

## Gas mixer: *iMixproVarioX*

### Gas mixer with variably adjustable mixture of two gases

Gas mixer *iMixproVarioX* for the production of mixtures of two gases with integrated equal pressure regulators and diffusion mixing system.

#### Highlights

- **Individually adjustable gas mixture** (within the technical limits)
- **High accuracy, according to ISO 14175**
- Mixture production stops automatically when gas supply is interrupted
- **Does not depend on gas withdrawal variations**
- Gas inlet filters protect the device against contamination
- No additional buffer vessel needed for discontinuous withdrawal of gas
- **Does not depend on input pressure differences due to integrated constant pressure regulation**
- Sturdy and compact design, low maintenance
- No power supply required for production of the gas mixture
- Inlet and outlet pressure regulator



#### Optional:

- External gas analysis for process control

#### Maintenance:

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

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



Technical Data:				
<b>Carrier gas:</b>	Argon (Ar)	Nitrogen (N <sub>2</sub> )	Carbon dioxide (CO <sub>2</sub> )	
<b>Additive gas:</b>	Carbon dioxide (CO <sub>2</sub> ) Helium (He) Nitrogen (N <sub>2</sub> ) Oxygen (O)	Carbon dioxide (CO <sub>2</sub> ) Helium (He) Oxygen (O)	Oxygen (O)	
<b>Mixing range:</b>	2 – 95 Vol. %			
<b>Inlet pressure:</b>	min. 0,4 MPa (4 bar) max. 1 MPa (10 bar)			
<b>Outlet pressure:</b>	Adjustable 0,05 – 0,8 MPa (0,5 - 8 bar) depending on the inlet pressure			
<b>Mixed gas capacity:</b>	See flow table			
<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 up to +50°C			
<b>Connection Gas inlet/Gas outlet:</b>	G1/2RH-F			
<b>Material:</b>	Housing: stainless steel In-built parts: brass, stainless steel, elastomer, copper, anodised aluminum			
<b>Measure and weight:</b>	height:	width:	depth:	weight:
<b>without connection</b>	400 mm	350 mm	190 mm	approx. 15 - 20 kg

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

Different connections available on request

# Type: iMixproVarioX

Flow capacity in Nm<sup>3</sup>/h related to Nitrogen:

Mixed gas capacity: **iMixproVarioX-25**

Outlet pressure [barÜ] →	0,5	1	2	3	4	5	6	7	8
Inlet pressure [barÜ] ↓									
4	9,0	8,3	6,0	-	-	-	-	-	-
5	13,8	12,8	10,8	7,5	-	-	-	-	-
6	16,8	16,3	15,0	12,5	9,3	-	-	-	-
7	21,0	20,0	19,0	17,0	14,3	10,5	-	-	-
8	25,0	24,0	23,3	21,8	19,3	16,3	12,0	-	-
9	28,5	27,8	27,0	26,0	23,8	21,3	17,3	13,3	-
10	31,5	31,0	30,0	29,5	28,5	25,0	23,5	19,0	14,3

Mixed gas capacity: **iMixproVarioX-45**

Outlet pressure [barÜ] →	0,5	1	2	3	4	5	6	7	8
Inlet pressure [barÜ] ↓									
4	12,0	11,0	8,0	-	-	-	-	-	-
5	18,3	17,0	14,3	10,0	-	-	-	-	-
6	22,3	21,7	20,0	16,7	12,3	-	-	-	-
7	28,0	26,7	25,3	22,7	19,0	14,0	-	-	-
8	33,3	32,0	31,0	29,0	25,7	21,7	16,0	-	-
9	38,0	37,0	36,0	34,7	31,7	28,3	23,0	17,7	-
10	42,0	41,3	40,0	39,3	38,0	33,3	31,3	25,3	19,0

Mixed gas capacity: **iMixproVarioX-75**

Outlet pressure [barÜ] →	0,5	1	2	3	4	5	6	7	8
Inlet pressure [barÜ] ↓									
4	18,0	16,5	12,0	-	-	-	-	-	-
5	27,5	25,5	21,5	15,0	-	-	-	-	-
6	33,5	32,5	30,0	25,0	18,5	-	-	-	-
7	42,0	40,0	38,0	34,0	28,5	21,0	-	-	-
8	50,0	48,0	46,5	43,5	38,5	32,5	24,0	-	-
9	57,0	55,5	54,0	52,0	47,5	42,5	34,5	26,5	-
10	63,0	62,0	60,0	59,0	57,0	50,0	47,0	38,0	28,5

The following table shows the correction factors as an example for different gas mixtures.

Application table

Gas mixture	Vol. % CO <sub>2</sub>	Vol. % Ar	Conversion factor
18	82		0,8812
4	96		0,8336
25	75		0,9050

Application table

Gas mixture	Vol. % CO <sub>2</sub>	Vol. % N <sub>2</sub>	Conversion factor
30	70		1,048
5	95		1,008
80	20		1,128

Vol. % He	Vol. % Ar	Conversion factor
20	80	0,8660
60	40	0,9580

Vol. % He	Vol. % N <sub>2</sub>	Conversion factor
10	90	1,005

Vol. % O <sub>2</sub>	Vol. % Ar	Conversion factor
4	96	0,8224
10	90	0,8260

Vol. % O <sub>2</sub>	Vol. % N <sub>2</sub>	Conversion factor
4	96	0,9952
25	75	0,9700

Vol. % O <sub>2</sub>	Vol. % CO <sub>2</sub>	Conversion factor
50	50	1,020
85	15	0,922

**Application example:**

Gas mixture setting:	
Gas mixture (Ar in CO <sub>2</sub> ) [%]:	82/18
Gas mixture conversion factor (F):	0,8812
Flow rate according to table [m <sup>3</sup> /h]:	19
Gas mixture flow rate [m <sup>3</sup> /h]:	19 x 0,8812 = 16,75

**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)