



LEADING SPECIALISTS
FOR GAS ANALYSIS,
EMISSION MEASUREMENT,
INDUSTRIAL PROCESSES

Analysis of sulfur emissions

Flue gas analysis

Recovery of valuable gases

Emission measurement

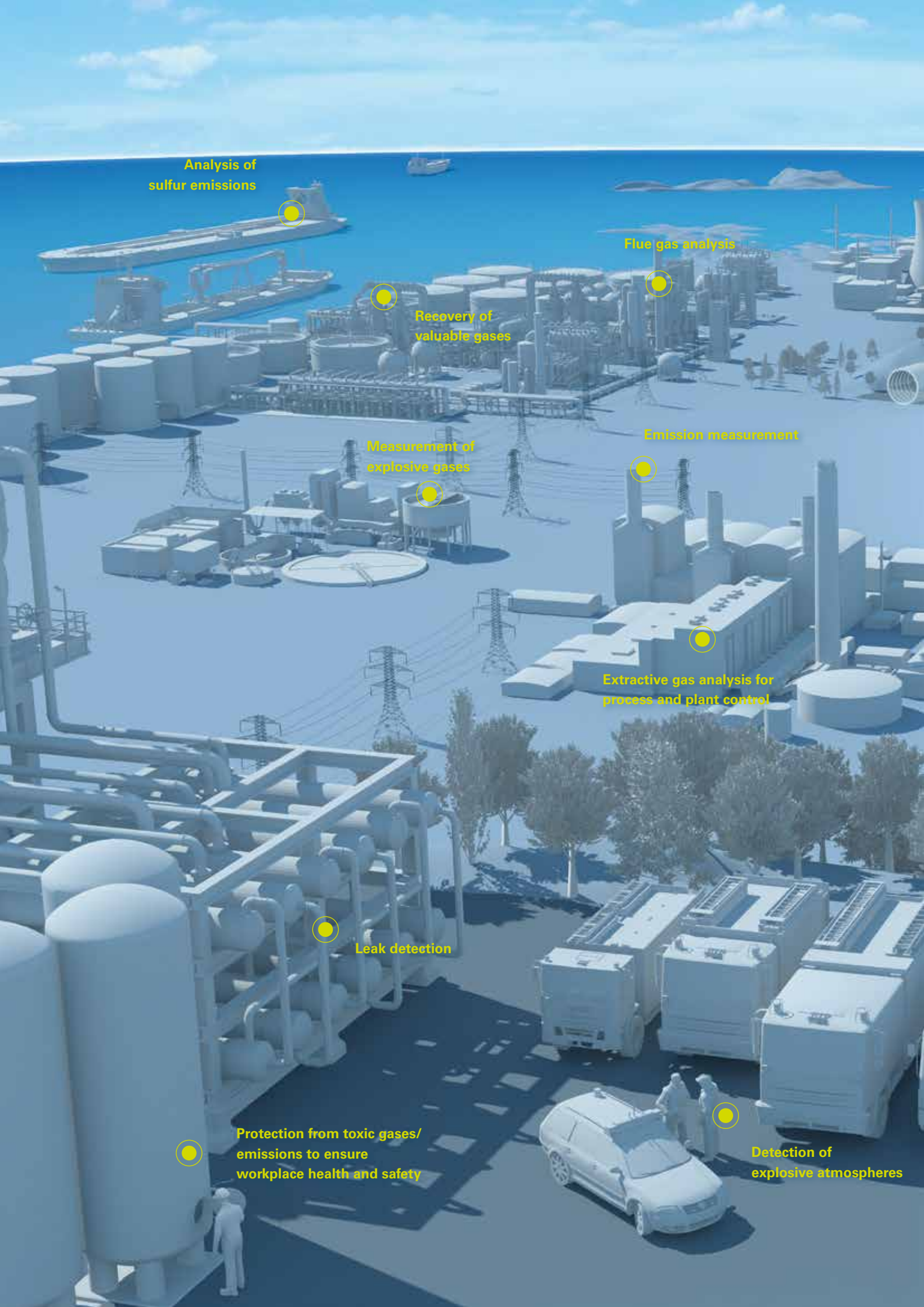
Measurement of explosive gases

Extractive gas analysis for process and plant control

Leak detection

Protection from toxic gases/ emissions to ensure workplace health and safety

Detection of explosive atmospheres





**Give your
process the
green light**

with KNF

KNF GAS AND LIQUID PUMPS

RELIABLE AND SAFE WHERE IT MATTERS MOST

Monitoring of vapor
composition, e.g. directly
on the turbine

Monitoring systems

Transfer of
highly explosive
media

From sample gas pumps for analyzing process gases to emissions monitoring, the transfer of highly explosive media and the recovery of valuable gases, KNF's solutions are used wherever it is crucial for processing media to be handled with special care. When it comes to implementing KNF diaphragm pumps that are tailored precisely to your process and operating conditions, your specifications set the benchmark right down to the smallest detail.

Flue gas analysis to
support compliance with
environmental regulations
and combustion settings



QUALITY

Our duty is to meet your quality standards. Developing, designing and producing process pumps in Germany and Switzerland ensures compliance with rigorous quality requirements and standards.

PROCESS UNDERSTANDING

A team of engineers and designers with many years of experience and detailed knowledge of the applications is available to advise and support you.

ALWAYS WORKING TO YOUR SPECIFICATIONS

Experience and expertise that define new standards

KNF develops and produces pioneering pump technology for use in demanding applications across a wide range of industries. As a global technology leader in diaphragm pumps and systems for moving liquids and gases, KNF supports customers by drawing on more than 70 years of knowledge and expertise. This is evident through development milestones, such as corrosion-resistant diaphragm pumps for chemical and process engineering, the temperature-resistant and heated pump head for hot gases of up to 240 °C and the double diaphragm pump for transferring hazardous and valuable gases.

All-round expertise in meeting complex requirements

From fulfilling specific demands imposed by operating conditions to complying with technical guidelines for specific processes and documentation requirements, KNF's experts take everything into account, offering carefully considered advice while completely adapting their solutions to client specifications. At all stages of the project there will be an individual contact for you at KNF who will assist you with all important questions, both commercial and organizational.



CONSULTING AND DEVELOPMENT

KNF is all focused upon the demands of project business. The company supplies the pump solutions needed, and thanks to flexible production systems is also able to manufacture them in small quantities.

SPECIFICATION

We implement your specifications carefully and accurately, and you will receive a diaphragm pump that meets the requirements of your process, your operating conditions and the the properties of the process media.

DOCUMENTATION

Comprehensive documentation is important, and is also strictly necessary in many process areas. KNF has experience in this field and appreciates its importance – e.g. for products used in nuclear power plants or potentially explosive atmospheres. We determine the scope of the documentation in collaboration with you.

A woman in a blue uniform and white hard hat is working on industrial machinery. She is wearing safety glasses and has a blue earplug in her ear. The machinery is grey and has several bolts and flanges. The background is a blurred industrial setting.

FOR MOBILE/PORTABLE GAS MEASUREMENT TECHNOLOGY

KNF DIAPHRAGM GAS PUMPS FOR RELIABLE SAFETY

Small, light, high-performance – these are the key requirements placed on KNF's pump technology by manufacturers of hand-held and portable devices for gas measurement, monitoring and analysis. Primarily used to protect both people's health and safety as well as facilities from explosions and malfunctions, KNF's diaphragm gas pumps form part of reliable warning systems for hazardous gases and vapors.



FOR MOBILE/PORTABLE GAS MEASUREMENT TECHNOLOGY

ALL OF YOUR DAY-TO-DAY NEEDS...

KNF diaphragm gas pumps – compelling advantages in measurement technology

Monitoring, controlling and warnings – protecting people and valuable facilities: the various applications for portable gas measurement devices and hand-held devices are extremely sensitive and demanding. This also applies to the requirements placed on integrated pump technology by manufacturers and users.

” Our emergency teams need to **work in explosive environments** without risking their health.

” On-site applications require instruments that can last all day **on a single charge**.

” The pumps for our measurement devices have to be **small, durable** and **easily adjustable**.

” The faster the results, the **more cost-efficient the operation**. It's just as important that the integrated pump technology **does not contaminate the sample gases**.

...COVERED BY KNF DIAPHRAGM GAS PUMPS

NMS 020

Thanks to its **very low power consumption**, this pump preserves the capacity of the batteries.



NMP 03

Intrinsic safety – alongside a total length of **24 mm** and a weight of just **11 grams** – is an outstanding product feature for hand-held devices and portable devices used in Ex zones.



NMP 820

This pump's **impressive size-to-performance ratio**, with a flow rate of up to 3.6 l/min, an ultimate vacuum of 100 mbar abs. and an operating pressure of up to 1.3 bar rel is second to none.



NMP 850.1.2

Its **compact size** with integrated motor, **optimized ball bearing**, precisely **controllable output** and ability to be **digitally parametrized** make this durable pump the clear winner every time.







FOR STATIONARY EMISSION MEASUREMENT TECHNOLOGY

KNF DIAPHRAGM GAS PUMPS FOR ACCURATE MONITORING

Robust, durable, easy to service: process gas measurement technology and analytical measuring devices used for environmental protection and facility management must continually deliver accurate measurements. They are often used in challenging ambient conditions. Their carefully designed components make KNF diaphragm gas pumps ideal for these demanding applications.

FOR STATIONARY EMISSION MEASUREMENT TECHNOLOGY

ALL OF YOUR DAY-TO-DAY NEEDS...

KNF diaphragm gas pumps – prepared for anything

The properties of the process gases, as well as the location and the ambient conditions, can place high requirements on stationary emission measurement and monitoring systems. KNF pumps are designed to meet these requirements.

” Continuous, safe functioning **even in extreme conditions** is a must for measurement technology so that our facilities can run without malfunctions or downtime.

” We need reliability, constant throughput and **flexibility as the composition of the gas is extremely variable.**

” Hot process gases must not be allowed to condense. This would distort the measurements for **water-soluble gases.**

” Flue gases are **aggressive and humid** – but measurements need to be accessible **quickly and reliably.**

...COVERED BY KNF DIAPHRAGM GAS PUMPS

N 96

Humidity and condensate have no effect on this pump's performance. Its **high pneumatic capacity** allows to take samples for analyses quickly and efficiently.



N 024

The **temperature-resistant or electrically heated pump head** is ideal for transferring hot process gases of up to 240 °C.



N 922 Ex

The **position of the compressor housing can be adjusted in increments of 90 degrees** separately from the motor to enable the geodetic drainage of condensate.



N 87 TTE Ex

Always ready for use: this pump stands out for its excellent **chemical resistance and explosion prevention** and protection.



A large industrial facility, likely a refinery or chemical plant, featuring a complex network of blue-painted metal structures, pipes, and scaffolding. The scene is set against a clear blue sky. In the foreground, a prominent white pipe runs diagonally across the frame. Below it, several parallel pipes are visible, some wrapped in grey insulation and others in green. The background shows more industrial equipment, including a tall distillation column and various tanks and vessels.

FOR HANDLING PROCESSING MEDIA IN INDUSTRIAL PROCESSES

KNF GAS AND LIQUID PUMPS FOR COMPLEX REQUIREMENTS

Whether in large or small plants, there are standard situations and special requirements. And sometimes small modifications result in significant advantages. Thanks to the flexibly adaptable technology of our pumps and the know-how of our experts, almost any individual configuration and performance characteristic is at hand, from engineering to compliant documentation.



FOR HANDLING PROCESSING MEDIA IN INDUSTRIAL PROCESSES

ALL OF YOUR DAY-TO-DAY NEEDS...

KNF diaphragm pumps – flexible, efficient, custom-fit

Industrial processes use gaseous and liquid processing media with a vast spectrum of properties ranging from neutral to highly aggressive or corrosive, from explosive to valuable (e.g. noble gases) or hazardous (e.g. radioactivity). KNF has decades of experience as a partner for transfer and vacuum technology in industrial processes – and our complete know-how goes into our pumps.

” The installation site is **outdoors**, and it is essential that **everything runs reliably even in wind and weather**.

” Our requirements for the pump are listed **in great detail in our specification**.

” Our processes use **explosive media**.

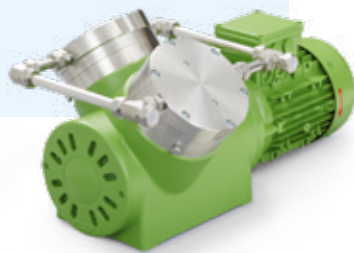
” The pump must be **absolutely leak-proof** to enable us to transfer **Helium** efficiently.

” We have **high demands for performance**, and for **technical configuration and service life** as well – and all this for the Ex-area.

...COVERED BY KNF DIAPHRAGM PUMPS

N 1400.12

Twofold safety: the combination of a working diaphragm and an additional safety diaphragm prevents gas from escaping in the event of a fracture.



N 1200

The robust design will hold up to **challenging operating conditions** and positive pressure of up to 6 bar. Thanks to the KNF modular system, the pump components **can be tailored by selecting and combining a variety of options** to meet precisely application-specific requirements.



N 630 Ex

With a permanently attached base, the N 630 Ex series comes as **completed machinery** and provides **optimal isolation from vibration**. The highly **robust diaphragm** of the explosion-proof pumps supports an **extended service life**, despite positive pressure of up to 9 bar and an ultimate vacuum of up to 25 mbar abs.



N 680.1.2 Ex

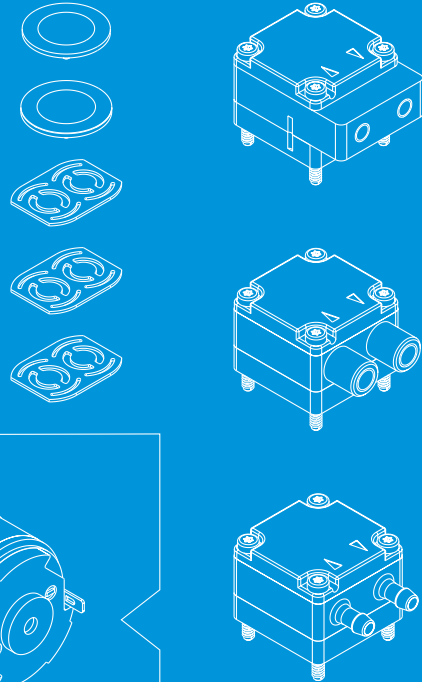
This pump combines the **safety of an explosion-proof diaphragm pump** with the trusted reliability by KNF.



MATERIAL OPTIONS

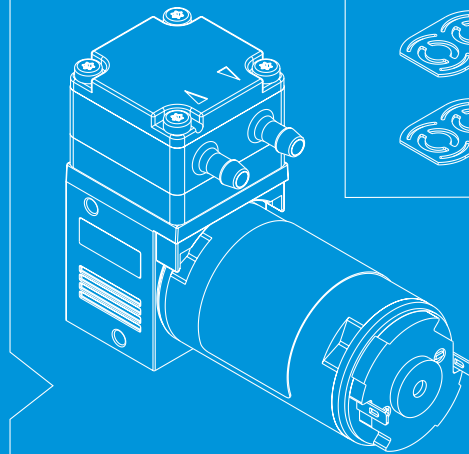
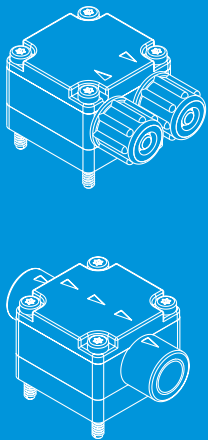
Valve/Diaphragm:
EPDM, FKM, FFKM,
HNBR, stainless steel
and others

Pump head:
PP, PPS, fluoroplastics,
stainless steel,
aluminum and others



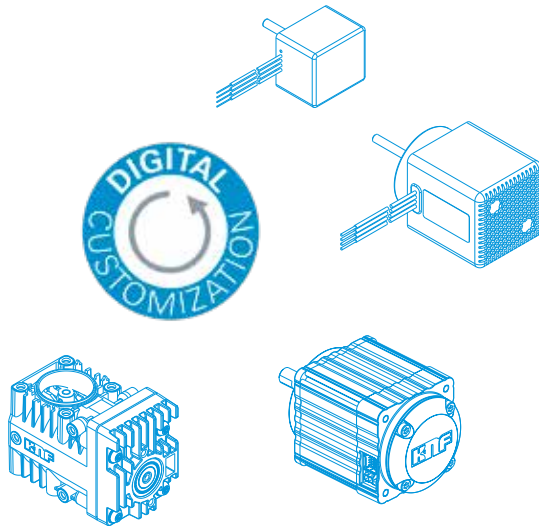
MECHANICAL OPTIONS

Circuit points and connections

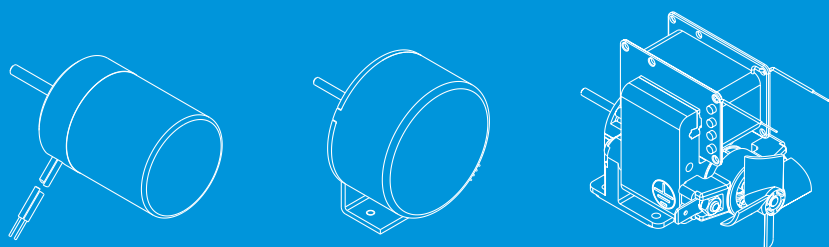


MOTOR OPTIONS

“DIGITAL CUSTOMIZATION” sets our brushless DC motors apart, allowing for their unique configuration. And we do mean unique. We develop and produce these motors ourselves or as part of an exclusive development partnership with a leading motor manufacturer. These motors map complex operating profiles, including required safety parameters. Your advantage: high energy efficiency, precisely controlled target variables and simple control via digital signals.



Explosion-proof versions and all common voltage configurations available.
Motor types: DC, DC-B, AC.



FLEXIBLE, CUSTOM-FIT, COST-EFFECTIVE – FROM STANDARD TO HIGH-END

Every application is different and some are one of a kind. Our modular system is designed to give you a high degree of flexibility, speed and reliability. You can be sure that every gas and liquid pump supplied by KNF will exactly meet your requirements, no matter how complex or unusual these might be.

Series models – the first step to customized pumps

KNF offers a range of up to 90 series models designed for handling gases and liquids. The specifications of these are described in our data sheets.

The KNF modular system for creating customized pumps

By selecting and combining a variety of options, ranging from the material used to make the pump components that come into contact with the media, to the drive and the mechanical elements such as the connections and wiring, it is easy to tailor every series model to meet application-specific requirements.

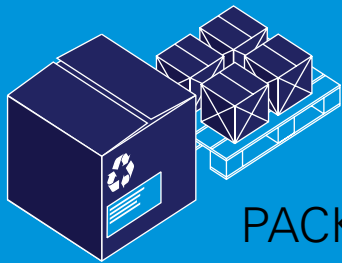
The configurations created by the KNF modular system are based on tried and tested individual components, meaning that developing customized pumps is quick and inexpensive.

Project pumps – precisely designed for the application

We support your development project by providing you with sample pumps quickly and easily. In consultation with you, our employees from the sales, engineering, and product management divisions determine the modifications to be made to the product's standard technical parameters.

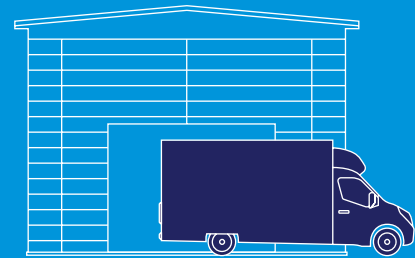
FLEXIBLE SUPPORT FROM START TO FINISH – YOUR ADDED VALUE IS OUR PRIORITY

WITH KNF, FLEXIBILITY DOESN'T STOP AT THE TECHNICAL SOLUTION. WE FULFILL YOUR INDIVIDUAL REQUESTS EVERY STEP OF THE WAY UNTIL DELIVERY AND SERVICE.



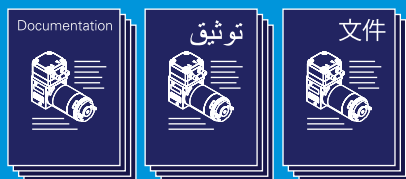
PACKAGING

We'll be happy to implement any measures that make life easier for your goods receiving department, as well as to support your efforts toward recycling and environmental protection.



LOGISTICS

We support all types of production lot ordering – including Kanban, VMI, CMI, B2B and others.



DOCUMENTATION

Together, we'll define the type, scope and design of the documentation.



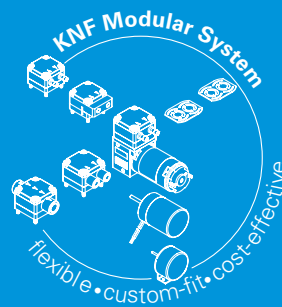
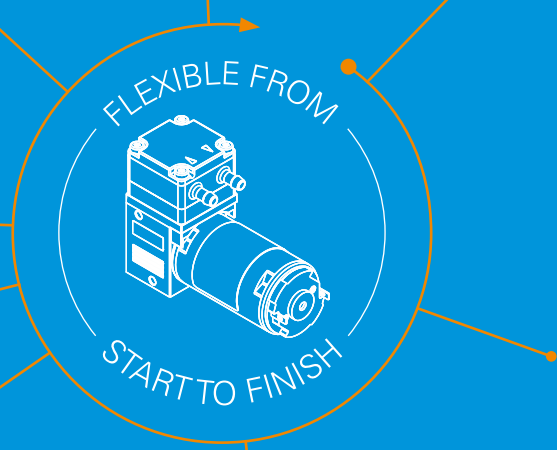
We inspect and test 100% in line with your requests.





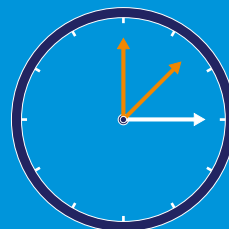
SERVICE

We implement custom-fit service concepts for you. It is important to us to minimize the overall running costs of our pumps, and we take this into account in the pricing of replacement parts.



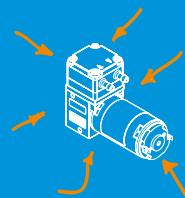
~3,000

customized adaptations are carried out at KNF every year for all our customers worldwide – quickly and inexpensively thanks to our modular system. We also develop exclusive pumps and drive concepts for individual customers.



“ASSEMBLY AND ENGINEERING IN ONE”

We will provide you with the pump as an assembly. This may include completing steps in the production process or installing components such as a valve block, sensors, tubing etc.



≥1



PRODUCTION

You can rely on the flexibility and quality of our support for every order with KNF, from large lot sizes to a single pump.

OUR BEST PUMPS FOR GAS ANALYSIS, EMISSION MEASUREMENT, INDUSTRIAL PROCESSES

FOR INTEGRATION WITH HAND-HELD/PORTABLE DEVICES

Type	Flow rate at atm. pressure (l/min)	max. vacuum (mbar abs.)	max. pressure (bar g)	Material	Motor type
NMP	0.33 – 16	40	3	Pump head: PPS, aluminum, stainless steel Diaphragm: EPDM, FPM, PTFE Valves: EPDM, FPM, FFPM, FKM	AC, DC, BLDC-controllable
NMS	0.75 – 12	220	0.5		
NPK 03 – 06	2.7 – 8	250	5.5		

FOR INTEGRATION INTO STATIONARY EMISSION MEASUREMENT SYSTEMS

Type	Flow rate at atm. pressure (l/min)	max. vacuum (mbar abs.)	max. pressure (bar g)	available EX options (Pump/Motor)	Material	Protection class motor	Motor type
GAS SAMPLING PUMPS (Double diaphragm – gas tightness up to 6×10^{-6} mbar x l/s)	30 – 250	15	3		Pump head: stainless steel, aluminum Diaphragm/Valves: EPDM, PTFE, stainless steel	up to IP 55	AC-1, AC-3 FU-frequency converter suited
GAS SAMPLING PUMPS	4.2 – 250	25	12		Pump head: stainless steel, aluminum, PVDF Diaphragm: EPDM, PTFE Valves: stainless steel, FKM, FFPM	up to IP 55	AC-1, AC-3 FU-frequency converter suited, DC, BLDC-controllable
PTFE GAS SAMPLING PUMPS	8 – 60	2	2		Pump head: PTFE Diaphragm: PTFE, EPDM Valves: FFPM, EPDM	up to IP 55	AC-1, AC-3 FU-frequency converter suited
EX GAS SAMPLING PUMPS	7.5 – 220	25	9	IIB + H ₂ /IIC	Pump head: PTFE, stainless steel, aluminum, PVDF Diaphragm: EPDM, PTFE Valves: stainless steel, FFPM, EPDM	up to IP 66	AC-1, AC-3 FU-frequency converter suited
				Temperature range			
GAS SAMPLING PUMPS FOR HOT PROCESS GASES (temperature-resistant, electrically heated)	6 – 100	180	1.5	up to 240 °C	Pump head: stainless steel, aluminum Diaphragm/Valves: PTFE	up to IP 54	AC-1, AC-3 FU-frequency converter suited, BLDC-controllable

FOR HANDLING PROCESSING MEDIA IN INDUSTRIAL PROCESSES

Type	Flow rate at atm. pressure (l/min)	max. vacuum (mbar abs.)	max. pressure (bar g)	available EX options (Pump/Motor)	Material	Protection class motor	Motor type
LIQUID PUMPS	1.5- 12.4	4.5 mWs suction height	60 mWs pressure head		Pump head: PP, PPS Diaphragm/Valves: PTFE, EPDM, FKM, FFKM	up to IP 55	AC-1, AC-3 FU-frequency converter suited, BLDC-controllable
EX LIQUID PUMPS	1.2 – 3	2.5 mWg suction height	40 mWg pressure head	IIB/IIC	Pump head: PP, PVDF Diaphragm/Valves: EPDM, PTFE, FFKM	up to IP 54	AC
GAS SAMPLING PUMPS	4.2 – 250	25	12		Pump head: stainless steel, aluminum, PVDF Diaphragm: EPDM, PTFE Valves: stainless steel, FKM, FFPM	up to IP 55	AC-1, AC-3 FU-frequency converter suited, BLDC-controllable
PTFE GAS SAMPLING PUMPS	8 – 60	2	2		Pump head: PTFE Diaphragm: PTFE, EPDM Valves: FFPM, EPDM	up to IP 55	AC-1, AC-3 FU-frequency converter suited
EX GAS SAMPLING PUMPS	7.5 – 220	25	9	IIB + H ₂ /IIC	Pump head: PTFE, stainless steel, aluminum, PVDF Diaphragm: EPDM, PTFE Valves: stainless steel, FFPM, EPDM	up to IP 66	AC-1, AC-3 FU-frequency converter suited
				Temperature range			
GAS SAMPLING PUMPS FOR HOT GASES (temperature-resistant, electrically heated)	6 – 100	180	1.5	up to 240 °C	Pump head: stainless steel, aluminum Diaphragm: PTFE	up to IP 54	AC-1, AC-3 FU-frequency converter suited, BLDC-controllable

Thanks to the KNF modular system, each of our series models can be quickly and inexpensively adapted to suit the specific needs of an application.

