WITT Flashback Arrestors for reliable protection against dangerous reverse gas flow and flashbacks according to EN 730 / ISO 5175-1 BAM Certified and under surveillance
Every Arrestor 100% tested.

The best Flashback Arrestors in the world

- a large surface area flame arrestor FA of stainless steel construction extinguishes any dangerous flashback entering the device in any direction
- a temperature sensitive cut-off valve TV extinguishes sustained flashbacks long before the internal temperature of the arrestors reaches a dangerous level
- a spring loaded non-return valve NV prevents slow or sudden reverse gas flow forming explosive mixtures in the gas supply
- a filter at the gas inlet protects the arrestor against dirt contamination, extending the service life (only 85-10 and 85-30)

Operation / Usage

- Flashback Arrestors are used to protect gas cylinders and pipeline outlet points (hoses and any equipment) against dangerous reverse gas flow and flashbacks
- for pipeline outlets and single cylinders with high users for example supply units for gas cutting machines: Models 85-10 and 85-30
- for torches of burners with high flow: Model 85-10NU
- for cutting machines with high flow: Model 85-10U
- WITT Flashback Arrestors may be mounted in any position / orientation
- only one piece of equipment may be connected to a single Flashback Arrestor
- the maximum ambient / working temperature is 70 °C

Maintenance

- annual testing of the non-return valve, body leak tightness and flow capacity is recommended
- WITT is happy to supply special test equipment
- Flashback Arrestors are only to be serviced by the manufacturer. The dirt filter may be replaced by competent staff

Approvals

Company certified according to ISO 9001:2000 and ISO 14001
CE-marked according to:
- PED 97/23/EG

Product Inforamtion

Technical Data

Safety devices	Model			
	85-10	85-10NU	85-10U	85-30
Flame arrestor FA	X	X	X	X
Non-return valve NV	X	X	X	X
Temperature sensitive cut-off valve TV	X	X	–	X
Weight [g]	434	434	434	4580
Approval DVGW	NG-4390BL0421	–	–	NG-4390AL0031
Approval BAM	BAM/ZBA/003/04			
Material	Housing – Brass; Flame arrestor – Stainless steel; Seal – Elastomer			

	Model			
	85-10	85-10NU	85-10U	85-30
Gases	max. working pressure [bar]			
Acetylene (A)	1.5	1.5	1.5	1.5
Town gas (C)	5.0	5.0	5.0	5.0
Natural gas (M)	5.0	5.0	5.0	5.0
LPG (P)	5.0	5.0	5.0	3.5
Hydrogen (H)	5.0	5.0	5.0	4.0
Ethylene (E)	5.0	5.0	5.0	4.0
Connections	Order-No.			
G 3/8 LH	143.002	143.039	–	–
G 1/2 LH	143.008	–	143.040	–
G 3/4 LH	–	–	–	147.001
G 1 LH	–	–	–	147.003
G 1.1/2 IT	–	–	–	147.004
3/4" NPT IT	–	–	–	147.034

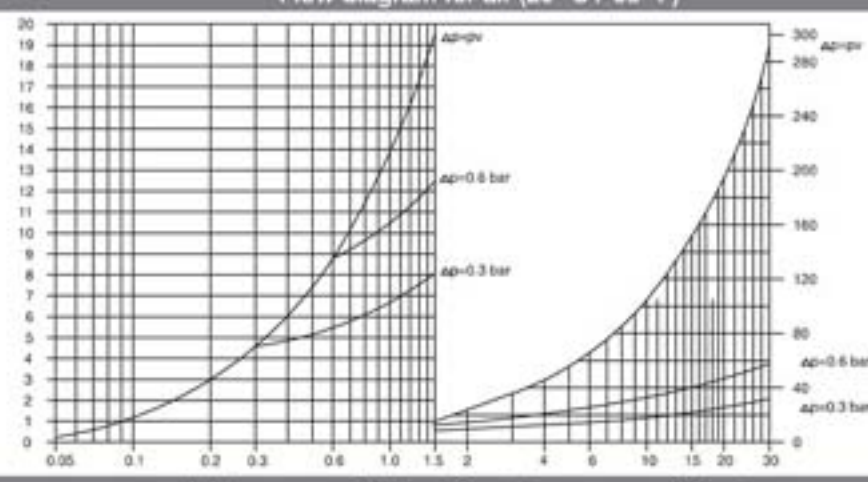
	Model			
	85-10	85-10NU	85-10U	85-30
Gases	max. working pressure [bar]			
Oxygen (O)	30.0	30.0	30.00	30.0
Compressed air (D)	30.0	30.0	30.00	30.0
Connections	Order-No.			
G 1/4 RH	143.013	–	–	–
G 3/8 RH	143.016	143.041	143.133	–
G 1/2 RH	143.019	–	143.042	–
G 3/4 RH	–	–	–	147.005
G 1 RH	–	–	–	147.006
G 1.1/2 IT	–	–	–	147.008
3/4" NPT IT	–	–	–	147.038

85-10
85-10U
85-10NU

Conversion factors:

Acetylene	x 1.04
Butane	x 0.68
Natural Gas	x 1.25
Methane	x 1.33
Propane	x 0.80
Oxygen	x 0.95
Town gas	x 1.54
Hydrogen	x 3.75

Flow diagram for air (20 °C / 68 °F)

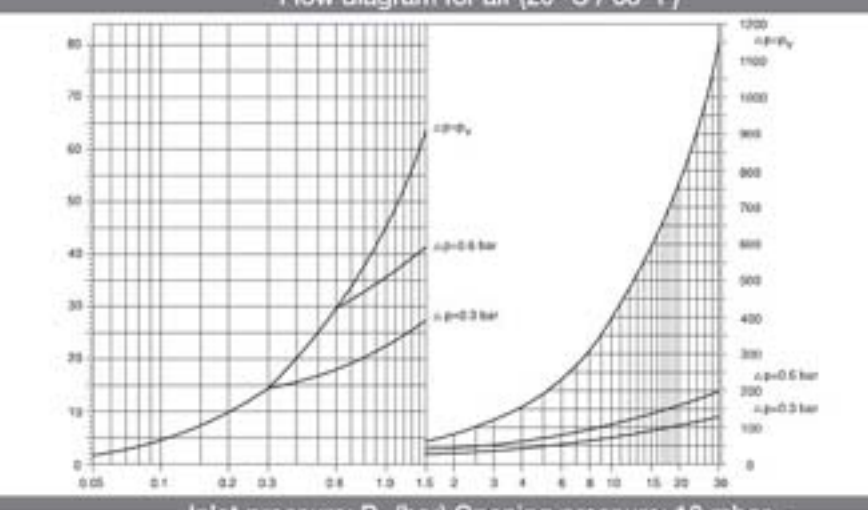


85-30

Conversion factors:

Acetylene	x 1.04
Butane	x 0.68
Natural Gas	x 1.25
Methane	x 1.33
Propane	x 0.80
Oxygen	x 0.95
Town gas	x 1.54
Hydrogen	x 3.75

Flow diagram for air (20 °C / 68 °F)



Other connections available on request

Technical Data

SAFETY DEVICES 270N and 623N

Product Information

WITT Flashback Arrestors 270N and 623N.
For reliable protection against dangerous gas backflow and flashback according to EN730 / ISO 5175-1. Every Arrestor 100% tested.

Benefits

- extinguish dangerous flashbacks with sintered stainless steel elements
- extinguish sustained backfire – via temperature sensitive cut-off valve
- avoid the formation of explosive mixtures in the gas supply – via non-return valves

Usage

The Flashback Arrestors are used against gas backflow and flashback at pipeline outlets as well as in thermal processing installations

- the Flashback Arrestors can be installed independent of the orientation but according to gas flow
- each pipeline should have its own Flashback Arrestor
- maximum ambient temperature: 70 °C (158 °F)

Maintenance

- annual testing of the non-return valve, leak tightness and flow capacity is recommended.

WITT is happy to supply testing equipment. Flashback Arrestors are only allowed to be serviced by the manufacturer.

Technical Data

Model	Max. operating pressure [bar]	EN 560 connection [inch]	Weight [g]	Overall lenght [mm]	Materials	Item no. 270 N	Item no. 270 NU
270 N 270 NU*	Town, natural gas 3.0 Propane 2.0 Hydrogen 1.5	G 3/4 RH	1.400	131	Brass NBR CR	123.038	123.046
		G 1/2 RH / IG*	1.450	125		123.054	–
		G 1 RH	1.500	140		123.041	123.047
		G 1 RH / IG*	1.400	125		123.057	–
		G 1 1/4 RH	1.600	143		123.039	123.048
		G 1 1/2 RH	1.700	154		123.040	123.049
		G 3/4 LH	1.400	131			123.050
		G 1 LH	1.500	140			123.051
		G 1 1/4 LH	1.600	143			123.052
		G 1 1/2 LH	1.700	154			123.053

* IG = two-sided internal thread

* U = changed flow direction, from female to male

J4 subject to change

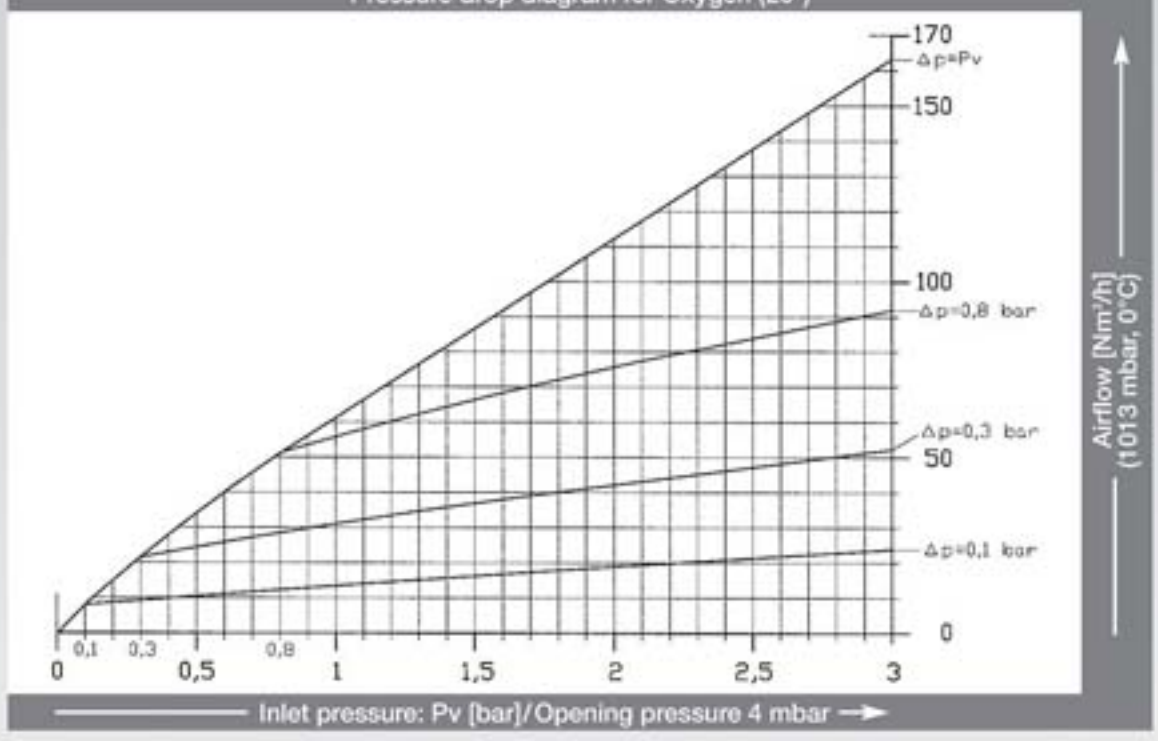
SAFETY DEVICES 270N and 623N

Model	Max. operating pressure [bar]	EN 560 connection [inch]	Weight [g]	Overall lenght [mm]	Materials	Item no. 623 N	Item no. 623 NU
623 N 623 NU*	Town, natural gas 4,0 Propane 2,0 Hydrogen 1,5	G 3/4 RH	1.800	178	Brass NBR CR	189.006	
		G 1RH	1.900	185		189.008	
		G 1 RH / IG*	1.850	181		189.017	
		G 1 1/4 RH	2.100	188		189.009	
		G 1 1/2 RH	2.100	189		189.007	
		G 3/4 LH	1.800	179			189.013
		G 1 LH	1.900	185			189.012
		G 1 1/4 LH	2.100	188			189.014
		G 1 1/2 LH	2.101	189			189.016

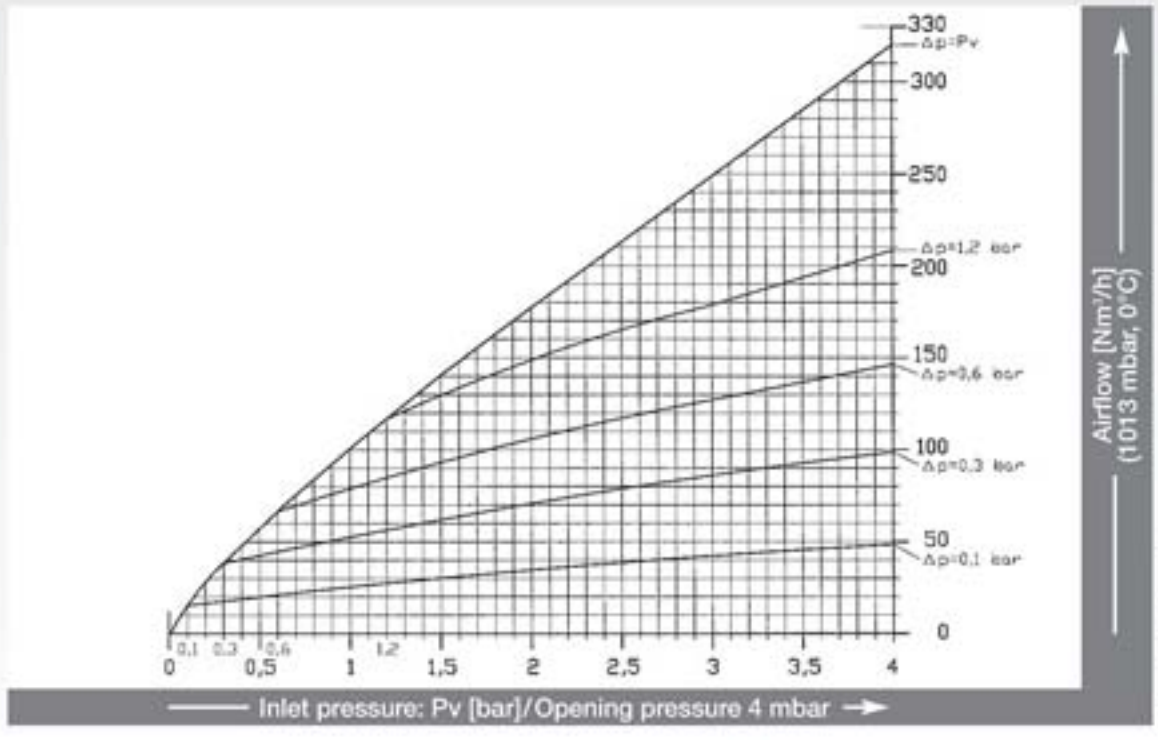
* IG = two-sided internal thread
* U = changed flow direction, from female to male

270N

Pressure drop diagram for Oxygen (20°)



623N



Technical Data

Conversion factors:

Butane	x 0.68
Natural gas	x 1.25
Methane	x 1.33
Propane	x 0.80
Oxygen	x 0.95
Town gas	x 1.54
Hydrogen	x 3.75

J4 subject to change

Product Information

BM-2M

Mixer for various technical processes for 2 gases direct bottle connection (high pressure).

Please identify the individual gases at the time of enquiring!

Benefits

- no more components required e.g. pressure control - for low costs
- compact design
- easy to install
- protection of the following system with 2 integrated safety relief valves against dangerous overpressures

Easy Usage

- a proportional mixing valve with %-scale provides an infinitely variable mixture setting
- infinitely variable flow setting with scaled turning knob

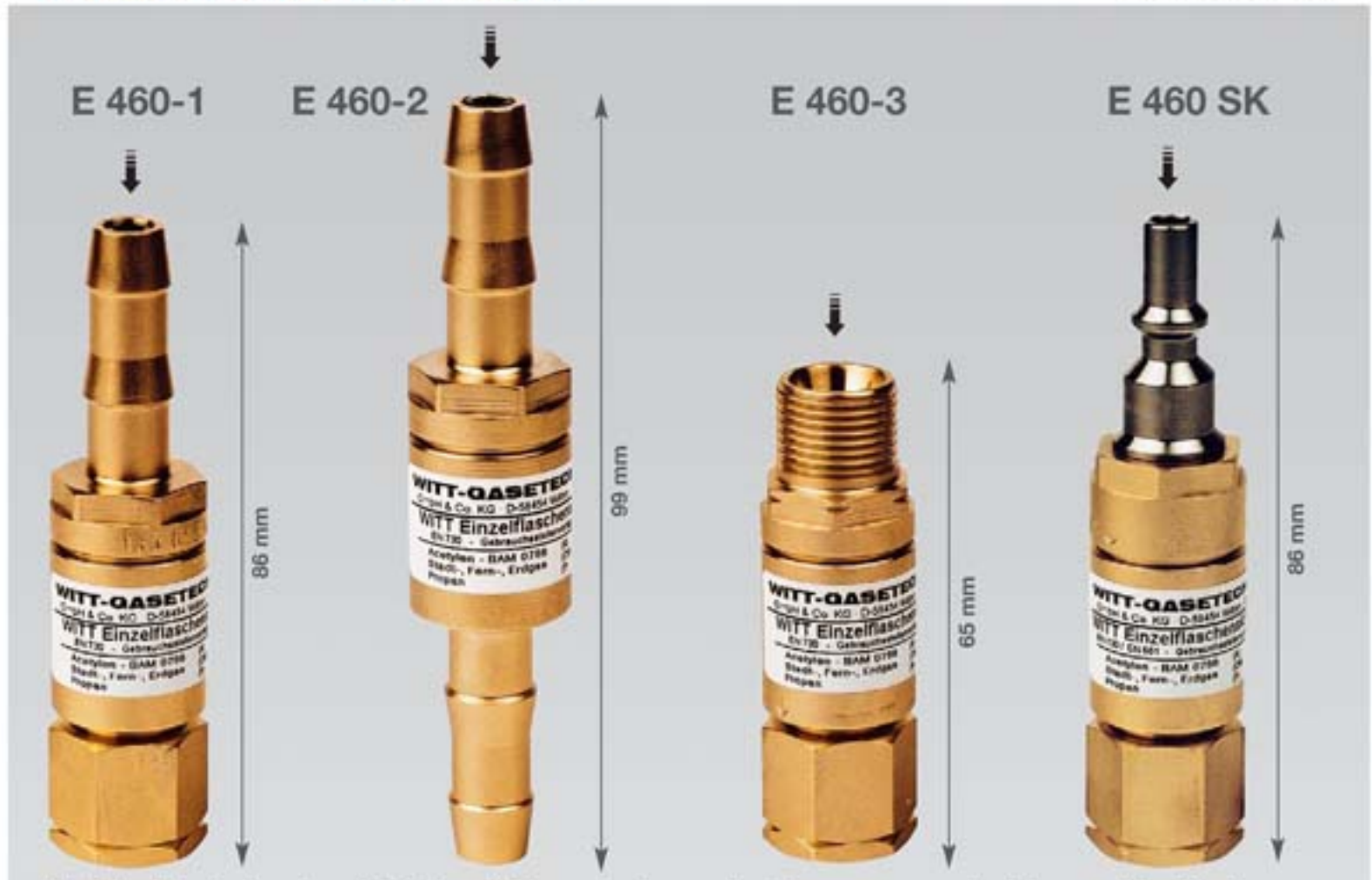
Constant Quality

- independent of pressure fluctuations
- independent of flucturation in the mixed gas capacity (in permitted range)

Technical Data

Type	BM-2M (with two integrated safety valves)
Gases	N_2/CO_2 (0-100%) or Ar/CO_2 (0-25%) other gases on request
Gas inlet pressure	min. 4,5 bar, max. 230 bar
Gas outlet pressure	max. 3 bar
Mixture output (Air)	8 - 25 Nl/min.
Set accuracy	±1% abs. with 0-25% Scale or ±2% abs. with 0-100% Scale
Mixing precision	better ±1% abs.
Gas connections	
Inlet	cylinder connection EN477
Outlet	G 1/4 EN 850
Housing	Aluminium, coated
Weight	approx. 3.2 kg
Dimensions (HxWxD)	approx. 220 x 160 x 140 mm (8.58 x 6.24 x 5.46 inch) (without connections)
Approvals	Company certified according to ISO 9001:2000 and ISO 14001

FLASHBACK ARRESTORS E460



WITT Flashback Arrestors E 460 for reliable protection against dangerous gas backflow and flashback according to EN 730 / ISO 5175-1 BAM prooved product

Benefits

- extinguish dangerous flashbacks with sintered stainless steel elements FA
- avoid the formation of explosive mixtures in the gas supply – via non-return valves NV
- offer long service life due to protection against dirt – via filter at gas inlet (valid for fuel gas model with hose nipple 9 mm)

Installation

The Flashback Arrestors E460-1, E460-3 and E460SK may be installed at the inlet of the blowpipe.
The E460SK with integrated coupling body conforming to EN561 / ISO7289 makes possible the use of the WITT-Couplingsystem SK100 for the fast connection and disconnection of the blowpipe. The E460-2 is for the installation in the hose – not nearer than. 1 m in front of the blowpipe.

Maintenance

Annual testing of the non-return valve, leak tightness and flow capacity is recommended. WITT is happy to supply testing equipment – test rig 722.
Flashback Arrestors are only allowed to be opened and serviced by the manufacturer. The dirt filter may be replaced by competent staff.

Approvals

Company certified according to ISO 9001:2000 and ISO 14001.

Coupling body SK100-9 (without non-return valve) for the coupling to E460SK conforming to EN561.

	Gas max. working pressures [bar]	Inlet hose [mm]	Outlet coupling probe to EN 561	Weight [g]	Material	Order-No.
SK 100-9	Acetylene (A) 1,5 Towngas (C), Methane (M), LPG (P) 5,0	4	X	94	Brass CR	150.037
		6,3				150.021
		8				150.039
		9				150.023
	Oxygen (O), air (D) 20,0	4				150.038
		6,3				150.024
		8				150.040

Product Information

J4 subject to change

FLASHBACK ARRESTORS E460

WITT Flashback Arrestors E 460 for reliable protection against dangerous gas backflow and flashback according to EN 730 / ISO 5175-1 BAM prooved product

	Gas max. working pressures [bar]	Inlet hose [mm]	Inlet coupling probe to EN 561	Inlet mail thread to EN 560	Outlet hose [mm]	Outlet female thread to EN 560	Weight [g]	Material	Order-No.
E 460-1	Acetylene (A) 1,5 Towngas (C), Methane (M), LPG (P) 5,0	4				G 3/8 LH	99	Brass NBR CR	135.002
		6,3							135.005
		8							135.009
		9							135.013
	Oxygen (O), air (D) 20,0	4				G 1/4 RH			135.014
		6,3							135.017
		8				G 3/8 RH			135.022
E 460-2	Acetylene (A) 1,5 Towngas (C), Methane (M), LPG (P) 5,0	4			4		93		135.029
		6,3			6,3				135.031
		8			8				135.032
		9			9				135.034
	Oxygen (O), air (D) 20,0	4			4				135.037
		6,3			6,3				135.038
		8			8				135.039
		9			9				135.040
E 460-3	Acetylene (A) 1,5 Towngas (C), Methane (M), LPG (P) 5,0			G 3/8 LH		G 3/8 LH	107		135.042
	Oxygen (O), air (D) 20,0			G 1/4 RH		G 1/4 RH			135.046
				G 3/8 RH		G 3/8 RH			135.052
E 460 SK	Acetylene (A) 1,5 Towngas (C), Methane (M), LPG (P) 5,0		X			G 3/8 LH	112	Brass Stainless Steel NBR, CR	135.114
	Oxygen (O), air (D) 20,0		X			G 1/4 RH			135.115
			X			G 3/8 RH			135.124

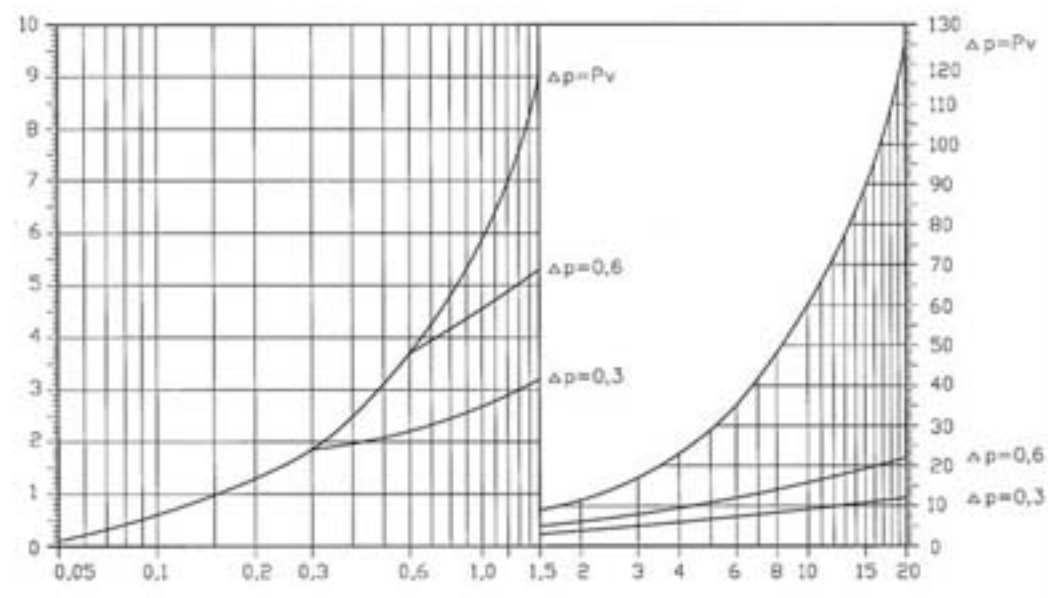
Technical Data

E 460-1
E 460-2
E 460-3
E 460 SK

Conversion factors:

Acetylene	x 1,04
Butane	x 0,68
Natural Gas	x 1,25
Methane	x 1,33
Propane	x 0,80
Oxygen	x 0,95
Town Gas	x 1,54
Hydrogen	x 3,75

Pressure drop diagram for Air (20 °C)



J4 subject to change

RF53N-ES / F53N-ES

WITT Flashback Arrestors for reliable protection against dangerous reverse gas flow and flashbacks according to EN 730 / ISO 5175-1 BAM Certified and under surveillance
Every Arrestor 100% tested.

The best Flashback Arrestors in the world

- a large surface area flame arrestor FA of stainless steel construction extinguishes any dangerous flashback entering the device in any direction
- a temperature sensitive cut-off valve TV extinguishes sustained flashbacks long before the internal temperature of the arrestors reaches a dangerous level
- a spring loaded non-return valve NV prevents slow or sudden reverse gas flow forming explosive mixtures in the gas supply
- a filter at the gas inlet protects the arrestor against dirt contamination, extending the service life (RF53N-ES)

Operation / Usage

- Flashback Arrestors are used to protect gas cylinders and pipeline outlet points (hoses and any equipment) against dangerous reverse gas flow (RF53N-ES) and flashbacks
- without non-return valve (F53N-ES) for lower working pressures i.e. before and after analysers
- ideal for use with corrosive gases in the chemical industry, process technology or in the laboratory area
- WITT Flashback Arrestors may be mounted in any position / orientation
- the maximum ambient / working temperature is 70 °C

Maintenance

- annual testing of the non-return valve, body leak tightness and flow capacity is recommended
- WITT is happy to supply special test equipment
- Flashback Arrestors are only to be serviced by the manufacturer. The dirt filter may be replaced by competent staff

Approvals

Company certified according to ISO 9001:2000 and ISO 14001

Safety devices	Model	
	F53N-ES	RF53N-ES
Flame arrestor FA	X	X
Non-return valve NV	–	X
Temperature sensitve cut-off valve TV	X	X
Weight [g]	181	195
Approval BAM	BAM/ZBA/003/04	
Material	Housing – Stainless steel; Flame arrestor – Stainless steel; Seal – Elastomer	

Gases	max. working pressure [bar]			
Acetylene (A)	–	–	1.5	–
Town gas (C)	5.0	–	5.0	–
Natural gas (M)	5.0	12.0	5.0	12.0
LPG (P)	5.0	8.0	5.0	8.0
Hydrogen (H)	3.0	9.0	3.0	9.0
Ethylene (E)	–	9.0	–	9.0
Connections	Order-No.			
1/4" NPT IG	145.059	145.106	145.001	145.107
3/8" NPT IG	–	–	145.031	145.121

Gases	max. working pressure [bar]	
Oxygen (O)	30.0	30.0
Compresses air (D)	30.0	30.0
Connections	Order-No.	
1/4" NPT IG	145.157	145.116
3/8" NPT IG	–	145.024

Other connections available on request

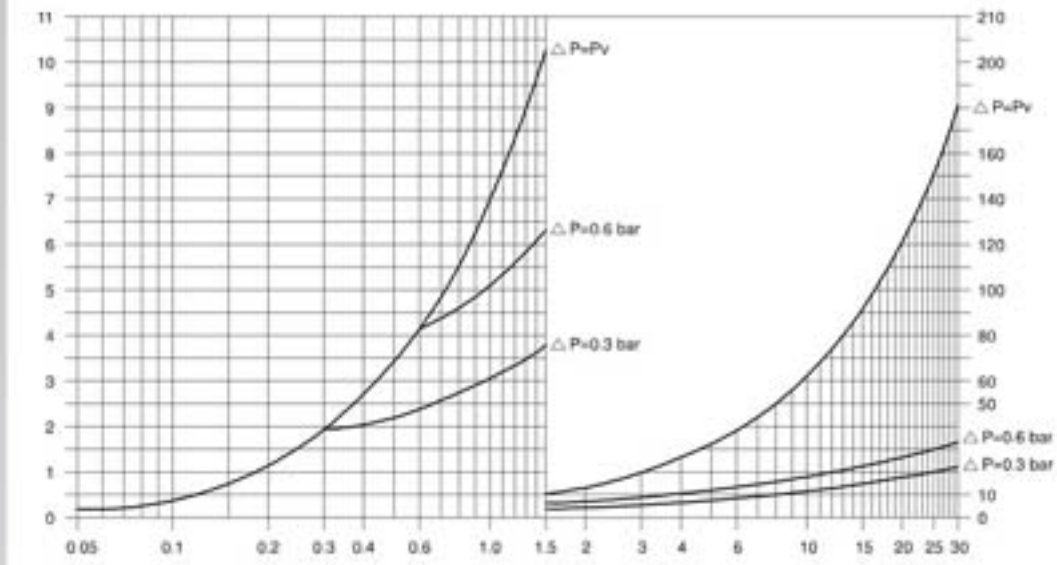
RF53N-ES

145.001
145.031
145.116
145.024

Conversion factors:

Acetylene	x 1.04
Butane	x 0.68
Natural gas	x 1.25
Methane	x 1.33
Propane	x 0.80
Oxygen	x 0.95
Town gas	x 1.54
Hydrogen	x 3.75

Flow diagram for air (20 °C / 68 °F)



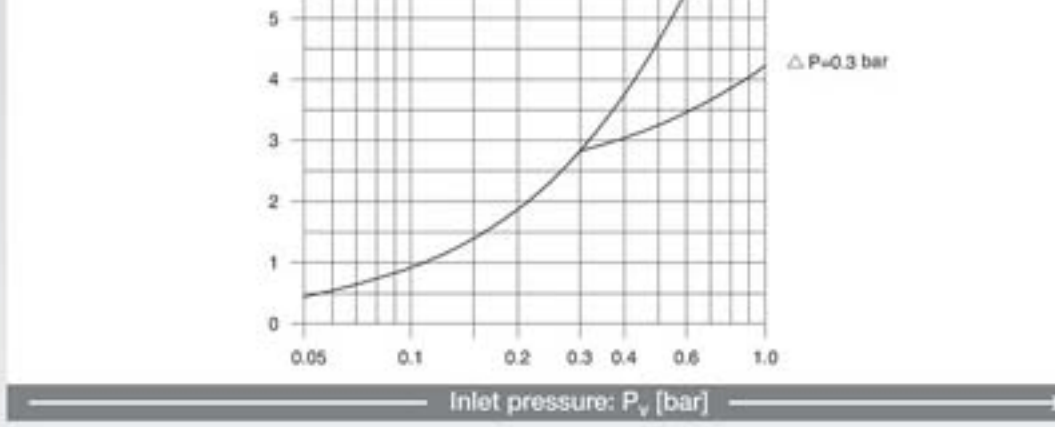
F53N-ES

145.059
145.157

Conversion factors:

Acetylene	x 1.04
Butane	x 0.68
Natural gas	x 1.25
Methane	x 1.33
Propane	x 0.80
Oxygen	x 0.95
Town gas	x 1.54
Hydrogen	x 3.75

Flow diagram for air (20 °C / 68 °F)



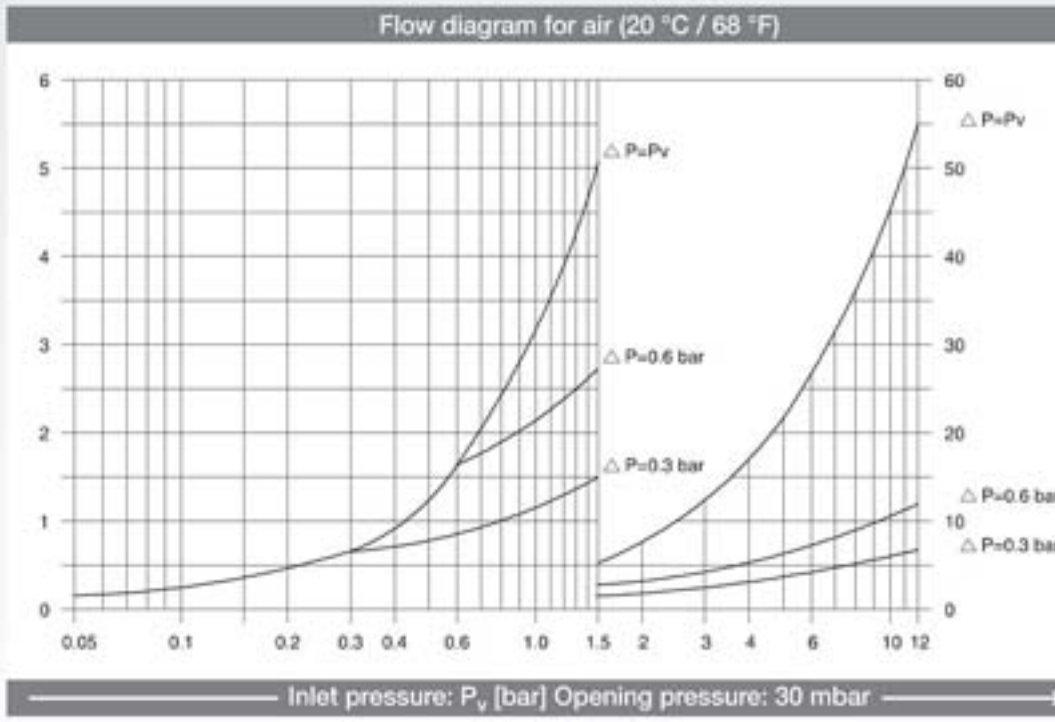
RF53N-ES

145.107
145.121

Conversion factors:

Acetylene	x 1.04
Butane	x 0.68
Natural gas	x 1.25
Methane	x 1.33
Propane	x 0.80
Oxygen	x 0.95
Town gas	x 1.54
Hydrogen	x 3.75

Flow diagram for air (20 °C / 68 °F)



Technical Data

RF85-10N-ES / F85-10N-ES

RF85-10N-ES VCR

WITT Flashback Arrestors for reliable protection against dangerous reverse gas flow and flashbacks according to EN 730 / ISO 5175-1 BAM Certified and under surveillance
Every Arrestor 100% tested.

The best Flashback Arrestors in the world

- a large surface area flame arrestor FA of stainless steel construction extinguishes any dangerous flashback entering the device in any direction
- a temperature sensitive cut-off valve TV extinguishes sustained flashbacks long before the internal temperature of the arrestors reaches a dangerous level
- a spring loaded non-return valve NV prevents slow or sudden reverse gas flow forming explosive mixtures in the gas supply
- a filter at the gas inlet protects the arrestor against dirt contamination, extending the service life (only RF85-10N-ES)

Operation / Usage

- Flashback Arrestors are used to protect gas cylinders and pipeline outlet points (hoses and any equipment) with high flow against dangerous reverse gas flow (RF85-10N-ES) and flashbacks
- without non-return valve (F85-10N-ES) for lower working pressures with low pressure drop i.e. before and after analysers
- ideal for use with corrosive gases in the chemical industry, process technology or in the laboratory area
- WITT Flashback Arrestors may be mounted in any position / orientation
- the maximum ambient / working temperature is 70 °C

Maintenance

- annual testing of the non-return valve, body leak tightness and flow capacity is recommended
- WITT is happy to supply special test equipment
- Flashback Arrestors are only to be serviced by the manufacturer. The dirt filter may be replaced by competent staff

Approvals

Company certified according to ISO 9001:2000 and ISO 14001

Safety devices	Model	
	F85-10N-ES	RF85-10N-ES/VCR
Flame arrestor FA	X	X
Non-return valve NV	–	X
Temperature sensitive cut-off valve TV	X	X
Weight [g]	385	385
Approval BAM	BAM/ZBA/003/04	
Material	Housing – Stainless steel; Flame arrestor – Stainless steel; Seal – Elastomer	

Gases	max. working pressure [bar]			
Acetylene (A)	–	–	1.5	–
Town gas (C)	5.0	–	5.0	–
Natural gas (M)	5.0	10.0	5.0	10.0
LPG (P)	5.0	5.0	5.0	5.0
Hydrogen (H)	5.0	10.0	5.0	10.0
Ethylene (E)	5.0	9.0	5.0	9.0
Connections	Order-No.			
1/4" NPT IT	143.028	143.100	143.061	143.077
3/8" NPT IT	–	–	143.069	143.087
9/16"-18UNF VCR	–	–	143.031	–
7/8" -14UNF VCR	–	–	143.048	143.076

Gases	max. working pressure [bar]	
Oxygen (O)	30.0	30.0
Compressed air (D)	30.0	30.0
Connections	Order-No.	
1/4" NPT IT	143.149	143.101
3/8" NPT IT	–	143.119
9/16"-18UNF VCR	–	143.163
7/8" -14UNF VCR	–	143.134

Other connections available on request

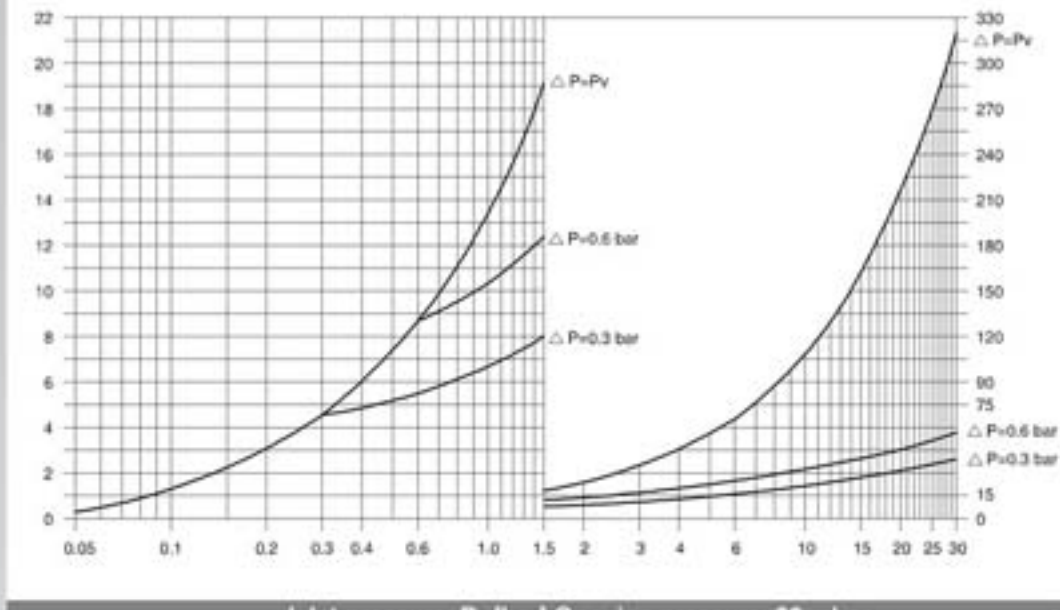
RF85-10N-ES
RF85-10N-ES VCR

143.031
143.048
143.061
143.069
143.101
143.119
143.134
143.163

Conversion factors:

Acetylene	x 1.04
Butane	x 0.68
Natural gas	x 1.25
Methane	x 1.33
Propane	x 0.80
Oxygen	x 0.95
Town gas	x 1.54
Hydrogen	x 3.75

Flow diagram for air (20 °C / 68 °F)



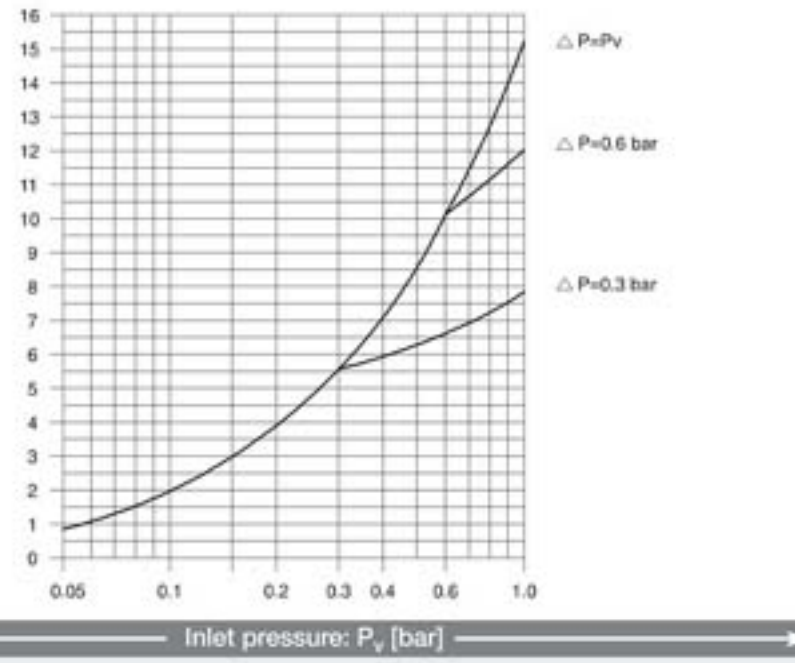
F85-10N-ES

143.028
143.100
143.149

Conversion factors:

Acetylene	x 1.04
Butane	x 0.68
Natural gas	x 1.25
Methane	x 1.33
Propane	x 0.80
Oxygen	x 0.95
Town gas	x 1.54
Hydrogen	x 3.75

Flow diagram for air (20 °C / 68 °F)



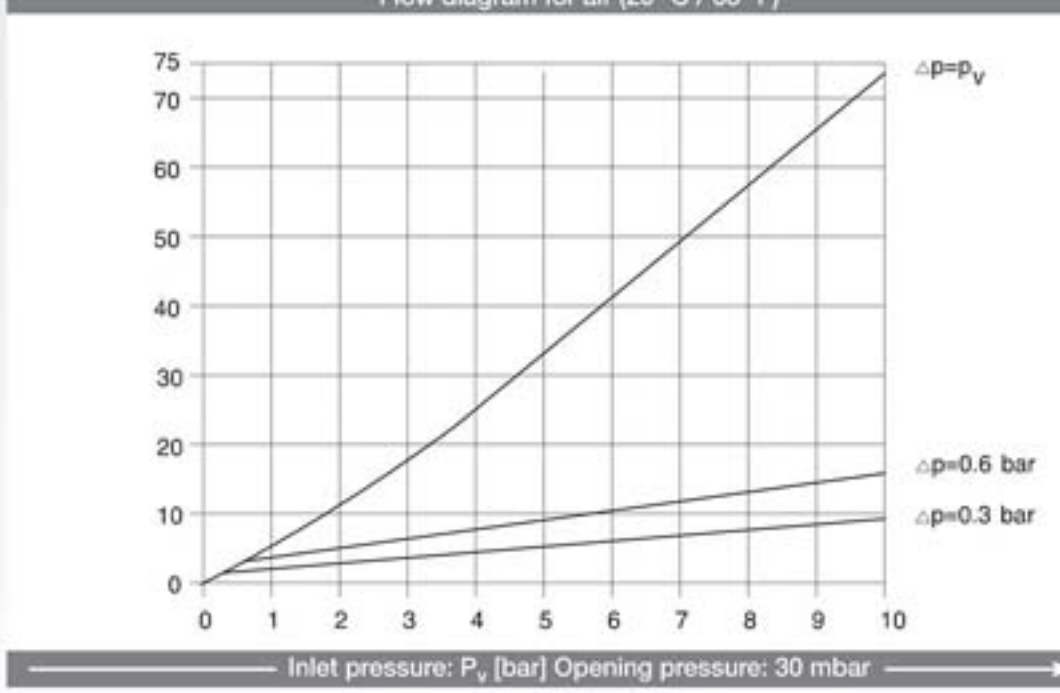
RF85-10N-ES

143.076
143.077
143.087

Conversion factors:

Acetylene	x 1.04
Butane	x 0.68
Natural gas	x 1.25
Methane	x 1.33
Propane	x 0.80
Oxygen	x 0.95
Town gas	x 1.54
Hydrogen	x 3.75

Flow diagram for air (20 °C / 68 °F)



Technical Data

Automatic Flame Arrestor FN 40

The FN 40 Flame Arrestor should be used at manifold regulator outlets or branch line intersections in fuel gas / oxygen pipelines.

The arrestor will prevent a decomposition of acetylene and / or a flashback of air / oxy-fuel gas mixtures travelling past the point of installation.

The arresting element quenches the flame completely. An additional automatic cut-off valve will operate before the internal temperature reaches a dangerous level.

Tests

Every WITT Arrestor is tested individually for body leaks and is subjected to flashback testing at the maximum rated operating pressure in accordance with ISO/EN standard or that of the country of sale.

Maintenance

No maintenance is required. Nevrtheless it is re-commended that at annual intervals the units are tested with clean dry air or nitrogen for body leakage.

Installation

The WITT Automatic Flame Arrestor FN 40 can be installed in any porition but the gas flow must be in the direction indicated by the arrow on the body. It should be installed adjacent to the manifold regulator outlet or immediately upstream of a branch line intersection.

With acetylene supplied directly from generators a suitable purifyer must be installed upstream of the FN 40.

If it is inevitable that hydraulic and dry flame arrestors are installed in the same pipeline system the hydaulic arrestors should be restricted to separate branch lines. If there is a danger from water vapour beeing carried with the gas, then the separator should be installed upstream.

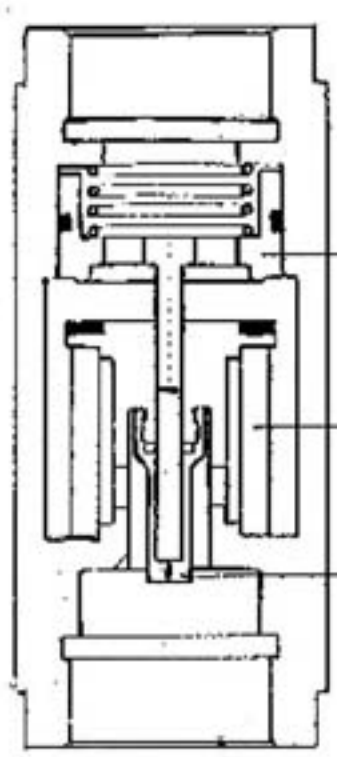
For greater flow requirements two more flame arrestors of identical specification may be connected in parallel. Manifolding the units the flow increases with two devices by approx. factor 1.45, and with four units by factor 3.45. Manifolding subassamblies available to special order.

Repairs

Defective units as well as units with temperature activated cut-off valve closed should only be serviced by the manufacturer or his authorised local representative as it requires full testing including flashback testing after reassembly.

Technical Data / Product Information

Model	max. Working Pressure [bar]	Connection [Zoll]	Weight [g]	Material	Oder No.
FN 40	Acetylene 1.5 bar Oxygen 10 bar	G 1 1/2 RH	3846	Brass	021.003 021.004



Description

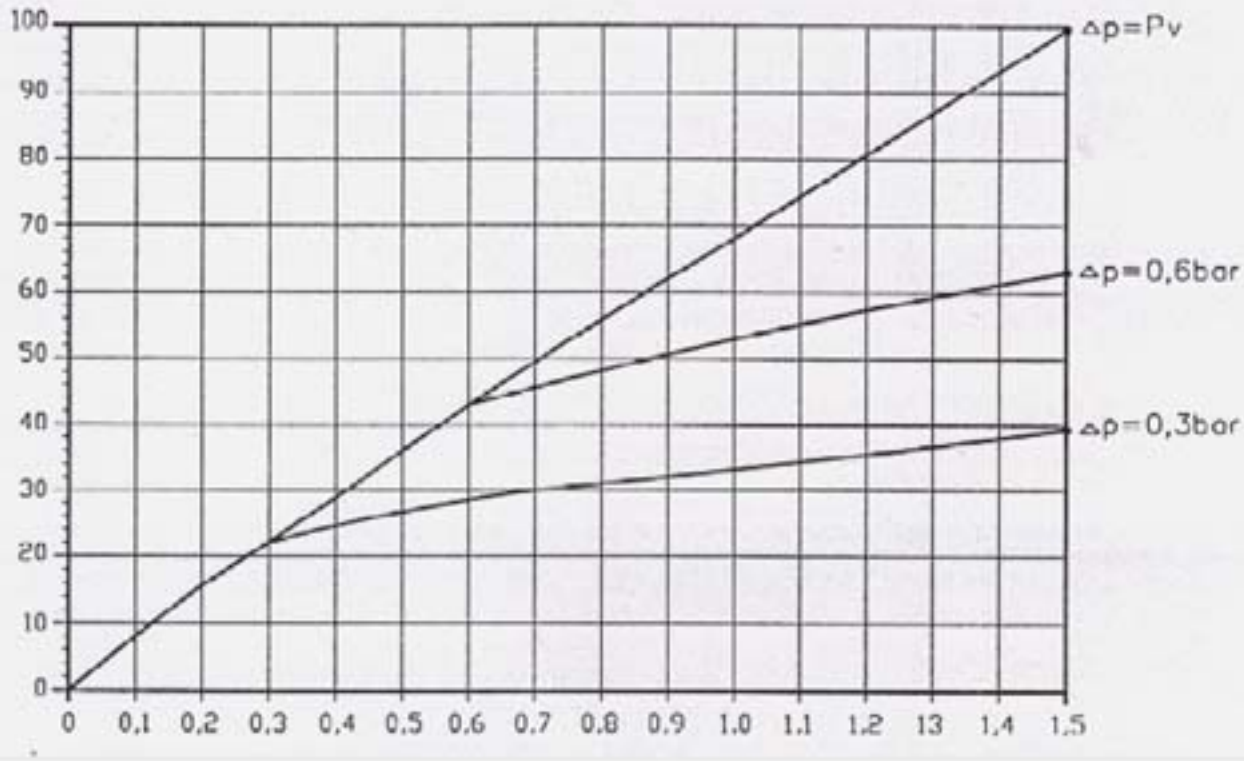
The WITT Automatic Flame Arrestor FN 40 incorporates:

1) Large surface cylindrical flame arrestor
made of stainless steel to prevent a de-composition and / or a flashback from passing through the device in any direction.

2) Temperature activated valve
to cut off the gas flow before the internal temperature reaches a dangerous level, wether caused by internal burning or external fire.
The valve closes in the same direction as the gas flow, ensuring that it cannot be re-opened by the gas inlet pressure.

Technical Data / Product Information

Pressure drop diagram for Air (20 °C)



Inlet pressure: Pv bar / Opening pressure 4 mbar

L4 subject to change

Product Information

Gas monitoring system for the detection of oxygen (O_2) depletion or carbon dioxide (CO_2).

Benefits

- 3 alarm limits adjustable within the measuring range
- digital displays for continuous visual monitoring of the gas concentration
- connections for alarm easy accessible on forefront
- easy wall mounting

Components

1. Control and Display Unit
2. Transmitter
3. Transmitter cable for connecting of Transmitter and Control Unit

Options

- control and display unit with built-in alarm (Hooter and emergency signal lamp)
- flow-through adapter for sensor check and calibration
- other gases on request

Technical Data

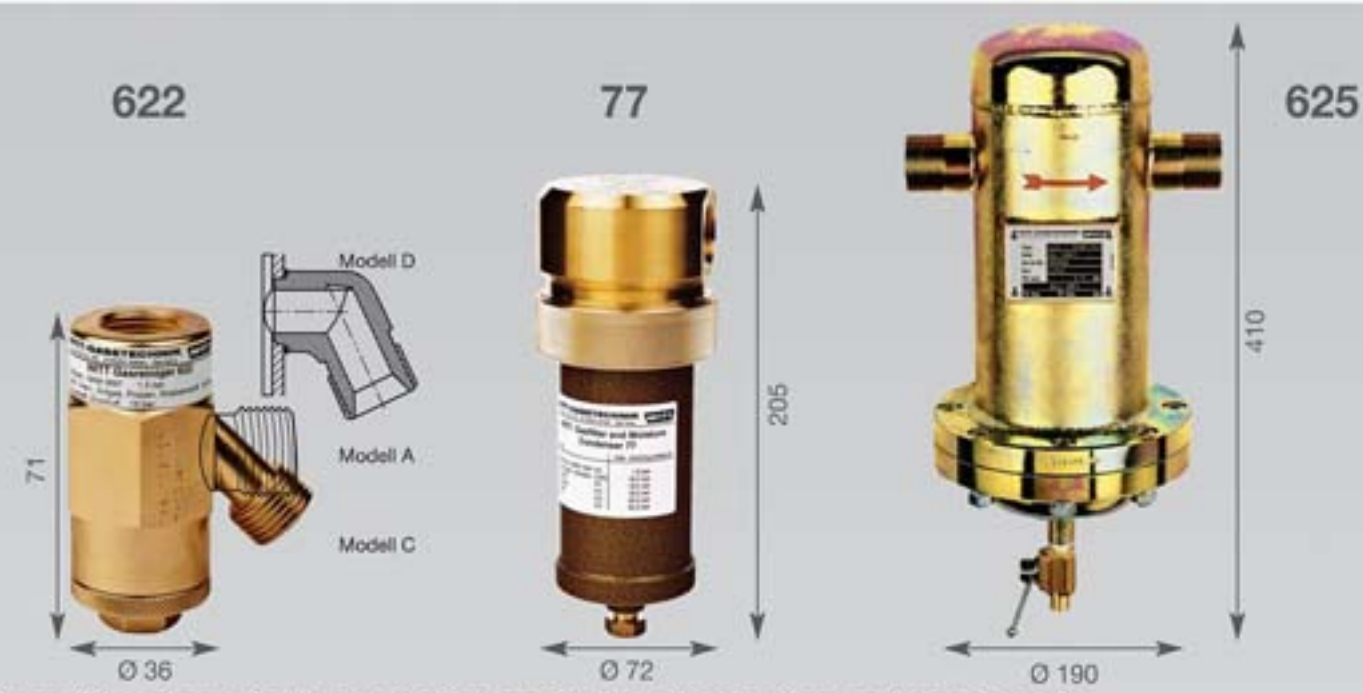
Type ①	Control and Display Unit
Gases	Oxygen (O_2) or carbon dioxide (CO_2)
Input signal	0.2 to 1mA and 4 to 20mA
Output signal	4 to 20mA
Alarm contacts	- 4 volt-free relay contacts for activation of external devices at alarm limits 1, 2, 3 and system fault - Rated: 230V / 4A (Please indicate with order whether the relay contacts shall be normally open (NO) or normally closed (NC)
Function keys	acknowledgement of alarm, built-in test and check of measurement range and calibration; relay function test
Display	- digital, 3 digits, for display of gas concentration and parameters - LEDs indicating of operating status, system fault and alarms 1, 2 and 3
Safety	continuous self check of processor function, excessive / low voltage, cable fault, transmitter function.
Housing	plastics, IP 54, splash proof
Dimensions (HxWxD)	185 x 130 x 95 mm (7.28 x 5.12 x 3.74 inch) (without connections)
Voltage	230V AC or 24V DC

Type ②	Transmitter
Measured gas	Oxygen (O_2) 0% - 25% (Vol.), electro-chemical sensor. Carbon dioxide (CO_2) 0% - 5% (Vol.), Infrared-sensor
Sample gas supply	diffusion
Special features	- service access to test switch - test connectors for measurement of measuring signal - potentiometers for zero and span adjustment
Housing	aluminium, IP 54, splash proofed
Dimensions (HxWxD)	125 x 80 x 60 mm (4.92 x 3.15 x 2.36 inch) (without connections)
Voltage	230V AC or 24V DC
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 CE-marked according to: - EMC 89/336/EWG - Low Voltage Directive 73/23/EWG

GAS FILTER 622 / 77 / 625

Product information

Technical data



WITT gas filters for reliable protection against contamination and condensate

Advantages

- ultra fine filtering out of mechanical impurities through nickel chromium steel filter inserts
- broad range of uses – compatible with many technical gases (e.g. BAM approval for acetylene)
- change of filter possible while installed due to user-friendly design
- high flowrate thanks to flow maximising design
- condensate can be collected and removed using condensate drain (models 77 and 625)
- easy to install thanks to large choice of connections
- reliable filtering performance increases service life of downstream fittings and equipment

Use

Gas filter models 77 and 625 are designed for installation in pipelines. Model 622 is used at outlet points.

The gas purifiers with condensate drain must be installed vertically.

Maintenance

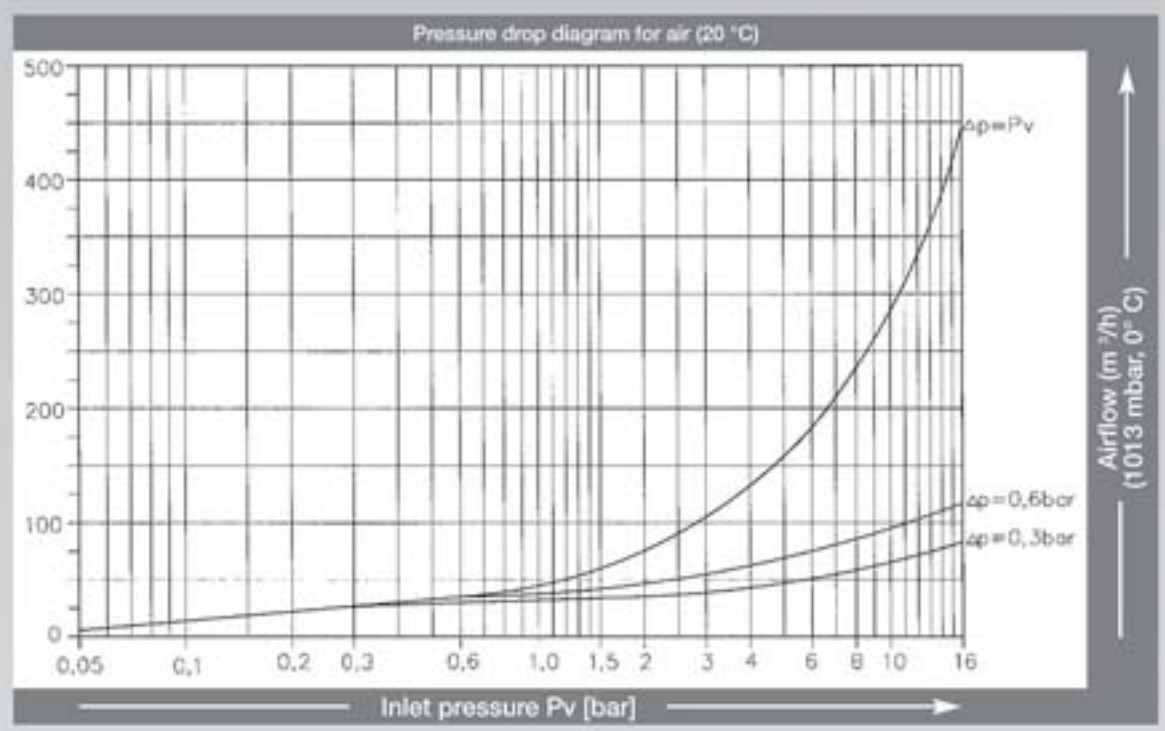
The condensate should be drained at regular intervals; the filter inserts must be checked in rotation and replaced if necessary.

Model	Max. working pressure [bar]	Connection [inch] Inlet	Outlet EN 560	Weight [g]	Material	Filtering fineness	Order
622 A / PN 25	Acetylene 1,5	G 3/8 female	G 3/8 LH male	400	brass /NBR	40 mµ	186.003
	Other fuel gases 16,0	G 3/8 female	G 3/8 RH male				186.001
622 C / PN 25	Oxygen, compressed air and non-flammable gases 16,0	G 1/2 female	G 3/8 LH male				186.004
622 D / PN 25		G 1/2 female	G 3/8 LH male				186.005
Replacement sintered stainless steel elements							955.0030
77 / PN40	Acetylene 1,5 Other fuel gases 16,0 Compressed air 40,0 Oxygen 40,0	both sides G 3/4 female		2.802	brass /NBR	30 mµ	077.001
		flange D25 / PN 40 both sides					077A.006
Replacement sintered stainless steel elements							FI-077
625 / PN16	Acetylene 1,5 Other fuel gases 16,0 Compressed air 16,0 Oxygen 10,0	both sides G 1 1/4 male		12.200	steel /NBR	40 mµ	042.001
		flange DN50 / PN 40 both sides					042.003
Replacement sintered stainless steel element							FI-625

D4 subject to change

GAS FILTER 622 / 77 / 625

622



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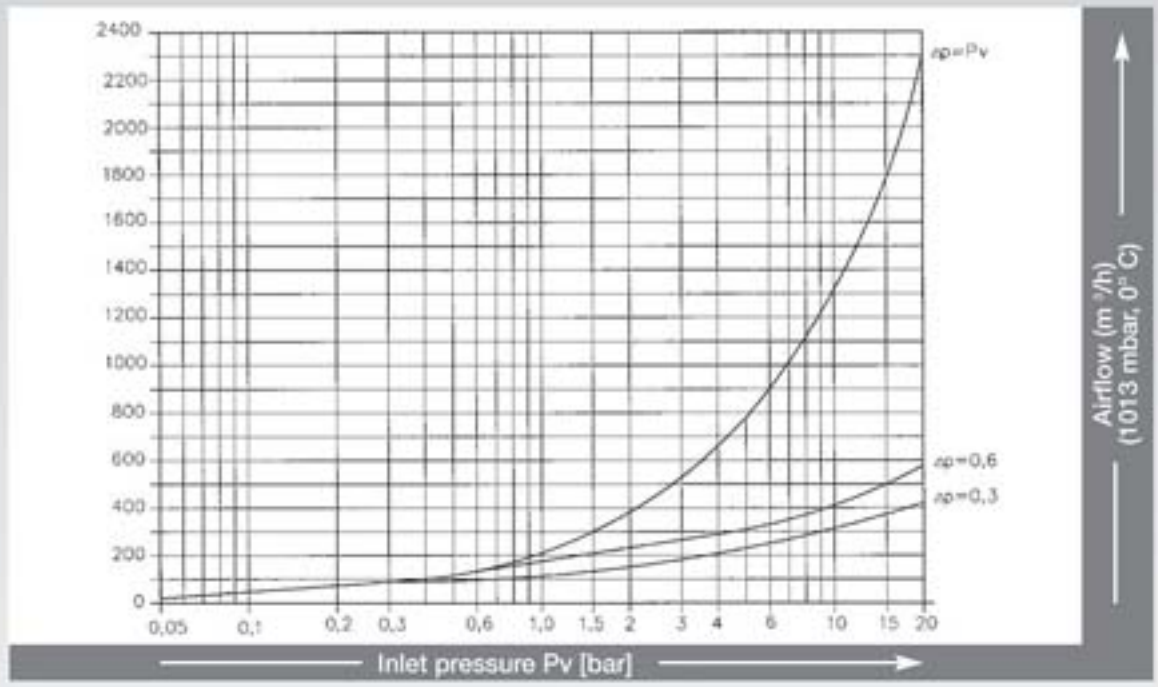
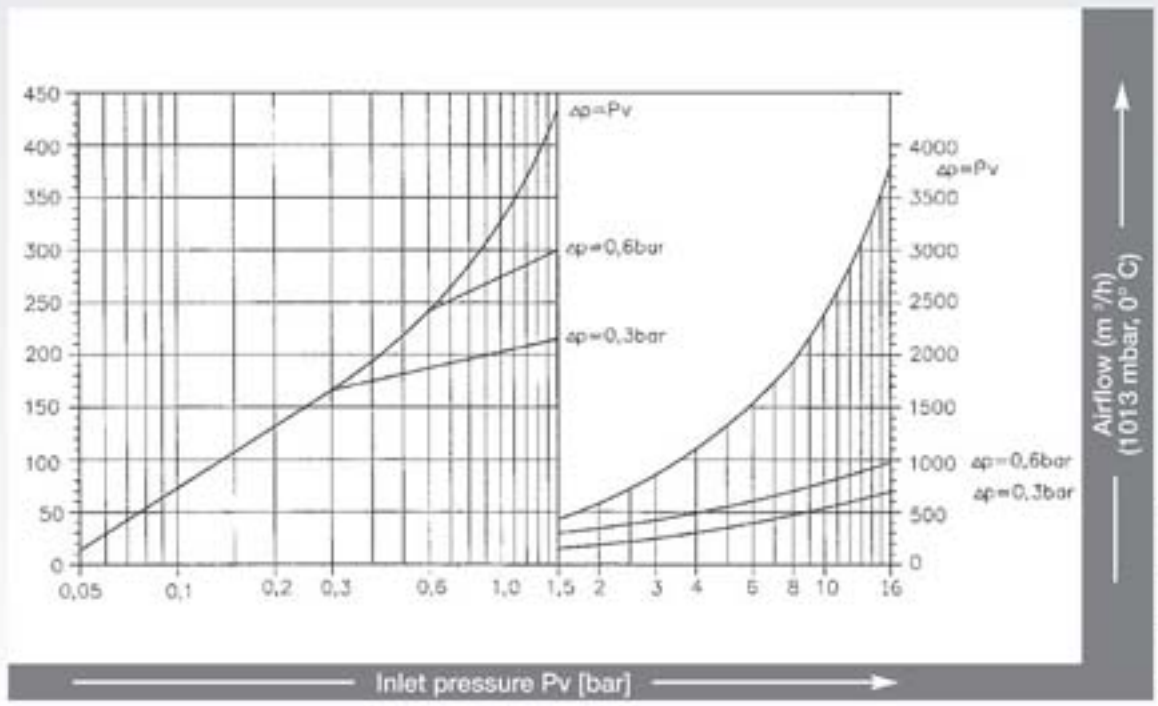


625



Technical data

Conversion factors:

Acetylene	x 1.04
Butane	x 0.68
Natural gas	x 1.25
Methane	x 1.33
Propane	x 0.80
Oxygen	x 0.95
Town gas	x 1.54
Hydrogen	x 3.75

D4 subject to change

Gas-Management aus einer Hand

gas-management in one hand

EN 746-2

www.wittgas.com

WITT GASETECHNIK

WITT
GASETECHNIK

WITT Gas-Management

EN 746-2*

Das zertifizierte WITT Gas-Management bietet Ihnen alles aus einer Hand: Sicherheit, Meß- und Regeltechnik von der zentralen Gasversorgung bis zum Brenner.

Seit 1997 schreibt die EN 746-2 erstmals die zum Umfang einer Brennerversorgung gehörenden Komponenten vor. Das neu entwickelte und nach EN 746-2 zertifizierte Konzept integriert

- **Absperrorgane**
- **Filter**
- **Sicherheitseinrichtung gegen Gasrücktritt und Flammrückschlag**
- **Druckschalter**
- **Druckregler**
- **Fernbetätigbare Absperrorgane**
- **Spüleinrichtung**
- **Gasmischsysteme für zwei oder mehr Gase**
- **Gasmengenventile für Einzelgase und Gasgemische**

WITT provides comprehensive and certified gas management:
Gas safety and gas control equipment from pipeline to burner.

Since 1997 EN 746-2 defines the requirements for a burner gas supply system for the first time. The newly developped and conforming to EN 746-2 WITT-concept incorporates

- Shut-off valves
- Filters
- Non-return valves and flashback arrestors
- Pressure switches
- Pressure regulators
- Remote control isolation valves
- Purging line
- Gas mixing unit for two or more gases
- Gas metering valves for single gases and gas mixture

* **Industrielle Thermoprozeßanlagen, Teil 2: Sicherheitsanforderungen an Feuerungen und Brennstoffführungssysteme, Deutsche Fassung EN 746-2: 1997**

Industrial thermoprocessing equipment, Part 2: Safety requirements for combustion and fuel handling systems, German version EN 746-2: 1997

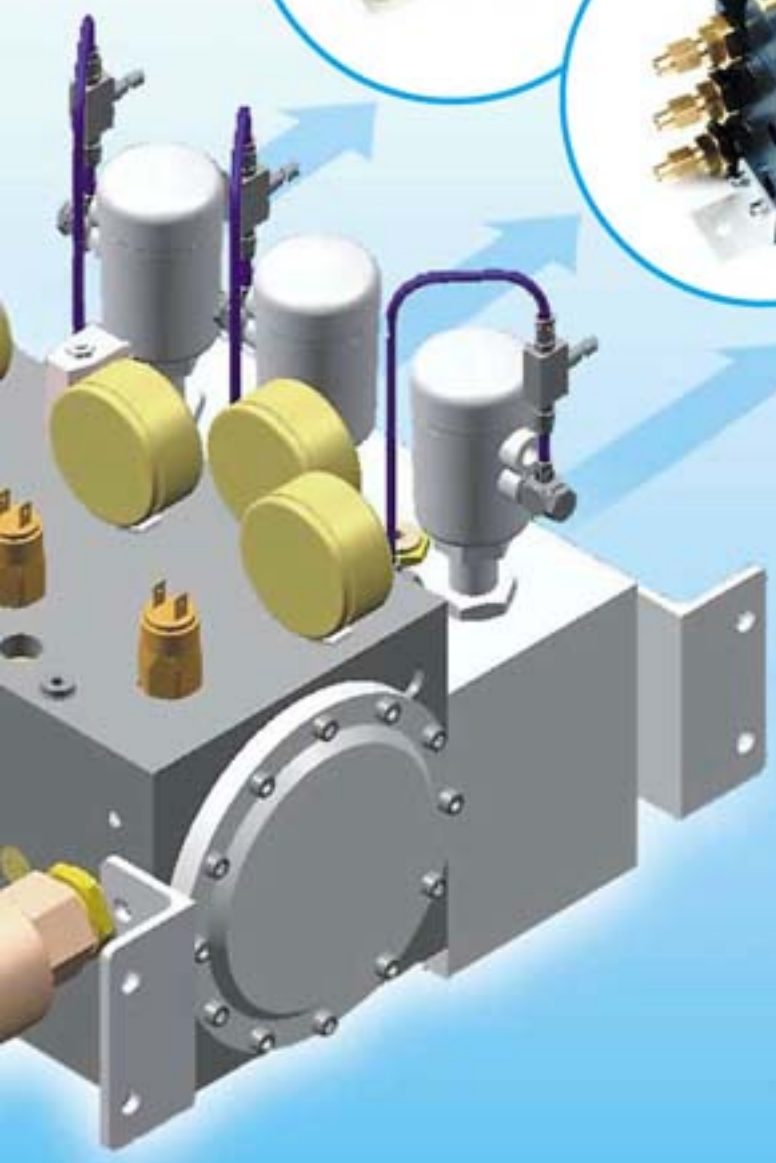
■ **Gasrücktrittssicherung für große Nennweiten zur Absicherung Ihrer zentralen Gasversorgung**

- Non-return valve for high flows protecting your pipeline systems

WITT
GASETECHNIK

■ **Dosiereinrichtung für**
2-Gas außenmischende Brenner
■ Metering unit for
2-gas post-mix burners

■ **Misch- und Dosiereinrichtung**
für 3-Gas-Gemischbrenner
■ Mixing and metering unit
for 3-gas pre-mix burners



■ **Misch- und Dosiereinrichtung**
für 2-Gas-Gemischbrenner
■ Mixing and metering unit
for 2-gas pre-mix burners

■ **Integrierte Druckregeleinrichtung**
nach EN 746-2 für drei Gase
■ Pressure control system according
to EN 746-2 for three gases

■ **Elektronische Misch- und Dosier-**
einrichtung für innen- oder außenmischende
Brenner mit Steuereinheit
■ Electronic mixing and metering unit for
pre- or post-mix burners with control unit

WORLD of Gases

Unser Programm:

Our Product Range:

Gaseverfahrenstechnik

- Gasmischsysteme
- Gasdosiersysteme
- Gasanalysesysteme
- Energieversorgungssysteme
- Druckbehälter
- Verfahrenstechnische Sonderlösungen

Gas Control Equipment

- Gas mixing systems
- Gas metering systems
- Gas analysing systems
- Energy supply systems
- Gas pressure vessels
- Engineering of customized systems

Gassicherheitstechnik

- Sicherheitseinrichtungen
- Gasrücktrittsicherungen
- Schlauchkupplungen
- Sicherheitsventile
- Edelstahlarmaturen
- Detonationssicherungen
- Gasfilter
- Druckregler
- Brennrohrhalter
- Kugelhähne
- Automatische Schlauchaufroller
- Prüfeinrichtungen
- Zubehör
- Sonderarmaturen

Gas Safety Equipment

- Flashback arrestors
- Non-return valves
- Quick couplers
- Safety valves
- Stainless steel devices
- Detonation safety devices
- Gas filters
- Pressure regulators
- Lance holders
- Ball valves
- Automatic hose reels
- Test equipment
- Accessories
- Customized safety equipment

WITT-GASETECHNIK
GmbH & Co KG

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Internet: http://www.wittgas.com • E-mail: mail@wittgas.com

GAS FLOW CONTROLLER

Product Information

KD 100-1A

Electronic flow control system for modified atmospheres for flowpack machines in the food industry and for room atmospheres e.g. for the storage of fruit and vegetables.

Cost reduction

- saves up to 30% of gas consumption by automatic regulation of the gas flow until the required oxygen value has been achieved
- the non-destructive gas analysis garanties quality of the packages and economy of the production

Easy Operation

- simple calibration
- maintenance free
- easy to read display
- integrated sample gas pump

High process reliability

- permanent control of the O_2-concentration
- electronic gas supply rate control of the sensor
- lockable door to protect the settings
- the gas supply is monitored by pressure switches; a low pressure triggers an alarm (hooter optional) and a potential-free contact (e.g. to shut down machinery and to avoid quality problems)
- independent of pressure fluctuations in the gas supply
- independent of packing speeds (MAP)
- independent of package sizes (MAP)

Maximum Hygiene

- splash-proof, robust stainless steel housing
- smooth and easy to clean surface

Documentation

- Interfaces for the documentation and remote transfer of the settings and measured values

The individual gases must be identified at the time of enquiring!

Technical Data

Type	KD 100-1A
Gases	N_2, CO_2, Ar or others as well as their mixtures; not for flammable gases!
Gas inlet pressures	see table
Gas outlet pressure	see table
Flow capacity (air)	see table
Temperatures (gas/environment)	0° C to 45° C (32° F to 113° F)
Accuracy	±0,3% of the required Oxygen value
Gas connections	G 3/8" with cone seat, hose nipple 8 mm
Measuring principle	chemical sensor for 0_2; measuring range 0-100%; lifetime approx. 4 years (in air) repeatability: ± 0,2%
Gas connections analysis	hose connection for ID 4 mm
Inlet pressure analysis	max. 0,3 bar (gauge)
Alarm contacts	one min./max. limit value (Oxygen), 2 potential free change over contacts
Interfaces	RS 232 with ASCII-output of date, time and measured value

Housing	stainless steel 1.4301, splash proof
Weight	approx. 14 kg
Dimensions (HxWxD)	approx. 310 x 480 x 500 mm (12.09 x 18.72 x 19.5 inch) (without connections)
Voltage	230V AC, 110V AC, 24V DC (please specify)
Power consumption	230V AC / 0,15A
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 CE-marked according to: - EMC 89/336/EWG - Low Voltage Directive 73/23/EWG

Flow capacity in Nl/min (air)
Outlet pressure in bar (gauge)

min. Inlet pressures in bar (gauge)	1	2	3	4	5	6	7
4	69	-	-	-	-	-	-
5	128	80	-	-	-	-	-
6	193	143	87	-	-	-	-
7	256	216	157	95	-	-	-
8	326	280	230	171	106	-	-
9	388	356	319	252	193	144	
10	451	424	387	338	279	220	117

J4 subject to change

GAS MIXER

KM 20/30/60/100-2ME /-3ME

KM 100-2ME GB

KM 20/30/60/100-2ME / -3ME EEx

KM 100-3ME EEx

Gas mixing systems for 2 or 3 defined gases, designed for a variety of industrial applications, particularly for all areas with sharply fluctuating mixed gas extraction quantities.

Capacity range from 0 to approx. 500 l/min.
For the exact pressure and flow capacity ratios, please see the technical data overleaf.

Note:

System only works with sufficient buffer volume (20 to 100 litres depending on gas mixing capacity).

Easy operation

- a proportional mixing valve (-2ME) or three single mixing valves (-3ME), each with a control knob and %-scale, provide infinitely variable mixture settings.
- gas mixture withdrawal possible from zero to the maximum flow capacity

High process reliability

- independent of pressure fluctuations in the gas supply
- intermittent gas mixture withdrawal possible
- lockable transparent door for protection of settings
- splash-proof and robust stainless steel housing

Options

- for flammable gases available as EEx-version with separate control cabinet
- monitoring of the gas supply by means of pressure switches; too low an inlet pressure triggers an optical alarm (audible optional) and switches a potential free contact (e.g. to shut down machinery to avoid quality problems)
- integrated gas analysis for the monitoring/control and documentation of the gas mixture production
- gas mixer mounted on gas mixture buffer tank for a more convenient installation

Other models, options and accessories available on request.

Please identify the individual gases at the time of enquiring!

Product Information

A5 subject to change

GAS MIXER

Type	KM 20/30/60/100-2ME /-3ME; KM 20/30/60/100-2ME/-3ME EEx
Gases	all technical gases (excluding toxic or corrosive gases)
Mixing range	0-25% (KM 60/100-ME only) or 0-100%
Pressure settings	see tables
Inlet pressure differential between the gases	max. 3 bar
Mixture output (air)	see tables
Setting accuracy	±1% abs. (scale 0-25%), ±2% abs. (scale 0-100%)
Mixing precision	better than ±1% abs.
Gas connections MG 50	
inlets	G 3/8" RH with cone, soldering nipple for pipe OD 10 mm
outlet at mixer	G 3/8" RH with cone, soldering nipple for pipe OD 10 mm
outlet at receiver	WITT-Pipe Couplers for pipe OD 12 mm
for fuel gas connection and outlet at mixer	G 3/8" LH with cone, soldering nipple for pipe OD 10 mm
Housing	stainless steel, splash proof (not EEx-version)
Weight	approx. 18 kg (-2ME), approx. 26 kg (-3ME) without receiver
Dimensions (HxWxD)	
mixer	approx. 225 x 325 x 345 mm (9 x 13 x 13.5 inch) (without connections and receiver)
separate control cabinet (EEx)	approx. 212 x 198 x 160 mm (8.3 x 7.8 x 6.3 inch) (without connections)
Voltage	230 V AC, 110 V AC or 24 V DC
Power consumption	230 V AC, 0,07 A
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 CE-marked according to: - EMC 89/336/EWG - Low Voltage Directive 73/23/EWG - PED 97/23/EG - ATEX 95 Directive 94/9/EG

Flow **KM 20** (in Nl/min) in relation to air

min. inlet pressure in barg (max. 13 bar)	min. receiver pressure in barg (max. receiver pressure 0.5 bar higher)									
	1,5	2,5	3,5	4,5	5,5	6,5	7,5	8,5	9,5	10,5
4	21	-	-	-	-	-	-	-	-	-
5	27	25	-	-	-	-	-	-	-	-
6	33	32	28	-	-	-	-	-	-	-
7	38	38	37	31	-	-	-	-	-	-
8	44	44	44	41	34	-	-	-	-	-
9	50	50	50	48	44	37	-	-	-	-
10	55	55	55	55	53	48	39	-	-	-
11	61	61	61	61	60	56	51	41	-	-
12	66	66	66	66	66	64	60	54	44	-
13	72	72	72	72	72	71	68	64	56	46

Flow **KM 30** (in Nl/min) in relation to air

min. inlet pressure in barg (max. 13 bar)	min. receiver pressure in barg (max. receiver pressure 0.5 bar higher)									
	1,5	2,5	3,5	4,5	5,5	6,5	7,5	8,5	9,5	10,5
4	40	-	-	-	-	-	-	-	-	-
5	52	47	-	-	-	-	-	-	-	-
6	62	61	54	-	-	-	-	-	-	-
7	73	73	70	60	-	-	-	-	-	-
8	83	83	83	77	65	-	-	-	-	-
9	94	94	94	91	84	70	-	-	-	-
10	104	104	104	104	99	90	74	-	-	-
11	115	115	115	115	113	107	96	78	-	-
12	125	125	125	125	125	121	114	101	83	-
13	136	136	136	136	136	134	129	120	107	86

Flow **KM 60** (in Nl/min) in relation to air

min. inlet pressure in barg (max. 13 bar)	min. receiver pressure in barg (max. receiver pressure 0.5 bar higher)									
	1,5	2,5	3,5	4,5	5,5	6,5	7,5	8,5	9,5	10,5
4	86	-	-	-	-	-	-	-	-	-
5	111	102	-	-	-	-	-	-	-	-
6	133	131	115	-	-	-	-	-	-	-
7	155	155	149	127	-	-	-	-	-	-
8	178	178	176	165	138	-	-	-	-	-
9	200	200	200	195	179	149	-	-	-	-
10	222	222	222	221	212	192	158	-	-	-
11	244	244	244	244	240	227	205	167	-	-
12	266	266	266	266	266	258	242	216	176	-
13	289	289	289	289	289	285	275	256	227	184

Flow **KM 100** (in Nl/min) in relation to air

min. inlet pressure in barg (max. 13 bar)	min. receiver pressure in barg (max. receiver pressure 0.5 bar higher)									
	1,5	2,5	3,5	4,5	5,5	6,5	7,5	8,5	9,5	10,5
4	162	-	-	-	-	-	-	-	-	-
5	209	191	-	-	-	-	-	-	-	-
6	251	247	217	-	-	-	-	-	-	-
7	293	293	280	240	-	-	-	-	-	-
8	335	335	332	310	261	-	-	-	-	-
9	376	376	376	367	337	280	-	-	-	-
10	418	418	418	416	399	362	298	-	-	-
11	460	460	460	460	452	428	385	315	-	-
12	502	502	502	502	500	486	456	407	332	-
13	544	544	544	544	544	537	517	482	428	347

Technical Data

A5 subject to change

GAS MIXERS

KM 20/30/60/100-2

KM 20-2

KM 20/30/60/100-3

KM 20-3

Gas mixing systems for 2 or 3 defined gases, designed for a variety of industrial applications for example, welding applications.

Capacity range up to approx. 350 Nl/min.
For the exact pressure and flow capacity ratios, please see the technical data overleaf.

Easy operation

- a proportional mixing valve (-2) or three single mixing valves (-3), each with a control knob and %-scale, provide infinitely variable mixture settings
- infinitely variable flow setting with scaled control knob

High process reliability

- independent of pressure fluctuations in the gas supply
- independent of withdrawal fluctuations (in permitted range)

Options

- robust stainless steel housing

Other models, options and accessories available on request.

Please identify the individual gases at the time of enquiring!

Product Information

C5 subject to change

GAS MIXERS

Type	KM 20/30/60/100-2; KM 20/30/60/100-3
Gases	all technical gases (excluding toxic or corrosive gases)
Mixing range	0-100% or 0-25% (KM 60/100 only)
Pressure settings	see tables
Inlet pressure differential between the gases	max. 3 bar
Mixture output (air)	see tables min. mixture output = 1/5 of the max. mixture output
Setting accuracy	±1% abs. (scale 0-25%), ±2% abs. (scale 0-100%)
Mixing precision	better than ±1% abs.
Gas connections KM 20/30/60	G 1/4 RH with cone, hose nipple 6 mm
Gas connections KM 100	G 3/8 RH with cone, hose nipple 8 mm
For fuel gases: **fuel gas connection and outlet at mixer**	G 3/8 LH with cone, soldering nipple for pipe OD 10 mm
Housing	steel, powder coated
Weight	approx. 12 kg (-2), approx. 21 kg (-3)
Dimensions (HxWxD)	approx. 250 x 150 x 340 mm (9.8 x 5.9 x 13.4 inch) (-2 without connections) approx. 250 x 350 x 340 mm (9.8 x 13.8 x 13.4 inch) (-3 without connections)
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 - ATEX 95 Directive 94/9/EG

Flow **KM 20** (in Nl/min) in relation to air

outlet pressure in barg

min. inlet pressure in barg (max. 13 bar)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
2	6	-	-	-								
3	-	10	-	-								
4	-	-	13	-								
5	-	-	-	17	-	-	-	-	-	-	-	-
6	-	-	-	-	20	-	-	-	-	-	-	-
7	-	-	-	-	-	24	-	-	-	-	-	-
8	-	-	-	-	-	-	27	-	-	-	-	-
9	-	-	-	-	-	-	-	30	-	-	-	-
10	-	-	-	-	-	-	-	-	34	-	-	-
11	-	-	-	-	-	-	-	-	-	37	-	-
12	-	-	-	-	-	-	-	-	-	-	40	-
13	-	-	-	-	-	-	-	-	-	-	-	44

Note: Reduced mixture output in case of higher outlet pressures.

Flow **KM 30** (in Nl/min) in relation to air

outlet pressure in barg

min. inlet pressure in barg (max. 13 bar)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
2	13	-	-	-								
3	-	21	-	-								
4	-	-	29	-								
5	-	-	-	36	-	-	-	-	-	-	-	-
6	-	-	-	-	44	-	-	-	-	-	-	-
7	-	-	-	-	-	51	-	-	-	-	-	-
8	-	-	-	-	-	-	59	-	-	-	-	-
9	-	-	-	-	-	-	-	66	-	-	-	-
10	-	-	-	-	-	-	-	-	73	-	-	-
11	-	-	-	-	-	-	-	-	-	81	-	-
12	-	-	-	-	-	-	-	-	-	-	88	-
13	-	-	-	-	-	-	-	-	-	-	-	95

Note: Reduced mixture output in case of higher outlet pressures.

Flow **KM 60** (in Nl/min) in relation to air

outlet pressure in barg

min. inlet pressure in barg (max. 13 bar)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
2	24	-	-	-								
3	-	39	-	-								
4	-	-	53	-								
5	-	-	-	68	-	-	-	-	-	-	-	-
6	-	-	-	-	82	-	-	-	-	-	-	-
7	-	-	-	-	-	96	-	-	-	-	-	-
8	-	-	-	-	-	-	109	-	-	-	-	-
9	-	-	-	-	-	-	-	123	-	-	-	-
10	-	-	-	-	-	-	-	-	137	-	-	-
11	-	-	-	-	-	-	-	-	-	151	-	-
12	-	-	-	-	-	-	-	-	-	-	165	-
13	-	-	-	-	-	-	-	-	-	-	-	179

Note: Reduced mixture output in case of higher outlet pressures.

Flow **KM 100** (in Nl/min) in relation to air

outlet pressure in barg

min. inlet pressure in barg (max. 13 bar)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
2	47	-	-	-								
3	-	77	-	-								
4	-	-	105	-								
5	-	-	-	133	-	-	-	-	-	-	-	-
6	-	-	-	-	160	-	-	-	-	-	-	-
7	-	-	-	-	-	188	-	-	-	-	-	-
8	-	-	-	-	-	-	215	-	-	-	-	-
9	-	-	-	-	-	-	-	242	-	-	-	-
10	-	-	-	-	-	-	-	-	269	-	-	-
11	-	-	-	-	-	-	-	-	-	296	-	-
12	-	-	-	-	-	-	-	-	-	-	323	-
13	-	-	-	-	-	-	-	-	-	-	-	350

Note: Reduced mixture output in case of higher outlet pressures.

Technical Data

Product Information

KM 20-2 ECO

Specifically designed mixer for beverage dispense applications. It provides 2 pre-set gas blends of carbon dioxide (CO_2) and nitrogen (N_2) used for pressurisation of beverage dispense systems, such as beer kegs.

Benefits

- prevents over-carbonation (saving time, product and money)
- optimum adjustment of blend settings to the specific beverage
- avoids need for multiple pre-mix stocks (saving costs)
- easy handling, blends are factory set and tamper proof
- pneumatic operating principle, no electrical connections required
- fail safe design (unit shuts down on failure of either gas supply)
- robust, compact design
- fully interchangeable with other systems available on the market

Technical Data

Type	KM 20-2 ECO
Gases	Carbon Dioxide (CO_2), Nitrogen (N_2), not for flammable gases
Mixing range	10 – 85 Vol% CO_2, 2 blend settings, pre-set at factory
Gas inlet pressures	min. 5,5 bar (80 psi) – max. 10,0 bar (145 psi) (the N_2-pressure must not drop more than 0,5 bar (7.25 psi) below the CO_2-pressure)
Gas outlet pressure	min. 3,5 bar (51 psi) – max. 8,0 bar (116 psi) (depending on gas inlet pressures)
Mixture output (air)	0,4 – 40 l/min (0.014 – 1.41 scfm), infinetely variable, no mixed gas receiver required (the maximum gas mixture flow rate will be equal or above 40 l/min (1.41 sfcm) at 3,5 bar (51 psi) gas outlet pressure)
Temperatures (gas/environment)	-10° C to +50° C (-23° F to +122° F)
Gas connections	push-fit fittings for flexible tube OD 8 mm (5/16"); OD 6,35 mm (1/4") optional
Material	housing: aluminium anodised parts: aluminium anodised, brass, stainless steel, elastomers
Weigth	ca. 1,6 kg (3.5 lb)
Dimensions (WxHxD)	87,5 x 60 x 110 mm (3.5 x 2.4 x 4.3 inch) (without connections)
Approvals	Company certified to ISO 9001:2000 and ISO 14001 Type certificate SK 385-001

GAS MIXERS

Product Information

KM 100/200-2 ECO

The WITT KM ECO-line of gas mixers has been specifically designed for standard industrial applications. It provides a single pre-set blend of two gases. With the new mixing technology patented by WITT no receiver is required.

Benefits

- high mixing accuracy without costly receiver
- easy operation; no special training required
- the blend is factory set and temper proof
- inlet gas filters protect the device against impurities
- non-return valves protect against reverse gas flow into the gas supply
- mixed gas production from zero to the max. flow
- incorporates an automatic pressure equalising system to compensate fluctuating inlet pressures
- robust, compact design for industrial applications
- maintenance free

Please indicate individual gases and required mixture setting when enquiring!

Technical Data

Type	KM 100/200-2 ECO
Gases	all technical gases (not flammable, toxic or corrosive gases)
Mixing range	5 - 95% according to the pre-set gas blend
Gas inlet pressures	max. 10 bar gauge; min. 8 bar gauge
Gas outlet pressure	related to extraction?
Temperature difference between the gases	max. 15° C (max. 59° F)
Inlet pressure difference between the gases	max. 3 bar
Mixture output (Air)	KM 100-2 ECO 1 to 100 Nl/min. KM 200-2 ECO 2 to 200 Nl/min.
Temperatures (gas/environment)	-10° C to + 45° C (+14° F to +113° F)
Mixing precision	better than ±2% abs.
Gas connections	
Inlets	G 1/2", with soldering nipple for pipe OD 12 mm
Outlet	G 1/2", with soldering nipple for pipe OD 12 mm
Housing	steel, powder coated
Weigth	approx. 11 kg
Dimensions (HxWxD)	approx. 315 x 296 x 163 mm (122.9 x 115.4 x 63.6 inch) (without connections)
Approvals	Company certified according to ISO 9001:2000 and ISO 14001

KM 100-2MEM+/-3MEM+

Electronic gas mixing system with motor driven mixing valve for various technical applications. A further innovation founded on the basis of the well proven WITT-mixing valve technology.

Benefits:

- control by PC, PDA, PLC of machine, etc.
  - remote control
  - easy documentation of parameter settings to meet quality management requirements
  - only one control unit for an infinite number of mixing systems
  - fixed gas mixtures according to product type possible
  - monitoring of parameters and valve positions possible at any time

Note: Features depends on the type of the control system used.

- operation with PDA (cp. picture) additionally
  - product selection on touch screen for easy operation without any special training
  - password protected administration of product data
  - PDA with MS Windows also available for other applications
- mixture settings in steps of 0,1%
- high mixing accuracy
- no controls on the unit, therefore
  - free positioning on/in the machine
  - protection against unintended change of mixture settings or other parameters
- gas mixers can be linked to PC or PLC (e.g. CAN-Bus)
- independent of pressure fluctuations in the gas supply
- independent of packaging speeds and sizes of packages (packaging industry)
- integrated monitoring of gas supply for higher process safety. Low pressures trigger an alarm and a potentialfree contact (e.g. to shut down machinery and avoid quality problems)
- perfect hygiene due to splash-proof housing with smooth, easy to clean surfaces of brushed stainless steel

Product Information

J4 subject to change

GAS MIXERS

Product Information

KM 100-2MEM+/-3MEM+

Options:

- continual monitoring and documentation of gas mixtures by optional gas analyser
- pre-assembly of mixer on receiver for easier on-site installation
- operation with Pocket-PC: lockable window for protection of the Pocket-PC
- hooter
- visual alarm (flash light)

Attention: These mixers require a receiver with sufficient volume (according to output from 10 to 100 Litre)

The individual gases must be identified at the time of enquiring!

Technical Data

Type	KM 100-2MEM+ /-3MEM+
Gases	all technical gases (except flammable, toxic or aggressive)
Mixing range	0 – 100%
Gas inlet pressures	max. 13 bar
Gas outlet pressure	max. 10 bar
Inlet pressure difference between the gases	max. 3 bar
Mixture output (air)	see table
Setting accuracy	±0,1% abs.
Mixture accuracy	better ±2% abs.
Gas connections	
Inlets	G 3/8" with cone seat, 8 mm hose nipple
Outlet	G 3/8" with cone seat, 8 mm hose nipple
Interfaces	RS 232 C (optional CAN)
Housing	stainless steel, brushed
Weigth	approx. 22 kg
Dimensions (HxBxT)	approx. 8,7 x 12,6 x 12,6 inch (220 x 320 x 400 mm)
Voltage	24V DC (optional 230V AC, 110V AC)
Power consumption	max. 600 mA
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 CE-marked according to: - EMC 89/336/EWG - Low Voltage Directive 73/23/EWG - PED 97/23/EG (receiver-mixer combinations)

Flow capacity in Nl/min (air)
min. receiver pressaure in barg (max. receiver pressure 0,5 bar higher)

min. inlet pressures in barg (max. 13 bar)	1,5	2,5	3,5	4,5	5,5	6,5	7,5	8,5	9,5	10,5
4	162	-	-	-	-	-	-	-	-	-
5	209	191	-	-	-	-	-	-	-	-
6	251	247	217	-	-	-	-	-	-	-
7	293	293	280	240	-	-	-	-	-	-
8	335	335	332	310	261	-	-	-	-	-
9	376	376	376	367	337	280	-	-	-	-
10	418	418	418	416	399	362	298	-	-	-
11	460	460	460	460	452	428	385	315	-	-
12	502	502	502	502	500	486	456	407	332	-
13	544	544	544	544	544	537	517	482	428	347

GAS MIXERS

KM 100/200-2M

KM 100-2M

KM 100/200-3M

KM 100-3M

Gas mixing systems for 2 or 3 defined gases especially for flow packing machines or other continuous packaging processes in the food industry.

Capacity range up to approx. 323 Nl/min.
For the exact pressure and flow capacity ratios, please see the technical data overleaf.

Easy operation

- a proportional mixing valve (-2) or three single mixing valves (-3), each with a control knob and %-scale, provide infinitely variable mixture settings
- the flow of the gas mixture is controlled by a metering valve combined with a flow meter

Constant quality

- independent of pressure fluctuations in the gas supply
- independent of packing speed (in permitted range)

High process reliability

- monitoring of the gas supply by means of pressure switches; too low an inlet pressure triggers an optical alarm (audible optional) and switches a potential free contact (e.g. to shut down machinery to avoid quality problems)
- lockable transparent door for protection of settings

Maximum hygiene

- splash-proof and robust stainless steel housing
- smooth and easy to clean surface

Other models, options and accessories available on request.

Please identify the individual gases at the time of enquiring!

Product Information

D5 subject to change

GAS MIXERS

Technical Data

Type	KM 100/200-2M; KM 100/200-3M
Gases	N_2, CO_2, O_2 not for flammable gases!
Mixing range	0-100%
Pressure settings	see tables
Inlet pressure differential between the gases	max. 3 bar
Mixture output (air)	see tables min. mixture output = 1/5 of the max. mixture output
Setting accuracy	±2% abs. (scale 0-100%)
Mixing precision	better than ±1% abs.
Gas connections	
inlets	G 3/8 RH with cone, hose nipple 8 mm
outlet	G 3/8 RH with cone, hose nipple 8 mm
Housing	stainless steel, splash proof
Weight	approx. 17 kg (-2), approx. 25 kg (-3)
Dimensions (HxWxD)	approx. 222 x 325 x 345 mm (8.7 x 12.8 x 13.6 inch) (without connections)
Voltage	230 V AC, 110 V AC or 24 V DC
Power consumption	230 V AC, 0.02 A 110 V AC, 0.04 A 24 V DC, 0.06 A
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 CE-marked according to: - EMC 89/336/EWG - Low Voltage Directive 73/23/EWG

Flow **KM 100** (in Nl/min) in relation to air

min. inlet pressure in barg (max. 20 bar)	outlet pressure in barg 0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
2	60	-	Note: Reduced mixture output in case of higher outlet pressures					
3	-	80						
4	-	-	100	-	-	-	-	-
5	-	-	-	110	-	-	-	-
6	-	-	-	-	120	-	-	-
7	-	-	-	-	-	130	-	-
8	-	-	-	-	-	-	140	-
9	-	-	-	-	-	-	-	150

Flow **KM 200** (in Nl/min) in relation to air

min. inlet pressure in barg (max. 20 bar)	outlet pressure in barg 0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
2	116	-	Note: Reduced mixture output in case of higher outlet pressures					
3	-	139						
4	-	-	168	-	-	-	-	-
5	-	-	-	197	-	-	-	-
6	-	-	-	-	216	-	-	-
7	-	-	-	-	-	249	-	-
8	-	-	-	-	-	-	288	-
9	-	-	-	-	-	-	-	323

GAS MIXERS

KM 300/600-2M

KM 300-2M

KM 300/600-3M

KM 300-3M

Gas mixing systems for 2 or 3 defined gases especially for flow packing machines or other continuous packaging processes in the food industry.

Capacity range up to approx. 717 Nl/min.
For the exact pressure and flow capacity ratios, please see the technical data overleaf.

Easy operation

- a proportional mixing valve (-2) or three single mixing valves (-3), each with a control knob and %-scale, provide infinitely variable mixture settings
- the flow of the gas mixture is controlled by a metering valve combined with a flow meter

Constant quality

- independent of pressure fluctuations in the gas supply
- independent of packing speed (in permitted range)

High process reliability

- monitoring of the gas supply by means of pressure switches; too low an inlet pressure triggers an optical alarm (audible optional) and switches a potential free contact (e.g. to shut down machinery to avoid quality problems)
- lockable transparent door for protection of settings

Maximum hygiene

- splash-proof and robust stainless steel housing
- smooth and easy to clean surface

Other models, options and accessories available on request.

Please identify the individual gases at the time of enquiring!

Product Information

D5 subject to change

GAS MIXERS

KM 300/600-2M

KM 300-2M

KM 300/600-3M

KM 300-3M

Gas mixing systems for 2 or 3 defined gases especially for flow packing machines or other continuous packaging processes in the food industry.

Capacity range up to approx. 717 Nl/min.
For the exact pressure and flow capacity ratios, please see the technical data overleaf.

Easy operation

- a proportional mixing valve (-2) or three single mixing valves (-3), each with a control knob and %-scale, provide infinitely variable mixture settings
- the flow of the gas mixture is controlled by a metering valve combined with a flow meter

Constant quality

- independent of pressure fluctuations in the gas supply
- independent of packing speed (in permitted range)

High process reliability

- monitoring of the gas supply by means of pressure switches; too low an inlet pressure triggers an optical alarm (audible optional) and switches a potential free contact (e.g. to shut down machinery to avoid quality problems)
- lockable transparent door for protection of settings

Maximum hygiene

- splash-proof and robust stainless steel housing
- smooth and easy to clean surface

Other models, options and accessories available on request.

Please identify the individual gases at the time of enquiring!

Product Information

D5 subject to change

WITT-GASETECHNIK GMBH & CO KG

GASMIXER KM 100/200-2MEM / 3MEM

www.wittgas.com

Product Information

KM 100/200-2MEM

KM 100/200-3MEM

Mixer for 2 or 3 defined gases especially for vacuum packing machines in the food industry and for applications where the mixed gas flow fluctuates widely.

Easy Usage

- A proportional mixing valve with percentage scale provides an infinitely variable mixture setting.
- These mixers require a receiver with sufficient volume (min. 10 litres volume), which ensures a constant, accurate mixture when large or very small volumes are needed.

Constant Quality

- independent pressure fluctuations
- independent packing speed
- independent size of packaging

High Process Safety

- The gas supply is monitored by pressure switches.
- A low pressure triggers an optical alarm (horn optional) and a potential-free contact (e.g. to shut down machinery and avoid quality problems)
- lockable inspection transarent door for protection of settings

Maximum Hygiene

- splash-proof, robust stainless steel housing
- smooth and easy to clean surface for perfect hygiene

The individual gases must be identified at the time of enquiring!

Technical data

Type	KM 100/200 -2MEM /3MEM
Gases	N_2, CO_2, O_2 not for flammable gases!
Mixing Range	0 – 100%
Gas inlet pressure	max. 290 psi (13 bar)
Gas outlet pressure	see table
Mixture output (air)	see table
Setting accuracy	±2% (scale 0-100%) abs.
Mixture accuracy	better than ±1% abs.
Gas connections	G 3/8"with cone seat, 8 mm hose nipple
Casing	stainless steel 1.4301
Weight	ca. 18 kg (2MEM), 26 kg (3MEM)

Dimensions (h x w x d)	ca. 221 x 350 x 350 mm (without connections)
Voltage	230 V AC, 110 V AC, 24 V DC
Power consumption	230 V AC / 0,08 A or 24 V DC / 0,5 A
Approvals	- manufactured to ISO 9001 - CE marked for EMC in conformity with DIN EN 50081 Part 1/03.93 / DIN EN 50082 Part 2/02.96 and - Low Voltage Directive PN EN 60439/1/04.94

Flow in Nl/min according to air

min. receiver pressure in bar g (max. receiver pressure 0,5 bar higher)

min. Inlet Pressure in bar (gauge) (max. 13 bar)	1,5	2,5	3,5	4,5	5,5	6,5	7,5
4	135	-	-	-	-	-	-
5	165	150	-	-	-	-	-
6	215	200	170	-	-	-	-
7	250	245	230	195	-	-	-
8	300	290	280	260	220	-	-
9	330	330	310	295	280	230	-

J3 subject to change

LEAK-MASTER INLINE

Automatic in-line micro-leak detection system for packages based on CO_2.
LEAK-MASTER INLINE features non-destructive detection of the smallest leaks without the need of costly helium - directly from the packaging line.

CO_2 is the most important gas in the packaging of food under modified atmospheres.
The LEAK-MASTER INLINE uses this CO_2 as trace gas. That way it is possible to test the packages for leaks directly after the packing process.

The LEAK-MASTER INLINE places the packages or complete shipping cases precisely in the test chamber. If the test sample is leaking, the pressure difference will result in a gas flow from the package into the chamber and the CO_2-concentration within the chamber rises. The highly sensitive sensor will notice the changes of the CO_2-concentration and even smallest leaks are easily detected.

After each test cycle (up to 15 cycles per minute) the chamber is ventilated and the test sample is moved on to the following system. If a leak has been detected, several potential free contacts for communication with external systems are available (e.g. alarms and/or pusher).

Benefits

- short response time
- high operating speed (max. 15 cycles/min.)
- for single packages or complete shipping cases
- various chamber sizes
- for flexible and rigid packs
- no calibration required
- easy-to-use intuitive system – no special skills required
- operator friendly - data and process parameter entry by means of integrated PLC with touch screen or via remote personal computer
- convenient data administration and evaluation for customer oriented quality documentation
- remote transmission of results via Ethernet
- easy to clean stainless steel housing

Other models, options and accessories available on request.

Product Information

LEAK DETECTION SYSTEMS

Technical Data

Type	LEAK-MASTER INLINE
Measuring System	ceramic sensor for CO_2
Measuring range	0 ppm – 5.000 ppm
Resolution	1 ppm
Warm-up time	approx. 10 min.
Calibration	not required
Response time	approx. 1 sec.
Leak testing cycle	max. 15 measures/min. depends on leak size, CO_2-percentage in package and size of chamber
Operating pressure	min. 800 mbar abs., max. 50 mbar abs.
Positioning	max. angle of inclination 15°
Temperature range	5 – 40 °C (41 – 104 °F)
Humidity of ambient air	max. 90% at 20 °C (68 °F) / max. 50% at 40 °C (104 °F)
Alarms	potential free contact; max. 250 V AC or 24 V DC / 2 A
Communication	- data communication via Ethernet - digital output for take-over cycle - start and stop of LEAK-MASTER INLINE with digital input - digital output for pusher unit of customer
Compressed air connection	
pneumatic cylinder	6 – 7 barg
purging line	min. 9 barg, max. 15 barg
Housing	stainless steel
Weight	approx. 700 kg
Dimensions (HxWxD)	
chamber inside 1.1	approx. 140 x 308 x 384 mm (5.5 x 12 x 15 inch)
1.2	approx. 400 x 308 x 384 mm (15.7 x 12 x 15 inch)
2.1	approx. 230 x 630 x 430 mm (9 x 24.8 x 17 inch)
2.2	approx. 430 x 630 x 430 mm (17 x 24.8 x 17 inch)
Power consumption	380 – 415 V 3 Ph 50 Hz
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 CE-marked according to: - EMC 89/336/EWG - Low Voltage Directive 73/23/EWG - Machines Directive 98/37/EG

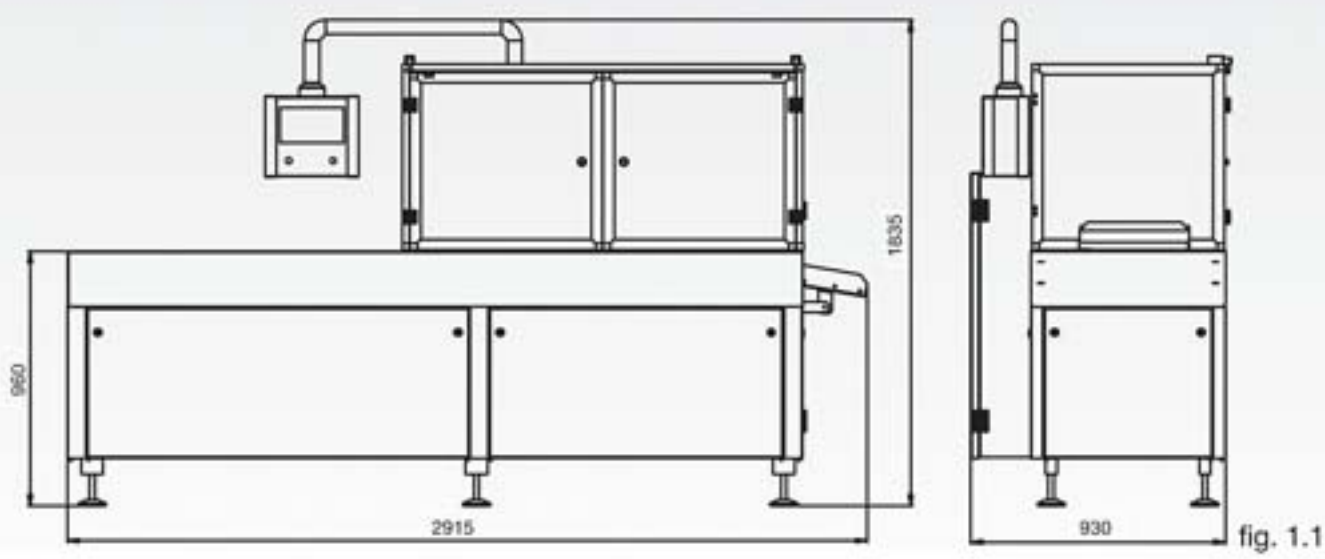


fig. 1.1

F5 subject to change

WITT-GASETECHNIK GMBH & CO KG

LEAK DETECTION SYSTEM

www.wittgas.com

LEAK-MASTER

Micro-leak detection system for packages based on CO_2. LEAK-MASTER features non-destructive detection of the smallest leaks without the need for costly Helium.

Product Information

Benefits

- minimal response time
- quick product change
- for flexible and rigid packs
- no calibration required
- operator friendly – data and process parameter entry by means of integrated keyboard or remote personal computer (e.g. MS-Excel®)
- easy-to-use intuitive system – no special skills required
- convenient data administration and evaluation for customer oriented quality documentation
- various chamber sizes (see back side)
- easy installation and start-up
- easy to clean splash-proof stainless steel cabinet / housing
- remote transmission of results via Ethernet
- potential free alarm contact for connection of external audible/visual device

Options

- Barcode Reader for simple and quick user/product selection. Available with or without IP-protection. Without IP-protection also available as retrofit version.
- wireless data transmission via WLAN (WIFI)
- stainless steel mobile workstations for various models available

NEW

Technical Data

Type	LEAK-MASTER
Measuring System	ceramic sensor for CO_2
Measuring range	0 ppm - 5000 ppm
Resolution	1 ppm
Warm-up time	approx. 10 min.
Calibration	not required
Response time of the sensor	approx. 1 sec.
Leak testing cycle	depends on leak size, CO_2-percentage in package, size of chamber
Vacuum	max. 50 mbar abs.
Alarms	potential free contact max. 250 V AC or 24 V DC/2 A
Interfaces	Ethernet (WLAN optional)
Cabinet / Housing	stainless steel, IP 54 (splash-proof)
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 CE marked according to: - EMC 89/336/EWG - Low Voltage Directive 73/23/EWG - Machines Directive 98/37/EG

K5 subject to change

LEAK DETECTION SYSTEM

Various chamber sizes – from the table model for sample analysing to the mobile bulk compact model for the 100%-analysis of complete packages (e.g. E2-boxes)

Technical Data

Model		Chamber-size approx. in mm (inch) (H x W x D)	Cabinet / housing-size approx. in mm (inch) (H x W x D)	Weigth approx. kg	Power con-sumption kWh	Pump suction capacity m^3/h	Voltage
	LM 4.2.1 LM 4.2.2	85 x 160 x 365 (3.3 x 6.3 x 14.4) 85 x 280 x 245 (3.3 x 11.0 x 9.6)	370 x 330 x 625 (14.6 x 13.0 x 24.6)	50	0,55	6	230 V AC or 110 V AC
	LM 4.4.1 LM 4.4.2	90 x 345 x 280 (3.5 x 13.6 x 11.0) 90 x 465 x 160 (3.5 x 18.3 x 6.3)	395 x 535 x 570 (15.6 x 21.1 x 22.4)	65	0,55	10	230 V AC or 110 V AC
	LM 4.4.1-S	specially for bottles up to 1,5 l	395 x 535 x 570 (15.6 x 21.1 x 22.4)	65	0,55	10	230 V AC or 110 V AC
	LM 5.2.1 LM 5.2.2	100 x 340 x 425 (3.9 x 13.4 x 16.7) 100 x 460 x 305 (3.9 x 18.1 x 12.0)	470 x 530 x 700 (18.5 x 20.9 x 27.6)	85	1,10	21	230 V AC or 110 V AC
	LM 6.0.1 LM 6.0.2	110 x 780 x 350 (4.3 x 30.7 x 13.8) 110 x 890 x 270 (4.3 x 35.0 x 10.6)	540 x 975 x 720 (21.3 x 38.4 x 28.3)	145	1,10	21	230 V AC or 110 V AC
	LM 12.1.1 LM 12.1.2	255 x 595 x 500 (10.0 x 23.4 x 19.7) 255 x 680 x 415 (10.0 x 26.8 x 16.3)	1025 x 760 x 855 (40.4 x 29.9 x 33.7)	225	2,20	100	400 V AC
	LM 12.2.1 LM 12.2.2	165 x 595 x 500 (6.5 x 23.4 x 19.7) 165 x 680 x 415 (6.5 x 26.8 x 16.3)	1025 x 760 x 855 (40.4 x 29.9 x 33.7)	225	1,50	63	400 V AC
	LM 15	225 x 775 x 665 (8.9 x 30.5 x 26.2)	1200 x 960 x 1080 (47.2 x 37.8 x 42.5)	285	2,20	100	400 V AC

K5 subject to change

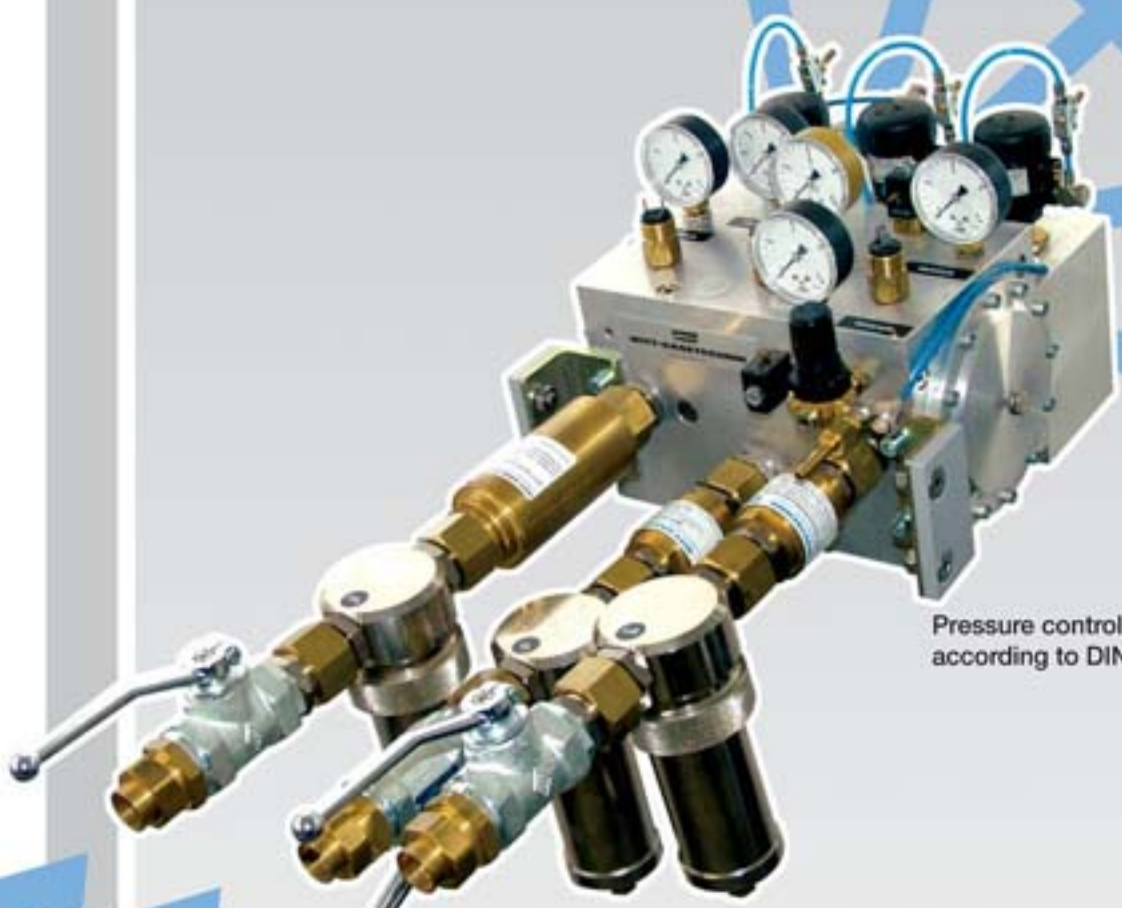
OVERVIEW

MDV-systems for pre-mix burners 3 gases

MDV-systems for pre-mix burners 2 gases

MDV-systems for surface-mix burners

Electronic MFC-gas mixers



Pressure control unit according to DIN EN746-2

Control units for electronic gas mixers

The WITT gas management for thermal process technology offers all in one hand: safety, measurement and controlling from the central gas supply system to the burner. Our strength are individually combined systems for your special application. Including:

Pressure control unit

Ball valves –
manual shut-off of the gas supplies

Gas filters –
protection of downstream components from pollution

Flashback arrestors –
against dangerous reverse gas flows and flashbacks

Pressure switches –
monitoring the gas supplies

Fluid loaded pressure regulators –
compensating pressure fluctuations in the main gas supply systems

Solenoid valves – remote shut-off of the gas supplies

Purging system – cooling burners and protecting gas supply lines

Gas mixing and metering systems

Electronic or manually adjustable gas mixtures and gas flows for short start up times and higher productivity.

Flexible modular system for different processes.

For detailed technical information please refer to the technical data sheets of the individual components.

WITT is certified according to ISO 9001:2000 and ISO 14001
CE-marked according to (where applicable):
- EMC 89/336/EWG
- Low Voltage Directive 73/23/EWG
- PED 97/23/EG
- ATEX 95 Directive 94/9/EG

Product Information

MDE-MFC

For the complete supply to the burner or other users with gas mixtures of 2 or more gases. For glass manufacturing, thermal and other processes where gas mixing is required.

Benefits

- secure reproducibility of process parameters to reduce time during the start up phase
- high long-term stability by compensation of variable disturbances, like pressure, temperature and burner changes etc.
- integrated WITT safety technic prevents flame flashback
- remote control by PLC, PC or WITT control systems AWE, AWS
- minimum preparation times in the case of product conversion by using saved product specific flow parameters
- changeable flame attitude during running process
- quality and cost control by accurate registration of the single gas flows
- easy integration into modern controll systems by a digital RS-485 bus system
- autocalibration function for faster and more exact flow control
- fastest compensating of variable disturbances and desired value through:
  - inline measurement directly in the gas flow
  - new CMos sensor-technology

- simple connection of several MFCs with all necessary components for
- mix equipment ready for operation
- no assembly works
- substantially reduced construction costs
- smaller space requirement

Technical data

Type	MDE-MFC mixer with analogue and RS-232 Interface
Gases	neutral, non-toxic gases, others on request
Gas inlet pressure	max.3 bar g
Gas outlet pressure	min. 0.5 bar less than inlet pressure
Temperature (gas/environment)	-10° C to + 50° C (14° F to 122° F)
Flow rate	according to the gas type max. e.g. 100Nl/min Hv, 80 Nl/min O_2, N_2, Air or Methane
Control time (T 95%)	< 300 ms
Measuring range	1 : 50
Control accuracy	±1% from current value plus ±0,5% of full scale
Linearity	±1% of full scale
Reproducability	±0,5% of full scale
Material	Aluminium
Dimensions (HxWXD)	approx. 250 x 100 x 150 mm (9.84 x 3.93 x 5.9 inch) for a 2-gas-mixer
Power consumption	+24V DC ±10%, ripple < 5%
Voltage	max. 400mA
Actual value/Desired value	0-10V, 0-5V, 0-20mA, 4-20mA
Interface	potential free contact 60V, 1A SUB-D-female 15 pins.
Installation position	situation independent

Product Information

Portable multi-functional Analyser MFA for O_2, CO_2, He or O_2/CO_2

Analysing System for the monitoring of protective atmospheres in food packaging and welding. For continuous analysis (in-line) and also intermittent sampling via a needle e.g. from food packs. A flexible analyser to garantee quality and productivity of production processes. Available as a single or double analyser for carbon dioxide, oxygen, helium.

Benefits

- minimum sample gas required for analysing of smallest volumes (e.g. food packaging)
- fast measuring results of sampling
- simple to operate
- reliable steady measuring results and high accuracy through pressure compensation
- simple calibration of sensor
- permanent monitoring of set limit values
- alarm signals are given if the set limits are exceeded and a potential free contact operates to e.g. auto-stop your machine to avoid quality problems
- easy to clean stainless steel housing for maximum hygiene, splash-proof

Options

- fully automatic calibration (for single gas analysers)
- software WITT-LOGGER for recording of results
- separate table printer for instant documentation
- lockable door with window to prevent tampering
- audio-visual alarms
- plug set for external connection of signals
- model for higher inlet pressures

Equipment selection

Application		Analysis		Gases				
Food	Welding	Sampling	Continuous Analysis	O_2	CO_2	O_2/CO_2	Helium	Type of equipment
•		•	•	•	•	•		MFA III [2]
•		•		•	•	•		MFA III S
•			•	•	•	•		MFA L
•	•		•	•	•	•	•	MFA P [1] [3]

[1] without pump, with inlet pressure regulation
[2] with 2 sensors for oxygen
[3] gases to be specified

Measuring systems

	Measuring system	Measuring range	Repeatability	Service life
O_2 for sampling	chemical measuring cell	0-100 %	± 0,2 %	approx. 2 years (in air)
O_2 for continuous analysis	chemical measuring cell	0-100 %	± 0,2 %	approx. 4 years (in air)
CO_2	infrared measuring cell	0-30 % 0-100 % please indicate	± 0,5 %	unlimited
Helium	thermal conductivity	0-30 % 0-100 % please indicate	± 0,2 % ± 0,5 %	unlimited

Technical Data

Type	MFA
Gases	O_2, CO_2, He or O_2/CO_2 not for flammable, corrosive or toxic gases!
Temperature range (gas/environment)	0° C to 45° C (32° F to 113° F)
Gas connections	
Permanent measuring	hose connections for ID 4 mm
Sample measuring	needle
Inlet pressure	max. 0.3 bar (gauge)
Alarm signals	2 potential free contacts for min. and max. settings (adjustable for each gas)
Interfaces	RS 232 with ASCII-output of date, time, measured value; analog output 4-20 mA or 0-10 V
Housing	stainless steel, splash-proof
Weigth	approx. 13.5 kg
Dimensions (HxWxD) (without carrying handle)	approx. 222 x 325 x 455 mm (8.74 x 12.80 x 17.91 inch)
Voltage	230V AC 50 / 60 Hz 110V AC 50 / 60 Hz
Power consumption	230V AC / 0,12 A
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 CE-marked according to: - EMC 89/336/EWG - Low Voltage Directive 73/23/EWG

GAS MIXER

MG 50/100-2ME /-3ME

MG 50-2ME GB

MG 50/100-2ME /-3ME EEx

MG 50-3ME EEx

Gas mixing systems for 2 or 3 defined gases, designed for a variety of industrial applications with high flows and fluctuating gas mixture production requirements.

Capacity range from 0 to approx. 160 Nm^3/h.
For the exact pressure and flow capacity ratios, please see the technical data overleaf.

Note:

System only works with sufficient buffer volume (100 to 250 litres depending on gas mixing capacity).

Easy operation

- a proportional mixing valve (-2ME) or three single mixing valves (-3ME), each with a control knob and %-scale, provide infinitely variable mixture settings.
- gas mixture withdrawal possible from zero to the maximum flow capacity

High process reliability

- independent of pressure fluctuations in the gas supply
- intermittent gas mixture withdrawal possible
- lockable transparent door for protection of settings
- splash-proof and robust stainless steel housing

Options

- for flammable gases available as EEx-version with separate control cabinet
- monitoring of the gas supply by means of pressure switches; too low an inlet pressure triggers an optical alarm (audible optional) and switches a potential free contact (e.g. to shut down machinery to avoid quality problems)
- integrated gas analysis for the monitoring/control and documentation of the gas mixture production
- gas mixer mounted on gas mixture buffer tank for a more convenient installation

Other models, options and accessories available on request.

Please identify the individual gases at the time of enquiring!

Product Information

A5 subject to change

GAS MIXER

Type	MG 50/100-2ME /-3ME; MG 50/100-2ME/-3ME EEx
Gases	all technical gases (excluding toxic or corrosive gases)
Mixing range	0-25% or 0-100%
Pressure settings	see tables
Inlet pressure differential between the gases	max. 3 bar
Mixture output (air)	see tables
Setting accuracy	±1% abs. (scale 0-25%), ±2% abs. (scale 0-100%)
Mixing precision	better than ±1% abs.
Gas connections MG 50	
inlets	G 1/2" RH with cone, soldering nipple for pipe OD 15 mm
outlet at mixer	G 1/2" RH with cone, soldering nipple for pipe OD 15 mm
outlet at receiver	G 1" RH with O-ring seal, soldering nipple for pipe OD 15 mm
for fuel gas connection and outlet at mixer	G 1/2" RH with cone, soldering nipple for pipe OD 15 mm
Gas connections MG 100	
inlets	G 3/4" RH with cone, soldering nipple for pipe OD 15 mm
outlet at mixer	G 3/4" RH with cone, soldering nipple for pipe OD 15 mm
outlet at receiver	G 1" RH with O-ring seal, soldering nipple for pipe OD 22 mm
Housing	stainless steel, splash proof (not EEx-version)
Weight MG 50	approx. 35 kg (-2ME), approx. 50 kg (-3ME) without receiver
Weight MG 100	approx. 50 kg (-2ME), approx. 65 kg (-3ME) without receiver
Dimensions (HxWxD)	
mixer	approx. 330 x 485 x 500 mm (13 x 19 x 19.7 in) (without connections and receiver)
separate control cabinet (EEx)	approx. 212 x 198 x 160 mm (8.3 x 7.8 x 6.3 in) (without connections)
Voltage	230 V AC, 110 V AC or 24 V DC
Power consumption	230 V AC, 0.07 A
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 CE-marked according to: - EMC 89/336/EWG - Low Voltage Directive 73/23/EWG - PED 97/23/EG - ATEX 95 Directive 94/9/EG

Flow **MG 50** (in Nm^3/h) in relation to air

min. Inlet pressure in barg (max. 20 bar)	min. receiver pressure in barg (max. receiver pressure 0,5 bar higher)									
	1,5	2,5	3,5	4,5	5,5	6,5	7,5	8,5	9,5	10,5
4	21	-	-	-	-	-	-	-	-	-
5	27	24	-	-	-	-	-	-	-	-
6	32	32	28	-	-	-	-	-	-	-
7	37	37	36	31	-	-	-	-	-	-
8	43	43	43	40	33	-	-	-	-	-
9	48	48	48	47	43	36	-	-	-	-
10	54	54	54	53	51	46	38	-	-	-
11	59	59	59	59	58	55	49	40	-	-
12	65	65	65	65	64	62	59	52	42	-
13	70	70	70	70	70	69	67	62	55	44

Flow **MG 100** (in Nm^3/h) in relation to air

min. Inlet pressure in barg (max. 20 bar)	min. receiver pressure in barg (max. receiver pressure 0,5 bar higher)								
	1,5	2,5	3,5	4,5	5,5	6,5	7,5	8,5	9,5
4	47	-	-	-	-	-	-	-	-
5	64	58	-	-	-	-	-	-	-
6	78	75	68	-	-	-	-	-	-
7	94	93	88	76	-	-	-	-	-
8	108	107	105	98	84	-	-	-	-
9	124	122	121	118	108	90	-	-	-
10	138	138	136	134	128	116	97	-	-
11	152	152	152	149	145	136	124	102	-
12	167	167	167	167	164	158	149	133	112

Technical Data

A5 subject to change

GAS MIXERS

MG 50/100-2 ECO

MG 50-2 ECO

MG 50/100-2 ECO EEx

MG 50-2 ECO EEx

Gas mixing systems for 2 defined gases, designed for a variety of industrial applications with FIXED 2-component gas mixtures in the mixing range of 0-100%.

Capacity range from 0 to approx. 160 Nm^3/h.
For the exact pressure and flow capacity ratios, please see the technical data overleaf.

Note:
System only works with sufficient buffer volume (100 to 250 litres depending on gas mixing capacity).

Benefits

- easy operation; no special skills required
- protection of fixed mixing ratio
- filter in the gas inlets protect the mixer against dirt contamination
- non-return valves prevent dangerous reverse gas flow in the gas supply
- gas mixture withdrawal possible from zero to the maximum flow capacity
- compact design
- low maintenance

High process reliability

- independent of pressure fluctuations in the gas supply
- robust stainless steel housing

Options

- for flammable gases available as EEx-version with separate control cabinet
- monitoring of the gas supply by means of pressure switches; too low an inlet pressure triggers an optical alarm (audible optional) and switches a potential free contact (e.g. to shut down machinery to avoid quality problems)
- gas mixer mounted on gas mixture buffer tank for a more convenient installation

Other models, options and accessories available on request.

Please identify the individual gases at the time of enquiring!

Product Information

GAS MIXERS

Type	MG 50/100-2 ECO; MG 50/100-2 ECO EEx
Gases	all technical gases (excluding toxic or corrosive gases)
Mixing range	0-100%
Pressure settings	see tables
Inlet pressure differential between the gases	max. 3 bar
Mixture output (air)	see tables
Mixing precision	better than ±1% abs.
Gas connections MG 50	
inlets	G 1/2 RH with cone, soldering nipple for pipe OD 15 mm
outlet at mixer	G 1/2 RH with cone, soldering nipple for pipe OD 15 mm
outlet at receiver	WITTFIX-Pipe Couplers for pipe OD 22x1.5 mm
Gas connections MG 100	
inlets	G 1 RH with cone, soldering nipple for pipe OD 22 mm
outlet at mixer	G 1 RH with cone, soldering nipple for pipe OD 22 mm
outlet at receiver	WITTFIX-Pipe Couplers for pipe OD 22x1.5 mm
Housing	stainless steel
Weight MG 50	approx. 20 kg, without receiver
Weight MG 100	approx. 27 kg, without receiver
Dimensions (HxWxD)	
mixer MG 50	approx. 245 x 380 x 285 mm (9.6 x 15 x 11.2 inch) (without connections and receiver)
mixer MG 100	approx. 245 x 530 x 335 mm (9.6 x 20.9 x 13.2 inch) (without connections)
separate control cabinet (EEx)	approx. 212 x 198 x 160 mm (8.3 x 7.8 x 6.3 inch) (without connections)
Voltage	230 V AC, 110 V AC or 24 V DC
Power consumption	230 V AC, 0.07 A
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 CE-marked according to: - EMC 89/336/EWG - Low Voltage Directive 73/23/EWG - PED 97/23/EG - ATEX 95 Directive 94/9/EG

Flow **MG 50** (in Nm³/h) in relation to air

min. inlet pressure in barg (max. 20 bar)	min. receiver pressure in barg (max. receiver pressure 0.5 bar higher)									
	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5
4	21	-	-	-	-	-	-	-	-	-
5	27	24	-	-	-	-	-	-	-	-
6	32	32	28	-	-	-	-	-	-	-
7	37	37	36	31	-	-	-	-	-	-
8	43	43	43	40	33	-	-	-	-	-
9	48	48	48	47	43	36	-	-	-	-
10	54	54	54	53	51	46	38	-	-	-
11	59	59	59	59	58	55	49	40	-	-
12	65	65	65	65	64	62	59	52	42	-
13	70	70	70	70	70	69	67	62	55	44

Flow **MG 100** (in Nm³/h) in relation to air

min. inlet pressure in barg (max. 20 bar)	min. receiver pressure in barg (max. receiver pressure 0.5 bar higher)								
	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5
4	47	-	-	-	-	-	-	-	-
5	64	58	-	-	-	-	-	-	-
6	78	75	68	-	-	-	-	-	-
7	94	93	88	76	-	-	-	-	-
8	108	107	105	98	84	-	-	-	-
9	124	122	121	118	108	90	-	-	-
10	138	138	136	134	128	116	97	-	-
11	152	152	152	149	145	136	124	102	-
12	167	167	167	167	164	158	149	133	112

Technical Data

C5 subject to change

GAS MIXERS

MG 50-2ME GB A
MG 100-2ME GB A
MG 200-2ME GB A

Zertifikat
über die Einhaltung von Normen
unter den folgenden EG-Richtlinien

RWTÜV

Certificate
of compliance to standards under
the following European Directives

Medizinprodukte Richtlinie 93/42/EWG/93/42/EWG
Medical Devices Directive 93/42/EEC

Zeichen des Auftraggebers Reference of applicant Witt-Gasetechnik	Auftragsdatum Date of application 10.05.2001	Aktenzeichen File reference 2 1-1023/01	Prüfberichts-Nr. Test report No. 1435/01	Ausstellungsdatum Date of issue 02.05.2001	Gültigkeit bis Expiry date 02.05.2006

Dieses Zertifikat bestätigt die Einhaltung der nachfolgend genannten Normen.
This is to certify that the following products comply to the later mentioned standards

Diesem Zertifikat basiert auf der Prüfung von Musterprodukten. Es beinhaltet keine Überwachung der Fertigung und erlaubt weder der Fertigung eines Prüfzeichens des RWTÜV noch der CE-Kennzeichnung. Der Antragsteller kann dieses Zertifikat zusammen mit seiner Konformitätserklärung nutzen.

This Certificate of conformity is based on the evaluation of samples of the product. It does not imply an assessment of the production and it does neither permit the use of a safety mark of the RWTÜV nor the CE-marking. The holder of this certificate may use this Certificate together with his EC-Declaration of Conformity.

Antragsteller: ***Applicant:***	Witt-Gasetechnik GmbH Solinger Feld 4-8, 58454 Witten
Fertigungsstätte: ***Manufacturing plant:***	Witt-Gasetechnik GmbH Solinger Feld 4-8, 58454 Witten
Registrier-Nr. ***Registered No.:***	1435/01
Produktbeschreibung: ***Product description:***	Gasmischanlage für synthetische Luft MG 50 und die Varianten MG 100 und MG 200 Gas mixers for synthetic Air MG 50 and the versions MG 100 and MG 200
Normen: ***Attachments:***	DIN EN 737-3 : 2000-01 Abschnitt 5.5 DIN EN 737-3 : 2000-01 Section 5.5

Zertifizierungsstelle der
RWTÜV Systems GmbH
Prüfstelle für Sicherheitstechnik
und Medizinprodukte
45032 Essen

Product Information

Technical Data

Stationary gas mixing system specifically for the generation of high purity (synthetic) air from Oxygen and Nitrogen. Especially for the supply of synthetic air in hospitals (references on request). Certified according to DIN EN 737-3.

Capacity range from 0 to approx. 232 Nm³/h.
For the exact pressure and flow capacity ratios, please see the technical data overleaf.

Note:
System only works with sufficient buffer volume (100 to 500 litres depending on gas mixing capacity).

Easy operation

- a proportional mixing valve with a control knob and %-scale provides infinitely variable mixture settings
- gas mixture withdrawal possible from zero to the maximum flow capacity

High process reliability

- 2 independent integrated Oxygen Analysers for permanent control and documentation of the gas mixtures
- monitoring of the gas supply with pressure sensors
- too low inlet pressures trigger an optical alarm and shut down the system
- lockable transparent door for protection of settings
- independent of pressure fluctuations in the gas supply
- intermittent gas mixture withdrawal possible
- self monitoring of analysers

Other models, options and accessories available on request.

GAS MIXERS

Type	MG 50/100/200-2ME GB A
Gases	Nitrogen and Oxygen
Mixing range	0-25% Oxygen
Pressure settings	see tables
Inlet pressure differential between the gases	max. 3 bar
Mixture output (air)	see tables
Temperature (gas/environment)	0 °C to 45 °C (32 °F to 113 °F)
Setting accuracy	±1% abs.
Mixing precision	better than ±0.5% abs.
Analysing principle	paramagnetic sensor, measuring range 0-30% O_2 lifetime: not limited
Reproducibility	±2% abs.

Gas connections

	MG 50-2ME GB A
inlets	G 3/4 with cone, soldering nipple for pipe OD 15 mm
outlet	G 1 RH with o-ring, soldering nipple for pipe OD 15 mm
	MG 100-2ME GB A
inlets	G 3/4 with cone, soldering nipple for pipe OD 15 mm
outlet	G 1 RH with o-ring, soldering nipple for pipe OD 22 mm
	MG 200-2ME GB A
inlet N_2	G 1 with o-ring, soldering nipple for pipe OD 22 mm
inlet O_2	G 3/4 RH with cone, soldering nipple for pipe OD 15 mm
outlet	G 1 with o-ring, soldering nipple for pipe OD 22 mm

Alarm signals	one min. / max. threshold value with 2 floating contacts (adjustable for each analyser)
Logging	analogue outlet 4-20 mA or 0-10 V
Interface	RS 232 with ASCII-output of date, time and measurement value
Housing	stainless steel, powder coated
Weight	approx. 87 kg (MG 50), approx. 90 kg (MG 100), approx. 100 kg (MG 200)
Dimensions (HxWxD)	approx. 1215 x 600 x 510 mm (47.8 x 23.6 x 20 inch) (without connections)
Voltage	230 V AC, 110 V AC or 24 V DC
Power consumption	230 V AC, 0.2 A
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 gas mixer certified according to: - DIN EN 737-3 /2000-01 section 5.5 CE-marked according to: - EMC 89/336/EWG - Low Voltage Directive 73/23/EWG - PED 97/23/EG

Flow **MG 50** (in Nm³/h) in relation to air

min. inlet pressure in barg (max. 20 bar)	min. receiver pressure in barg (max. receiver pressure 0.5 bar higher)							
	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5
4	18	-	-	-	-	-	-	-
5	25	21	-	-	-	-	-	-
6	33	30	24	-	-	-	-	-
7	39	37	33	26	-	-	-	-
8	46	45	42	36	29	-	-	-
9	52	51	50	46	39	30	-	-
10	58	57	56	54	50	42	31	-

Flow **MG 100** (in Nm³/h) in relation to air

min. inlet pressure in barg (max. 20 bar)	min. receiver pressure in barg (max. receiver pressure 0.5 bar higher)							
	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5
4	47	-	-	-	-	-	-	-
5	64	58	-	-	-	-	-	-
6	78	75	65	-	-	-	-	-
7	94	93	88	76	-	-	-	-
8	108	107	105	98	34	-	-	-
9	124	122	121	118	108	90	-	-
10	138	138	136	134	128	116	97	-

Flow **MG 200** (in Nm³/h) in relation to air

min. inlet pressure in barg (max. 20 bar)	min. receiver pressure in barg (max. receiver pressure 0.5 bar higher)							
	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5
4	85	-	-	-	-	-	-	-
5	117	103	-	-	-	-	-	-
6	148	139	114	-	-	-	-	-
7	173	170	152	140	-	-	-	-
8	203	200	193	174	142	-	-	-
9	219	219	219	210	193	155	-	-
10	232	232	232	232	224	203	171	-

Technical Data

GAS MIXER

MG 200-2ME /-3ME

MG 200-2ME GB

MG 200-2ME /-3ME EEx

MG 200-3ME EEx

Gas mixing systems for 2 or 3 defined gases, designed for a variety of industrial applications with high flows and fluctuating gas mixture production requirements.

Capacity range from 0 to approx. 270 Nm^3/h. For the exact pressure and flow capacity ratios, please see the technical data overleaf.

Note:
System only works with sufficient buffer volume (to 500 litres depending on gas mixing capacity).

Easy operation

- a proportional mixing valve (-2ME) or three single mixing valves (-3ME), each with a control knob and %-scale, provide infinitely variable mixture settings.
- gas mixture withdrawal possible from zero to the maximum flow capacity

High process reliability

- independent of pressure fluctuations in the gas supply
- intermittent gas mixture withdrawal possible
- lockable transparent door for protection of settings

Options

- for flammable gases available as EEx-version with separate control cabinet
- monitoring of the gas supply by means of pressure switches; too low an inlet pressure triggers an optical alarm (audible optional) and switches a potential free contact (e.g. to shut down machinery to avoid quality problems)
- integrated gas analysis for the monitoring/control and documentation of the gas mixture production

Other models, options and accessories available on request.

Please identify the individual gases at the time of enquiring!

Product Information

GAS MIXER

Type	MG 200-2ME /-3ME; MG 200-2ME/-3ME EEx
Gases	all technical gases (excluding toxic or corrosive gases)
Mixing range	0-25% or 0-100%
Pressure settings	see table
Inlet pressure differential between the gases	max. 3 bar
Mixture output (air)	see table
Setting accuracy	±1% abs. (scale 0-25%), ±2% abs. (scale 0-100%)
Mixing precision	better than ±1% abs.
Gas connections	
inlet 0- 25%	G 3/4" RH with cone, soldering nipple for pipe OD 15 mm
inlet 0- 100%	G 1" RH with O-ring seal, soldering nipple for pipe OD 22 mm
outlet at mixer	G 1" RH with O-ring seal, soldering nipple for pipe OD 22 mm
Housing	painted steel
Weight	approx. 80 kg (-2ME), approx. 110 kg (-3ME)
Dimensions (HxWxD)	
mixer	approx. 1220 x 600 x 515 mm (48 x 23.6 x 20.2 inch) (without connections)
separate control cabinet (EEx)	approx. 212 x 198 x 160 mm (8.3 x 7.8 x 6.3 inch) (without connections)
Voltage	230 V AC, 110 V AC or 24 V DC
Power consumption	230 V AC, 0.07 A
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 CE-marked according to: - EMC 89/336/EWG - Low Voltage Directive 73/23/EWG - PED 97/23/EG - ATEX 95 Directive 94/9/EG

Flow **MG 200** (in Nm^3/h) in relation to air

min. receiver pressure in barg (max. receiver pressure 0.5 bar higher)

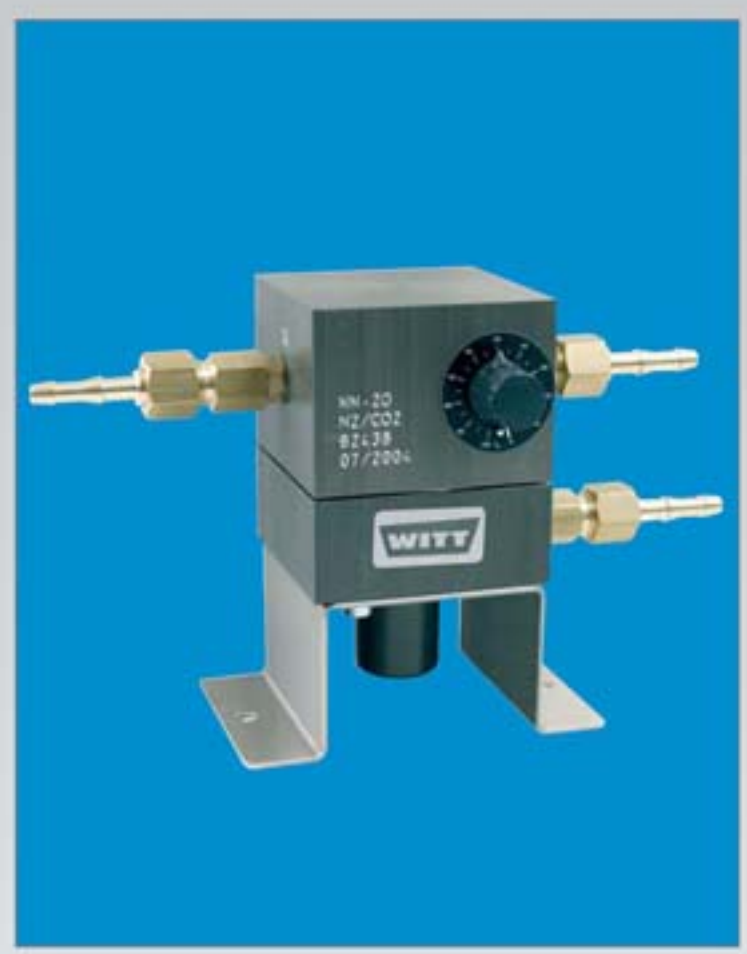
min. inlet pressure in barg (max. 20 bar)	1,5	2,5	3,5	4,5	5,5	6,5	7,5	8,5	9,5	10,5
4	85	-	-	-	-	-	-	-	-	-
5	117	103	-	-	-	-	-	-	-	-
6	148	139	114	-	-	-	-	-	-	-
7	173	170	152	140	-	-	-	-	-	-
8	203	200	193	174	142	-	-	-	-	-
9	219	219	219	210	193	155	-	-	-	-
10	232	232	232	232	224	203	171	-	-	-
11	252	252	252	252	252	235	216	174	-	-
12	258	258	258	258	258	258	248	226	193	-
13	279	279	279	279	279	276	266	248	220	178

Technical Data

Product Information

MM-2K / MM-2G

Mixer for 2 gases for a variety of technical applications.



Benefits

- inexpensiv
- compact design
- easy to install
- incl. bracket for easy fastening

Easy Operation

- a proportional mixing valve with %-scale provides an infinitely variable mixture setting

Constant Quality

- independent of pressure fluctuations in the gas supply
- independent of fluctuations of the mixed gas production (in permitted range)

Please identify the individual gases at the time of enquiring!

Technical Data

Type	MM-2K and MM-2G
Gases	N_2/CO_2 (0-100%) or Ar/CO_2 (0-25%) not for flammable gases!
Gas inlet pressures	min. 1 bar, max. 9.5 bar
Gas outlet pressure	see table
Mixture output (air)	see table
Setting accuracy	±3% abs. (scale 0-100%)
Mixing accuracy	better ±1% abs.
Gas connections (inlets/outlet)	nipples for 6 mm bore hose
Housing	aluminium, coated
Weight	approx. 2.9 kg
Dimensions (HxWxD)	ca. 142 x 130 x 80 mm (5.54 x 5.07 x 3.12 inch) (without connections)
Approvals	Company certified according to ISO 9001:2000 and ISO 14001

Flow capacity **MM-2 K** in Nl/min (air)

Inlet pressure CO_2 in barg (second gas 1 bar higher)	Outlet pressure in barg 1	2	3	4	5	6	7	8
2	36	-	-	-	-	-	-	-
3	53	43	-	-	-	-	-	-
4	67	63	50	-	-	-	-	-
5	80	79	73	56	-	-	-	-
6	93	93	91	82	60	-	-	-
7	107	107	107	102	90	66	-	-
8	119	119	119	118	111	98	70	-
9	131	131	131	131	127	118	101	73

Flow capacity **MM-2 G** in Nl/min (air)

Inlet pressure CO_2 in barg (second gas 1 bar higher)	Outlet pressure in barg 1	2	3	4	5	6	7	8
2	55	-	-	-	-	-	-	-
3	84	67	-	-	-	-	-	-
4	108	102	77	-	-	-	-	-
5	133	126	116	87	-	-	-	-
6	156	152	143	128	95	-	-	-
7	179	177	172	160	142	102	-	-
8	201	199	196	188	176	151	109	-
9	224	223	221	215	206	187	159	116

J4 subject to change

GAS NON-RETURN VALVES NV100 and NV200

Product information

Benefits

- the non-return valves prevent bachfeeding of gases which could lead to flammable mixtures being formed
- minimum pressure drops result from low opening pressures. Model NV 200 is approximately 4 mbar (0.058 psi) and the model NV 100 is 30 mbar (0.435 psi)
- the valve mechanism is protected by a mesh filter
- the valves are suitable for use with most non-corrosive gases
- the spring loaded valve is not affected by gravity and may be installed in any position

Applications

Non-return valves are safety devices to prevent bachfeeding of gases. They can also be used in accordance with EN 764 section 2 in applications where the maximum temperature does not exceed 70° C (158° F).

Maintenance

In common with safety equipment non-return valves should be tested at least once a year for function and body leak tightness. Testing equipment is available on request.
Witt non-return valves should only be serviced by Witt or approved repairer.
The dirt filters however can be replaced by the user.

Technical data

Model	Max. working pressure bar [psi]	EN 560 connection [inch]	Weight [g]	Housing material	Sealing material	Order no.
NV200	Town gas, natural gas and LPG Hydrogen Oxygen Compressed air Non-flammable gases Model NV200 - 16 bar (232 psi) Model NV100 - 25 bar (362.5 psi)	G 1/2	745	Brass	NBR / CR	200 037.008
		G 3/4	686			200 037.009
		G 1	589			200 037.010
NV100		G 1/8	190			100 145.001
		G 1/4				100 145.002
		G 3/8				100 145.003

H4 subject to change

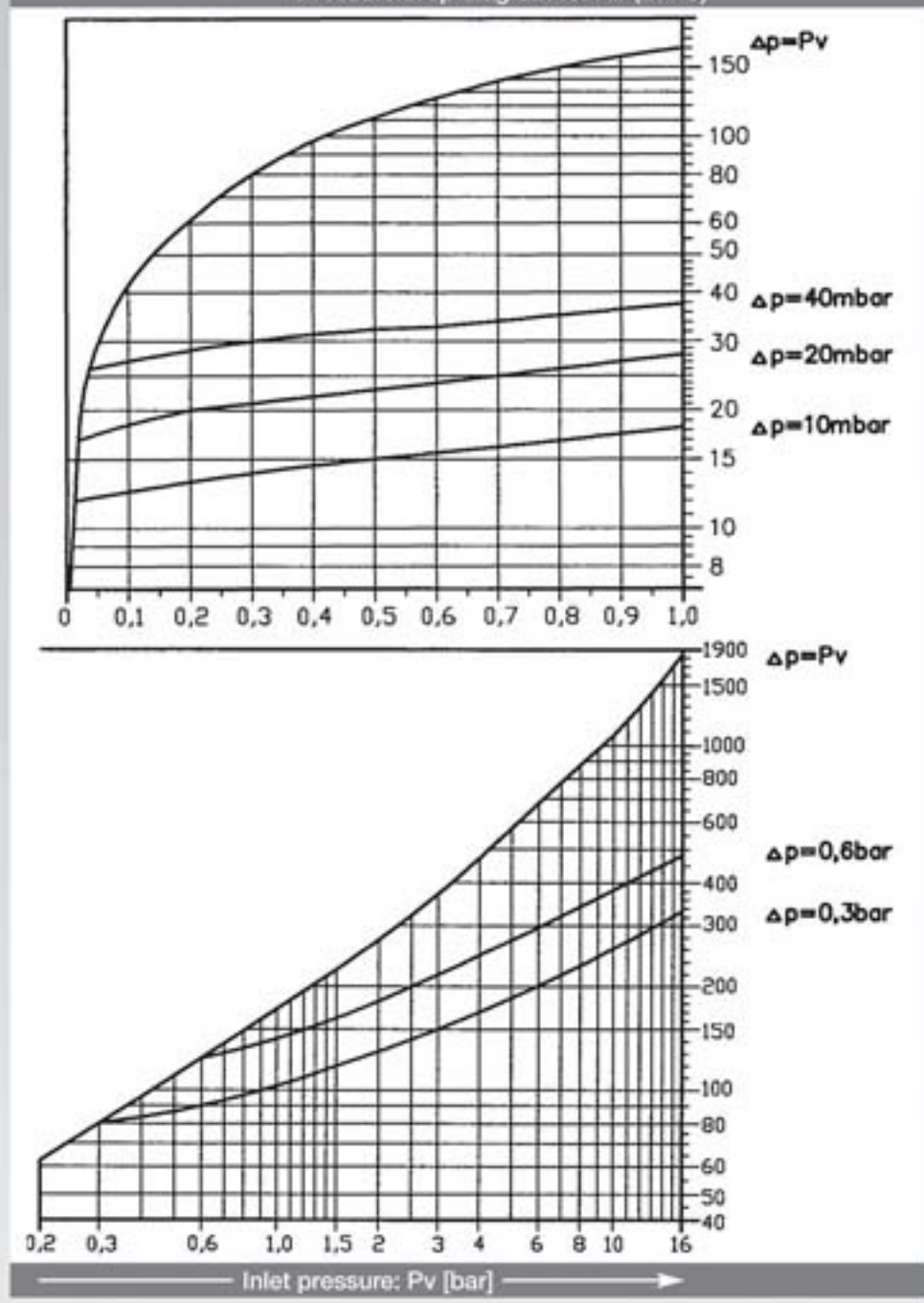
GAS NON-RETURN VALVES NV100 and NV200

NV200

Conversion factors:

Butane	x 0.68
Hydrogen	x 3.75
Methane	x 1.33
Natural gas	x 1.25
Oxygen	x 0.95
Propane	x 0.80
Town gas	x 1.54

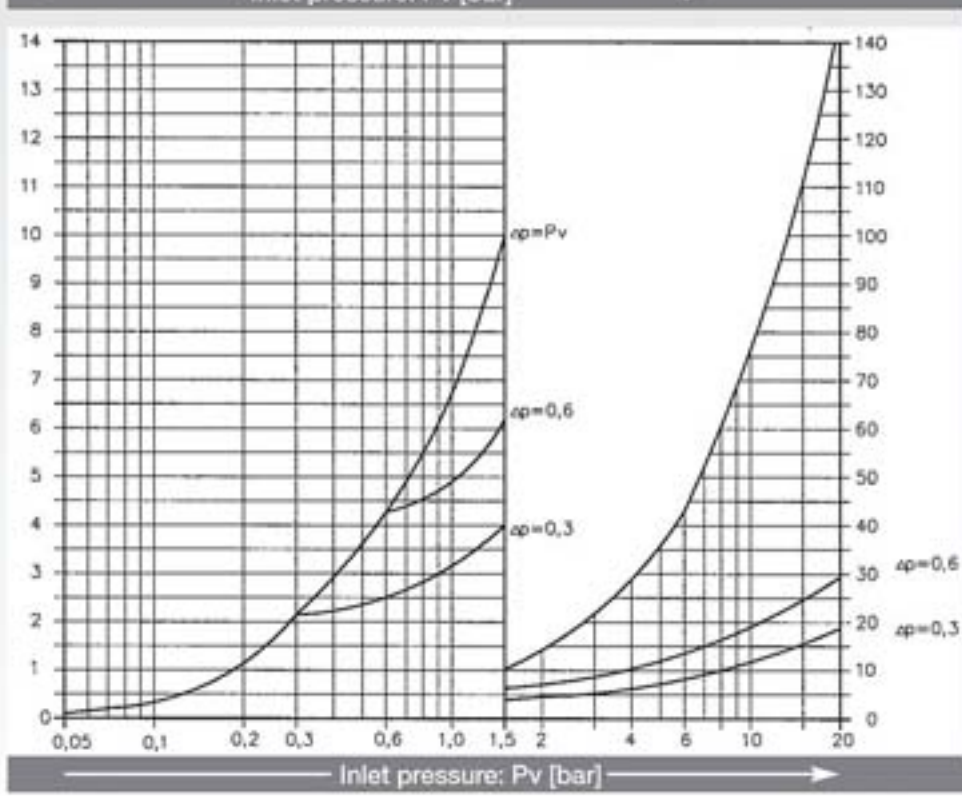
Pressure drop diagram for Air (20 °C)



NV100

Conversion factors:

Butane	x 0.68
Hydrogen	x 3.75
Methane	x 1.33
Natural gas	x 1.25
Oxygen	x 0.95
Propane	x 0.80
Town gas	x 1.54



bar – psi conversion:
1 bar = 14.5 psi

Technical data

H4 subject to change

GAS NON-RETURN VALVES NV300 and NV400

Product information

Benefits

- the non-return valves prevent bachfeeding of gases which could lead to flammable mixtures being formed
- minimum pressure drops result from low opening pressures. Model NV 400 is approximately 4 mbar (0.058 psi)
- the valve mechanism is protected by a mesh filter
- the valves are suitable for use with most non-corrosive gases
- the spring loaded valve is not affected by gravity and may be installed in any position

Applications

Non-return valves are safety devices to prevent bachfeeding of gases. They can also be used in accordance with EN 746 section 2 in applications where the maximum temperature does not exceed 70° C (158° F).

Maintenance

In common with safety equipment non-return valves should be tested at least once a year for function and body leak tightness. Testing equipment is available on request.
Witt non-return valves should only be serviced by Witt or approved repairer.
The dirt filters however can be replaced by the user.

Technical data

Model	Max. working pressure bar [psi]	EN 560 connection [inch]	Weight [g]	Housing material	Sealing material	Order no.
NV300	Town gas, natural gas and LPG Hydrogen Oxygen Compressed air Non-flammable gases 16 bar (232 psi)	G 1 G 1 1/4	1.568	Brass	NBR / CR	300 038.002 300 038.031
NV400		G 1 1/2 G 2	2.789			400 038.024 400 038.008

flange connections are possible

H4 subject to change

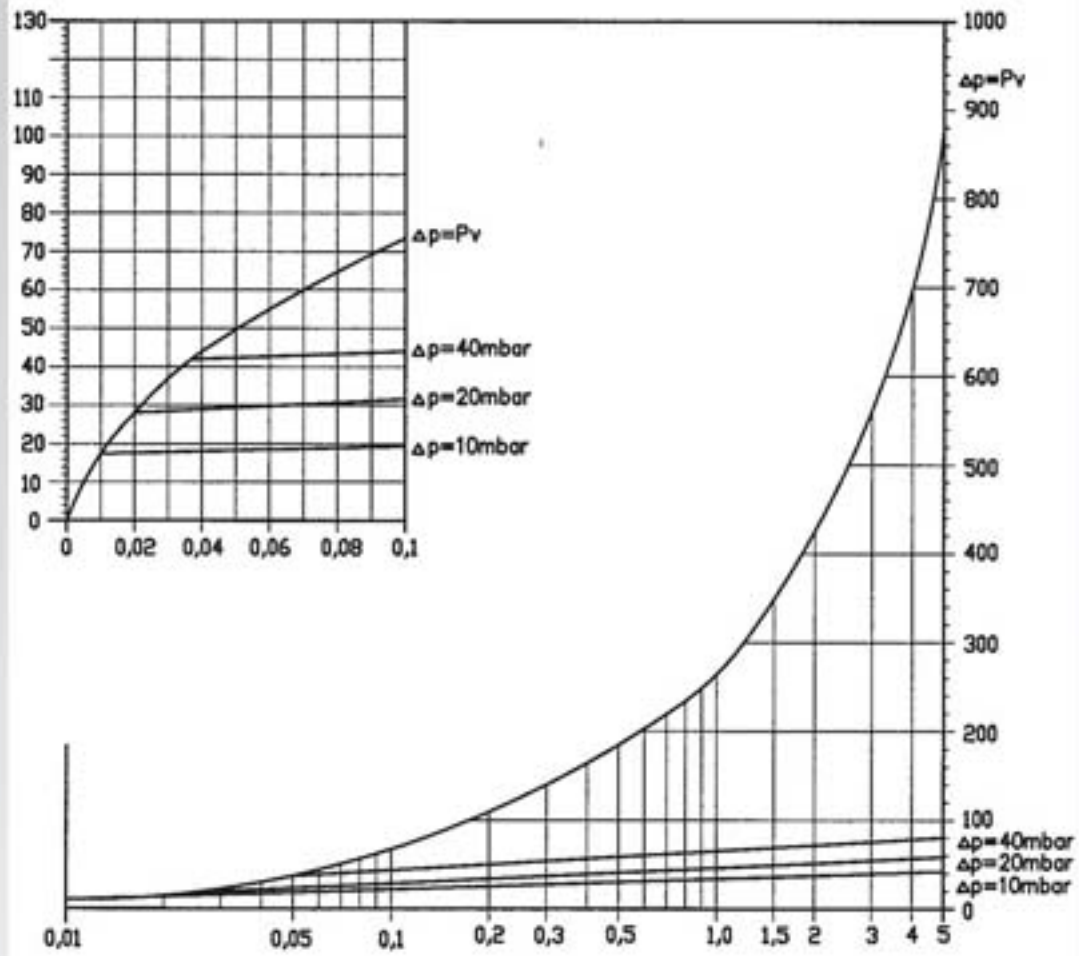
GAS NON-RETURN VALVES NV300 and NV400

NV300

Conversion factors:

Butane	x 0.68
Hydrogen	x 3.75
Methane	x 1.33
Natural gas	x 1.25
Oxygen	x 0.95
Propane	x 0.80
Town gas	x 1.54

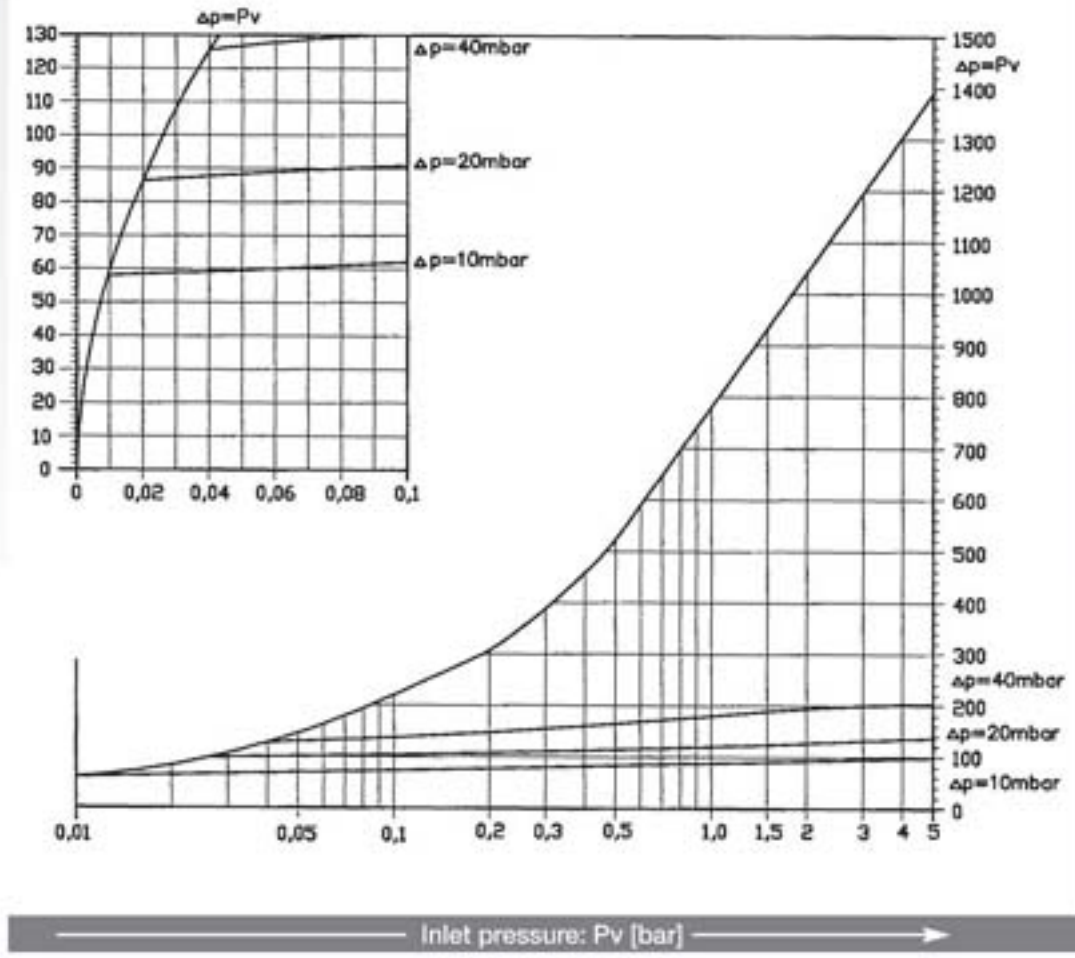
Pressure drop diagram for Air (20 °C)



NV400

Conversion factors:

Butane	x 0.68
Hydrogen	x 3.75
Methane	x 1.33
Natural gas	x 1.25
Oxygen	x 0.95
Propane	x 0.80
Town gas	x 1.54



bar – psi conversion:
1 bar = 14.5 psi

Technical data

H4 subject to change

NON-RETURN VALVES

Product Information

NV 800

NV 2000

WITT non-return valves NV800 and NV2000 are designed for installation in the supply system of natural gas, LPG and hydrogen when oxygen or compressed air is being used at equal or higher pressures than the fuel gas.

Benefits

- the non-return valves prevent backfeeding of gases which could lead to flammable mixtures being formed
- minimum pressure drops due to low opening pressures, NV 800 approx. 6 - 8 mbar (0.087 – 0.116 psi), NV2000 approx. 4 mbar (0,058 psi)
- smallest leakages - by employment of a spring-tensioned valve system with seal over elastomers
- long service life by means of protection from pollution from the gas supply - by dirt filters in the inlet from rustproof wire mesh (100 µm)
- broad spectrum of use the valves are suitable for use with most non-corrosive gases
- reduce planning expenditure- the spring loaded valve is not affected by gravity and may be installed in any position (NV800 only)

Applications

Non-return valves are safety devices to prevent backfeeding of gases. They can also be used in accordance with EN 764 section 2 in applications where the maximum temperature does not exceed 70°C (158°F).

Maintenance

Non-return valves should
be tested at least once a year for function and body leak tightness. Testing equipment is available on request.
Witt non-return valves should only be serviced by Witt or approved repairer.
The user however can replace the dirt filters.

Technical data

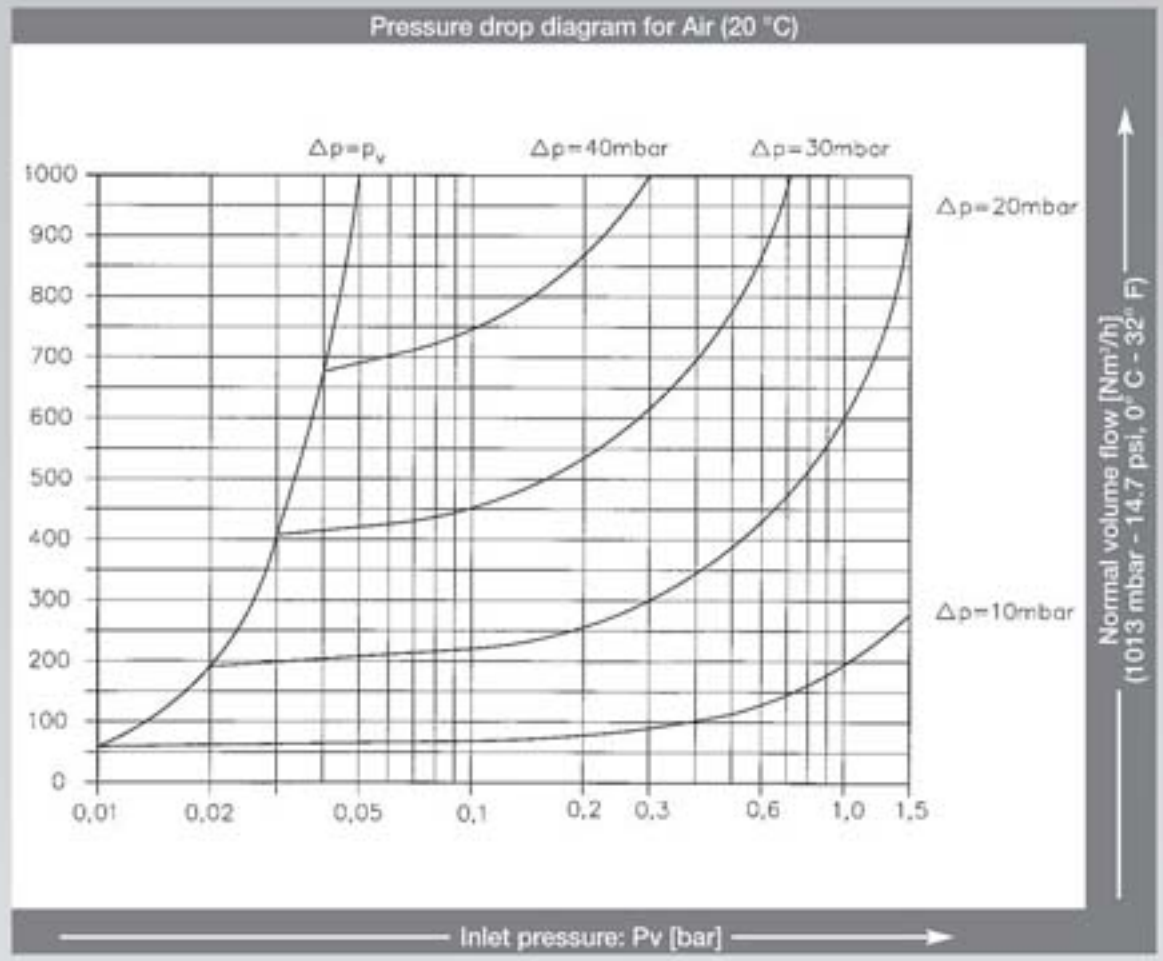
Model	Gas max. working pressures [bar]	Connection Flansch PN 16, DIN 2633	Weight [kg]	Housing-material	Sealing-material	Order-No.
NV 800	Towngas, Methane, Natural gas, LPG, Oxygen, Non-flammable gases 10 bar (145 psi)	DN 80	20	Steel	NBR / CR	800080.001
NV2000	Towngas, Methane, Natural gas, LPG 10 bar (145 psi)	DN 80 DN 100 DN 125 DN 150 DN 200	50			2000119.002 2000119.003 2000119.004 2000119.006 2000119.007

H4 subject to change

NV800

Conversion factors:

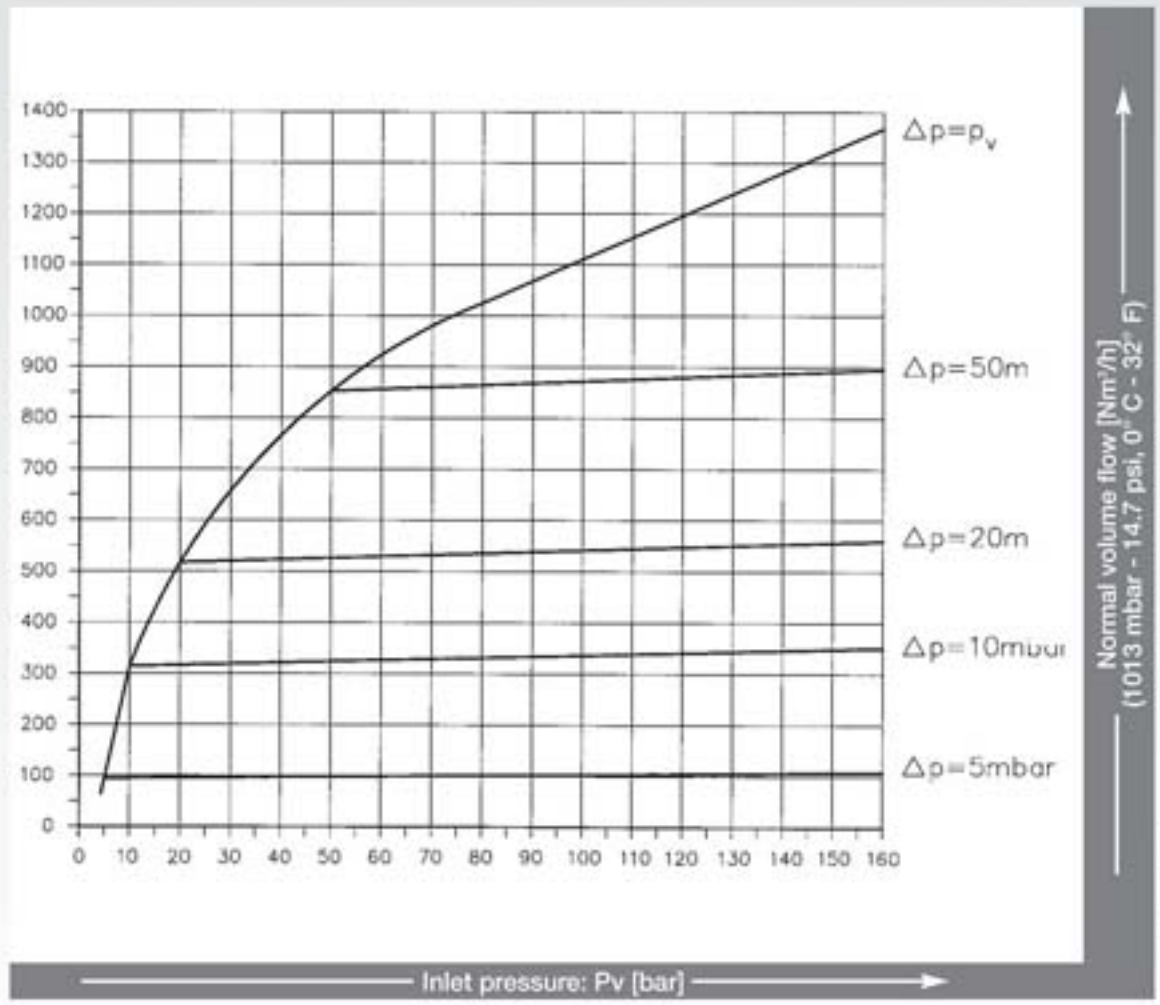
Butane	x 0.68
Hydrogen	x 3.75
Methane	x 1.33
Natural gas	x 1.25
Oxygen	x 0.95
Propane	x 0.80
Town gas	x 1.54



NV2000

Conversion factors:

Butane	x 0.68
Hydrogen	x 3.75
Methane	x 1.33
Natural gas	x 1.25
Oxygen	x 0.95
Propane	x 0.80
Town gas	x 1.54



Technical data

H4 subject to change

Product Information

OXYBABY® V for O_2 or O_2/CO_2

Cordless single-handed oxygen analyser for checking modified atmospheres in food packs. The ideal instrument for portable, faster and accurate sample tests at the packaging machine, in stores or in laboratories.

Whenever you need a record of your measurement this instrument together with the exclusive WITT-Logger-Software is the solution.

Provide your customer with the results proving that your produkt has the best possible pack quality.

The OXYBABY® V is the ideal instrument for sample tests with only a minimum gas required for smallest packs in modified atmosphere (MAP).

Benefits

- minimum sample gas requirement (< 4 ml) for smallest packs
- cordless operation using rechargeable batteries
- simple one hand operation
- easy to clean
- large reversible graphic display (software controlled)
- multilingual menu guide: german, english, french, italian, dutch, swedish, finnish, spanish, polish, japanese and russian (more to come)
- integrated needle covering to protect the user
- response time max. 6 seconds
- integrated value recording of the last 100 measurements
- asignment of measurements to different product names
- interface for transfer of logged data (cable optional)

Technical Data

Gases	O_2 and/or CO_2 balancegas: N_2, Ar (other on request)
Measuring principle O_2	electro-chemical cell with an approximate lifetime of 2 years (in air)
Measuring principle CO_2	IR-Adsorption
Measuring range O_2/CO_2	0-100%; oxygen in 0.1%-steps
Calibration O_2/CO_2	simple two point calibration
Sampling	automatic via needle using integrated pump
Temperature range	5-40 °C (ambient temperature)
Shut down	automatic after 2 minutes of non-use
Case	shock resistant plastic
Weight	approx. 600 g (1.3 lb)
Dimensions (HxWxD)	187 x 106 x 91 mm (without needle)
Power supply	2 integrated rechargeable batteries
Charger	110-240 V AC
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 CE-marked according to: - EMC 89/336/EWG - Low Voltage Directive 73/23/EWG

Complete in carrying case:

- charging device
- CD-ROM with software WITT-Logger (demo-version) and OXYBABY® V-terminal (product name administration)
- 2 spare needles
- 2 spare filters
- set of 100 rubber seals
- data cable (optional)
- operating instructions
- case dimensions (HxWxD): approx. 300 x 395 x 105 mm (11.8 x 15.5 x 4.1 inch)
- case weight: approx. 1.7 kg (4.0 lb)

PA-O_2 or PA-O_2/CO_2

inclined display

vertical display

Compact analyser for the monitoring of protective atmospheres in food packaging (MAP) and welding. For continuous analysis (in-line) and also intermittent sampling via a needle e.g. from food packs. A flexible analyser to guarantee quality and productivity of production processes.

Product Information

Whenever you need a record of your measurement this instrument together with the exclusive WITT-LOGGER-Software is the solution.

Provide your customer with the results proving that your product has the best possible quality.

Benefits

- minimum sample gas required for analysing of smallest volumes (e.g. food packing)
- fast measuring results of sampling
- integrated data logger for the last 100 measurements
- assignment of measurements to different product names
- multilingual menu guide: German, English, French, Italian, Dutch, Swedish, Finish, Spanish, Polish, Japanese and Russian (more to come)
- system errors or exceeding of set limits trigger an alarm and switch a potential free contact (e.g. to shut down machinery to avoid quality problems)
- splash-proof and robust aluminium housing
- interface for transfer of logged data

Options

- vertical or inclined display
- software WITT-LOGGER for recording of results incl. data cable (see separate data sheet)
- separate table printer for instant documentation

Other models, options and accessories available on request.

Please identify the individual gases at the time of enquiring!

Technical Data

Measuring systems

Gases	Measuring system	Measuring range	Repeatability	Response time	Service life
O_2 for sampling	chemical measuring cell	0-100%	± 0,2%	6 sec.	approx. 2 y. in air
O_2 for continuous analysis	chemical measuring cell	0-100%	± 0,2%	10 sec.	approx. 4 y. in air
CO_2	infrared measuring cell	0-30% 0-100% please indicate	± 0,5%	6 sec.	unlimited

Technical Data

Type	PA-O_2; PA-O_2/CO_2
Gases	O_2 and/or CO_2; balance gas: N_2, Ar (others on request) not for flammable, corrosive or toxic gases!
Measuring system	see table
Measuring range O_2/CO_2	0-100%; in 0.1%-steps
Calibration O_2/CO_2	simple two point calibration
Withdrawal	
sample	automatic via needle using integrated pump
continuous	by pump or pressure regulator (optional)
Temperature (gas/environment)	5-40 °C (41-104 °F)
Gas connections	
sample	needle with integrated pump
continuous	hose connection for ID 4 mm with integrated pump
Inlet pressure	
pump	max. 0.3 barg
pressure regulator	max. 10 barg
Alarm contacts	2 potential free contacts for min. and max. settings (adjustable for each gas)
Interfaces	RS 232 with ASCII-output of date, time, measured value analog output 4-20 mA or 0-10 V
Housing	aluminium, splash proof
Weight	approx. 3 kg
Dimensions (HxWxD)	ca. 145 x 105 x 200 mm (5.7 x 4.1 x 7.9 inch) (without connections)
Voltage	230 V AC, 110 V AC or 24 V DC
Power consumption	230 V AC, 0.07 A
Approvals	Company certified according to ISO 9001:2000 and ISO 14001 CE-marked according to: - EMC 89/336/EWG - Low Voltage Directive 73/23/EWG

Product Information

PACK-VAC

Leak detection system for packages.
PACK-VAC features the detection even of the smallest leaks without the need of trace gases.

The package is placed into a chamber filled with water, the head space above the water-level is evacuated using a venturi vacuum (compressed-air) system. The package immersed in water inflates, any leak and the location of the leak is identified by a stream of bubbles.

Benefits

- short testing period (< 30 sec.)
- for all flexible and rigid kind of packs (food-, pharmaceutical-, industrial- and other packages)
- no trace gas required in package
- no calibration required
- easy-to-use intuitive system – no special skills required
- various chamber sizes available
- easy installation and start-up
- low maintenance
- easy to clean perspex housing
- no vacuum pump necessary
- no electrical connections

Other models, options and accessories available on request.

Technical Data

Type	PACK-VAC
Measuring System	visual
Calibration	not required
Vacuum	max. 90 mbar abs., adjustable
Vacuum generation	compressed air powered venturi injector
Compressed air pressure	min. 5 bar, max. 8 bar
Connection	1/4“ NPT (adapter available)
Housing	perspex

Model	Chamber size approx. in mm (inch) (HxWxD)	Weight incl. box in kg
PVCA110808	203 x 280 x 203 (8 x 11 x 8)	17
PVCA181210	254 x 457 x 305 (10 x 18 x 12)	41
PVCA201413	330 x 508 x 355 (13 x 20 x 14)	95
PVCA242015	381 x 610 x 508 (15 x 24 x 20)	136
PVCA302016	406 x 762 x 508 (16 x 30 x 20)	159
PVCA322620	508 x 813 x 660 (20 x 32 x 26)	245

FLASHBACK ARRESTORS RF 53 N / 85-10 / 85-30

Product inforamtion

Description:

The WITT Automatic Flashback Arrestors RF 53 N, 85-10 and 85-30 incorporate:

- Large surface **mesh filter** to remove dirt particles from the gas to improve service life of the arrestor.
- Spring loaded **non-return valve** to prevent slow or sudden backfeeding. It is protected from flashbacks by the downstream arrestor element.
- Large surface area **flame arrestor** of sintered stainless steel to extinguish any flashback entering the device in any direction. The cylindrical shape gives high flow capacity.
- **Temperature activated valve** to cut-off the gas supply before the internal temperature reaches a dangerous level. The sealing element is shrouded from flashbacks and the valve closes in the same direction as the gas flow ensuring that it cannot be re-opened by the gas inlet pressure.

WITT Automatic Flashback Arrestors RF 53 N, 85-10 and 85-30 conform to EN 730-1, ISO 5175 and other national standards.

Tests

Every WITT Arrestor is tested individually for body leaks, non-return valve funktion and is subjected to flashback testing at the maximum rated operating pressure in accordance with ISO standards or those of the country of sale.

Maintenance

No maintenance is required. Nevertheless it is recommended that at annual intervals the units are tested with clean dry air or nitrogen for body leakage and against reverse flow.
Test specifications and test equipment available on request.

Installation

The WITT Automatic Flashback Arrestor may be installed at regulator or pipeline outlets. For pipeline use a shut-off valve should be fitted immediately upstream of the arrestor. If there is a danger from water vapour being carried with the gas, then a seperator should be installed upstream. Not more than one process unit may be connected to one flashback arrestor. It may be mounted horizontally, vertically or any other position. The maximum working temperature is 70° C.

Repairs

Detective units as well as units with temperature activated cut-off valve closed should only be serviced by the manufacture or his authorised local representative as it requires full testing including flashback testing after reassembly. The change of the dirt filter is not part of this requirement and can easily be carried out.

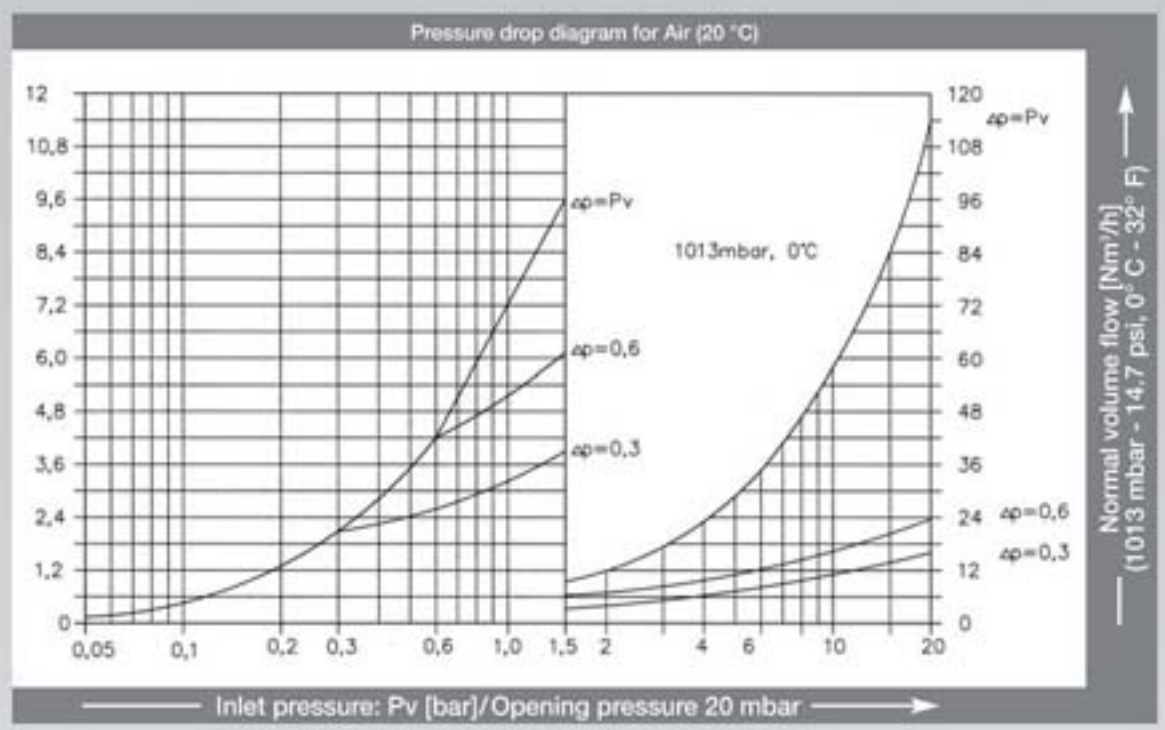
Technical data

	Fuel max. work press [bar]	Connections	approval	weight [g]	housing-material	seal-material	RF 53 N Part No.	85-10 Part No.	85-30 Part No.
RF 53 N 85-10 85-30	Acetylene 1,5 Natural Gas 5,0 LPG RF 53 N, 85-10 5,0 85-30 3,5 Hydrogen RF 53 N 3,0 85-10 5,0 85-30 4,0	G 3/8 LH G 1/2 LH G 1/4 LH G 3/4 LH G 1 LH	BAM 0485 NG-4390BL0422 (RF 53 N) BAM 0385 NG-4390BL0421 (85-10)	191 (RF 53 N) 434 (85-10)	Brass	NBR / CR	145.012 145.016 145.009	143.002 143.008	 147.001 147.003
	Air / Oxygen 30,0	G 1/4 RH G 3/8 RH G 1/2 RH G 3/4 RH G 1 RH	BAM 0890 NG-4390AS0749 (85-30)	4.580 (85-30)			145.021 145.022 145.023	143.013 143.016 143.019	 147.005 147.006

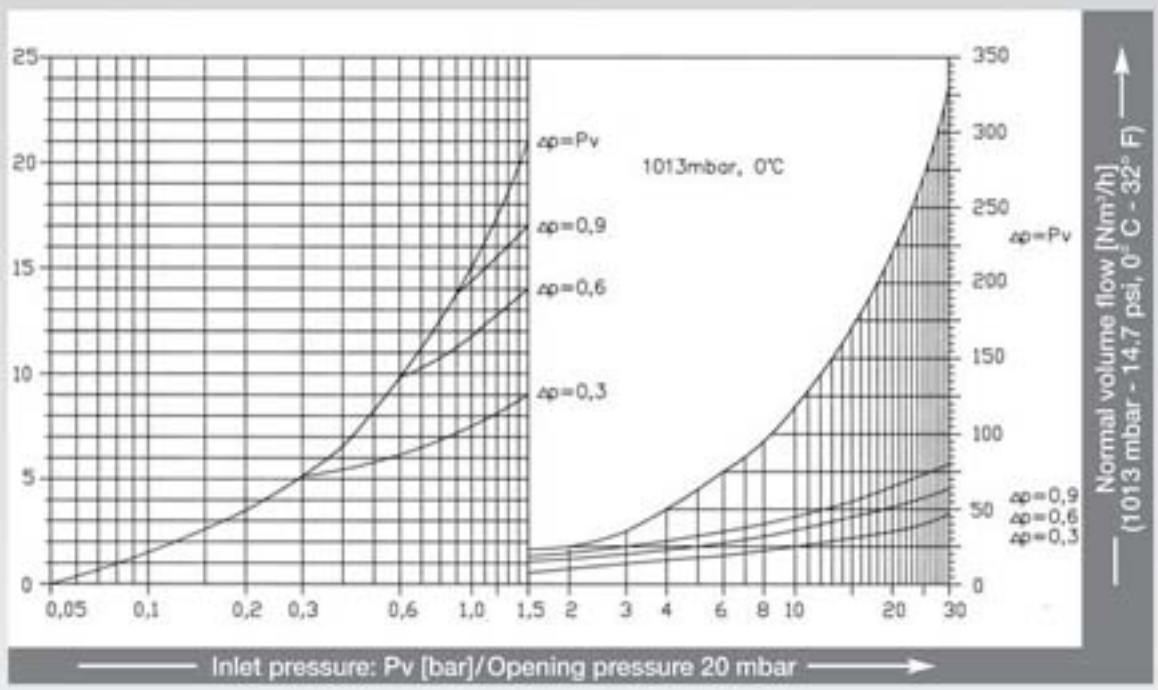
H4 subject to change

FLASHBACK ARRESTORS RF 53 N / 85-10 / 85-30

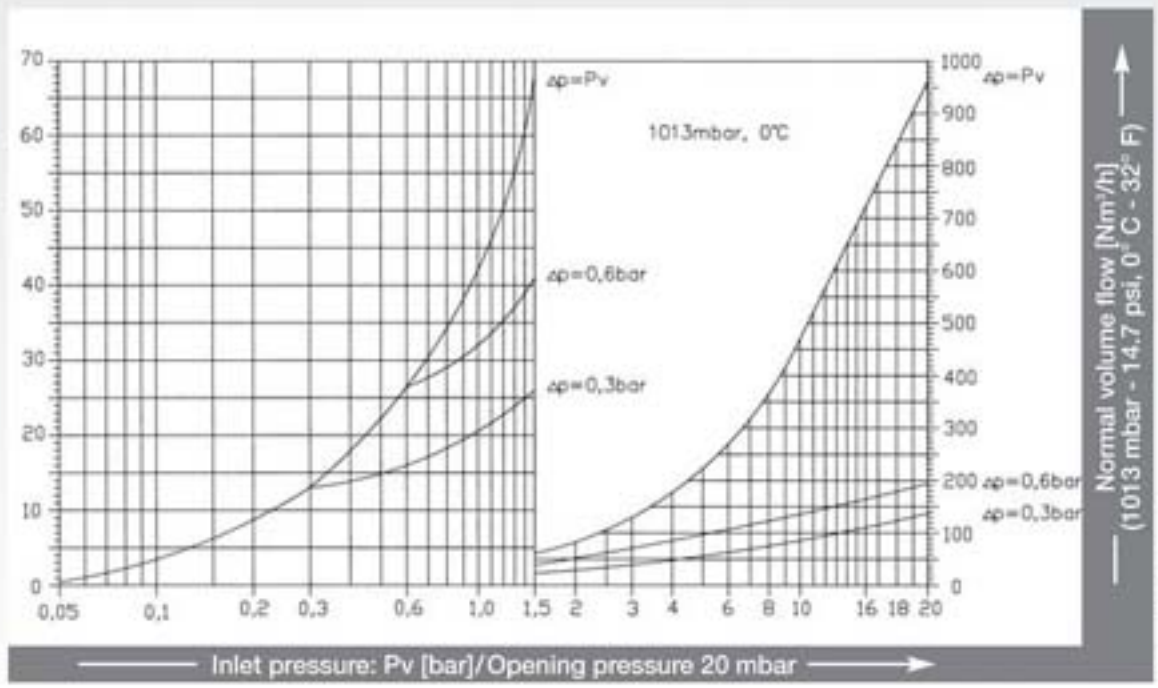
RF 53 N



85-10



85-30

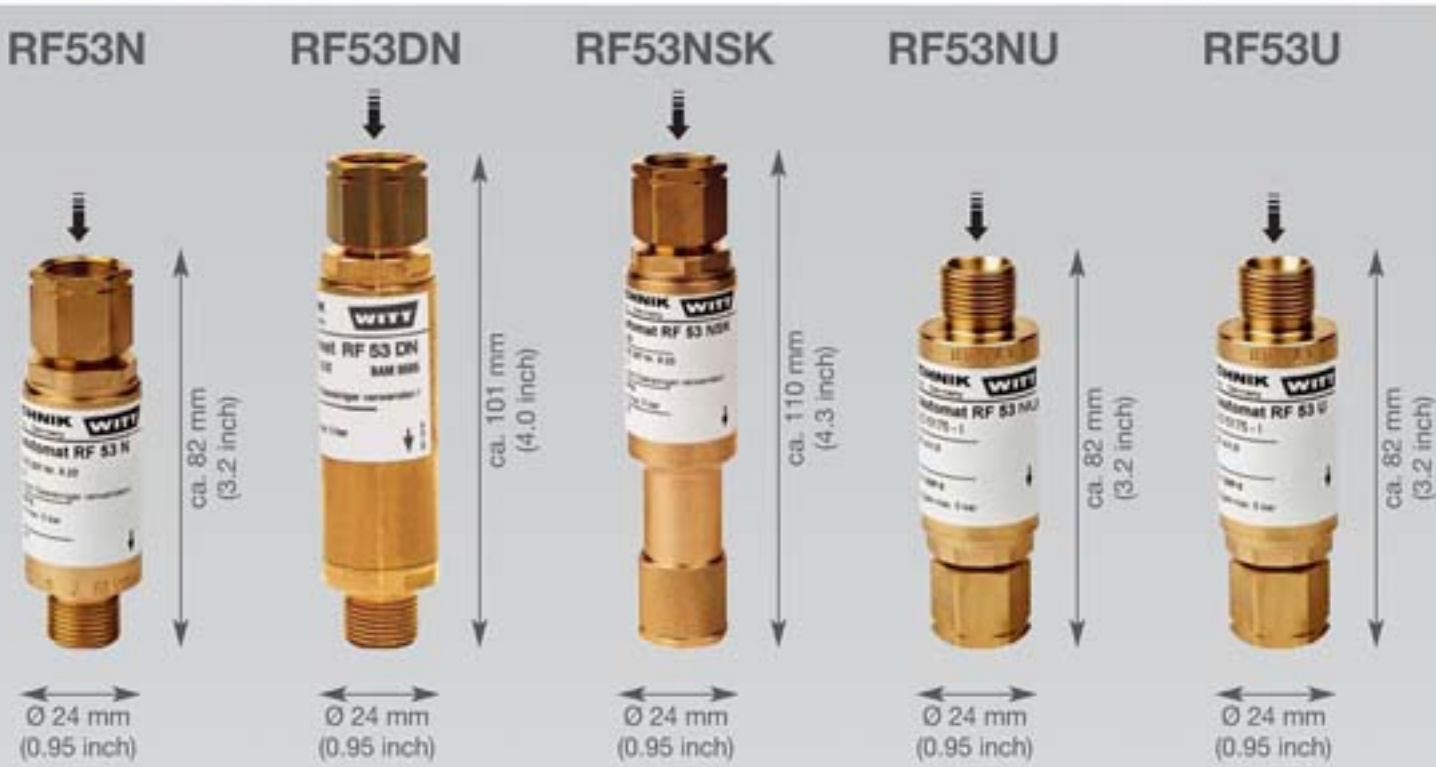


Technical data

Convesion factors:

Acetylene	x 1,04
Butane	x 0,68
Natural Gas	x 1,25
Methane	x 1,33
Propane	x 0,80
Oxygen	x 0,95
Town Gas	x 1,54
Hydrogen	x 3,75

H4 subject to change



WITT RF Flashback Arrestors for reliable protection against dangerous reverse gas flow and flashbacks according to EN 730 / ISO 5175-1 BAM Certified and under surveillance
Every Arrestor 100% tested.

Product Information

The best Flashback Arrestors in the world

- a large surface area flame arrestor FA of stainless steel construction extinguishes any dangerous flashback entering the device in any direction
- a temperature sensitive cut-off valve TV extinguishes sustained flashbacks long before the internal temperature of the arrestors reaches a dangerous level
- a spring loaded non-return valve NV prevents slow or sudden reverse gas flow forming explosive mixtures in the gas supply
- a filter at the gas inlet protects the arrestor against dirt contamination, extending the service life
- a pressure relief valve vents excessive pressure and soot to the atmosphere protecting the hose from bursting and the flame arrestor from clogging up thus maintaining the flow rate (only RF53DN)

Operation / Usage

- RF Flashback Arrestors are used to protect gas cylinders and pipeline outlet points (hoses and any equipment) against dangerous reverse gas flow and flashbacks.
- for pipeline outlets and single cylinders: Models RF53N, RF53DN and RF53NSK
- for torches of burners with high flow: Model RF53NU
- for cutting machines with high flow: Model RF53U
- WITT Flashback Arrestors may be mounted in any position / orientation
- only one piece of equipment may be connected to a single Flashback Arrestor
- the maximum ambient / working temperature is 70 °C

Maintenance

- annual testing of the non-return valve, body leak tightness and flow capacity is recommended
- WITT is happy to supply special test equipment
- Flashback Arrestors are only to be serviced by the manufacturer. The dirt filter may be replaced by competent staff

Approvals

Company certified according to ISO 9001:2000 and ISO 14001

Techical Data

Safety devices	Models				
	RF53N	RF53DN	RF53NSK	RF53NU	RF53U
Flame arrestor FA	X	X	X	X	X
Non-return valve NV	X	X	X	X	X
Temperature sensitive cut-off valve TV	X	X	X	X	
Weight [g]	191	260	248	191	191
Approval DVGW	NG-4390BL0422				
Approval BAM	BAM/ZBA/003/04				
Material	Housing – Brass; Flame arrestor – Stainless steel; Valve seal – NBR; O-rings – CR				

C5 subject to change

SAFETY DEVICES

Safety devices	Models				
	RF53N	RF53DN	RF53NSK	RF53NU	RF53U
Gases	max. working pressure [bar]				
Acetylene (A)	1.5	1.5	1.5	1.5	
Town gas (C)	5.0	5.0	5.0	5.0	5.0
Natural gas (M)	5.0	5.0	5.0	5.0	5.0
LPG (P)	5.0	3.0	5.0	5.0	5.0
Hydrogen (H)	3.0	5.0	3.0	3.0	
Connections	Order-No.				
G 3/8 LH	145.012	145.041	145SK.002	145.034	145.003
G 1/2 LH	145.016	145.043		145.035	
G 1/4 LH	145.009				

Safety dev ices	Models				
	RF53N	RF53 DN	RF53NSK	RF53NU	RF53U
Gases	max. working pressure [bar]				
Oxygen (O)	30.0	10.0	20.00	30.0	30.0
Compressed air (D)	30.0	10.0	20.00	30.0	30.0
Connections	Order-No.				
G 1/4 RH	145.021	145.048	145SK.008*	145.036	145.004
G 3/8 RH	145.022	145.049	145SK.001*	145.037	145.005
G 1/2 RH	145.023	145.050		145.038	145.006

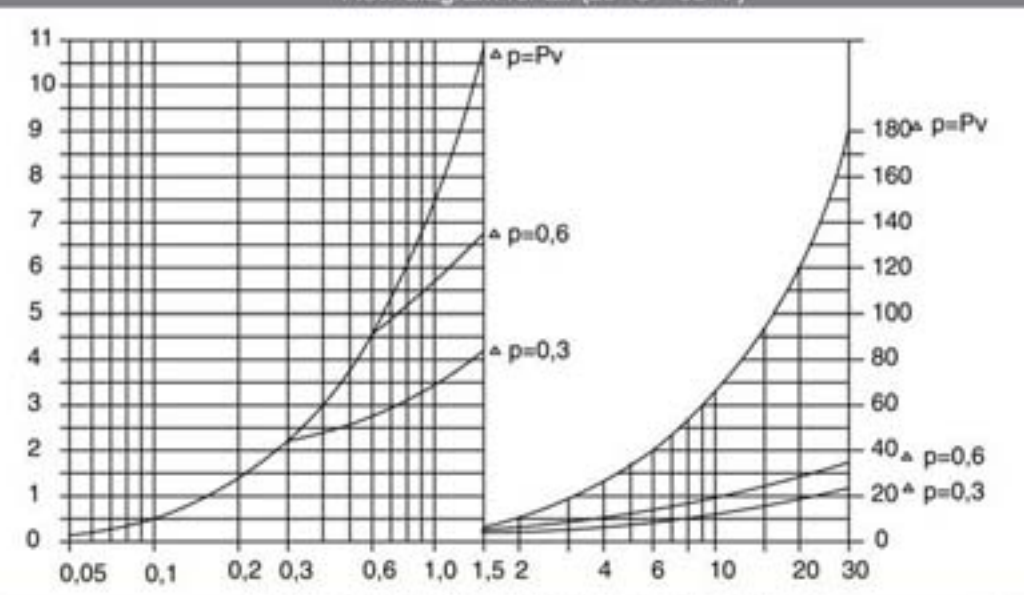
*RF53NSK with coupling body according to EN 561 – for coupling probes SK100

RF53N
RF53NU
RF53U
RF53DN Flow 10% less

Conversion factors:

Acetylene	x 1,04
Butane	x 0,68
Natural gas	x 1,25
Methane	x 1,33
Propane	x 0,80
Oxygen	x 0,95
Town gas	x 1,54
Hydrogen	x 3,75

Flow diagram for air (20 °C – 68 °F)

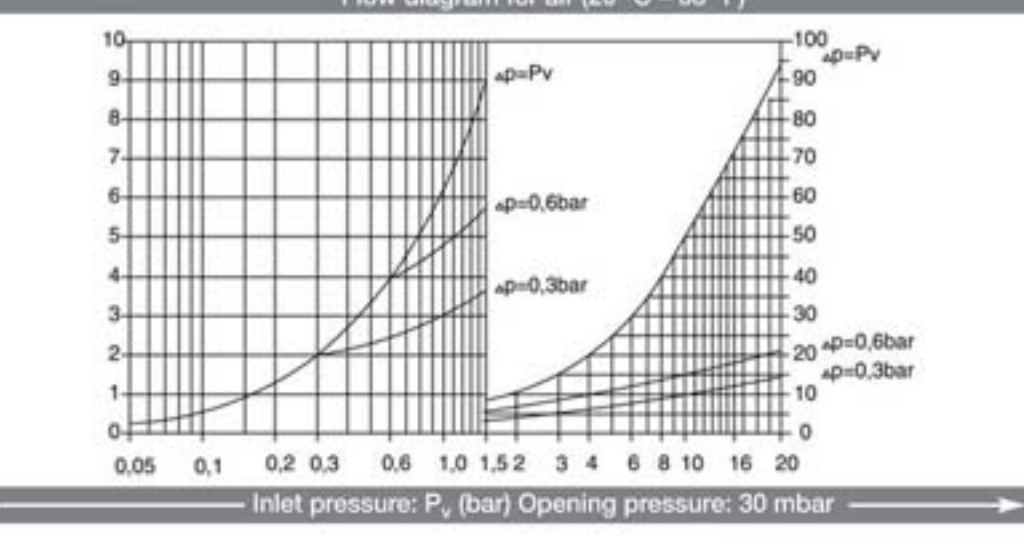


RF53NSK

Conversion factors:

Acetylene	x 1,04
Butane	x 0,68
Natural gas	x 1,25
Methane	x 1,33
Propane	x 0,80
Oxygen	x 0,95
Town gas	x 1,54
Hydrogen	x 3,75

Flow diagram for air (20 °C – 68 °F)



Technical Data

WITT-GASETECHNIK GMBH & CO KG

WITT

HOSE COUPLING SK 100

www.wittgas.com

To ISO 7289 / EN 561 BAM certified

WITT-Couplings guarantee safety

- no uncontrolled escape of gas when disconnected – because of automatic cut off valve.
- no build-up of explosive gas-mixtures in the pipe line – because of non return valve.
- no confusion between connection – because of different probes for Oxygen, Fuel and Inert Gases.
- kink free hose and secure connection – because of ball race lock.

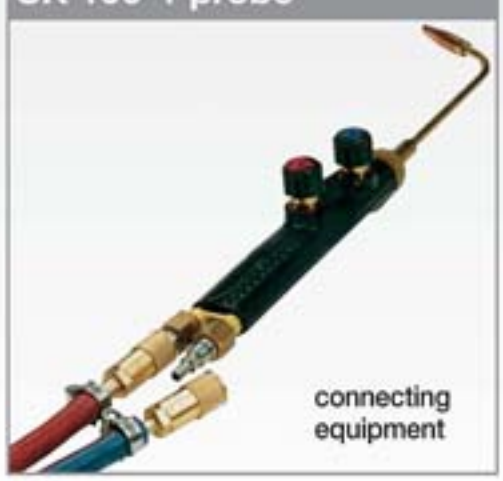
WITT-Couplers save time and money

- lightning fast connection and dis-connection of equipment
- simplest selec-tion of the right body and probe – because new colour coded probe.
- flexible extensions of hoses without additional equipment.
- easiest suction test for injector burner without tool

WITT-Couplings for long life

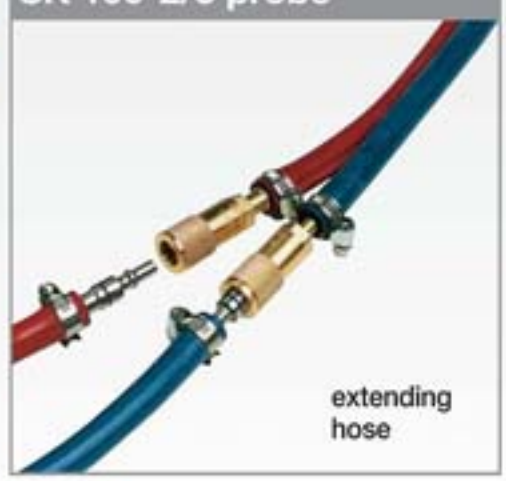
- probe made from stainless steel with hardness of 25 Rockwell.
- dirt-filter protects hose coupling and equipment

SK 100-1/2 body
SK 100-1 probe



connecting equipment

SK 100-1/2 body
SK 100-2/3 probe



extending hose

SK 100-3 body
SK 100-2/3 probe

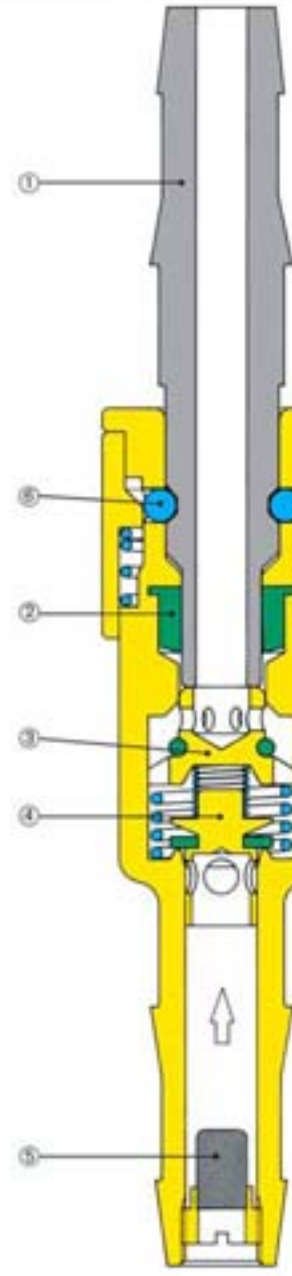
connection to the supply

PRODUCT INFORMATION

G4 subject to change

HOSE COUPLING SK 100

Model	Connection EN 560 Inlet	Outlet	body part no.	probe part no.
SK 100-1 Fuel Gas	nozzle Ø 4,0 mm nozzle Ø 5,0 mm nozzle Ø 6,3 mm nozzle Ø 8,0 mm nozzle Ø 9,0 mm	G 3/8 LH	150.001 150.002 150.003 150.004 150.005	151.001
Oxygen	nozzle Ø 4,0 mm nozzle Ø 5,0 mm nozzle Ø 6,3 mm nozzle Ø 8,0 mm	G 1/4 RH	150.007 150.008 150.009 150.010	151.003
Inert Gases	nozzle Ø 6,3 mm	G 1/4 RH	150.013	151.005
SK 100-2 Fuel Gas	nozzle Ø 4,0 mm nozzle Ø 5,0 mm nozzle Ø 6,3 mm nozzle Ø 8,0 mm nozzle Ø 9,0 mm	nozzle Ø 4,0 mm nozzle Ø 5,0 mm nozzle Ø 6,3 mm nozzle Ø 8,0 mm nozzle Ø 9,0 mm	150.001 150.002 150.003 150.004 150.005	151.007 151.008 151.009 151.010 151.011
Oxygen	nozzle Ø 4,0 mm nozzle Ø 5,0 mm nozzle Ø 6,3 mm nozzle Ø 8,0 mm	nozzle Ø 4,0 mm nozzle Ø 5,0 mm nozzle Ø 6,3 mm nozzle Ø 8,0 mm	150.007 150.008 150.009 150.010	151.013 151.014 151.015 151.016
Inert Gases	nozzle Ø 6,3 mm	nozzle Ø 6,3 mm	150.013	151.021
SK 100-3 Fuel Gas	G 3/8 LH	nozzle Ø 4,0 mm nozzle Ø 5,0 mm nozzle Ø 6,3 mm nozzle Ø 8,0 mm nozzle Ø 9,0 mm	150.015	151.007 151.008 151.009 151.010 151.011
Oxygen	G 1/4 RH	nozzle Ø 4,0 mm nozzle Ø 5,0 mm nozzle Ø 6,3 mm nozzle Ø 8,0 mm	150.017	151.013 151.014 151.015 151.016
Inert Gases	G 1/4 RH	nozzle Ø 5,0 mm nozzle Ø 6,3 mm	150.019	151.021



① **Probe**
Rust and corrosion resistant Chrome Steel with a minimum hardness of 25 Rockwell.

② **Seal**
Seals the probe before gas can flow.

③ **Automatic cut-off valve**
Prevents dangerous escape of gases when disconnected.

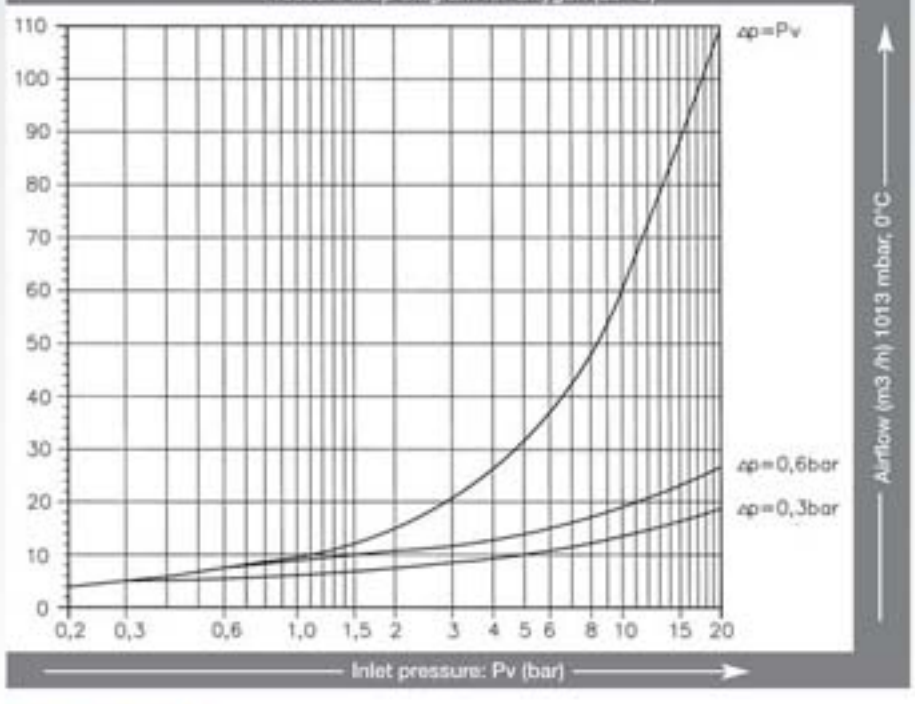
④ **Non-return valve**
Prevents dangerous backfeeding of gases.

⑤ **Dirt filter**
Prevents damage by dirt or particles.

⑥ **Safety lock**
Locks the probe securely in place.

TECHNICAL DATA

Pressure drop diagram for Oxygen (20 °C)



Maximum Working Pressure [bar]	
Acetylene	1,5
Inert Gases and other Fuel Gases	20
Oxygen	20

G4 subject to change

SPECTROCEM

Benefits

- wall-mounting tapping points
- laboratory-style design
- ergonomically designed
- filter at the process gas inlet valve
- diaphragm-type shut-off valves optimised for low internal volume with On/Off position indicator
- suitable for ECD-applications
- regulator with high control accuracy and Hastelloy-diaphragm
- designed for easy installation
- tested for use with oxygen
- tapping point can be extended into multiple tapping Points

Specifications

- SPECTROCEM - components guarantee maximum quality by using high grade materials and a quality assurance program acc. to ISO 9001.
- all components which come into contact with the medium are cleaned in an ultrasonic cleaning system (CFC-free) with the special cleaning process SPECTRO-CLEAN® and are then baked out.
- SPECTROCEM - components undergo a 100% Helium-leak-test.

Pressure indication

- all pressure regulators are equipped with pressure gauges for outlet pressure indication for the relevant pressure range.

Important note regarding component selection

- in order to assure safe operation it is essential to take the configuration of the whole system into account when selecting a tapping point.
- the function of the components, the compatibility of the materials, correlating temperature ranges, correct installation, operation and maintenance in accordance with the relevant regulations are the responsibility of the system designer and the user.

Product Information

Technical Data

SPECTROCEM

Inlet pressure PV	max. 40 bar
Outlet pressure PH	1,5/4/10/20 bar
Materials:	
Body regulator and valve	SS 1.4404 (SS 316 L)
Valve seat regulator	PCTFE
Valve seat shut-off valve	PCTFE
Diaphragm regulator	Hastelloy C276
Diaphragm valve	Hastelloy C276
Soft goods	Viton (FKM)
Filter	sintered SS 1.4404
Connectors	1/4"-18 NPT-F
Temperature range	-30 °C to +60 °C
Leak rate:	
to atmosphere	1x10-8 mbar l/s He
via seat	1x10-6 mbar l/s He
Pressure gauges	safety pressure gauge EN562 / cl. 1.6 / NG50
Weight	2,5 kg

H5 Subject to change

SUPER 55

From the product range „Super", one of the best flashback arrestors in the world.
For reliable protection against dangerous gas backflow and flashback according to EN 730 / ISO 5175-I. BAM Certified and under surveillance
Every Arrestor 100% tested.

Benefits

- extinguish dangerous flashbacks with sintered stainless steel elements FA
- immediately cut off the gas supply, and therefore prevent dangerous further work after any flash-back or gas backflow via pressure sensitive cut-off valve PV
- extinguish sustained backfire – via temperature sensitive cut-off valve TV
- avoid the formation of explosive mixtures in the gas supply – via non-return valves NV
- indicate flashbacks and gas backflow optically – via red alarm mark
- allow simple resumption of work after the cause of hazard has been removed – via resetting the sleeve
- offer long service life due to protection against dirt – via filter at gas inlet
- signalise leaks upstream - via pressure sensitive cut-off valve

Operation / Usage

The Flashback Arrestors are used against gas backflow and flashback at pipeline outlets and single cylinder equipment

- the Flashback Arrestors can be installed independent of the orientation but according to gas flow
- each blowpipe should have its own Flashback Arrestor
- maximum ambient temperature: 70 °C (158 °F)

Maintenance

- annual testing of the non-return valve, leak tightness and flow capacity is recommended
- WITT is happy to supply testing equipment
- Flashback Arrestors are only be serviced by the manufacturer.
  The dirt filter may be replaced by competent staff

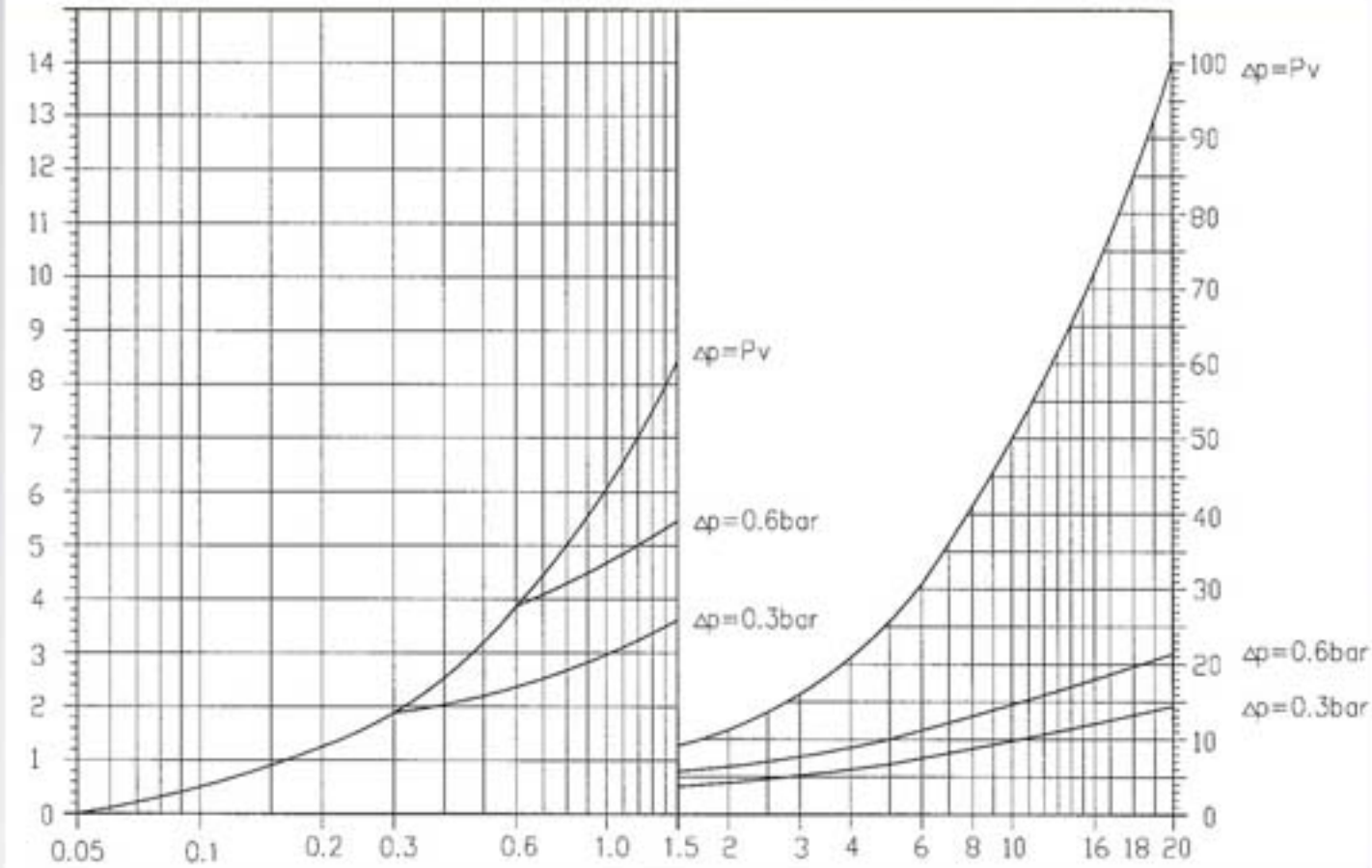
Approvals

Company certified according to ISO 9001:2000 and ISO 14001

Product Information

	gas type max. working pressure [bar]		connection EN 560 [inch]	approval	housing material	seal material	part no.
SUPER 55	Acetylene (A)	1.5	G 3/8 LH	BAM/ZBA/003/04	Brass	Elastomer	146.001
	Propane (P) Natural Gas (C) Methane (M)	5.0					
	Hydrogene (H)	3.0					
	Oxygen (O) Non-flammable gases (D)	20.0	G 1/4 RH				146.003
			G 3/8 RH				146.002

Flow diagram for air (20 °C / 68 °F)



Technical Data

Conversion factors:

Acetylene	x 1.04
Butane	x 0.68
Natural Gas	x 1.25
Methane	x 1.33
Propane	x 0.80
Oxygen	x 0.95
Town gas	x 1.54
Hydrogen	x 3.75

Product Information

Technical Data

WITT SUPER Flashback Arrestors for reliable protection against dangerous reverse gas flow and flashbacks according to EN 730 / ISO 5175-1 BAM **Certified and under surveillance**
Every Arrestor 100% tested.

The best Flashback Arrestors in the world

- a large surface area flame arrestor of stainless steel construction extinguishes any dangerous flashback entering the device in any direction
- after any flashback or reverse gas flow, a pressure sensitive cut-off valve immediately cuts off the gas supply and prevents dangerous further work
- a red signal lever indicates the operation of the pressure sensitive cut-off valve
- the resetting of the arrestor by the lever allows the user to resume safe work immediately after fixing the cause of the flashback or the reverse gas flow
- a temperature sensitive cut-off valve extinguishes sustained flashbacks long before the internal temperature of the arrestors reaches a dangerous level
- a spring loaded non-return valve prevents slow or sudden reverse gas flow forming explosive mixtures in the gas supply
- a filter at the gas inlet protects the arrestor against dirt contamination, extending the service life
- a pressure relief valve vents excessive pressure and soot to the atmosphere protecting the hose from bursting and the flame arrestor from clogging up thus maintaining the flow rate

Operation / Usage

- SUPER Flashback Arrestors are used to protect gas cylinders and pipeline outlet points (hoses and any equipment) against dangerous reverse gas flow and flashbacks
- WITT Flashback Arrestors may be mounted in any position / orientation
- only one piece of equipment may be connected to a single Flashback Arrestor
- the maximum ambient / working temperature is 70 °C

Maintenance

- annual testing of the non-return valve, body leak tightness and flow capacity is recommended
- WITT is happy to supply special test equipment
- Flashback Arrestors are only to be serviced by the manufacturer. The dirt filter may be replaced by competent staff

Approvals

Company certified according to ISO 9001:2000 and ISO 14001

	Gas type Max. working pressure [barg]	Connection EN 560 [inch]	Order no. SUPER 78	 SUPER 90	Approval	Weight [g]	Housing- Material	Seal- Material
SUPER 78 + SUPER 90	Acetylene 1.5	G 3/8 LH	125.010	125.029	BAM/ZBA/003/04	650 (S 78) 600 (S 90)	Brass	NBR/CR
	Propane 4.0							
	Natural Gas/Methane/Hydrogene 5.0							
	Oxygen/non-flammable gases 10.0	G 1/4 RH	125.016	125.030				
SUPER 66	Acetylene 1.5	G 3/8 LH	125.002		BAM/ZBA/003/04	1.104	Brass	NBR/CR
	Propane/Natural Gas/Methane/ Hydrogene 5.0							
	Oxygen/non-flammable gases 10.0	G 1/4 RH	125.006					

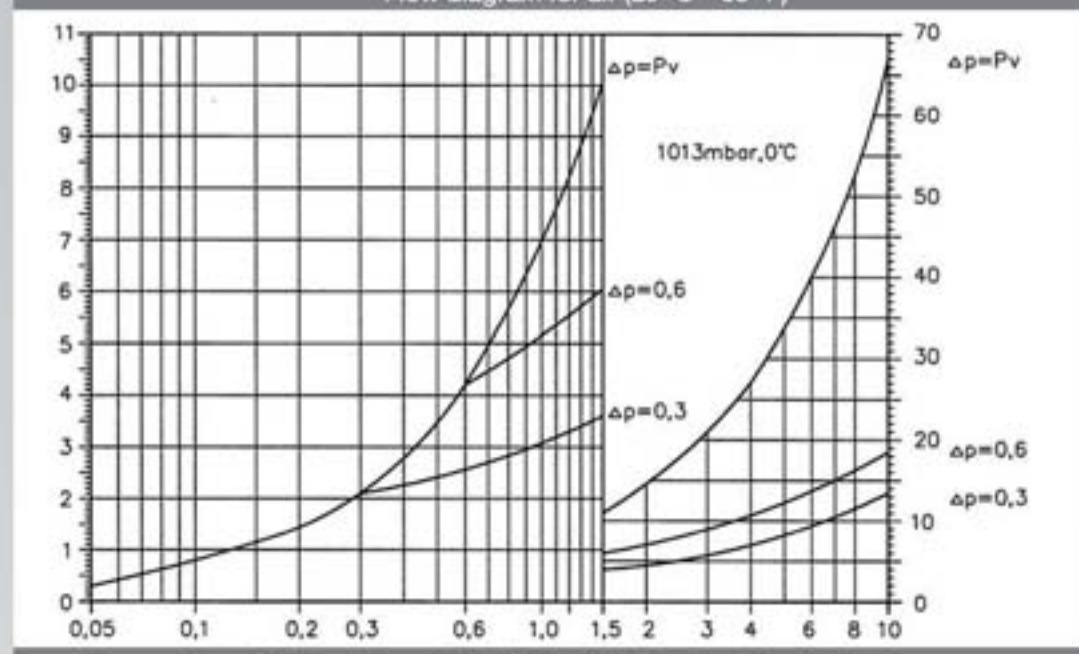
Other connections available on request

SUPER 78 and SUPER 90

Conversion factors:

Acetylene	x 1,04
Butane	x 0,68
Natural Gas	x 1,25
Methane	x 1,33
Propane	x 0,80
Oxygen	x 0,95
Town gas	x 1,54
Hydrogen	x 3,75

Flow diagram for air (20 °C – 68 °F)

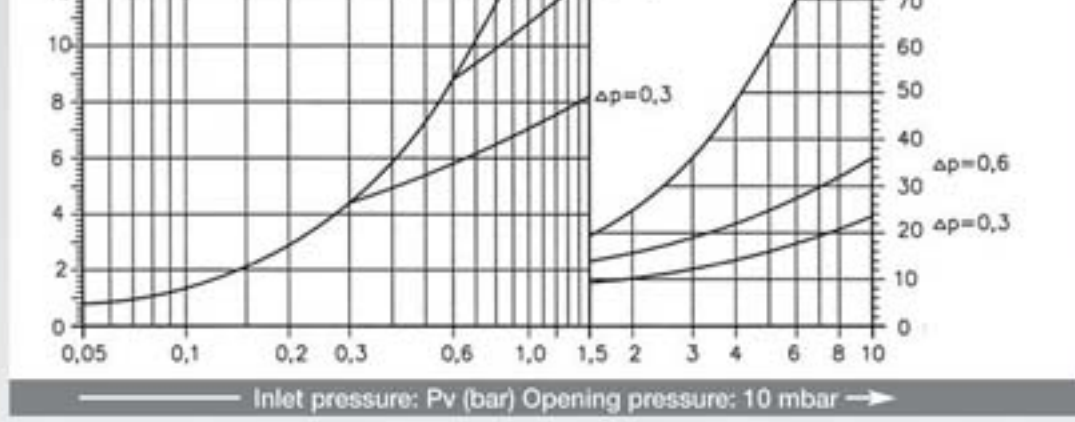


SUPER 66

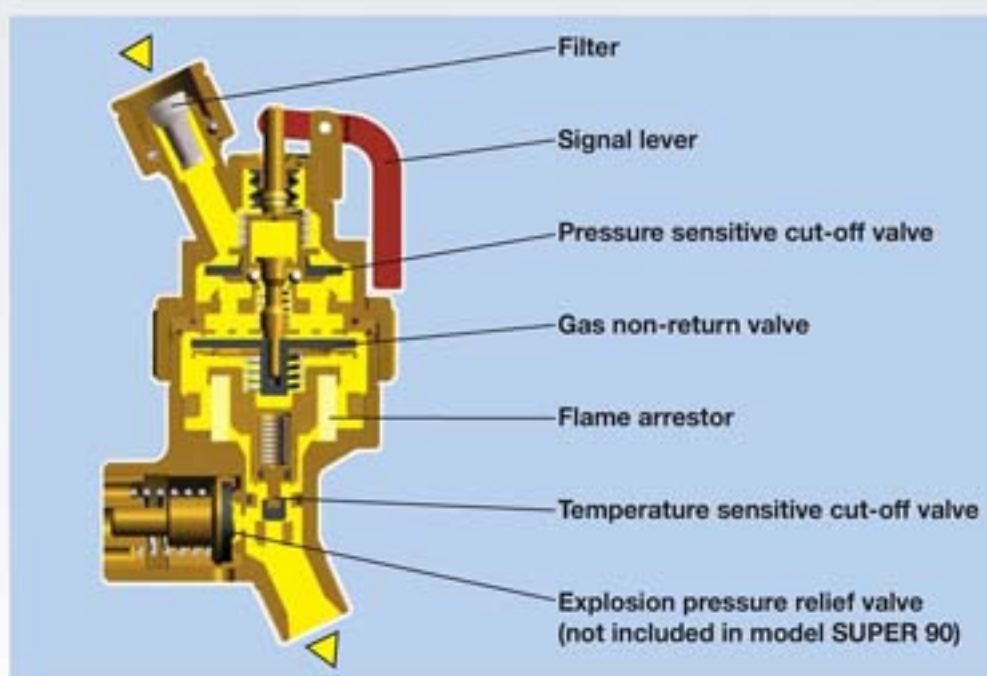
Conversion factors:

Acetylene	x 1,04
Butane	x 0,68
Natural Gas	x 1,25
Methane	x 1,33
Propane	x 0,80
Oxygen	x 0,95
Town gas	x 1,54
Hydrogen	x 3,75

Flow diagram for air (20 °C – 68 °F)



SUPER 66/78/90



Technical Data

A5 subject to change

SAFETY VALVE SV805 / SV808

Component certified, spring loaded, direct acting valve for venting excess pressure from receivers, pipelines and other equipment.

Product Information

Technical Data

Benefits

- according to pressure directives 97/23/EG
- individual pressure setting
- TÜV-certification of pressure setting
- alternatively in brass or stainless steel
- installation independent of position
- sealing agent according to type of gas
- minimal size for easy, problem free mounting
- different inlet connections
- with/without condensation drilling
- protective cap against dirt
- SV808 manual ventilation

Flow capacity for air at 23° C (Valid only for atmospheric back pressure)

Inlet Pressure	[bar]	0,5	1	2	3	4	5	6	7	8	9	10	11
Airflow	[m³/h]	15,7	23,5	35,9	48,3	60,6	73	85,4	97,7	110,1	122,3	134,7	147
Inlet Pressure	[bar]	12	13	14	15	16	17	18	19	20	21	22	23
Airflow	[m³/h]	159,4	171,7	184,1	196,5	209,8	260,6	275,1	289,7	304,3	318,9	333,4	348
Inlet Pressure	[bar]	24	25	26	27	28	29	30	31	32	33	34	35
Airflow	[m³/h]	362,5	375,5	390	404,5	419	433,4	448	462,4	476,9	491,5	505,9	520,4
Inlet Pressure	[bar]	36	37	38	39	40	41	42	43	44	45		
Airflow	[m³/h]	534,9	549,4	563,9	578,4	592,9	607,4	621,9	636,3	650,9	665,3		

SAFETY VALVE SV805 / SV808

Excess pressures	from 0,5 to 45,0 bar
Type of gas	all technical gases
Material	Housing and metal turned parts, brass or stainless steel (1.4541) Pressure spring made of stainless steel (1.4310) Valve seal according to type of gas
Wrench size	27 mm
Weight	ca. 260 g
Outlet	M24 x 1 IG
Marking	CE0044, TÜV*SV*03-931* d0* D/G* 0,56*p
Drilling (d0)	Ø 6,0 mm for opening pressure 0,5 bar to 25 bar Ø 6,5 mm for opening pressure 25 bar to 45 bar
Outflow number (α_w)	0,56
Temperature Range	-196 °C to +150 °C
Adapter	for connection to ventilation pipe at the outlet M24 x 1 AG auf 1/2" NPT IG, available in brass or stainless steel

Version	Inlet	Overall length	Outlet
Brass	G 1/4", 1/4" NPT G 3/8", 3/8" NPT M16 x 1,5, M18 x 1,5 G 1/2", 1/2" NPT G 3/4", 3/4" NPT M20 x 1,5	L = 90,0 mm	M24 x 1 IG
		L = 95,0 mm	
Stainless steel	G 1/4", 1/4" NPT G 3/8", 3/8" NPT M16 x 1,5, M18 x 1,5 G 1/2", 1/2" NPT G 3/4", 3/4" NPT M20 x 1,5	L = 96,5 mm	
		L = 101,5 mm	

Upon ordering please state:

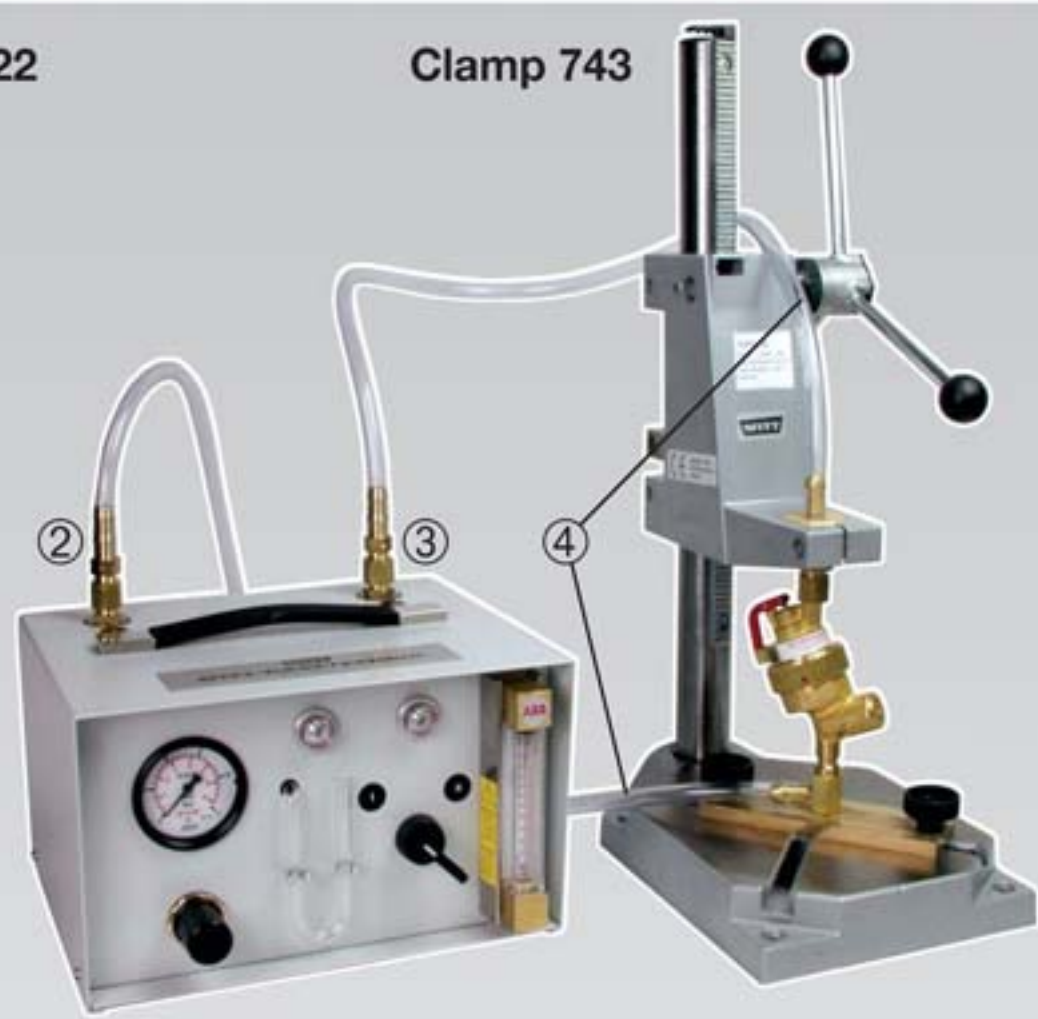
Type of gas
Temperature
Pressure setting
Type of Inlet fitting
With or without condensation drilling

Technical Data

J4 subject to chance – other connections on request

Test Rig 722

Clamp 743



Flashbacks, dirt and external damage may affect the flow capacity and proper functioning of Flashback Arrestors and Non-return Valves. Therefor annual testing of all safety elements is imperative to avoid hazardous situations.

Product Information

Benefits

- helps to save money- no more costly services by testing companies required
- ready for immediate and flexible use e.g. during breaks
- only one test rig for all flashback arrestors and non-return valves (up to DN 50)
- only one test rig for all 5 tests
- easy and time saving operation
- clear readings
- robust design
- maintenance free

Option Clamp 743

- for convenient testing
- quick exchange of test units saves time and money
- connector sets for different fittings included in package

Tests

The following tests can be carried out:

1. leak tightness to atmosphere
2. test of non-return valve against low and high back pressure
3. operating pressure of pressure sensitive gas cut off valve
4. measurement of flow capacity of flashback arrestors

Components:

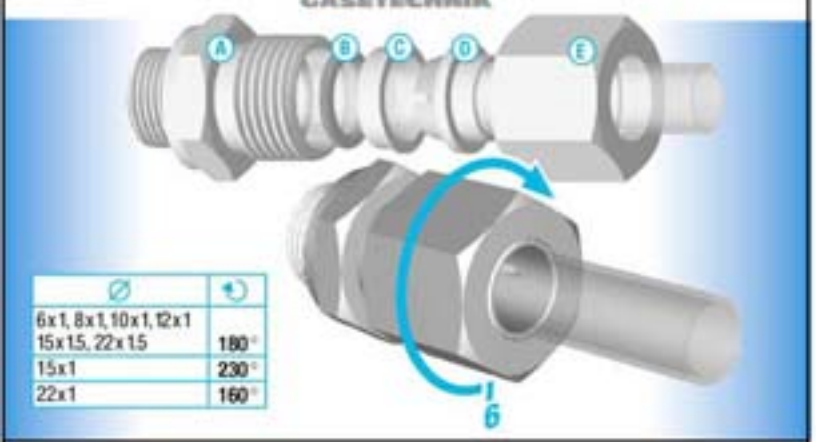
a) regulator adjustment
b) pressure gauge
c) U-tube for measurement of leak rates
d) flow meter to control the flow
e) selector switch for operation mode

Technical Data

Type	Test Rig 722
Order No.	101.00010
Test gases	Nitrogen, oil free air
Test gas inlet pressure	min. 3.0 bar; max. 18.0 bar
Temperature (gas/environment)	0 °C to +45 °C (32 °F to 113 °F)
Test gas connection	G 1/4 male or coupling probe for compressed air
Connections	② ③ G 3/8 LH
Housing	steel, powder-coated
Weight	ca. 5.6 kg
Dimensions (HxWxD)	180 x 296 x 230 mm (7.1 x 11.7 x 9.1 inch)

Type	Clamp 743
Order No.	101.00012
Test gas connections	④ hoses DN 9 with G 3/8 LH male
Connector sets	G 1/4 RH/LH G 3/8 RH/LH G 1/2 RH/LH or conforming to country requirements
Housing	steel, powder-coated
Weight	ca. 9.0 kg
Dimensions (HxWxD)	600 x 100 x 320 mm (23.6 x 3.9 x 12.6 inch)
Approvals	Company certified according to ISO 9001:2000 and ISO 14001

WITT GASETECHNIK www.wittgas.com



∅	↻
6x1, 8x1, 10x1, 12x1 15x1.5, 22x1.5	180°
15x1	230°
22x1	160°

WITTFIX Rohrverschraubung für Kupferrohr (vgl. Tab.) D

- **Max. 25 bar Betriebsüberdruck**
- **Rohrempfehlung:** Nahtlos gezogenes Rohr nach EN 12449, SF-Cu, F22
- **WITTFIX ist gebrauchsfertig** mit den abgebildeten lose verschraubten fünf Bauteilen:
  - (A) Doppelnippel
  - (B) O-Ring
  - (C) Druckscheibe
  - (D) Spannhülse
  - (E) Überwurfmutter

⚠ *Prüfen Sie, ob der O-Ring aus NBR beständig gegen das verwendete Medium ist!*

Montageanleitung

1. Stecken Sie das rechtwinklig abgesägte und sauber entgratete Rohr bis zum Anschlag in die leicht gelöste Rohrverschraubung und ziehen Sie die Überwurfmutter *fingerfest* an.
2. Markieren Sie die Überwurfmutter an der *6-Uhr-Position.*
3. Halten Sie den Doppelnippel (A) mit einem Gabelschlüssel am Sechskant gegen. Ziehen Sie die Überwurfmutter mit der aus der Tabelle ersichtlichen Gradangabe fest.

WITTFIX Pipe connection for copper pipe (see table) GB

- **Up to 25 bar operating pressure**
- **Pipe type:** Copper pipe to EN 12449
- When the five components shown on the drawing have been fitted, **WITTFIX is ready for use:**
  - (A) Connector body
  - (B) O-ring
  - (C) Washer
  - (D) Olive
  - (E) Nut

⚠ *Check that the NBR (Nitrile) O-rings are suitable for the gas in use!*

Assembly instructions

1. Cut the tube squarley to the correct length. Clean any burrs or rough edges. Put the pipe into the loosened pipe connection and carefully tighten the nut *by hand.*
2. Mark the nut at the *6 o'clock position.*
3. Hold the double nipple (A) with a spanner and tighten the nut according to the table.

WITTFIX Raccords pour tubes de cuivre (voir tableau) F

- **Pression de service de 25 bar maxi**
- **Recommandations:** Les tubes cuivre conformes à la norme EN 12449
- Quand les 5 parties ont été assemblées suivant le plan, le raccord **WITTFIX est prêt.**
  - (A) Corps du raccord
  - (B) Joint O'ring
  - (C) Bague de compression
  - (D) Olive
  - (E) Ecrou

⚠ *Vérifier que le joint O'ring en NBR (Nitrile) est compatible avec les gaz utilisés.*

Instructions de montage

1. Couper le tube proprement à la longueur souhaitée. Ebavurer. Monter les éléments sur le tube et présenter celui-ci dans le raccord. Serrer l'écrou *à la main.*
2. Marquer l'écrou *à 6 h.*
3. Tout en maintenant le raccord (A) avec une clé, serrer l'écrou suivant le tableau ci-joint.

WITTFIX per tubi di rame (vedi tabella) I

- **Pressione operativa di 25 bar max**
- **Raccomandato per:** tubo di rame come da EN 12449
- Quando i 5 componenti illustarti dal disegno sono stati connessi, **WITTFIX é pronto per l'uso.**
  - (A) Corpo del raccordo
  - (B) O-ring
  - (C) Rondella
  - (D) Oliva
  - (E) Dado

⚠ *Verificare che l'O-ring in NBR sia compatibile con i gas da utilizzare*

Istruzioni di montaggio

1. Tagliare l'estremità del tubo alla lunghezza corretta. Pulire e sbavare i bordi. Infilare il tubo nel raccordo allentato e poi stringere *a mano.*
2. Marcare il dado in posizione *ore 6.*
3. Tenere il doppio nipplo (A) con le chiavi e stringere secondo la tabella

WITTFIX Atornillamiento para tubos de cobre (mire tabla) E

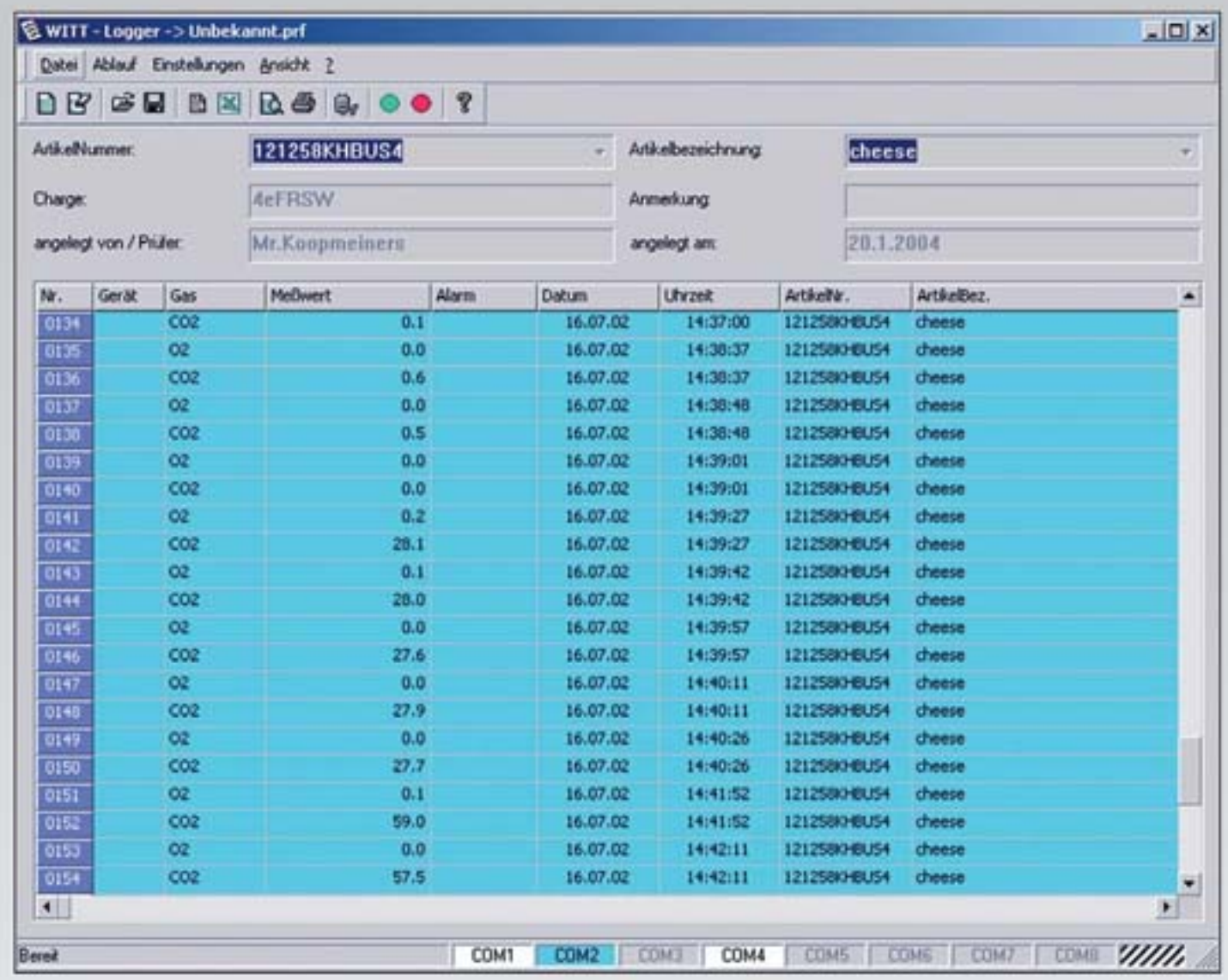
- **Max. 25 bar presión de servicio**
- **Recomendamos:** Tubo sin costura según EN 12449, SF-Cu, F22
- **WITTFIX esta listo para usar** con las ilustradas 5 piezas:
  - (A) manguito doble
  - (B) junta
  - (C) arandela
  - (D) manguito de apriete
  - (E) tuerca de racor

⚠ *Comprueben, si la junta de NBR es resistente contra el medio que van usar!*

Instrucciones de montaje

1. Introduzcan el tubo rebarbado y cortado en ángulo recto en el atornillamiento y aprieten la tuerca de racor.
2. Marqen la tuerca de racor en la *posición de 6 horas.*
3. Mantengan en posición el manguito doble (A) usando una llave de horquilla en el exagonal y aprieten la tuerca de racor según los datos de la tabla.

SOFTWARE WITT-LOGGER



Nr.	Gerät	Gas	Meßwert	Alarm	Datum	Uhrzeit	ArtikelNr.	ArtikelBez.
0134		CO2	0.1		16.07.02	14:37:00	121258KHBUS4	cheese
0135		O2	0.0		16.07.02	14:38:37	121258KHBUS4	cheese
0136		CO2	0.6		16.07.02	14:38:37	121258KHBUS4	cheese
0137		O2	0.0		16.07.02	14:38:48	121258KHBUS4	cheese
0138		CO2	0.5		16.07.02	14:38:48	121258KHBUS4	cheese
0139		O2	0.0		16.07.02	14:39:01	121258KHBUS4	cheese
0140		CO2	0.0		16.07.02	14:39:01	121258KHBUS4	cheese
0141		O2	0.2		16.07.02	14:39:27	121258KHBUS4	cheese
0142		CO2	28.1		16.07.02	14:39:27	121258KHBUS4	cheese
0143		O2	0.1		16.07.02	14:39:42	121258KHBUS4	cheese
0144		CO2	28.0		16.07.02	14:39:42	121258KHBUS4	cheese
0145		O2	0.0		16.07.02	14:39:57	121258KHBUS4	cheese
0146		CO2	27.6		16.07.02	14:39:57	121258KHBUS4	cheese
0147		O2	0.0		16.07.02	14:40:11	121258KHBUS4	cheese
0148		CO2	27.9		16.07.02	14:40:11	121258KHBUS4	cheese
0149		O2	0.0		16.07.02	14:40:26	121258KHBUS4	cheese
0150		CO2	27.7		16.07.02	14:40:26	121258KHBUS4	cheese
0151		O2	0.1		16.07.02	14:41:52	121258KHBUS4	cheese
0152		CO2	59.0		16.07.02	14:41:52	121258KHBUS4	cheese
0153		O2	0.0		16.07.02	14:42:11	121258KHBUS4	cheese
0154		CO2	57.5		16.07.02	14:42:11	121258KHBUS4	cheese

Windows-Software for the documentation of analysis-results of MFA, OXYBABY®V and other WITT- equipment with integrated or separate analysis.

Product Information

Benefits

- quality control by means of data recording and storing with date and time
- individual product administration of lot no., article no., examiner etc.
- data-export interface for further read-out of the measured data in MS EXCEL®
- simultaneous logging from up to 8 analysers
- multilingual interface
- automatic identification of the connected WITT-Analyser

Technical Data

System requirements

Operating system	WINDOWS 95, 98, ME, NT 4.0, 2000, XP
Hardware	min. Pentium 200 MHz, 64 MB RAM 1 free serial interface, graphic resolution min. 800 x 600 Pixel
Compatibility	all MFA, OXYBABY®V, WITT-analysers and gas mixers with integrated analysers please specify device number with order
Accessories	connecting cable included in delivery
Option	USB-adapter cable