Masterflex® B/T®
MasterSense™
BioPharma Pump

Achieve high flow rates, up to 42 LPM, in your biopharma process

- 316 stainless steel housing is IP66 rated for use in washdown environments
- Intuitive touch-screen interface—quick and easy to program, even with gloves on
- Options for connectivity and control include MasterflexLive®, EtherNet/IP®, Profibus, and analog signal—one pump has it all!
- Ideal for high-volume filling, transfer, and dispensing
- Operational modes include continuous run, volume dispense, and time dispense
- Save and recall up to 50 commonly used protocols, each with a unique name
- Over-the-air firmware updates let you take full advantage of future improvements in pump features and functionality
- Three-level user access gives you the option of controlling who can operate the pump and at what level
- Rapid-Load® pump head occlusion mechanism slides occlusion bed out of the way for easy tube loading and improved tubing life
PerfectPosition® tubing feature retention marks to indicate the best placement of the tubing within the pump head.

Easily know when the loaded tubing is optimally calibrated.

Specifications

Display
5” capacitive TFT/RGB touch screen with in-plane switching (wide viewing angle); 800 x 480 pixels

External control - input
0 to 20 mA, 20 to 0 mA, 4 to 20 mA, 20 to 4 mA, 0 to 10 V, 10 to 0 V, 5 to 0 V, 5 to 5 V, Start/stop, Direction (CW/CCW), Prime via contact closure

External control - output
0 to 20 mA, 20 to 0 mA, 4 to 20 mA, 20 to 4 mA, 0 to 10 V, 10 to 0 V, 5 to 0 V, 5 to 5 V, Tach output (open collector), Motor running, Open head, Local/remote, General alarm

Motor
Continuous duty, TENN, BLDC, microprocessor-based PWM; reversible; 370 W (0.5 hp)

Maximum torque
1130 N cm (1600 oz-in) starting; 1017 N cm (1440 oz-in) running

Housing materials
316 stainless steel housing, stainless steel chassis, stainless steel bezel

Pump head materials
Powder-coat carbon steel and cast aluminum, stainless steel, polycarbonate, Nylatron® rollers

Enclosure rating
IP66

Agency listings
UL, cUL, CE, DLS

Dimensions (L x W x H)
62.2 x 40.1 x 47.8 cm (24 1/2” x 15 13/16” x 18 13/16”)

Shipping weight
54.5 kg (120 lb)

Power
90 to 260 VAC, 50/60 Hz

Ordering Information

Flow range, LPM (GPM) | Drive rpm | Speed control (resolution) | Open-head sensor | Pump head | Connectivity | Item number
---|---|---|---|---|---|---
0.65 to 18.9 (0.17 to 5) | 1.3 to 42 (0.3 to 11.1) | ±0.1% | Yes | B/T Rapid-Load® (integrated) | EtherNet/IP, Profibus, and MasterflexLive | MK-77112-10

MK-07575-80 Cable assembly for remote control; 7.6 m (25 ft) cable with stripped wire ends

Masterflex PerfectPosition® Pump Tubing

<table>
<thead>
<tr>
<th>Pump tubing formulations</th>
<th>PerfectPosition pump tubing size</th>
</tr>
</thead>
<tbody>
<tr>
<td>B/T 87</td>
<td>B/T 91</td>
</tr>
<tr>
<td>Puri-Flex®</td>
<td>3.0 m (10 ft) per pack</td>
</tr>
<tr>
<td>Silicone (platinum-cured)</td>
<td>3.0 m (10 ft) per pack</td>
</tr>
<tr>
<td>BioPharma Plus silicone (platinum-cured)</td>
<td>3.0 m (10 ft) per pack</td>
</tr>
<tr>
<td>C-Flex®</td>
<td>3.0 m (10 ft) per pack</td>
</tr>
<tr>
<td>PharMed® BPT</td>
<td>3.0 m (10 ft) per pack</td>
</tr>
<tr>
<td>PharmaPure®</td>
<td>3.0 m (10 ft) per pack</td>
</tr>
<tr>
<td>Chem-Durance® Bio</td>
<td>3.0 m (10 ft) per pack</td>
</tr>
<tr>
<td>Tygon® E-LFL</td>
<td>3.0 m (10 ft) per pack</td>
</tr>
</tbody>
</table>

PerfectPosition® Pump Tubing Specifications

Tubing cross sections

<table>
<thead>
<tr>
<th>Pump tubing size</th>
<th>B/T 87</th>
<th>B/T 91</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside diameter (nominal)</td>
<td>12.7 mm (0.5”)</td>
<td>19.0 mm (0.75”)</td>
</tr>
<tr>
<td>Hose barb size</td>
<td>12.7 mm (1⁄2”)</td>
<td>19.0 mm (3⁄4”)</td>
</tr>
<tr>
<td>Flow range (approximate)(^1) with 11 to 321 rpm drive</td>
<td>0.65 to 18.9 LPM (0.17 to 5.0 GPM)</td>
<td>1.3 to 42 LPM (0.3 to 11.1 GPM)</td>
</tr>
<tr>
<td>Maximum pressure(^2)</td>
<td>2.4 bar (35 psi)</td>
<td>2.06 bar (30 psi)</td>
</tr>
<tr>
<td>Maximum vacuum(^2)</td>
<td>660 mm Hg (26” Hg)</td>
<td>5.8 m H2O (20 ft H2O)</td>
</tr>
</tbody>
</table>

\(^1\) Determined under the following conditions: 0 bar (0 psi) at inlet; 0.03 bar (0.5 psi) at outlet; water temperature at 22°C (72°F). \(^2\) Actual performance varies depending on tubing formulation—values shown are for firm tubing.

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