

# Pipeline Ancillaries

## Sight Glasses / Flow Indicators DA 4.00 - 4.40



Two Glass Sight Glasses / Flow Indicator

### Technical Data

Connection DN	DA 4.00 - 4.20 DN 15 - 250 DA 4.30 - 4.40 DN 15 - 50
Connection G	DA 4.00 - DA 4.40 G 3/8 - 2
Nominal Pressure PN	16 - 40
Temperature	280 °C
Medium	liquids, gases and steam

### Description

Sight glasses without flow indicator may be used for easy checking of fill levels, consistency, bi- or multiphase flows or condensate. They may also be used for mixtures of liquids, gases and vapours. Flow indicators fitted with a vane can be used for monitoring the flow of liquids, gases and biphasic fluids. Flow indicators fitted with an impeller are used for liquids and small flow volumes. Flow indicators fitted with a ball can be used for liquids and gases.

**DA 4.00 - 4.40** with two borosilicate glasses, a good view of the fluid is provided by the two opposite glasses.

**DA 4.00 without indicator device**, for basically visual control.  
Installation position:  
» any position

**DA 4.10 with internal indicator flag**, for constant flow direction.  
Nominal diameters G 3/8 - G 1 and DN 15 - 25 are without resetting spring as standard, subsequent installation is possible. All others are with resetting spring.  
Installation position:  
» with resetting spring any position  
» without resetting spring horizontal with flag downwards, vertical only with flow from below upwards

**DA 4.20 with internal indicator flag**, for alternating flow directions:  
Nominal diameters G 3/8 - G 1 and DN 15 - 25 are without resetting spring as standard, subsequent installation is possible. All others are with resetting spring.  
Installation position:  
» with resetting spring any position  
» without resetting spring horizontal with flag downwards

**DA 4.30 with impeller**, for constant flow direction:  
Installation position:  
» horizontal or vertical, for small flow rates ( $v < 1$  m/s)

**DA 4.40 with ball**, for constant flow direction:  
Installation position:  
» vertical, only with flow from below upwards

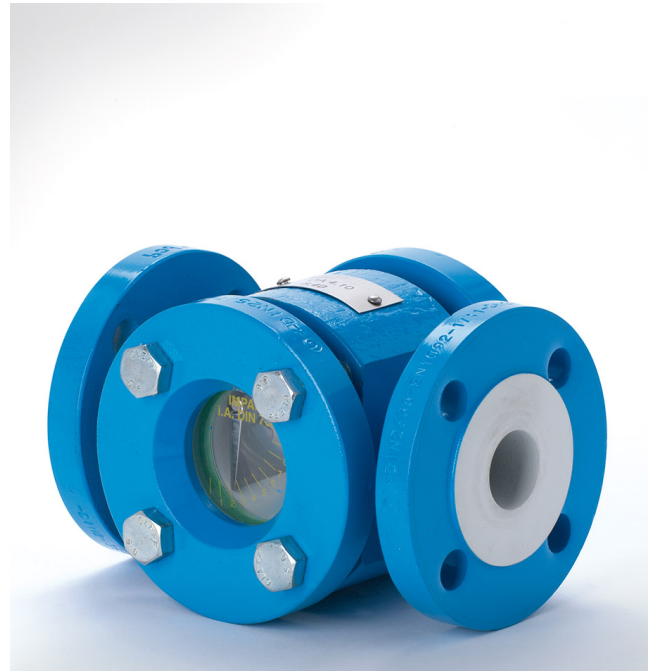
### Standard

- » 2 borosilicate glasses
- » Internals made of CrNiMo-steel, impeller PBTP, ball PA

### Options

- » Various seal materials suitable for your medium
- » PTFE impeller or ball
- » Special versions on request

Operating instructions, know how and safety instructions must be observed. All the pressure has always been indicated as overpressure. We reserve the right to alter technical specifications without notice.



### Sensitivity [m<sup>3</sup>/h]

DN	DA 4.10	DA 4.20	DA 4.30	DA 4.40
15	0,18	0,20	0,12	0,15
20	0,18	0,20	0,15	0,20
25	0,18	0,20	0,20	0,35
32	1,20	0,80	0,25	0,50
40	1,20	0,80	0,30	0,60
50	1,50	0,90	1,20	1,00
65	1,50	1,20	-	-
80	2,50	1,60	-	-
100	5,00	2,00	-	-
125	8,00	2,50	-	-
150	8,00	2,50	-	-
200	on request		-	-
250	on request		-	-

sensitivity for water, 20 °C, horizontal installation (DA 4.40 vertical), app. rate in m<sup>3</sup>/h

# Pipeline Ancillaries

## Sight Glasses / Flow Indicators DA 4.00 - 4.40



Two Glass Sight Glasses / Flow Indicator

### Materials DA 4.00 - 4.20

Temperature	150 / 280 °C	
Body	PN 16	steel
	PN 25 - 40	C-steel
	PN 16 - 40	CrNiMo-steel
Seal	Nova Universal / Grafit	
Glasses	borosilicate glass	
Internals	CrNiMo-steel / Ms	
Screws	5.6 zincd	

### Materials

Type	3.30	4.30	3.40	4.40
Temperature	80 °C		100 °C	
Body	PN 16	steel		
	PN 25 - 40	C-steel		
	PN 16 - 40	CrNiMo-steel		
Seal	Nova Universal			
Glasses	borosilicate glass			
Internals	CrNiMo-steel / PBTP		CrNiMo-steel / Ms / PA	
Screws	5.6 zincd			

### Dimensions Sleeve Connection [mm]

size	nominal diameter G						
	3/8	1/2	3/4	1	1 1/4	1 1/2	2
A*	90	90	90	90	90	90	110
B	70	70	70	70	70	70	90
C	140	140	140	140	140	140	180
E	115	115	115	115	115	115	150
F	50	50	50	50	50	50	66

### Dimensions Flange Connection [mm]

size	nominal pressure PN	nominal diameter DN													
		15	20	25	32	40	50	65	80	100	125	150	200*	250*	
A*	PN 16 (steel)	-	-	-	-	-	-	-	-	310	350	400	480	600	650
	PN 16 (CrNiMo-steel)	164	168	168	172	178	202	290	on request						
	PN 25/40	166	170	170	174	180	206	290	on request						
B	PN 16 - 40	70	70	70	70	70	90	90	110	125	135	135	230	250	
C		140	140	140	140	140	180	180	220	250	270	270	460	500	
E	PN 16 (steel)	-	-	-	-	-	-	-	130	190	210	210	285	285	
	PN 16 (CrNiMo-steel)	115	115	115	115	115	150	150	on request						
	PN 25/40	115	115	115	115	115	150	150	on request						
F	PN 16 - 40	50	50	50	50	50	66	66	80	100	110	110	175	175	

\* Overall length tolerances in acc. with DIN EN 558

### Weights [kg]

nominal pressure	nominal diameter G							nominal diameter DN												
	3/8	1/2	3/4	1	1 1/4	1 1/2	2	15	20	25	32	40	50	65	80	100	125	150	200	250
PN 16	2,6	2,6	2,8	3	3	4	7	4	4	5	6	7	10	13	17	26	36	43	80	126
PN 25/40	4,5	4,5	4,5	5	5	5	10	6	7	8	9	9	15	15	on request					

### Customs Tariff Number

84818099

Special designs on request.

The pressure has always been indicated as overpressure.

Mankenberg reserves the right to alter or improve the designs or specifications of the products described herein without notice.

### Dimensional Drawing

