

MICRO DIAPHRAGM LIQUID PUMPS NF 10/11

DATA SHEET E 511



NF 10 KPDC



NF 10 KPE



NF 11 KPDC



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.

NF 10/11 type liquid pumps can be mounted in any position and can deliver up to 0.1 l/min depending on the model and will operate against pressures of up to 10 mWg.

The KNF modular system contains a wide standard range of materials, motors, voltages and frequencies to enable the selection of an optimal solution for your application.

Features

Small and powerful

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

Self-priming and excellent for pressure

Sophisticated diaphragm technology and precise valve structures enable performances of up to 3 mWg suction and 10 mWg pressure.

Extreme chemical resistance

The use of chemically resistant materials such as PTFE, PVDF, FFPM or other material combinations for the parts which come in contact with the liquid allows almost all neutral or corrosive liquids 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 diaphragm liquid pumps include: fuel cells, hydrogen generators, CD coating, dental technology, textiles and many more.

Performance Data

Type	Flow rate (l/min)	Suction head (mWg)	Pressure head (mWg)
NF 10/11	0.1	3	10

The KNF Modular Concept of Selection



General note

This Data Sheet provides an overview of the options with our NF 10/11 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.

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 Motors

E Shaded pole motor (AC)

DC Direct current motor

DCB Brushless direct current motor

NF 11 Ironless direct current motor

This provides the following advantages compared to a conventional DC motor: higher durability, less power consumption and smaller size.

3 Voltages / Frequencies

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

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 10/11			

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

2	Motoren
E	Shaded pole motor (AC)
DC	Direct current motor
DCB	Brushless direct current motor

3	Voltages / Frequencies
230V / 50Hz 115V / 60Hz 100V / 50-60Hz	for AC motors
6 / 12 / 24V	for DC motors
12 / 24V	for DCB motors



Performance

Basic model	Flow rate at atmos. pressure (l/min)	Max. suction head (mWg)	Max. pressure head (mWg)
NF 10-E	0.1	3	10
NF 10-DC	0.1	3	10

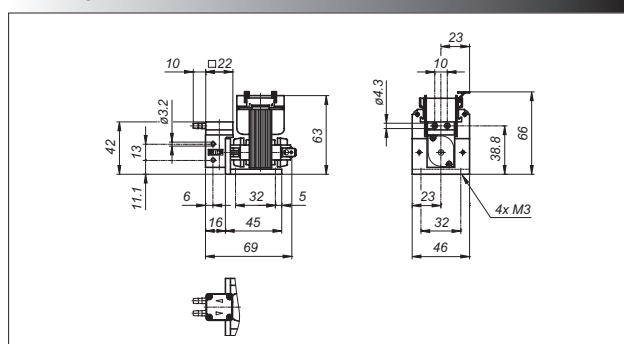
Motor selection	E	DC (NF 10)
Voltage (V)	230V / 50 Hz	6 / 12 / 24
Power rating (W)	9.1	3.8 / 3.7 / 3.4
I Last max. (A)	0.06	0.61/0.28/0.13
I max. (A)	0.08	0.64/0.31/0.14
EMC guideline	EN 55014	EN 55014
Motor protection factor	IP 00	IP 30
Weight	410 g	60 g

Performance

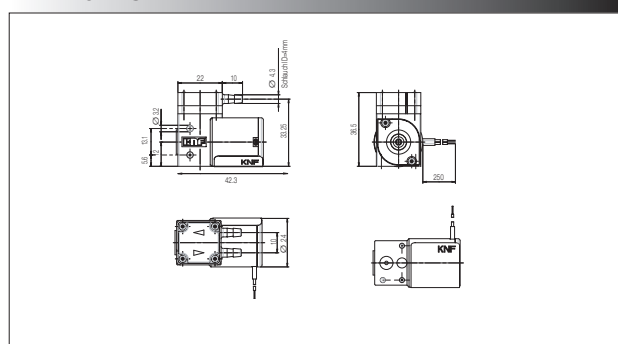
Basic model	Flow rate at atmos. pressure (l/min)	Max. suction head (mWg)	Max. pressure head (mWg)
NF 10-DCB	0.1	3	10
NF 11-DC	0.1	3	10

Motor selection	DCB (NF 10)	DC (NF 11)
Voltage (V)	12 / 24	6 / 12 / 24
Power rating (W)	2.0 / 2.4	2.2 / 2.5 / 2.3
I Last max. (A)	0.17 / 0.1	0.33/0.17/0.08
I max. (A)	0.17 / 0.1	0.37/0.21/0.09
EMC guideline	EN 55011 EN 61000-6-1	EN 55022 EN 55011
Motor protection factor	IP 30	IP 33
Weight	52 g	70 g

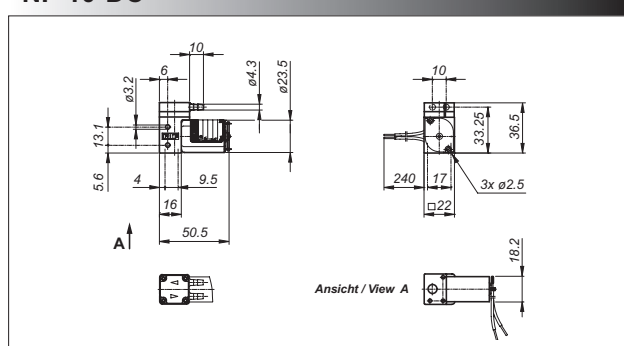
NF 10-E



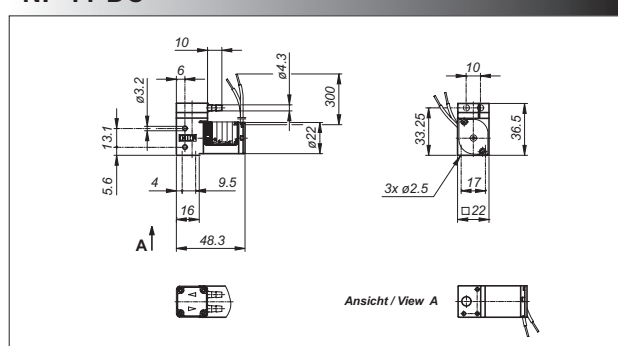
NF 10-DCB



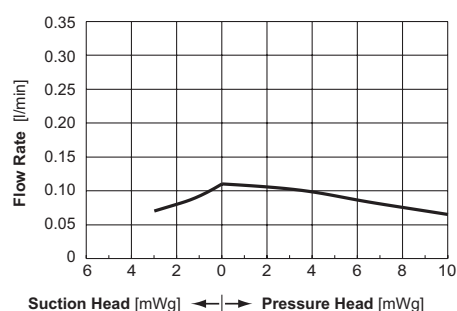
NF 10-DC



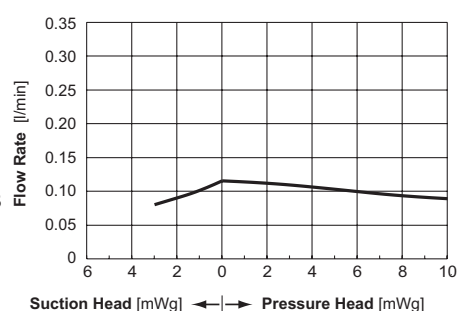
NF 11-DC



NF 10-DC



NF 11-DC NF 10-E NF 10-DCB





The NF 10/11 pump range comes with many other options. If you require any further information concerning the following features, our local sales representative would be very happy to be of assistance.



Special hose connections

UNF 1/4" - 28

Compression fitting for ID 4mm; OD 6mm hosing

Accessories

- Pulsation damper
- Pressure control valve / check valves
- Hoses
- Hose connections
- Shock mounts

Further options

- Suitable for pressures over 1.0 bar
- Other head materials
- Motors with special voltages and frequencies
- The incorporation of customers special requirements, for example special electrical connections (Molex, AMP, etc.)

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