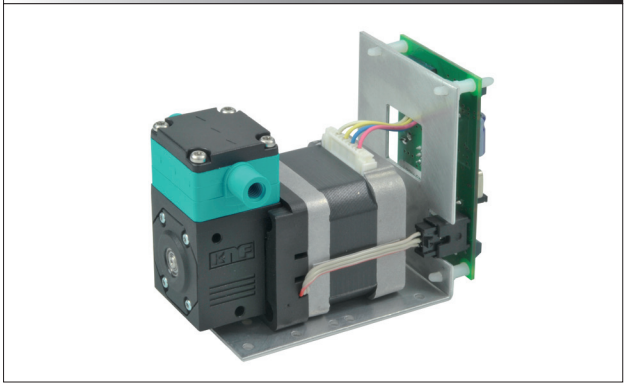
DIAPHRAGM DOSING PUMP
FEM1.02 & UFEM1.09_.55 RC

FEM1.02KP.55 RC



UFEM1.09KP.55RC

Dosing very small quantities

- **5 – 180 µl**
- **10 – 520 µl**

The FEM diaphragm dosing pump has been specifically developed in order to accurately dose small quantities of liquid over a long period of time whereby two of its most distinctive features are its compact size and robustness (pump and electronics). The FEM pump and electronics makes a complete dosing system which is suitable for both simple as well as complex applications.

Characteristics

- Partial stroke adjustment by potentiometer or analog signals 0 - 10 V / 4 - 20 mA
- Digital Input for single partial stroke
- Calibration by internal potentiometer
- Priming with constant motor speed
- Alarms in case of lost step or excessive pressure

Advantages

- Simple and precise pump control
- Flexibility of the control process
- Different speeds for the suction and the dispense stroke (two for the suction stroke and five for the dispense stroke)
- Maintenance free (>10,000 h resp. >10^8 Strokes)
- Competitive price

Features

- Excellent repeatability
- High long term stability
- High chemical resistance
- Self priming
- Run dry
- Long life-time
- Different mounting solutions

Applications

- Medical devices
- Diagnostic instruments
- Chemical Titration
- Laboratory dosing
- Fuel cells

Performance

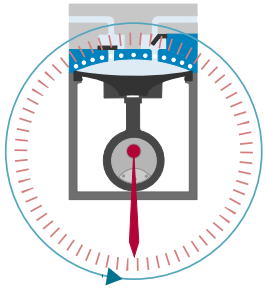
Type	Dispense volume (µl)	max.suction head (in.Hg)	max.pressure head (PSIG)
FEM1.02_.55RC	5 – 180	11.8	87
FEM1.09_.55RC	10 – 520	11.8	87

Features and Functions

Functions

Prime−Mode

To prime or flush the pump. The pump runs at maximum speed.

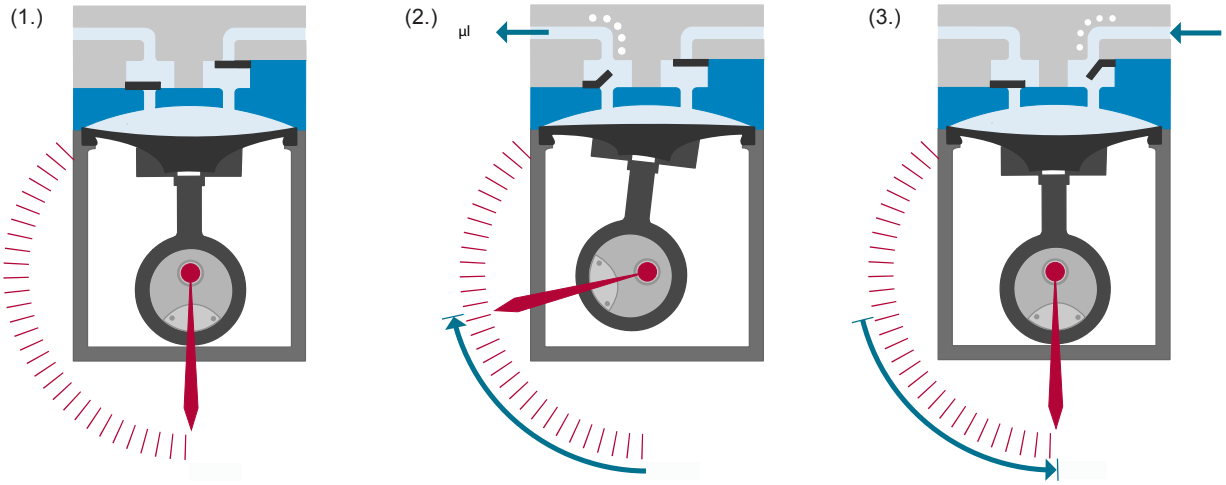


Technology with long-term precision

A flexible diaphragm is moved up and down by an eccentric which is connected to the motor shaft. During the downwards movement the liquid is sucked in through the inlet valve into the working chamber and by the upwards movement the liquid is pushed out through the outlet valve. The working chamber of the pump is hermetically separated from the motor so that the liquid can not be contaminated in any way.

Dispense−Mode

Dosing a volume .



The diaphragm is positioned at the lowest point ready for dosing with the pump head completely filled with liquid (1.). After receiving the start order the diaphragm moves upwards displacing the required volume of liquid (2.), the diaphragm then returns back to the start position drawing new liquid in (3.).

Description

FEM 1.02 KP .55 RC

- RC Pump with electronic module
- for partial stroke set up
- Valves / Diaphragm
- Head material
- 1.02 Stroke volume
- Pump electronically driven

Electronic control

Partial strokes can be set by a potentiometer or analog signals 0 -10 V / 4 - 20 mA. The pump can be calibrated in this manner as well. (5 - 180 µl or 5 - 520 µl).

The dispense volume can be set by a potentiometer or analog signals 0 - 10V / 4 - 20mA.

Single strokes can be triggered by a digital impulse.

Analog interface	4 − 20 mA, 0 − 10 V
Logical control	Impulse (TTL)
Output signal	Alarm (Open Collector)

Material of head component

Type	Head	Valves	O-ring	Diaphragm
FEM 1.02 / 1.09 KP .55 RC	PP	EPDM	EPDM	PTFE coated
FEM 1.02 / 1.09 KT .55 RC	PP	FFPM	FFPM	PTFE coated
FEM 1.02 / 1.09 TT .55 RC	PVDF	FFPM	FFPM	PTFE coated

FEM1.02_.55RC

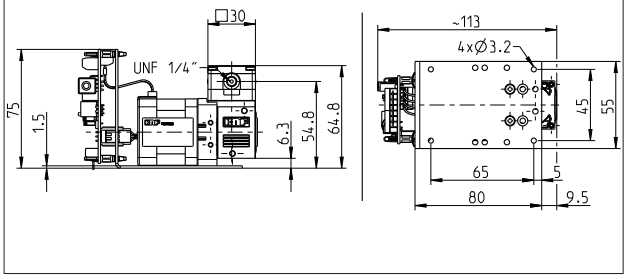
Technical Data

Dispense Mode	5 − 180 µl
Prime Mode (max.)	20 ml/min
Max. suction head	11.8 in.Hg
Max. back pressure	87 PSI
accuracy	±2%
Reapitability	±1%
Allowed ambient temp.	+5 − +40 °C
Allowed liquid temp	+5 − +80 °C
Max Viscosity	150 cSt
RPM Max	200 RPM
Motor protection factor	IP 40
Noise level	<40 dB
Connectors	UNF ¼"-28
Tube (ID - OD)	1/16" - 1/8"
Weight	390 g

Electronic control

Voltage (DC)	12 − 24 V
Power rating	15 W
Max power consumption	0.6 A
Impulse Start	TTL
Analog Input	0 − 10 V (Reference 10 V) 4 − 20 mA
Prime/Drain	TTL
Alarm Output	Open Collector

FEM1.02_.55RC



FEM1.02_.55RC Dispense volume

UFEM1.09_.55 RC

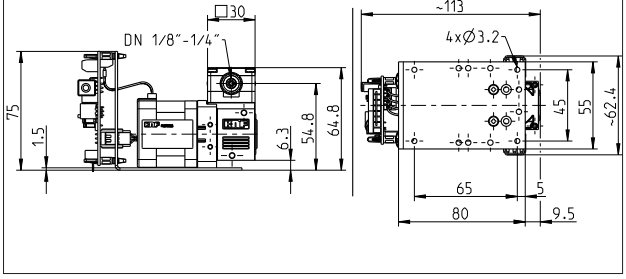
Technical Data

Dispense Mode	10 − 520 µl
Prime Mode (max.)	90 ml/min
Max. suction head	11.8 in.Hg
Max. back pressure	87 PSI
accuracy	±2%
Repeatability	±1%
Allowed ambient temp.	+5 − +40 °C
Allowed liquid temp	+5 − +80 °C
Max Viscosity	150 cSt
RPM Max	200 RPM
Motor protection factor	IP 40
Noise level	<40 dB
Connectors	Compression fittings
Tube (ID - OD)	1/8" - 1/4"
Weight	390 g

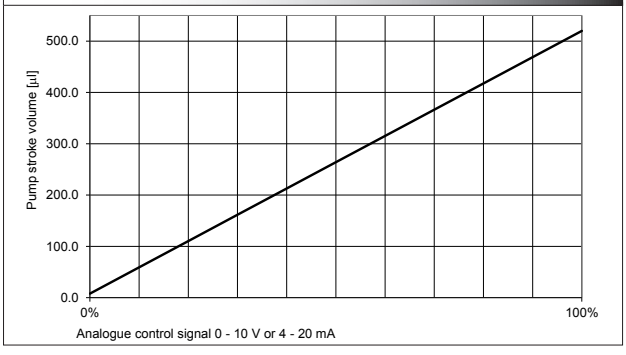
Electronic control

Voltage (DC)	12 − 24 V
Power rating	15 W
Max power consumption	0.6 A
Impulse Start	TTL
Analog Input	0 − 10 V (Reference 10 V) 4 − 20 mA
Prime/Drain	TTL
Alarm Output	Open Collector

UFEM1.09_.55RC



UFEM1.09_.55RC Dispense volume



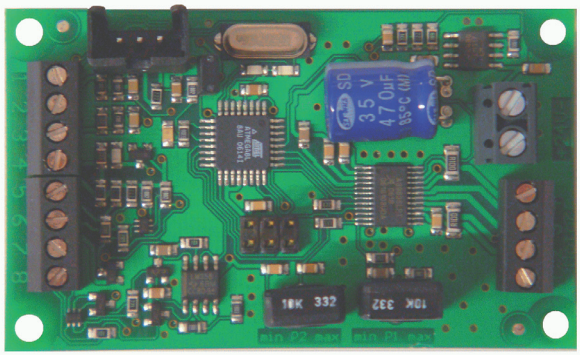
Options

Options

- Other connectors on request
- Modular construction
- Different mounting possibilities
- Customer specific solutions on request

FEZ4 Control board accessory for continuous dosing

- FEM 1.02: 20 ml/min
- FEM 1.09: 90 ml/min



FEM1.02SM2 & FEM1.09SM2 Pump without electronics board

- for your own stepper motor electronic controls
- Contact KNF for further information

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