

# FL 10

## DIAPHRAGM LIQUID PUMP WITH SOLENOID DRIVE



FL 10 DC-P



FL 10 AC

### Benefits

- Leak-tight valve function prevents uncontrolled flow of media
- High repeatability
- Long lifetime (over 10,000 hours/1.8 billion strokes)
- Durable and maintenance-free
- IP 65 protection class for dust and low pressure spray
- 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

### Ideal Markets Include:

- Laboratory
- Cleaning industry
- Inkjet printing
- Medical
- Water analysis

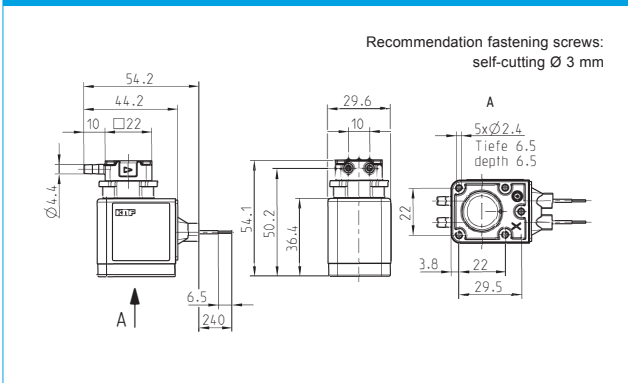
BASIC TYPES	FL 10 DC-P		FL 10 AC		FL 10 AC	
<b>Voltage</b>	24 V		230 V / 50 Hz		115 V / 60 Hz	
<b>Material designs</b>	KP	KT	KP	KT	KP	KT
Valves	EPDM	FFKM	EPDM	FFKM	EPDM	FFKM
Diaphragm	PTFE					
Pump head	PP					
<b>Performance data</b>						
Flow rate	100 ± 10 mL/min		100 ± 10 mL/min		90 ± 10 mL/min	
Suction height	5.8 inHg		5.8 inHg		4.3 inHg	
Maximum working pressure	14.5 psig					
Flow tight	7.25 psig					
Backflow tight	29 psig					
Overpressure limit	29 psig					
<b>Operating conditions</b>						
Permissible ambient temperature	- 5 to 60 °C					
Permissible media temperature	5 to 80 °C					
Permissible viscosity	100 cSt					
Protection class	IP 65					
<b>Electrical basic data</b>						
	FL 10 DC-P		FL 10 AC		FL 10 AC	
Operating voltage U	24 V		230 V / 50 Hz		115 V / 60Hz	
Power consumption P	7.7 W		7.1 W		5.8 W	
Max. current consumption I <sub>peak</sub>	0.87 A		0.103 A		0.182 A	
Average current consumption I <sub>rms</sub> / I <sub>mean</sub>	0.47 A / 0.32 A		0.055 A / 0.039 A		0.094 A / 0.067 A	

# FL 10 DC-P

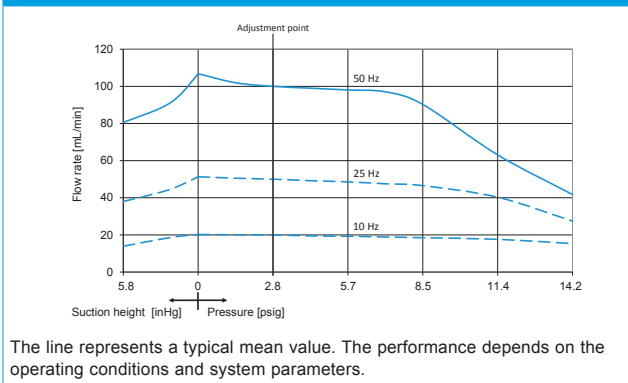
## PERFORMANCE RANGE

Basic type	Flow rate	Suction height	Max. working pressure
FL 10 DC-P	100 ± 10 mL/min	5.8 inHg	14.5 psig

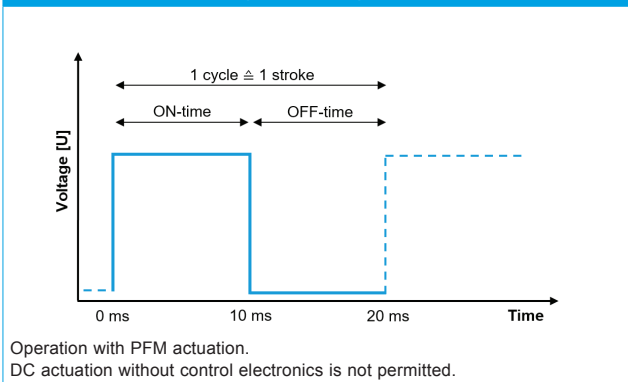
## FL 10 DC-P



## FL 10 DC-P FLOW CURVE



## FL 10 DC-P ACTUATION (EXTERNAL)



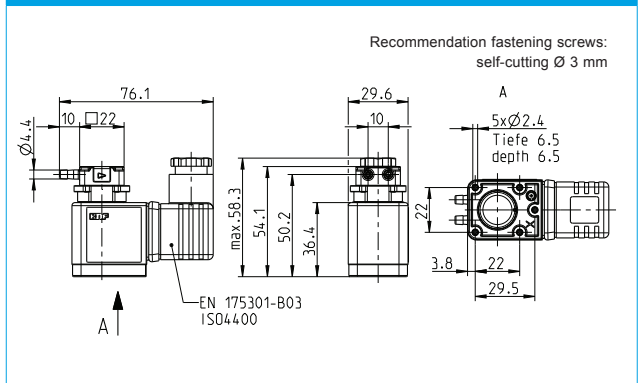
Actuation parameters	FL 10 DC-P
Operating voltage U	24 V
Input signal	PFM (Pulse Frequency Modulation)
Operating frequency	0-50 Hz
ON-time	10 ms
OFF-time	≥ 10 ms
Min. dielectric strength of external circuit breaker	70 V
Continuous current supply	Not permissible
Electronic specifications	FL 10 DC-P
Strands	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

# FL 10 AC

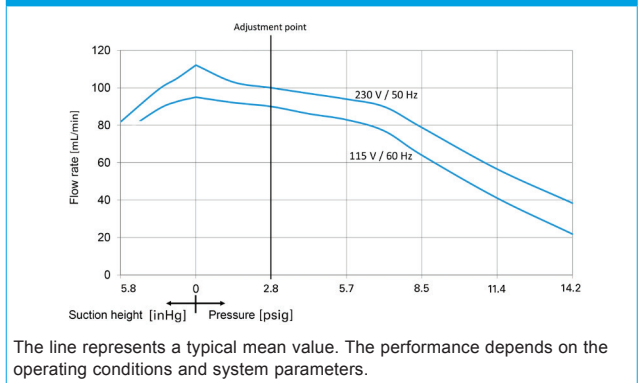
## PERFORMANCE RANGE

Basic type	Flow rate	Suction height	Max. working pressure
FL 10 AC 230 V	100 ± 10 mL/min	5.8 inHg	14.5 psig
FL 10 AC 115 V	90 ± 10 mL/min	4.3 inHg	14.5 psig

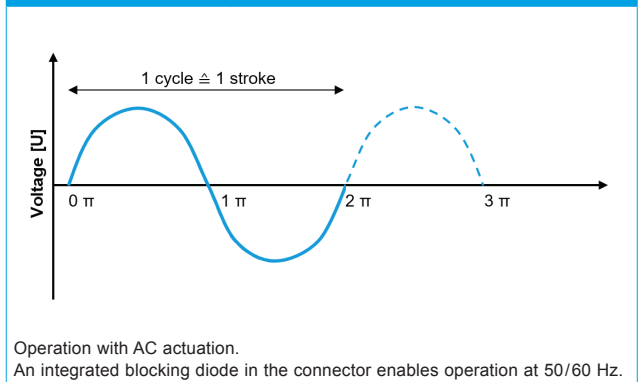
## FL 10 AC



## FL 10 AC FLOW CURVE



## FL 10 AC ACTUATION (EXTERNAL)



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.

