Gas mixer: iMix*pro*

Compact gas mixer with integrated constant pressure regulators
and diffusion mixing system

Gas mixer range **iMix***pro* for the production of gas mixtures of two or three gas types.

Highlights

• Optimal factory calibration according to customer‘s requirement(within the permissible range)

• Infinitely variable up to 130 m³/h (related to Nitrogen)

• **High accuracy, according to ISO 14175**

• No accidental mixture changes

• Mixture production stops automatically when gas supply is interrupted

• **Does not depend on gas withdrawal variations**

• 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

Optional:

• Inlet and outlet pressure regulator (pre-adjusted)

• Integrated gas analysis for process control

• Inlet gas filter GF

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.

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| Technical Data: |

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| Carrier gas: | Argon (Ar) | Nitrogen (N2) | Carbon dioxide (CO2) |
| Additive gas: | Carbon dioxide (CO2)Helium (He) Nitrogen (N2)Oxygen (O) | Carbon dioxide (CO2)Helium (He)Oxygen (O) | Oxygen (O) |

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| Mixing range:depending on composition of the gas mixture |  2 mixed gases: 5 – 95 Vol. % |
|  3 mixed gases: Carrier gas: 50 – 95 Vol. % 1. Additive gas: 5 – 25 Vol. %, 2. Additive gas: 5 - 25 Vol. %  |

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| Inlet pressure: | min. 0,4 MPa (4 bar)max. 1 MPa (10 bar) |

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| Outlet pressure: | 0,05 – 0,8 MPa (0,5 - 8 bar) depending on the inlet pressure |

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| Mixed gas capacity: | 50 / 100 / 130 m³/h, infinitely variable (related to Nitrogen) |

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| Mixing precision: | ± 0,5 % abs: 1-5 Vol. % additive gas± 10 % of nominal value: >5-20 Vol. % additive gas± 2 % abs: > 20 Vol. % additive gas |

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| Temperature: | -10 bis +50°C |

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| Connection EN560 Gas inlet/Gas outlet: | < 100 m³/h: G1/2RH-M> 100m³/h: G1RH-M | (optional solder connection for pipe Ø 18mm)(optional solder connection for pipe Ø 28 mm) |

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| Material: | Housing: sheet steel, powder coatedIn-built parts: brass, stainless steel, Elastomer Copper, aluminum, anodised |

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| Measure and weight: | heigth: | width: | depth: | weight: |

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| without connection | 500 mm | 500 mm | 210 mm | approx. 15-25 kg |

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

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| Type: **iMix***pro* |
| Flow capacity in Nm³/h related to Nitrogen:

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| Mixed gas capacity: 50m³/h |
| 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 |

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| Mixed gas capacity:100m³/h |
| Outlet pressure [barÜ] → | 0,5 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Inlet pressure[barÜ] ↓ |  |  |  |  |  |  |  |  |  |
| 4 | 36,0 | 33,0 | 24,0 | - | - | - | - | - | - |
| 5 | 55,0 | 51,0 | 43,0 | 30,0 | - | - | - | - | - |
| 6 | 67,0 | 65,0 | 60,0 | 50,0 | 37,0 | - | - | - | - |
| 7 | 84,0 | 80,0 | 76,0 | 68,0 | 57,0 | 42,0 | - | - | - |
| 8 | 100,0 | 96,0 | 93,0 | 87,0 | 77,0 | 65,0 | 48,0 | - | - |
| 9 | 114,0 | 111,0 | 108,0 | 104,0 | 95,0 | 85,0 | 69,0 | 53,0 | - |
| 10 | 126,0 | 124,0 | 120,0 | 118,0 | 114,0 | 100,0 | 94,0 | 76,0 | 57,0 |

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| Mixed gas capacity:130m³/h |
| Outlet pressure [barÜ] → | 0,5 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Inlet pressure[barÜ] ↓ |  |  |  |  |  |  |  |  |  |
| 4 | 46,8 | 42,9 | 31,2 | - | - | - | - | - | - |
| 5 | 71,5 | 66,3 | 55,9 | 39,0 | - | - | - | - | - |
| 6 | 87,1 | 84,5 | 78,0 | 65,0 | 48,1 | - | - | - | - |
| 7 | 109,2 | 104,0 | 98,8 | 88,4 | 74,1 | 54,6 | - | - | - |
| 8 | 130,0 | 124,8 | 120,9 | 113,1 | 100,1 | 84,5 | 62,4 | - | - |
| 9 | 148,2 | 144,3 | 140,4 | 135,2 | 123,5 | 110,5 | 89,7 | 68,9 | - |
| 10 | 163,8 | 161,2 | 156,0 | 153,4 | 148,2 | 130,0 | 122,2 | 98,8 | 74,1 |

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

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| Application table |  | Application table |
| Gas mixture |  | Gas mixture |
| Vol.% CO2 | Vol.%Ar | Conversion factor |  | Vol.% CO2 | Vol.%N2 | Conversion factor |
| 18 | 82 | 0,8812 |  | 30 | 70 | 1,048 |
| 4 | 96 | 0,8336 |  | 5 | 95 | 1,008 |
| 25 | 75 | 0,9050 |  | 80 | 20 | 1,128 |

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| Vol.%He | Vol.%Ar | Conversion factor |  | Vol.%He | Vol.%N2 | Conversion factor |
| 20 | 80 | 0,8660 |  | 10 | 90 | 1,005 |
| 60 | 40 | 0,9580 |  |  |  |  |

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| Vol.%O2 | Vol.%Ar | Conversion factor |  | Vol.%O2 | Vol.%N2 | Conversion factor |
| 4 | 96 | 0,8224 |  | 4 | 96 | 0,9952 |
| 10 | 90 | 0,8260 |  | 25 | 75 | 0,9700 |

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| Vol.%O2 | Vol.%CO2 | Conversion factor |  |  |  |  |
| 50 | 50 | 1,020 |  |  |  |  |
| 85 | 15 | 0,922 |  |  |  |  |

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| Application example: |
| Gas mixture setting: |
| Gas mixture (Ar in CO2) [%]:  | 82/18 |
| Gas mixture conversion factor (F):  | 0,8812 |
| Flow rate according to table [m³/h]: | 38 |
| Gas mixture flow rate [m³/h]: | 38 x 0,8812 = 33,5 |

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| Certification/ Technical Standards/ RulesTRBS 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/ ApprovalsCompany 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) |