Variable area flowmeter TYPE SK01/SK02/SK03

description:

Variable area flowmeter are ideal to read discharge values in a system and/or to controll flow rates.

product features:

- suitable for **water, air & gases depending on type**
- simple mounting and handling
- flow from the bottom up
- maintenance-free

connection	temperature	pressure
female thread 1/4" – 2" adhesive connection d20, d32, d63	up to max. +60°C	max. 10 bar

body material:	Trogamid	
measuring cone:	liquids:	stainless steel 1.4571
	air:	aluminium
seal:	Perbunan (NBR), EPDM or FPM	
flow direction:	vertically upwars	
connection:	female thread DIN ISO 228, adhesive connection	
connection material:	PVC	
temperature:	max. + 60°C (water max. 50°C)	
measuring accuracy:	liquids:	G 2,5 qG 50% (acc. to VDE/VDI 3513, paper 2)
	gases:	G 2,5 qG 50% (acc. to VDE/VDI 3513, paper 2)

Pressure and temperature limits:

Trogamid (body material):

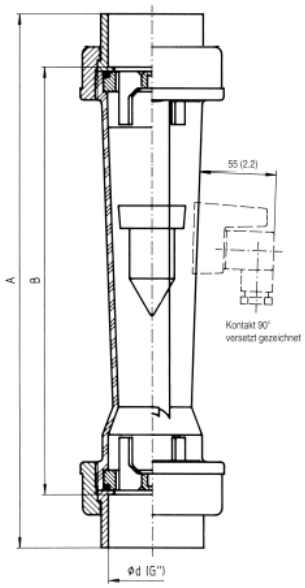
Temperature	Pressure
-10 to +60°C / Water max. up to +50°C	10,0 bar

PVC connection material:

Medium	Temperature in °C	Pressure in bar
Water and not aggressive liquids	20	10,0
	40	10,0
	60	2,5
aggressive mediums	20	10,0
	40	4,0
	60	1,0

dimensions:

emale thread	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
dhesive conn.	d20 mm			d32 mm		d63 mm		
limension A thread SK01 /SK02	366 +/-4 mm			358 +/- 4 mm		366 +/-4 mm		
limension A dhesive connection SK03	346 +/-4 mm			356 +/- 4 mm		389 +/-4 mm		
ength B	306	306	306	306	306	306	306	306
veight in kg	0,4			0,7		2,2		



installation:

For specific device sizes the float is inserted with a plastic net for transport lock. This must be removed through the top of the meter before installation. After that the free movement of the float inside the flow tube should be checked again.

The device must be mounted vertically and stress-free. Reductions, extensions, and control elements upstream and downstream of the meter have no influence on the measurement accuracy with liquids. For gases, however, the installation of the meter is recommended before valves to prevent compression oscillations.

Since variable area flow meters are very sensitive to changes in flow, control elements should always be adjusted slowly. The calibration is carried out for defined conditions. It is essential to ensure compliance with the calibration conditions. Deviations of the density, pressure or temperature of gases, as well as density and viscosity of liquids, result in errors. Therefore it is essential to specify the following data of the medium in the order: the medium, the density and the viscosity at operating temperature and pressure. For gases, the exact reference point for the pressure (gauge or absolute pressure) is also required.

Retrofitting of switching contacts is only possible when the floats are equipped with magnets. When commissioning the contact we recommend to ensure the correct position of the bistable contact by moving the float along the contact in flow direction.

measuring ranges:

liquids (p=1 kg/l, viscosity 1mPa s)										**pressure loss float**
female thread		**1/4"**	**3/8"**	**1/2"**	**3/4"**	**1"**	**1 1/4"**	**1 1/2"**	**2"**	
adhesive connect.		**d20 mm**			**d32 mm**		**d63 mm**			
type	dynamic	l/h	l/h	l/h	l/h	l/h	l/h	l/h	l/h	mbar
01	1:10	125	125	125	--	--	--	--	--	11
02	1:10	315	315	315	--	--	--	--	--	13
03	1:10	--	--	--	650	650	--	--	--	17
04	1:10	--	--	--	1000	1000	--	--	--	17
05	1:10	--	--	--	1600	1600	--	--	--	20
06	1:10	--	--	--	2500	2500	--	--	--	24
07	1:10	--	--	--	--	--	4000*	4000*	4000*	25
08	1:10	--	--	--	--	--	6500*	6500*	6500*	27
09	1:10	--	--	--	--	--	10000*	10000*	10000*	32
10	1:4	--	--	--	--	--	16000*	16000*	16000*	51
11	1:3	--	--	--	--	--	20000*	20000*	20000*	65
12	1:3	--	--	--	--	--	25000*	25000*	25000*	91

air (Pabs=1,013 bar, at T=0C, p=1,239 kg/m3, v= 0,0181 mPa s)										**pressure loss float**
female thread		**1/4"**	**3/8"**	**1/2"**	**3/4"**	**1"**	**1 1/4"**	**1 1/2"**	**2"**	
adhesive connect.		**d20 mm**			**d32 mm**		**d63 mm**			
type	dynamic	l/h	l/h	l/h	l/h	l/h	l/h	l/h	l/h	mbar
01	1:10	2000	2000	2000	--	--	--	--	--	4
02	1:10	5000	5000	5000	--	--	--	--	--	5
03	1:10	--	--	--	10000	10000	--	--	--	7
04	1:10	--	--	--	16000	16000	--	--	--	7
05	1:10	--	--	--	28000	28000	--	--	--	7
06	1:10	--	--	--	40000	40000	--	--	--	8
07	1:10	--	--	--	--	--	64000*	64000*	64000*	9
08	1:10	--	--	--	--	--	100000*	100000*	100000*	10
09	1:10	--	--	--	--	--	160000*	160000*	160000*	13
10	1:4	--	--	--	--	--	280000*	280000*	280000*	23
11	1:3	--	--	--	--	--	350000*	350000*	350000*	31
12	1:3	--	--	--	--	--	430000*	430000*	430000*	43

- float guided

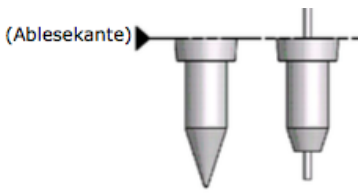
unit measuring ranges: 1/4" up to 1" l/h from 1 1/4" m3/h

note: Different measuring ranges for types with solenoid.

design float:

design 0 – float unguided

design 1 – float guided



design 0 1

Information on the dimensioning of variable area flowmeters:

The flowmeters types SK01 to SK03 work on the basis of the variable area principle:

The measuring unit consists of a plastic cone in which a float can move up and down. The conical float is raised by the measuring material (medium) flowing from the bottom to the top. The annular gap increases until a balance has been established between the weight force FG, the buoyant force FA and the force FS due to the flow resistance.

The variable area flowmeters are set and calibrated to a specific operating and media state and delivered in accordance with previosuly defined measurement conditions.

The flow values specified in the data sheets and catalogue refer to the media of water and air in depressurised applications! If your media and operating data are different individual calculations must be made as to what design and what type are suitable for your application.

Therefore following data must be specified for a precise dimensioning:

Media data:
- Media
- Density
- Temperature
- Viscosity

Operating data:
- Operating pressure
- Flow rate

We automatically assume water/air with the above-mentioned parameters if no further information about substances, thickness, viscosity, etc. are given to us.

article number:

type	seal	media	measuring range	size
SK01 – DIN IS0 228	0 – NBR	**0 – liquids**	01 – type 01	01 – 1/4"
SK02 – NPT	**1 – EPDM**	1 – air	02 – type 02	02 – 3/8"
SK03 – adhesive connection	2 – FKM		03 – type 03	03 – 1/2"
			04 – type 04	**04 – 3/4" |d20 mm**
			05 – type 05	05 – 1"
			06 – type 06	06 – 1 1/4" | d32 mm
			07 – type 07	07 – 1 1/2"
			08 – type 08	08 – 2"
			09 – type 09	09 – d63 mm
			10 – type 10	
			11 – type 11	
			12 – type 12	
			see tables page 3	

example no. SK01000404:

SK01	**0**	**0**	**04**	**04**

Variable area flowmeter
connection: female thread DIN ISO 228
seal: EPDM
media: liquids
measuring range: type 04 | 1000 l/h
size: 3/4"

Image similar, subject change without notice.