



## GA24 Technical Datasheet

### Variable-area flowmeter

- Robustly built for many uses
- Local display without auxiliary power
- Replaceable mounting parts

## GA24 Variable-area flowmeter

The GA24 flowmeter is suitable for measuring the volume or flow rate of liquids or gasses. The GA24 flowmeter is suitable for measuring gasses at low operating pressures.



### Highlights

- Consistently used overall length concept
- Low loss of pressure for gas applications
- Low maintenance
- Limit monitors are optional
- Simple installation and start-up
- Easy feeding of suspended solid particle (can also be installed at a later date)
- Fragment protection

### Industries

Can be used in all industrial sectors, for example:

- Chemical
- Heating, cooling, and air conditioning
- Iron, steel and metal
- Oil and gas
- Power plants
- Mechanical engineering
- Paper and pulp
- Water
- Furnace construction

### Applications

- Measuring gas
- Burner controlling
- Compressor monitoring
- Water circuits

## Technical data

Application range	Flow measurement of liquids, gases and vapors
Measuring accuracy	1,0% acc. to directive VDI / VDE 3513, sheet 2 ( $q_G = 50\%$ )
Inlet condition, run	$\geq 5 \times DN$
Outlet condition, run	$\geq 3 \times DN$
Operating pressure PS	Directive 97/23/ EC, April 29, 1999
Test pressure PT	Pressure equipment directive 97/23/EC or AD 2000-HP30
Max. permitted operating gauge pressure PS at TS = 100°C	
DN15, DN25	10 bar ①
DN40	9 bar ①
DN50	7 bar ①

① other pressures upon request

## Process connection

	Connection dimensions according to	Connection	Pressure class
Flanged connections	EN 1092	DN15, DN25	PN25
	EN 1092	DN40 DN50	PN10
	ASME B16.5	1/2" ...2"	Class 150 lbs / RF
	ASME B16.5	1/2" ...2"	Class 300 lbs / RF

## Materials

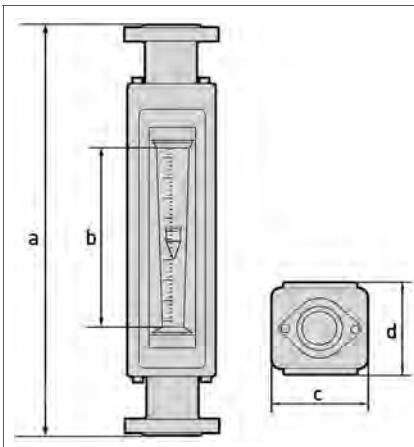
Flange connection GA24/R	Stainless steel 1.4404 (316 L)
Flange connection GA24/PTFE	Stainless steel 1.14404 (316 L) with a liner made of PTFE
Housing	Steel plate housing (zinc-plated with epoxy/polyester coating)
Measuring cone	Borosilicate glass
Suspended solid particle	Stainless steel 1.4571 (316 Ti) or Hastelloy C2000
	PTFE/insert or TFM (PTFE)
	Aluminum
	Hard rubber
Suspended solid particle and insert	PVDF (conforms to FDA)
Seals	Neoprene
	PTFE Scherring
	PTFE sleeve

## Weights

	approx. kg	approx. lbs
DN15	6	13
DN25	10	22
DN40	13	29
DN50	18	40

## Dimensions

Nominal size		a		b		c		d	
DN	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
15	1/2"	500	19.7	300	11.8	84	3.31	82	3.23
25	1"	500	19.7	300	11.8	105	4.13	102	4.02
40	1 1/2"	500	19.7	300	11.8	125	4.92	122	4.80
50	2"	500	19.7	300	11.8	165	6.50	147	5.74



## Temperatures

Max. measuring temperature $T_m$	+120°C
Min. measuring temperature $T_m$	-40°C
Max. for floats made out of hard rubber	+60°C
Min. for floats made out of hard rubber	-10°C
Max. ambient temperature $T_{amb. min.}$	+100°C
Min. ambient temperature $T_{amb.}$	-20°C



### Technical data RC RB

Clamp-type terminal	Connection box M16 x 1.5				
Cable diameter	5...10 mm				
Limit monitors	RC10-14-N3	RC15-14-N3	RC10-14-N0	RC15-14-N0	RB15-14-E2
Switching function	Bistable, NAMUR	Bistable, NAMUR	Monostable, NAMUR	Monostable, NAMUR	Bistable, 3-wire
Connection technology	NAMUR, two-wire	NAMUR, two-wire	NAMUR, two-wire	NAMUR, two-wire	Three-wire
Rated voltage U <sub>0</sub>	8 VDC	8 VDC	8 VDC	8 VDC	
Current consumption	1 mA passage ↓		3 mA - sphere beyond the limit monitor		
Current consumption	3 mA passage ↓		1 mA - sphere is in limit monitor		
Operating voltage U <sub>b</sub>					10...30 Vdc
Operating current I <sub>b</sub>					0...100mA
No-load current					20mA
Output U <sub>a</sub> - passage ↓					≤ 1 VDC
Output U <sub>a</sub> - passage ↑					≥ U <sub>b</sub> -3 VDC

### Technical data MS14

Contact type	N/C or N/O, can be reversed
Switching reproducibility	< 2% of the measurement range end value
Contact rating	12 V A
Max. switching voltage	30 VDC
Max. switching current	0.5 A
Ambient temperature	- 25°C...+ 60°C
Protection class	Acc. to EN 60529 / IEC 529 IP 44

### Technical data, TG21

Rated voltage	8 VDC
Current consumption, active surface free	3 mA
Current consumption, active surface covered	1 mA
Type of protection according to EN 60529 / IEC 529	IP 67 (NEMA 6)
Ambient temperature	-25°C...+100°C

## Measuring ranges GA24

Measuring span 10 : 1

Flow values 100%

Materials of float: **1** Stainless steel or Hastelloy - **2** PTFE - **3** TFM - **4** aluminum - **5** hard rubber

	Materials ▶	Flow, water [L/h]			Flow, air [[m <sup>3</sup> /h]				Max. pressure loss [mbar]				
		1	2	3	1	3	4	5	1	2	3	4	5
	Cone no.												
DN15	G 13.11	0,4	-	-	0,016	-	0,007	-	2	-	-	1	-
	G 14.06	0,63	-	-	0,025	-	0,012	-	3	-	-	2	-
	G 14.08	1	-	-	0,04	-	0,02	-	4	-	-	3	-
	G 15.07	1,6	-	-	0,06	-	0,03	-	4	-	-	3	-
	G 15.09	2,5	-	-	0,09	-	0,04	-	5	-	-	4	-
	G 15.12	4	-	-	0,14	-	0,06	-	6	-	-	5	-
	G 16.08	6,3	-	-	0,2	-	0,1	-	6	-	-	5	-
	G 16.12	10	-	-	0,3	-	0,16	-	7	-	-	6	-
	G 17.08	16	-	-	0,5	-	0,25	-	7	-	-	6	-
	G 17.12	25	-	-	8	-	0,4	-	8	-	-	7	-
	N 18.07	40	25	13	1,5	0,6	0,8	0,5	9	6	2	3	1
	N 18.09	63	40	22	2,2	0,95	1,2	0,7	9	7	3	3	2
	N 18.13	100	63	35	3	1,5	1,8	1,2	9	8	3	4	2
	N 19.09	160	100	55	5	2,2	2,8	1,8	13	9	4	5	2
	N 19.13	250	160	85	8	3,3	4,5	2,8	16	11	4	5	2
	N 19.19	400	250	140	-	-	-	-	21	14	5	7	3
	N 19.26	630	400	230	-	-	-	-	27	17	6	10	4
DN25	N 21.09	630	400	230	18 ①	9	11	7	22	14	6	8	3
	N 21.13	1000	630	350	28 ①	14	18	12	23	17	6	8	4
	N 21.18	1600	1000	600	49 ①	-	28 ①	17 ①	26	25	7	10	6
	N 21.25	2500	1600	950	70 ①	-	42 ①	26 ①	33	40	8	12	9
DN40	N 41.09	1600	1000	600	45 ①	22	28	18	32	18	9	11	5
	N 41.13	2500	1600	950	70 ①	36	45 ①	28 ①	34	20	10	12	5
	N 41.19	4000	2500	1500	128 ①	-	76 ①	46 ①	38	24	11	15	8
DN50	N 51.10	4000	2500	1500	120 ①	56	70	45	43	25	12	15	7
	N 51.15	6300	4000	2400	190 ①	90	110 ①	70 ①	47	30	13	16	7
	N 51.21	10000	6300	3500	310 ①	-	170 ①	118 ①	55	42	14	20	10

① only possible with guided suspended solid particles

Reference condition:

Water 20°C

Air 20°C - 1.013bar abs.

The operating pressure should be at least twice the pressure loss for liquids and five times the pressure loss for gasses. The indicated pressure losses apply for water and air at maximum flow. Other flow rate measuring ranges can be provided upon request. The conversion of other materials or operating data (pressure, temperature, density, viscosity) is done at KROHNE with the help of the calculation procedure as detailed in VDE /VDI Directive 3513.

## KROHNE measuring technology - Product overview

- Electromagnetic flowmeters
- Variable area flowmeters
- Mass flowmeters
- Ultrasonic flowmeters
- Vortex flowmeters
- Flow controllers
- Level measuring instruments
- Temperature measuring instruments
- Pressure measuring instruments
- Analysis
- Oil and gas industry

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