Small Diaphragm Liquid Pump

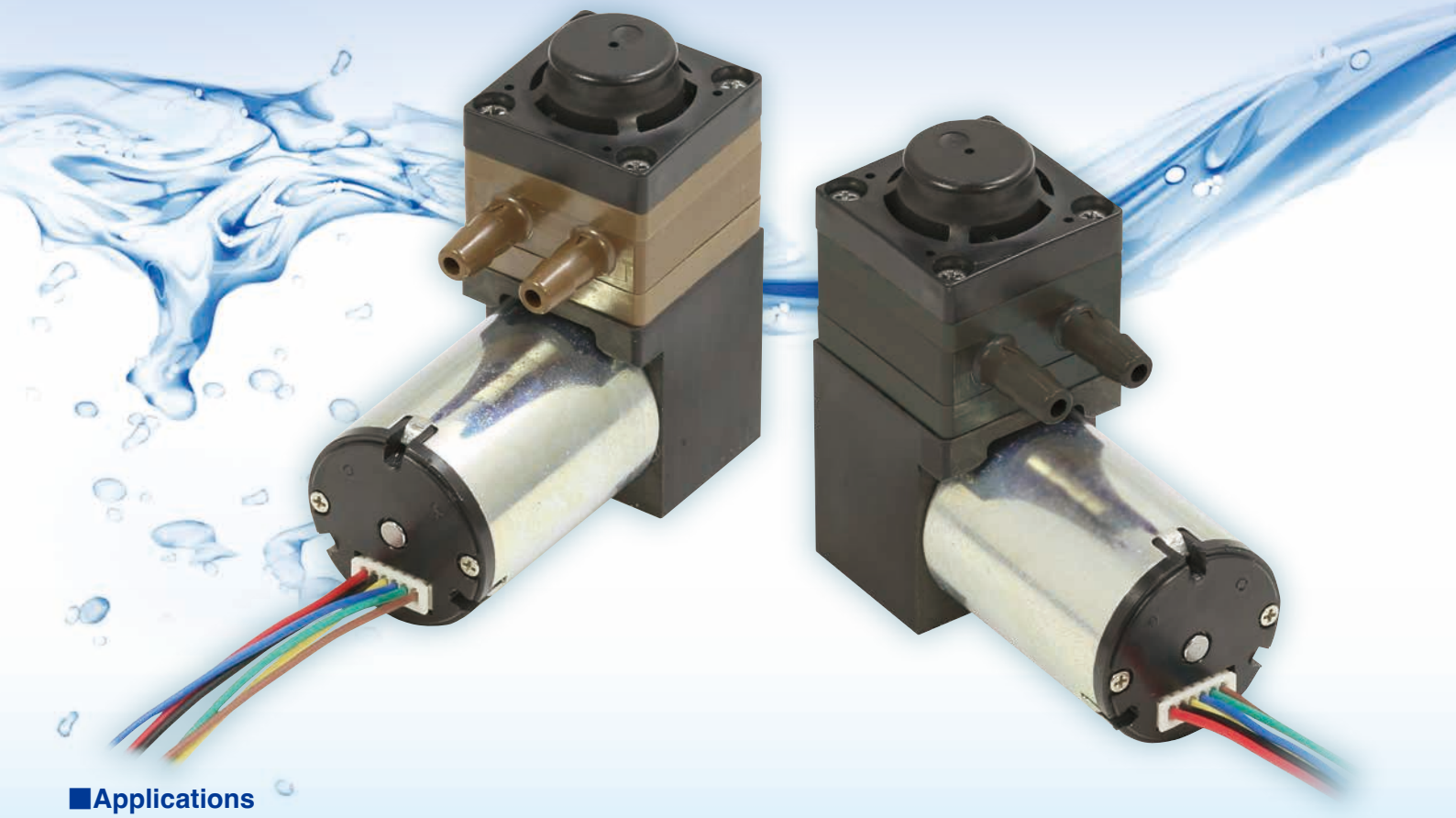
Model DPE-100BLC
DPE-200BLC

DC Diaphragm | Brushless DC Motor | Liquid Pump

Ideal for transporting a small amount of chemical liquids precisely

Built-in brushless DC motor with PWM control

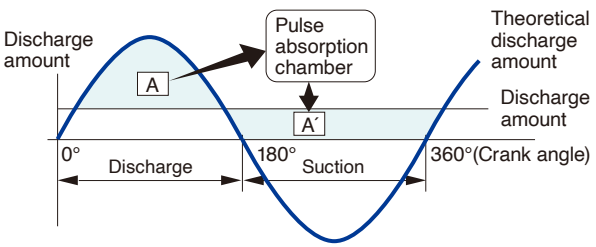
YouTube



■Applications

- Liquid transport for analytical instruments
  e.g. medical, food, water treatment and environment measurement
- Liquid transport within filtration, sampling, washers and sterilizers
- Ink transport within industrial ink-jet printers

■Pulse Absorption Mechanism



- The cause of pulsation (A) is taken into the pulse absorption chamber and discharged at the time of suction (A') to reduce pulse.
- Pulsation: Vibration due to change in pressure and flow rate

PWM controllable

For various kinds of liquids

Built-in pulse absorption mechanism

Long lifetime 6000 hours

Self-priming type operable without load

CE UKCA

LINEAR

Small Diaphragm Liquid Pump

DPE-100BLC / DPE-200BLC

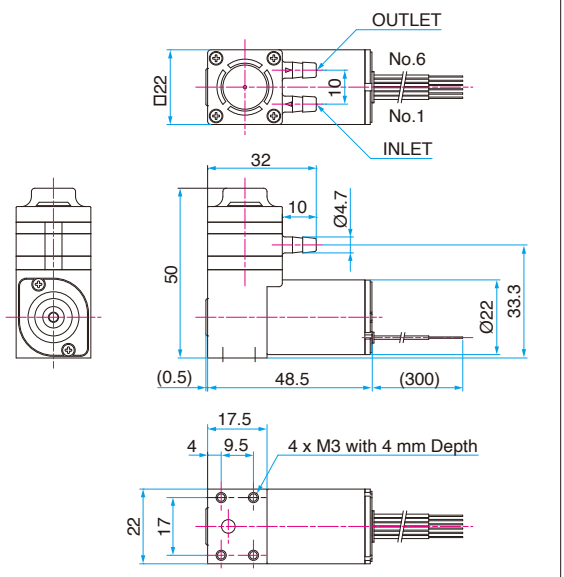
Specifications

Model	DPE-100BLC	DPE-200BLC
Rated Voltage	24 V DC	
Flow Rate*1	100 mL/min	200 mL/min
Working Pressure Range	0 to 100 kPa {0 to 1 kgf/cm^2}	
Maximum Pressure*2	300 kPa {3 kgf/cm^2}	
Maximum Current	90 mA	140 mA
Duty Cycle	Continuous	
Rated Performance (MTTF)	6000 hours	
Self-Priming Pressure*1	10 kPa {75 mmHg}	20 kPa {150 mmHg}
Inlet	4.7 mm O.D. hose barb	
Outlet	4.7 mm O.D. hose barb	
Insulation Classification	Class E equivalent	
Mounting Dimensions	9.5(L) × 17(W) mm	
Weight	80 g	

*1 When the check valve is hardened due to low liquid temperature, self-priming performance and flow rate will go down.
*2 The unit cannot be restarted with flow passage closed. It cannot be used at the maximum pressure.

External Dimensions

(Unit: mm)



Condition of Use

Operating Ambient Temperature	5 to 40°C
Operating Ambient Humidity	30 to 85%
Operating Fluid Temperature	5 to 50°C

Connection Table

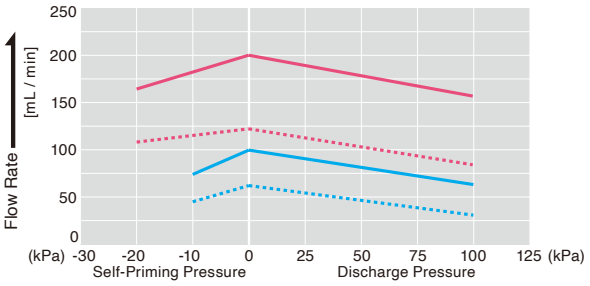
		Power Source		Control Signal			
Circuit No.		1	2	3	4	5	6
Cord Color		RED	BLACK	YELLOW	BLUE	GREEN	BROWN
Function		V+	V-	Pulse	PWM or voltage input	Voltage control	DC 5V output
Selection of connection	With no control	ON			ON*1		ON*1
	PWM control	ON			ON*2		
	Voltage control	ON			ON*3	ON*3	ON*3
Cord Size		AWG26		AWG28			
Cord UL Style		UL1061					

*1 For non-control (Duty cycle: 100%) drive, short-circuit pins 4 and 6.
*2 For PWM control drive, keep pin 5 in an open state and input PWM signal (Duty cycle: 0 to 100%, 2 to 5 V DC, and recommended frequency 15 to 25 kHz) to pin 4.
*3 For analog voltage control drive, short-circuit pins 5 and 6 and apply the voltage (0 to 5 V DC and variable range 0.6 to 3.2 V DC) to pin 4.
・Take noise countermeasures for the signal wire if necessary.
・Please cut the unnecessary lead wires so that there is no trouble in operating the unit.

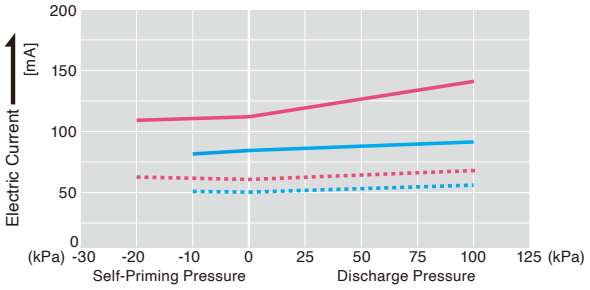
Flow & Electric Characteristics

DPE-100BLC — Duty 100%
DPE-200BLC ····· Duty 60%

●Flow Characteristics [Conditions] Input power: 24 V DC Fluid: Water at 25°C



●Current Characteristics



*The characteristics charts are for reference only and not guaranteed.
*The actual number of the motor rotation depends on the power supply voltage and load conditions of the pump.Examine the variable state of the pump output under the conditions of actual use.

Material of Wetted Parts and Applicable Fluid

Model	Material of wetted parts					Example of suitable chemical liquid*	Example of unsuitable chemical liquid
	Cylinder Head	Head Cover	Diaphragm	Valve	O-ring		
DPE-100BLC-2E DPE-200BLC-2E	PA Polyamide(Nylon)		PTFE Polytetrafluoroethylene	EPDM Ethylene-propylene rubber		Ammonia water, Citric acid, Caustic soda, Ethanol, Caustic potash	Mineral oil, Trichloroethylene, Benzaldehyde, Carbon tetrachloride, Toluene
DPE-100BLC-7G DPE-200BLC-7G	PPS Polyphenylene sulfide			FKM Fluoro rubber		Ethanol, Carbon tetrachloride, Trichloroethylene, Xylene, Silicone oil	Acetone, Chlorosulfonic acid, Formalin, Ammonia water, Glacial acetic acid
DPE-100BLC-7P DPE-200BLC-7P				FFKM Perfluoroelastomer		Ethanol, Glacial acetic acid, Methyl ethyl ketone, Chloroform, Benzene	Chlorosulfonic acid, CFC 112, Fluorine oil, CFC 113

*This chart is for reference only. Please confirm under the operating conditions before use.

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