

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: -4 °F to 212 °F
- Setting range: 7.3 to 150 psi

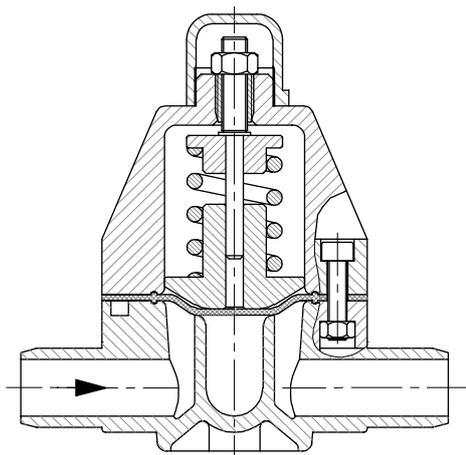
Advantages

- 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 whose steam pressure at the permissible maximum temperature is a maximum of 7.3 psi above the normal atmospheric pressure (15 psi).

Working medium temperature

Valve body PVC-U	0 to 140 °F
Valve body PP-B	0 to 176 °F
Valve body PVDF	-4 to 212 °F

The permissible operating pressure depends on the working medium temperature.

Ambient conditions

Ambient temperature	0 to 140 °F
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Technical data

Type	Nominal size	PN	Setting range [psi]
GEMÜ N185	DN 10 - 50	10	7.3 - 150
GEMÜ N085	DN 65 - 80	6	15 - 90
	DN 100	4	15 - 60

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

Temperature in °F (plastic body)		-4	14	32	41	50	68	77	86	104	122	140	158	176	194	212
Valve body material		Permissible operating pressure in psi														
PVC-U	Code 1	-	-	-	-	150	150	150	120	90	51	22	-	-	-	-
PP-B	Code B5	-	-	150	150	150	150	150	123	105	80	60	39	22	-	-
PVDF	Code 20	150	150	150	150	150	150	150	131	120	105	91	78	68	52	36

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 °F (plastic body)		-4	14	32	41	50	68	77	86	104	122	140	158	176	194	212
Valve body material		Permissible operating pressure in psi														
PVC-U	Code 1	-	-	-	-	90	90	90	70	52	30	13.1	-	-	-	-
PP-B	Code B5	-	-	90	90	90	90	90	74	61	48	35	23	13.1	-	-
PVDF	Code 20	90	90	90	90	90	90	90	78	70	62	55	47	41	31	22

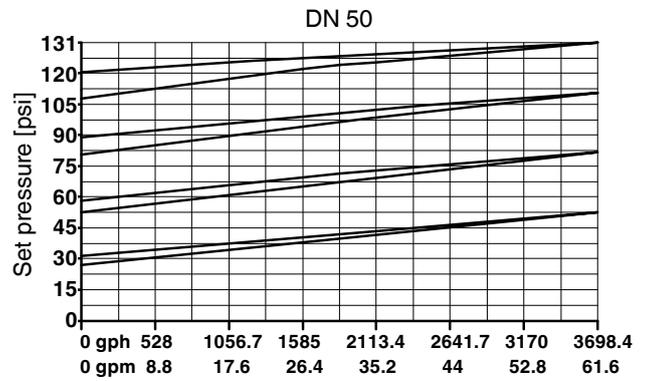
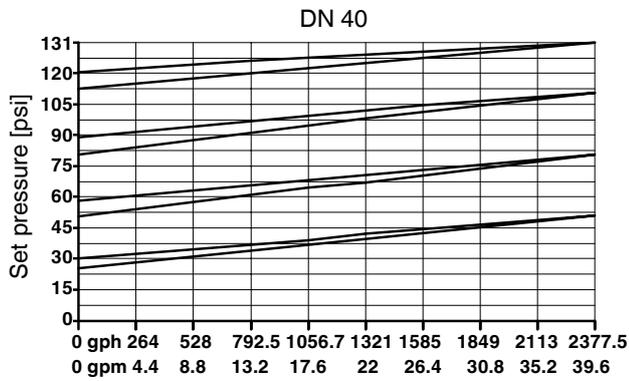
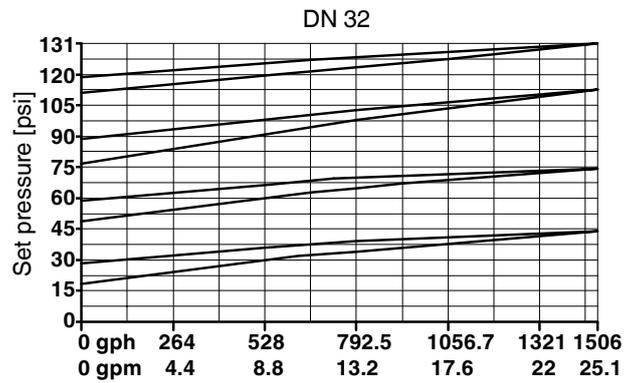
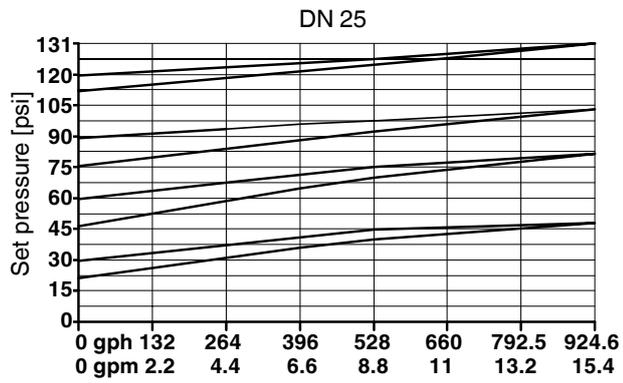
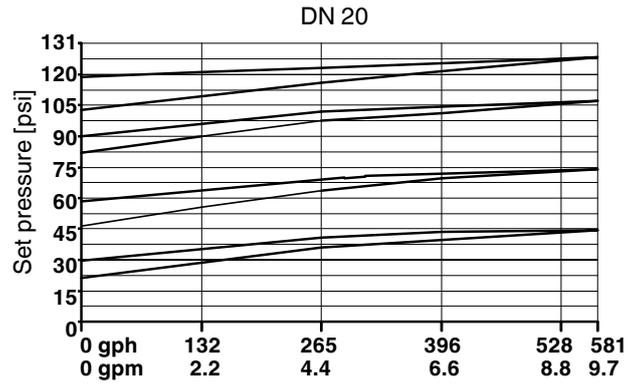
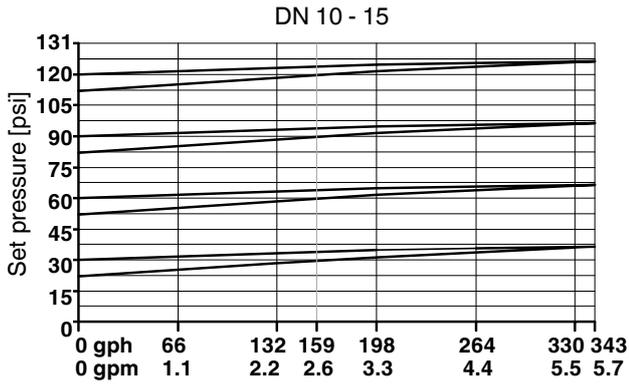
Data for extended temperature ranges on request. Please note that the ambient temperature and medium temperature generate a combined temperature at the valve body which must not exceed the above values.

Pressure / temperature correlation for N085 (DN 100)

Temperature in °F (plastic body)		-4	14	32	41	50	68	77	86	104	122	140	158	176	194	212
Valve body material		Permissible operating pressure in psi														
PVC-U	Code 1	-	-	-	-	60	60	60	46	35	20	8.7	-	-	-	-
PP-B	Code B5	-	-	60	60	60	60	60	49	41	32	23	16	8.7	-	-
PVDF	Code 20	60	60	60	60	60	60	60	52	46	41	37	31	27	21	15

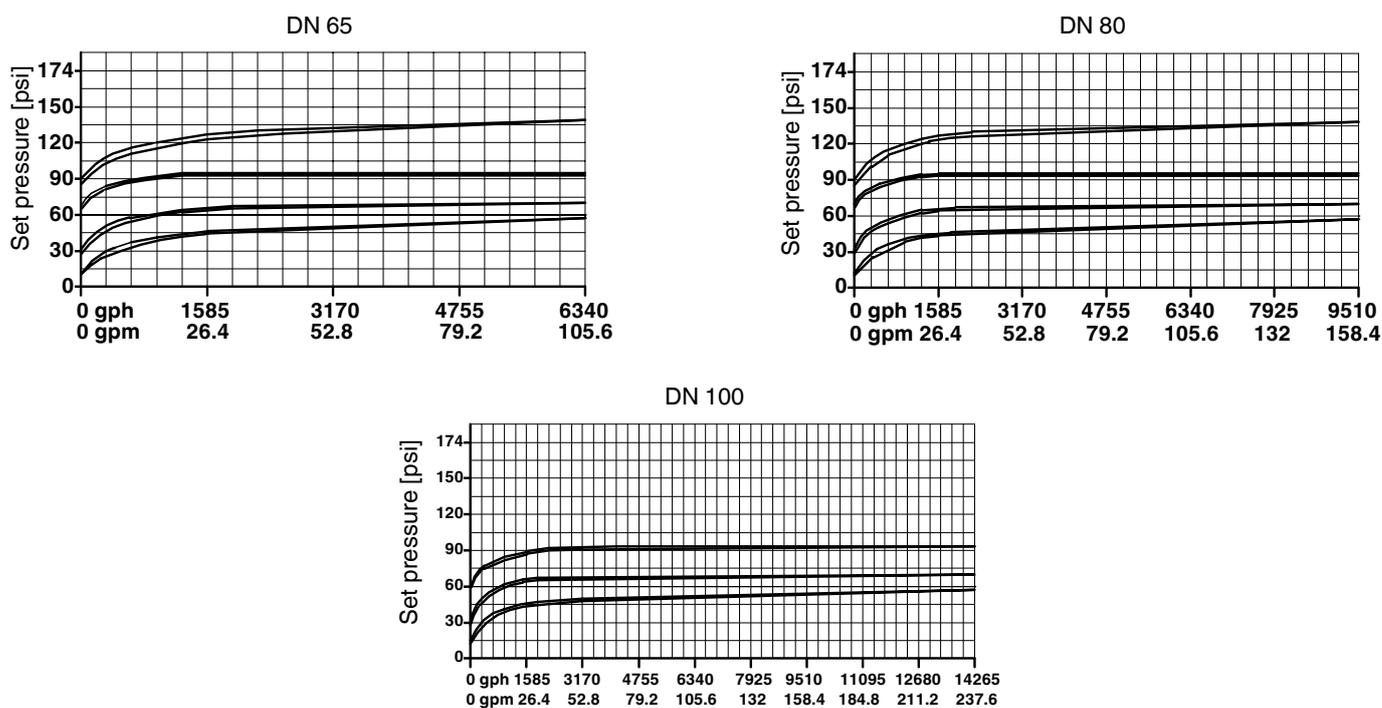
Data for extended temperature ranges on request. Please note that the ambient temperature and medium temperature generate a combined temperature at the valve body which must not exceed the above values.

Diagrams - N185



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 68 °F.

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 68 °F.

Order data

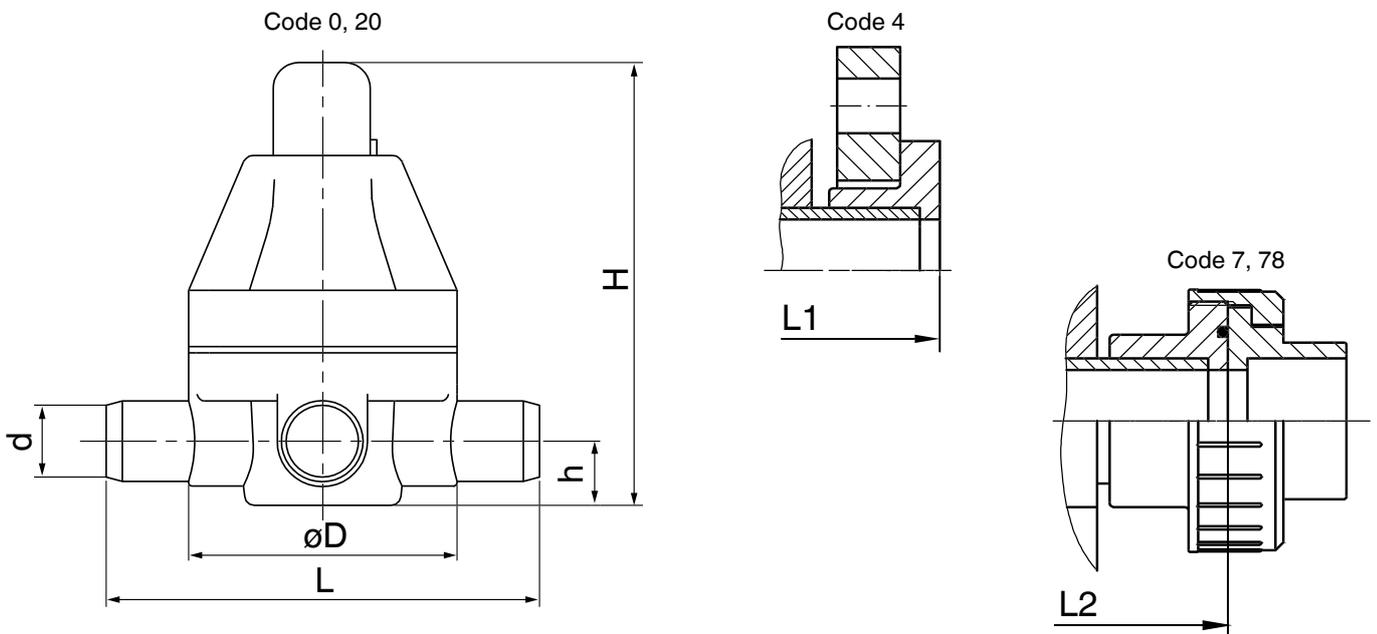
Valve type		Code	Valve body material		Code
Pressure relief valve	DN 65 - DN 100	N085	PVC-U, grey		1
Pressure relief valve	DN 10 - DN 50	N185	PVDF		20
			PP-B		B5
Body configuration		Code	Diaphragm material		Code
Multi-port version		M	EPDM		14
			PTFE/EPDM, PTFE laminated		52
Connection		Code			
Spigots 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

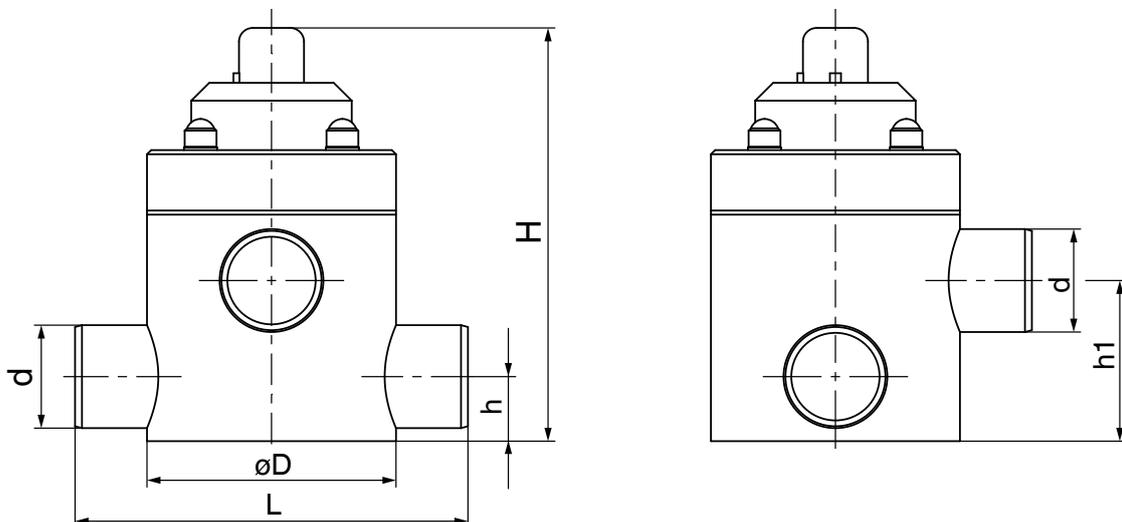
Dimensions [inch]

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	0.63	5.28	6.22	5.51	6.61	-	6.06	7.09	7.09	3.27	0.79	0.79	5.39
	15	0.79	5.28	6.22	5.51	6.61	6.61	6.06	7.17	7.17	3.27	0.79	0.79	5.39
	20	0.98	5.28	6.22	5.51	6.61	6.61	6.06	7.17	7.17	3.27	0.79	0.79	5.39
	25	1.26	6.85	7.8	7.09	8.19	8.19	7.64	8.74	8.74	4.41	1.06	1.06	7.83
	32	1.57	6.85	7.95	7.09	8.35	8.35	7.8	9.06	9.06	4.41	1.06	1.06	7.83
	40	1.97	8.82	10.08	9.06	10.47	10.47	9.92	11.34	11.34	6.5	1.69	1.69	11.42
	50	2.48	9.61	10.08	9.84	10.47	10.47	11.02	11.65	11.65	6.5	1.69	1.69	11.42
GEMÜ N085	65	2.95	11.18	11.18	11.42	-	11.57	12.6	-	12.6	7.09	1.87	4.61	10.83
	80	3.54	14.17	14.17	14.57	-	14.72	15.59	-	15.59	9.84	2.17	6.1	16.14
	100	4.33	14.96	14.96	15.35	-	15.51	15.83	-	16.69	9.84	2.76	7.09	19.09



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

