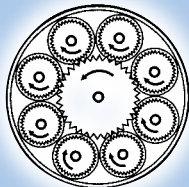


# Ismatec® IP/IP-N and IPC/IPC-N Pumps



## Planetary Drive System

With the planetary drive system each roller is directly driven by the sun wheel. This prevents axial push-pull friction on the tubing.



Result: increased service-life of the tubing, lower pulsation, high repeatability.

## Low-flow, high-accuracy pumps provide repeatable results

- Planetary drive system for less pulsation and longer tubing life
- Smooth rotation and accurate liquid flow provided by eight stainless steel rotors
- Standard versions are capable of flow rates up to 44 mL/min, while -N versions are geared down to limit maximum flow rate to 11 mL/min
- Simple to use—automatic occlusion cartridges provide reproducible results
- Install cartridges in one direction for low pulsation; in opposite direction for higher counterpressure

## IP and IP-N Models

Analog inputs allow you to remotely control speed; TTL contact closure provides start/stop, rotation direction, and autostart control. Monitor speed via analog output.

**Remote control capabilities:** 0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA for speed control, start/stop, reverse direction, and autostart via contact closure (DB15 female); foot switch (three-pin DIN port). Dispenser may be attached for DB15 female port.

## IPC and IPC-N Models

In addition to continuous flow, these models also support flow calibration and perform more advanced dispensing techniques including flow rate, time, batches, drip-free, and volume.

**Remote control capabilities:** RS-232 to control all operating functions (DB9 female); 0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA for start/stop and autostart via contact closure (DB15 female); foot switch (three-pin DIN port). Monitor speed via analog output.

# Specifications

**Motor type:** DC motor

**Speed range:**

- All models: 1 to 100%, resolution 0.1%
- IP: 0.4 to 45 rpm, resolution 0.1 rpm
- IP-N: 0.11 to 11.25 rpm, resolution 0.03 rpm
- IPC: 0.4 to 45 rpm, resolution 0.1% or as flow rate
- IPC-N: 0.11 to 11.25 rpm, resolution 0.1% or as flow rate

**Flow rate setting (IPC/IPC-N models only):**

µL/min or mL/min

**Remote control capabilities:**

- All models: analog interface for speed control (0 to 5 V, 0 to 10 V, 0 to 20 mA, 4 to 20 mA), speed output (0 to 10 V or 0 to 11 kHz), start/stop, rotation direction, autostart
- IPC/IPC-N models only: RS-232

**Protection rating:** IP30

**Power consumption:** 30 W

**What's included:** CA Click'n'go™ POM-C cassettes and appropriate adapters for each channel

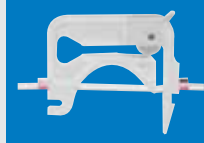
# Flow Ranges (mL/min)



Tubing ID (mm)	IP/IPC	IP-N/IPC-N
0.13	0.0015 to 0.15	0.00039 to 0.039
0.19	0.0026 to 0.26	0.00066 to 0.066
0.25	0.0041 to 0.41	0.0010 to 0.10
0.38	0.0086 to 0.86	0.0022 to 0.22
0.44	0.011 to 1.1	0.0028 to 0.28
0.51	0.015 to 1.5	0.0038 to 0.38
0.57	0.019 to 1.9	0.0046 to 0.46
0.64	0.023 to 2.3	0.0058 to 0.58
0.76	0.032 to 3.2	0.0081 to 0.81
0.89	0.044 to 4.4	0.011 to 1.1
0.95	0.049 to 4.9	0.012 to 1.2
1.02	0.057 to 5.7	0.014 to 1.4
1.09	0.064 to 6.4	0.016 to 1.6
1.14	0.070 to 7.0	0.017 to 1.7
1.22	0.079 to 7.9	0.020 to 2.0
1.30	0.089 to 8.9	0.022 to 2.2
1.42	0.11 to 11	0.026 to 2.6
1.52	0.12 to 12	0.030 to 3.0
1.65	0.14 to 14	0.035 to 3.5
1.75	0.15 to 15	0.039 to 3.9
1.85	0.17 to 17	0.043 to 4.3
2.06	0.21 to 21	0.052 to 5.2
2.29	0.25 to 25	0.063 to 6.3
2.54	0.30 to 30	0.075 to 7.5
2.79	0.35 to 35	0.089 to 8.9
3.17	0.44 to 44	0.11 to 11

## High-Pressure Applications?

Pumps are also available with pressure lever cassettes for applications at elevated differential pressure conditions (>1 bar). Contact our Application Specialists for information.



# Ordering Information



Model	Flow range per channel	No. of channels	No. of rollers	Speed range	Tubing accepted	Size (mm)	Weight (kg)	Catalog number	
								115 VAC, 60 Hz	230 VAC, 50 Hz
<b>IP and IP-N models</b>									
IP 4	0.0015 to 44 mL/min	4	8	0.4 to 45 rpm	Ismatec two-stop tubing	17.5 x 13 x 18	4.6	<a href="#">MK-78011-03</a>	<a href="#">MK-78011-09</a>
IP 8		8				17.5 x 13 x 22	5.1	<a href="#">MK-78011-13</a>	<a href="#">MK-78011-19</a>
IP 12		12				17.5 x 13 x 26	5.8	<a href="#">MK-78011-23</a>	<a href="#">MK-78011-29</a>
IP 16		16				17.5 x 13 x 30	6.5	<a href="#">MK-78010-33</a>	<a href="#">MK-78010-39</a>
IP 24		24				17.5 x 13 x 38	7.9	<a href="#">MK-78011-43</a>	<a href="#">MK-78011-49</a>
IP-N 4	0.00039 to 11 mL/min	4	8	0.11 to 11.25 rpm	Ismatec two-stop tubing	17.5 x 13 x 18	4.6	<a href="#">MK-78011-01</a>	<a href="#">MK-78011-07</a>
IP-N 8		8				17.5 x 13 x 22	5.1	<a href="#">MK-78011-11</a>	<a href="#">MK-78011-17</a>
IP-N 12		12				17.5 x 13 x 26	5.8	<a href="#">MK-78011-21</a>	<a href="#">MK-78011-27</a>
IP-N 16		16				17.5 x 13 x 30	6.5	<a href="#">MK-78011-31</a>	<a href="#">MK-78011-37</a>
IP-N 24		24				17.5 x 13 x 38	7.9	<a href="#">MK-78010-41</a>	<a href="#">MK-78010-47</a>
<b>IPC and IPC-N models with advanced dispensing capability</b>									
IPC 4	0.0015 to 44 mL/min	4	8	0.4 to 45 rpm	Ismatec two-stop tubing	17.5 x 13 x 18	4.6	<a href="#">MK-78001-02</a>	<a href="#">MK-78001-08</a>
IPC 8		8				17.5 x 13 x 22	5.1	<a href="#">MK-78001-12</a>	<a href="#">MK-78001-18</a>
IPC 12		12				17.5 x 13 x 26	5.8	<a href="#">MK-78001-22</a>	<a href="#">MK-78001-28</a>
IPC 16		16				17.5 x 13 x 30	6.5	<a href="#">MK-78001-32</a>	<a href="#">MK-78001-38</a>
IPC 24		24				17.5 x 13 x 38	7.9	<a href="#">MK-78001-42</a>	<a href="#">MK-78001-48</a>
IPC-N 4	0.00039 to 11 mL/min	4	8	0.11 to 11.25 rpm	Ismatec two-stop tubing	17.5 x 13 x 18	4.6	<a href="#">MK-78001-00</a>	<a href="#">MK-78001-06</a>
IPC-N 8		8				17.5 x 13 x 22	5.1	<a href="#">MK-78001-10</a>	<a href="#">MK-78001-16</a>
IPC-N 12		12				17.5 x 13 x 26	5.8	<a href="#">MK-78001-20</a>	<a href="#">MK-78001-26</a>
IPC-N 16		16				17.5 x 13 x 30	6.5	<a href="#">MK-78001-30</a>	<a href="#">MK-78001-36</a>
IPC-N 24		24				17.5 x 13 x 38	7.9	<a href="#">MK-78001-40</a>	<a href="#">MK-78001-46</a>

MK-78003-07 Foot switch for start/stop operation



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