



# LAB LIQUID PUMPS METER, DOSE, TRANSFER



METERING, DOSING, AND  
TRANSFERRING LIQUIDS.  
PRECISE, SAFE AND CLEAN HANDLING  
OF NEUTRAL AND AGGRESSIVE LIQUIDS.

# LIQUID PUMPS FOR THE LABORATORY

**KNF liquid diaphragm pumps** are small, quiet, self-priming, maintenance-free, and will operate dry indefinitely without damage. Each includes intuitive control options and a splash-proof housing. Unlike peristaltic pumps, there is no tubing to break or fatigue, therefore flow rates are consistent, and reliable. In addition, all KNF liquid pumps offer premium, chemically-resistant models.

The KNF line of liquid diaphragm pumps includes:

- **SIMDOS® 02 and 10** metering and dosing pumps, offering metering flow rates from 0.03 – 20 mL/min and 1 – 100 mL/min, respectively, and discrete dosing volumes of 0.03 – 999 mL and 1 – 999 mL, respectively. See pages 3 – 6.
- **LIQUIPORT®** easy-to-use transfer pumps, with flow rates ranging from 0.2 – 1.3 L/min and 0.5 – 3.0 L/min. See pages 7 – 8.

**Diaphragm liquid pumps are ideal for:** applications that require low shear force, high repeatability and the ability to handle aggressive media.

## **Fields of Applications:**

- Chemistry
- Synthetic organic chemistry
- Pharmacy
- Adhesives and glue
- Polymers & polymer coating
- Food technology research
- Detergents
- Water treatment research
- Biology, microbiology
- Biotechnology
- Fragrances

# SIMDOS® 02

## FINE METERING AND DOSING LIQUID PUMP



- Simple and intuitive operation
- Easy calibration
- Cycle mode
- Adaptable to fluid characteristics
- Self priming, can run dry
- Various control options
- Splashproof IP65, small footprint

### FIELDS OF APPLICATION

- Chemistry
- Synthetic organic chemistry
- Pharmaceutical
- Adhesives and glue
- Polymers & polymer coating
- Food technology research
- Detergents

### HYDRAULIC DATA

Metering flow rate	Dosing volume	Suction height	Max. pressure
0.03 – 20 mL/min	0.03 mL – 999 mL	6.6 ft. water	85 psig

### PUMP TYPE

Code	Pump head	Diaphragm	Valves	Filter (1pc. included)	Tubing (2pc. included)
KT	PP	PTFE covered	FFKM Kalrez®	165212	166329
TT	PVDF	PTFE covered	FFKM Kalrez®	165210	166329
FT	PTFE	PTFE covered	FFKM Kalrez® *	165212	166329
ST	STAINLESS STEEL	PTFE covered	FFKM Kalrez®	165212	166329

\* On request FFKM Chemraz®

### CONTROL TYPE

S - Version	RC - Version	RC Plus - Version
<ul style="list-style-type: none"> <li>■ Manual operation</li> </ul>	<ul style="list-style-type: none"> <li>■ Manual operation</li> <li>■ Analog control: 0 – 5 V, 0 – 10 V, 0 – 20 mA, 4 – 20 mA, from 1 to 100%</li> <li>■ Start/Stop through logic control (TTL)</li> </ul>	<ul style="list-style-type: none"> <li>■ Reset/Prime through logic control (TTL)</li> <li>■ Output signal fault alarm</li> <li>■ RC cable for external control included</li> <li>■ Same as RC</li> <li>■ RS 232 port for PC control</li> <li>■ RS 232 cable with D-Sub 9 connector included</li> </ul>

### TECHNICAL DATA

- Main supply 100 – 240 V / 50 – 60 Hz
- Ambient temperature allowed +5 to +40 °C
- Liquid temperature allowed +5 to +80 °C
- Viscosity settings up to 500 cSt\*\*
- Accuracy +/-2% (nominal value)
- Repeatability +/-1%
- Power consumption 10 W
- Protection class IP65
- Dimensions: 150 H x 93 W x 144 D mm
- Weight: 0.9 kg
- UNF 1/4" – 28 threaded ports
- Supplied with 1/8" OD x 1/16" ID tubing; other options available
- Filter

\*\* Reduced flow rate above 150 cSt

**Model Numbers:** FEM 1.02\_\_\_.18\_\_ Example: FEM 1.02KT.18RCP

Code: KT, TT, FT, or ST

Control: S, RC, or RCP

See page 9 for a list of all model numbers.

# ACCESSORIES

VALVES KIT	
	ID-Nr.
FFKM Chemraz® special valves for certain chemicals	164984



Special Valves CHEMRAZ®

DIAPHRAGM PRESSURE CONTROL VALVE WITH SUPPORT (when the feeding tank is above the pump or to dose into vacuum)	
	ID-Nr.
Kit JFDV 30 KTZ for SIMDOS® 02 KT	166286
Kit JFDV 30 TTZ for SIMDOS® 02 TT	166287
Kit JFDV 30 FTZ for SIMDOS® 02 FT	166288



FILTER (for protection against influent particulates and fibers)				
Type	Porosity	Material	Connector	ID-Nr.
FS 60 T	70 µm	PVDF	UNF 1/4"-28	165210
FS 60 X	35 µm	PEEK	UNF 1/4"-28	165212



TUBING AND CONNECTORS	
	ID-Nr.
Replacement FEP inlet/outlet tubing , 1/8" OD x 1/16" ID x 1 m with UNF 1/4"-28 connector	166329
Also available in 2 m length	166330
Replacement UNF 1/4"-28 connector set for 1/8" OD tubing (includes 2 ferrules and 2 fittings)	069790
Optional FEP outlet tubing for fine dosing, 1/16" OD x 1/32" ID x 1 m with UNF 1/4"-28 connector†	166335



† 5 mL/min maximum flow rate with this tubing.

MOUNTING PLATE	
	ID-Nr.
For wall mounting	160473



STANDFITTING	
	ID-Nr.
For retort stand	160474



USB-SERIAL CONVERTER (for SIMDOS® RC Plus)	
	ID-Nr.
	166949



FOOTSWITCH	
	ID-Nr.
For impulse start and stop	155872



# SIMDOS® 10

## METERING AND DOSING LIQUID PUMP



- Simple and intuitive operation
- Easy calibration
- Cycle mode
- Adaptable to fluid characteristics
- Self priming, can run dry
- Various control options
- Splashproof IP65, small footprint

### FIELDS OF APPLICATION

- Chemistry
- Synthetic organic chemistry
- Pharmaceutical
- Adhesives and glue
- Polymers & polymer coating
- Food technology research
- Detergents

### HYDRAULIC DATA

Metering flow rate	Dosing volume	Suction height	Max. pressure
1 – 100 mL/min	1 – 999 mL	9.8 ft. water	85 psig

### PUMP TYPE

Code	Pump head	Diaphragm	Valves	Filter (1pc. included)	Tubing (2pc. included)
KT	PP	PTFE covered	FFKM Kalrez®	165213	160269
TT	PVDF	PTFE covered	FFKM Kalrez®	165211	160269
FT	PTFE	PTFE covered	FFKM Kalrez® *	165213	160271
ST	STAINLESS STEEL	PTFE covered	FFKM Kalrez®	165213	160271

\* On request FFKM Chemraz®

### CONTROL TYPE

S2 - Version	RC2 - Version	RC Plus 2 - Version
<ul style="list-style-type: none"> <li>■ Manual operation</li> </ul>	<ul style="list-style-type: none"> <li>■ Manual operation</li> <li>■ Analog control: 0 – 5 V, 0 – 10 V, 0 – 20 mA, 4 – 20 mA, from 1 to 100%</li> <li>■ Start/Stop through logic control (TTL)</li> </ul>	<ul style="list-style-type: none"> <li>■ Reset/Prime through logic control (TTL)</li> <li>■ Output signal fault alarm</li> <li>■ RC cable for external control included</li> <li>■ Same as RC2</li> <li>■ RS 232 port for PC control</li> <li>■ RS 232 cable with D-Sub 9 connector included</li> </ul>

### TECHNICAL DATA

- Main supply 100 – 240 V / 50 – 60 Hz
- Allowed ambient temperature +5 to +40 °C
- Allowed liquid temperature +5 to +80 °C
- Viscosity settings up to 500 cSt\*\*
- Accuracy +/-2% (nominal value)
- Repeatability +/-1%
- Power consumption 24 W
- Protection class IP65
- Dimensions: 150 H x 93 W x 144 D mm
- Weight: 0.9 kg
- Supplied with 1/4" OD x 1/8" ID x 2 M tubing and compression fittings
- Filter

\*\* Reduced flow rate above 150 cSt

**Model Numbers:** UFEM 1.10\_\_ .18\_\_     Example: UFEM 1.10TT.18RC2

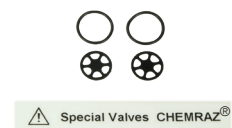
Code: KT, TT, FT, or ST

Control: S2, RC2, or RCP2

See page 9 for a list of all model numbers.

# ACCESSORIES

VALVES KIT	
	ID-Nr.
FFKM Chemraz® special valves for certain chemicals	168037



DIAPHRAGM PRESSURE CONTROL VALVE WITH SUPPORT (when the feeding tank is above the pump or to dose into vacuum)	
	ID-Nr.
Kit UFDV 30 KTZ for SIMDOS® 10 KT	167598
Kit UFDV 30 TTZ for SIMDOS® 10 TT	167599
Kit UFDV 30 FTZ for SIMDOS® 10 FT, ST	167600



FILTER					
Type	Porosity	Material	Connector	FOR	ID-Nr.
FS 25 T	70 µm	PVDF	for 1/4" OD x 1/8" ID tubing	TT	165211
FS 25 X	35 µm	PEEK	for 1/4" OD x 1/8" ID tubing	FT, KT, ST	165213



PULSATION DAMPER (placed on pump outlet for smoother flow)	
	ID-Nr.
UFPD 10 KT for SIMDOS® 10 KT	167821
UFPD 10 TT for SIMDOS® 10 TT	167822
UFPD 10 FT for SIMDOS® 10 FT, ST	167823



MOUNTING PLATE	
	ID-Nr.
For wall mounting	160473



STANDFITTING	
	ID-Nr.
For retort stand	160474



USB-SERIAL CONVERTER (for SIMDOS® RC Plus 2)	
	ID-Nr.
	166949



FOOTSWITCH	
	ID-Nr.
For impulse start and stop	155872



# LIQUIPORT® 100, 1.100, 300, 1.300

## LIQUID TRANSFER PUMP



- Simple and intuitive operation
- Self priming, can run dry
- Analog and impulse control (RC)
- Splashproof IP65, small footprint

### FIELDS OF APPLICATION

- Chemistry
- Synthetic organic chemistry
- Pharmaceutical
- Adhesives and glue
- Polymers & polymer coating
- Food technology research
- Detergents

### HYDRAULIC DATA

Type	Flow rate	Suction height	Max. pressure
LIQUIPORT 100	0.2 – 1.3 L/min	9.8 ft. water	15 psig
LIQUIPORT 1.100	0.2 – 1.3 L/min	9.8 ft. water	58 psig
LIQUIPORT 300	0.5 – 3.0 L/min	9.8 ft. water	15 psig
LIQUIPORT 1.300	0.5 – 3.0 L/min	9.8 ft. water	58 psig

### PUMP TYPE

Code	Pump head	Diaphragm	Valves
KT	PP	PTFE covered	FFKM Simriz® *
TT	PVDF	PTFE covered	FFKM Simriz® *
FT	PTFE	PTFE covered	FFKM Simriz® *

\* Optional materials available on request

### CONTROL TYPE

S - Version	RC - Version
<ul style="list-style-type: none"> <li>■ Manual operation</li> </ul>	<ul style="list-style-type: none"> <li>■ Manual operation</li> <li>■ Analog control: 0 – 10 V for 0 to 100% (others on request)</li> <li>■ Start/Stop through logic control (TTL)</li> <li>■ Output signal fault alarm</li> <li>■ RC cable for external control included</li> </ul>

### TECHNICAL DATA

- Main supply 100 – 240 V / 50 – 60 Hz
- Ambient temperature allowed +5 to +40 °C
- Liquid temperature allowed +5 to +80 °C
- Maximum viscosity allowed 150 cSt
- Power consumption 12 – 16 W (100, 1.100); 22 – 32 W (300, 1.300)
- Repeatability +/-1%
- Protection class IP65
- Dimensions:
  - 130 H x 99 W x 177 D mm (100, 1.100)
  - 160 H x 104 W x 188 D mm (300, 1.300)
- Weight: 1.0 kg (100, 1.100); 1.5 kg (300, 1.300)
- Equipped with barbed fittings:
  - for 5/16" ID tubing (100, 1.100)
  - for 15/32" ID tubing (300, 1.300)

**Model Numbers:** NF \_\_\_\_\_ .18 \_\_\_\_\_ Example: NF 1.300FT.18S

Type: 100, 1.100, 300, 1.300

Code: KT, TT, or FT

Control: S, or RC

See page 10 for a list of all model numbers.



# ACCESSORIES

MOUNTING PLATE	
	ID-Nr.
For wall mounting	160473



STANDFITTING	
	ID-Nr.
For retort stand	160474



FOOTSWITCH	
	ID-Nr.
For impulse start and stop	155872



# PRODUCT LISTINGS AND SPECIFICATIONS

Model	Specifications				Materials of Construction			Control
	Metering	Dosing	Suction Height	Pressure	Head	Diaphragm	Valves	
<b>SIMDOS® 02</b>								
FEM 1.02KT.18S	0.03 – 20 mL/min	0.03 – 999 mL	6.6 ft. water	85 psig	PP	PTFE	FFKM <sup>1</sup>	S
FEM 1.02TT.18S	0.03 – 20 mL/min	0.03 – 999 mL	6.6 ft. water	85 psig	PVDF	PTFE	FFKM <sup>1</sup>	S
FEM 1.02FT.18S	0.03 – 20 mL/min	0.03 – 999 mL	6.6 ft. water	85 psig	PTFE	PTFE	FFKM <sup>1</sup>	S
FEM 1.02ST.18S	0.03 – 20 mL/min	0.03 – 999 mL	6.6 ft. water	85 psig	SS	PTFE	FFKM <sup>1</sup>	S
FEM 1.02KT.18RC	0.03 – 20 mL/min	0.03 – 999 mL	6.6 ft. water	85 psig	PP	PTFE	FFKM <sup>1</sup>	RC
FEM 1.02TT.18RC	0.03 – 20 mL/min	0.03 – 999 mL	6.6 ft. water	85 psig	PVDF	PTFE	FFKM <sup>1</sup>	RC
FEM 1.02FT.18RC	0.03 – 20 mL/min	0.03 – 999 mL	6.6 ft. water	85 psig	PTFE	PTFE	FFKM <sup>1</sup>	RC
FEM 1.02ST.18RC	0.03 – 20 mL/min	0.03 – 999 mL	6.6 ft. water	85 psig	SS	PTFE	FFKM <sup>1</sup>	RC
FEM 1.02KT.18RCP	0.03 – 20 mL/min	0.03 – 999 mL	6.6 ft. water	85 psig	PP	PTFE	FFKM <sup>1</sup>	RCP
FEM 1.02TT.18RCP	0.03 – 20 mL/min	0.03 – 999 mL	6.6 ft. water	85 psig	PVDF	PTFE	FFKM <sup>1</sup>	RCP
FEM 1.02FT.18RCP	0.03 – 20 mL/min	0.03 – 999 mL	6.6 ft. water	85 psig	PTFE	PTFE	FFKM <sup>1</sup>	RCP
FEM 1.02ST.18RCP	0.03 – 20 mL/min	0.03 – 999 mL	6.6 ft. water	85 psig	SS	PTFE	FFKM <sup>1</sup>	RCP
<b>SIMDOS® 10</b>								
UFEM 1.10KT.18S2	1 – 100 mL/min	1 – 999 mL	9.8 ft. water	85 psig	PP	PTFE	FFKM <sup>1</sup>	S
UFEM 1.10TT.18S2	1 – 100 mL/min	1 – 999 mL	9.8 ft. water	85 psig	PVDF	PTFE	FFKM <sup>1</sup>	S
UFEM 1.10FT.18S2	1 – 100 mL/min	1 – 999 mL	9.8 ft. water	85 psig	PTFE	PTFE	FFKM <sup>1</sup>	S
UFEM 1.10ST.18S2	1 – 100 mL/min	1 – 999 mL	9.8 ft. water	85 psig	SS	PTFE	FFKM <sup>1</sup>	S
UFEM 1.10KT.18RC2	1 – 100 mL/min	1 – 999 mL	9.8 ft. water	85 psig	PP	PTFE	FFKM <sup>1</sup>	RC
UFEM 1.10TT.18RC2	1 – 100 mL/min	1 – 999 mL	9.8 ft. water	85 psig	PVDF	PTFE	FFKM <sup>1</sup>	RC
UFEM 1.10FT.18RC2	1 – 100 mL/min	1 – 999 mL	9.8 ft. water	85 psig	PTFE	PTFE	FFKM <sup>1</sup>	RC
UFEM 1.10ST.18RC2	1 – 100 mL/min	1 – 999 mL	9.8 ft. water	85 psig	SS	PTFE	FFKM <sup>1</sup>	RC
UFEM 1.10KT.18RCP2	1 – 100 mL/min	1 – 999 mL	9.8 ft. water	85 psig	PP	PTFE	FFKM <sup>1</sup>	RCP
UFEM 1.10TT.18RCP2	1 – 100 mL/min	1 – 999 mL	9.8 ft. water	85 psig	PVDF	PTFE	FFKM <sup>1</sup>	RCP
UFEM 1.10FT.18RCP2	1 – 100 mL/min	1 – 999 mL	9.8 ft. water	85 psig	PTFE	PTFE	FFKM <sup>1</sup>	RCP
UFEM 1.10ST.18RCP2	1 – 100 mL/min	1 – 999 mL	9.8 ft. water	85 psig	SS	PTFE	FFKM <sup>1</sup>	RCP

For more information, see pages 3 – 4 for SIMDOS® 02 and pages 5 – 6 for SIMDOS® 10.

Model	Specifications			Materials of Construction			Control
	Transfer	Suction Height	Pressure	Head	Diaphragm	Valves	
<b>LIQUIPORT®</b>							
NF 100KT.18S	0.2 – 1.3 L/min	9.8 ft. water	15 psig	PP	PTFE	FFKM <sup>2</sup>	S
NF 100TT.18S	0.2 – 1.3 L/min	9.8 ft. water	15 psig	PVDF	PTFE	FFKM <sup>2</sup>	S
NF 100FT.18S	0.2 – 1.3 L/min	9.8 ft. water	15 psig	PTFE	PTFE	FFKM <sup>2</sup>	S
NF 1.100KT.18S	0.2 – 1.3 L/min	9.8 ft. water	58 psig	PP	PTFE	FFKM <sup>2</sup>	S
NF 1.100TT.18S	0.2 – 1.3 L/min	9.8 ft. water	58 psig	PVDF	PTFE	FFKM <sup>2</sup>	S
NF 1.100FT.18S	0.2 – 1.3 L/min	9.8 ft. water	58 psig	PTFE	PTFE	FFKM <sup>2</sup>	S
NF 300KT.18S	0.5 – 3.0 L/min	9.8 ft. water	15 psig	PP	PTFE	FFKM <sup>2</sup>	S
NF 300TT.18S	0.5 – 3.0 L/min	9.8 ft. water	15 psig	PVDF	PTFE	FFKM <sup>2</sup>	S
NF 300FT.18S	0.5 – 3.0 L/min	9.8 ft. water	15 psig	PTFE	PTFE	FFKM <sup>2</sup>	S
NF 1.300KT.18S	0.5 – 3.0 L/min	9.8 ft. water	58 psig	PP	PTFE	FFKM <sup>2</sup>	S
NF 1.300TT.18S	0.5 – 3.0 L/min	9.8 ft. water	58 psig	PVDF	PTFE	FFKM <sup>2</sup>	S
NF 1.300FT.18S	0.5 – 3.0 L/min	9.8 ft. water	58 psig	PTFE	PTFE	FFKM <sup>2</sup>	S
NF 100KT.18RC	0.2 – 1.3 L/min	9.8 ft. water	15 psig	PP	PTFE	FFKM <sup>2</sup>	RC
NF 100TT.18RC	0.2 – 1.3 L/min	9.8 ft. water	15 psig	PVDF	PTFE	FFKM <sup>2</sup>	RC
NF 100FT.18RC	0.2 – 1.3 L/min	9.8 ft. water	15 psig	PTFE	PTFE	FFKM <sup>2</sup>	RC
NF 1.100KT.18RC	0.2 – 1.3 L/min	9.8 ft. water	58 psig	PP	PTFE	FFKM <sup>2</sup>	RC
NF 1.100TT.18RC	0.2 – 1.3 L/min	9.8 ft. water	58 psig	PVDF	PTFE	FFKM <sup>2</sup>	RC
NF 1.100FT.18RC	0.2 – 1.3 L/min	9.8 ft. water	58 psig	PTFE	PTFE	FFKM <sup>2</sup>	RC
NF 300KT.18RC	0.5 – 3.0 L/min	9.8 ft. water	15 psig	PP	PTFE	FFKM <sup>2</sup>	RC
NF 300TT.18RC	0.5 – 3.0 L/min	9.8 ft. water	15 psig	PVDF	PTFE	FFKM <sup>2</sup>	RC
NF 300FT.18RC	0.5 – 3.0 L/min	9.8 ft. water	15 psig	PTFE	PTFE	FFKM <sup>2</sup>	RC
NF 1.300KT.18RC	0.5 – 3.0 L/min	9.8 ft. water	58 psig	PP	PTFE	FFKM <sup>2</sup>	RC
NF 1.300TT.18RC	0.5 – 3.0 L/min	9.8 ft. water	58 psig	PVDF	PTFE	FFKM <sup>2</sup>	RC
NF 1.300FT.18RC	0.5 – 3.0 L/min	9.8 ft. water	58 psig	PTFE	PTFE	FFKM <sup>2</sup>	RC

For more information, see pages 7 – 8 for LIQUIPORT® pumps.

<sup>1</sup> FFKM Kalrez®

<sup>2</sup> FFKM Simriz®

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