GAS MIXER MG-FIX/FLEX

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MG 25/45/75/95/125-2 FIX



MG 25/45/75/95/125-2 FLEX

Gas mixing systems for 2 or 3 defined gases, designed for variable processes with a mixing range from 2-92%. See other ranges on overleaf.

FIX: pre-set, for 2 or 3-component gas mixtures.

FLEX: adjustable, for 2-component gas mixtures.

Using a new mixing technology, no receiver is required.

MG 25 capacity range up to approx. 22 Nm^3/h.
MG 45 capacity range up to approx. 46 Nm^3/h.
MG 75 capacity range up to approx. 68 Nm^3/h.
MG 95 capacity range up to approx. 90 Nm^3/h.
MG 125 capacity range up to approx. 135 Nm^3/h.
For the exact pressure and flow capacity ratios, please see the technical data overleaf.

Benefits

- high mixing accuracy
- avoids the need to stock multiple pre-mixes (cost saving)
- does not require receiver (cost and space saving)
- inlet gas filters protect the device against impurities
- pneumatic operating principle, no electrical connections required
- mixed gas production from 8 l/min to the max. flow
- robust, compact design
- panel for wall mounting
- minimal maintenance required

Easy operation

- blends are factory set and tamper proof (FIX)
- a mixing valve with a control knob and %-scale provides infinitely variable mixture settings (FLEX)

High process reliability

- independent of pressure fluctuations in the gas supply
- independent of withdrawal fluctuations (in permitted range)
- fail safe design (unit shuts down on failure of either gas supply)
- lockable to prevent tampering (FLEX)

Other models, options and accessories available upon request.

Please identify the individual gases at the time of enquiring!

KM14 - T01/6I subject to change

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Type	MG 25/45/75/95/125-2 FIX; MG 45/95/125-3 FIX; MG 25/45/75/95/125-2 FLEX
Gases	N_2, CO_2, Ar or others as well as their mixtures; not for flammable gases!
Mixing range	
MG 25/45/75/95/125	-2 FIX/FLEX: 2-92% according to gas combination and type (see table on last page)
MG 45/95/125	-3 FIX/: carrier gas 47-96% 1st admix gas 2-24% 2nd admix gas 2-29% according to the pre-set gas blend smaller admix concentrations for MG 125 upon request
	by selection of suitable mixing range the accuracy corresponds to ISO 14175
Pressure settings	see tables
Inlet pressure differential between the gases	max. 3 bar
Mixture output (N_2)	see tables (other gases on request)
Setting accuracy	
Mixing range 1: < 5%	± 0.5% absolute
Mixing range 2: 5 up to 20%	± 10% of the nominal value
Mixing range 3: > 20%	± 2% absolute
Temperature (gas/environment)	-25 °C to +50 °C (-13 °F to +122 °F)
Gas connections	
MG 25/45/75	G 1/2 RH with cone, soldering nipple for pipe OD 15 mm
MG 95/125	G 1 RH with cone, soldering nipple for pipe OD 22 mm
Housing	stainless steel
Weight	
MG 25/.../125-2 /-3 FIX	approx. 18 ... 27 kg
MG 25/.../125-2 FLEX	approx. 20 ... 32 kg
Dimensions (HxWxD)	approx. 570 x 470 x 240 mm (22.4 x 18.5 x 9.4 inches) without connections
Approvals	Company certified according to ISO 9001 CE-marked according to: - PED 2014/68/EU Cleaned for Oxygen Service according to: - EIGA IGC Doc 13/12/E: Oxygen Pipeline and Piping Systems

Caution!
Gas flows under the min. mixed gas output (e.g. switching off the gas consumption and then refilling the pipes etc.) can cause an undefined gas mix, flowing to the point of use.

Flow **MG 25-2** (in Nm^3/h) in relation to N_2 — min. mixed gas production 8 l/min

min. inlet pressure in barg (max. 25 bar) \ outlet pressure in barg	0.5	1	2	3	4	5	6	7	8	9	10	11	12	13	14
4	2.7	2.1	-	-	-	-	-	-	-	-	-	-	-	-	-
5	4.9	4.3	2.7	-	-	-	-	-	-	-	Note: Flow values higher P_V 10 bar not for O_2 and CO_2				-
6	7.6	7.0	5.5	3.4	-	-	-	-	-	-					-
7	10.5	10.1	8.5	6.5	3.8	-	-	-	-	-	-	-	-	-	-
8	14.5	14.0	12.6	10.5	8.2	5.0	-	-	-	-	-	-	-	-	-
9	18.5	18.1	16.8	14.8	12.3	9.4	5.8	-	-	-	-	-	-	-	-
10	22.4	22.0	20.7	18.9	16.5	13.6	9.9	6.0	-	-	-	-	-	-	-
11	26.7	26.6	25.5	23.7	21.6	19.0	15.8	12.3	8.2	-	-	-	-	-	-
12	30.2	29.8	29.1	27.5	25.3	22.8	19.7	16.1	12.5	8.0	-	-	-	-	-
13	35.0	34.9	33.9	32.5	30.3	28.0	24.9	21.6	17.6	13.3	8.5	-	-	-	-
14	40.2	39.7	39.0	37.9	36.1	34.2	31.0	27.5	23.8	19.4	14.8	9.7	-	-	-
15	47.2	46.9	46.5	45.0	43.0	39.0	36.5	33.5	30.1	25.8	20.9	15.6	10.2	-	-
16	50.3	50.3	49.8	48.6	47.0	44.8	42.3	39.4	36.1	32.6	26.6	22.5	16.9	10.9	-
17	56.7	56.3	55.5	54.5	52.8	50.8	48.5	45.9	42.8	39.4	35.3	30.5	24.5	18.6	12.5

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Flow **MG 45-2 /-3** (in Nm³/h) in relation to N_2 — min. mixed gas production 16 l/min

min. inlet pressure in barg (max. 25 bar) \ outlet pressure in barg	0.5	1	2	3	4	5	6	7	8	9	10	11	12	13	14
4	5.9	3.7	-	-	-	-	-	-	-	-	-	-	-	-	-
5	12.1	8.4	5.1	-	-	-	-	-	-	-	Note: Flow values higher P_V 10 bar not for O_2 and CO_2				-
6	17.4	14.5	11.3	6.9	-	-	-	-	-	-					-
7	24.2	21.2	18.1	13.9	8.3	-	-	-	-	-	-	-	-	-	-
8	32.0	28.7	25.6	21.6	16.1	9.7	-	-	-	-	-	-	-	-	-
9	39.0	36.9	33.8	30.1	25.0	18.7	10.5	-	-	-	-	-	-	-	-
10	46.4	45.0	42.7	38.7	33.7	28.0	20.5	11.4	-	-	-	-	-	-	-
11	54.0	53.4	51.3	48.4	44.3	39.0	32.4	24.4	14.3	-	-	-	-	-	-
12	61.7	61.1	59.3	56.6	52.9	48.1	42.0	34.9	25.9	14.9	-	-	-	-	-
13	70.0	69.6	68.1	65.7	62.3	58.0	52.7	45.9	37.7	27.8	15.4	-	-	-	-
14	77.2	76.9	75.6	73.4	70.4	66.6	61.7	56.4	48.9	40.3	29.2	16.6	-	-	-
15	84.9	84.6	83.6	81.7	78.8	75.2	70.9	65.4	59.1	51.3	42.2	30.2	17.7	-	-
16	92.5	92.3	91.6	90.2	88.2	85.1	81.6	76.8	70.8	64.2	55.8	46.5	33.6	19.5	-
17	99.3	99.0	98.7	97.3	95.5	92.9	89.3	85.2	79.7	73.4	66.1	57.4	47.1	35.6	19.9

Flow **MG 75-2** (in Nm³/h) in relation to N_2 — min. mixed gas production 32 l/min

min. inlet pressure in barg (max. 25 bar) \ outlet pressure in barg	0.5	1	2	3	4	5	6	7	8	9	10	11	12	13	14
4	11.4	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-
5	19.4	17.4	11.4	-	-	-	-	-	-	-	Note: Flow values higher P_V 10 bar not for O_2 and CO_2				-
6	29.1	27.5	22.3	14.2	-	-	-	-	-	-					-
7	38.3	37.0	32.8	26.5	16.3	-	-	-	-	-	-	-	-	-	-
8	47.4	46.3	42.9	37.8	30.3	18.6	-	-	-	-	-	-	-	-	-
9	57.5	57.3	54.0	49.5	43.2	34.5	21.6	-	-	-	-	-	-	-	-
10	67.7	67.2	64.8	60.9	55.6	47.1	37.3	22.3	-	-	-	-	-	-	-
11	78.9	78.4	76.5	74.5	70.0	63.2	54.1	41.4	24.9	-	-	-	-	-	-
12	87.8	87.5	86.2	83.9	80.8	75.8	68.5	58.8	45.2	27.5	-	-	-	-	-
13	94.8	94.6	93.7	91.5	88.8	85.2	80.3	73.5	63.2	48.8	29.2	-	-	-	-
14	102.9	102.7	101.9	100.3	97.8	94.3	90.3	85.2	77.8	66.7	51.7	31.3	-	-	-
15	111.0	111.0	110.3	108.8	106.7	103.6	100.1	94.7	89.3	82.0	70.2	54.6	32.3	-	-
16	120.6	120.6	120.4	119.3	113.9	111.8	109.1	105.4	101.3	95.8	87.8	74.3	58.2	35.5	-
17	133.7	133.7	133.7	129.9	129.5	128.2	126.3	120.7	116.8	112.8	104.4	92.9	79.6	61.9	37.6

Flow **MG 95-2* /-3** (in Nm³/h) in relation to N_2 — min. mixed gas production 32 l/min

min. inlet pressure in barg (max. 25 bar) \ outlet pressure in barg	0.5	1	2	3	4	5	6	7	8	9	10	11	12	13	14
4	11.6	9.4	-	-	-	-	-	-	-	-	-	-	-	-	-
5	21.2	19.1	13.0	-	-	-	-	-	-	-	Note: Flow values higher P_V 10 bar not for O_2 and CO_2				-
6	33.0	30.8	24.9	16.3	-	-	-	-	-	-					-
7	45.2	43.2	37.3	29.1	18.0	-	-	-	-	-	-	-	-	-	-
8	61.0	59.0	52.6	45.3	35.5	22.3	-	-	-	-	-	-	-	-	-
9	75.1	73.5	68.7	65.4	52.9	40.6	25.6	-	-	-	-	-	-	-	-
10	89.8	88.6	84.2	81.6	69.2	58.6	44.6	27.1	-	-	-	-	-	-	-
11	109.1	108.6	104.6	98.9	90.6	79.7	66.7	50.7	31.2	-	-	-	-	-	-
12	124.2	124.1	121.0	115.1	108.8	99.1	87.4	72.2	55.0	33.5	-	-	-	-	-
13	138.4	138.1	136.1	132.1	126.1	119.3	109.3	94.9	79.1	59.9	36.3	-	-	-	-
14	152.1	152.0	150.1	146.1	141.5	134.9	126.6	115.5	101.7	84.7	63.5	37.8	-	-	-
15	166.1	166.1	165.6	162.1	158.1	153.2	145.6	136.7	124.1	109.7	91.3	68.1	40.1	-	-
16	182.2	182.2	179.1	177.7	174.1	168.5	162.8	154.2	145.1	133.2	117.5	97.2	73.4	43.7	-
17	196.2	196.2	195.9	191.4	184.3	178.2	176.3	172.4	164.2	154.1	141.5	124.1	103.3	77.8	45.2

*MG95 - CO_2 in Ar, 2-23% CO_2 , min. mixed gas production 90 Nl/min

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Flow **MG 125-2 /-3** (in Nm^3/h) in relation to N_2 — min. mixed gas production 64 l/min

min. inlet pressure in barg (max. 25 bar)	outlet pressure in barg														
	0.5	1	2	3	4	5	6	7	8	9	10	11	12	13	14
4	24.2	19.8	-	-	-	-	-	-	-	-	Note:				-
5	41.3	37.4	25.7	-	-	-	-	-	-	-	Flow values higher P_V 10 bar				-
6	60.7	57.3	46.9	31.7	-	-	-	-	-	-	not for O_2 and CO_2				-
7	80.7	78.3	69.6	55.6	37.7	-	-	-	-	-	-	-	-	-	-
8	98.6	96.9	90.4	79.3	62.9	41.1	-	-	-	-	-	-	-	-	-
9	118.3	117.8	113.1	105.2	93.4	76.0	50.4	-	-	-	-	-	-	-	-
10	135.4	135.3	131.6	124.8	115.3	102.3	82.8	54.8	-	-	-	-	-	-	-
11	150.6	150.6	148.9	143.8	135.8	124.8	109.1	87.2	55.6	-	-	-	-	-	-
12	166.2	166.2	166.0	160.9	154.4	145.4	132.8	117.0	92.5	58.1	-	-	-	-	-
13	182.2	182.2	181.1	178.1	173.7	167.4	157.3	143.4	126.3	102.0	59.8	-	-	-	-
14	205.6	205.6	205.6	201.7	198.8	189.4	180.6	168.3	153.8	133.6	104.3	61.1	-	-	-
15	219.2	219.2	219.2	217.4	213.2	207.8	200.6	190.6	178.6	162.1	143.1	112.3	64.3	-	-
16	237.2	237.2	237.2	237.1	232.3	228.0	224.1	215.8	205.6	190.8	173.8	153.7	123.7	72.1	-
17	249.5	249.5	249.5	249.4	247.0	241.2	237.3	232.1	224.9	212.2	198.1	183.2	161.6	129.1	77.6

Note: The determined data of mixture output are only in relation to N_2!
The use of other required gases results in a difference to the mixture output, which is compensated by the correction factor F_{MIX}:

F_{MIX} for concentrations (example):

	GAS 1	GAS 2	F_{MIX}
mixture	**CO_2**	**Ar**	
admix proportion in vol.%	18	82	0.8812
admix proportion in vol.%	4	96	0.8336
admix proportion in vol.%	25	75	0.905
mixture	**CO_2**	**N_2**	
admix proportion in vol.%	30	70	1.048
admix proportion in vol.%	5	95	1.008
admix proportion in vol.%	80	20	1.128
mixture	**He**	**Ar**	
admix proportion in vol.%	20	80	0.866
admix proportion in vol.%	60	40	0.958
mixture	**He**	**N_2**	
admix proportion in vol.%	10	90	1.005
mixture	**O_2**	**Ar**	
admix proportion in vol.%	4	96	0.8224
admix proportion in vol.%	10	90	0.826
mixture	**O_2**	**N_2**	
admix proportion in vol.%	4	96	0.9952
admix proportion in vol.%	25	75	0.97
mixture	**O_2**	**CO_2**	
admix proportion in vol.%	50	50	1.02
admix proportion in vol.%	85	15	0.922

Possible admix range		
Mix	**Range**	**Type**
CO_2 in Ar	2-23% CO_2	MG 75/95*/125
CO_2 in Ar	3-46% CO_2	MG 45/75/95/125
CO_2 in Ar	5-92% CO_2	MG 25/45/75/95/125
CO_2 in N_2	5-85% CO_2	MG 25/45/75/95/125
CO_2 in O_2	7-90% CO_2	MG 25/45/75/95/125
O_2 in Ar	2-46% O_2	MG 45/75/95/125
O_2 in Ar	5-92% O_2	MG 25/45/75/95/125
O_2 in N_2	5-92% O_2	MG 25/45/75/95/125
He in Ar	5-92% He	MG 25/45/75/95/125
He in N_2	5-85% He	MG 25/45/75/95/125

*MG95 min. mixed gas production 90 Nl/min

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