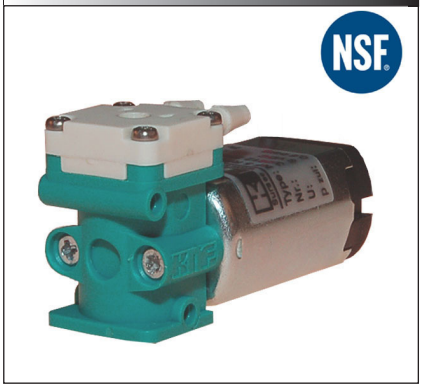
INNOVATIVE
TECHNOLOGIE
WELTWEIT

MICRO DIAPHRAGM LIQUID PUMP NF 5

DATA SHEET E 518

NF 5 RP.51 DC-M



NF 5 RPDC-L

NF 5 RPDCB-4

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 5 liquid pump can be mounted in any position. It delivers up to 70 ml/min and will operate against pressures of up to 10 mWg.

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 4 mWg suction or 10 mWg pressure.

Extreme chemical resistance

The use of the materials PPS and EPDM 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

Type	Flow rate (ml/min)	Suction head (mWS)	Pressure head (mWg)
NF 5 S-Version	50	4	6
NF 5 M-Version	50	4	10
NF 5 L-Version	50	4	10
NF 5 B-Version	5-70	4	10

The KNF Modular Concept of Selection

General note

This Data Sheet provides an overview of the options with our NF 5 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

DC-S Direct current motor

DC-M Direct current motor

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

DCB-4 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.
The small size, the flow rate adjustability and the impulse generator are some more advantages to the other DC motors.

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 5			

1	**Materials of head components**	
RP / RP .51*	Head	PPS
	Valves	EPDM
	Diaphragm	EPDM
RT	Head	PPS
	Valves	FFPM
	Diaphragm	FFPM

* food conform according to the standard NSF/ANSI 169, for further information see options

2	**Motors**
DC-S	Direct current motor
DC-M	„
DC-L	Ironless direct current motor
DCB-4	Brushless direct current motor

3	**Voltage**
6 / 12 V	for direct current motor
10..28 V	for brushless direct current motor

Performance

Type	Flow rate at atmos. pressure (ml/min)	Max. suction head (mWg)	Max. pressure head (mWg)
NF 5 DC-S	50	4	6

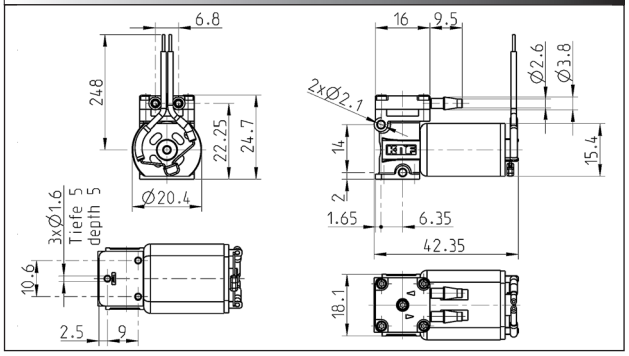
Type	NF 5 S-Version
Voltage (V)	6
Power rating (W)	0.78
I max. load (A)	0.13
I max. (A)	0.230
EMV guideline	EN 55014
Weight (g)	32
Motor selection	DC
Motor protection factor	IP 30

Performance

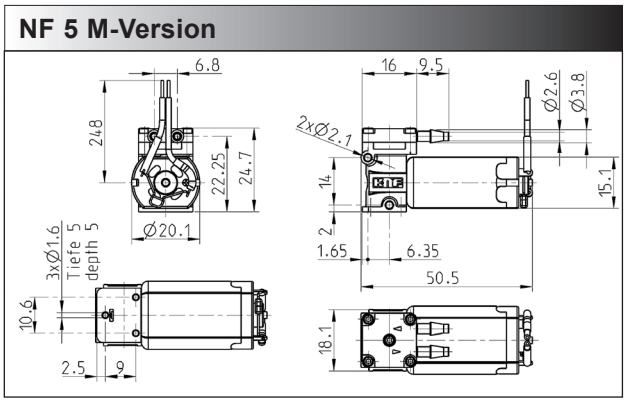
Type	Flow rate at atmos. pressure (ml/min)	Max. suction head (mWg)	Max. pressure head (mWg)
NF 5 DC-M	50	4	10
NF 5 DC-L	50	4	10

Type	NF 5 M-Version		NF 5 L-Version	
Voltage (V)	6	12	6	12
Power rating (W)	0.66	0.84	0.54	0.65
I max. Load (A)	0.11	0.07	0.09	0.065
I max. (A)	0.235	0.121	0.182	0.092
EMV guideline	EN 55014		EN 55014	
Weight (g)	42		36	
Motor selection	DC		DC	
Motor protection factor	IP 30		IP 30	

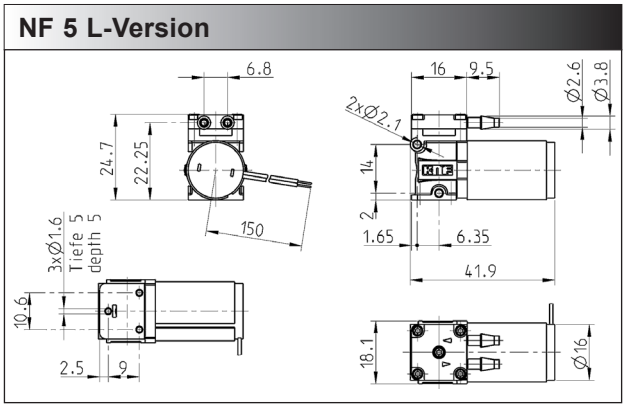
NF 5 S-Version



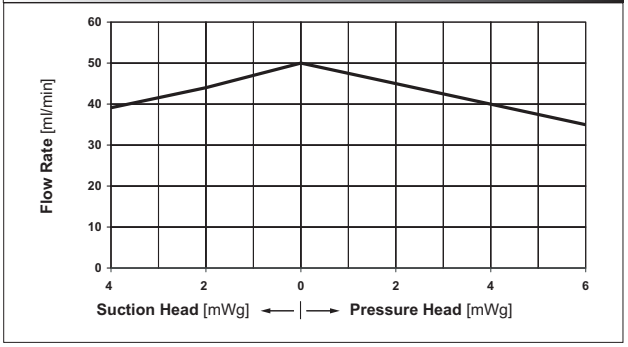
NF 5 M-Version



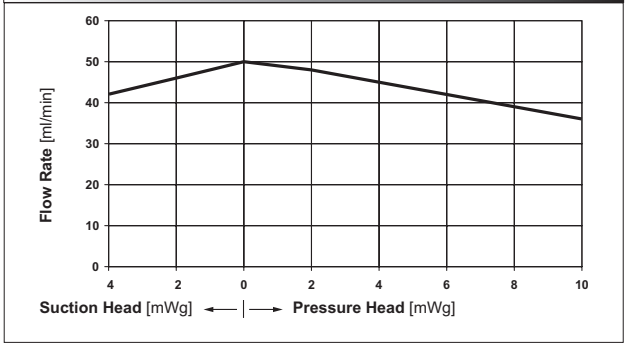
NF 5 L-Version



Flow Curve NF5 S-Version



Flow Curve NF 5 M- und L-Version



NF 5 DCB-4

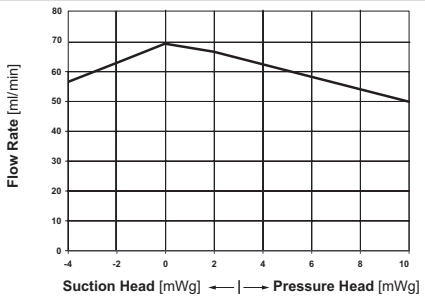
Performance

Basic model	flow rate at atmos. pressure (l/min)	max. suction head (mWg)	max. pressure head (mWg)
NF 5 DCB-4	5-70	4	10

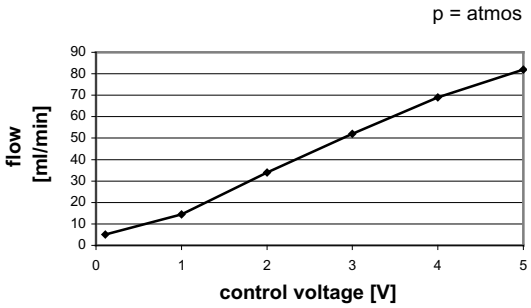
Motor selection	DCB-4
Voltage (VDC)	10..28 V
Power rating (W)	0.96
I Last max. (A)	0.08..0.04
I max. (A)	0.65
EMC guideline	EN 55011
Weight (g)	30
Motor protection factor	IP 40

Leads			
Function	Color of leads	Signal name	Signal
+ Voltage	red	+Vs	10..28 VDC
- Voltage	black	-Vs/GND	-
Speed control input signal	white	Vctrl	0,11..5 VDC
Impulse generator	green	FG	6 pulse/ mech. rotation

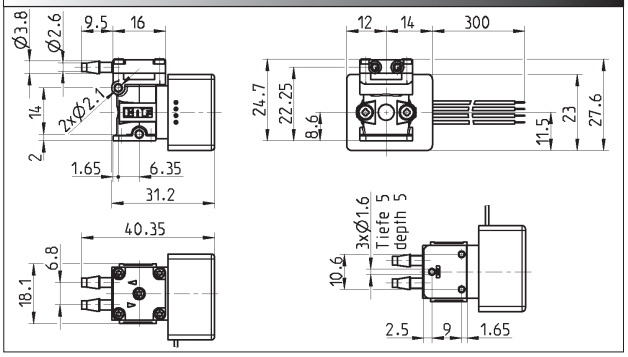
Flow curve NF 5 DCB-4



Flow rate NF 5 DCB-4



NF 5 DCB-4



Options

NSF National Sanitary Foundation

NSF is market leader in the development and controlling of standards relevant for equipment used for handling foodstuffs. By using different toxicological tests our products will be certified according to the standard NSF/ANSI 169. This certification will confirm that all of the pumps with the code .51 are certified for the use with foods/consumables. In addition to this it also means that the pumps are constructed with wetted parts which come with a FDA* declaration of conformity. A yearly audit from NSF will be carried out to ensure that these standards are being maintained. A list of the various products are available on request.

* FDA = Food and Drug Administration

We specialise in tailor made solutions. For all the possible options feel free to contact us.

KNF FLODOS AG, Wassermatte 2, 6210 Sursee, Switzerland - www.knf-flodos.ch, info@knf-flodos.ch

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