

FL 10

DIAPHRAGM LIQUID PUMP WITH LINEAR DRIVE



FL 10 DC-P



FL 10 AC

Your benefits

- Valve function when switched off prevents uncontrolled flow of the media
- Long lifetime and maintenance-free
- IP 65 protection class for operation in harsh environments
- Integrated overpressure limit
- Good controllability of the flow rate by means of PFM signal
- Clean and gentle transportation of sensitive liquids
- Self-priming and dry-run safe

Possible areas of application

- Analytical engineering
- Laboratory technology
- Cleaning industry
- Inkjet printing
- Medical technology
- Water treatment

BASIC TYPES	FL 10 DC-P		FL 10 AC		FL 10 AC	
Voltage	24 V		230 V / 50 Hz		115 V / 60 Hz	
Material designs	KP	KT	KP	KT	KP	KT
Valves	EPDM	FFKM	EPDM	FFKM	EPDM	FFKM
Diaphragm	PTFE					
Pump head	PP					
Performance data						
Flow rate	100 ± 10 ml/min		100 ± 10 ml/min		90 ± 10 ml/min	
Suction height	2 mWg		2 mWg		1.5 mWg	
Maximum working pressure	1 bar					
Flow tight	0.5 bar					
Backflow tight	2 bar					
Overpressure limit	2 bar					
Operating conditions						
Permissible ambient temperature	- 5 to 60 °C					
Permissible media temperature	5 to 80 °C					
Permissible viscosity	100 cSt					
Protection class	IP 65					
Electrical basic data						
	FL 10 DC-P		FL 10 AC		FL 10 AC	
Operating voltage U	24 V		230 V / 50 Hz		115 V / 60 Hz	
Power consumption P	7.7 W		7.1 W		5.8 W	
Max. current consumption I_{peak}	0.87 A		0.103 A		0.182 A	
Average current consumption I_{rms} / I_{mean}	0.47 A / 0.32 A		0.055 A / 0.039 A		0.094 A / 0.067 A	

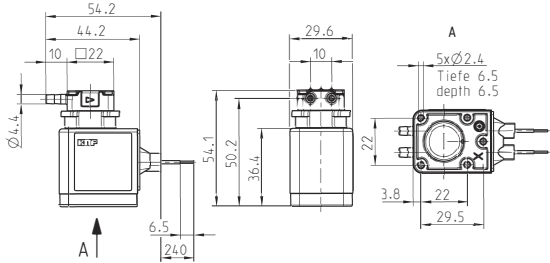
FL 10 DC-P

PERFORMANCE RANGE

Basic type	Flow rate	Suction height	Max. working pressure
FL 10 DC-P	100 ± 10 ml/min	2 mWg	1 bar

FL 10 DC-P

Recommendation fastening screws:
self-cutting Ø 3 mm



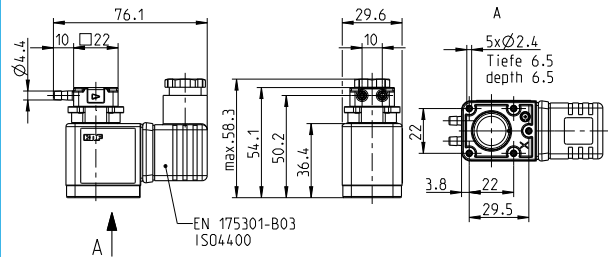
FL 10 AC

PERFORMANCE RANGE

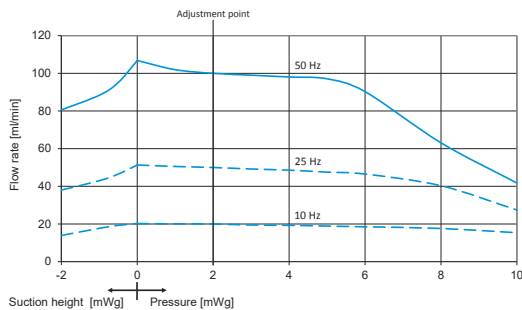
Basic type	Flow rate	Suction height	Max. working pressure
FL 10 AC 230 V	100 ± 10 ml/min	2 mWg	1 bar
FL 10 AC 115 V	90 ± 10 ml/min	1.5 mWg	1 bar

FL 10 AC

Recommendation fastening screws:
self-cutting Ø 3 mm

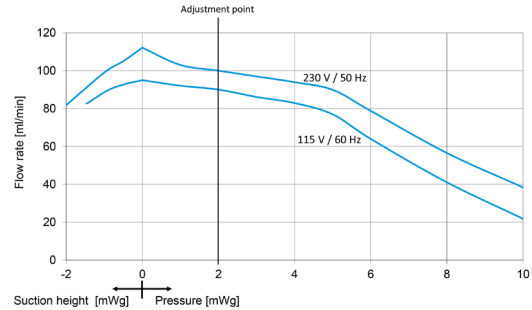


FL 10 DC-P FLOW CURVE



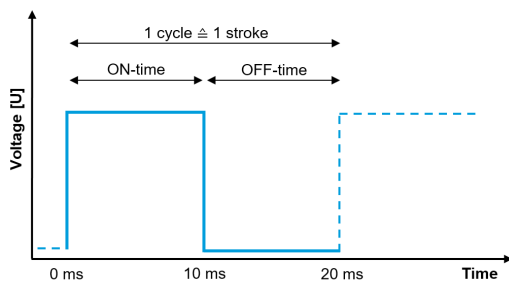
The line represents a typical mean value. The performance depends on the operating conditions and system parameters.

FL 10 AC FLOW CURVE



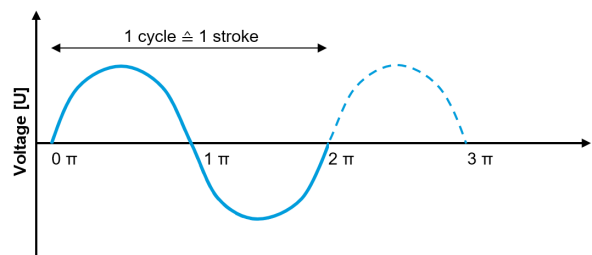
The line represents a typical mean value. The performance depends on the operating conditions and system parameters.

FL 10 DC-P ACTUATION (EXTERNAL)



Operation with PFM actuation.
DC actuation without control electronics is not permitted.

FL 10 AC ACTUATION (EXTERNAL)



Operation with AC actuation.
An integrated blocking diode in the connector enables operation at 50/60 Hz.

Actuation parameters	FL 10 DC-P
Operating voltage U	24 V
Input signal	PFM (Pulse Frequency Modulation)
Operating frequency	0-50 Hz
ON-time	10 ms
OFF-time	≥ 10 ms
Min. dielectric strength of external circuit breaker	70 V
Continuous current supply	Not permissible
Electronic specifications	FL 10 DC-P
Strands	2 x AWG22 PTFE, not polarized
Insulation material class	H (180 °C)
Protective function	Overtoltage protection against counter-induction of the coil integrated, no additional freewheeling diode permissible

Actuation parameters	FL 10 AC	
Operating voltage U	230 V / 50 Hz	115 V / 60 Hz
Input signal	AC Sinus	AC Sinus
Operating frequency	50 Hz	60 Hz
Min. dielectric strength of external circuit breaker	900 V	500 V
Electronic specifications	FL 10 AC	
Connector	EN175301-803 ISO4400 with integrated blocking diode, suitable for cables with Ø 5-7 mm	
Connection terminal contacts	③ : L1 ② : N ⊕ : PE	
Insulation material class	H (180 °C)	
Protective function	Overtoltage protection against counter-induction of the coil integrated, no additional freewheeling diode permissible	

OPTIONS, ACCESSORIES

The standard pumps can be customized and equipped with accessories on request. This can include the following:

- Voltage and frequency options
- Flow and pressure performance
- Hydraulic connections
- Electrical connections
- Materials
- Fastening elements
- Pulsation damper
- Filter
- Tubing
- Etc.

Important notes

The values in this data sheet have been measured under KNF testing conditions and are indicative values for the standard models. Other values may apply for customer specific products. The performance of the pump depends on the customer's application and the parameters of the system. Actual values can therefore only be determined in the customer's application.

KNF reserves the right to alter the product and the related documentation without prior notice to the customer.

Before operating the pump, read the specific installation instructions and pay attention to the safety precautions.

