

MICRO-DIAPHRAGM LIQUID PUMPS

NF 1.60



NF 1.60 KPDC



NF 1.60 KPDCB

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 NF1.60 liquid pump can be mounted in any position. It delivers up to 650 mL/min and will operate against pressures of up to 87 psig.

Features

Small and powerful

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

Self-priming

Sophisticated diaphragm technology and precise valve structures enable performances of 9 inHg suction or 87 psig pressure.

Extreme chemical resistance

The use of the materials PP, PTFE, EPDM and FFKM 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.

PERFORMANCES			
Type	Flow rate (mL/min)	max.Suction height (inHg)	max.Pressure head (psig)
NF 1.60 DC	650	9	87
NF 1.60 DCB	650	9	87

THE KNF MODULAR CONCEPT OF SELECTION

General note

This Data Sheet provides an overview of the options with our NF 1.60 pumps. Certain standard options will be explained in more detail where necessary.

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

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:

TYPE DESCRIPTION			
Type	Components		
	1	2	3
NF 1.60			
Bsp.	KP	DCB	12V

1 MATERIALS OF HEAD COMPONENTS		
KP	Head Valves O-Rings Diaphragm Resonating diaphragm	PP EPDM EPDM EPDM PTFE
KT	Head Valves O-Rings Diaphragm Resonating diaphragm	PP FFKM FFKM PTFE covered PTFE

2 MOTORS	
DC	Direct current motor
DCB	Brushless direct current motor

3 VOLTAGES	
12 / 24V	DC / DCB

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.

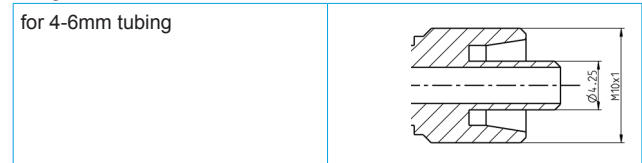
2 Motors

- **DC** Direct current motor
- **DCB** Brushless direct current motor
This type of motor has no brushes which can wear down thus giving it a lifetime comparable with an AC motor.
Option: For external command (PWM, 0-5V DC).

3 Voltages

- Choose from the different electrical connection possibilities. Special variations are available.

4 Hydraulic connections



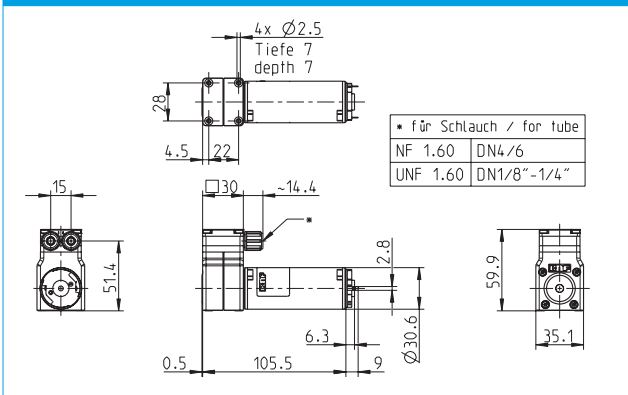
NF 1.60 DC

PERFORMANCE

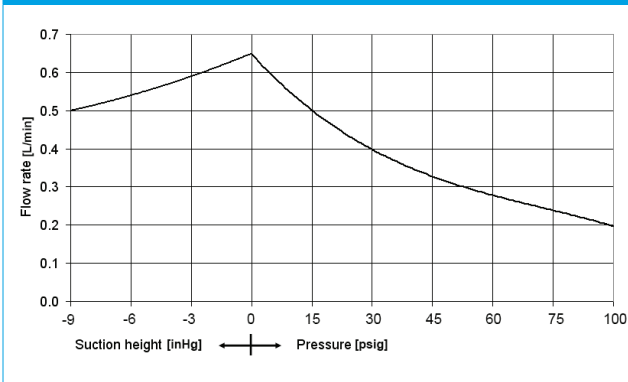
Type	Flow rate at atm. pressure (mL/min)	Max. suction height (inHg)	Max. pressure head (psig)
NF 1.60 DC	650	9	87

Type	DC
Voltage (V)	12 / 24
Power rating (W)	10
I max. load. (A)	0.8 / 0.4
I max. (A)	1.4 / 0.71
EMV guidelines	EN 55011
Weight (g)	320
Motor protection factor	IP 00

NF 1.60 DC



NF 1.60 DC Flow curve



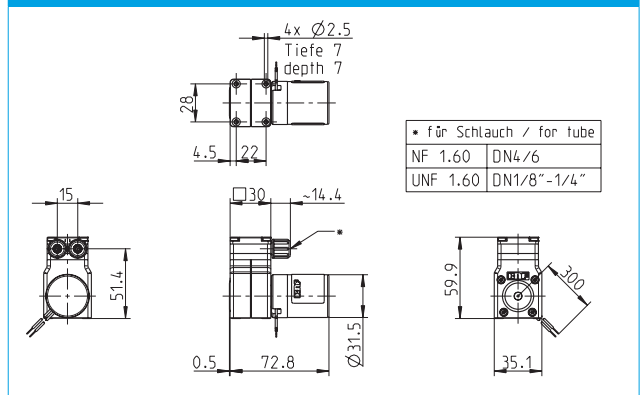
NF 1.60 DCB

PERFORMANCE

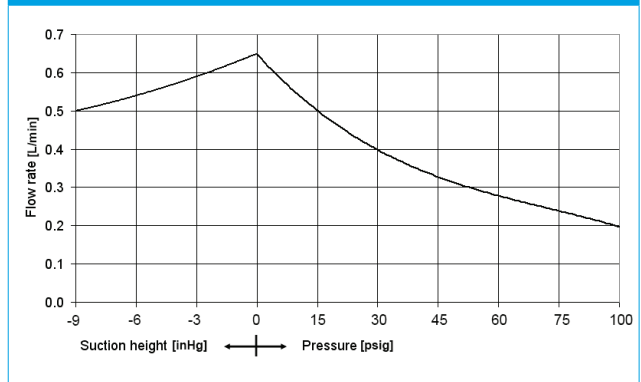
Type	Flow rate at atm. pressure (mL/min)	Max. suction height (inHg)	Max. pressure head (psig)
NF 1.60 DC	650	9	87

Type	DCB
Voltage (V)	12 / 24
Power rating (W)	7.5
I max. load. (A)	0.65 / 0.35
I max. (A)	1.1 / 0.57
EMV guidelines	EN 55014-1 EN 61000-6-3 EN 61000-6-1 EN 55014-2
Weight (g)	210
Motor protection factor	IP 54

NF 1.60 DCB



NF 1.60 DCB Flow curve



OPTIONS, ACCESSORIES

Further options

- Other head materials
- Motors with special voltages or frequencies
- Specific customers requirements such as special connections (Molex, AMP, etc.)
- DCB motor with 4 leads
Input: 0-5 V, Output: impuls

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 pressurised system. Used correct it can save pumps, plumbings and other fittings from damage.



Pulsation damper

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



Other accessories

- Tubing
- Shock mounts