



LEADING SPECIALISTS  
FOR GAS ANALYSIS,  
EMISSION MEASUREMENT,  
INDUSTRIAL PROCESSES





Give your process the green light – with KNF

KNF GAS AND LIQUID PUMPS

# RELIABLE AND SAFE WHERE IT MATTERS MOST

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.

Analysis of sulfur emissions

Flue gas analysis

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

Recovery of valuable gases

Monitoring systems

Measurement of explosive gases

Emission measurement

Extractive gas analysis for process and plant control

Transfer of highly explosive media

Leak detection

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

Detection of explosive atmospheres

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





## KNF GAS AND LIQUID PUMPS

# OUR PUMPS START WITH YOUR SPEC

### 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 procedural guidelines and documentation requirements, KNF's experts take everything into account, offering carefully considered advice and completely adapting their solutions to client specifications.

Give your process the green light –

with KNF

#### 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.

#### CONSULTATION AND DEVELOPMENT

KNF is equipped to meet 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

Are you looking for a process pump that meets the requirements of your procedure, your operating conditions and the properties of your media? We can provide considered, accurate solutions that comply with your instructions.

#### 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. The scope of documentation is determined jointly.



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**.

” Flue gases are **aggressive and damp** – but the measurements still need to be reliable.

” 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

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.



NMS 020

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



N 816

Humidity and condensate have no effect on the pump's performance: the components in contact with media are made from **chemically resistant materials**.



N 96

Thanks to the **high pneumatic capacity** of the pump, it is possible to efficiently obtain samples and make them available for direct analysis.





A large container ship is shown from a low angle, moving through the ocean. The ship's hull is dark grey, and the lower part is red. The deck is visible with several red and blue shipping containers. The sky is overcast with grey clouds. The water is dark blue with white foam from the ship's wake.

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.

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

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

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

” The measurement technology's **low running costs** contribute to cost-efficiency.

## ...COVERED BY KNF DIAPHRAGM GAS PUMPS

N 024

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



N 922

Long maintenance cycles and minimal wearing parts – which are inexpensive and easy to replace. Clear **advantages for this pump's long service life overall costs.**



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.





FOR HANDLING PROCESSING MEDIA IN INDUSTRIAL PROCESSES

# KNF GAS AND LIQUID PUMPS FOR COMPLEX REQUIREMENTS

Process understanding, specification, documentation – from fulfilling specific demands imposed by operating conditions to complying with technical procedure guidelines or documentation requirements, KNF's experts take everything into account, offering carefully considered advice and implementing comprehensive solutions.





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 and high-quality, low-maintenance performance by KNF.





## KNF MODULAR SYSTEM

# 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 performances 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 circuit points and connections, 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.

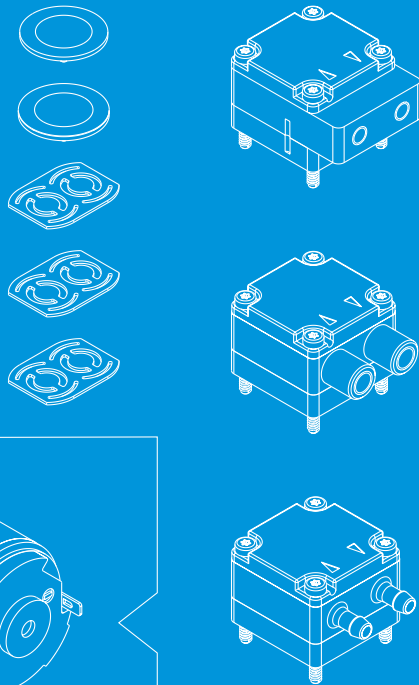
### Project pumps – precisely designed for the application

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.

## MATERIAL OPTIONS

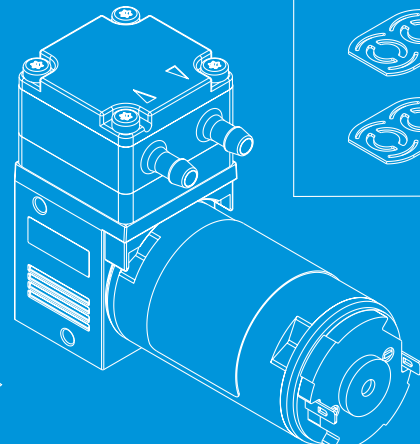
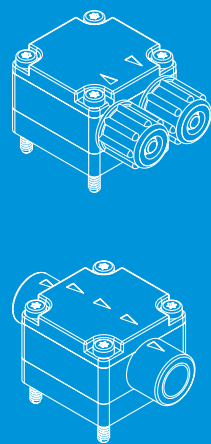
Valve/Diaphragm:  
EPDM, FKM, FFKM,  
HNBR, stainless steel  
and others

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



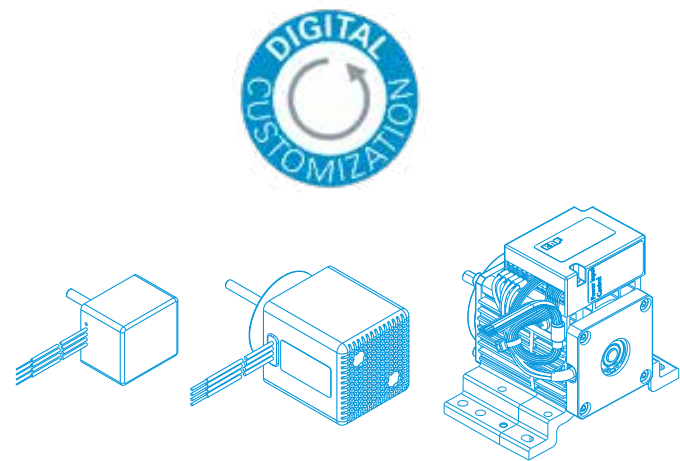
## MECHANICAL OPTIONS

Circuit points and connections

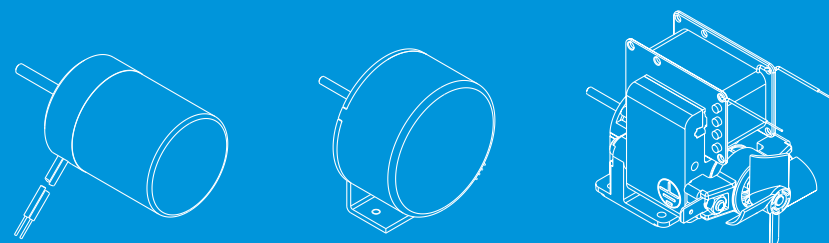


## MOTOR OPTIONS

“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 exhibit complex operating profiles with comprehensive safety equipment, allowing you to benefit from improved energy efficiency, precise management of target values and easy digital control.



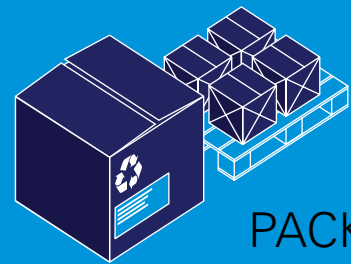
Explosion-proof options and all common voltage configurations available.  
Motor types: DC, DC-B, AC.





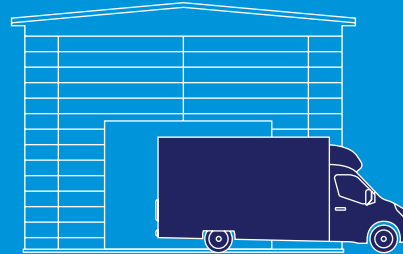
# FLEXIBLE SUPPORT FROM START TO FINISH – YOUR ADDED VALUE IS OUR PRIORITY

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



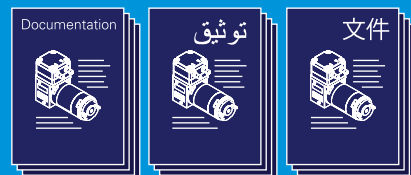
## PACKAGING

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.

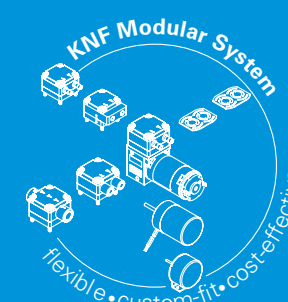


We inspect and test 100% in line with your requests.



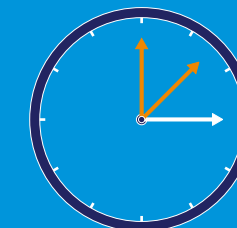
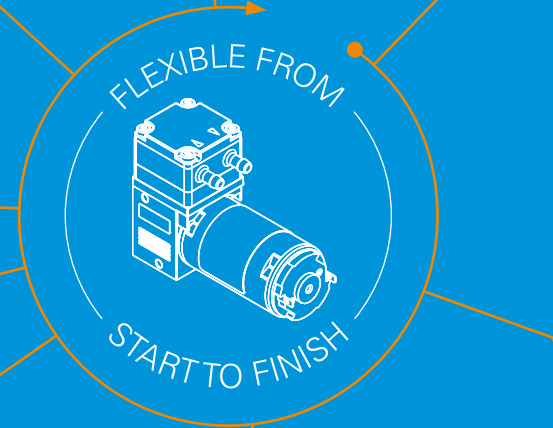
## SERVICE

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.



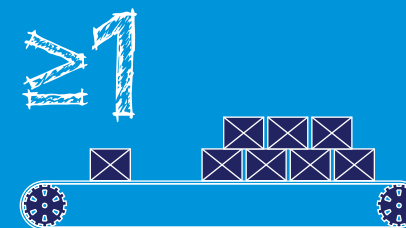
~3,000

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.



## 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.







