## BOXER

## Boxer 3KL Series Diaphragm Pump Liquid

Liquid Flow Rate to $1.5 \mathrm{l} / \mathrm{m}$

## DESCRIPTION

The 3 KL series is a robust and versatile single headed liquid diaphragm pump. Highest quality connection rod and motor bearings combined with slow speed contribute to maximum operational life and lowest power consumption. This series is offered with a quality brushed and versatile brushless motor. Like all other pumps in the Boxer range, this series can be customized to specific OEM requirements.

## FEATURES

- BLDC versions at same costs as brushed DC
- approx. 1500 rpm with speed control 0 to 5 V
- speed feedback signal (1 pulse per revolution) output
- single, double, and quad heads
- slow running


## FLOW CURVE

At max recommended speed (Speed Input at 4.5 V DC / 1500 rpm )



## SPECIFICATIONS

GENERAL

| Free Flow | $1.5 \mathrm{l} / \mathrm{m}$ |
| :--- | :--- |
| Max Pressure | 2.0 Bar (29 PSI) |
| Max Vacuum | -800 mbar Brushed, -600 mbar Brushless |
| Motor | 12 \& 24 Volt; DC \& BLDC |
| Housing Material | PPS (Polyphenylene Sulphide) |
| Diaphragm Material | EPDM (other materials available) |
| Valve Material | EPDM/Silicone (other materials available) |
| Tubing Connection | Suitable for 6 mm ID tubing |
| Eccentric | $0.8 \& 1.0 \mathrm{~mm}$ |
| Max. Ambient Temp | $50^{\circ} \mathrm{C}$ |
| Max Media Temp | $100^{\circ} \mathrm{C}$ |
| Weight | 385 g |

## BRUSHED DIMENSIONS



WIRING DETAILS / SPEED CONTROL

| Wire |  |  |
| :--- | :--- | :--- |
| 1 | Red | 24 V DC |
| 2 | Black | GND |
| 3 | Green | Speed control input: 0.5 to 4.5 V DC (or 5.0 V PWM with min. 15 kHz signal) |
|  |  | Speed range: 167 to 1500 rpm |
|  |  | Not recommended to run below $400 \mathrm{rpm} \mathrm{(1.2} \mathrm{V)}$ |
|  |  | Green wire can be connected to +24 V supply for full speed (1500 rpm) operation |
|  |  | Resolution: 10 bit |
| 4 | Yellow | Frequency (rpm) output, 1 pulse $(+5.0 \mathrm{~V})$ per revolution with $50 \%$ on time |

ORDERING INFORMATION

| Model | Motor Type | Nominal Motor Voltage (VDC) |
| :--- | :--- | :--- |
| 3211.650 | Brushless | 12 |
| 3211.660 | Brushless | 24 |
| 3111.129 | Brushed | 12 |
| 3111.252 | Brushed | 24 |

