

MICRO DIAPHRAGM LIQUID PUMP

NF 1.11

SECTION 200.16



Concept

KNF micro diaphragm liquid pumps are based on the principle of the oscillating displacement pump which is remarkably simple in design. The circular power from the motor is converted into vertical movement by an eccentric. This motion is then transferred to a diaphragm by means of a connecting rod which, in conjunction with an inlet and outlet valve, creates a pumping action.

The NF 1.11 liquid pump can be mounted in any position. It delivers up to 0.1 l/min and will operate against pressures of up to 87 PSIG.

The use of a high quality ironless DC motor ensures a low power consumption, a very high durability and an extremely compact size.

Features

Small and powerful

Micro design and maximum performance resulting from built-in technology are the outstanding characteristics of these products.

Self-priming and excellent for pressure

Sophisticated diaphragm technology and precise valve structures enable performances of 8.86 in Hg suction or 87 PSIG pressure.

Extreme chemical resistance

The use of the materials PP, PVDF, PTFE, EPDM and FPM for the parts which come in contact with the liquid allows many neutral or corrosive liquid to be pumped.

Dry running, durable and maintenance free

The carefully considered design of these pumps allows them to be run dry and ensures safe operation and a long life even under the most severe conditions.

Areas of use

The versatility of KNF pumps allows a wide field of applications to be covered. Over many years our pumps have proved themselves in the following areas:

Analysers

- Medical / pharmaceutical
- Environmental / water treatment
- Food / toxicology

Laboratory

- Filtration
- Chromatography

Cleaning industry

- Cuvette cleaning
- Sterilisers
- Industrial washing machines

Printing

- Ink jet printing
- Photographic / film development

Other applications for micro-diaphragm liquid pumps include: fuel cells, hydrogen generators, CD coating, dental technology, textiles and many more.

Performance Data			
Basic model	Flow rate (l / min)	Suction head (in.Hg)	Pressure head (PSIG)
NF 1.11	0.1	8.86	87

The KNF Modular Concept of Selection

General note

This Data Sheet provides an overview of the options with the NF 1.11 and explains all components in detail.

Flow curves

The flow curves illustrate how the flow rate alters in relation to the pressures before and after the pump. In the case of a combination of both we would be very happy to advise what the expected flow rate would be.

The values given in the curves are dependant upon the liquid, choice of head materials and the type of hoses being used. Therefore a certain deviation is to be expected.

Note: The flow rate is measured with water at 20°C.

1 Materials of head components

KNF Flodos offers a wide range of different materials for those parts which come in contact with the liquid thus allowing the possibility of pumping most liquids.

2 Motor

The NF 1.11 is driven by a high quality ironless DC motor. This provides the following advantages compared to a conventional DC motor: higher durability, less power consumption and smaller size.

3 Voltages

The ironless DC motor is available for voltages of 6V, 12V and 24V.

Modules

Our versatile self-selection program allows you to personally-determine the optimum characteristics that you require from your pump. Select your diaphragm pump from the following characteristics:

Pump type			
Basic model	Components		
	1	2	3
NF 1.11			

1	Materials of head components	
KP	Head	PP
	Valves	EPDM
	Diaphragm	EPDM
	Resonating diaphragm	EPDM
KT	Head	PP
	Valves	FFPM
	Diaphragm	PTFE
	Resonating diaphragm	FFPM
TT	Head	PVDF
	Valves	FFPM
	Diaphragm	PTFE
	Resonating diaphragm	FFPM

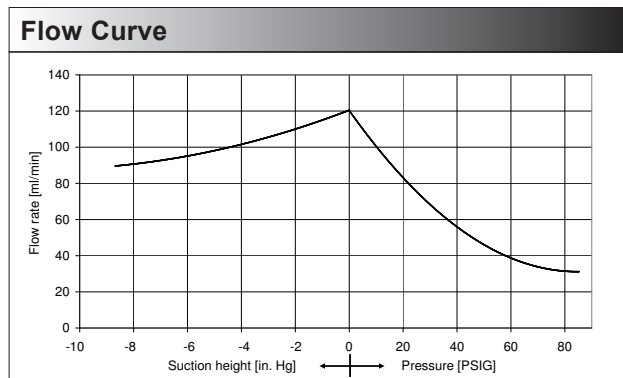
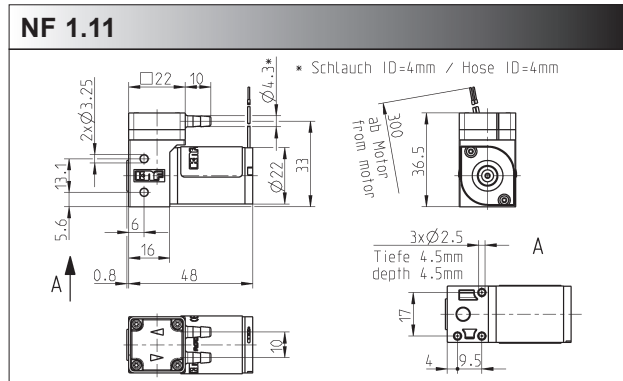
2	Motor
DC	Direct current motor

3	Voltages
6 / 12 / 24V	for DC motors

NF 1.11

Basic model	Flow rate at atmos. pressure (l/min)	Max. suction head (in.Hg)	Max. pressure head (PSIG)
NF 1.11	0.1	8.86	87

Motor selection	DC
Voltage (V)	6 / 12 / 24
Power rating (W)	2.2 / 2.5 / 2.3
I max. load (A)	0.37 / 0.21 / 0.09
I max. (A)	0.47 / 0.25 / 0.12
EMV-guideline	EN 55022 / EN 55011
Weight (g)	70
Motor protection factor	IP 33





Diaphragm pressure control valve

The pressure control valve can be used for a more accurate control of flow against a fluctuating back pressure, metering into a vacuum and from a pressurized system. Used correctly it can prevent damage to pumps, plumbing and other fittings.



Pulsation damper

This versatile pulsation damper reduces the vibration in hoses and pipes and it helps to remove pulsation which might prevent the system from functioning correctly. It also protects instrumentation connected after the pump.

Other accessories

- Tubing
- Shock mounts

Further options:

- Other connections (M5, UNF 1/4"-28, compression fittings for 4/6mm hose)
- Molex / AMP connector
- The incorporation of customers special requirements

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