

BOXER

9K & 9QQ Series Peristaltic Pumps

DC Gear or Stepper Motor, Liquid Flow to 200 ml/min

DESCRIPTION

The Boxer 9K & 9QQ compact peristaltic pump utilizes a three, four or six roller system for precise delivery of liquids to 200 ml/min. dependent on tube size and motor selected. 9QQ models incorporate a unique floating saddle to enhance tube life and/or limit pressure.

Model 9K & 9QQ are offered with a choice of four and five tube diameters respectively and four tube materials as well as three roller configurations.

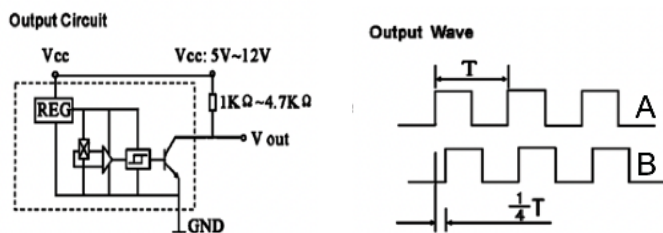
A unique hinged lid allows for quick removal of cover and tubing for fast and easy tube replacement.

DC & Stepper motors offer the versatility of finite speed control.

FEATURES

- Cost Effective & Extremely Versatile
- Flow Rates 0.4 ml to 200 ml/min
- Continuous Tube or Tube Sets
- Multi-channel Option Available
- DC Gear & Stepper Motors

BACK SHAFT ENCODER



Shaft Encoder Pin Assignments			
Motor	-	Hall Sensor	Ground
Motor	+	Hall Sensor A	V out
Hall Sensor	Vcc	Hall Sensor B	V out



SPECIFICATIONS

MOTOR

DC Gear Motor	12 VDC or 24 VDC
DC Gear Motor RPM	12 V- 116, 260 or 520 24 V- 33/107, 315 or 520
DC Motor Life	>2000 hours
Stepper Motor	NEMA 14, 24 VDC
Stepper Motor RPM	to 800 rpm dependent on tube size and number of rollers

GENERAL

Max. Pressure	1 bar (29 PSI)
Max. Vacuum	-950 mbar (28.1 inches Hg)
Max Ambient Temp	60oC

FLOWDATA

1 mm ID Tube	48/45/35 µl per rev. (3/4/6 rollers)
2 mm ID Tube	160/148/106 µl per rev. (3/4/6 rollers)
3 mm ID Tube	381/325/191 µl per rev. (3/4/6 rollers)
For stepper motor version use type 9QQ only for 3 mm ID tube size	
3.5 mm ID Tube (QQ stepper motor only)	381/325/191 µl per rev. (3/4/6 rollers)
Tube Materials	Silicone, Lagoprene, PHI or ED-Plex Weight: 130g
Options	Back shaft motor encoder, 10 pulses per motor revolution (consider gearbox ratio for pulses per pump rotor revolution)

ORDERING INFORMATION

1) Select pump model 2) Select tubing model 3) Select any additional accessories

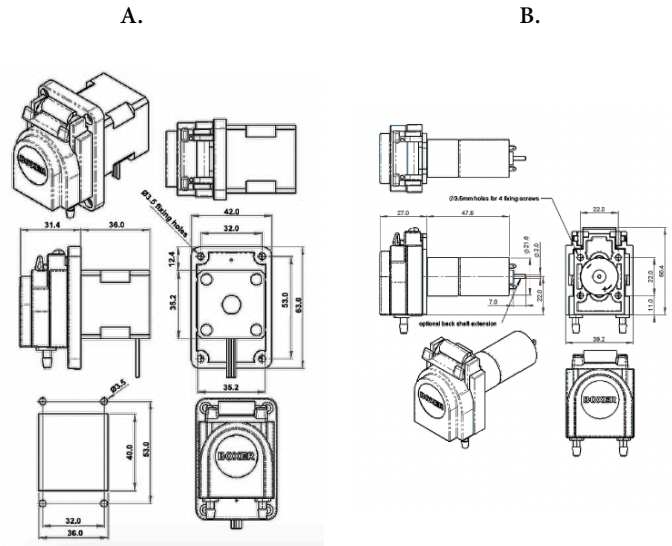
9K Models	9QQ Models	Number of Rollers	Nom. Voltage (VDC)	RPM
Pump Head, DC Motor & Gearbox				
9010.000	9010.930	3	12	116
9017.000	9017.930	3	12	260
9007.000	9007.930	3	12	520
9016.000	9016.930	3	24	33
9012.000	9012.930	3	24	107
9008.000	9008.930	3	24	315
9015.000	9015.930	3	24	520
Pump Head & Stepper Motor				
9600.003	9600.930	3	24	Max. 800
9600.004	9600.940	4	24	Max. 800
9600.006	9600.960	6	24	Max. 800

Model	Tubing/Accessories
9000.504	Silicone ID Ø 1.0 mm with PP connectors
9000.505	Silicone ID Ø 2.0 mm with PP connectors
9000.510	Silicone ID Ø 3.0 mm with PP connectors
9000.507	Silicone ID Ø 1.0 mm x 1 m (tube clips required)
9000.509	Silicone ID Ø 2.0 mm x 1 m (tube clips required)
9000.508	Silicone ID Ø 3.0 mm x 1 m (tube clips required)
9000.512	Lagoprene ID Ø 1.0 mm with PP connectors
9000.513	Lagoprene ID Ø 2.0 mm with PP connectors
9000.558	Lagoprene ID Ø 3.0 mm with PP connectors
9000.521	Lagoprene ID Ø 1.0 mm x 1 m (tube clips required)
9000.506	Lagoprene ID Ø 2.0 mm x 1 m (tube clips required)
9000.564	Lagoprene ID Ø 3.0 mm x 1 m (tube clips required)
*9000.567	PHI ID Ø 0.5 mm with PP connectors

Model	Tubing/Accessories
9000.531	PHI ID Ø 1.0 mm with PP connectors
9000.532	PHI ID Ø 2.0 mm with PP connectors
9000.565	PHI ID Ø 3.0 mm with PP connectors
*9000.566	PHI ID Ø 0.5 mm x 1 m (tube clips required)
9000.535	PHI ID Ø 1.0 mm x 1 m (tube clips required)
9000.536	PHI ID Ø 2.0 mm x 1 m (tube clips required)
9000.537	PHI ID Ø 3.0 mm x 1 m (tube clips required)
9000.525	ED-Plex ID Ø 1.0 mm with PP connectors
9000.526	ED-Plex ID Ø 2.0 mm with PP connectors
9000.520	ED-Plex ID Ø 3.0 mm with PP connectors
9000.522	ED-Plex ID Ø 1.0 mm x 1 m (tube clips required)
9000.523	ED-Plex ID Ø 2.0 mm x 1 m (tube clips required)
*9000.567	PHI ID Ø 0.5 mm with PP connectors
9000.524	ED-Plex ID Ø 3.0 mm x 1 m (tube clips required)
9000.601	Tube clip for 1mm continuous tube, set of 2
9000.610	Tube clip for 1mm continuous tube x 2 channel, set of 2
9000.602	Tube clip for 2mm continuous tube, set of 2
9000.603	Tube clip for 3 and 3.5 mm continuous tube, set of 2
9000.613	9K Mounting Bracket (DC Gear Motor Only)
6900.001	Remote Stepper Motor Control Board, USB Interface
6900.003	UIM24302B Integrated Stepper Motor Cotroller
	* 0.5 mm ID tubes for use with Model 9QQ only

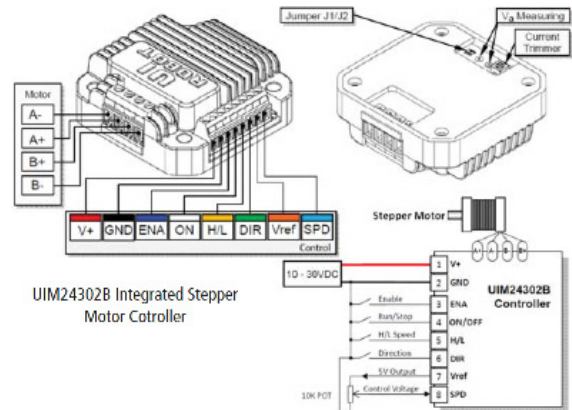
A. DIMENSIONS (MM) WITH STEPPER MOTOR

B. DIMENSIONS (MM) WITH DC MOTOR



NEMA 14 STEPPER MOTOR CONTROLLERS

ROTATIONAL SPEEDS TO 780 RPM



UIM24302B stepper motor controller is a microprocessor embedded, voltage control, miniature stepper motor controller. With the UIM24302B, the motor speed can be controlled by an analog voltage via an external potentiometer or an external voltage. Run/stop, direction, high/low speed range and, enable/disable can be controlled simply by shorting the corresponding terminal to the ground.

UIM24302B can provide 0 - 2A adjustable phase current. Their mixed-decay current control reduces the back-EMF effect under high motor speed and improves the performance.

UIM24302B is mounted remote to the NEMA 14 series stepper motor. The enclosure is made of die-cast aluminum which provides a rugged durable protection and improves the heat dissipation.

Model 6900.001 Stepper Motor Control Board

The optional CSD board (Controlled Stepper Drive) is a flexible and powerful controller for accurate dispensing. USB interface and intuitive menu driven programming software allow for easy programming of up to 10 operating pump protocols to characterize the movement of a pump.