



DRM Technic

BÜHLER CATALOGUE 2017



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ABOUT US

DRM offers products and services for combustion, process and environmental monitoring. We make our own products and also represent leading manufacturers.

We are a leading gas analysis and conditioning equipment supplier whose services include system design, system installation, product maintenance and customer support.

We've worked within the measurement industry for many years and work very closely with most of the leading UK and European systems integrators and manufacturers. We have excellent relationships with our customers and endeavour to always provide high quality solutions with the best possible price/performance ratios.

PAYMENT OPTIONS

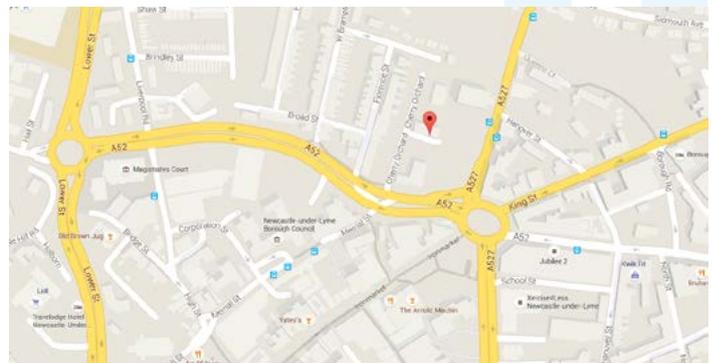
We accept cheques, credit/debit cards and electronic bank payments. We also offer monthly credit accounts, subject to status. We are an established exporter and are pleased to offer a complete export service for our large product range. We can export our products worldwide.

CONTACT DETAILS

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**SECTION 1:
SAMPLE GAS
ANALYSERS**



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BA4000 PORTABLE ANALYSER

The BA4000 is suitable for various applications in non-hazardous areas.



FEATURES

**Paramagnetic Detection Principle | 4-20 mA Analog Output | Reliable, Durable Measuring Cell
Simple Operation | Fast, Accurate O₂ Analysis | Various Ranges Available | Battery Operated**

SPECIFICATIONS

Product No.	Description
Available Ranges	0 ... 25 Vol.% O ₂ 0 ... 100 Vol.% O ₂ (Custom Ranges Available on Request)
Measuring Principle	Paramagnetic
Accuracy	0.1 % O ₂ Absolute
Repeatability	± 0.05 % O ₂
Response Time	T ₉₀ < 10s
Zero-Drift	± 0.1 Vol.% O ₂ per week
Span Drift	± 1% range per week
Inlet Temp.	5 °C ... 40 °C
Inlet Pressure	Min: 10 mbar, Max: 1.5 bar (w/o internal pump) -5 mbar (w/ internal pump)
Sample Flow	Approx. 120 ml/min at (w/o internal pump) Approx. 30 l/h (w/ internal pump)
Conditioning Dew Point	At least 5 °C below ambient temperature
Ambient Temperature	10 °C ... 45 °C
Relative Humidity	< 75% in average
Signal Output	4 ... 20 mA (max. 400 Ω) 0.1 V (min. 1 kΩ) optional
Power Supply	230 V, 50/60 Hz 115 V, 50/60 Hz
Internal Battery	12 V, 2.7 Ah (Approx. Operating Time: 14 hrs)
Protection	IP 20 (standard)
Dimensions	145 mm x 182 mm x 240 mm
Weight	Approx. 4.5 kg
Gas Connections	6 mm OD, 4mm ID
Sample Wetted Parts	PVDF, Glass, SS 1.4571, Gold, Viton, Platinum-iridium, Epoxy Resin

OPTIONS AND ACCESSORIES

55110991	Internal Pump	55110993	Power Supply, 115 V
55110992	Power Supply, 230 V	4600999	ARP Back Pressure Regulator



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BA4000 Inj. PORTABLE ANALYSER

The BA4000 is designed for oxygen analysis in small packages. Typically, it is used for analysis of head space volume in bottles, cans or soft packages. It can work for up to 14 hours without an external power source.



FEATURES

**Paramagnetic Detection Principle | O₂ Analysis at Low Volumes ≥15ml | Long Life Measuring Cell
Simple Operation | Fast and Accurate Analysis | Optional Time Relay for Pump Control**

SPECIFICATIONS

Analyser Specifications

Product No.	BA 4000 Inj. GV	BA 4000 Inj. KV
Volume	> 35 ml	15 ... 35 ml
Piercing Probes	EV-1, EV-3, EV-D or EV-G	EV-1, EV-3, EV-D or EV-G
Pump Type	Intergrated Sample Pump with Adjustable Time Relay	External Vaccum Pump

Piercing Probe Specifications

Product No.	Description
EV-1	For single hand operation. Suitable for taking gas samples from inerted soft packing.
EV-3	Fixed needle. Suitable for taking gas samples from inerted soft packing. The optional attachment of a fine disc filter makes this probe particularly suitable for packages potentially containing fine particulates (e.g. coffee).
EV-D	Adjustable in height with a short, strong needle. Suitable for taking gas samples from hard packing like cans, bottles, etc.
EV-G	Suitable for taking samples from double glazed panes.

OPTIONS AND ACCESSORIES

OPTIONS

Product No.	Description
55113999	BA4000 Inj. GV
55115991	BA4000 Inj. KV

ACCESSORIES

6570521	Vacuum Pump 115V
6570520	Vacuum Pump 230V
55110994	Pressure Indication
6578999	EV-D
6574999	EV-G
6571999	EV-1
65709012	Needles for EV-1
6570947	Adhesive Tape
65709021	EV-3
6570901	Needles for EV-3
6570937	Septum for EV-3
65709033	Disc Filter for EV-3
6570949	Quick Coupling Set
6570975	Water Stop Filter
55110992	Power Converter 100-240 V AC, 12 V DC

For more information, please contact sales



BA4510 PORTABLE TRACE O₂-ANALYSER

The BA4510 is designed to measure oxygen traces in inert gases. It has an intergrated sample pump which can be used in low pressure applications. For applications involving combustibile gases, a special version (BA4510KIZ) is available.



FEATURES

- Nearly Drift Free
- 4-20 mA Analog Output
- RS232 Interface
- Internal Sampling Pump
- Programmable Alarm Output

OPTIONS AND ACCESSORIES

PN	Description
5515000	BA4510 Analyser
5515001	BA4510 KIZ Analyser
5511399	BA4000 Portable Oxygen Analyser

For more information, please feel free to contact our sales department

SPECIFICATIONS

Product No.	BA4510
General	
Measured Component	Oxygen
Measuring Range	0 Vol.-ppm ... 20.9 Vol.-% O ₂
Measuring Principal	Zirconia Dioxide
Dimensions	135 x 100 x 240 mm
Gas Inlet / Outlet	3mm Swagelok Screwed Union / Tube Nipple 4mm
Protection Class	IP 40
Performance Specification	
Accuracy	< 5% (of measured value)
Repeatability	< 1.5 % O ₂
Response Time (T ₉₀)	< 5 sec
Zero Drift	< 0.2 vpm O ₂ per week
Span Drift	< 0.02% of range per week or 200 vpb per week (whichever is larger)
Sample / Environmental Conditions	
Sample Temp.	+ 5 °C to 80 °C
Sample Pressure	Max. 20 mbar
Sample Flow Rate	5 ... 10 l/h (without pump)
Dew Point	Min 5 °C below ambient temperature
Ambient Temp.	10 °C to 45 °C
Power Supply / Signal Outputs	
Power Supply	100 - 240 V AC, 47-63 Hz
Power Consumption	20 VA
Signal Output	0/4 ... 20 mA, scalable
Serial Interface	RS 232



BA1000 ZIRCONIA OXYGEN ANALYSER

The BA1000 Zirconia Oxygen Analyser has been developed for in-situ applications.

The cell is self-controlling and therefore well suited to applications in flue gases or similar matrices.

FEATURES

Low Energy Consumption | Temperature Independent | Linear Output Signals 4 - 20 mA | Long Life Error Protected | High Measurement Precision | Independent of Gas Matrix | No Reference/Calibration Gas

SPECIFICATIONS

Product No.	BA1000
Warm-up Time	Approx. 5 min.
Measurement Range	0.1 - 25 Vol.% O ₂
Output	4-20 mA
Accuracy	± 2% of full scale value
Sample Temp.	0 °C up to +450 °C
Exhaust Gas Velocity	Up to 10 m/s
Probe Diameter	12 mm
Response Time	Approx. 3 seconds
Operating Ambient Temp.	-10 °C to +50 °C
Storage Temp.	-20 °C to +70 °C
Power Supply	24 V DC
Current	650 mA
Switch-on Current	4.4 A
Distance Analyser / Control Unit	Max. 100 m
Protection Class	IP 54
Weight	ca. 1.1 kg
Material	Stainless Steel / Aluminium (Painted)

OPTIONS AND ACCESSORIES

PN	Description
Options	
5501398	BA1000 w/ Probe Length = 220 mm
5501399	BA1000 w/ Probe Length = 380 mm
5501499	BA1000 w/ Probe Length = 780 mm
Accessories	
5501599	Wall Mounted Power Supply
5501899	Wall Mounted LED Display
55012992	Calibration Display
55012993	1/2" NPT Pipe Fitting for Probe Mounting; PTFE Locking Ring
55012994	1/2" NPT Pipe Fitting for Probe Mounting; St/St Locking Ring
55012995	Interconnecting Cable 5m
55012997	Complete Pre-Filter w/ Mounting Flange
550129971	Complete Pre-Filter w/o Mounting Flange

For more information, please feel free to contact our sales department



BA2000 OXYGEN FLUE GAS ANALYSER

The BA2000 Oxygen Flue Gas Analyser is a fast-response, low maintenance analyser for use in general combustion applications. It doesn't need reference or calibration gases.



For more information on the BA2000 Flue Gas Analyser, please see overleaf

FEATURES

- Reliable and Fast Results
- No Reference or Calibration Gas Required
- Low Maintenance Time / Costs
- Flue Gas Temp: > 1600 °C
- Ambient Temp: -20 °C to 70 °C

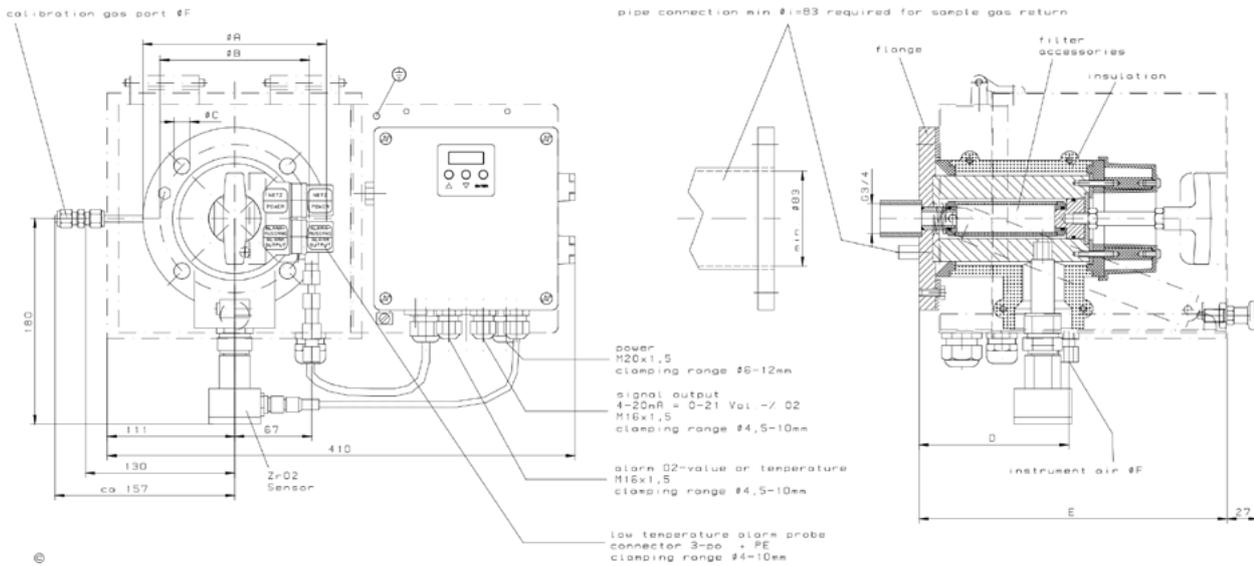
SPECIFICATIONS

Sample Tube Length	0.5 m ... 1.5 m
Mains Supply	115/230 V, 50/60 Hz
Power Consumption Probe Heating	400 W
Measuring Range	0.1 to 21 Vol.-% O ₂
Signal Output	4-20 mA = 0 - 21 Vol.-% O ₂ (scalable 0-2.5 / 0-5 / 0-10 / 0-15)
Accuracy	Relative error < 5%
T ₉₀ -time Sensor	< 15 sec
Alarm Sensor	Upper and lower limit of normal value for heating (fixed) Upper and lower limit of O ₂ concentration (settable)
Alarm Probe	Insufficient temperature
Ambient Temperature	- 20 ... + 70 °C
Process Temperature	< 16 °C depending on sample tube
Probe Operating Temperature	Max. 200 °C
Probe Material	SS 1.4571
Calibration gas 1-point calibration	Instrument air, 20.9 Vol.-% O ₂
Calibration gas 2-point calibration	Instrument air, 20.9 Vol.-% O ₂ and calibration gas 0.1 ... 15 Vol.-% O ₂



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TECHNICAL DRAWINGS



All measurements in mm

OPTIONS AND ACCESSORIES

Product No.	Description
Options	
BA-2000	Standard Version, 115/230V Mains Supply
BA-2000-MF	Version with Separate Sample Gas Recovery; 115/230V Mains Supply
BA-2000-SE	Version with Separated Electronic up to 15m (approx); 115/230V Mains Supply
BA-2000-CREM	Version Specifically Designed for High-Temperature and High-Dust Applications; 115v/230v Mains Supply (Separate Datasheet Available)
Accessories	
55200001	Adaptor flange - DN65 PN6 to Thermox
55200002	Adaptor flange - DN65 PN6 to Thermox
55200001I	Adaptor flange - DN3-150 to Servomex
55200002I	Adaptor flange - DNS-150 to Thermox



BA2000-CREM OXYGEN FLUE GAS ANALYSER

The BA2000 Oxygen Flue Gas Analyser is specially designed for use in high temperature/dust situations where traditional analysers wouldn't be able to function.



For more information on the BA2000-CREM Oxygen Flue Gas Analyser, please see overleaf

FEATURES

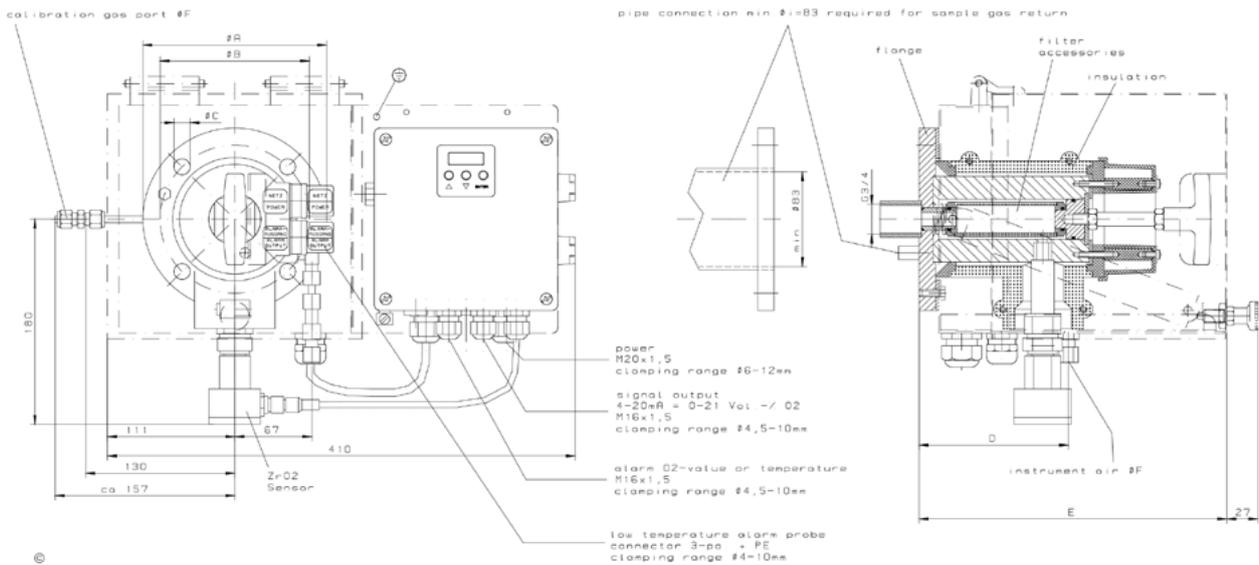
- Suitable for use in High Temperature and High Dust Environments
- Reliable and Fast Results
- No Sampling System Required
- Low Maintenance Time and Costs

SPECIFICATIONS

Sample Tube Length	0.5 m ... 1.5 m
Mains Supply	115/230 V, 50/60 Hz
Power Consumption Probe Heating	400 W
Measuring Range	0.1 to 21 Vol.-% O ₂
Signal Output	4-20 mA = 0 - 21 Vol.-% O ₂ (scalable 0-2.5 / 0-5 / 0-10 / 0-15)
Accuracy	Relative error < 5%
T ₉₀ -time Sensor	< 15 sec
Alarm Sensor	Upper and lower limit of normal value for heating (fixed) Upper and lower limit of O ₂ concentration (settable)
Alarm Probe	Insufficient temperature
Ambient Temperature	- 20 ... + 70 °C
Process Temperature	< 16 °C depending on sample tube
Probe Operating Temperature	Max. 200 °C
Probe Material	SS 1.4571
Calibration gas 1-point calibration	Instrument air, 20.9 Vol.-% O ₂
Calibration gas 2-point calibration	Instrument air, 20.9 Vol.-% O ₂ and calibration gas 0.1 ... 15 Vol.-% O ₂



TECHNICAL DRAWINGS



All measurements in mm

OPTIONS AND ACCESSORIES

Product No.	Description
Options	
BA2000-CREM	High-Temperature / Dust Version; 115v/230v Mains Supply
BA2000	Standard Version, 115/230V Mains Supply
BA2000-MF	Version with Separate Sample Gas Recovery; 115/230V Mains Supply
BA2000-SE	Version with Separated Electronic up to 15m (approx); 115/230V Mains Supply
Accessories	
55200001	Adaptor flange - DN65 PN6 to Thermox
55200002	Adaptor flange - DN65 PN6 to Thermox
55200001I	Adaptor flange - DN3-150 to Servomex
55200002I	Adaptor flange - DNS-150 to Thermox



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SECTION 2: SAMPLE GAS COOLERS



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TC-MINI SAMPLE GAS COOLER

Sample Gas Coolers are used to provide stable dewpoints, even under harsh ambient conditions.

The TC-Mini is a small but compact gas cooler, particularly suited for OEMs to build into compact sample gas conditioning systems.



FEATURES

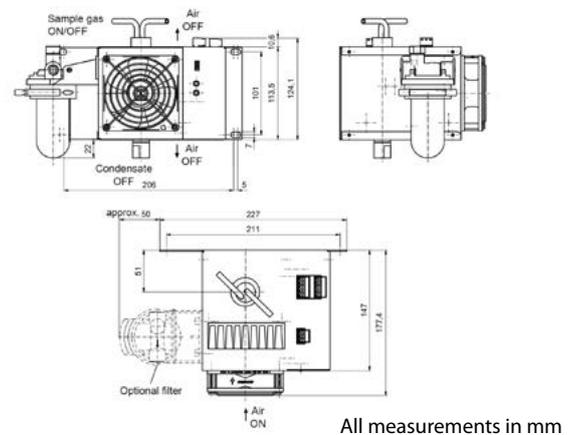
Peltier Cooler with 1 Heat Exchanger | Status Display and Output | Analog Signal Output | Adjustable Dew Point | Maintenance Free | Low Operating Noise

SPECIFICATIONS

Product No.	TC-Mini
Ready for Operation	After 10 min (max)
Ambient Temp.	5 °C to 55 °C
Gas Output Temp	5 °C (preset)
Protection Class	IP 20
Housing	Stainless Steel
Dimensions	235 x 225 x 280 mm (w/o add-on filter)
Weight	3.5 kg (w/ heat exchanger)
Power Supply	24 V DC
24V Output	Max. 1 A
Power Input	Max. 70 VA (+ max. 25 VA at the 24V output)
Status Output Switching Capacity	33 V AC / 70 V DC, 1 A
Electrical Connections	Phoenix Plug (Std. Applications)

For more information, please contact our sales department

TECHNICAL DRAWINGS



All measurements in mm

OPTIONS AND ACCESSORIES

Product No.	Description
Heat Exchanger Options	
MTS / MTS-I	Stainless Steel Heat Exchanger
MTG	Glass Heat Exchanger
MTV / MTS-I	PVDF Heat Exchanger
Additional Options	
FF-3-N	Moisture Detector
AGF-PV-30-F2	Filter



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TC-STANDARD SAMPLE GAS COOLER

Sample Gas Coolers are used to provide stable dewpoints, even under harsh ambient conditions. The TC-Standard is a compact analyser which covers a large percentage of standard applications in gas analysis. It is the direct successor to the PKE5.



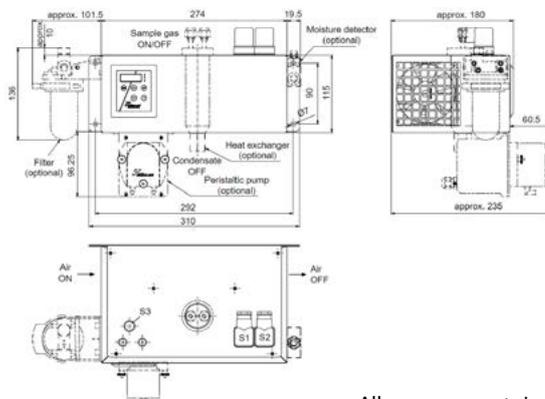
FEATURES

Compact Design | Pre-installed and Ready to Connect | Low Maintenance Costs | Available with One or Two Heat Exchangers (in either SS, PVDF or Duran Glass) | Low Operating Noise

SPECIFICATIONS

Product No.	TC-Standard
Ready for Operation	After 10 min (max)
Ambient Temp.	5 °C to 50 °C
Gas Output Temp	5 °C (preset) 2 °C ... 20 °C (adjustable)
Protection Class	IP 20
Housing	Stainless Steel
Dimensions	355 x 220 x 205 mm
Weight	7.5 kg (standard) 6.5 kg (for 24 V DC) 9kg (fully upgraded)
Electrical Power Input	Options - 24 V DC; 5 A; 120 W 230 V AC; 0.6 A; 110 W/140 VA 115 V AC; 1.2 A; 110 W/140 VA
Status Output Switching Capacity	Max. 230 V AC, 150 V DC; 2A, 50 VA, potential-free
Electrical Connections	Plug per DIN 43650

TECHNICAL DRAWINGS



All measurements in mm

OPTIONS AND ACCESSORIES

Product No.	Description
Heat Exchanger Options	
TC-Standard 6111	Cooler w/ 1 Heat Exchanger
TC-Standard 6112	Cooler w/ 2 Heat Exchangers
Additional Options	
FF-3-N	Moisture Detector
CPsingle/ CPdouble	Peristaltic Drain Pumps
AGF-PV-30-F2	Filter

For more information, please contact our sales department



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TC-MIDI SAMPLE GAS COOLER

Sample Gas Coolers are used to provide stable dewpoints, even under harsh ambient conditions.

The TC-MIDI is specified for applications requiring a higher cooling capacity. It is the direct successor to the PKE 52.



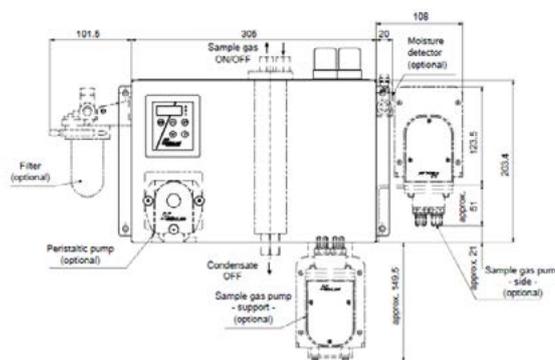
FEATURES

Compact Design | Pre-installed and Ready to Connect | One or Two Gas Paths | Available with One or Two Heat Exchangers (in either SS, PVDF or Duran Glass) | Low Maintenance Cost

SPECIFICATIONS

Product No.	TC-Midi
Ready for Operation	After 10 min (max)
Ambient Temp.	5 °C to 60 °C
Gas Output Temp	5 °C (preset) 2 °C ... 20 °C (adjustable)
Protection Class	IP 20
Housing	Stainless Steel
Dimensions	350 x 220 x 220 mm
Weight	11 kg (standard) 14.5 kg (fully expansion)
Electrical Power Input	Options - 24 V DC; 1.2 A; 200 W/280 VA 115 V AC; 2.4 A; 110 W/140 VA
Status Output Switching Capacity	Max. 230 V AC, 150 V DC; 2A, 50 VA, potential-free
Electrical Connections	Plug per DIN 43650
Pump Condensate Outlet	Hose Nipple Ø6 mm Screw Connection 4/6

TECHNICAL DRAWINGS



All measurements in mm

OPTIONS AND ACCESSORIES

Product No.	Description
Options	
45100xx	Automatic Condensate Drains
9144050038	Cable for Cooler Temperature Analogue Output 4m
4410005	Condensate Trap GL1, 0.4 L
422811110000	P1.1 Sample Pump
Replacements	
41939959	Filter Element F2
449200350xx	Norprene Hoses

For more information, please contact our sales department



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EGK 1/2 SAMPLE GAS COOLER

EGK 1/2 Sample Gas Coolers are used to provide stable dewpoints, even under harsh ambient conditions. It works through a cooling block which is regulated by the Bühler Constant Regulating System. It can accommodate two separate gas paths.

FEATURES

Compact Design | Single or Dual Gas Streams | Cooling Block Temperature Display | Cooling Capacity 320 kJ/h | Self-Checking | Status Alarm | CFC-Free | FM Approval

SPECIFICATIONS

Ready for Operation	Max. 15 minutes
Cooling capacity (at 25 °C)	320 kJ/h
Ambient Temperature	+5 ... +50 °C
Dewpoint (Set at Factory)	Approx. 5 °C
Dewpoint Variations (Static) (Over Full Operation Range)	0.1 K ± 1.5 K
Power Supply	115 or 230 V, 50/60 Hz, plug according to DIN 43650
Power Consumption	290/260 VA, fuse (external) 10 A
Alarm Output	Max. 250V, 2A, 50VA, plug according to DIN 43650
Protection Class	IP 20
Housing	Stainless Steel
Installation	Table or Wall Mounting
Packing Dimensions	Approx. 390 x 300 x 400 mm
Weight (with Heat Exchanger)	Approx. 15 kg

OPTIONS AND ACCESSORIES

Product No.	Description
4410001	Automatic Condensate Drain 11 LD V 38
4410004	Automatic Condensate Drain AK 20, PVDF
4410005	Condensate Vessel GL 1; glass, 0.4 l
4410019	Condensate Vessel GL 2; glass, 1 l
9124030104	Persitaltic Pump, 230 V, 0.3 l/h, separate mounting
9124030105	Peristaltic Pump, 115 V, 0.3 l/h, separate mounting

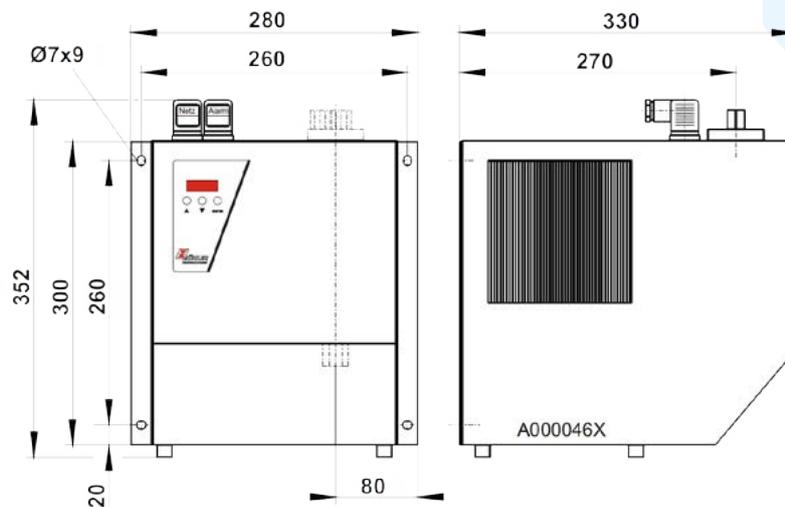


EGK 1/2 HEAT EXCHANGERS

Heat Exchanger	TS / TS-I ¹	TG	TV-SS / TV-I ¹	DTS (DTS-6 ²) / DTS-I (DTS-6-I ²)	DTG	DTV ¹ / DTV-1 ¹²
Flow Rate v_{\max}	530 l/h	280 l/h	155 l/h	2 x 250 l/h	2 x 140 l/h	2 x 115 l/h
Inlet Dew point $\tau_{e,\max}$	80 °C	80 °C	68 °C	80 °C	65 °C	65 °C
Gas Inlet Temperature $\vartheta_{G,\max}$	180 °C	140 °C	140 °C	180 °C	140 °C	140 °C
Max. Cooling Capacity Q_{\max}	450 kJ/h	230 kJ/h	120 kJ/h	450 kJ/h	230 kJ/h	185 kJ/h
Gas Pressure p_{\max}	160 bar	3 bar	3 bar	25 bar	3 bar	2 bar
Pressure Drop Δ ($v=150$ l/h)	8 mbar	8 mbar	8 mbar	each 5 mbar	each 5 mbar	each 15 mbar
Dead Volume V_{tot}	69 ml	48 ml	129 ml	28 / 25 ml	28 / 25 ml	21 / 21 ml
Sample Gas Connections (Metric/US)	G 1/4" / NPT 1/4"	GL 14 (6mm) ³ / GL 14 (1/4") ³	DN 4/6 / 1/4" - 1/6"	Tube 6mm / Tube 1/4"	GL 14 (6mm) ³ / GL 14 (1/4") ³	DN 4/6 / 1/4" - 1/6"
Condensate Out Connections (Metric/US)	G 3/8" / NPT 3/8"	GL 25 (12 mm) ³ / GL 25 (1/2") ³	G 3/8" / NPT 3/8"	Tube 10 mm (6mm) / Tube 3/8" (1/4")	GL 18 (10 mm) ³ / GL 18 (3/8") ³	DN 5/8 / 3/16" - 5/16"

¹ Max. Cooling Capacity of the Cooler must be considered | ² Types marketing "I" have NPT-threads or US tubes, respectively
³ Can only be used with peristaltic pumps | ⁴ Inner diameter gasket

EGK 1/2 TECHNICAL DRAWINGS



All measurements in mm



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EGK 1SD SAMPLE GAS COOLER

A compressor-type cooling system connected to a cooling block, specified for use even under harsh ambient conditions. It can be used to serve two separate gas paths at the same time.



FEATURES

Compact Design | Single or Dual Gas Streams | Cooler Block Temperature Display | Self-Checking Status Alarm | CFC Free | FM Approval | Heat Exchangers made of Stainless Steel, Duran Glass or PVDF

SPECIFICATIONS

Product No.	EGK 1SD
Ready for Operation	Max. 15 minutes
Cooling Capacity (at 25 °C)	320 kJ/h
Ambient Temperature	+5 °C to + 50 °C
Dew Point (set at factory)	Approx. 5 °C
Dew Point Variations (Static) (Over Full Operation Range)	0.1 K ± 1.5 K
Power Supply	115 or 230 V, 50/60 Hz, plug acc. to DIN 43650
Power Consumption	290/260 VA, fuse (external) max. 10 A
Alarm Output	Switching Capacity Max. 250 V, 2 A, 50 VA
Protection Class	IP 20
Housing	Stainless Steel
Installation	Table or Wall Mounting
Packing Dimensions	Approx. 390 mm x 300 mm x 400 mm
Weight (inc. heat exchanger)	Approx. 15 kg

OPTIONS AND ACCESSORIES

Product No.	Description
4410001	Automatic Condensate Drain 11 LD V 38
4410004	Automatic Condensate Vessel AK 20, PVDF
4410005	Condensate Vessel, 0.4 l
4410019	Condensate Vessel, 1 l
9124030104	Peristaltic Pump, 230 V
9124030105	Peristaltic Pump, 115 V



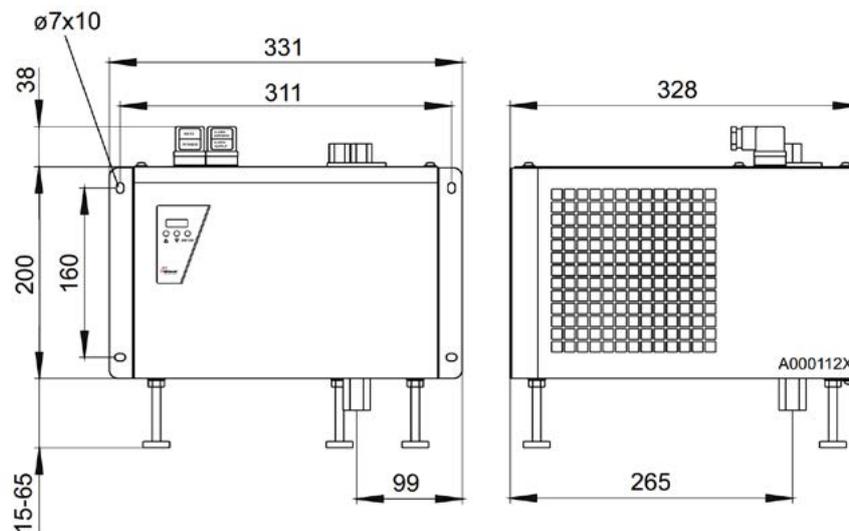
EGK 1SD HEAT EXCHANGERS

Heat Exchanger	TS / TS-I ¹	TG	TV-SS / TV-I ¹	DTS (DTS-6 ²) / DTS-I (DTS-6-I ²)	DTG	DTV ¹ / DTV-1 ^{1,2}
Flow Rate v_{\max}	500 l/h	400 l/h	235 l/h	2 x 250 l/h	2 x 200 l/h	2 x 160 l/hl
Inlet Dew Point $\tau_{e,\max}$	80 °C	80 °C	65 °C	80 °C	65 °C	65 °C
Gas Inlet Temperature $\vartheta_{G,\max}$	180 °C	140 °C	140 °C	180 °C	140 °C	140 °C
Max. Cooling Capacity Q_{\max}	450 kJ/h	230 kJ/h	120 kJ/h	450 kJ/h	230 kJ/h	185 kJ/h
Gas Pressure p_{\max}	160 bar	3 bar	3 bar	25 bar	3 bar	2 bar
Pressure Drop $\Delta (v=150 \text{ l/h})$	8 mbar	8 mbar	8 mbar	each 5 mbar	each 5 mbar	each 15 mbar
Dead Volume V_{tot}	69 ml	48 ml	129 ml	28 / 25 ml	28 / 25 ml	21 / 21 ml
Sample Gas Connections (Metric/US)	G 1/4" / NPT 1/4"	GL 14 (6mm) ³ / GL 14 (1/4") ³	DN 4/6 / 1/4" - 1/6"	Tube 6mm / Tube 1/4"	GL 14 (6mm) ³ / GL 14 (1/4") ³	DN 4/6 / 1/4" - 1/6"
Condensate Out Connections (Metric/US)	G 3/8" / NPT 3/8"	GL 25 (12 mm) ³ / GL 25 (1/2") ³	G 3/8" / NPT 3/8"	Tube 10 mm (6mm) / Tube 3/8" (1/4")	GL 18 (10 mm) ³ / GL 18 (3/8") ³	DN 5/8 / 3/16" - 5/16"

¹ Max. Cooling Capacity of the Cooler must be considered | ² Types marketing "I" have NPT-threads or US tubes, respectively

³ Can only be used with peristaltic pumps | ⁴ Inner diameter gasket

EGK 1SD TECHNICAL DRAWINGS



All measurements in mm



DRM Technic

EGK 2-19 SAMPLE GAS COOLER

A compressor-type cooling system connected to a cooling block, specified for use under harsh ambient conditions. The EGK 2-19 can be used to serve two separate gas paths at the same time.



FEATURES

Compact Design | Comes Pre-Assembled | Up to Two Gas Paths | Low Maintenance | Self-Monitoring | Status Outputs | Dew Point Stability 0.1 K

SPECIFICATIONS

Product No.	EGK 2-19
Warming Up Time	Max. 15 min
Cooling Capacity (at 25 °C)	320 kJ/h
Ambient Temperature	+5 °C to + 50 °C
Dew Point (set at factory)	Approx. 5 °C
Dew Point Variations Static	0.1 K
Over Full Operation Range	± 1.5 K
Temperature Differential Between Heat Exchangers	< 0.5 K
Housing	Stainless Steel
Packing Dimensions	Approx. 390 x 300 x 400 mm
Weight (inc. Heat Exchangers)	Approx. 15 kg
Weight (Fully Equipped)	19 kg
Power Supply	115 or 230 V, 50/60 Hz, plug acc. to DIN 43650
Power Consumption	290 / 260 VA
Protection Class	IP 20

OPTIONS AND ACCESSORIES

Product No.	Description
9124030027	Spare Peristaltic Pump Tube, Right Angle Terminals
41151050	FE-4 Filter Element

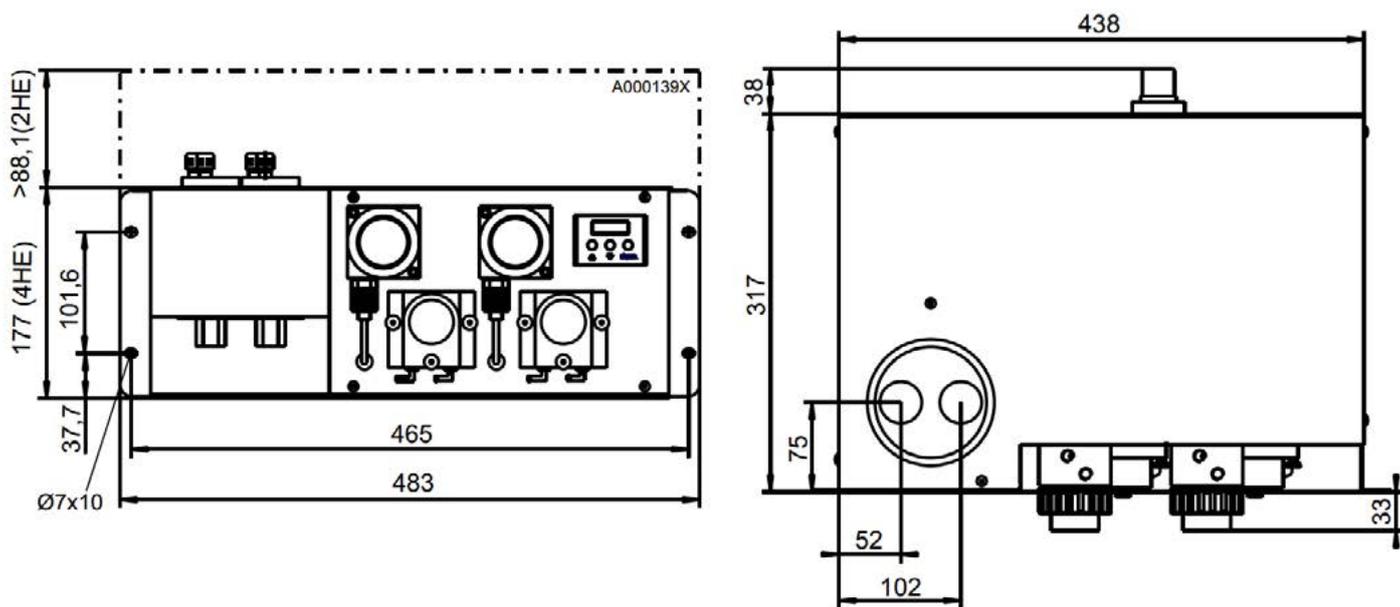


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EGK 2-19 HEAT EXCHANGERS

Heat Exchanger	PTS	PTG	PTV
Flow Rate v_{\max}	500 l/h	280 l/h	280 l/h
Inlet Dew Point $\tau_{e,\max}$	65 °C	65 °C	65 °C
Gas Inlet Temperature $\vartheta_{G,\max}$	180 °C	140 °C	140 °C
Gas Pressure p_{\max}	160 bar	3 bar	3 bar
Pressure Drop Δ ($v=150$ l/h)	10 mbar	10 mbar	10 mbar
Dead Volume V_{tot}	29 ml	29 ml	57 ml
Sample Gas Connections	Swagelok 6mm	GL 14	DN 4/6
Condensate Out Connections	G 3/8" i	GL 25	G 3/8" i

EGK 2-19 TECHNICAL DRAWINGS



Please note: Space above the cooler for the tubing must be provided. All measurements in mm

For more information, please contact our sales department



DRM Technic

EGK 4 SAMPLE GAS COOLER

A compressor-type cooling system connected to a cooling block, capable of accomodating four individual heat exchangers and serving four separate gas paths at once.



FEATURES

**Compact Design | Easy to Install | CFC-Free | Wall or Rack Mountable | Reliable Cooling System
Heat Exchanger in Stainless Steel, Glass or PVDF | Accomodates Up to 4 Gas Paths**

SPECIFICATIONS

Product No.	EGK 4
Ready for Operation	Max. 20 min
Cooling Capacity (at 25 °C)	800 kJ/h
Ambient Temperature	+5 °C to + 50 °C
Dew Point (set at factory)	Approx. 5 °C
Dew Point Variations (Static) (Over Full Operation Range)	0.2 K ± 2 K
Power Supply	115/230 V, 3A, 690 VA
Power Consumption	170/500 VA
Fuse	10 A
Alarm Output	Each 230V, 3A, 690 VA change over contact
Protection Class	IP 20
Housing Material	Varnished Sheet Metal
Installation	Wall or Rack Mounting
Approx. Dimensions	510 x 355 x 450 mm
Weight (inc. heat exchangers; approx.)	38 kg

OPTIONS AND ACCESSORIES

Product No.	Description
9124030104	Peristaltic Pump, 230 V, for separate mounting
9124030105	Peristaltic Pump, 115 V, for separate mounting

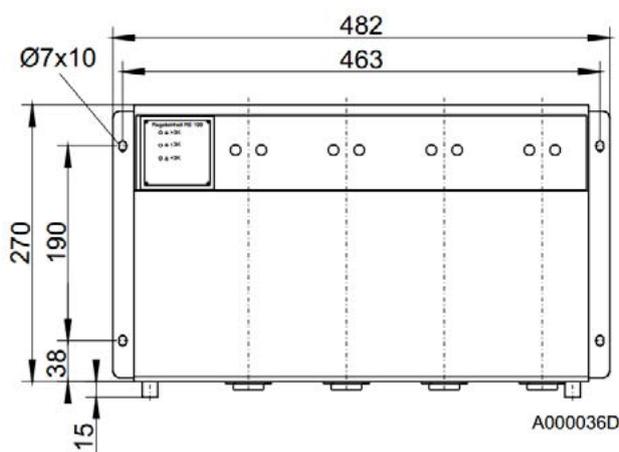


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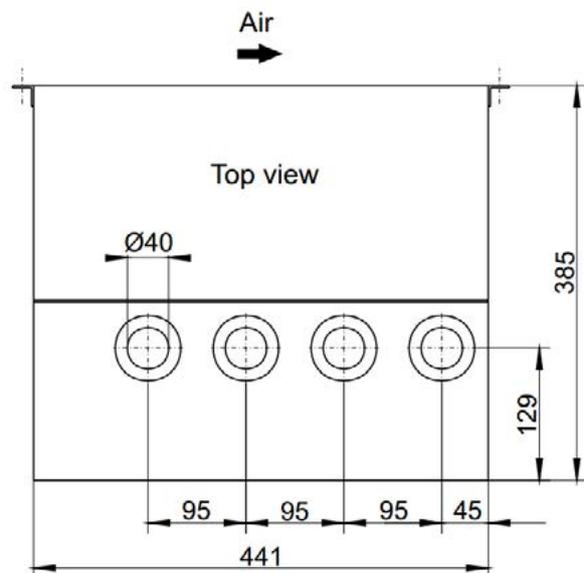
EGK 4 HEAT EXCHANGERS

Exchanger	TS	TG	TV
Flow Rate v_{\max}	530 l/h	280 l/h	150 l/h
Inlet Dew Point $T_{e,\max}$	80 °C	80 °C	65 °C
Gas Inlet Temp. $\vartheta_{G,\max}$	180 °C	140 °C	140 °C
Max. Cooling Capacity Q_{\max}	450 kJ/h	230 kJ/h	120 kJ/h
Gas Pressure p_{\max}	160 bar	3 bar	3 bar
Pressure Drop Δp ($v=150$ l/h)	8 mbar	8 mbar	8 mbar
Dead Volume V_{tot}	69 ml	48 ml	129 ml
Sample Gas Connections (metric) (US)	G 1/4" NPT 1/4"	GL 14 (6 mm) ³ GL 14 (1/4") ³	DN 4/6 1/4" - 1/6"
Condensate Out Connections (metric) (US)	G 3/8" NPT 3/8"	GL 25 (12 mm) ³ GL 25 (1/2") ³	G 3/8" NPT 3/8"

EGK 4 TECHNICAL DRAWINGS



All measurements in mm



For more information, please contact our sales department



DRM Technic

EGK 4S SAMPLE GAS COOLER

A compressor-type cooling system connected to a cooling block, capable of serving four separate gas paths at once, with an LED display.



FEATURES

**Compact Design | Easy to Install | CFC-Free | Wall or Rack Mountable | Reliable Cooling System
Up to 4 Gas Paths | Temperature Display | Feet, Handles or Mounting Brackets Available**

SPECIFICATIONS

Product No.	EGK 4S
Ready for Operation	Max. 15 min
Cooling Capacity (at 25 °C)	800 kJ/h
Ambient Temperature	+5 °C to + 50 °C
Dew Point (set at factory)	Approx. 5 °C
Dew Point Variations (Static)	0.2 K
(Over Full Operation Range)	± 2 K
Power Consumption	170/500 VA
Fuse	10 A
Alarm Output	230/150V DC, 2A, 30 VA, change over contact
Protection Class	IP 20
Housing Material	Stainless Steel
Installation	Wall, Rack or Table Mounting
Approx. Dimensions	510 x 355 x 450 mm
Weight (inc. heat exchangers; approx.)	Max. 32 kg

OPTIONS AND ACCESSORIES

Product No.	Description
4410001	Automatic Condensate Drain 11 LD V 38
4410004	Automatic Condensate Drain AK 20, PVDF
4410005	Condensate Vessel GL 1; glass 0.4 l
4410019	Condensate Vessel GL 2; glass 1 l
9124030104	Peristaltic Pump 230 V, 0.3 l/h, for separate mounting
9124030105	Peristaltic Pump 115 V, 0.3 l/h, for separate mounting
4570008	Mounting Bracket for up to 4 Peristaltic Pumps



EGK 4S HEAT EXCHANGERS

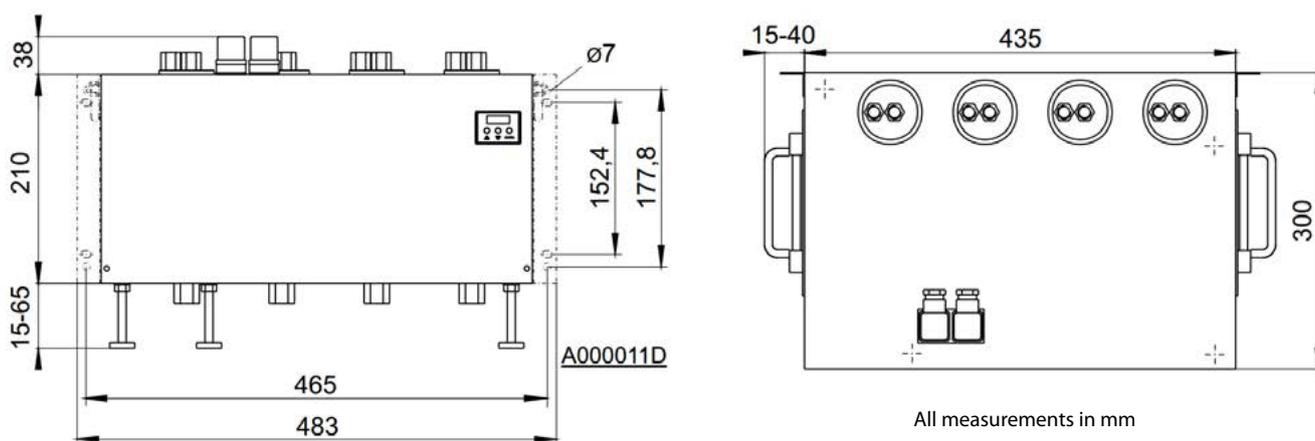
Exchanger	TS / TS-I ²	TG	TV / TV-I ²
Flow Rate v_{\max}^1	530 l/h	280 l/h	150 l/h
Inlet Dew Point $T_{e,\max}^1$	80 °C	80 °C	65 °C
Gas Inlet Temp. $\vartheta_{G,\max}^1$	180 °C	140 °C	140 °C
Max. Cooling Capacity Q_{\max}	450 kJ/h	230 kJ/h	120 kJ/h
Gas Pressure p_{\max}	160 bar	3 bar	3 bar
Pressure Drop Δp ($v=150$ l/h)	8 mbar	8 mbar	8 mbar
Dead Volume V_{tot}	69 ml	48 ml	129 ml
Sample Gas Connections (metric) (US)	G 1/4" NPT 1/4"	GL 14 (6 mm) ³ GL 14 (1/4") ³	DN 4/6 1/4" - 1/6"
Condensate Out Connections (metric) (US)	G 3/8" NPT 3/8"	GL 25 (12 mm) ³ GL 25 (1/2") ³	G 3/8" NPT 3/8"

¹ With maximum heat transfer of the heat exchanger and max. cooling capacity of the cooler

² Types marked "I" have NPT-threads or US tubes, respectively

³ Inner diameter gasket

EGK 4S TECHNICAL DRAWINGS



For more information, please contact our sales department



DRM Technic

EGK 10 SAMPLE GAS COOLER

A compact cooler specified for high flow applications.

The temperature of the cooling block is regulated by the Bühler Constant Regulating System and is almost maintenance free.



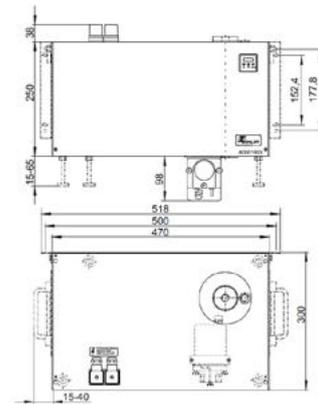
FEATURES

**Compact Design | Easy Installation | Wall or Table Mountable | Reliable Cooling System | CFC-Free Coolant
Nominal Capacity 1450 kJ/h | Dew Point Stability ± 0.2 K | Adjustable Dew Point and Alarm Thresholds**

SPECIFICATIONS

Product No.	EGK 10
Ready for Operation	After max. 15 min
Cooling Capacity (at 25 °C)	1450 kJ/h
Ambient Temperature	+ 5 ... 50 °C
Dew Point Adjustable	2 °C ... 20 °C Factory Setting: 5 °C
Alarm Treshold Adjustable with Respect to Dew Point	Upper Alarm Threshold: + 1 °C ... 7 °C Factory Setting: 3 °C Lower Alarm Threshold: - 1 °C ... - 3 °C Factory Setting: - 3 °C
Dew Point Variations Static Over Full Operation Range	0.2 K ± 2 °C
Power Supply	115 or 230 V, 50/60 Hz
Power Consumption	750 VA
Cut-in Current	12 A at 230 V, 28 A at 115 V
Alarm Output	250 V AC / 150 V DC
Protection Class	IP 20
Housing	Stainless Steel
Weight inc. Heat Exchanger	Approx. 32 kg
Max. Pressure p_{max}	5 bar
Pressure Drop Δp ($v = 1500$ l/h)	24 mbar

TECHNICAL DRAWINGS



All measurements in mm

OPTIONS AND ACCESSORIES

Product No.	Description
4410001	11 LD V 38 Condensate Drain
4410004	AK 20 Condensate Drain
4410005	Condensate Trap GL1, 0.4 L
4410019	Condensate Trap GL2, 1 L
9124030106	Peristaltic Pump, 230 V
9124030107	Peristaltic Pump, 115 V

For more information, please contact our sales department



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EGK 2 Ex SAMPLE GAS COOLER

The EGK 2 Ex Sample Gas Cooler is a CFC-free, compressor-type cooling system connected to a cooling block. The cooling block evenly dissipates the heat, thus supporting the highly efficient heat exchangers. Condensate is removed either into condensate vessels or by automatic condensate drains.



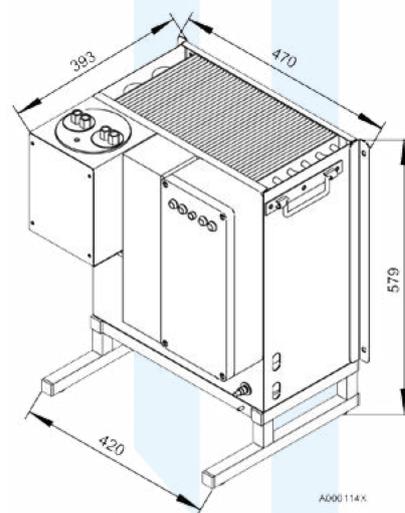
FEATURES

ATEX Certificate Zone 1 (Cat. 2G) | CFC-Free | Nominal Cooling Capacity 615 kJ/h
1 or 2 Heat Exchangers can be Inserted; up to 4 Gas Paths | Self-Checking with Status Outputs
4 Operation Conditions Displayed | Simple Operation and Test | Easy to Install

SPECIFICATIONS

Product No.	EGK 2 Ex
ATEX Class	II 2 G Ex px e mb q [ia] IIC T4 Gb
Ready for Operation	After max. 20 minutes
Cooling Capacity (at 25 °C)	> 615 kJ/h (170 W)
Ambient Temp.	0 °C to 45 °C
Gas Outlet Dewpoint	Approx. 5 °C (preset)
Dew Point Stability Static	± 0.2 K (with stainless steel) ± 0.5 K (with PVDF)
Power Supply	230 V, 50 Hz or 115 V, 60 Hz
Power Consumption	250 VA (230 V); 300 VA (115v)
Fuse	Motor Protection Switch
Potential-Free Status Outputs (Fail-safe)	250 V / 3 AA C 24 V / 1 A DC
Protection Class (Electric)	IP 54
Housing Material	Stainless Steel / Polyester
Installation	Upright or Against Wall
Dimensions (H x W x D)	Approx. 700 x 500 x 500 mm
Weight inc. 2 Heat Exchangers	Approx. 37 kg

TECHNICAL DRAWING



All measurements in mm

A000114x

OPTIONS AND ACCESSORIES

Product No.	Description
91320200xx	Motor Protection Switches
44100xx	Condensate Vessels
DTx / Tx	Heat Exchangers

For more information, please contact our sales department



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SECTION 3: CONDENSATE REMOVAL



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CPsingle & CPdouble PERISTALTIC CONDENSATE PUMPS

A range of single- and dual-headed Peristaltic Condensate pumps, designed to discharge condensate from commercial gas analysis systems.



FEATURES

- Installation and Housing Versions Available
- Single or Double Head Pumps Available
- Easy to Replace Hoses in a Wide Range of Materials
- 115/230 V AC or 24 V AC
- Separate Installation Possible
- Various Flow Rates
- Reliable Design

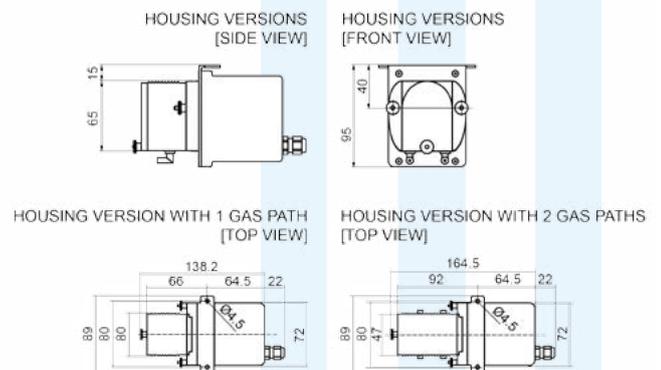
SPECIFICATIONS

Technical Details

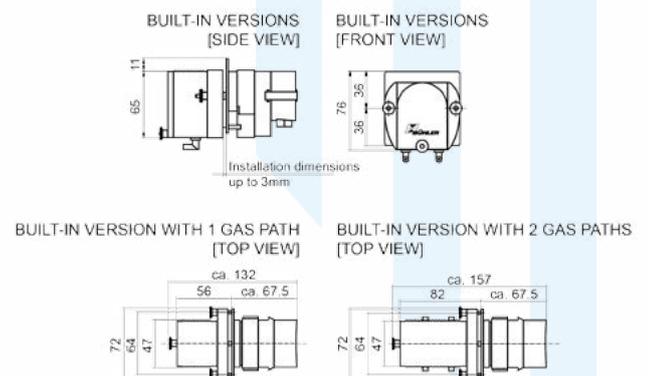
Electrical Supply	115 / 230 V AC, 50/60 Hz; 24 V DC
Power Input	28 mA (230 V) 46 mA (115 V) 172 mA (24 V)
Connections	Built-in Pumps: 500mm Strands Housing Pumps: 2m Cable
Flow Rate	0.3 l/h (50 Hz); 0.36 l/h (60 Hz) with standard hose
Inlet Vacuum	> 0.6 bar
Max. Inlet Pressure	> 1 bar
Output Pressure	1 bar
Hose	4 x 1.6mm Norprene (Standard)
Hose Connections	Built-in Pumps: PVDF, 90° angled, 6 mm (1/4") Housing Pumps: PVDF, straight, 4mm (1/6")
Weight	0.06 kg

TECHNICAL DRAWINGS

HOUSING VERSIONS



BUILT-IN VERSIONS



All measurements in mm

**Information on the CPsingle and CPdouble
Peristaltic Condensate Pumps continues
overleaf**



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SPECIFICATIONS (cont.)

Condensate Accumulation

Dew Point (°C)	30	40	50	60	70	80
Moisture Content (Vol %)	40	7	12	20	31	47
Moisture Accumulation (w) per 100 NI/h / cooled air	2.2	4	6.5	12	22	44

AVAILABLE VERSIONS

Product No.	Description	Gas Paths	Hose Connectors
Housing Versions 115 / 230 V AC			
44921120101	CPsingle-SA-AC	1	straight
44921120102	CPsingle-SA-AC	1	90° angle
44922120101	CPdouble-SA-AC	2	straight
44922120102	CPdouble-SA-AC	2	90° angle
Built-In Versions 115 / 230 V AC			
44921220101	CPsingle-OEM-AC	1	straight
44921220102	CPsingle-OEM-AC	1	90° angle
44922220101	CPdouble-OEM-AC	2	straight
44922220102	CPdouble-OEM-AC	2	90° angle
Built-In Versions 24 V DC			
44921240101	CPsingle-OEM-DC	1	straight
44921240102	CPsingle-OEM-DC	2	90° angle
44922240101	CPdouble-OEM-DC	1	straight
44922240102	CPdouble-OEM-DC	2	90° angle

OPTIONS & ACCESSORIES

Product No.	Description
9124030079	Norprene hose - angled connection
91240300791	Norprene hose - straight connection
91240300792	Norprene hose - both connections
91240300795	Marprene hose - angled connection
91240300796	Marprene hose - straight connection
91240300793	Fluran hose - angled connection
91240300794	Fluran hose - straight connection



DRM Technic

170 IST CHILLERS

The 170 IST Chillers are used to keep sample gas temperatures constant in a sample gas system.

The sample gas is directed through a coil-type heat exchanger which is immersed into a shell through which water is circulated. Condensate is drained through a port in the bottom of the unit.

The Chiller can be custom-designed for your particular application.



FEATURES

Low-Maintenance | Easy to install | Integrated Condensate Pump | For Vertical Mounting

SPECIFICATIONS

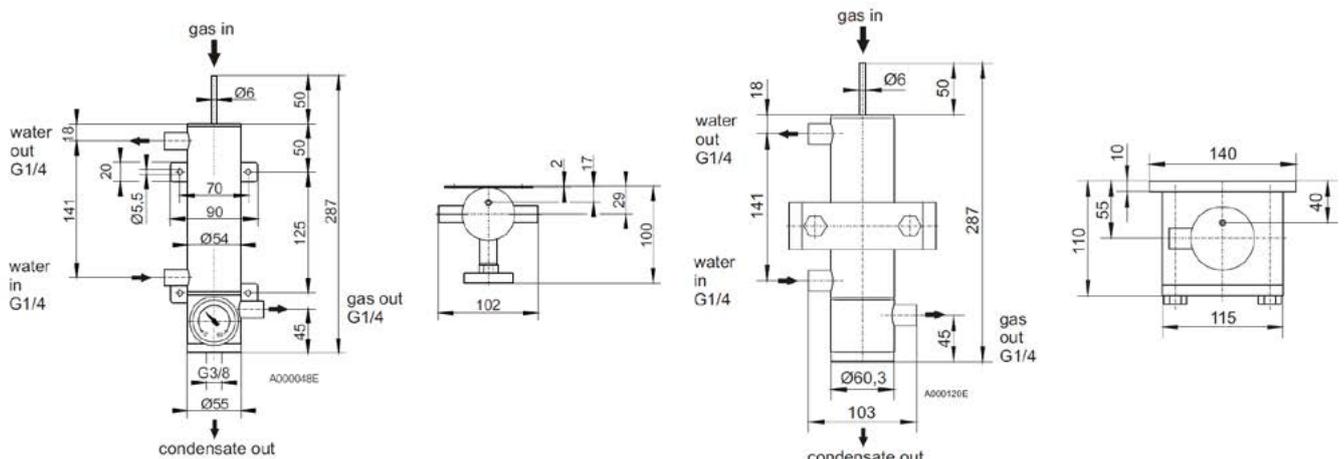
Product No.	170 IST	170 IST Titanium
Cooling Agent	Water	Water
Material	SS 316 Ti	Titanium
Max. Operation Pressure	25 bar / 360 psi	15 bar / 220 psi
Max. Gas Inlet Temp.	160 °C / 320 °F	160 °C / 320 °F

OPTIONS AND ACCESSORIES

Product No.	Description
AK 20 V / 11 LD spec	Pre-Coolers with Automatic Drain Valve (PVDF / SS)
165 SS / 167 T	Pre-Coolers with Separator and Coarse Filter
161 PVDF spec	PVDF Scrubber

For more information, please contact our sales department

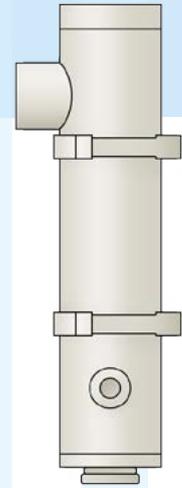
TECHNICAL DRAWINGS



All measurements in mm



DRM Technic



161 PVDF SPEC. SCRUBBER

The 161 PVDF Spec. Scrubber uses contact between water and the sample gas to remove unwanted components from the gas path. The jacket and the inner tube are filled with water to a defined level. The sample gas inlet is situated below water level. The “clean” gas exists at the top of the scrubber.

A stainless steel version is available upon request.

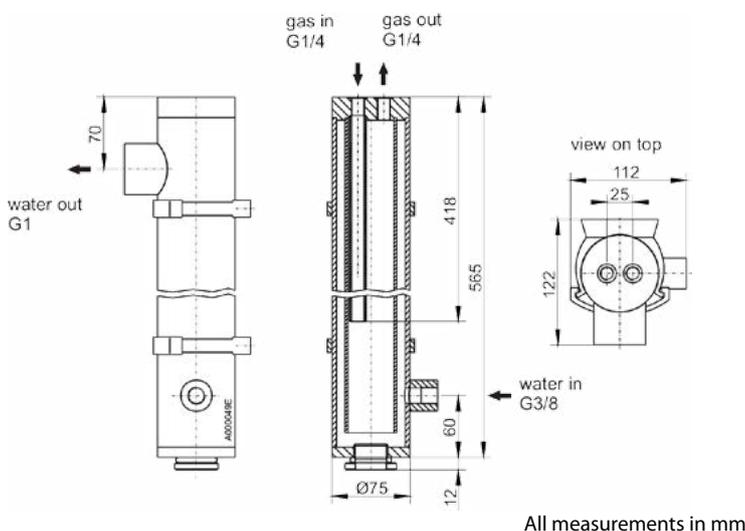
FEATURES

**Low-maintenance | Easy to install | Stainless Steel Version Available Upon Request
Can be Customised Based on Your Application Requirements**

SPECIFICATIONS

Product No.	161 PVDF spec.
Material	PVDF
Water Consumption	Max. 120 l/h
Gas Flow	Max. 420 l/h
Max. Operating Pressure	2 bar / 29 psi
Max. Operating Temperature	+ 80 °C / 180 °F

TECHNICAL DRAWINGS



OPTIONS AND ACCESSORIES

Product No.	Description
AK 20 V / 11 LD spec	Pre-Coolers with Automatic Drain Valve (PVDF / SS)
165 SS / 167 T	Pre-Coolers with Separator and Coarse Filter
170 IST	SS Chiller
170 IST Titanium	Titanium Chiller



DRM Technic



TS-10 PRE-COOLER

The TS-10 Pre-Cooler lowers the dew-point of sample gas, keeping it stable and ensuring that your system produces the most accurate measurements possible.

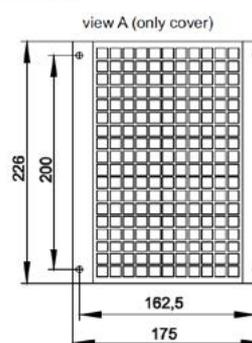
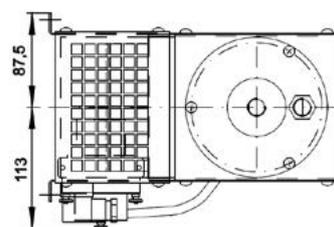
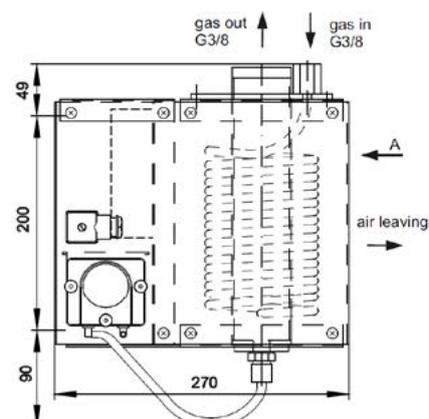
FEATURES

Low-Maintenance | Easy to Install | Integrated Condensate Pump

SPECIFICATIONS

Product No.	TS-10 Pre-Cooler
General	
Ambient Temperature	0 ... 45 °C
Power Supply	115V 50/60 Hz or 230V 50/60Hz
Power Consumption	33W
Protection Class	IP 20
Installation	Against Wall
Heat Exchanger	
Gas Pressure p_{max}	1 bar
Sample Gas Connections	G 3/8
Condensate Outlet Connection	DN 6

TECHNICAL DRAWINGS



All measurements in mm

OPTIONS AND ACCESSORIES

Product No.	Description
AK 20 V	Pre-Cooler with automatic drain valve (PVDF)
11 LD spec	Pre-Cooler with automatic drain valve (SS)
165 SS / 167 T	Pre-Cooler with combined centrifugal separator and coarse filter
161 PVDF spec	PVDF Scrubber
170 IST	SS Chiller



DRM Technic

AKxx SERIES PRE-COOLERS

AKxx series Pre-Coolers are specified for applications with entrained liquid droplets or high vapor content in the sample gas path. The AK 20 V is an upstream separator, while the 11 LD spec. is an up-stream separator with an integrated drain valve. The 165 SS and 167 T models are a combination of centrifugal separators and coarse filters.



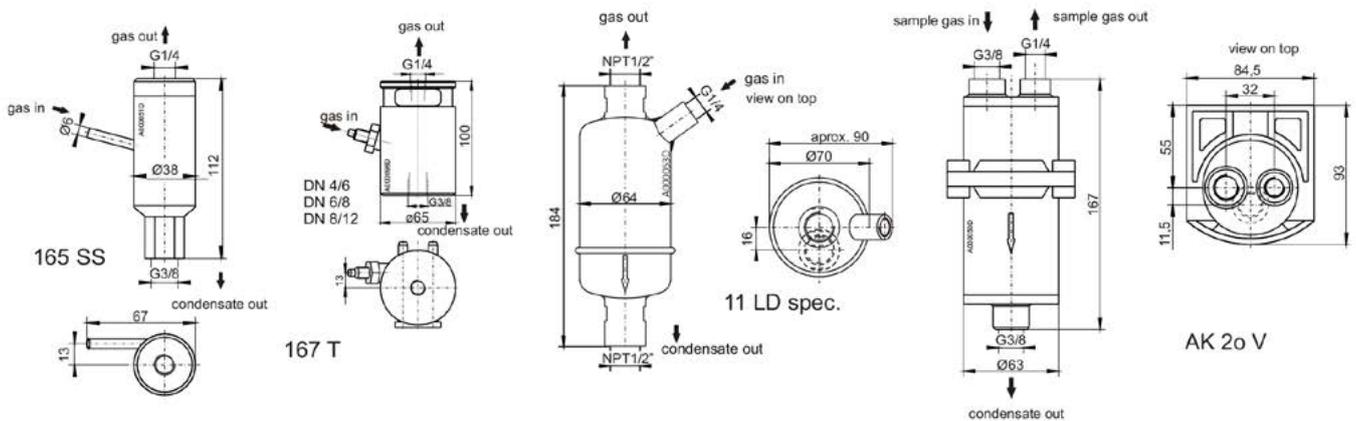
FEATURES

Very Long Life | Maintenance-Free | Can be Used Stand-Alone or in Combination with a Coalescing Filter

SPECIFICATIONS

Product No.	165 SS	167 T-V	167 T-P	11 LD spec.	AK 20 V
Max. Op. Pressure	64 bar / 930 psi	4 bar / 60 psi	4 bar / 60 psi	18 bar / 160 psi	2 bar / 29 psi
Max. Op. Temperature	180 °C / 360 °F	80 °C / 180 °F	80 °C / 180 °F	200 °C / 390 °F	100 °C / 210 °F
Max. Gas Flow Rate	200 l/h	200 l/h	200 l/h	-	-
Material	1.4571 SS	PTFE / Viton	PTFE / FFKM	Stainless Steel	PVDF
Suitable for Explosive Applications	1, IIC	-	-	1, IIC	1, 11B

TECHNICAL DRAWINGS



All measurements in mm

For more information, please feel free to contact our sales department



DRM Technic

AKxx SERIES AUTOMATIC CONDENSATE DRAINS

A range of condensate drains for use in pressurised sample conditioning systems. They are specifically designed to have low friction and a high lifetime. The AK 20 is the standard drain; the AK 5 the compact drain; and the 11 LD V 38 the heavy duty drain.



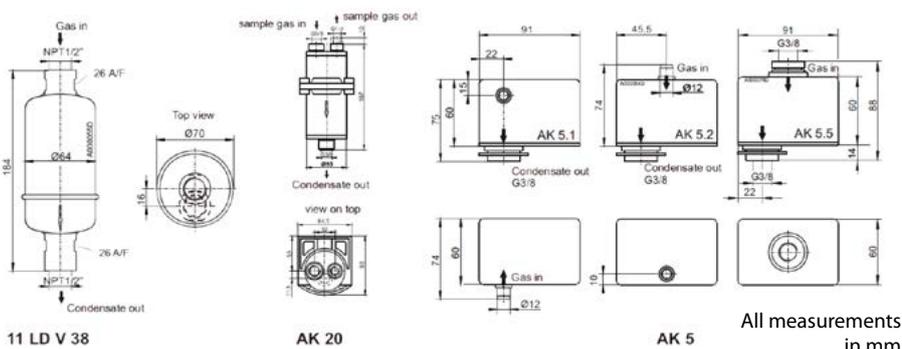
FEATURES

Easy to Assemble | Long-Life | Available in a Variety of Materials | High Reliability of Operation

SPECIFICATIONS

Product No.	11 LD V 38	AK 20	AK 5
General			
Max. Operating Pressure	18 bar / 260 psi	2 bar / 29 psi	2 bar / 29 psi
Max. Operating Temp.	200 °C / 390 °F	200 °C / 390 °F	200 °C / 390 °F
Weight	0.8 kg	0.3 kg with mounting frame (gas out is closed)	0.25 kg
Material	Stainless Steel 1.4306, 1.4401 and 1.4301	PVDF	PVDF
Range of Use in Explosive Atmospheres			
Zone	1	1	1
Group	IIC	IIB	IIB

TECHNICAL DRAWINGS



OPTIONS

Part No.	Description
4510006	AK 5.1 (horizontal inlet)
4510008	AK 5.1 (vertical inlet)
4510028	AK 5.5
4410004	AK 20
4410001	11 LD V 38



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GLx CONDENSATE VESSELS

GLx Condensate Vessels are used to store condensate which has been removed from a sample conditioning system prior to the final dispersal of said condensate.

Models GL1 and GL2 have a drain valves and differ only by their storage volume. The GL3 model has a liquid level switch which can be used to adjust the liquid level or control a drain pump.



FEATURES

Multiple Sizes Available
Corrosion Resistant
Easy Clean | Low Maintenance

For more information, please contact our sales department.

SPECIFICATIONS

G1, G2 and G3 Condensate Vessels

Material | Duran Glass, PTFE, PP

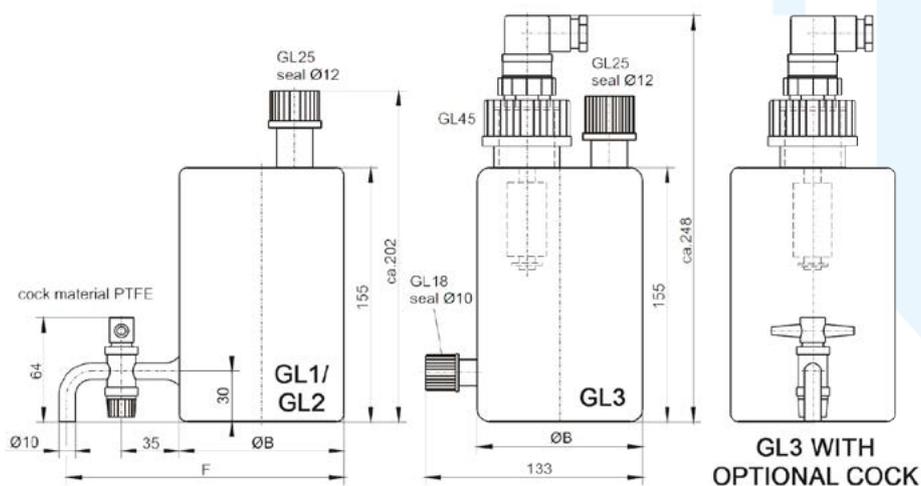
Media Temperature | Max. 80 °C

Max. Temperature | 120 °C

G3 Condensate Vessel Only

Contact | 230 V, 1 A, 40 VA, changeover

TECHNICAL DRAWINGS



Model	A	B	C	D	E	F	Volume
GL 1	65 mm	Ø 60 mm	100 mm	63 mm	85 mm	128 mm	0.4 l
GL2 / GL3	145 mm	Ø 100 mm	52 mm	91 mm	165 mm	168 mm	1 l



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CV-x SERIES CONDENSATE VESSELS

The CV-x series Condensate Vessels are used to store condensate after being drained from a sample gas conditioning system. It can be drained easily via a ball valve, has a removal top cover and the condensate level is always visible.

They are available in three sizes: 3 litre (CP-3), 6.5 litre (CP-6) and 10 litre (CP-10).



FEATURES

- Available in 3l, 6.5l and 10l Capacities
- Chemically Resistant Materials
- Removable Top Cover
- Robust Mounting Bracket
- Level Switch Available

SPECIFICATIONS

Overall

Materials	PVC, PVDF, PP, Viton
Fitting	G3/8 and G1/4 for condensate inlet and ventilation; G1/4 for outlet
Max. Media Temp.	60 °C

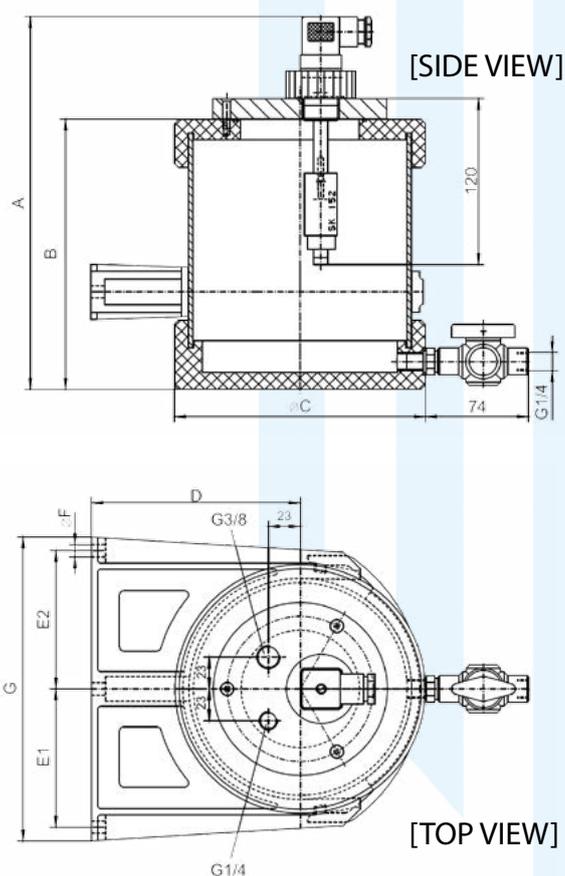
Level Switch

Max. Operating Voltage	230 V
Max. Switching Current	0.5 A
Max. Contact Load	10 VA

OPTIONS AND ACCESSORIES

4410088	CV-3 vessel with level switch
4410096	CV-6 vessel with level switch
4410097	CV-6 vessel without level switch
4410094	CV-10 vessel with level switch
4410095	CV-10 vessel without level switch
44100943	Level switch

TECHNICAL DRAWINGS



Type vessel	A (mm)	B (mm)	C (mm)	D (mm)	E1 (mm)	E2 (mm)	F (mm)	G (mm)
V = 3l	269	195	Ø180	150	100	100	3 x Ø9	220
V = 6.5l	344	270	Ø225	175	120	150	2 x Ø13	310
V = 10l	454	380	Ø225	175	120	150	2 x Ø13	310



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MOISTURE DETECTORS AND CONTROLLERS

These are used to alarm when damaging moisture breakthrough occurs in gas conditioning systems. They are installed in-situ; after the moisture is removed, they are dried by the gas stream.



FEATURES

Maintenance Free | Self-Resetting | All Models Come with Broken Wire Detection | Can be Used with AGF-Filters | Specialised Adaptors (Types G and S) Available

PRODUCT DESCRIPTIONS AND TECHNICAL DRAWINGS

MOISTURE DETECTORS

All measurements in mm

<p>FF-3-N Detector for use in explosive applications</p>		<p>FF-40 Detector for use in pressures of up to 40 bar</p>	
---------------------------------------------------------------------	--	-----------------------------------------------------------------------	--

CONTROLLERS

All measurements in mm

<p>ER-145/A/EX - Intrinsically safe input - Long cables - Connectable to one FF-3-N detector</p>		<p>FF-HM - Connectable to up to two FF-3-N detectors in parallel or one FF-40 - Potential-free outputs - Configurable lock mode</p>	
<p>FF-19 - Same specifications as the FF-HM controller - Specially designed for 19"-support</p>		<p>FF-x-U - Wall mountable - Mono-stable Outputs - FF-1-U: connectable to one or two FF-3-U units - FF-3-U: Connectable to one FF-3-N or FF-40 - FF-3-U-2: Connectable to two FF-3-U</p>	



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SPECIFICATIONS

MOISTURE DETECTORS

Product No.	FF-3-N	FF-40
Materials	PVDF, 1.4571, Epoxy, 1.4576, PTFE	PE, 1.4571, Epoxy, 1.4576
Standard Cable Length	4 m, 4 x 0.34 ²	4m, 2 x 0.25 ²
Max. Operating Pressure	2 bar	40 bar
Max. Operating Temperature	3 °C to 50 °C	3 °C to 50 °C
Broken Wire Detection	Yes	Yes

CONTROLLERS

Product No.	FF-HM-230	FF-HM-24	FF-19	FF-x-U	ER-145/A/Ex
Power Supply	230 / 115 V AC 50/60 Hz	24 V DC ±10%	24 V DC ±10%	230 / 115 V AC 50 / 60 Hz	230 V or 115 V AC; 48 ... 62 Hz
Output Max.	230 V, 2 A	24 V DC/AC, 2 A	24 V DC/AC, 2 A	230 V, 2 A	AC: 250 V, 5 A DC: 150 V, 5 A
Protection Class	IP 40 Terminals: IP 20	IP 40 Terminals: IP 20	IP 20 in attached state	-	IP 40, Terminals: IP 20
Ex-classification	-	-	-	-	II(1)G [Exx ia] IIC
Max. Cable Length	4 m / 13 ft	4 m / 13ft	-	4 m / 13 ft	70 m / 230 ft
Dimensions (mm)	70 x 75 x 109	70 x 75 x 109	8DU x 3 HU x 170	94 x 180 x 91	22.5 x 99 x 120
Ports	Terminals	Terminals	Strip DIN 41612 trip-type B	Terminals	Terminals

OPTIONS AND ACCESSORIES

Product No.	Description	Product No.	Description
Moisture Detectors			
4111100	Moisture Detector FF-3-N (w/o cable)	4111020	Controller FF-HM-230
41111000	Moisture Detector FF-3-N (w cable)	4111030	Controller FF-HM-24
4189699	Moisture Detector FF-40	4111017	Controller FF-1-U
Adaptors			
4011000	Adaptor type G (PVDF)	4111015	Controller FF-3-U
40110001	Adaptor type NPT1/4 (PVDF)	4111016	Controller FF-3-U-2
4011005	Adaptor type S (Stainless Steel)	4111012	Controller ER-145/A, 230V
		4111014	Controller ER-145/A, 155V
		4111040	Controller FF-19



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SECTION 4: DUST MONITORS



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BDA 02 DUST PROBE

The BDA 02 is specified for the analysis of dust particles in emissions, allowing you to more efficiently control your emissions and keep the dust levels within government specifications.

FEATURES

**Robust and Low Maintenance | Easy Assembly using Mounting Set | Zero Points | Area Control
2.5" Graphic Display | Immediately Displays Filter Conduction Diagnosis | TA-Luft Approved**

SPECIFICATIONS

Product No.	BDA 02
Housing	Compact Housing; IP 65
Weight	2.5 kg approx
Probe	Triboelectric Probe Consisting of Rod and Integrated Head
Probe Rod	Electrically Insulated from the Housing; Length Variable
Immersion Depth	Max. 1000 mm (Dependant on Application)
Display / Input	2.5" Graphic Display, 4 Control Buttons
Ambient Temp.	- 20 ... + 50 °C
Humidity	Minimal Sensitivity
Dew Point Difference	Min. +5 K
Measured Gas Temp.	Max. 250 °C (Higher Temperatures on Request: Max. 400 °C)
Flow Velocity	3 m/s approx.
Dust Measuring Range	Quant: 0 ... 10 mg/m ³ (0 1000 mg/m ³); Qual: 0 ... 100%
Calibration	By Gravimetric Measurement
Analog Output	4 ... 20 mA, Electrically Isolated from the Equipment. Max Burden: 500 Ω
Digital Output	3 relays, max. 24v DC at 0.7 A
Process Connection	1" Easily Adjustable Mounting Kit / Flange DN25 PN6 (optional)
Cable Gland	2x M20 x 1.5/9 ... 13mm, 1x Blanking Plug
Power Supply	230 / 110 v AC, 50-60 Hz, 24v DC
Qualifying Examination	TA-Luft

For more information on the BDA 02 Dust Probe, please see overleaf



BDA 02 Ex DUST PROBE

The BDA 02 is specified for the analysis of dust particles in emissions, allowing you to more efficiently control your emissions and keep the dust levels within government specifications. It is suitable for ATEX applications.

FEATURES

Robust and Low Maintenance | Easy Installation | Zero Point and Range Monitoring | Calibratable Visual Filter Condition Diagnosis on Site | 2.5" Graphics Display | TA-Luft Approved | Ex Zone 2/22

SPECIFICATIONS

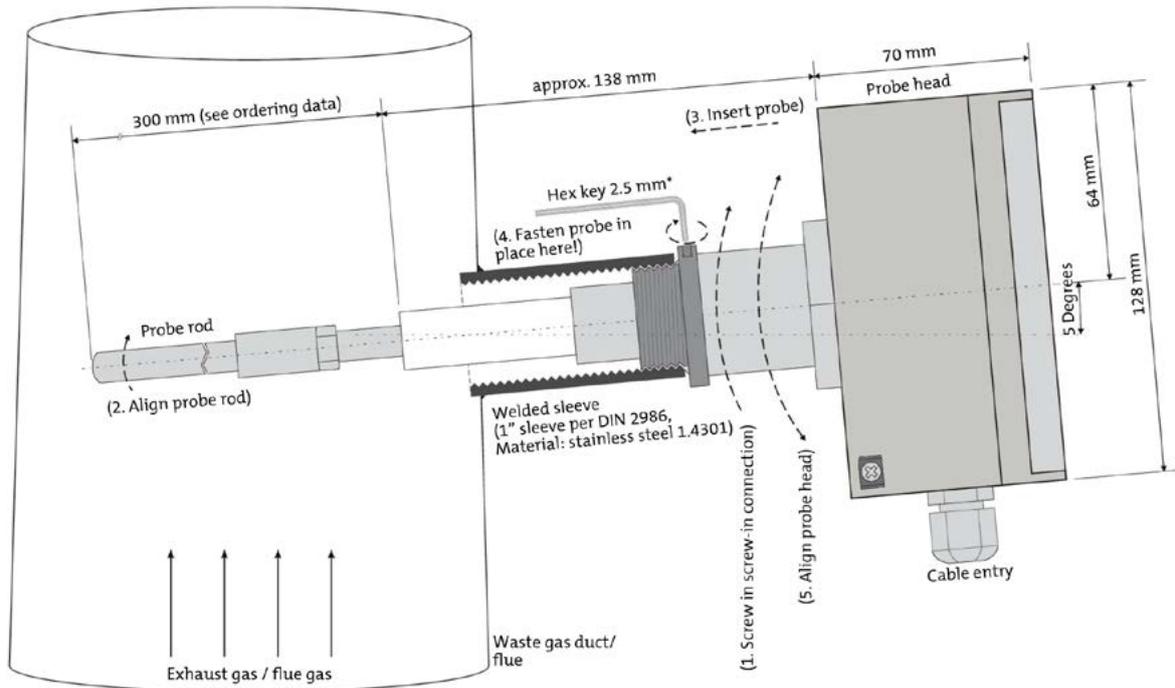
Product No.	BDA 02 Ex
Housing	Compact Device IP 65
Weight	Approx. 2.5 kg
Probe	Triboelectric Probe consisting of Probe Rod and Probe Head
Immersion Depth	1000 mm max. (varies by application)
Display / Operation	2.5" Graphics Display; 4 Control Keys
Ambient Temperature	- 20 ... + 50 °C
Humidity	Minimal Sensitivity
Dew Point Difference	Min. ± 5 K
Sample Gas Temperature	Max. 250 °C
Flow Rate	Approx. 3 m/s and up
Dust Measuring Range	Qualitative: 0 ... 100 %; Quantitative: 0 ... 10 mg/m ³ (0 ... 1000 mg/m ³)
Amplification Levels	Arbitrary from 0 to 3
Calibration	By gravimetric comparison measurements
Analogue Output	4 ... 20 mA, max. load impedance 500 Ω
Digital Outputs	3 relays, max. 24 V DC at 0.1 A (for failure, service, required service)
Power Supply	24 V DC, electrically isolated ($U_{max} < 36 V$)
Performance Test	TA- Luft
ATEX Mark	Ex II 1/3 D Ex ia/tc IIIC T74° C Da/Dc Ex II 3G Ex ic nA IIC T4 Gc

For more information on the BDA 02 Ex Dust Probe, please see overleaf



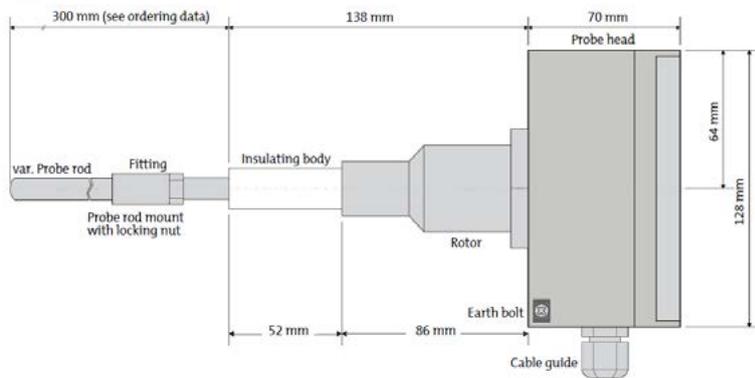
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ASSEMBLY DIAGRAM



TECHNICAL DRAWINGS

Side view



Front view





BDA 06 ED PARTICLE MONITOR

The BDA 06 ED Particle Monitor is suitable for monitoring moist and tacky residual dust. The unit consists of two installation units: a sampling/analysis unit and the control/support unit.



FEATURES

**Suitable for Monitoring Moist and Tacky Dust | Robust Technology | Easy to Install a Mounting Pipe
Measuring Unit and Control/Support Unit | Calibratable | On-Site Diagnostics**

SPECIFICATIONS

Product No.	BDA 06 ED
Control Unit	Sheet Steel Housing Over Profile Frame (incl. Fan) 600 mm x 1700 mm x 500 mm , approx. 90 kg, IP 55
Probe	Extractive Sampling with GFK Weather Hood 500 mm x 750 mm x 1000 mm, approx. 65 kg, IP 55
Flange	DN 80 N 6, special version: Tube Ø 100 mm
Measuring Principle	Dust: Optical Dust Measurement by Laser Beam (scattered light); Extractive
Measuring Range	Dust: i.b.: 0 ... 15 mg/m ³ (max. 500 mg/m ³)
Calibration	By Gravimetric Comparison Measurement
Display	4-line LC Display
Medium Temperature	Max. 180 °C
Exhaust Gas Moisture	Rel. Humidity: 100%
Pressure Against Ambient	- 30 ... + 2 hPa
Ambient Temperature	- 20 ... + 50 °C
Sample Gas Flow Rate	6 ... 12 m ³ /h (Extracted Sample Gas and Dilution Air)
Power Supply	3L, N, PE, 400 V AC 50 Hz, 4 kVA
Analog Outputs	4 x 4 ... 20 mA, Galvanically Isolated by Shared Mass, Load Impedance Max. 1 kΩ
Digital Outputs	6 x Potential-Free Contact, Max. 35 V UC, 0.4 A
Digital Input	Optional, External Switching Contact for Switching Measurement/Flushing
Clip Contacts	Max. 2.5 mm ²
Performance Test	DIN EN 15267, QAL1 (in preparation)

For more information, please contact our sales department



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SECTION 5: SAMPLE GAS FILTERS



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AGF-PV-30 SAMPLE GAS FILTER HOUSING

The AHG-PV-30 provides fine filtration and easy filter media replacement. The QC bracket rotates 180°, making the mounting of the filter bracket independent from the chosen flow direction.

FEATURES

**Bühler Unique QC Bracket | Easy Tool-less Filter Element Replacement | Condensate Drain Option
Low Dead Volume for Fast Response | Filter-Head with Additional Port for Bypass or Moisture Detector**

SPECIFICATIONS

Housing

AGF-PV	30-S2	30-S2-A	30-F2	30-F2-A	30-F2-L	30-F25	30-F25-A	30-F25-L	30-F25-L-A	30-AKF
Filter Head	PVDF									
Filter Bowl	Glass									
Seal	Viton									
Max. Temp.	100 °C									
Max. Pressure	4 bar									
Port Size	2 µm	25 µm	25 µm	25 µm	25 µm	1 µm				
Element	S2	S2	F2	F2	F2-L	F25	F25	F25-L	F25-L	AFK
Dead Volume	57 ml	69 ml	57 ml	57 ml	108 ml	57 ml	63 ml	108 ml	117 ml	45 ml
Weight (approx.)	0.28 kg	0.29 kg	0.24 kg	0.29 kg	0.29 kg	0.23 kg	0.24 kg	0.29 kg	0.30 kg	0.23 kg

Elements

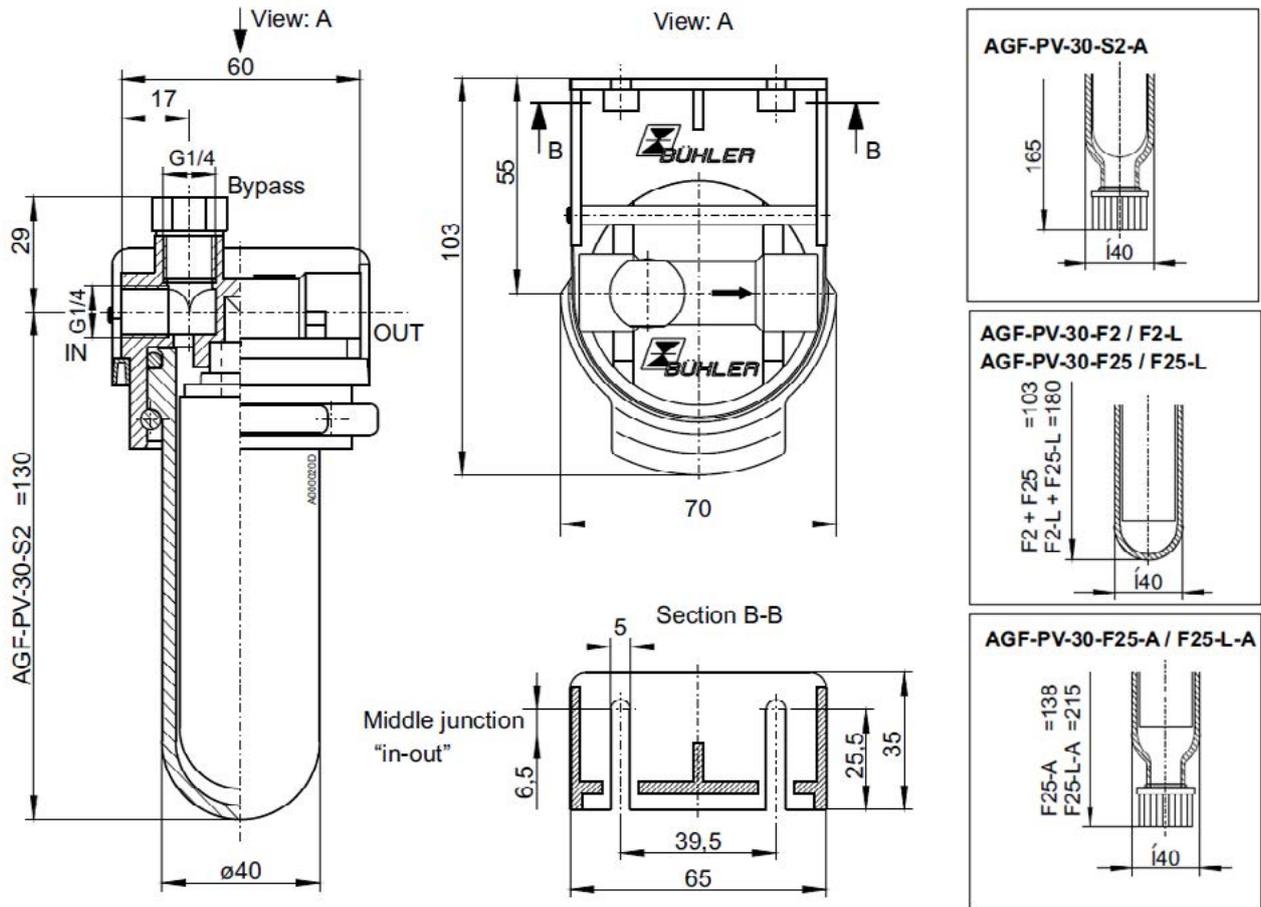
Type	Elements	Material	Pore Size	Surface Area	Package	Range of Use
S2	Husk	Glass Fibre	2 µm	80 cm ²	5 / 25 pcs	Group IIC
F2	PTFE Sintered	PTFE	2 µm	60 cm ²	5 pcs	Group IIB
F2-L	PTFE Sintered	PTFE	2 µm	125 cm ²	2 pcs	Group IIB
F25	PTFE Sintered	PTFE	25 µm	60 cm ²	5 pcs	Group IIB
F25-L	PTFE Sintered	PTFE	25 µm	125 cm ²	2 pcs	Group IIB
AKF	Threaded	Activated Carbon	1 µm	45 cm ²	1 pc	Group IIC

Information on the AGF-PV-30 Sample Gas Filter Housing continues overleaf



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AGF-PV-30 TECHNICAL DRAWINGS



All measurements in mm

AGF-PV-30 ORDERING INFORMATION

Product No.	Description	Product No.	Description	Product No.	Description
4150099	AGF-PV-30-S2	4150399	AGF-PV-30-F2-A	41030050	F2 Elements
41502999	AGF-PV-30-F2	4150499	AGF-PV-30-F25-L	41020050	F2-L Elements
4151999	AGF-PV-30-F2-A	4150599	AKF-PV-30-F25-L-A	41020130	F25 Elements
4150799	AGF-PV-30-F2-L	4153099	AGF-PV-30-AKF	41010120	F25-L Elements
4150299	AGF-PV-30-F25	41010010	S2 Elements	41010130	AKF Element



AGF-T-30 SAMPLE GAS FILTER HOUSING

AGF-T-30 Sample Gas Filter Housings are specified for applications featuring corrosive components which would be harmful to other types of filter housing.

FEATURES

**Filter Head made of Solid PTFE | PTFE Seal | Highly Corrosion Resistant | Little or No Absorption of Trace Gases
Fast Response | Versatile Mounting Bracket | PTFE Filter Elements with Pore Size of 2 µm or 25 µm**

SPECIFICATIONS

Housing

AGF-T-	30-S2	30-S2-KU	30-F2	30-F25	30-F2-L	30-F25-L
Filter Head	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
Filter Bowl	Glass	Glass	Glass	Glass	Glass	Glass
Seal	Viton with PTFE Jacket					
Max. Temp.	100 °C					
Max. Pressure	4 bar					
Port Size	2 µm	2 µm	2 µm	25 µm	2 µm	25 µm
Element	S2	S2KU	F2	F25	F2L	F25L
Dead Volume	57 ml	50 ml	57 ml	57 ml	108 ml	108 ml
Weight (Approx.)	0.41 kg	0.35 kg	0.35 kg	0.35 kg	0.43 kg	0.43 kg

Spare Filter Elements

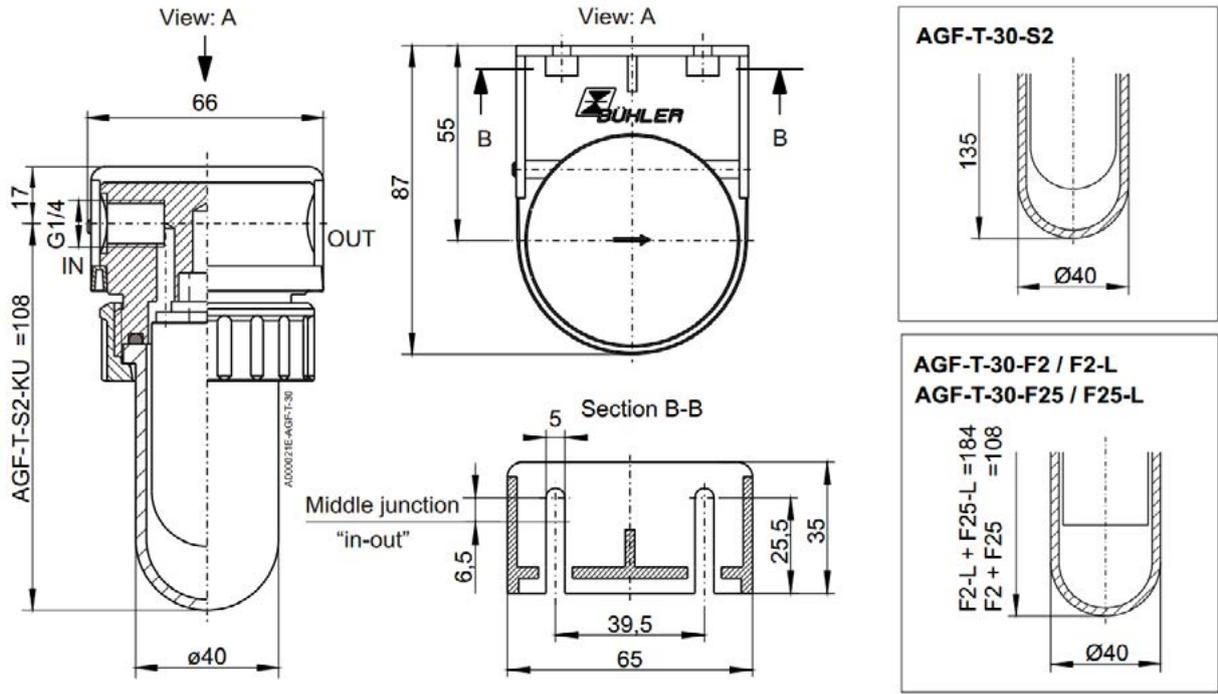
Type	Elements	Material	Pore Size	Surface Area	Package	Range of Use
S2	Husk	Glass Fibre	2 µm	80 cm ²	5 / 25 pcs	Group IIC
S2KU	Husk	Glass Fibre	2 µm	61 cm ²	5 / 25 pcs	Group IIC
F2	PTFE Sintered	PTFE	2 µm	60 cm ²	5 pcs	Group IIB
F25	PTFE Sintered	PTFE	25 µm	60 cm ²	5 pcs	Group IIB
F2L	PTFE Sintered	PTFE	2 µm	125 cm ²	2 pcs	Group IIB
F25L	PTFE Sintered	PTFE	25 µm	125 cm ²	2 pcs	Group IIB

Information on the AGF-T-30 Sample Gas Filter Housing continues overleaf



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AGF-T-30 TECHNICAL DRAWINGS



All measurements in mm

AGF-T-30 ORDERING INFORMATION

Product No.	Description
4151399	AGF-T-30-S2 Sample Gas Filter Housing w/ 1x Filter Element
4151499	AGF-T-30-S2-KU Sample Gas Filter Housing w/ 1x Filter Element
4151799	AGF-T-30-F2 Sample Gas Filter Housing w/ 1x Filter Element
4151199	AGF-T-30-F25 Sample Gas Filter Housing w/ 1x Filter Element
4151099	AGF-T-30-F25-L Sample Gas Filter Housing w/ 1x Filter Element
41010010	S2 Spare Filter Elements
41010140	S2KU Spare Filter Elements
41030050	F2 Spare Filter Elements
41020130	F25 Spare Filter Elements
41020050	F2L Spare Filter Elements
41010120	F25L Spare Filter Elements



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AGF-FE PANEL FILTERS

Sample Gas Filter designed for panel mounting. The main body is attached onto the front panel. The filter bowl threads onto the main body and seals with an O-Ring. Changing filter media is done by simply removing the bowl. The filter media is visible through the bowl. Gas inlet and outlets are at the back of the unit.



FEATURES

Easy Installation | Easy Filter Replacement | Visual Indication of Filter Condition | Large Filter Area

SPECIFICATIONS

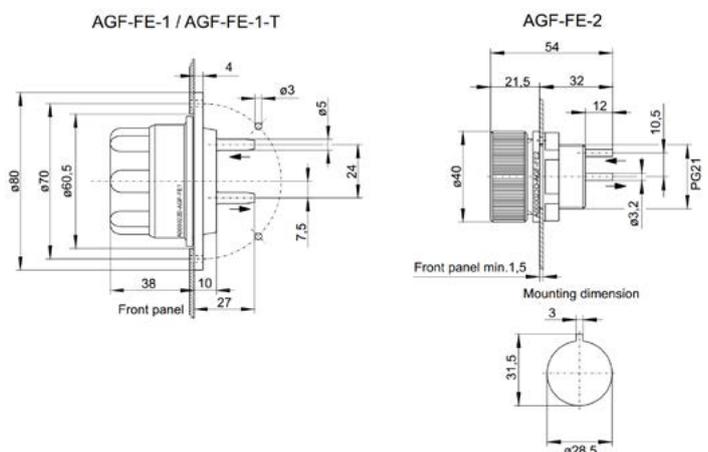
Product No.	AGF-FE-1	AGF-FE-1-T	AGF-FE-2
Surface Area	40 cm ²	40 cm ²	13 cm ²
Pore Size	2 μm	2 μm	2 μm
Dead Volume	25 ml	25 ml	25 ml
Material (Filter)	PC	PC	PVDF / 1.4571
Material (Seal)	Viton	Viton	Viton
Material (Element)	Glass Fibre / Epoxy Resin	Glass Fibre / Epoxy Resin	Glass Fibre / Epoxy Resin
Connections	DN 4/6	DN 4/6	DN 4/6
Pressure (max.)	2 bar	2 bar	2 bar
Media Temp (max.)	80 °C	80 °C	80 °C

OPTIONS AND ACCESSORIES

PN	Description
41150010	Spare Elements for AGF-FE-1
41150090	Spare Elements for AGF-FE-1-T
411509910	Spares Elements for AGF-FE-2

For more information, please contact our sales department

TECHNICAL DRAWINGS





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AGF-FE-4 PANEL FILTER

Sample Gas Filter designed for panel mounting. The main body is attached onto the front panel. The filter bowl threads onto the main body and seals with an O-Ring. Changing filter media is done by simply removing the bowl. The filter media is visible through the bowl. Gas inlet and outlets are at the back of the unit.



FEATURES

Easy installation | Easy Filter Replacement | Large Area | Acid-Resistant | Filter Always Viewable

SPECIFICATIONS

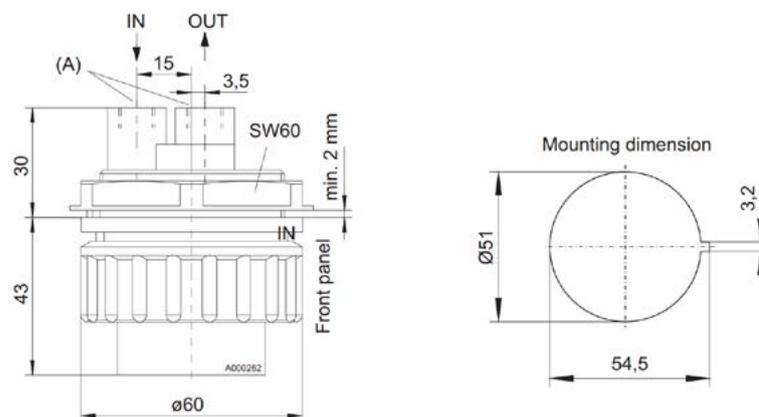
Product No.	AGF-FE-4
Surface Area	42 cm ²
Pore Size	2 μm
Dead Volume	28.5 ml
Material (Filter)	PTFE, PVDF, Glass
Material (Seal)	Viton or PTFE armoured Viton
Material (Element)	Sintered PTFE
Connections	G 1/8 or NPT 1/8
Pressure (max.)	2 bar
Media Temp. (max.)	100 °C

OPTIONS AND ACCESSORIES

PN	Description
41151050	Spare Filter Elements for AGF-FE-4 Filter Housings

For more information, please contact our sales department

TECHNICAL DRAWINGS



All measurements in mm



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AGF-VA-23 SAMPLE GAS FILTER HOUSING

The AGF-VA-23 provides fine filtration and easy filter media replacement. The QC bracket rotates 180°, making the mounting of the filter bracket independent from the chosen flow direction.

FEATURES

**Bühler Unique QC Bracket | Easy Tool-less Filter Element Replacement | Condensate Drain Option
Low Dead Volume for Fast Response | Filter-Head with Additional Port for Bypass or Moisture Detector**

SPECIFICATIONS

Housing (delivery includes one filter element)

Product No.	AGF-VA-23
Temperature (max.)	See Filter Element Table
Pressure (max.)	160 bar
Dead Volume	50 ml (with DRG xx SO-V and DRG xx SO-P Elements) 56 ml (with DRG xx VA-V Elements) 51 ml (with F2 / F25 Elements)
Weight	Approx. 1.7 kg
Housing Material	1.4571 / SS 316 Ti
Seal	Viton or Perfluorelastomer

Spare Filter Elements

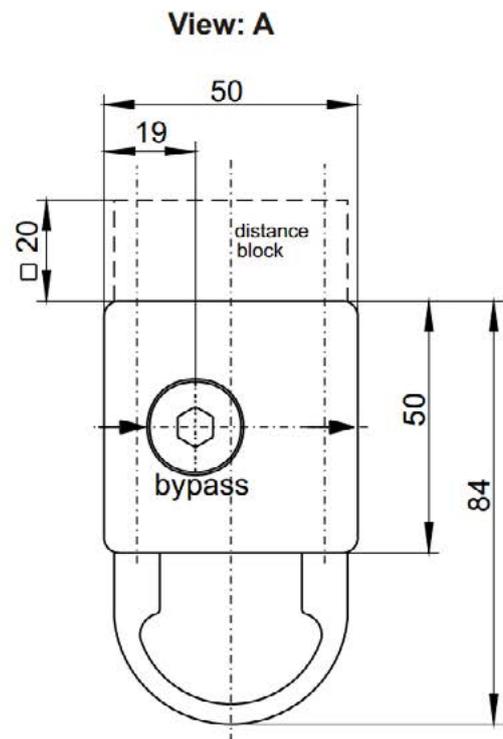
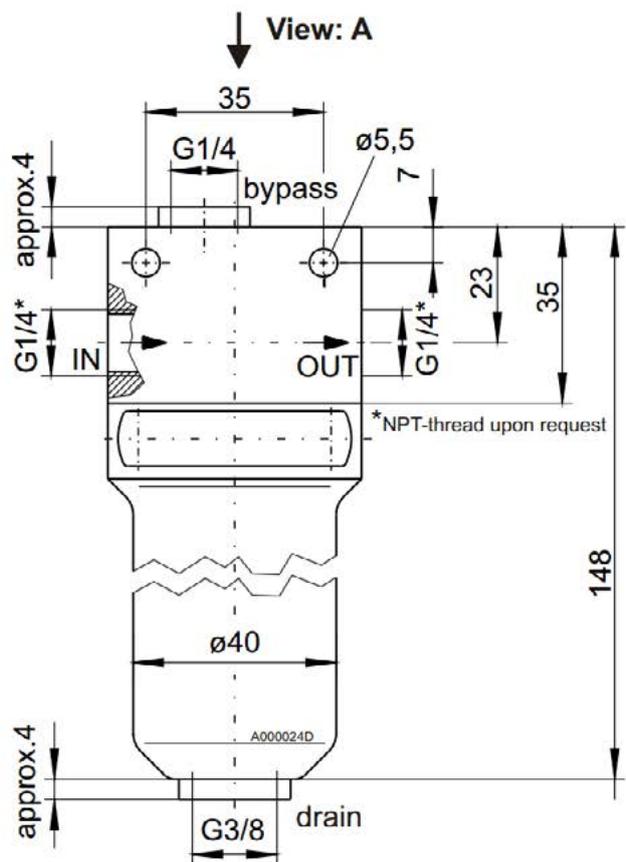
Type	Seal	Material	Temp. (Max.)	Pore Size	Area	Pcs.
DRG 25 VA-V	Viton	1.4301 / Epoxy Resin	120 °C	25 µm	70 cm ²	1
DRG 60 VA-V	Viton	1.4301 / Epoxy Resin	120 °C	60 µm	70 cm ²	1
DRG 100 VA-V	Viton	1.4301 / Epoxy Resin	120 °C	100 µm	70 cm ²	1
DRG 25 SO-V	Viton	1.4301 / 1.4401	150 °C	25 µm	70 cm ²	1
DRG 60 SO-V	Viton	1.4301 / 1.4401	150 °C	60 µm	70 cm ²	1
DRG 25 SO-P	Perfluorelastomer	1.4301 / 1.4401	260 °C	25 µm	70 cm ²	1
DRG 60 SO-P	Perfluorelastomer	1.4301 / 1.4401	260 °C	60 µm	70 cm ²	1
F2	--	PTFE Sintered	100 °C	2 µm	60 cm ²	5
F25	--	PTFE Sintered	100 °C	25 µm	60 cm ²	5

Information on the AGF-VA-23 Sample Gas Filter Housing continues overleaf



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AGF-VA-23 TECHNICAL DRAWINGS



All measurements in mm

AGF-VA-23 ORDERING INFORMATION

Product No.	Description
4142999	AGF-VA-23-V for mounting filter elements DRG, Viton Seal
4152999	AGF-VA-23-V for mounting filter elements DRG, Perfluorelastomer Seal
4142699	AGF-VA-23-V-F2/F25 for mounting filter elements F2 / F25, Viton Seal
4145699	AGF-VA-23-V-F2/F25 for mounting filter elements F2 / F25, Perfluorelastomer Seal



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BF2-S SELF CLEANING SAMPLE GAS FILTER HOUSING

A filter housing which uses the cross flow (inertial) principal to self-clean while in use. Filters of this type provide the lowest maintenance cost and longest life of any filter technology.

FEATURES

For Gases and Liquids | Long Filter Life | Low Maintenance | Compact Design | Integrated Tube Fittings

SPECIFICATIONS

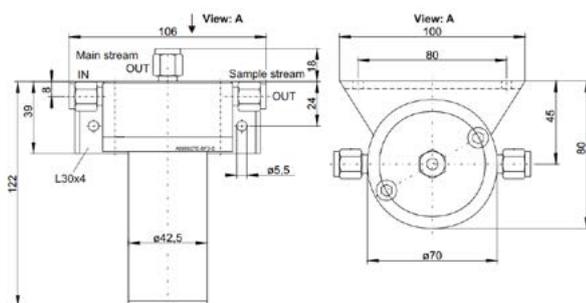
Product No.	BF2-S
Materials	
Housing	SS 1.4571
Core	PTFE
Filter Element	SS 1.4404
Seal	Viton
Technical Details	
Connections	Swagelok tube, Ø 6 mm
Pressure	Max. 25 bar
Temperature	Max. 120 °C
Filter Surface Area	125 cm ²
Pore Size	0.5 or 5 µm
Dead Volume	14 ml (Bypass Outlet) 19 ml (Sample Outlet)
Weight	Approx. 1.5 kg

OPTIONS AND ACCESSORIES

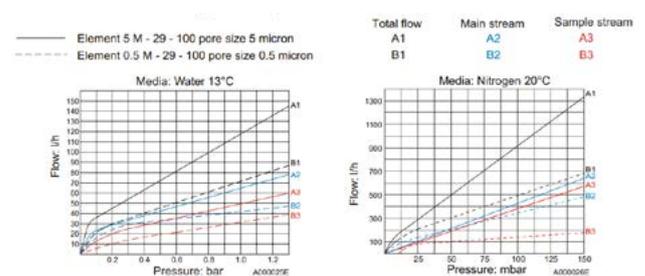
Product No.	Description
4109999	BF2-S w/ 0.5 µm element
4108999	BF2-S w/ 5 µm element
4109001	Spare 0.5 µm element
4108001	Spare 5 µm element

For more information, please contact our sales department

TECHNICAL DRAWINGS



FLOW DIAGRAMS





RAF-PV-30 AMBIENT AIR FILTER

The RAF-PV-30 Ambient Air Filter uses a fine upstream filter element to eliminate fugitive particulate matter in an ambient air sample gas path.

FEATURES

Unique Bühler QC Bracket | Easy Change of Filter Media without Tools | Versatile Mounting Bracket

SPECIFICATIONS

Filter Elements

Type	Element	Material	Pores	Surface Area	Range of Use
S2	Husk	Glass Fibre	2 µm	80 cm ²	Group IIC
F25	PTFE	PTFE sintered	25 µm	60 cm ²	Group IIB

Filter Housings

Product No.	RAF-PV-30
Materials	
Filter Head	PVDF
Filter Bowl	Glass
Seal	Viton

Technical Data

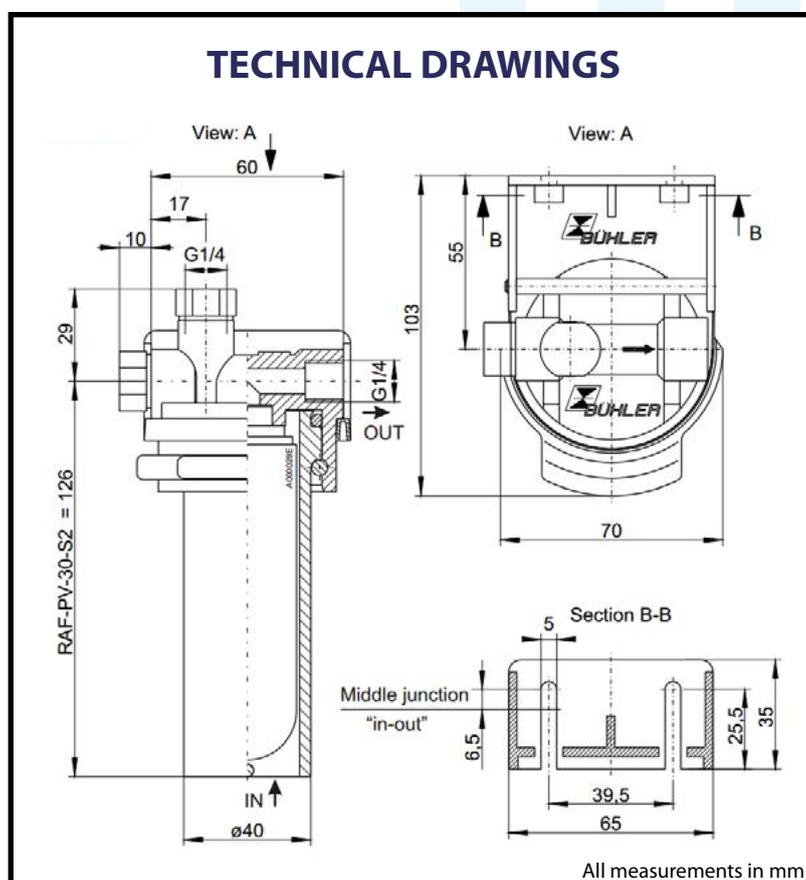
Temperature	Max. 100 °C
Weight	Approx. 0.28 kg

OPTIONS AND ACCESSORIES

Type	Element
RAF-PV-30-S2	RAF-PV-30 with S2 elements
RAF-PV-30-F25	RAF-PV-30 with F25 elements

For more information, please contact our sales department

TECHNICAL DRAWINGS





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K-AGF-PV-30-A SAMPLE GAS FILTER HOUSING

The K-AGF-PV-30-A uses a coalescing element made of borosilicate fibres.

The gas stream passes through the element from inside to outside. The aerosols are caught in the matrix, forming steadily growing droplets which eventually drop into the bowl as a liquid. The liquid collected in the bowl is drained off by either a condensate drain or a peristaltic pump.



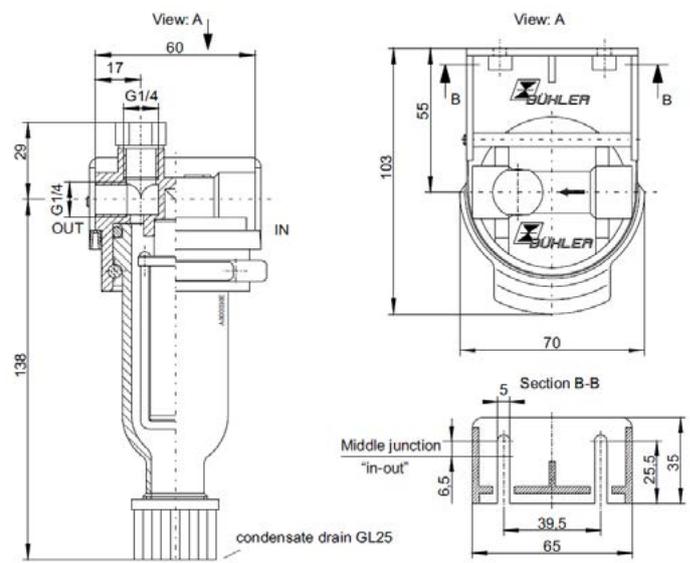
FEATURES

Bühler Unique QC Bracket | Easy Tool-less Filter Element Replacement | Filter Head with Auxiliary Port

SPECIFICATIONS

Part No	K-AGF-PV-30-A
Filter Head	PVDF
Filter Bowl	Duran Glass
Seal	Viton
Max. Pressure	4 bar
Max. Temperature	80 °C
Dead Volume	73 ml
Weight (Approx.)	0.24 kg

TECHNICAL DRAWINGS



All measurements in mm

OPTIONS AND ACCESSORIES

Part No.	Description
4150699	K-AGF-PV-30-A Filter Housing
4932001	Borosilicat Husk Filter Element for K-AGF-PV-30-A Filter Housings

For more information, please contact our sales department



DRM Technic

K-AGF-VA-23 SAMPLE GAS FILTER HOUSING

The K-AGF-VA-23 uses a coalescing element made of borosilicate fibres.

The gas stream passes through the element from inside to outside. The aerosols are caught in the matrix, forming steadily growing droplets which eventually drop into the bowl as a liquid. The liquid collected in the bowl is drained off by either a condensate drain or a peristaltic pump.

The lifetime of the element depends on the concentration of particulate matter in the gas stream.



FEATURES

Bühler Unique QC Bracket | Easy Tool-less Filter Element Replacement | Filter Head with Auxiliary Port

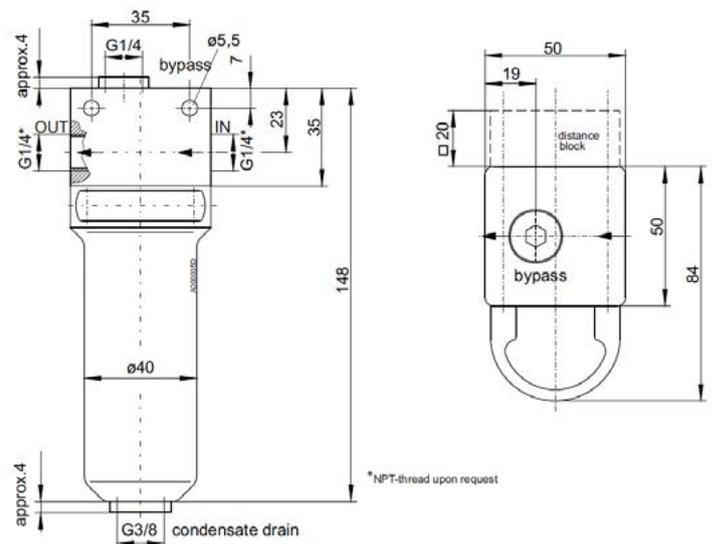
SPECIFICATIONS

Part No	K-AGF-VA-23
Temperature (max.)	140 °C
Pressure (max.)	160 bar
Dead Volume	55 ml
Weight (approx.)	1.7 kg
Housing Material	1.4571 / SS 316 Ti
Seal	Viton or Perfluorelastomer

OPTIONS AND ACCESSORIES

Part No.	Description
4142799	K-AGF-VA-23-V Filter Housing with Viton Seal
4142899	K-AGF-VA-23-P Filter Housing with Perfluorelastomer Seal
4932001	Borosilicat Husk Filter Element for K-AGF-PV-30-A Filter Housings

TECHNICAL DRAWINGS



All measurements in mm

For more information, please contact our sales department



DRM Technic

AHF-22 HEATED SAMPLE GAS FILTER

The AHF-22 Heated Sample Gas Filter is a highly advanced filter housing. A spent filter can be changed in seconds and does not require dismantling the unit. Self-Regulation and Controller-Regulated Versions are available.



FEATURES

**Robust and Reliable Design | Easy Installation | Tool-less Filter Replacement
Regulated or Self-Regulating Heating | Optional Calibration Gas Ports | No Cold Spots**

SPECIFICATIONS

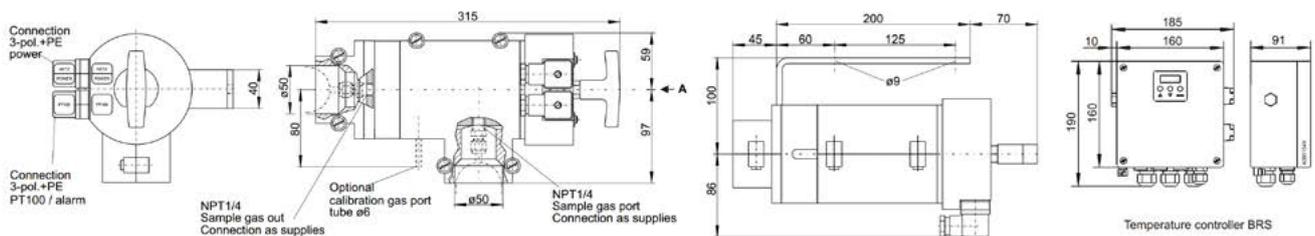
Product No.	AHF-22
Filter Housing	SS 316 Ti
Voltage	115 / 230 V AC, 50/60 Hz
Insulation	Filled Resin
Seals	Viton (Perfluorelastomer optional)
Heating Power	400 W
Protection Class	IP 40
Dead Volume	80 - 100 ml
Weight	Approx. 6.4 kg
Pressure	Max. 16 bar
Temperature	Self Regulated: Approx. 180 °C Regulated: Max. 200 °C
Temp. Sensor	Self Regulated: Alarm at 140 °C Regulated: PT100
Ambient Temp.	0 ... 70 °C

OPTIONS AND ACCESSORIES

Product No.	Description
46222010	5 µm Stainless Steel Filter Element (1 pc)
46222011	10 µm Pleated Stainless Steel Filter Element (1 pc)
46222026	3 µm Ceramic Filter Element (1 pc)

For more information, please contact our sales department

TECHNICAL DRAWINGS



All measurements in mm



DRM Technic

AGF-VA-350 SAMPLE GAS FILTER

The AGF-VA-350 provides reliable filtration.

The filter media is easily replaced without tools and a large variety of filter materials are available. The mounting bracket can be installed at an angle of 180°, making the mounting of the filter independent from the flow direction.



FEATURES

Easy and Tool-less Filter Change | Low Dead Volume | Variable Attachment Configurations

SPECIFICATIONS

Filter Housing

Product No. AGF-VA-350

Technical Data

Max. Temperature	150 °C
Max. Pressure	350 bar
Dead Volume	18 ml (with filter element)
Weight	0.8 kg

Materials

Housing	1.4404 (SS 316L)
Filter Element	See Below
Seal	Viton FEP covered

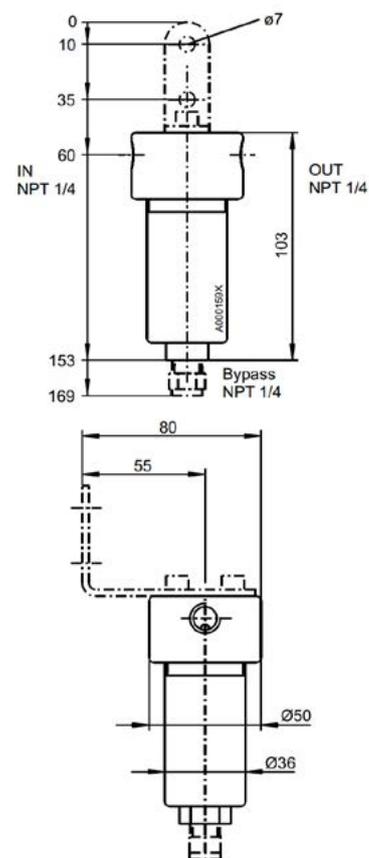
Filter Elements

Product No.	Materials	Pore Size	Max. Temp.
4135G002	Glass Fibre / Epoxy Resin	2 µm	150 °C
4135G005	Glass Fibre / Epoxy Resin	5 µm	150 °C
4135G010	Glass Fibre / Epoxy Resin	10 µm	150 °C

OPTIONS AND ACCESSORIES

Product No.	Description
4135999	AGF-VA-350-T Housing
41359993	Mounting Bracket
9008802	Plug NPT 1/4"

TECHNICAL DRAWINGS



All measurements in mm

For more information, please contact our sales department



DRM Technic

K-AGF-VA-350 SAMPLE GAS FILTER HOUSING

The K-AGF-VA-350 uses a coalescing element made of borosilicate fibres.

The gas stream passes through the element from inside to outside. The aerosols are caught in the matrix, forming steadily growing droplets which eventually drop into the bowl as a liquid. The liquid collected in the bowl is drained off by either a condensate drain or a peristaltic pump.

The lifetime of the element depends on the concentration of particulate matter in the gas stream.



FEATURES

Bühler Unique QC Bracket | Easy Tool-less Filter Element Replacement | Filter Head with Auxiliary Port

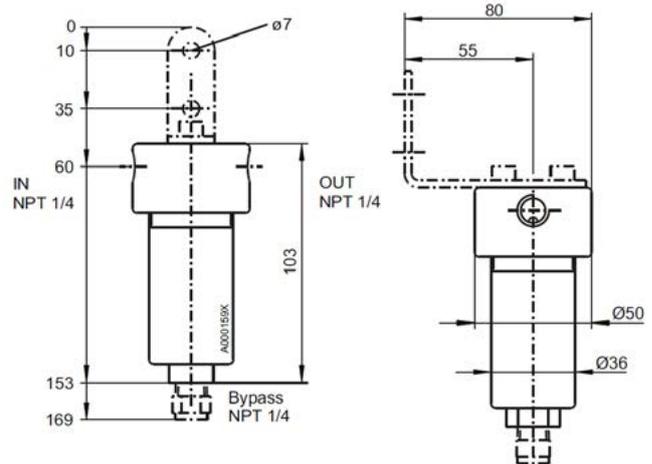
SPECIFICATIONS

Part No	K-AGF-VA-23
Temperature (max.)	150 °C
Pressure (max.)	350 bar
Dead Volume	18 ml w/o Filter Element
Weight (approx.)	0.8 kg
Housing Material	1.4404 (SS 316L)
Filter Element	See "Options and Acc."
Seal	Viton FEP Covered

OPTIONS AND ACCESSORIES

Part No.	Description
4135099	K-AGF-VA-350 Filter Housing
41359993	Mounting Bracket
9008802	Plug NPT 1/4
4932002	Borosilicat Husk Filter Element for K-AGF-PV-30-A Filter Housings

TECHNICAL DRAWINGS



All measurements in mm

For more information, please contact our sales department



DRM Technic

AGF-FA-5 PANEL FILTER

Sample Gas Filter designed for panel mounting.

The main body is attached onto the front panel. The filter bowl threads onto the main body and seals with an O-Ring. All wetted parts are resistant to aggressive media. Changing filter media is done by simply removing the bowl. The filter media is visible through the bowl.



FEATURES

**Simple, Panel-Mount Installation | Easy to Install | Large Filter Area | Easy Filter Replacement
Acid-resistant Materials | Filter Head with Additional Port for Bypass, Moisture Detector or Vent**

SPECIFICATIONS

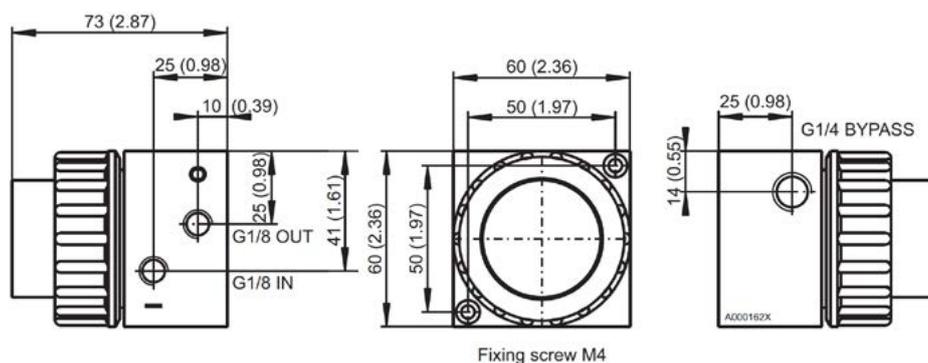
Product No.	AGF-FA-5
Surface Area	42 cm ²
Pore Size	2 µm
Dead Volume	28.5 ml (without filter element)
Material (Filter)	PTFE, PVDF, Glass (contacts by gas)
Material (Seal)	Viton
Material (Element)	Sintered PTFE
Connections	G 1/8
Pressure (max.)	2 bar
Media Temp.	100 °C (max.)

OPTIONS AND ACCESSORIES

Product No.	Description
4115300	AGF-FA-5 Panel Filter
41151050	Spare Filter Elements (8 pk)

For more information, please contact our sales department

TECHNICAL DRAWINGS



Fixing screw M4

All measurements in mm



DRM Technic

ADF-170 / ADF-300 ABSORBER HOUSINGS

The ADF series of Filter Housings are specified for the removal of interfering components from a sample gas system.

The ADF filter housings are available in two sizes (170mm and 300mm) and two materials (PVDF and Teflon). The most commonly used absorption material is Glass Fibre and NH₃ Adsorber material, though other materials are available on request.



FEATURES

- Different Sizes Available

- Highly Effective NH₃-Absorption Material Available
- Up to 38,000 Hours Lifetime for NH₃-Absorber
- Quick and Easy Maintenance (No Tools Required)
- Chemical and Temperature Resistant Materials
- Optional Condensate Outlet Available

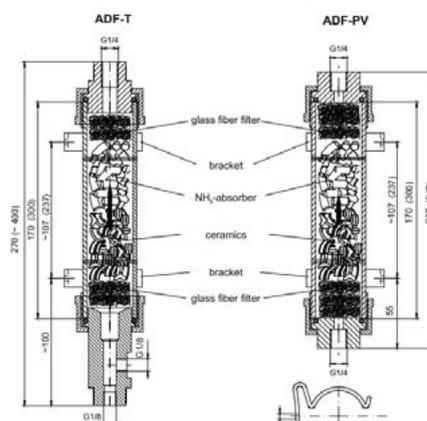
OPTIONS AND ACCESSORIES

Product No.	Description
ADF-PV-170	PVDF Filter Housing, 170mm long
ADF-PV-300	PVDF Filter Housing, 300mm long
ADF-T-170	Teflon Filter Housing, 170 mm long
ADF-T-300	Teflon Filter Housing, 300 mm long
46222167	Glass Fibre Filter
415729912	NH ₃ Adsorber Filter Granulate

SPECIFICATIONS

Product No.	ADF-170 / ADF-300
Filter Gas Inlets (PTFE Body)	Gas Inlet: G 1/8; Gas Outlet: G 1/4; Condensate Outlet: G 1/8
Filter Gas Inlets (PVDF Body)	Gas Inlet and Outlet: G 1/4
Filter Glass	Duran Glass
Material Gasket	Viton
Temperature (max.)	150 °C (gas) / 100 °C (ambient temp.)
Pressure (max.)	2 bar abs. at 150 °C
Filling Volume	ADF-170: Approx. 125 ml ADF-300: Approx. 250 ml
Weight (Without Filling)	ADF-170: Approx. 0.3 kg ADF-300: Approx. 0.4 kg
Weight of Filling	ADF-170: Approx. 50 g ADF-300: Approx. 100 g

TECHNICAL DRAWINGS



Dimensions in brackets refer to glass length of 300 mm

All measurements in mm

For more information, please contact our sales department



DRM Technic

SECTION 6: FLOWMETERS AND VALVES



DRM Technic



DRM Technic

SM-6-xx FLOW METERS

Specified for applications where flow monitoring is critical.

The SM-6-V combines a flow meter with a precision needle valve, allowing the user to more accurately regulate and adjust their flow.

They can also be equipped with a bi-stable flow sensor.



FEATURES

Highly Corrosion Resistant | Reliable Construction | Easy Maintenance Metering Tube
Optional Flow Sensor Available

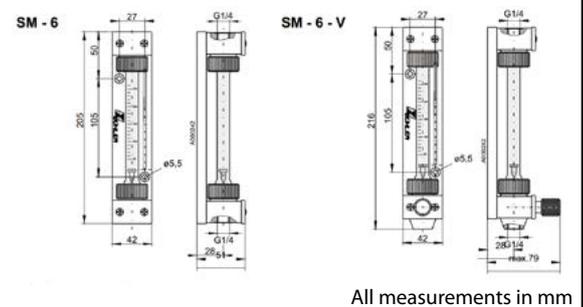
SPECIFICATIONS

Product No.	SM-6-xx
Flow Meter	
Ambient Temp.	80 °C
Media Temp. (Max.)	150 °C
Operating Temp. (Max.)	4 bar
Flow Sensor	
Protection Class	IP 67 DIN 40050
Ambient Temp.	-20 °C ... + 70 °C
Material	
Head	PTFE
Seal	PTFE
Adjusting Screw	PVDF/Viton or PCTFE/Perfluorelastomer
Metering Tube	Borosilicate Glass
Float	Hastelloy C 4 or optional PEEK with iron core
Union Nut	PPS Fiberglass (reinforced)
Base Plate	PA
Flow Sensor Housing	PBT

OPTIONS AND ACCESSORIES

Product No.	Description
SM-6	Flow Meter
SM-6-V	Flow Meter with Percision Needle

TECHNICAL DRAWINGS



For more information, please contact our sales department



SM-6-xx [AMP] SWITCH AMPLIFIERS

A variety of switch amplifiers are available for the SM-6-xx Flow Meter. The KFD/KFA single channel switch amplifiers (specified for intrinsically safe circuits) have an alarm relay, broken wire detection, and 3 LED status indicators. Also available is the KCD model - a single channel amplifier with one LED status indicator and broken wire detection.

FEATURES

Rail Mounting (DIN EN 60715) | Intrinsically Safe Input | ATEX, FM, UL, CSA Approvals

SPECIFICATIONS

Flow Sensor

Protection Class	IP 67 DIN 40050; approved by PTB 99 ATEX 2128X
Ambient Temperature	- 20 ... + 70 °C
Operating	Bi-stable
Cable Length	2 m

Controllers

Product No.	KFD 2-SR2-Ex 1.W	KFA 5-SR2-EX 1.W	KFA 6-SR2-Ex 1.W	KCD2-E2L 24
Power Supply	20 - 30 V DC	103.5 - 126 V AC 45 - 65 Hz	207 - 253 V AC 45 - 65 Hz	24 V DC
Intrinsically Safe Acc. To	EN 60079-11	EN 60079-11	EN 60079-11	No
Broken Wire Detection	Yes	Yes	Yes	Yes
Approved for	PTB 00 ATEX 2080 ExII(1)GD [Ex ia]IIC Class I A, B, C, D Class II E, F, G Class I Div 1 A, B, C, D Class II Div 1 E, F, G	PTB 00 ATEX 2080 ExII(1)GD [Ex ia]IIC Class I A, B, C, D Class II E, F, G Class I Div 1 A, B, C, D Class II Div 1 E, F, G	PTB 00 ATEX 2080 ExII(1)GD [Ex ia]IIC Class I A, B, C, D Class II E, F, G Class I Div 1 A, B, C, D Class II Div 1 E, F, G	-
Output	Change Over	Change Over	Change Over	Closing PNP - Transistor
Switch Power Output	230 V AC, 2 A	230 V AC, 2 A	230 V AC, 2 A	200 mA DC
Ambient Temp.	- 20 ... + 60 °C	- 20 ... + 60 °C	- 20 ... + 60 °C	-25 ... + 70 °C
Protection Class	IP 20	IP 20	IP 20	IP 20
Dimensions	20 x 118 x 115 mm	20 x 118 x 115 mm	20 x 118 x 115 mm	20 x 63 x 44 mm



S-SM SERIES SAFETY FLOWMETERS

The S-SM Safety Flowmeters have sealed protection glass around the metering glass, alongside an outer stainless steel shell with a slight window for flow monitoring, making them suitable for the safe handling of hazardous liquids.

FEATURES

Rugged Protection | Large Range of Applications | High Safety Standard

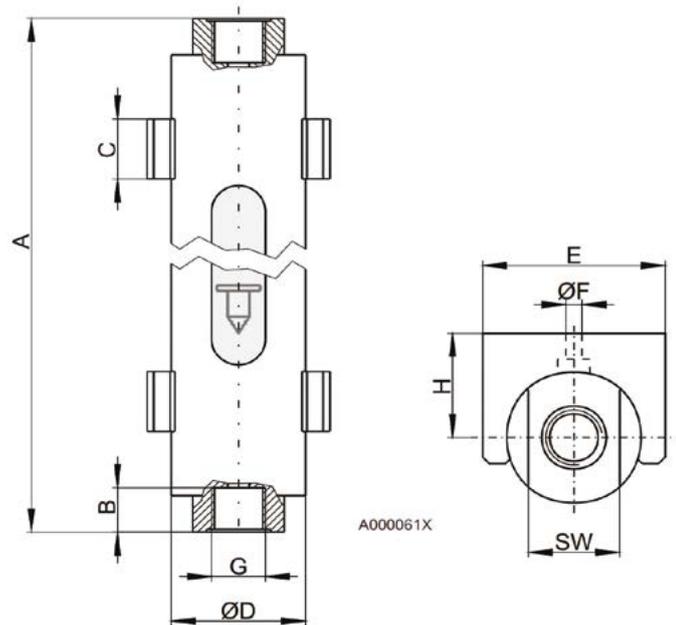
SPECIFICATIONS

Product No.	S-SM xx
Metering Range	See Table of Typical Ranges (overleaf)
Metering Cone	Glass, Hastelloy, SS or PTFE
Endcaps	PTFE, SS or Titanium
Support	Plastic Bracket

OPTIONS AND ACCESSORIES

Product No.	Description
402x999	S-SM 3-1
4024999	S-SM 4
4025999	S-SM 4-1
4026999	S-SM 5

TECHNICAL DRAWINGS



Type	A	B	C	ØD	E	ØF	G	H	SW	kg	Operating pressure* max. at 20°C	Operating temperature* max. at 2bar
S-SM 3-1	197	17	17	25	42	5,5	1/4"NPT	27	22	0,9	10 bar	100 °C
S-SM 4	368	17	23	50	68	6	G 1/2"	40	36	2,8	10 bar	100 °C
S-SM 4-1	368	17	23	50	68	6	G 1/2"	40	36	2,8	10 bar	100 °C
S-SM 5	370	25	23	70	95	6	G 1"	58	46	4	10 bar	100 °C

All measurements in mm

For more information, please contact our sales department



DRM Technic

NVT-3 NEEDLE VALVE

These valves are very corrosion resistant and perfectly suited for the regulation of gas samples in industrial as well as laboratory applications. While designed for gaseous media, the valves can be used with liquids too.

The materials are resistant to hydrofluoric acid solutions. The precise adjustment of the spindle provides a very sensitive setting of the flow rate.



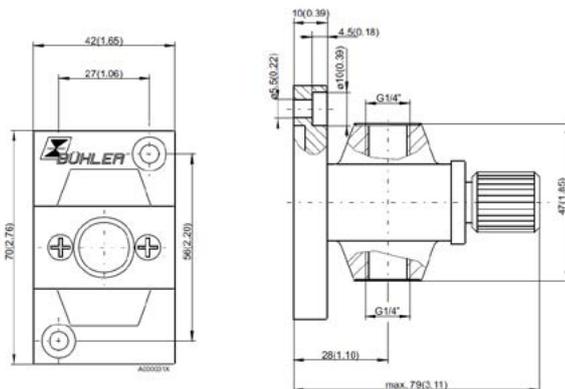
FEATURES

Highly Corrosion Resistant Materials | Simple, Reliable Construction

SPECIFICATIONS

Product No.	NVT-3
Housing	Standard Applications: PTFE / PVDF / Viton Highly Corrosive Media: PTFE / PCTFE / Perfluorelastomer
Connections	G 1/4"
Flow	Approx. 400 NI/h (max.)
Operating Pressure	6 bar (max.)
Temperatures	Media: 130 °C (max.) Ambient: 80 °C (max.)

TECHNICAL DRAWINGS



All measurements in mm

OPTIONS AND ACCESSORIES

Product No.	NVT-3
NVT-3	Version for Standard Applications
NVT-30	Version for Highly Corrosive Media

For more information, please contact our sales department



GKH DIRECTIONAL VALVES

These switching valves are designed to direct gas paths to process or laboratory analysers. The switching valves are available in a number of models. Mounting options include clamp and claw mounts.

FEATURES

Highly Corrosion Resistant Materials | Simple, Reliable Construction

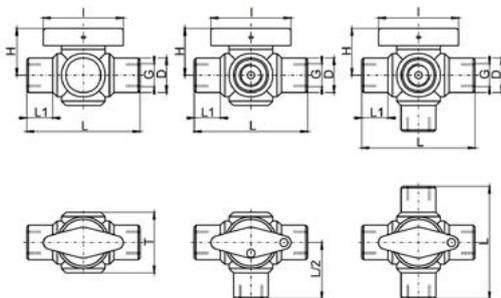
SPECIFICATIONS

Product No.	GKH-PVDF	GKH-PFA
Material	Housing: PVDF / Gasket: Viton	Housing: PFA / Gasket: Viton
Terminals	G 1/4"	G 1/4"
Operating Pressure ¹	10 bar (max.)	10 bar (max.)
Media Temperature	- 30 °C ... + 140 °C	- 30 °C ... + 200 °C
Nominal Width	4 mm	4 mm

¹ The maximum pressure decreases with increasing temperature (see below table); values given in % of the maximum pressure at 20 °C

Material	Pressure	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170 - 200 °C	
PVDF	10 bar	100	80	70	60	50	45	40	35	35	30	25	25				%	
PFA	10 bar	100	90	85	80	70	60	50	45	40	35	30	30	25	20	15	10	%

TECHNICAL DRAWINGS



DN	G	D	H	T	L	L1	I
4	1/4"	20	27	30	65	15	40

All measurements in mm

OPTIONS AND ACCESSORIES

Product No.	NVT-3
GKH-2-PVDF	2-way PVDF Switching Valve
GKH-2-PFA	2-way PFA Switching Valve
GKH-3-PVDF	3-way PVDF Switching Valve
GKH-3-PFA	3-way PFA Switching Valve
GKH-5-PVDF	5-way PVDF Switching Valve
GKH-5-PFA	5-way PFA Switching Valve
4060098	Mounting Claw for NVT-3 Valves
4060099	Clamp Set for NVT-3 Valves



ARP-1.2 BACK PRESSURE REGULATOR

The back pressure regulator keeps the sample gas pressure constant and independent from atmospheric pressure. This avoids inaccuracies due to fluctuations in barometric pressure. The unit is adjusted to a pressure above the normal variations of atmospheric pressure.



FEATURES

- Constantly Stable Sample Gas Pressure
- High Accuracy ($\pm < 2$ mbar)
- Maintenance Free

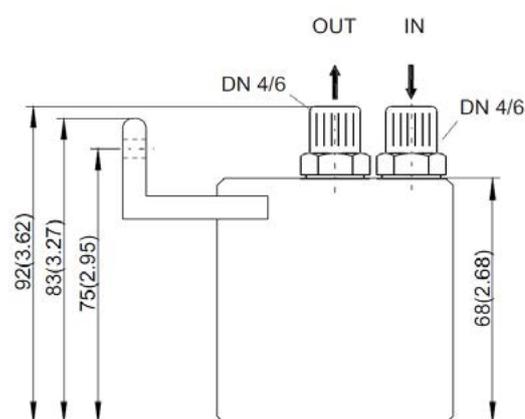
SPECIFICATIONS

Product No.	ARP-1.2
Volumetric Flow	
Min. Volumetric Flow	25 l/h
Max. Volumetric Flow	200 l/h
Pressure	
Standard	1067 \pm 2 mbar ¹
Variation (max.)	1400 mbar
Accuracy	
w/ Variable Flow	$\pm < 2$ mbar
w/ Constant Flow	$\pm < 1$ mbar
Sample Gas Temp.	+ 5 ... + 50 °C
Sample Gas Connection	Hose DN 4/6
Material	CU BE / 1.4571 / PP / Viton / PVC
Dead Volume	45 ml
Weight	0.24 kg

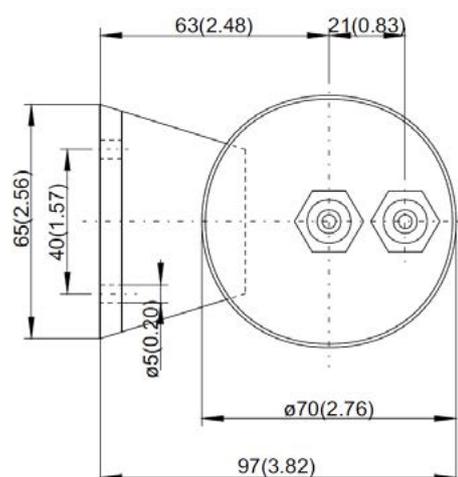
¹ May be supplied with other standard pressures to meet specific applications

TECHNICAL DRAWINGS

Side View



Top View



All measurements in mm

For more information, please contact our sales department



DRM Technic

SECTION 7: NO_x CONVERTERS



DRM Technic



BÜNOx 2+ GAS CONVERTER

The BÜNOx series Gas Converters allow easy detection of NOx components in flue gas (NO and NO₂).

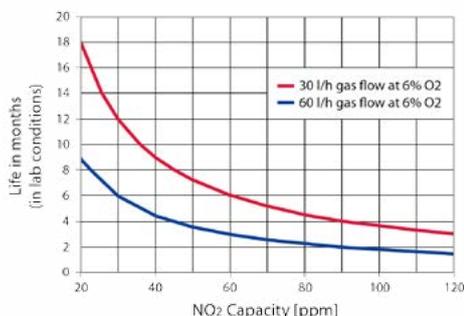
The BÜNOx 2+ is an updated replacement for the current BÜNOx. Because they share the same dimensions and connections, they can be replaced one-to-one.



FEATURES

- 19" Mount Housing
- Maintenance Calculator NOxCal for Service Life Monitoring
- Optimised Menu Navigation
- Easy to Replace Reactor Cartridge (Tools Not Needed)
- High Conversion Rate: > 97%
- High NO₂ Capacity
- Low Temperature Operation for High Efficiency
- Optional Bypass Solenoid Valves
- Optional Long-Life Cartridges

DIAGRAM



Life of standard cartridges MC or CC shown. Values determined in lab conditions; actual life during operation may differ.

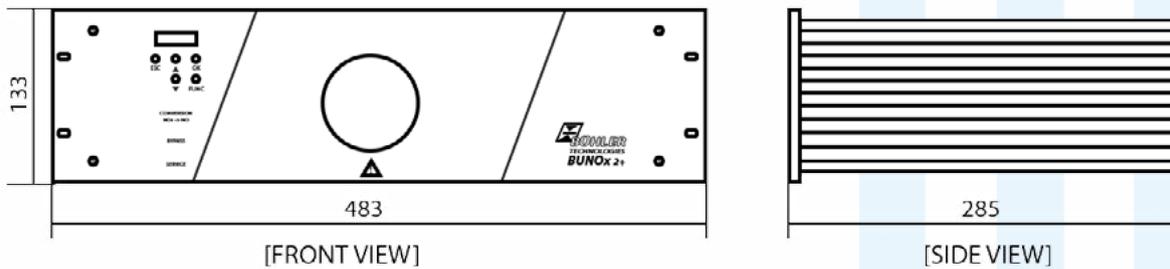
SPECIFICATIONS

Product No.	BÜNOx 2+
General	
Operating Temp.	400 °C
Ready for Operation	After approx. 30 min heat-up time
Power Supply	115 V AC or 230 V AC; 50/60 Hz
Cartridge Material	Metal (MC) and Carbon (CC) Based
Gas Inlet Conditions	
Sample Gas Pressure	Up to 1.5 bar abs.
Sample Gas Flow Rate	Up to 120 L/h (2 L/min)
Sample Gas Temp.	5 °C to 80 °C
Dew Point After Cooler	< 10 °C
Ambient Conditions	
Ambient Temp.	5 °C to 50 °C (during operation) -20 °C to 70 °C (during storage)
Ambient Humidity (during storage)	< 80% rel. humidity
Signal Inputs and Outputs	
Status Outputs (Service/NOxCal; Operating Mode; Temperature)	Changeover contact max. 230 V AC / DC, 1 A
Analogue Output	Temperature 4-20 mA
Signal Input	Solenoid Valve Control, 24 V DC, 1 mA via external switch
Structural Specifications	
Dimensions (w x h x d)	483 mm x 133 mm x 285 mm
Weight	10.2 kg (approx.)
Protection Class	IP20



DRM Technic

BUNOX 2+ TECHNICAL DRAWINGS



All measurements in mm

BUNOX 2+ REACTOR CARTRIDGE SPECIFICATIONS

Part No.	MC	CC
Filling Material	Metal-Based	Carbon-Based
Life	See Diagram on Previous Page	See Diagram on Previous Page
Conversion Factor NO ₂ --> NO	≥ 97% when cartridge is new	≥ 95% when cartridge is new
Max. NO ₂ Capacity (at 70 l/h)	300 ppm	120 ppm
Max. Conversion Temp.	425 °C	225 °C

¹ The converter temperature should only be increased if the conversion level drops below 95 % with the cartridge almost depleted

BUNOX 2+ OPTIONS AND ACCESSORIES

Item No.	Description
553 119 70	MC Cartridge (Metal Based Material; Long-Life Version)
553 199 90	MC Cartridge (Metal Based Material)
553 199 60	CC Cartridge (Carbon Based Material; Long-Life Version)
553 199 80	CC Cartridge (Carbon Based Material)
553 199 992	Set of Gaskets



DRM Technic

SECTION 8: PORTABLE EQUIPMENT



DRM Technic



BASELINE PORTABLE SAMPLE GAS PROBE

A portable Sample Gas Probe for use in Sample Gas Conditioning.



FEATURES

Designed for Sample and Control Measurements | Unheated 3m NBR Hose | Easy to Handle
Low Weight and Maintenance | Ideal for use with PCS.base Portable Conditioning System

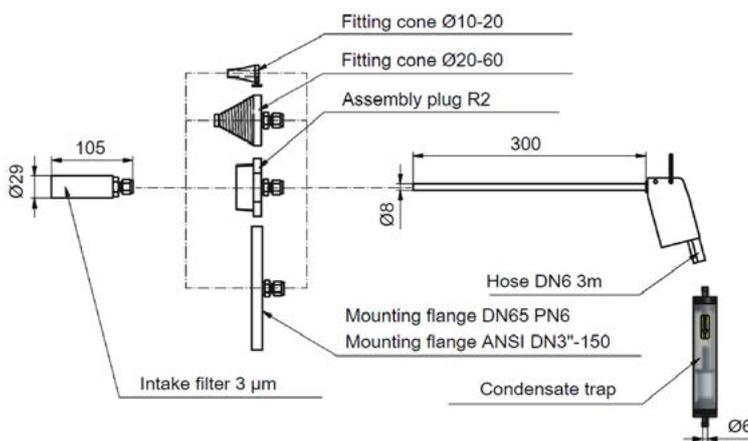
SPECIFICATIONS

Product No.	Baseline
Weight	350 g
Material	Stainless Steel (Tube) Polyamide (Handle) NBR (Hose)
Temperature Inside Stack	Max. 600 °C
Pressure	Atmospheric
Dust Load	Max. 2 g/m ² when using intake filter
Fixed Probe Tube Length	300 mm

OPTIONS AND ACCESSORIES

Product No.	Description
Probes and Accessories	
46760100000	Baseline Probe
46760008	Mount 2m Chain and Carabiner
46760007	Condensate Trap
Filter / Filter Elements	
46760020	Fiberglass Filter Element for Condensate Trap
467600030	PTFE Filter Element for Condensate Trap
46760006	Sintered Stainless Steel Intake Filter 3 µm
Mounting Accessories	
46760001	Tapered Assembly Plug Ø 10-20
46760002	Tapered Assembly Plug Ø 20-60
46760003	Assembly Plug R2
46760004	Mounting Flange DN65 PN6
46760005	Mounting Flange ANSI DN3"-150

TECHNICAL DRAWINGS



All measurements in mm

For more information, please contact our sales department



DRM Technic

PCS.base PORTABLE SAMPLE GAS CONDITIONING SYSTEM

The PCS.base Portable Sample Gas Conditioning System features a gas cooler, particle filter, condensate trap and pump, fitted inside a carrying bag with room for electric lines and various accessories.



FEATURES

System and Accessories Built into a Lightweight Transport Bag | Consists of Cooler with Condensate Trap, Filter and Pump | Optional Moisture Detector, Flow Meter and More Available | Compact Design

SPECIFICATIONS

Part Number	PCS.base
Ready for Operation	at TU - 25 °C after approx. 10 min.
Ambient Temperature	5 °C to 45 °C
Gas Inlet Temp.	80 °C
Gas Outlet Dew Temp.	5 °C
Dew Point Stability	± 0.2 K
Max. Pressures	1 bar
Flow Rate	110 L/h max.
Rated Cooling Capacity at 25 °C and Dew Point	5 °C: 55 kJ/h
	10 °C: 60 kJ/h
	15 °C: 65 kJ/h
Power Supply	110 - 260 V AC, 50/60 Hz
Electrical Connection	IEC Connector
Hose Connections	DN 6 hose nipple PVDF (in/outlet)
Weight (excl. accessories)	6.8 kg
Weight (w/ accessories)	10.5 kg
Dimensions	Approx. 480 (w) x 270 (h) x 260 (d) mm
Materials in Contact with Medium	
Heat Exchanger, Filter, Tubing, Pump	PVDF, PC, PTFE, Viton, EPDM, PP, PVC
Optional Moisture Detector	PVDF, Stainless Steel 1.4571 / 1.4576, Epoxy Resin
Optional Flow Meter	PP, Glass, Viton

OPTIONS AND ACCESSORIES

Part No.	Description
Options	
CSPB100000	PCS.base
CSPB110000	PCS.base with Moisture Detector
CSPB101000	PCS.base with Flow Meter and Needle Valve
CSPB111000	PCS.base with Flow Meter, Needle Valve and Moisture Detector
Accessories	
41150090	Spare AGF-FE-1T 2 µm Filter Element (5pk)
9014033	PVC hose DN 4/6 (for gas outlet)
90114136	Viton hose DN 4/6 (for gas outlet)
9014036	PVC hose DN 4/6 (for gas inlet)
9014138	Viton hose DN 6/8 (for gas inlet)

For more information, please contact our sales department



DRM Technic

TGAK3 PORTABLE SAMPLE GAS CONDITIONING SYSTEM

The TGAK3 is a complete portable gas conditioning system in a rugged metal case, featuring a gas cooler, condensate vessel, gas pump, filter, moisture detector and flow meter with needle valve.



FEATURES

**Excellent Cooling Capacity | Adjustable Outlet Dew Point and Alarm Threshold | Unique Fail-Safe Interlock
Can be used in Corrosive, Non-Corrosive and Reactive Applications, Depending on Materials Ordered**

SPECIFICATIONS

Product No.	TGAK3
Ambient Temperature	5 ... 40 °C
Outlet Dew Point	Adjustable; 2 ... 20 °C
Outlet Dew Point Alarm Threshold	Adjustable; -3 ... 1 K and 1 ... 7 K with respect to dew point
Dew Point Stability	0.1 K (statically); ± 1.5 K (over whole range)
Inlet Dew Point (Max.)	60 °C
Inlet Gas Temperature	110 °C
Gas Flow	Approx. 10 ... 110 l/h
Gas Terminals	Quick Coupling
Rel Pressure (Max.)	0 bar
Cooling Capacity	90 kJ/h
Power Supply	230v, 50 Hz; or 115v, 60 Hz
Power Connection	2.5m cable w/ connector
Power Consumption	Max. 250 VA
Ready for Operation After	Max. 10 min
Dimensions (w/o pipe; H x W x D)	Approx. 510 x 355 x 270
Weight	Approx. 16 kg (standard)

Materials in Gas Path

Standard	Glass, PPH, Viton, EPDM, Stainless Steel, PA 12, PC, Glass Fibre
Acid-Resistant	PVDF, Glass, Teflon, Stainless Steel, PTFE, Kalrez, PTFE

OPTIONS AND ACCESSORIES

Product No.	Description
Accessories	
CS PX 00012	Aluminium Removal Case Trolley with 50mm wheels
Spare Parts	
41150010	Fibre Glass Filter Elements for standard and pumpless versions (5 pk)
41151050	PTFE Filter Elements for acid-proof versions (8 pk)
9124030027	Spare Tube for Peristaltic Pump

For more information, please contact our sales department



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SECTION 9: SAMPLE GAS PROBES



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GAS 222.15 SAMPLE GAS PROBE

In gas analysis, the sample point is a critical interface between the process and the analysis system. The GAS 222 series of probes have a robust modular design, allowing them to be easily adapted for applications with specific requirements.

The probes are assembled-to-order, easy to install and have low operational costs.



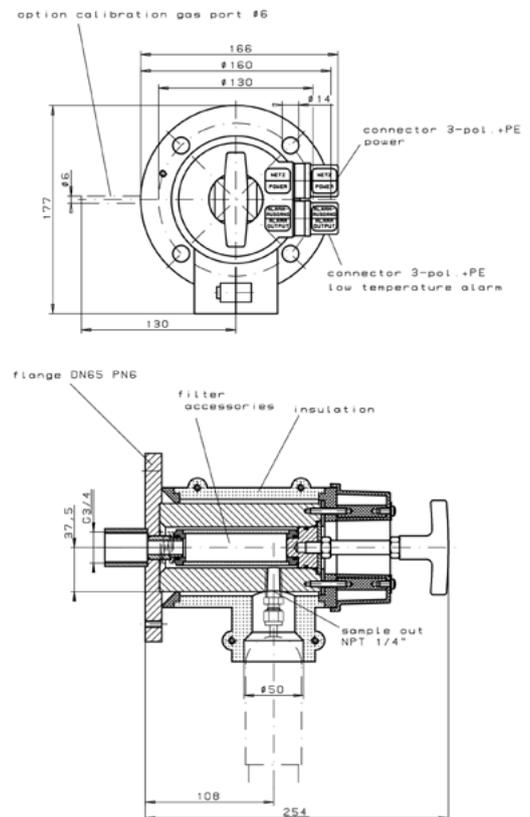
FEATURES

**Heated Sample Gas Probe with Downstream Filter | Easy Filter Element Replacement
Effective Insulation and Protection Shield | Self-Regulating with Low Temperature Alarm
For Dust Concentrations of up to 2 g/m³ | Specified for Non-Hazardous Areas**

SPECIFICATIONS

Product No.	GAS 222.15
Material	1.4571 SS
Seals	Graphite, 1.4404 SS + filter elements
Max. Operating Temp.	200 °C
Max. Working Pressure	6 bar
Voltage	115/230 V, 50/60 Hz
Temperature	+180 °C (Self-regulating)
Low Temp. Alarm	Contact is open at operating temperature, closes at < 140 °C, current max. 4 A
Ambient Temp.	-20 to + 80 °C

TECHNICAL DRAWINGS



All measurements in mm

OPTIONS AND ACCESSORIES

Please see page 114 for our full range of accessories



DRM Technic

GAS 222.17 SAMPLE GAS PROBE

In gas analysis, the sample point is a critical interface between the process and the analysis system. The GAS 222 series of probes have a robust modular design, allowing them to be easily adapted to application specific requirements.

The probes are assembled-to-order, easy to install and have low operational costs.



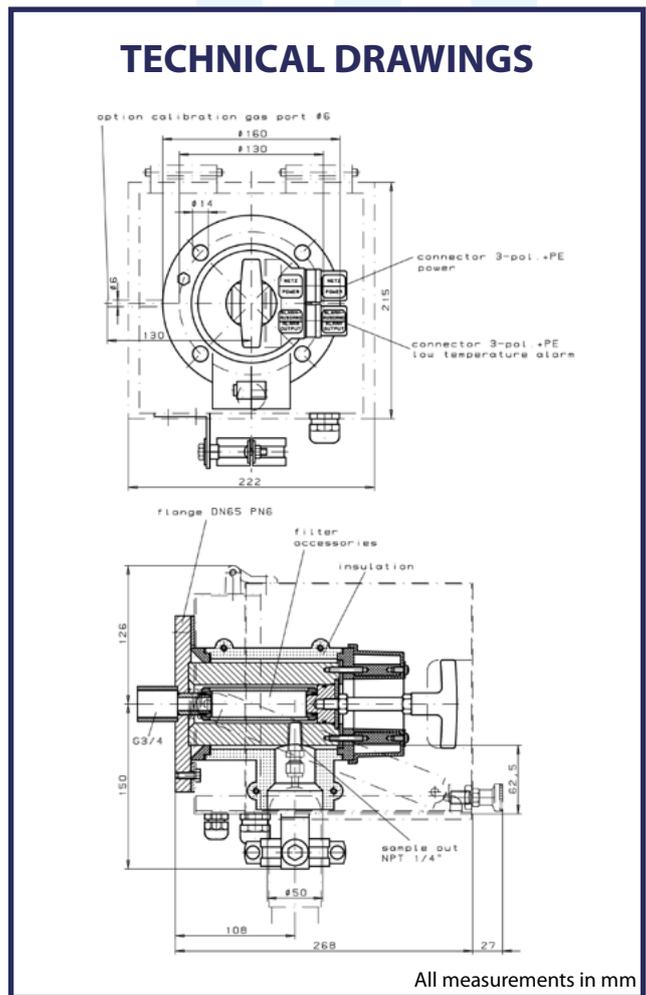
FEATURES

Heated Sample Gas Probe with Downstream Filter and Weather Protection Shield
Easy Filter Element Replacement | Self-Regulating Up to 180 °C with Low Temperature Alarm
For Dust Concentrations of Up to 2 g/m³ | Specified for Non-Hazardous Areas

SPECIFICATIONS

Product No.	GAS 222.17
Material	1.4571 SS
Seals	Graphite, 1.4404 SS + filter elements
Max. Operating Temp.	200 °C
Max. Working Pressure	6 bar
Voltage	115/230 V, 50/60 Hz
Temperature	Self-regulating; +180 °C
Low Temp. Alarm	Contact is open at operating temperature, closes at < 140 °C, current max. 4 A
Ambient Temp.	-20 to + 80 °C

TECHNICAL DRAWINGS



OPTIONS AND ACCESSORIES

Please see page 114 for our full range of accessories

All measurements in mm



GAS 222.20 SAMPLE GAS PROBE

In gas analysis, the sample point is a critical interface between the process and the analysis system. The GAS 222 series of probes have a robust modular design, come assembled-to-order, are easy to install and have low operational costs.

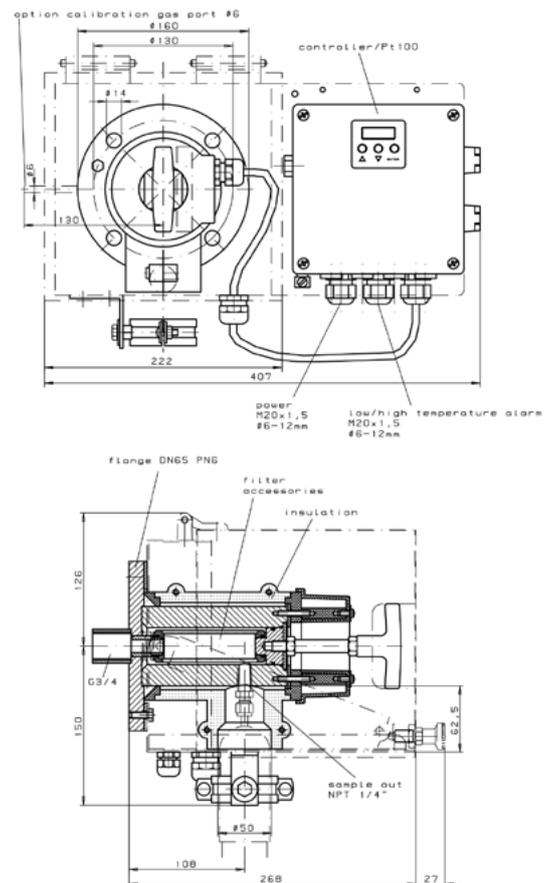
FEATURES

Heated Sample Gas Probe with Downstream Filter and Weather Protection Shield
Electronic Heater (up to 200 °C) with Low/High Temperature Alarm and Display
Easy Filter Element Replacement | Effective Insulation and Protection Shield
For Dust Concentrations of up to 2 g/m³ | Specified for Non-Hazardous Areas

SPECIFICATIONS

Product No.	GAS 222.20
Material	1.4571 SS
Seals	Graphite, 1.4404 SS + filter elements
Max. Operating Temp.	200 °C
Max. Working Pressure	6 bar
Voltage	230 V, 2.0 A, 50/60 Hz; or 115 V, 3.8 A, 50/60Hz
Temperature Range	+ 50 to +200 °C
Alarm	Adjustable; + 5 ... 30 K from set point; factory set 15 K, max. current 1 A
Protection Class	- IP54
Ambient Temp.	- 20 ... + 70 °C

TECHNICAL DRAWINGS



All measurements in mm

OPTIONS AND ACCESSORIES

Please see page 114 for our full range of accessories



DRM Technic

GAS 222.20 ATEX SAMPLE GAS PROBE

In gas analysis, the sample point is a critical interface between the process and the analysis system. The GAS 222 series of probes have a robust modular design, come assembled-to-order, are easy to install and have low operational costs.



FEATURES

Heated Sample Gas Probe with Downstream Filter, Weather Protection Shield and Junction Box
Easy Filter Element Replacement | Effective Insulation and Protection Shield | C-US and CSA Approval
For Dust Concentrations of up to 2 g/m³ | Self-Regulating at up to 130 °C (T3) / 70 °C (T4)

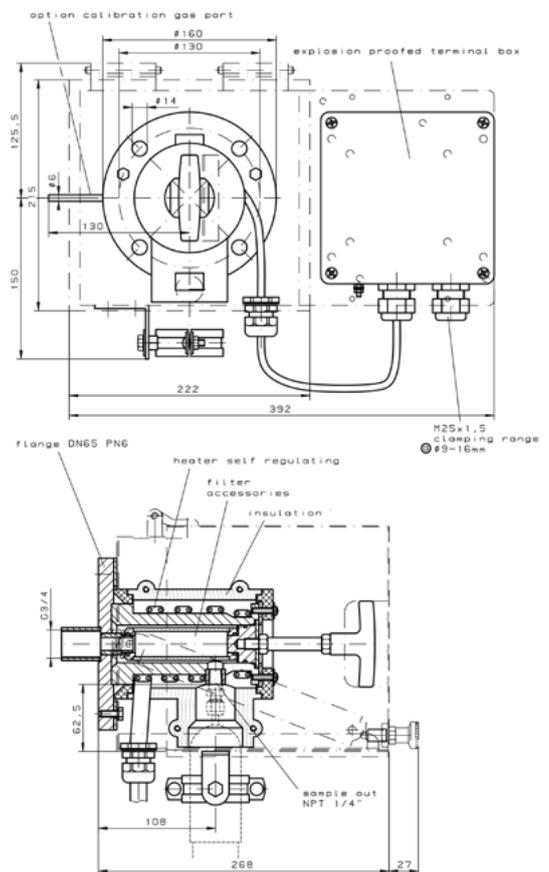
SPECIFICATIONS

Product No.	GAS 222.20 ATEX
Material	1.4571 SS
Seals	Graphite, 1.4404 SS + filter elements
Max. Working Pressure	6 bar
Max. Flow Rate	1000 l/h
Max. Inlet Temp. Process Media	135 °C
Voltage	230 V, 50/60 Hz; or 115 V, 50/60 Hz
External Circuit Breaker	Type C: 2A for 230 V, 50/60 Hz 3 A for 115 V, 50/60 Hz
Ambient Temperature	-20 to 50 °C
Temperature	Self-regulating; approx. 80 °C
Ex-marking of the basic unit	1 GD / 2 GD T4 T130 °C

OPTIONS AND ACCESSORIES

Please see page 114 for our full range of accessories

TECHNICAL DRAWINGS



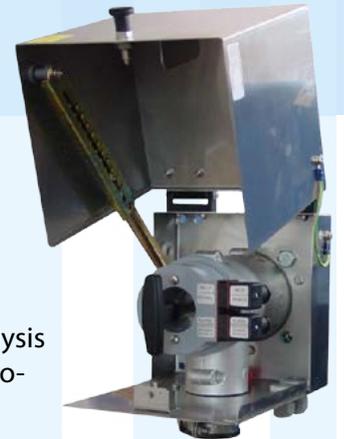
All measurements in mm



DRM Technic

GAS 222.20 ATEX 2 SAMPLE GAS PROBE

In gas analysis, the sample point is a critical interface between the process and the analysis system. The GAS 222 series of probes have a robust modular design, come assembled-to-order, are easy to install and have low operational costs.



FEATURES

Heated Sample Gas Probe with Downstream Filter and Weather Protection Shield
Easy Filter Element Replacement | Effective Insulation and Protection Shield
For Dust Concentrations of up to 2 g/m³ | Self-Regulating at up to 130 °C (T3) / 70 °C (T4)
Specified for Use in Hazardous Areas

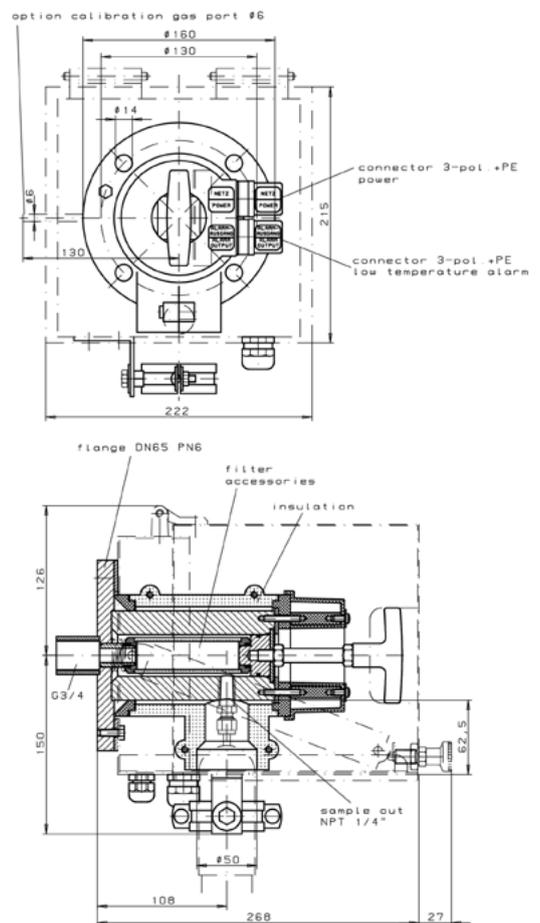
SPECIFICATIONS

Product No.	GAS 222.20 ATEX 2
Material	1.4571 SS
Seals	Graphite, 1.4404 SS + filter elements
Max. Working Pressure	6 bar
Heater	115-230 V, 50/60 Hz
Temperature	Self-regulating; + 130 °C (T3) / + 70 °C (T4)
Low Temperature Alarm	Contact is open at operating temperature; closes at < 95 °C (T3) resp. < 45 °C (T4); U _{max} =30VDC, I _{max} = 100mA, CI/Li~0
Ambient Temperature	- 20 to 80 °C
II 3G EEx nA L IIC T3	3G c IIC T3
II 3G EEx nA L IIC T4	3G c IIC T4

OPTIONS AND ACCESSORIES

Please see page 114 for our full range of accessories

TECHNICAL DRAWINGS



All measurements in mm



DRM Technic

GAS 222.21 SAMPLE GAS PROBE

In gas analysis, the sample point is a critical interface between the process and the analysis system.

The GAS 222 series of probes have a robust modular design, come assembled-to-order, are easy to install and have low operational costs.



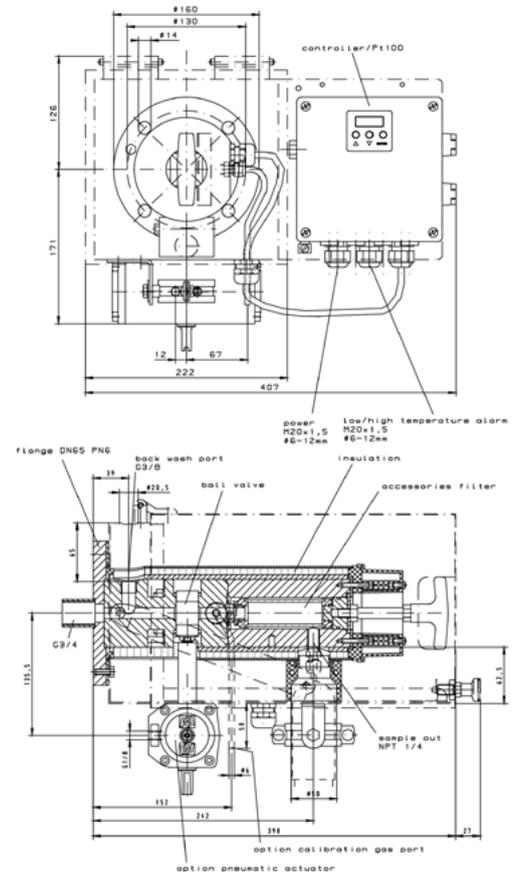
FEATURES

**Heated Sample Gas Probe with Shut Off Valve, alongside an In-Situ and/or Downstream Filter
Tool-less Downstream Filter Element Replacement | Effective Insulation and Protection Shield
Electronic Heater (up to 200 °C) with Low/High Temperature Alarm and Display
For Dust Concentrations of up to 2 g/m³ | Specified for Non-Hazardous Areas**

SPECIFICATIONS

Product No.	GAS 222.21
Material	1.4571 SS; ball valve: 1.4408 SS
Seals	PTFE, Graphite, 1.4404 SS + filter elements
Max. Operating Temp.	200 °C
Max. Working Pressure	6 bar
Voltage	230 V, 2.0 A, 50/60 Hz; or 115 V, 3.8 A, 50/60Hz
Temperature Range	+ 50 to +200 °C
Alarm	Adjustable; + 5 ... 30 K from set point; factory set 15 K, max. current 1 A
Protection Class	IP54
Ambient Temp.	- 20 ... + 70 °C

TECHNICAL DRAWINGS



All measurements in mm

OPTIONS AND ACCESSORIES

Please see page 114 for our full range of accessories



DRM Technic

GAS 222.21 ATEX SAMPLE GAS PROBE

In gas analysis, the sample point is a critical interface between the process and the analysis system. The GAS 222 series of probes have a robust modular design, come assembled-to-order, are easy to install and have low operational costs.



FEATURES

Heated Sample Gas Probe with In-Situ / Downstream Filter and Weather Protection Shield
Easy Tool-less Filter Element Replacement | Effective Insulation | Self-Regulating at up to 90 °C
For Dust Concentrations of up to 2 g/m³ with In-Situ Filter and 10 g/m³ with In-situ and Downstream Filters
Approved for Use in Zone 1, 21 and for Gas Sampling from Zone 0, 20

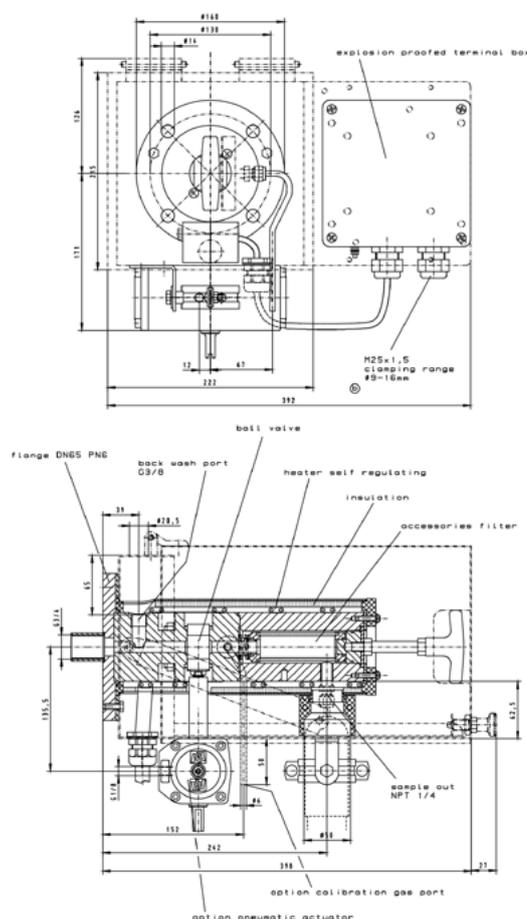
SPECIFICATIONS

Product No.	GAS 222.21 ATEX
Material	1.4571 SS; ball valve: 1.4408 SS
Seals	PTFE, Graphite, 1.4404 SS + filter elements
Max. Working Pressure	6 bar
Max. Flow Rate	1000 l/h
Max. Inlet Temp. Process Media	135 °C
Voltage	230 V, 50/60 Hz; or 115 V, 50/60Hz
Temperature	Self-regulating approx. 90 °C
External Circuit Breaker	Type C: 2 A for 230 V, 50/60 Hz 3 A for 115 V, 50/60 Hz
Ambient Temperature	- 20 to + 50 °C
Filter Type	In-situ and/or downstream
Ex-marking of the Basic Unit.	1 GD / 2 GD T4 T130°C

OPTIONS AND ACCESSORIES

Please see page 114 for our full range of accessories

TECHNICAL DRAWINGS



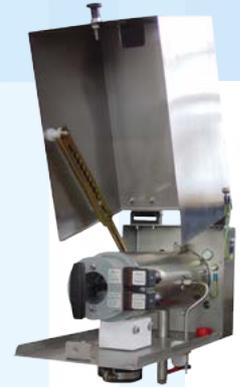


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GAS 222.21 ATEX 2 SAMPLE GAS PROBE

In gas analysis, the sample point is a critical interface between the process and the analysis system.

The GAS 222 series of probes have a robust modular design, come assembled-to-order, are easy to install and have low operational costs.



FEATURES

Heated Sample Gas Probe with Shut-Off Valve, plus an In-Situ and/or Downstream Filter
Easy Tool-less Filter Element Replacement | Effective Insulation and Protection Shield
Self-Regulating at up to 120 °C (T3) / 70 °C (T4) with Low Temperature Alarm
For Dust Concentrations of up to 2 g/m³ | Specified for Use in Hazardous Areas

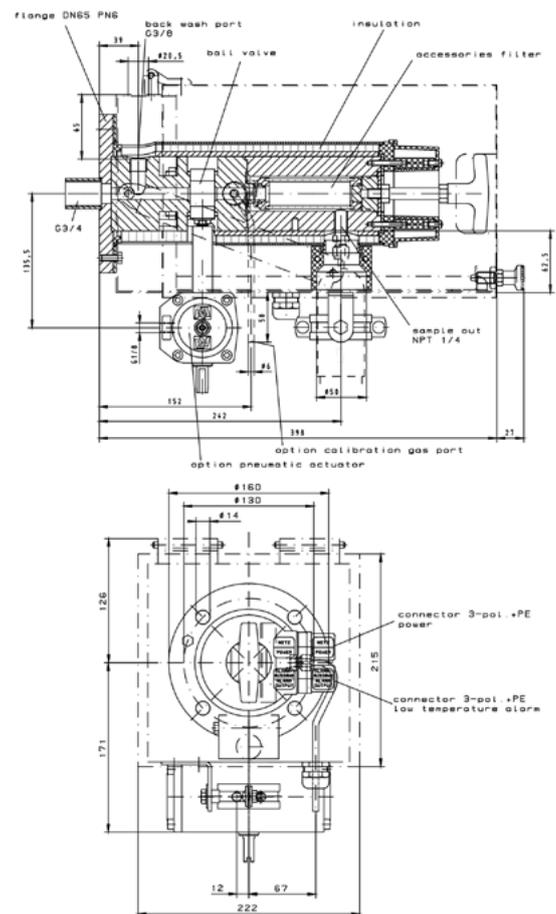
SPECIFICATIONS

Product No.	GAS 222.21 ATEX 2
Material	1.4571 SS ball valve: 1.4408 SS
Seals	Graphite, 1.4404 SS + filter elements
Max. Working Pressure	6 bar
Temperature	Self-regulating; 130 °C (T3) / 70 °C (T4)
Low Temperature Alarm	Contact is open at operating temp.; closes at < 95 °C (T3) resp. < 45 °C (T4); U _{max} =30VDC, I _{max} = 100mA, CI/Li~0
Ambient Temperature	- 20 to 80 °C
Pressure Shut-Off Valve	6 to 8 bar
Suitable for	II 3G EEx nA L IIC T3; 3G c II CT3; II 3G EEx nA L IIC T4; 3G c IIC T4

OPTIONS AND ACCESSORIES

Please see page 114 for our full range of accessories

TECHNICAL DRAWINGS



All measurements in mm



DRM Technic

GAS 222.31 SAMPLE GAS PROBE

In gas analysis, the sample point is a critical interface between the process and the analysis system.

The GAS 222 series of probes have a robust modular design, come assembled-to-order, are easy to install and have low operational costs.



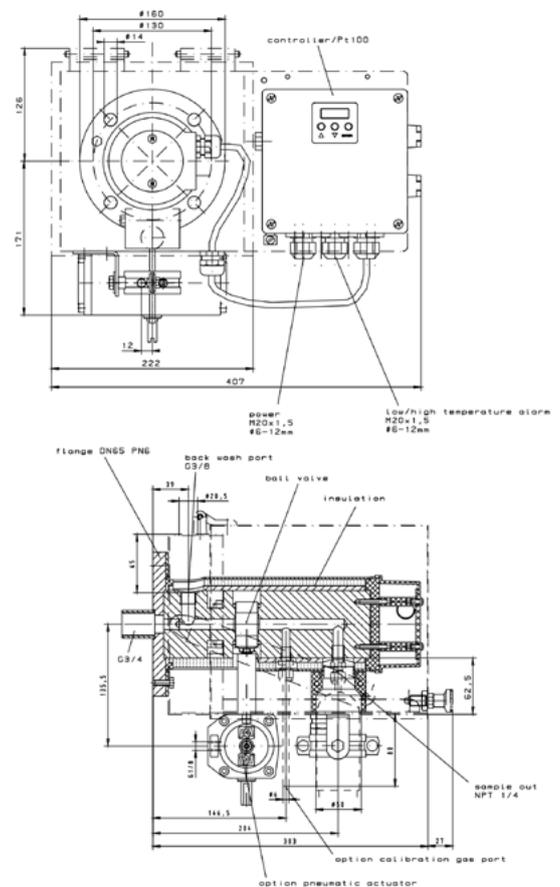
FEATURES

**Heated Sample Gas Probe with Shut-Off Valve, In-Situ Filter and Weather Protection Shield
Electronic Heater (up to 200 °C) with Low/High Temperature Alarm and Display
For Dust Concentrations of Up to 200 g/m³ | Specified for Non-Hazardous Areas**

SPECIFICATIONS

Product No.	GAS 222.31
Material	1.4571 SS; ball valve: 1.4408 SS
Seals	PTFE, Graphite, 1.4404 SS
Max. Operating Temp.	200 °C
Max. Working Pressure	6 bar
Voltage	230 V, 2.0 A, 50/60 Hz; or 115 V, 3.8 A, 50/60Hz
Temperature Range	+ 5 to +200 °C
Alarm	Adjustable; + 5 ... 30 K from set point; factory set 15 K, max. current 1 A
Protection Class	IP54
Ambient Temp.	- 20 ... + 70 °C

TECHNICAL DRAWINGS



All measurements in mm

OPTIONS AND ACCESSORIES

Please see page 114 for our full range of accessories



DRM Technic

GAS 222.31 ATEX SAMPLE GAS PROBE

In gas analysis, the sample point is a critical interface between the process and the analysis system. The GAS 222 series of probes have a robust modular design, come assembled-to-order, are easy to install and have low operational costs.



FEATURES

Heated Sample Gas Probe with Shut-Off Valve, Internal Filter and Weather Protection Shield
Effective Insulation | Self-Regulating at Up to 90 °C | For Dust Concentrations of Up to 200 g/m³
Approved for Use in Zone 1, 21 and for Gas Sampling from Zone 0, 20

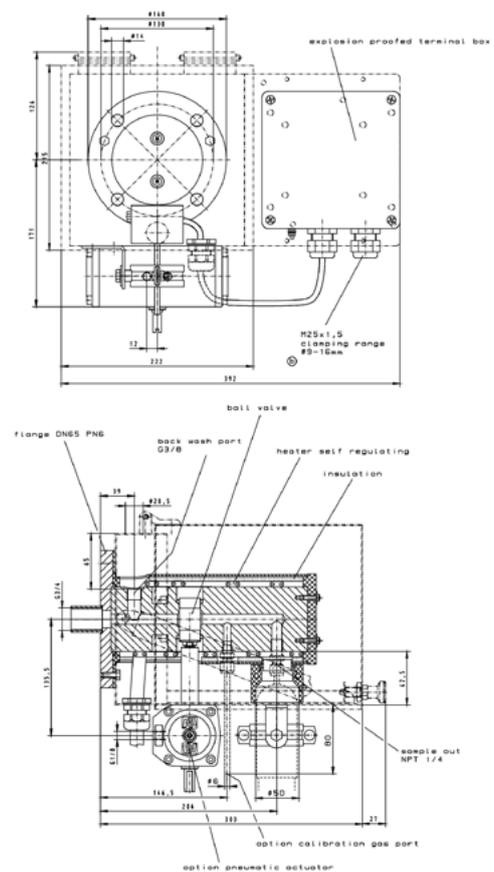
SPECIFICATIONS

Product No.	GAS 222.31 ATEX
Material	1.4571; ball valve: 1.4408
Seals	PTFE, Graphite, 1.4404 SS
Max. Working Pressure	6 bar
Max. Flow Rate	1000 l/h
Max. Inlet Temperature Process Media	135 °C
Voltage	230 V, 50/60 Hz; or 115 V, 50/60Hz
Temperature	Self-regulating approx. 90 °C
External Circuit Breaker	Type C: 2 A for 230 V, 50/60 Hz 3 A for 115 V, 50/60 Hz
Ambient Temperature	- 20 to + 50 °C
Filter Type	In-situ
Ex-Marking of the Basic Unit	1 GD / 2 GD T4 T130°C

OPTIONS AND ACCESSORIES

Please see page 114 for our full range of accessories

TECHNICAL DRAWINGS



All measurements in mm



DRM Technic

GAS 222.31 ATEX 2 SAMPLE GAS PROBE

In gas analysis, the sample point is a critical interface between the process and the analysis system. The GAS 222 series of probes have a robust modular design, come assembled-to-order, are easy to install and have low operational costs.



FEATURES

Heated Sample Gas Probe with Shut-Off Valve, In-Situ Filter and Weather Protection Shield
Effective Insulation | Self-Regulating at Up to 120 °C (T3) / 70 °C (T4) with Low Temperature Alarm
For Dust Concentrations of Up to 200 g/m³ | Specified for Use in Hazardous Areas

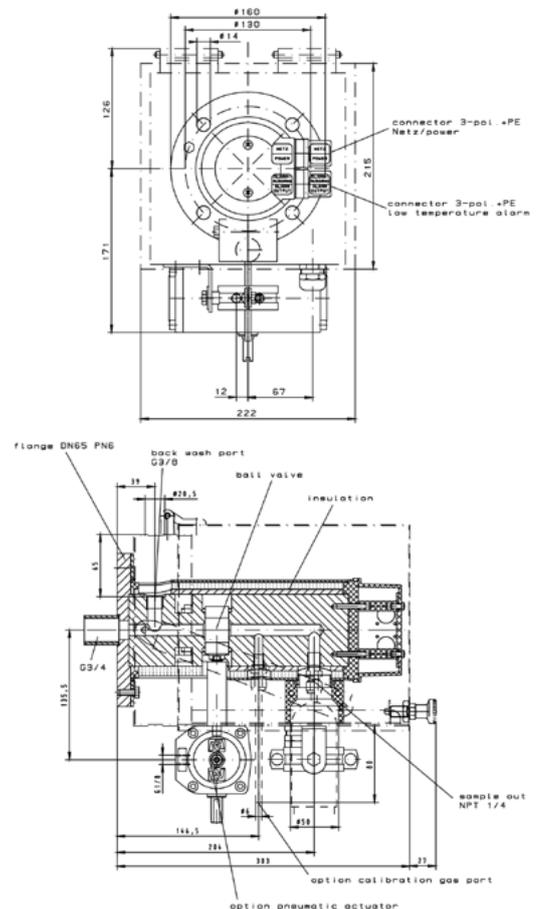
SPECIFICATIONS

Product No.	GAS 222.31 ATEX 2
Material	1.4571 SS; ball valve: 1.4408 SS
Seals	PTFE, Graphite and 1.4404 SS
Max. Working Pressure	6 bar
Temperature	Self-regulating; + 120 °C (T3) / + 70 °C (T4)
Low Temperature Alarm	Contact is open at operating temperature; closes at < 95 °C (T3) resp. < 45 °C (T4); U _{max} =30VDC, I _{max} = 100mA, CI/Li~0
Ambient Temperature	- 20 to 80 °C
Suitable for	II 3G EEx nA L IIC T3; 3G c IIC T3; II 3G EEx nA L IIC T4 ; 3G c IIC T4

OPTIONS AND ACCESSORIES

Please see page 114 for our full range of accessories

TECHNICAL DRAWINGS



All measurements in mm



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GAS 222.35 SAMPLE GAS PROBE

In gas analysis, the sample point is a critical interface between the process and the analysis system.

The GAS 222 series of probes have a robust modular design, come assembled-to-order, are easy to install and have low operational costs.



FEATURES

**Heated Sample Gas Probe with an In-Situ Filter and Weather Protection Shield
Tool-less Downstream Filter Element Replacement | Effective Insulation
Electronic Heater (up to 200 °C) with Low/High Temperature Alarm and Display
For Dust Concentrations of Up to 200 g/m³ | Specified for Non-Hazardous Areas**

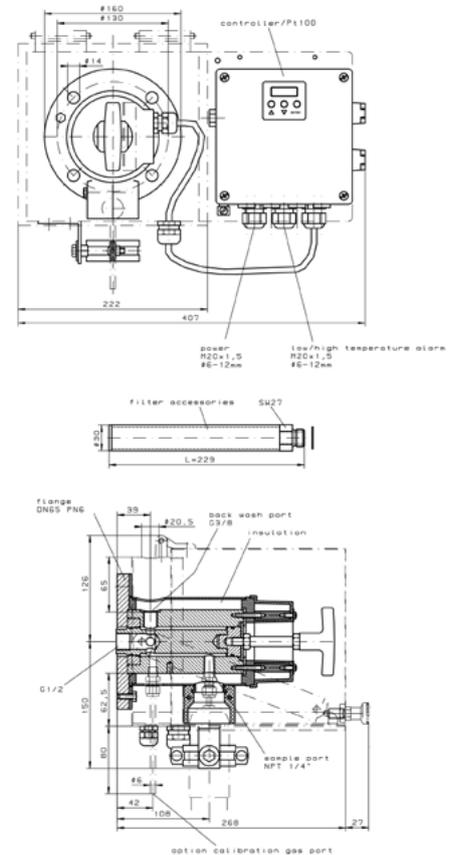
SPECIFICATIONS

Product No.	GAS 222.35
Material	1.4571 SS
Seals	Graphite, 1.4404 SS + filter elements
Max. Operating Temp.	200 °C
Max. Working Pressure	6 bar
Voltage	230 V, 50/60 Hz; or 115 V, 50/60Hz
Temperature Range	50 to 200 °C
Alarm	Adjustable; 5 ... 30 K from set point; factory set 15 K, max. current 1 A
Protection Class	IP54
Ambient Temp.	- 20 ... 70 °C

OPTIONS AND ACCESSORIES

Please see page 114 for our full range of accessories

TECHNICAL DRAWINGS



All measurements in mm



DRM Technic

GAS 222.35 ATEX SAMPLE GAS PROBE

In gas analysis, the sample point is a critical interface between the process and the analysis system. The GAS 222 series of probes have a robust modular design, come assembled-to-order, are easy to install and have low operational costs.



FEATURES

Heated Sample Gas Probe with In-Situ Filter and Weather Protection Shield
Tool-less Element Replacement | Self-Regulating at Up to 80 °C | For Dust Concentrations of Up to 200 g/m³
Approved for Use in Zone 1, 21 and for Gas Sampling from Zone 0, 20 (Hazardous Areas)

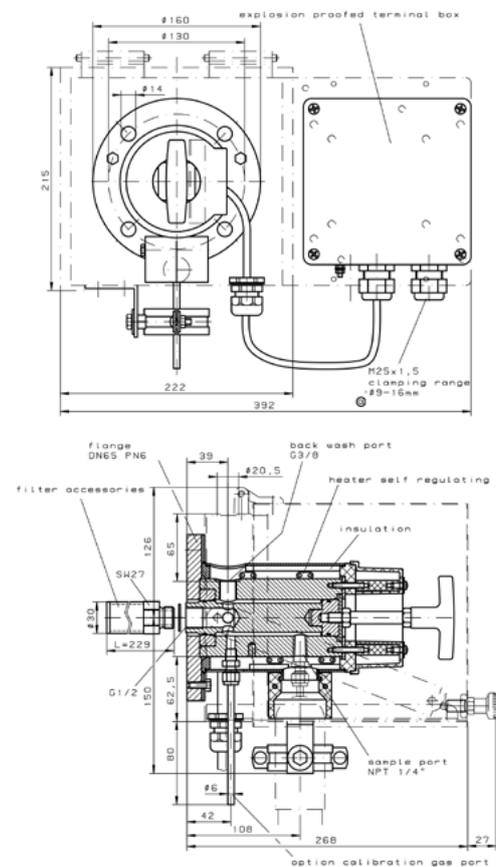
SPECIFICATIONS

Product No.	GAS 222.35 ATEX
Material	1.4571
Seals	PTFE, Graphite, 1.4404 SS + filter elements
Max. Working Pressure	6 bar
Max. Flow Rate	1000 l/h
Max. Inlet Temperature Process Media	135 °C
Voltage	230 V, 50/60 Hz; or 115 V, 50/60Hz
Temperature	Self-regulating approx. 80 °C
External circuit breaker	Type C: 2 A for 230 V, 50/60 Hz 3 A for 115 V, 50/60 Hz
Ambient Temperature	- 20 to + 50 °C
Ex-Marking of the Basic Unit	1 GD / 2 GD T4 T130°C

OPTIONS AND ACCESSORIES

Please see page 114 for our full range of accessories

TECHNICAL DRAWINGS



All measurements in mm



DRM Technic

GAS 222.35 ATEX 2 SAMPLE GAS PROBE

In gas analysis, the sample point is a critical interface between the process and the analysis system. The GAS 222 series of probes have a robust modular design, come assembled-to-order, are easy to install and have low operational costs.



FEATURES

Heated Sample Gas Probe with an In-Situ Filter and Weather Protection Shield
Effective Insulation | Self-Regulating at Up to 120 °C (T3) / 70 °C (T4) with Low Temperature Alarm
For Dust Concentrations of Up to 200 g/m³ | Specified for Use in Hazardous Areas

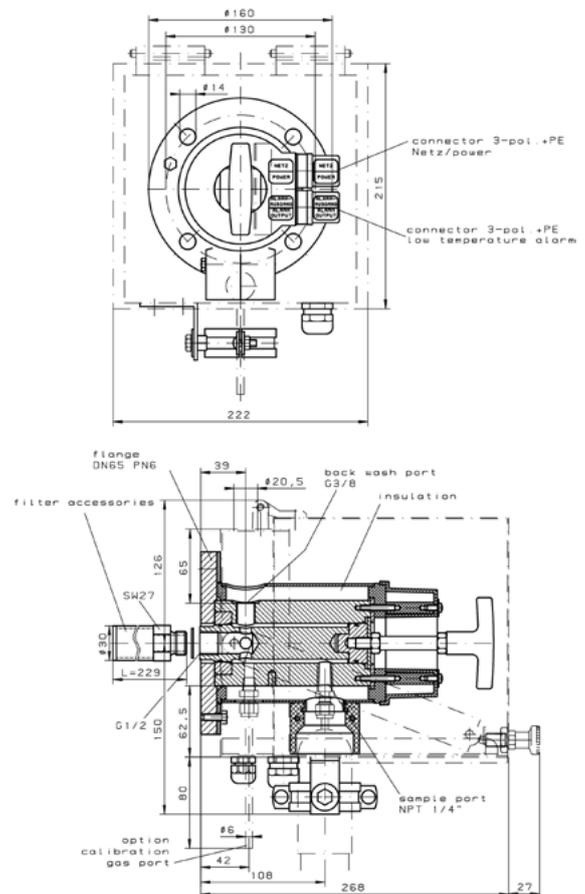
SPECIFICATIONS

Product No.	GAS 222.35 ATEX 2
Material	1.4571 SS
Seals	PTFE, Graphite, 1.4404 SS + filter elements
Max. Working Pressure	6 bar
Voltage	115-230 V, 50/60 Hz
Temperature	Self-regulating; + 125 °C (T3) / + 70 °C (T4)
Low Temperature Alarm	Contact is open at operating temperature; closes at < 95 °C (T3) resp. < 45 °C (T4); U _{max} =30VDC, I _{max} = 100mA, CI/Li~0
Ambient Temperature	- 20 to 80 °C
Suitable for	II 3G EEx nA L IIC T3; 3G c IIC T3; II 3G EEx nA L IIC T4; 3G c IIC T4

OPTIONS AND ACCESSORIES

Please see page 114 for our full range of accessories

TECHNICAL DRAWINGS



All measurements in mm



DRM Technic

RSS 24 / RSS 230 BLOWBACK CONTROLLERS

The Blowback Controllers RSS 24 and RSS 230 are meant for controlling the cleaning cycles of a probe filter. They are designed for use with probe types GAS 222.30, GAS 222.31 and ECO-01, but may also be used to control other external valves.



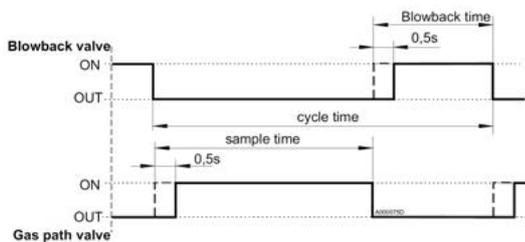
FEATURES

Programmable Blowback and Sample Time | Status Control | Wall Mounted

SPECIFICATIONS

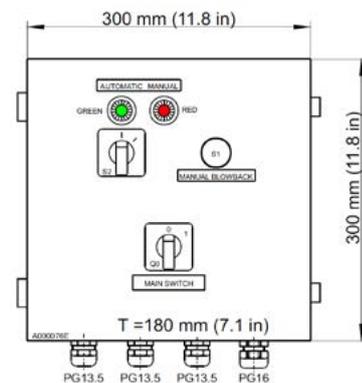
Product No.	RSS 24	RSS 230
Power Supply	24 V DC \pm 10%	85 - 265 V AC 50/60 Hz
Fuse	5 A (slow)	1 A (slow)
Relais Output	Max. 10 A / 24 V DC / 75 W	Max. 10 A / 230 V AC / 690 VA
Ambient Temperature	0 - 55 °C	0 - 55 °C
Blowback Time	0 - 60 s	0 - 60 s
Sample Time	1 min - 99:59 h	1 min - 99:59 h
Protection Class	IP 65	IP 65
Weight	Approx. 3 kg	Approx. 3 kg
Dimensions (H x W x D mm)	300 x 300 x 180	300 x 300 x 180

TIME FLOW DIAGRAM



For more information, please feel free to contact our sales department

TECHNICAL DRAWINGS





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SECTION 10: SAMPLE GAS PUMPS



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P1.1 / P1.1E / P1.2 / P1.2E SAMPLE GAS PUMPS

Highly reliable, long life Sample Gas Pumps, specified for harsh gas applications with entrained liquids and a high possibility of condensate formation.



FEATURES

Easy to Replace Valves | Bellow Made of One Solid Piece | Pumps Gases with Entrained Liquid
Well-proven Pump Technology | Small Mounting Space Required | Housing Protection Class IP20

SPECIFICATIONS

Product No.	P1.1 / P1.1E / P1.2 / P1.2E
Voltage	230 V / 50 Hz, 0,48 A 115 V / 60 Hz, 0,84 A
Protection Class	IP 00 IP 20
Weight	Approx. 1.3 kg (w/o accessories)
Media Temp. (Max.)	70 °C
Ambient Temp.	0 °C to 50 °C
Nominal Output	280 l/h
Media Wetted Materials	PTFE, PVDF, 1.4571, 1.4401

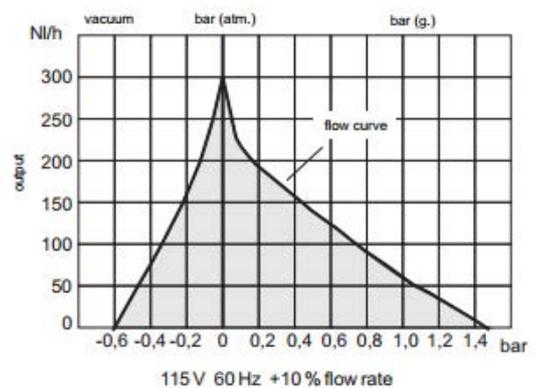
ORDERING INFORMATION

Part no.	42	XX	X	X	X	1	X	X	X	0	0	Feature
												Basic type
28												P1.1 280 l/h
29												P1.2 280 l/h (II 3G/- c IIB T4)
												Motor supply
1												230 V / 50 Hz, 0,48 A
2												115 V / 60 Hz, 0,84 A
												Pump head position
1												normal pos. vertical
2												pointing downwards
												Material pump head
1												PTFE
2												VA (1.4571)
4												PVDF
												Material valves
1												up to 70 °C PTFE/PVDF
												Male stud couplings / pipe fittings
0												without fittings
1												PVDF DN 4/6 *
2												PVDF 1/4"-1/8" **
3												PVDF 1/4"-1/8" **
5												VA (1.4401) 6 mm **
6												VA (1.4401) 1/4" **
												Mounting accessories
0												without mounting accessories
1												mounting brackets and set of vibration dampers
2												set of vibration dampers only
												Housing
0												no housing
1												housing incl. connection cable, length 3 m
2												housing incl. ON/OFF switch and connection cable, length 3 m

*only for PTFE or PVDF pump bodies

**only for VA pump body

FLOW CURVE



For more information, please contact our sales department



DRM Technic

P2.3 / P2.83 SAMPLE GAS PUMPS

Highly reliable, long life Sample Gas Pumps. These pumps are specified for harsh gas applications with entrained liquids and a high possibility of condensate formation.



FEATURES

Robust and Reliable Design | Easy to Replace Valves | Bellow Made of One Solid Piece | Long Life Pumps Gases with Entrained Liquid | Low Noise

SPECIFICATIONS

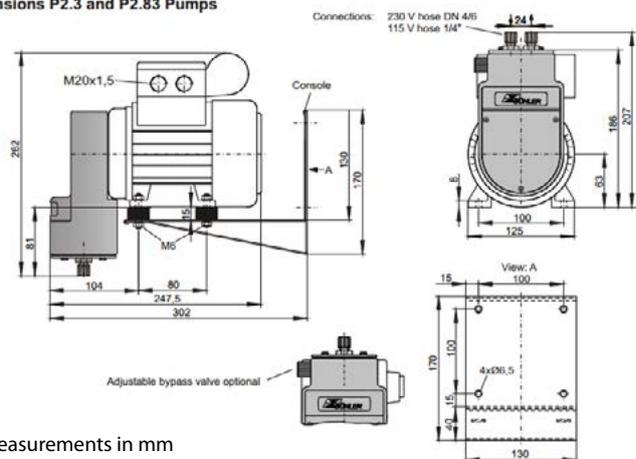
Product No.	P2.3 / P2.83
Voltage	230 V, 50/60 Hz, 0.85/0.8 A 115V, 50/60 Hz, 1.7/1.6 A
Protection Class	Electrical: IP55 Mechanical: IP20
Weight	6.5 kg
Dead Space	8.5 ml
Media Temperature	100 °C (PTFE/PVDF Valves) 160 °C (PTFE/PEEK Valves)
Ambient Temperature	60 °C (Max.)

ORDERING INFORMATION

Part no.	
42	xx x x x x 99
56	P2.3 400l pump
63	P2.83 800l pump
1	Motor 230 V, 50/60Hz, 0.85/0.8 A 115 V, 50/60Hz, 1.7/1.6 A
2	
1	Pump head position Normal pos. vertical Pointing downwards
2	
1	Pump head material PTFE
2	SS 1.4571, Viton, 1.4401
3	PTFE with bypass valve
1	Valves material up to 100°C PTFE / PVDF
2	up to 160°C PTFE / PEEK

TECHNICAL DRAWINGS

Dimensions P2.3 and P2.83 Pumps



For more information, please contact our sales department



DRM Technic

P2.4 / P2.84 SAMPLE GAS PUMPS

Highly reliable, long life Sample Gas Pumps.

These pumps are specified for hot applications involving explosive materials.



FEATURES

Robust and Reliable Design | Easy to Replace Valves | Bellow Made of One Solid Piece | Long Life Pumps Gases with Entrained Liquid | Low Noise | ATEX Version Available (See Separate Datasheet)

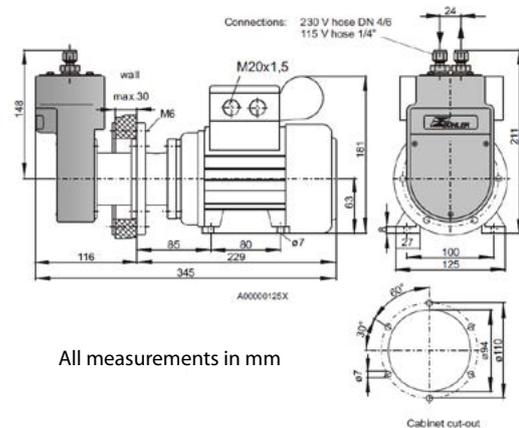
SPECIFICATIONS

Product No.	P2.4 / P2.84
Voltage	230 V, 50/60 Hz, 0.88/0.89A 115V, 50/60 Hz, 1.76/1.78 A
Protection Class	Electrical: IP55 Mechanical: IP20
Weight	7.5 kg
Dead Space	8.5 ml
Media Temperature	160 °C (PTFE / PEEK Valves)
Ambient Temperature	Motor: 60 °C (max.) Pump Head: 100 °C (max.)

ORDERING INFORMATION

Part no.					
42	xx	x	1	x	2 99
57					P2.4 400 l/h pump
64					P2.84 800 l/h pump
			1		Motor
			2		230 V, 50/60Hz, 0.85/0.8 A
					115 V, 50/60Hz, 1.7/1.6 A
				1	Pump head material
				2	PTFE
					SS 1.4571, Viton, 1.4401

TECHNICAL DRAWINGS



For more information, please contact our sales department



DRM Technic

P4.3 / P4.83 SAMPLE GAS PUMPS

Highly reliable Sample Gas Pumps. These pumps are specified for harsh gas applications with entrained liquids and a high probability of condensate formation.



FEATURES

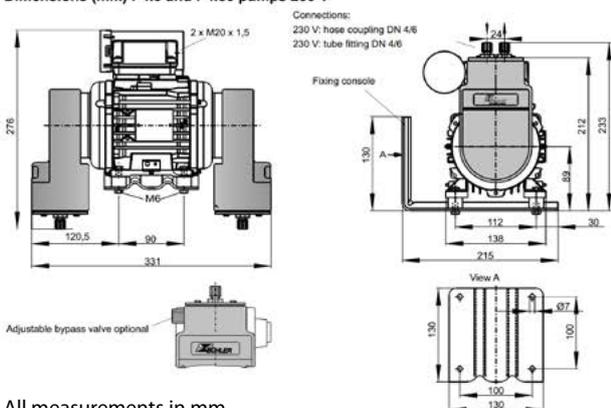
Robust and Reliable Design | Easy to Replace Valves | Bellow Made of One Solid Piece | Long Life Pumps Gases with Entrained Liquid | Low Noise | Vibration Dampening Console

SPECIFICATIONS

Product No.	P4.3	P4.83
Voltage	230 V, 50/60 Hz, 1.75/1.45 A 115 V, 50/60 Hz, 3.5/2.9 A	230 V, 50/60 Hz, 1.75/1.45 A 115 V, 50/60 Hz, 3.5/2.9 A
Protection Class	Electrical: IP55 Mechanical: IP20	Electrical: IP55 Mechanical: IP20
Free Flow	2x 400 l/h	2x 800 l/h
Dead Space	8.5 ml	8.5 ml
Weight	12.5 kg	12.5 kg
Dead Volume	2 x 8.5 ml	2 x 8.5 ml
Media Temperature	PTFE / PVDF Valves: 100 °C PTFE / PEEK Valves: 160 °C	PTFE / PVDF Valves: 100 °C PTFE / PEEK Valves: 160 °C
Ambient Temp.	Max. 60 °C	Max. 60 °C

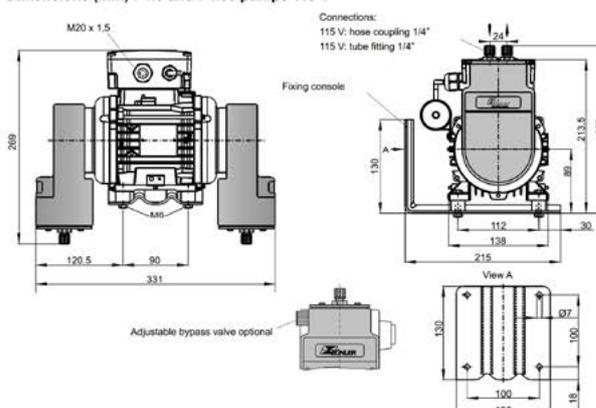
TECHNICAL DRAWINGS

Dimensions (mm) P4.3 and P4.83 pumps 230 V



All measurements in mm

Dimensions (mm) P4.3 and P4.83 pumps 115 V





DRM Technic

P2.2 ATEX SAMPLE GAS PUMP

The P2.2-ATEX Sample Gas Pump is for use in harsh gas applications with entrained liquids and high levels of condensate.

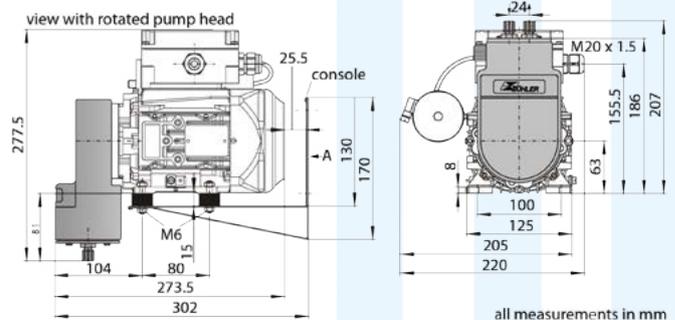
Equipped with a bellow made of solid PTFE, it is very reliable and durable. It is suitable for use in situations involving hot temperatures.



FEATURES

- Pumps Gases with Entrained liquid
- Suitable for Corrosive Gases and Hot Temperatures
- Explosion-Proof Motors
- Robust and Reliable Design
- Easy to Replace Valves
- Vibration Dampening Console

TECHNICAL DRAWINGS



SPECIFICATIONS

Product No.	P2.2-ATEX
General	
Power Supply	115 V / 230 V / 380-240 V versions available
Protection Class	Electrical IP 54 Mechanical IP 20
Ambient Temp.	-20 ... +50 °C (115 V / 230 V) -20 ... +40 °C (380-420 V)
Gas Wetted Materials	PTFE, PVDF, PCTFE, Viton, FFKM/1.4401/1.4571
Dead Space	8.5 ml
Media Temp. Valves	PTFE / PVDF (Up to 100 °C) PTFE / PEEK (Up to 140 °C)
Measurements	
Height	277.5 mm
Width	220 mm
Depth	302 mm
Weight	7.5 kg

OPTIONS AND ACCESSORIES

PN	Description
Motor Protection Switches	
9132020021	For use in outside hazardous areas (230 V)
9132020030	For use in outside hazardous areas (115 V)
9132020036	For mounting inside zone 1/2 (230V)
9132020033	For mounting inside zone 1/2 (115V)
Available Options	
Motors	230 V, 50 Hz, 0.88 A
	230 V, 60 Hz, 0.89 A
	115 V, 50 Hz, 1.76 A
	115 V, 60 Hz, 1.78 A
Pump Head Positions	380-420 V, 50 Hz, 0.41 A
	Vertical (Standard Position) Pointed Downwards
Pump Head Material	PTFE
	SS 1.4571 / Viton / 1.4401 PTFE with bypass valve
Valves Material	PTFE / PVDF (Up to 100 °C) PTFE / PEEK (Up to 140 °C)

For more information, please contact our sales department



DRM Technic

P2.4 ATEX SAMPLE GAS PUMP

A highly reliable, long life Sample Gas Pump. This pump is specified for harsh gas applications with entrained liquids and a high possibility of condensate formation.



FEATURES

Robust and Reliable Design | Easy to Replace Valves | Bellow Made of One Solid Piece | Low Noise Pumps Gases with Entrained Liquid | Suitable for Corrosive Ages | Vibration Dampening Console

SPECIFICATIONS

Product No.	P2.4 ATEX
Voltage	230 V, 50/60 Hz, 0.88/0.89A 115V, 50/60 Hz, 1.76/1.78 A 380 - 420 V, 50 Hz, 0.41 A
Protection Class	Electrical: IP54 Mechanical: IP20
Dead Space	8.5 ml
Ambient Temperature	Motor 115/230 V: -20 °C to +50 °C Motor 380-420 V: -20 °C to +40 °C
Pump Head	PTFE SS 1.4571 / Viton / 1.4401 PTFE with Bypass Valve
Media Temperature Valves	PTFE/PVDF: 100 °C PTFE/PEEK: 140 °C

ORDERING INFORMATION

42 62 x 1 x 2 99

1
2
3
4
5

Motors

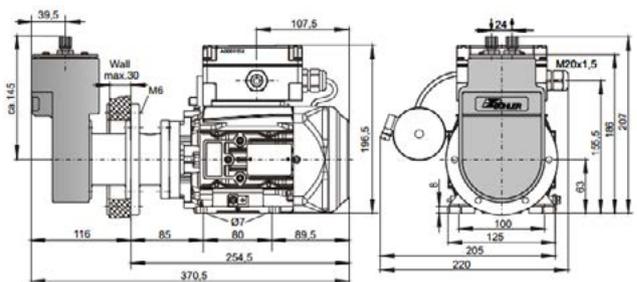
230 V, 50 Hz, 0.88 A
230 V, 60 Hz, 0.89 A
115 V, 50 Hz, 1.76 A
115 V, 60 Hz, 1.78 A
380 - 420 V, 50 Hz, 0.41 A

Pump head material

PTFE
SS 1.4571 / viton / 1.4401

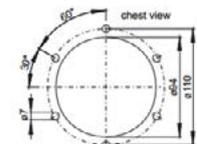
1
2

TECHNICAL DRAWINGS



Mounting Hints

- 1) Direction of the inlet/outlet connections can be chosen while mounting
- 2) If the gas carries condensate, the inlet/outlet connections must point downwards



All measurements in mm

For more information, please contact our sales department



DRM Technic

P2.7x ATEX SAMPLE GAS PUMPS

A highly reliable, long life Sample Gas Pump. This pump is specified for harsh gas applications that entrained liquids present and a high possibility of condensate formation.



FEATURES

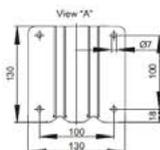
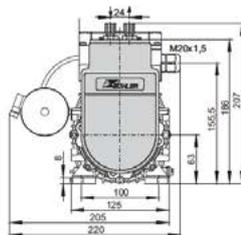
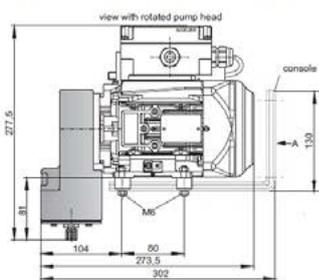
**Robust and Reliable Design | Easy to Replace Valves | Bellow Made of One Solid Piece
Pumps Gases with Entrained Liquid | Suitable for Corrosive Gases | Low Noise | Long Life**

SPECIFICATIONS

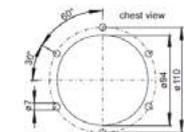
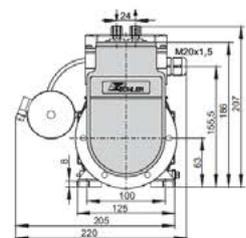
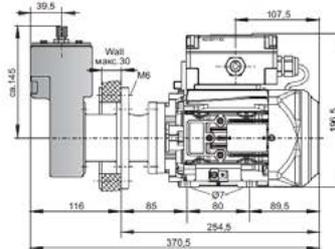
Product No.	P2.72-ATEX	P2.74-ATEX
Type	One Piece Pump	Pump with Intermediate Flange
Nominal Free Flow	700 l/h	700 l/h
Power Supply	230V 50/60 Hz, 0.88/0.89 A 115 V, 50/60 Hz, 1.76/1.78 A 380-400 V, 50 Hz, 0.41 A	230V 50/60 Hz, 0.88/0.89 A 115 V, 50/60 Hz, 1.76/1.78 A 380-400 V, 50 Hz, 0.41 A
Protection Class	Electrical: IP 54 Mechanical: IP 20	Electrical: IP 54 Mechanical: IP 20
Weight	7.5 kg	8.5 kg
Dead Space	8.5 ml	8.5 ml
Ambient Temperature	Motors 115/230V : -20 °C to + 50 °C Motors 380-420 V: -20 °Cto + 40 °C	Motors 115/230V : -20 °C to + 50 °C Motors 380-420 V: -20 °Cto + 40 °C
Gas Wetted Materials	PTFE, PEEK, 1.4571, 1.4401, Viton	PTFE, PEEK, 1.4571, 1.4001, Viton

TECHNICAL DRAWINGS

Dimensions of P 2.72 ATEX (Drawing 1)



Dimensions of P 2.74 ATEX (Drawing 2)



- Mounting Hints**
- 1) Direction of the inlet/outlet connections can be chosen while mounting
 - 2) If the gas carries condensate, the inlet/outlet connections must point downwards

All measurements in mm



DRM Technic

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