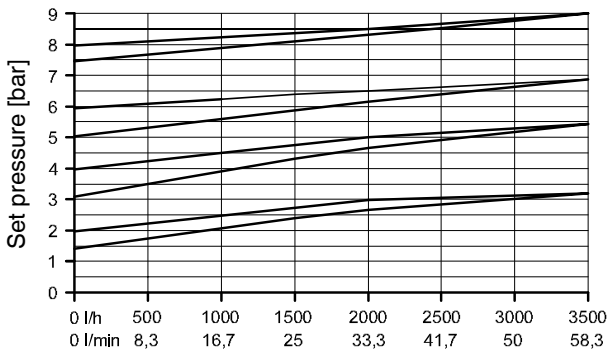
DN 10 - 15



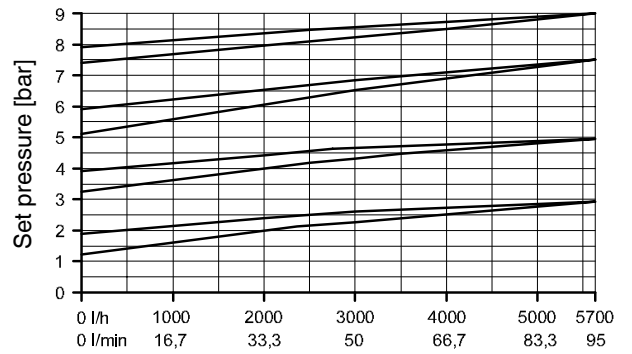
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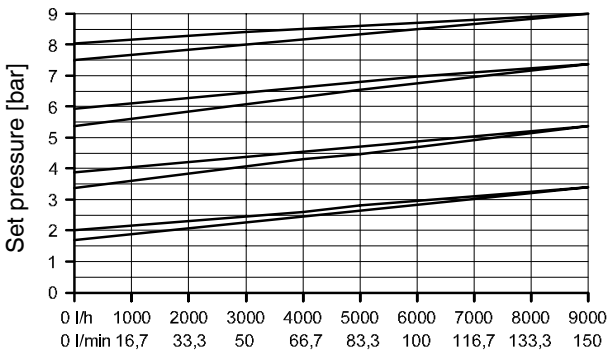
DN 25



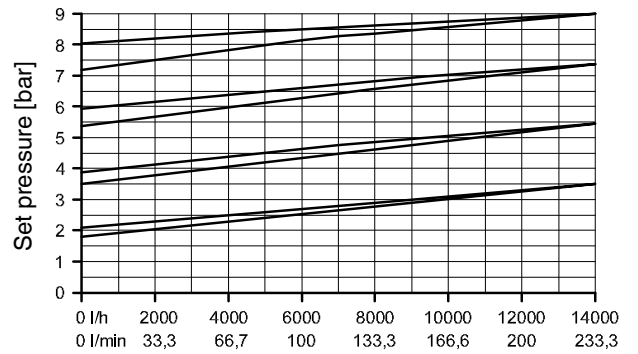
DN 32



DN 40

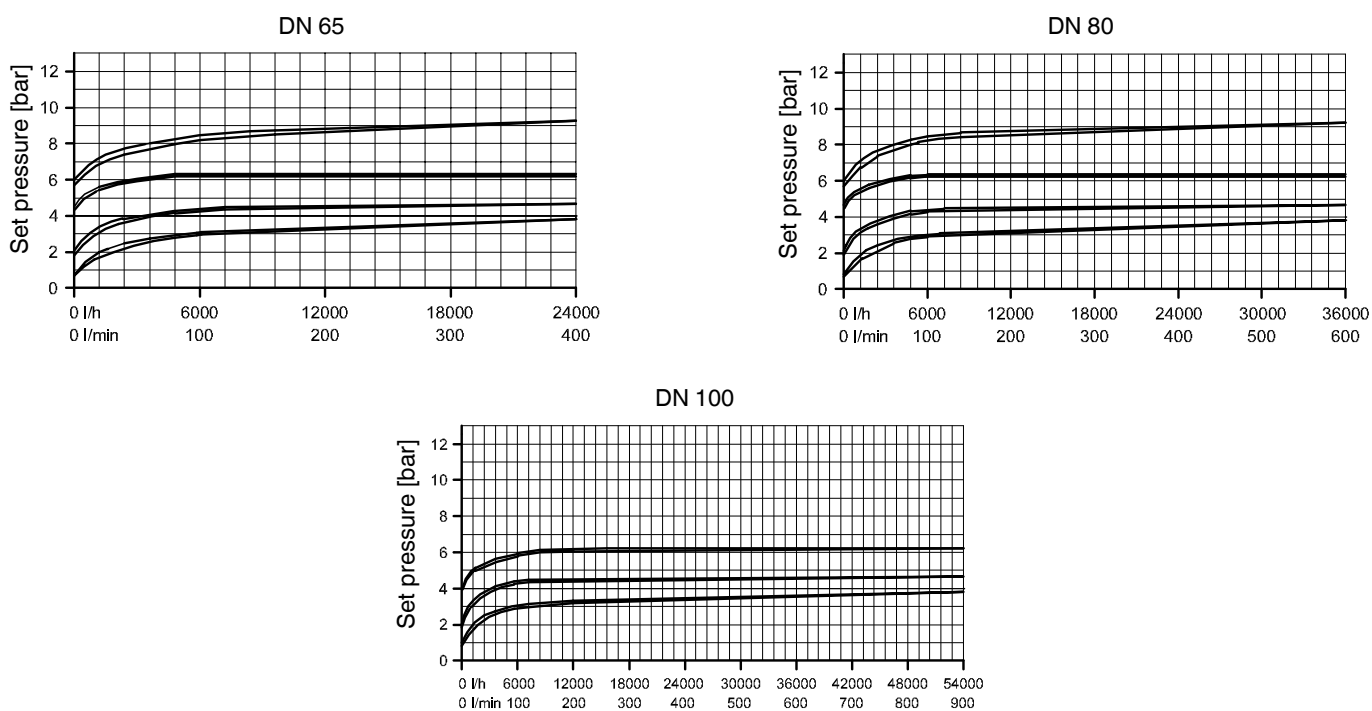


DN 50



The characteristics in the diagrams show the pressure drop of the set pressure from 0 to max. permissible flow.  
 The upper line shows the progression of the opening pressure, the lower line shows the progression of the closing pressure.  
 All characteristics relate to water at 20 °C.

## Diagrams - N085



The characteristics in the diagrams show the pressure drop of the set pressure from 0 to max. permissible flow. The upper line shows the progression of the opening pressure, the lower line shows the progression of the closing pressure. All characteristics relate to water at 20 °C.

### Order data

Valve type	Code
Pressure relief valve DN 65 - DN 100	N085
Pressure relief valve DN 10 - DN 50	N185

Valve body material	Code
PVC-U, grey	1
PVDF	20
PP-B	B5

Body configuration	Code
Multi-port version	M

Diaphragm material	Code
EPDM	14
PTFE/EPDM, PTFE laminated	52

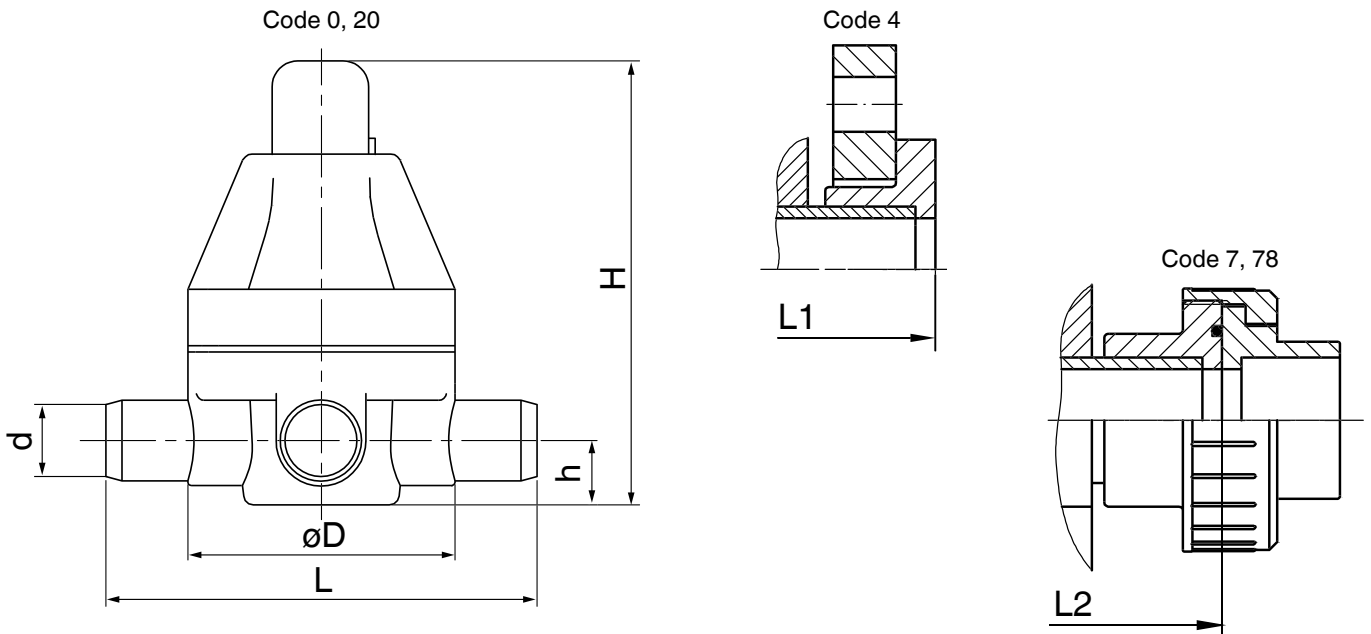
Connection	Code
Spigots DIN	0
Flanges EN 1092 / PN10 / form B, length EN 558, series 1, ISO 5752, basic series 1	4
Union ends with DIN insert (socket)	7
Spigots for IR butt welding	20
Union ends with DIN insert (for IR butt welding)	78

Order example	N185	25	M	0	1	14
Type	N185					
Nominal size		25				
Body configuration (code)			M			
Connection (code)				0		
Valve body material (code)					1	
Diaphragm material (code)						14

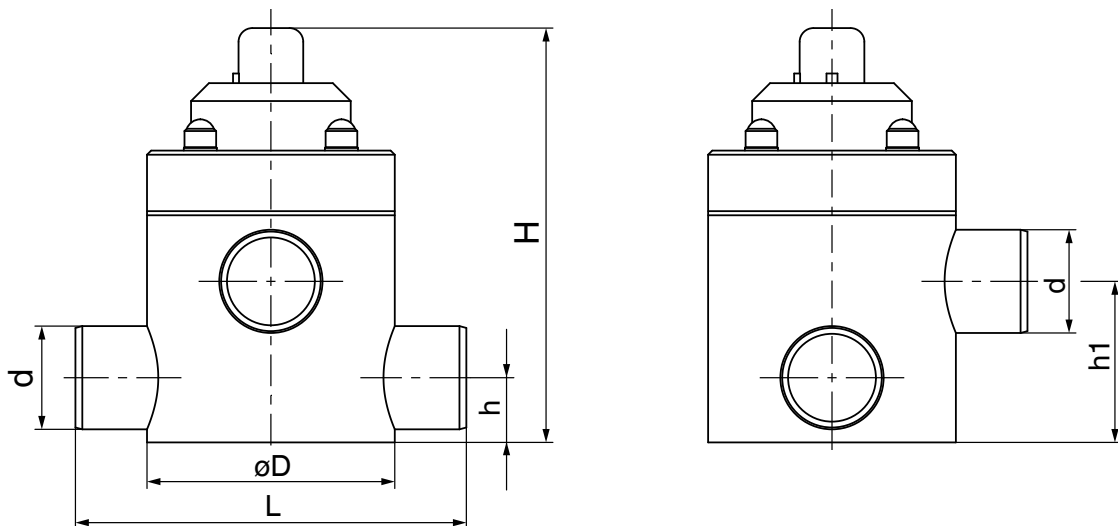
**Dimensions [mm]**

**N085, N185**

Typ	DN	d	L		L1			L2			ø D	h	h1	H
			Connection code 0	Connection code 20	Connection code 4			Connection code 7, 78						
			Material code 1, 20, B5	Material code 20, B5	Material code 1	Material code 20	Material code B5	Material code 1	Material code 20	Material code B5				
GEMÜ N185	10	16	134	158	140	168	-	154	180	180	83	20.0	20.0	137
	15	20	134	158	140	168	168	154	182	182	83	20.0	20.0	137
	20	25	134	158	140	168	168	154	182	182	83	20.0	20.0	137
	25	32	174	198	180	208	208	194	222	222	112	27.0	27.0	199
	32	40	174	202	180	212	212	198	230	230	112	27.0	27.0	199
	40	50	224	256	230	266	266	252	288	288	165	43.0	43.0	290
	50	63	244	256	250	266	266	280	296	296	165	43.0	43.0	290
GEMÜ N085	65	75	284	284	290	-	294	320	-	320	180	47.5	117.0	275
	80	90	360	360	370	-	374	396	-	396	250	55.0	155.0	410
	100	110	380	380	390	-	394	402	-	424	250	70.0	180.0	485



Code 0, 20 - Pressure relief channel



### Overview of valve bodies for N185

Connection code	0	4		7	20	78
Material code	1, 20, B5	1, 20	B5	1, 20, B5	20, B5	20, B5
DN						
10	X	X	-	X	-	-
15	X	X	X	X	X	X
20	X	X	X	X	X	X
25	X	X	X	X	X	X
32	X	X	X	X	X	X
40	X	X	X	X	X	X
50	X	X	X	X	X	X

### Overview of valve bodies for N085

Connection code	0		4		20	
Material code	1, B5	20	1, B5	20	B5	20
DN						
65	X	X	X	X	X	X
80	X	-	X	-	X	-
100	X	-	X	-	X	-

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Should there be any doubts or misunderstandings, the German version of this data sheet is the authoritative document!

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**GEMÜ** VALVES, MEASUREMENT AND CONTROL SYSTEMS

