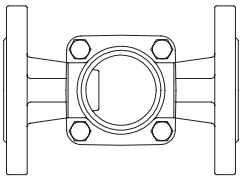
Flow indicator
(Double window sight glasses)
PN16 / PN40

- **with flanges** **(Fig. 660....1)**
- **with screwed sockets** **(Fig. 660....2)**
- **with butt weld ends** **(Fig. 660....4)**



Grey cast iron
Cast steel
Stainless steel

Fig. 660 Page 2

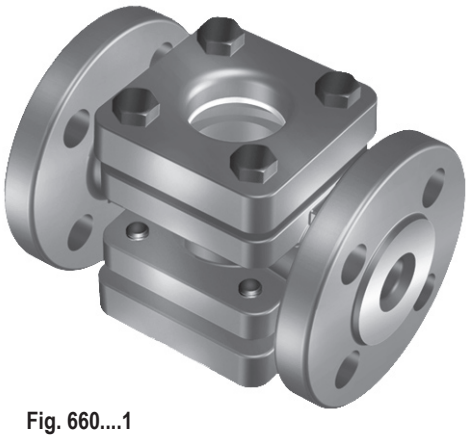


Fig. 660....1

Features:

- with double sided window (borosilicate glass)
- Sight glasses with reinforced windows acc. to DIN 3237
- Mounting in any position
- Robust and water hammer proof design

Flow indicator (Grey cast iron, Cast steel, Stainless steel)

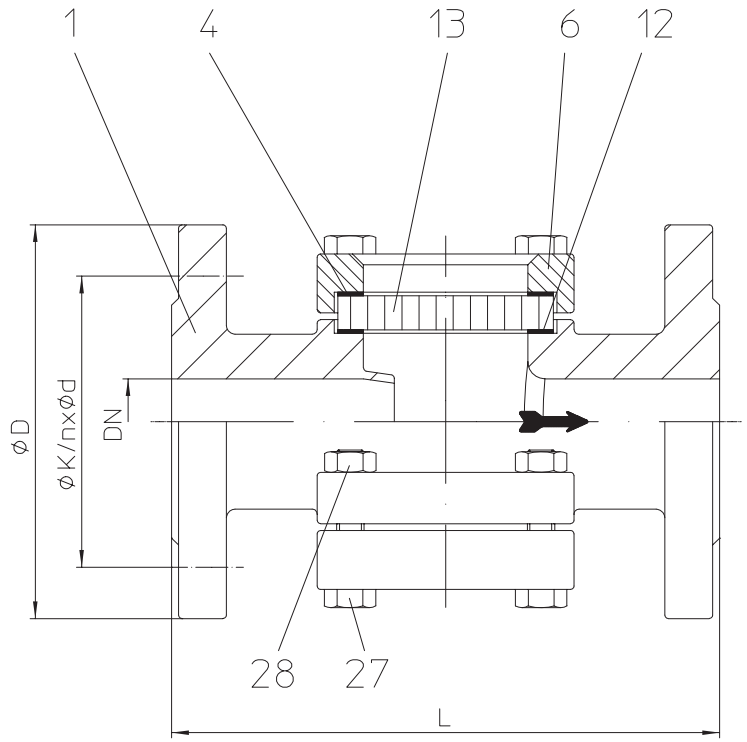


Fig. 660....1 with flanges

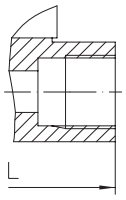


Fig. 660....2
with screwed sockets

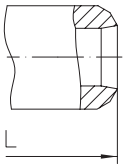


Fig. 660....4
with butt weld ends

Figure	Nominal pressure	Material	Nominal diameter / NPS	Operating pressure PS	Inlet temperature TS	max. pH value
12.660	PN16	EN-JL1040	6 - 200 / 1/4“ - 8“	16 barg	120 °C	9-10
				10,2 barg	280 °C	
32.660	PN16	1.0619+N	6 - 200 / 1/4“ - 8“	16 barg	120 °C	
				10,2 barg	280 °C	
52.660	PN16	1.4408	6 - 200 / 1/4“ - 8“	16 barg	120 °C	
				10,2 barg	280 °C	
35.660	PN40	1.0619+N	6 - 200 / 1/4“ - 8“	40 barg	120 °C	
				28 barg	280 °C	
55.660	PN40	1.4408	6 - 200 / 1/4“ - 8“	40 barg	120 °C	
				28 barg	280 °C	
For ANSI versions refer to data sheet CONA®Komponenten-ANSI						

Types of connection — Other types of connection on request.

- Flanges ....1 _____ acc. to DIN 2533 or DIN EN 1092-2 (PN16) / DIN 2635 or DIN EN 1092-1 (PN40)
- Screwed sockets ....2 ___ Rp thread acc. to DIN EN 10226-1 or NPT thread acc. to ANSI B1.20.1
- Butt weld ends ....4 _____ Weld preparation acc. to EN ISO 9692 identification No. 1.3 and 1.5
  (Note restriction on operating pressure / inlet temperature depending to design!)

Features

- Double window sight glasses in straight through (borosilicate glass)
- Sight glasses provide visual indication of the flow through pipe works and monitoring of the system.
- In connection with steam traps they will allow the monitoring of the function of steam traps
- Installation in any position. In connection with the steam trap the sight glass has to be installed in front of it.
- **Construction acc. to DIN 3237 Sight glasses with reinforced windows**

Selection criteria		Example for order data
• Operating pressure	• Type of connection	For monitoring the function of steam traps in pipe work systems, PS = 22bar, TS = 250°C, Screwed sockets G1/2, Body stainless steel, Window borosilicate glass DIN 7080-16.
• Operating temperature	• Body material	**=> Flow indicator, Fig. 660, G 1/2, PN16, Stainless steel, Face-to-face dimension 100 mm, Screwed sockets.**
• Nominal diameter / pressure		

DN				6	10	15	20	25	32	40	50	65	80	100	125	150	200
NPS				1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
Dimensions and weights (Face-to-face acc. to data sheet resp. customer request)																	Standard-flange dimensions refer to page 4
PN16	**Flanges**	L	(mm)	--	--	130	150	160	180	200	230	290	310	350	400	480	600
		D	(mm)	--	--	95	105	115	140	150	165	185	200	220	250	285	340
		Weight approx.	(kg)	--	--	3,6	4,2	6,5	8,1	10,5	14,5	23	32	41	47	on request	
	Screwed sockets (NPT not for EN-JL1040)	L (EN-JL1040)	(mm)	100	100	100	120	120	160	160	180	--	--	--	--	--	--
		L	(mm)	100	100	100	120	120	160	160	230	--	--	--	--	--	--
		SW	(mm)	36	36	36	46	46	75	75	80	--	--	--	--	--	--
		Weight approx.	(kg)	2,2	2,2	2,2	3,4	3,4	7	7	10	--	--	--	--	--	--
PN40	**Flanges**	L	(mm)	--	--	130	150	160	180	200	230	290	310	350	400	480	600
		D	(mm)	--	--	95	105	115	140	150	165	185	200	235	270	300	375
		Weight approx.	(kg)	--	--	3,6	4,2	6,5	8,1	11,5	14,9	23	33	43	50	on request	
	Screwed sockets	L	(mm)	100	100	100	120	120	160	160	230	--	--	--	--	--	--
		SW	(mm)	36	36	36	46	46	75	75	80	--	--	--	--	--	--
		Weight approx.	(kg)	2,2	2,2	2,2	3,4	3,4	7	7	10	--	--	--	--	--	--
	Butt weld ends	L	(mm)	--	100	100	100	120	120	160	230	290	310	350	400	480	600
		A	(mm)	--	20	22	28	34	42	49	61	77	90	115	141	170	222
		Weight approx.	(kg)	--	2,2	2,2	2,2	4	4	7	10	18	25	32	35	on request	

Parts					
Pos.	**Sp.p.**	**Description**	**Fig. 12.660**	**Fig. 32.660 Fig. 35.660**	**Fig. 52.660 Fig. 55.660**
1		Body	EN-JL1040, EN-GJL-250	GP240GH+N, 1.0619+N	GX5CrNiMo19-11-2, 1.4408
4	x (window cpl.)	Gasket	Aramidfaser C4400		
+ 12		Gasket	Graphite		
+ 13		Window	borosilicate glass DIN 7080 max. 280°C		
6		Cover flange	EN-JL1040, EN-GJL-250	GP240GH+N, 1.0619+N	GX5CrNiMo19-11-2, 1.4408
27		Hexagon screw	5.6 zinc coated		A4-70
28		Hexagonal nut	5		A4-70
	L Spare parts				

Information / restriction of technical rules need to be observed!

Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

Operating and installation instructions can be downloaded at www.ari-armaturen.com.

Flow conditions through a sight glass installed in front of a steam trap

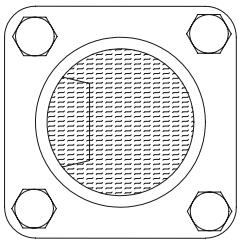


Figure 1: Back pressure of condensate

On a back pressure of condensate the interior space will be filled with liquid.

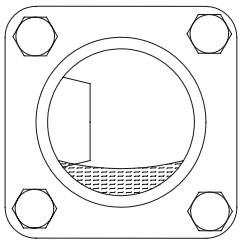


Figure 2: Steam flow

On steam flow the liquid level is lowered below the edge of the inlet pipe. Intensive mixture of water and steam can lead to an intensive bubbling.

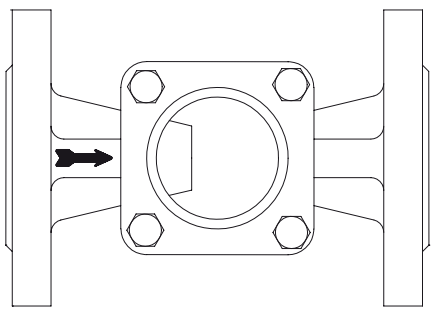


Figure 3: Tetragonal top flange (< DN 65)

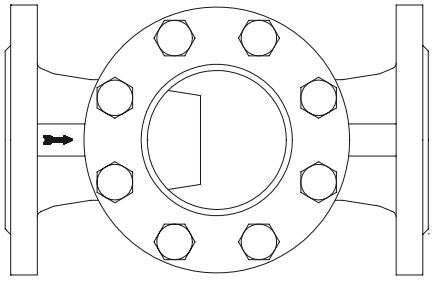


Figure 4: Circular top flange (DN65-250)

Informations about pipe welding

Welding groove acc. to DIN 2559

The material used for ARI valves with butt weld ends are:	1.0619+N	GP240GH+N acc. to DIN EN 10213-2
Note:	1.4408	GX5CrNiMo19-11-2 acc. to DIN EN 10213-4

Note restriction on operating pressure / inlet temperature depending to design!

Due to our experience, we recommend to apply an electric welding process.

Because of the different material compositions and wall thickness of the steam traps and the pipe gas welding shall not be applied. Quenching cracks and coarse grain structure may develop.

On bimetallic steam traps face-to-face of 95 mm or less, the bimetallic controller has to be disassembled prior to welding. After the traps have cooled down to the ambient temperature the bimetallic controller shall be fitted again into the body.

Steam traps with socket-weld ends shall only be welded by arc welding (welding process 111 acc. to DIN EN 24063).

If during the time of warranty others than the manufacturer or by the manufacturer authorized persons are interfering in the product and/or the setting, the right of claim for warranty will lapse!

Standard-flange dimensions acc. to DIN 2533 / DIN 2634 / DIN 2635 or DIN EN 1092-2/ -1

DN			15	20	25	32	40	50	65	80	100	125	150	200
NPS			1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	4 1/2"	6"	8"
PN16	ØD	(mm)	95	105	115	140	150	165	185	200	220	250	285	340
	ØK	(mm)	65	75	85	100	110	125	145	160	180	210	240	295
	n x Ød	(mm)	4 x 14	4 x 14	4 x 14	4 x 18	4 x 18	4 x 18	4 x 18	8 x 18	8 x 18	8 x 18	8 x 22	12 x 22
PN25	ØD	(mm)	95	105	115	140	150	165	185	200	235	270	300	360
	ØK	(mm)	65	75	85	100	110	125	145	160	190	220	250	310
	n x Ød	(mm)	4x14	4x14	4x14	4x18	4x18	4x18	8x18	8x18	8x22	8x26	8x26	12x26
PN40	ØD	(mm)	95	105	115	140	150	165	185	200	235	270	300	375
	ØK	(mm)	65	75	85	100	110	125	145	160	190	220	250	320
	n x Ød	(mm)	4 x 14	4 x 14	4 x 14	4 x 18	4 x 18	4 x 18	8 x 18	8 x 18	8 x 22	8 x 18	8 x 22	12 x 30

ARI-Armaturen Albert Richter GmbH & Co. KG, D-33750 Schloß Holte-Stukenbrock,
Tel. +49 52 07 / 994-0, Telefax +49 52 07 / 994-158 or 159 Internet: http://www.ari-armaturen.com E-mail: info.vertrieb@ari-armaturen.com