

## Gas Mixer: VarioMix

### Compact gasmixer with proportional mixing valve.

Gas mixer varioMix for the production of mixtures of two gases

#### Highlights

- **Individual adjustment of mixture and flow rate**
- **High mixing precision**
- Infinitely variable up to 205 l/min (related to air)
- **Does not depend on input pressure differences due to integrated constant pressure regulation**
- Mixture production stops automatically when gas supply is interrupted
- Does not depend on the input pressure difference due to integrated constant pressure regulation
- Gas inlet filters protect the device against contamination
- Cost savings due to the avoidance of storage of different premixes
- Low maintenance
- Compact, space saving and sturdy design
- Easy to operate and to assemble
- No power supply required



#### Accessories:

- Safety devices for use with fuel gas

#### Maintenance:

Gas mixers are to be tested for leaks at least once a month.

The inlet filters are only to be cleaned and exchanged by qualified person..

Gas mixers are only to be opened and repaired by the manufacturer.

Technical Data:				
<b>Carrier Gas:</b>	Argon (Ar)	Nitrogen(N2)		Air
<b>Additive Gas:</b>	Carbon Dioxide (CO <sub>2</sub> ) Helium (He) Nitrogen (N <sub>2</sub> ) Hydrogen (H <sub>2</sub> ) Oxygen (O <sub>2</sub> )	Carbon Dioxide (CO <sub>2</sub> ) Helium (He) Hydrogen ( H <sub>2</sub> ) Oxygen (O <sub>2</sub> )	Carbon Dioxide (CO <sub>2</sub> ) Oxygen (O <sub>2</sub> )	
<b>Mixing Range:</b>	5 – 95 Vol %			
<b>Inlet Pressure:</b>	Min - 5 MPa (5bar) Max – 1 MPa (10 bar)			
<b>Outlet Pressure:</b>	0.4 – 0.9 MPa (4-9 bar) depending on the inlet pressure			
<b>Mixed Gas Capacity:</b>	1 – 188 l/min, infinitely variable (related to Nitrogen)			
<b>Mixing Precision:</b>	± 0,5 % abs: 1-5 Vol. % additive gas ± 10 % of nominal value: >5-20 Vol. % additive gas ± 2 % abs: > 20 Vol. % additive gas			
<b>Temperature:</b>	-10 to + 50°C			
<b>Connection Inlet</b>	G1/4-F G1/4F			
<b>Outlet</b>	Optional: G1/4-M E560 quick plug-in connection for 8mm hose			
<b>Material:</b>	Housing: aluminium, anodisd: in built parts: Brass , stainless steel, elastomer			
<b>Measure &amp; Weight Without connection:</b>	Height 88mm	Width 130mm	Depth 68mm	Weight Approx. 1.62kg

Further gas mixer versions for the production of gas mixtures of two gases are available on request

**Type: varioMix**

Flow table (NI/min, related to air) \*1)

Outlet pressure [bar] → *3)		0,75	1,25	1,75	2,2	2,7	3,2	3,65	4,15	4,5	5,1	5,6	6,0	6,5	7,0	7,5	8,0
Inlet pressure [bar] *2)	Working pressure [bar]																
	1,2	32															
	1,7	46	35														
	2,2	59	52	37													
	2,7	69	64	54	42												
	3,2 →	84	79	72	62	44											
	3,7	94	91	79	77	64	47										
	4,1	104	101	96	91	82	69	52									
	4,6	116	114	109	104	96	79	72	52								
	5,1	129	126	124	119	111	104	91	77	57							
	5,6	138	138	136	133	124	119	109	96	82	62						
	6,1 →	151	151	148	143	138	133	126	116	101	87	62					
	6,5	163	163	161	158	153	148	141	133	124	109	94	64				
	7,0	173	173	171	168	163	158	151	143	138	129	114	96	64			
	7,5	183	183	180	178	176	173	168	161	153	143	133	119	94	72		
8,0	193	193	193	190	188	183	178	173	163	153	148	131	124	106	79		
8,5	205	205	205	203	200	195	193	185	178	173	163	153	141	129	104	84	

\*1) Max flow valve at 100% (all shown pressure information are for fluent pressures)

\*2) Constant Inlet pressure. Must be 1,5 bar higher than working pressure.

\*3) The outlet pressure depends on the quantity of users and has to be controlled at the pipeline.

**Application table:**

Gas mixture CO <sub>2</sub> /Ar		
% CO <sub>2</sub>	% Ar	Conversion factor
5	95	0,987
10	90	0,975
15	85	0,962
20	80	0,951
25	75	0,940

Gas mixture He/Ar		
% He	% Ar	Conversion factor
5	95	0,874
10	90	0,896
15	85	0,919
20	80	0,943
25	75	0,970
40	60	1,068
50	50	1,152

Gas mixture CO <sub>2</sub> /N <sub>2</sub>		
% CO <sub>2</sub>	% N <sub>2</sub>	Conversion factor
5	95	1.002
10	90	0.989
15	85	0.975
20	80	0.962
25	75	0.950
40	60	0.916
50	50	0.895

**Application example:**

Gas mixture: 15% CO <sub>2</sub> in Ar	
Consumption:	3 work places each 14 l/min=42 l/min
Flow rate (air):	42 x 0,962 = 44 l/min
Outlet pressure:	2,2 bar
Flow regulator:	(44 : 62) x 100 = 71 %
Working pressure:	3,2 bar
Inlet pressure:	3,2 + 1,5 ≥ 4,7 bar

Gas mixture: 25% He in Ar	
Consumption:	5 work places each 20 l/min = 100 l/min
Flow rate (air):	100 x 0,970 = 103 l/min
Outlet pressure::	3,65 bar
Flow regulator:	(103 : 126) x 100 = 82 %
Working pressure:	6,1 bar
Inlet pressure::	6,1 + 1,5 ≥ 7,6 bar

**Certification/ Technical Standards/ Rules**

TRBS German Technical rules for operation safety, DVS German Association for Welding, Cutting and Allied Processes, DGUV German Employer's liability insurance association rules and regulations.

**Standards/ Approvals**

Company certified according to ISO 9001:2015 and ISO 14001:2015, CE-marking according to: Pressure Equipment Directive 2014/68/EU (Subject to change without notice)