

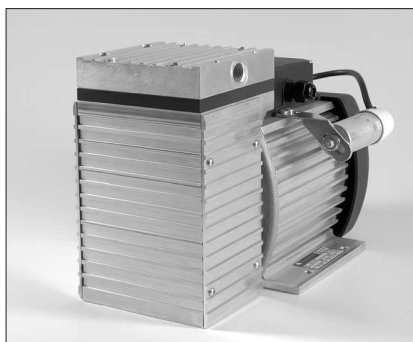


## DIAPHRAGM VACUUM PUMPS

## DATA SHEET E 040



**N 860 FTE**



**N 860 ANE**



**N 860.3 ANE**

### Concept

The Diaphragm Vacuum Pumps from KNF are based on a simple principal - an elastic diaphragm, fixed on its edge, moves up and down its central point by means of an eccentric. in this way the substance is transferred using automatic valves.

The pumps are equipped with the patented stress-optimised structured diaphragm, resulting in a high pneumatic performance, long product life and compact size. Special valves ensure that the product can cope easily with vapour and condensation.

Thanks to the KNF modular system, the parts used to transfer the gases can be made from materials with varying degrees of resistance. The customer has a choice of pump drives ranging from a selection of A/C motors to explosion-proof models. Please contact us for further details.

### Features

#### Uncontaminated flow

No contamination of the media due to oil-free operation

#### Maintenance-free

#### Compact size

due to structured diaphragm

#### High performance

because of structured diaphragm

#### High level of gas tightness

#### Chemically resistant versions

#### Long product life

thanks to structured diaphragm

#### Very quiet and little vibration

#### Copes well with vapour and condensation

#### Starts against vacuum

#### Cool running motor

even when in constant use

#### Can operate in any installed position

### Areas of use

The Diaphragm Vacuum Pumps offer a high level of performance despite their small size, as well as an excellent price performance ratio. They are required especially in the fields of analysis, medicine and production technology.

The pumps are used for sucking gases, taking samples (even liquids in a vacuum) and evacuating vessels.

## PERFORMANCE DATA

Type	Delivery (l/min)	Vacuum (mbar abs.)	atm. Press.	Pressure (bar g)	Weight (kg)
N 860 ANE	60	80		1	12.7
N 860 ATE	60	80		1	12.7
N 860 FTE	60	80		1	12.5
N 860.3 ANE	60	2		1	14.7
N 860.3 ATE	60	2		1	14.7
N 860.3 FTE	60	2		1	14.3

# N 860 ANE N 860 ATE

# N 860 FTE

## Chemically resistant version

### PERFORMANCE DATA

Type and Order No.	Delivery at atm. Pressure (l/min) <sup>1)</sup>	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
<b>N 860 ANE</b>	60	1	80
<b>N 860 ATE</b>	60	1	80

<sup>1)</sup> Litre at STP

### MOTOR DATA

Protection class	<b>IP 54</b>		
Voltage/Frequencies (V/Hz)	~230/50		
Power P <sub>1</sub> (W)	200		
Operating current (A)	1.5		

### MODEL CODES AND MATERIALS

Type and Order No. <sup>2)</sup>	Pump head	Diaphragm	Valves
<b>N 860 ANE</b>	Aluminium	EPDM	EPDM
For slightly aggressive or corrosive gases and vapours			
<b>N 860 ATE</b>	Aluminium	PTFE coated	FFPM

<sup>2)</sup> See also „MODEL CODE FOR EASY ORDERING“

### PERFORMANCE DATA

Type and Order No. **	Delivery at atm. pressure (l/min) <sup>1)</sup>	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
<b>N 860 FTE</b>	60	1	80

<sup>1)</sup> Litre at STP

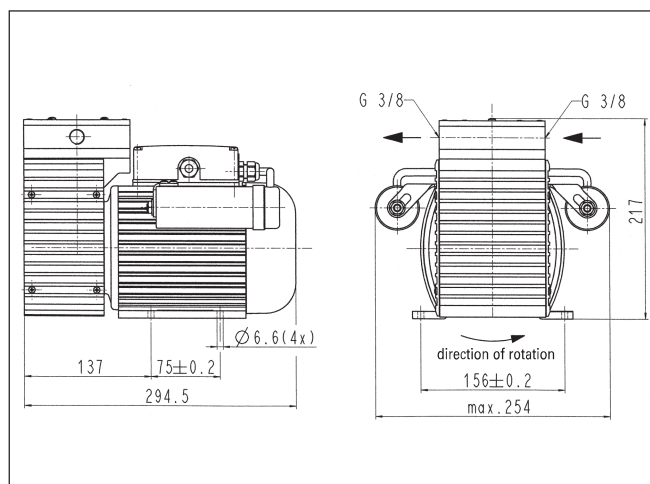
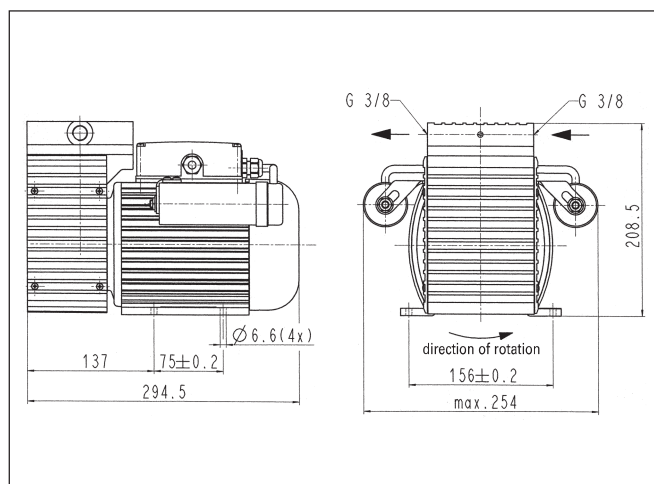
### MOTOR DATA

Protection class	<b>IP 54</b>		
Voltage/Frequencies (V/Hz)	~230/50		
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Operating current (A)	1.5		

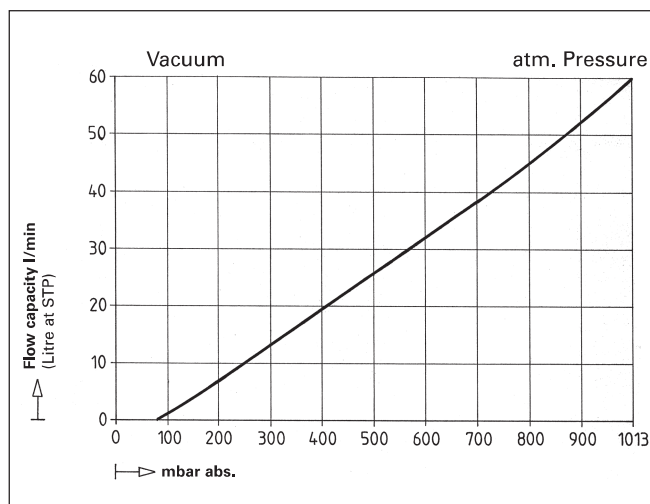
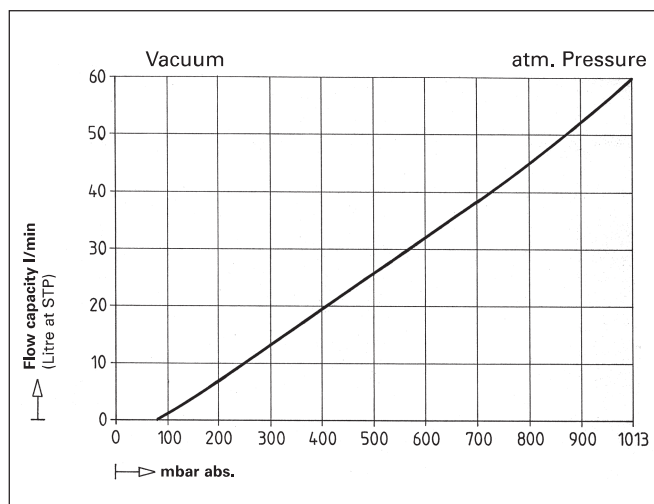
### MODEL CODES AND MATERIALS

Type and Order No. <sup>2)</sup>	Pump head	Diaphragm	Valves
<b>N 860 FTE</b>	PTFE	PTFE coated	FFPM

### Dimensions <sup>3)</sup> (mm)



<sup>3)</sup> All dimensional tolerances conform to DIN ISO 2768-1, Tolerance Class V



# N 860.3 ANE N 860.3 ATE

# N 860.3 FTE

## Chemically resistant version

### PERFORMANCE DATA

Type and Order No.	Delivery at atm. pressure (l/min) <sup>1)</sup>	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 860.3 ANE	60	1	2
N 860.3 ATE	60	1	2

<sup>1)</sup> Litre at STP

### MOTOR DATA

Protection class	IP 54		
Voltage/Frequencies (V/Hz)	~230/50		
Power P <sub>1</sub> (W)	220		
Operating current (A)	1.6		

### MODEL CODES AND MATERIALS

Type and Order No. <sup>2)</sup>	Pump head	Diaphragm	Valves
N 860.3 ANE	Aluminium	EPDM	EPDM
For slightly aggressive or corrosive gases and vapours			
N 860.3 ATE	Aluminium	PTFE coated	FFPM

### PERFORMANCE DATA

Type and Order No.	Delivery at atm. pressure (l/min) <sup>1)</sup>	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 860.3 FTE	60	1	2

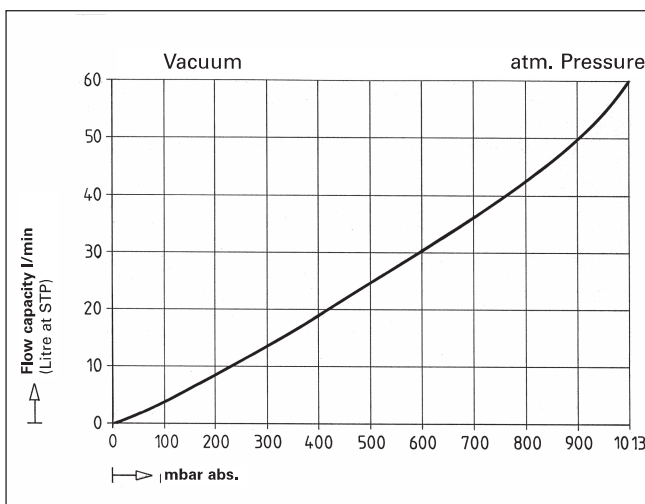
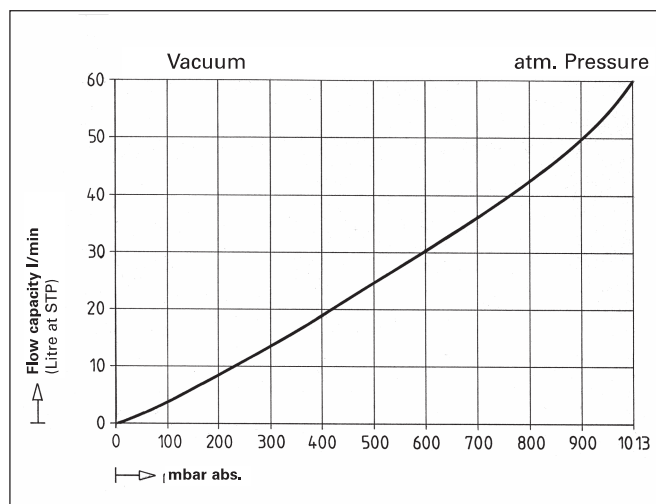
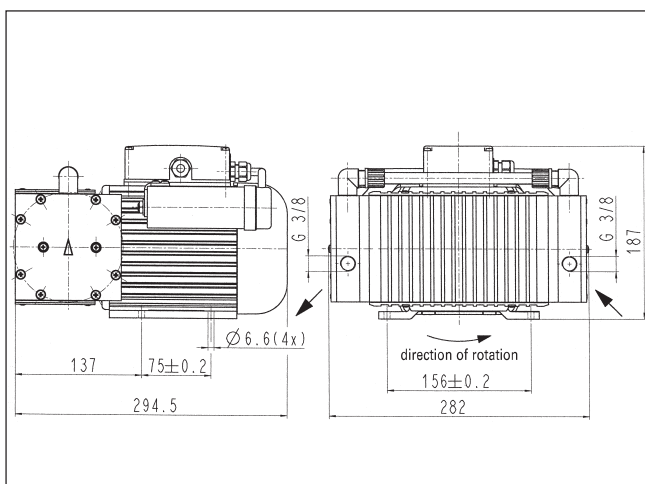
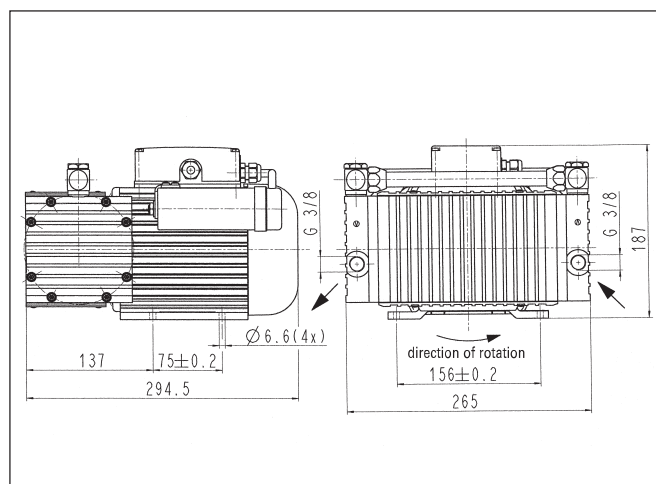
<sup>1)</sup> Litre at STP

### MOTOR DATA

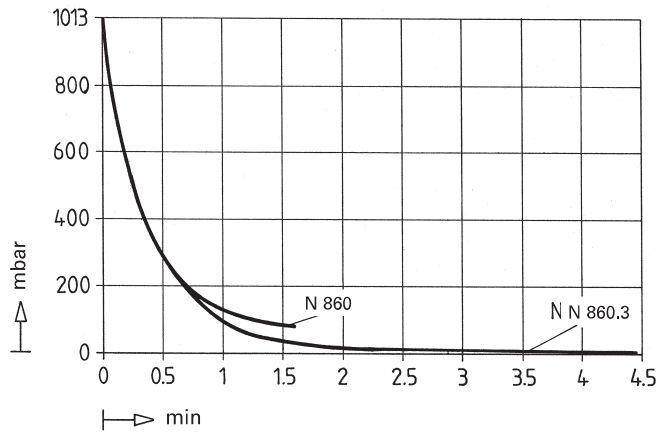
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Voltage/Frequencies (V/Hz)	~230/50		
Power P <sub>1</sub> (W)	220		
Operating current (A)	1.6		

### MODEL CODES AND MATERIALS

Type and Order No. <sup>2)</sup>	Pump head	Diaphragm	Valves
N 860.3 FTE	PTFE	PTFE coated	FFPM

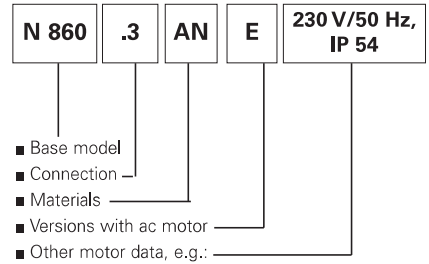


## Pump down time for 20 l receiver



## MODEL CODE FOR EASY ORDERING

The model code is identical to the order number. It is set up as follows:



In addition the motor data must be given in the purchase order (voltage, frequency, and protection class). In our extensive program you can be sure to find the pump you need for your particular application.

## TECHNICAL DETAILS

Maximum permissible gas and ambient temperature: between +5°C and +40°C.

Motors with other voltages, frequencies and protection classes on request.

## Accessories

Description	Order No.	Details
Silencer	045993	G 3/8
Filter	046164	G 3/8
Hose connector	045859	G 3/8 / Ms
Hose connector	046851	G 3/8 /PVDF
Gasket	044982	

Hints on function, installation, and service: see back side.

KNF - the competent partner for vacuum and compressor technology. Especially for unusual problems. Call us and talk to our application engineers.

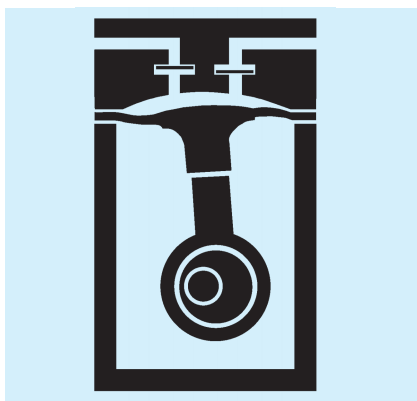
## KNF Neuberger GmbH Diaphragm Pumps + Systems

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[www.knf.de](http://www.knf.de)

## FUNCTION OF KNF DIAPHRAGM VACUUM PUMPS

An elastic diaphragm is moved up and down by an eccentric (see illustration). On the down-stroke it draws the air or gas being handled through the inlet valve. On the up-stroke the diaphragm forces the medium through the exhaust valve and out of the head. The compression chamber is hermetically separated from the drive mechanism by the diaphragm. The pumps transfer, evacuate and compress completely oil-free.

### Diaphragm pump



## HINTS ON INSTALLATION AND OPERATION

- Range of use: Transferring air and gases at temperatures between +5°C and +40°C
- Permissible ambient temperature: between +5°C and +40°C
- The standard pumps are not suitable for use in areas where there is a risk of explosion. In these cases there are other products in the KNF program - please ask us for details
- The pumps are designed to start against vacuum. Pumps that start against pressure are available on request.
- To prevent the maximum operating pressure being exceeded, restriction or regulation of the air flow should only be carried out in the suction line
- Components connected to the pump must be designed to withstand the pneumatic performance of the pump
- Install the pump so that the fan can draw in sufficient cooling air
- Fit the pump at the highest point in the system, so that condensate cannot collect in the head of the pump - that prolongs working-life.

## HINTS ON SERVICE

The diaphragm and valve plates are the only parts of the KNF diaphragm pumps subject to wear. They are easy to change, as no special tools are needed.

If you have any questions, please call our application engineers (see below for contact telephone number).