

### MICRO DIAPHRAGM LIQUID PUMP NF 25

#### **SECTION 200.19**



### 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 25 type liquid pumps can be mounted in any position and can deliver up to 250 ml/min depending on the model and will operate against pressures of up to 14,5 PSIG.

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.

NF 25 TTDC-L



### 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 from 8.85 in. Hg suction and 14.5 PSIG pressure.

#### Extreme chemical resistance

The use of chemically resistant materials such as PTFE (TFM), 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.

#### NF 25 KPDCB-4



### 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			
Туре	Flow rate (ml/min)	Suction head (in. Hg)	Pressure head (PSIG)
NF 25 DC-M	250	8.85	14.5
NF 25 DC-L	250	8.85	14.5
NF 25 DCB-4	250	8.85	14.5

### The KNF Modular Concept of Selection

#### **General note**

This Data Sheet provides an overview of the options with our NF 25 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-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 moto has no brushes which can wear down thus giving it a higher lifetime and no brushes fire. Compact size, flow rate control over motor speed are the advantages of this motor.

Leads DCB-4			
Function	colour	signal name	signal
+ voltage	red	+Vs	1028VDC
- voltage	black	-Vs/GND	-
control voltage			
input signal	white	Vctrl	0.35 VDC
impulse			6 Pulses /
generator	green	FG	rot.

#### 3 Voltages

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 25			

1	Materials of head components	
KP	Head Valves	PP EPDM
	Diaphragm Resonating diaphragm	EPDM EPDM
КТ	Head Valves Diaphragm Resonating diaphragm	PP FFPM PTFE covered FFPM
тт	Head Valves Diaphragm Resonating diaphragm	PVDF FFPM PTFE covered FFPM

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

3	Voltages
12/24V	for DC motors
1028V	for DCB motor

### NF 25 DC-M /L

### **NF 25 DCB-4**

#### Performance NF 25 DC-M/L

Basic model	Flow rate at atmos. pres- sure (ml/min)	Max. suction head (in. Hg)	Max. pressure head (PSIG)
NF 25 DC-M	250	8.85	14.5
NF 25 DC-L	250	8.85	14.5

Motor type	DC-M	DC-L
Voltage (V)	12 / 24	12 / 24
Power rating (W)	2.9 / 2.9	1.9 / 1.9
Current (A)	0.24 / 0.12	0.16 / 0.08
max. (A)	0.31 / 0.14	0.25 / 0.12
EMI guideline	EN 55022 EN 55011	EN 55022 EN 55011
Weight (g)	64	74
Motor protection class	IP 30	IP 33



#### NF 25 DC-L





### Performance NF 25 DCB-4

Basic model	Flow rate at	Max. suction	Max. pressu-
	atmos. pres-	head	re head
	sure (ml/min)	(in. Hg)	(PSIG)
NF 25 DCB-4	250	8.85	14.5

Motor type	DCB-4
Voltage (V)	1028
Power rating (W)	2.6
Current (A)	0.260.09
max. (A)	0.45
EMI guideline	EN 61000-6-2
	EN 61000-6-3
Weight (g)	60
Motor protection class	IP 40



#### NF 25 Flow curve DCB-4



#### NF 25 Control curve DCB-4



## NF 25

### **Options**



#### 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 reduzes the vibration in hoses and pipes and it helps to remove pulsation which is preventing the system from functionning correctly. It also protects instrumentation connected after the pump.

#### **Further accessories**

- · Hoses
- · Hoses connections
- · Shock mounts

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#### **Further options**

- Other materials
- · Motors with special voltages
- The incorporation of customers special requirements, or example special
- Electrical connections (Molex, AMP, etc.)
- DCB Motor with 2 wires (12 V and 24 V)