LEADING SPECIALISTS FOR GAS ANALYSIS, EMISSION MEASUREMENT, INDUSTRIAL PROCESSES
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.
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.

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.

Give your process the green light – with KNF
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.
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.

FOR MOBILE/PORTABLE GAS MEASUREMENT TECHNOLOGY

...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 use in challenging conditions.

NMS 020
Thanks to its **very low power consumption**, this pump preserves the performance 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 86
Its **high pneumatic capacity** allows the pump to quickly and efficiently obtain samples and analyze them directly.
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.

...COVERED BY KNF DIAPHRAGM GAS PUMPS

N 816
Flow rate of up to 16 l/min combined with robust brushless DC motors – with the option to use motors developed in-house by KNF.

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 024
The temperature-resistant pump head is ideal for transferring hot process gases of up to 240 °C.

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.

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

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

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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 and 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 location where it will be used means it needs to be weather-proof.

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.

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

The robust design will hold up to challenging operating conditions and positive pressure of up to 16 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.

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.

The pump parts and motor are designed to be ATEX-compliant.

N 1400.12
N 630 Ex
N 922 Ex
N 1200
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 70 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.

**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.
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.

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.

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

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.

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

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.

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.

100%
We inspect and test 100% in line with your requests.
**OUR BEST PUMPS FOR GAS ANALYSIS, EMISSION MEASUREMENT, INDUSTRIAL PROCESSES**

**FOR INTEGRATION WITH HAND-HELD/PORTABLE DEVICES**

<table>
<thead>
<tr>
<th>Type</th>
<th>Flow rate at atm. pressure (l/min)</th>
<th>max. vacuum (bar/abs.)</th>
<th>max. pressure (bar g)</th>
<th>Material</th>
<th>Motor type</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMP</td>
<td>0.25 – 8</td>
<td>230</td>
<td>2</td>
<td>Pump head: PPS, PVDF, EPDM, PTFE</td>
<td>AC, DC, BLD-C controllable</td>
</tr>
<tr>
<td>NMS</td>
<td>0.75 – 12</td>
<td>200</td>
<td>0.5</td>
<td>Pump head: PTFE, EPDM</td>
<td>AC, DC, BLD-C controllable</td>
</tr>
<tr>
<td>NPK 03 – 04</td>
<td>2 – 3.3</td>
<td>250</td>
<td>5.5</td>
<td>Pump head: CR, EPDM, PTFE</td>
<td>AC, DC, BLD-C controllable</td>
</tr>
<tr>
<td>N 84.3 – 816</td>
<td>4.2 – 16</td>
<td>2</td>
<td>2.5</td>
<td>Pump head: CR, EPDM, PTFE</td>
<td>AC, DC, BLD-C controllable</td>
</tr>
</tbody>
</table>

**FOR INTEGRATION INTO STATIONARY EMISSION MEASUREMENT SYSTEMS**

<table>
<thead>
<tr>
<th>Type</th>
<th>Flow rate at atm. pressure (l/min)</th>
<th>max. vacuum (bar/abs.)</th>
<th>max. pressure (bar g)</th>
<th>Material</th>
<th>Protection class motor</th>
<th>Motor type</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAS SAMPLING PUMPS</td>
<td>23 – 250</td>
<td>15</td>
<td>3</td>
<td>Pump head: stainless steel, aluminum, EPDM</td>
<td>AC, IP 66</td>
<td>AC, AC FU-frequency converter suited, BLD-C controllable</td>
</tr>
<tr>
<td>GAS SAMPLING PUMPS</td>
<td>20 – 250</td>
<td>15</td>
<td>16</td>
<td>Pump head: stainless steel, EPDM</td>
<td>AC, IP 66</td>
<td>AC, AC FU-frequency converter suited, BLD-C controllable</td>
</tr>
<tr>
<td>PTFE GAS SAMPLING PUMPS</td>
<td>3 – 60</td>
<td>3</td>
<td>2</td>
<td>Pump head: PTFE, PVDF, EPDM</td>
<td>AC, IP 66</td>
<td>AC, AC FU-frequency converter suited, BLD-C controllable</td>
</tr>
<tr>
<td>EX GAS SAMPLING PUMPS</td>
<td>3 – 200</td>
<td>25</td>
<td>9</td>
<td>Pump head: PTFE, stainless steel, FFPM</td>
<td>AC, IP 66</td>
<td>AC, AC FU-frequency converter suited, BLD-C controllable</td>
</tr>
<tr>
<td>GAS SAMPLING PUMPS FOR HOT PROCESS GASES (temperature-resistant, electrically heated)</td>
<td>6 – 100</td>
<td>180</td>
<td>1.5</td>
<td>Pump head: stainless steel, aluminum, EPDM</td>
<td>AC, IP 64</td>
<td>AC, AC FU-frequency converter suited, BLD-C controllable</td>
</tr>
</tbody>
</table>

**FOR HANDLING PROCESSING MEDIA IN INDUSTRIAL PROCESSES**

<table>
<thead>
<tr>
<th>Type</th>
<th>Flow rate at atm. pressure (l/min)</th>
<th>max. vacuum (bar/abs.)</th>
<th>max. pressure (bar g)</th>
<th>Available EX options (Pump/Motor)</th>
<th>Material</th>
<th>Protection class motor</th>
<th>Motor type</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIQUID PUMPS</td>
<td>1.2 – 3</td>
<td>2.5 mWg suction height</td>
<td>40 mWg pressure head</td>
<td>IB/IIC</td>
<td>Pump head: PTFE, PVDF, EPDM</td>
<td>AC up to IP 64</td>
<td>AC</td>
</tr>
<tr>
<td>GAS SAMPLING PUMPS</td>
<td>20 – 250</td>
<td>15</td>
<td>16</td>
<td>Pump head: stainless steel, aluminum, EPDM</td>
<td>IB/IIC</td>
<td>AC, AC FU-frequency converter suited</td>
<td></td>
</tr>
<tr>
<td>PTFE GAS SAMPLING PUMPS</td>
<td>3 – 60</td>
<td>2</td>
<td>2</td>
<td>Pump head: PTFE, PVDF, EPDM</td>
<td>IB/IIC</td>
<td>AC, AC FU-frequency converter suited</td>
<td></td>
</tr>
<tr>
<td>EX GAS SAMPLING PUMPS</td>
<td>3 – 200</td>
<td>25</td>
<td>9</td>
<td>Pump head: PTFE, stainless steel, EPDM</td>
<td>IB/IIC</td>
<td>AC, AC FU-frequency converter suited</td>
<td></td>
</tr>
<tr>
<td>TEMPERATURE-RESISTANT PUMPS</td>
<td>6 – 100</td>
<td>180</td>
<td>1.5</td>
<td>Pump head: stainless steel, aluminum, EPDM</td>
<td>IB/IIC</td>
<td>AC, AC FU-frequency converter suited</td>
<td></td>
</tr>
<tr>
<td>ELECTRICALLY HEATED PUMPS</td>
<td>10.5 – 100</td>
<td>180</td>
<td>1.5</td>
<td>Pump head: stainless steel, aluminum, EPDM</td>
<td>IB/IIC</td>
<td>AC, AC FU-frequency converter suited</td>
<td></td>
</tr>
</tbody>
</table>

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.
YOUR LOCAL PARTNER AROUND THE WORLD

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