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BVP *Standard*

Economical

- Robust, powerful drive
- Variable speed

Interfaces



- Speed control
(0–5 or 0–10V, 0–20 or 4–20mA)
- Speed output
(0–10 V_{DC} or 0–12 kHz)
- Start/Stop, rotation direction



BVP *Standard*

without dispensing functions

- **3-digit potentiometer for speed setting**
 - More than 14 pump-heads available
 - Bayonet coupling system enables a system change without tools
- Flow rates, channels, rollers and differential pressure depend on the mounted pump-head (see Pages 20 to 25)

BVP *Standard* drive
(pump-heads on Pages 20 to 25)

Specifications

Motor type	DC motor
Speed	2.4 – 240 rpm
Speed setting	1–99.9%, resolution 0.1 % 3-digit potentiometer
Power consumption	100 W
Mains connection	230V _{AC} /50Hz, 115V _{AC} /60Hz adjustable
Protection rating	IP 30
Depth/Width/Height	220 x 155 x 260 mm (without pump-head)
Weight	5.7 kg (without pump-head)

Ordering information

The complete pump system BVP *Standard* consists of:

Drive	ISM 444
Pump-head	Pages 20 to 25
Tubing	Pages 30 to 39
Accessories	Page 61
Foot switch	ISM 891

Applications

With pump-head CA12

Addition of tablet coating solution during pharmaceutical production (pump controlled by external flow-through measuring system)

With pump-head 380

Cross-flow filtration of dyes and suspensions over a number of days for subsequent use of the filtrate in the dyeing industry

MCP *Standard*

Multi-purpose

Saves individual application parameters!

- Robust, powerful drive
- Ideal for dispensing and filling



CE

MCP *Standard* drive
(pump-heads on Pages 20–25)

Interfaces



PC-controllable:
– RS232



- Speed control
(0–5 or 0–10V, 0–20 or 4–20mA)
- Speed output
(0–10 V_{DC} or 0–7.2 kHz)
- Start/Stop, Rotation direction,
Autostart

MCP *Standard*

- **Pre-programmed tube sizes and pump-heads allow you to work with flow rates**
- Membrane key-pad, LED display
- **4 program memories for saving individual application parameters**
- More than 20 pump-heads available
- Bayonet coupling system enables a system change without tools

Flow rates, channels, rollers and differential pressure depend on the pump-head mounted (see Pages 20 to 25)



Dispensing and calibrating
function see Page 5

Specifications

Motor type	DC motor
Speed	1 – 240 rpm
Speed setting	rpm, resolution 0.1 rpm
Flow rate setting	µl/min, ml/min, l/min
Power consumption	100 W
Mains connections	230V _{AC} /50Hz, 115V _{AC} /60Hz adjustable
Protection rating	IP 30
Depth/Width/Height	220 x 155 x 260 mm (without pump-head)
Weight	6.4 kg (without pump-head)

Ordering information

The complete pump system MCP *Standard* consists of:

Drive	ISM 404
Pump-head	Pages 20 to 25
Tubing	Pages 30 to 39
Accessories	Page 61
Foot switch	IS 10039

Applications

With pump-head 360

Filling of pharmaceutical solutions at small production scale (500 to 1000 units) in syrup bottles. Controlled via foot switch.

With PTFE-Tubing pump-head

Used as “trickle funnel”, time-controlled addition of organic solvents during synthesis (small scale pilot plant)

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BVP Process

Washdown

Protection rating of IP 65

- Extremely robust drive
- Microprocessor controlled
- Ideal for applications in a dusty, humid or corrosive environment and in clean room areas (IP 65, dust-tight and protected against water jets)



CE

BVP Process drive
(pump-heads on Pages 20 to 25)

Interfaces



- Speed control
(0–5 or 0–10V, 0–20 or 4–20mA)
- Speed output
(0–10 V_{DC} or 0–7.2 kHz)
- Start/Stop, rotation direction, autostart

BVP Process

without dispensing functions

Flow rates, channels, rollers and differential pressure depend on the mounted pump-head (see Pages 20 to 25)

- **Membrane key-pad for speed setting, LED display**
- **Stainless steel housing**
- More than 20 pump-heads available
- Bayonet coupling system enables a system change without tools

Specifications

Motor type	DC motor
Speed	1 – 240 rpm
Speed setting	rpm, resolution 0.1 rpm
Power consumption	120 W
Mains connection	85–264 V _{AC} / 47–60 Hz
Protection rating	IP 65
Depth/Width/Height	220 x 155 x 260 mm (without pump-head)
Weight	6.9 kg (without pump-head)

Ordering information

The complete pump system BVP Process consists of:

Drive	ISM 920
Pump-head	Pages 20 to 25
Tubing	Pages 30 to 39
Accessories	Page 61
Foot switch	IS10039

Applications

With Easyload® II pump-head
Continuous addition of ink for roller
based printing machine

MCP Process

Programmable

Programs can be carried out on the spot independently of a PC!

Protection rating of IP 65

- Extremely robust drive, suitable for industries
- Ideal for dispensing and filling applications in a dusty, humid or corrosive environment, and in clean room areas (IP 65, dust-tight and protected against water jets)



MCP Process drive
(pump-heads on Pages 20 to 25)

Interfaces



PC controllable:
– RS232



- Speed control
(0–5 or 0–10V, 0–20 or 4–20mA)
- Speed output
(0–10 V_{DC} or 0–7.2 kHz)
- Start/Stop, Rotation direction, Autostart
- 2 universal inputs
- 2 universal outputs

MCP Process

- **Pre-programmed tube sizes and pump-heads allow you to work with flow rates**
 - Stainless steel housing, membrane key-pad, LED display
 - **4 program memories for saving individual application parameters or PC programmed command sequences**
 - More than 20 pump-heads available
 - Bayonet coupling system enables a system change without tools
- Flow rates, channels, rollers and differential pressure depend on the pump-head mounted (see Pages 20 to 25)



Get your free plugin for ProgEdit
(German/English switchable)
see Page 61



Dispensing and calibrating
function see Page 5

Specifications

Motor type	DC motor
Speed	1 – 240 rpm
Speed setting	rpm, resolution 0.1 rpm
Flow rate setting	µl/min, ml/min, l/min
Power consumption	100 W
Mains connection	100–230 V _{AC} / 50 – 60 Hz
Protection rating	IP 65
Depth/Width/Height	220 x 155 x 260 mm (without pump-head)
Weight	6.9 kg (without pump-head)

Ordering information

The complete pump system MCP Process consists of:

Drive	ISM 915
Pump-head	Pages 20 to 25
Tubing	Pages 30 to 39
Accessories	Page 61
Software ProgEdit	free
Foot switch	IS 10039

LabVIEW driver
download for free: www.ismatec.com

Applications

With pump-head Pro 381 and pressure sensor

Pressure controlled sterile filtration of human plasma through a filter plate 0.2 µm. Constant monitoring is no longer necessary thanks to an optical alarm if pre-set pressure is exceeded.

With pump-head MS/CA 4-12 and switching valves

Stabilizing of an electrophysiological test system with Ringer solution and switching to the test solutions without delay at very low flow rates.

Gentle pumping

This pump-head is gentle enough for pumping highly concentrated viable cells



Pro-280 0.49–3700 ml/min

Order No. ISM 785

- Coated aluminum pump-head
- **Can be dismantled for cleaning**
- Self-centering tube-track thanks to concave tube-bed and convex rollers, which lengthens the tube-life
- 2 stainless steel rollers (higher max. flow rate but more pulsation than with 3 rollers)
- For tubing with 1.6 mm wall thickness
- 1.5 bar differential pressure¹

Pro-281 3.6–3100 ml/min

Order No. ISM 793

Same pump-head as Pro-280, but

- For tubing with **2.4 mm wall thickness**
- 2.5 bar differential pressure¹

Flow rates/ Tubing		Model Pro-280		
Tygon®ST R-3603/R-3607	Wall	Tubing	ml/min	
Order No.	(mm)	i.d. (mm)	min.	max.
MF0028	1.6	1.6	0.49	120
MF0030	1.6	3.2	1.9	450
SC0379	1.6	4.8	4.2	1000
MF0031	1.6	6.4	7.2	1700
MF0032	1.6	8.0	11	2600
SC0383	1.6	9.5	14	3300
SC0384	1.6	11.1	16	3700

Flow rates/ Tubing		Model Pro-281		
Tygon ST R-3603/R-3607	Wall	Tubing	ml/min	
Order No.	(mm)	i.d. (mm)	min.	max.
MF0029	2.4	4.8	3.6	870
MF0033	2.4	6.4	6.5	1600
SC0502	2.4	8.0	9.9	2400
SC0503	2.4	9.5	13	3100

Instantly interchangeable pump system



Especially suitable for:

- Chemical, biotechnological and pharmaceutical applications
- Food industry
- Elevated differential pressures (Pro-281 and Pro-381)
- Viscous fluids
- Fluids containing a high content of sensitive solids
- Applications requiring hygienic conditions, durability and reliability

Comparisons to gear, piston and centrifugal pumps proved that peristaltic pumps are the only suitable and sterilisable pump system for gently pumping media containing living cells.

¹ Differential pressure depends on tubing material; tubing with small i.d.'s enable higher pressures.

The flow rates are based on a drive speed of 1 (or 2.4) to 240 rpm. For the BVP Standard drive the indicated min. flow rates must be multiplied by factor 2.4.

Approx. values: determined with water, at 22° C, no differential pressure, Tygon tubing.



Pro-380 0.45–3400 ml/min

Order No. ISM 791

Same pump-head as Pro-280, but

- 3 stainless steel rollers (less pulsation but lower max. flow rate than with 2 rollers)

Pro-381 3.3–2900 ml/min

Order No. ISM 797

Same pump-head design as Pro-280, but

- 3 stainless steel rollers (less pulsation but lower max. flow rate than with 2 rollers)
- For tubing with **2.4 mm wall thickness**
- 2.5 bar differential pressure¹

Flow rates/ Tubing		Model Pro-380		
Tygon ST R-3603/R-3607	Wall	Tubing	ml/min	
Order No.	(mm)	i.d. (mm)	min.	max.
MF0028	1.6	1.6	0.45	110
MF0030	1.6	3.2	1.7	400
SC0379	1.6	4.8	3.7	890
MF0031	1.6	6.4	6.5	1600
MF0032	1.6	8.0	9.7	2300
SC0383	1.6	9.5	13	3000
SC0384	1.6	11.1	14	3400

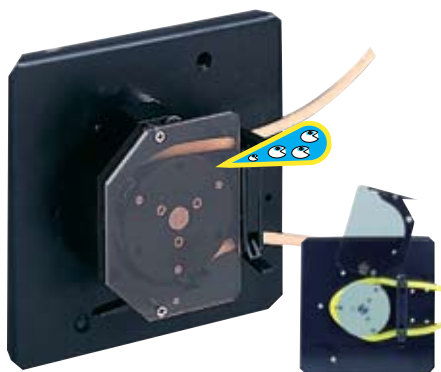
Flow rates/ Tubing		Model Pro-381		
Tygon ST R-3603/R-3607	Wall	Tubing	ml/min	
Order No.	(mm)	i.d. (mm)	min	max
MF0029	2.4	4.8	3.3	800
MF0033	2.4	6.4	5.8	1400
SC0502	2.4	8.0	8.8	2100
SC0503	2.4	9.5	12	2900

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Multi-purpose single-channel pump-heads

For MCP and BVP drives

Change the pump-heads within seconds without the use of tools



360¹ 0.072–530 ml/min

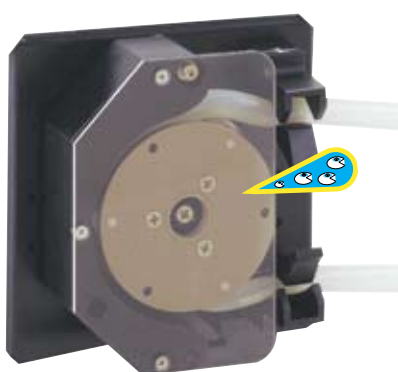
Order No. ISM 719

- Easily accessible flip-up tube-bed guarantees easy and rapid tube change-over
- Transparent protection cover allows monitoring the tube and the revolving rotor
- Self-centering tube-track design thanks to the **concave tube-bed** and **convex rollers** (lengthens tube-life)
- Rotor for tubing i.d. from 0.8 to 6.4 mm with 1.6 mm wall thickness
- 3 stainless steel rollers
- 1.5 bar differential pressure²

Flow rates / Tubing		Model 360		
Tygon®ST R-3603/R-3607	Wall	Tubing	ml/min	
Order No.	(mm)	i.d. (mm)	min.	max.
MF0001	1.6	0.8	0.072	17
MF0028	1.6	1.6	0.26	62
MF0030	1.6	3.2	1.0	240
SC0379	1.6	4.8	2.2	530



¹ An OEM version of this pump-head is also available. Ask for the detailed data sheet.



380¹ 0.44–2800 ml/min

Order No. ISM 718

Same design as pump-head 360, but larger size

- For tubing i.d. from 1.6 to 9.5 mm with 1.6 mm wall thickness
- 1.5 bar differential pressure²

Ideal for sterile media

Flow rates / Tubing		Model 380		
Tygon ST R-3603/R-3607	Wall	Tubing	ml/min	
Order No.	(mm)	i.d. (mm)	min.	max.
MF0028	1.6	1.6	0.44	100
MF0030	1.6	3.2	1.7	400
SC0379	1.6	4.8	3.6	860
MF0031	1.6	6.4	6.0	1400
MF0032	1.6	8.0	8.8	2100
SC0383	1.6	9.5	12	2800

² Differential pressure depends on tubing material; tubing with small i.d.'s may enable higher pressures.



380AD 0.41–3600 ml/min

Order No. ISM 725

- Pressure on tubing adjustable via rollers
- Rotor accepts tubing with 1.6 and 2.4 mm wall thickness and 1.6 to 11.1 mm i.d.
- 3 stainless steel rollers
- 1.5 bar differential pressure² (with tubing wall thickness 1.6 mm)
- 2.5 bar differential pressure² (with tubing wall thickness 2.4 mm)

Ideal for media with high viscosity or a certain level of solid content

Flow rates / Tubing		Model 380AD		
Tygon ST R-3603/R-3607	WS	Tubing	ml/min	
Order No.	(mm)	iØ (mm)	min.	max.
MF0028	1.6	1.6	0.4	99
MF0030	1.6	3.2	1.5	370
SC0379	1.6	4.8	3.4	830
MF0031	1.6	6.4	6.2	1500
MF0032	1.6	8.0	9.5	2300
SC0383	1.6	9.5	13.0	3000
SC0384	1.6	11.1	15.0	3600
MF0029	2.4	4.8	3.4	830
MF0033	2.4	6.4	6.2	1500

The flow rates are based on a drive speed of 1 (or 2.4) to 240 rpm. For the BVP Standard drive the indicated min. flow rates must be multiplied by factor 2.4. Approx. values: determined with water, at 22° C, no differential pressure, and Tygon tubing.

The pump-head for PTFE tubing



Easy-Load®³ 0.07–1100 ml/min

Order No. MF 0313/ISM738

- Easily accessible pump-head
- Allows rapid tube change-over
- PSF housing (Polysulfone)
- Rotor for tubing with 1.6 mm wall thickness
- Rotor with 3 stainless steel rollers
- 0.7 bar differential pressure²

Flow rates / Tubing		Model Easy-Load		
Tygon® ST R-3603/R-3607 Order No.	Wall	Tubing	ml/min	
	(mm)	i.d. (mm)	min.	max.
MF0001	1.6	0.8	0.066	16
MF0028	1.6	1.6	0.25	59
MF0030	1.6	3.2	0.91	220
SC0379	1.6	4.8	1.9	450
MF0031	1.6	6.4	3.1	730
MF0032	1.6	8.0	4.7	1100

² Differential pressure depends on tubing material; tubing with small i.d.'s may enable higher pressures.



Easy-Load II³ 0.24–1000 ml/min

Order No. MF 0446/ISM738

- Same specifications as Easy-Load, but
- Adjustable pressure setting
 - Improved, automatic tubing retention
 - PPS housing (Polyphenylene sulfide)
 - Rotor with 4 stainless steel rollers
 - 0.7 bar differential pressure²

Flow rates / Tubing		Model Easy-Load II		
Tygon ST R-3603/R-3607 Order No.	Wall	Tubing	ml/min	
	(mm)	i.d. (mm)	min.	max.
MF0028	1.6	1.6	0.24	58
MF0030	1.6	3.2	0.92	220
SC0379	1.6	4.8	1.9	460
MF0031	1.6	6.4	3.0	730
MF0032	1.6	8.0	4.2	1000

³ 2 pump-heads can be mounted on one drive. (Special mounting sets must be ordered separately).



PTFE-Tube 0.07–45 ml/min

Order No. MF 0330/ISM727

Pump-head for PTFE tubing

- 6 stainless steel rollers
- Stainless steel rotor
- Anodized aluminum body
- Adjustable tube-bed pressure with locking knob
- Up to 6.9 bar differential pressure

Ideal for dispensing and pumping aggressive chemicals and for the filtration of organic solvents.

Flow rates for PTFE-Tubing

Tubing i.d.	Flow rates ml/min
2 mm	0.07 to 15
4 mm	0.19 to 45



See ordering information and tubing below.

Ordering information for pump-head PTFE tubing

Article	Specifications	Order No.	Pack size
PTFE pump tubing, 38 cm long	2 mm i.d. / 4 mm o.d., for 0.07 – 15 ml/min	MF 0331	2 pieces
PTFE pump tubing, 38 cm long	4 mm i.d. / 6 mm o.d., for 0.19 – 45 ml/min	MF 0332	2 pieces
Tube connectors (straight) (2 connectors are needed for one tube)	for tubing with 2 mm i.d.	MF 0333	3 pieces
Tube connectors (straight) (2 connectors are needed for one tube)	for tubing with 4 mm i.d.	MF 0334	1 pieces
PTFE extension tubing, 3.65 m long	for tubing with 2 mm i.d.	SC 1017BO	1 x 3.65 m
PTFE extension tubing, 3.65 m long	for tubing with 4 mm i.d.	SC 1016BO	1 x 3.65 m
Tubing grooving tool (Use only tubing with 4 mm i.d.)	Important for connections which must withstand 2.8 bar (40 psi) or greater.	MF 0337	1 pieces

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Pump-heads up to 24 channels

For MCP and BVP drives

Change the pump-heads in seconds without tools



CA-4, CA-8, CA-12

0.002–230 ml/min

Order No. ISM 721 CA 4 (with cassettes for 4 channels)
 Order No. ISM 732 CA 8 (with cassettes for 8 channels)
 Order No. ISM 733 CA 12 (with cassettes for 12 channels)

- CA Click'n'go cassettes (spare cassettes, see Page 60)
- Automatic pressure setting
- Easy and rapid tube change-over;
each channel separately, even while pump is running
- 8 rollers
- **4 to 12 channels**, each channel can take different tube sizes
- 2-stop tubing, 0.13 to 3.17 mm i.d.
- 1.0 bar differential pressure¹

Ideal pump-head for multi-channel applications at higher flow rates

Flow rates / Tubing			
Tygon®ST R-3603/R-3607 Order No.	Tubing i.d. (mm)	ml/min per channel	
		min.	max.
SC0188	0.13	0.002	0.31
SC0002	0.25	0.008	1.8
SC0005	0.51	0.034	8.2
SC0008	0.76	0.074	18
SC0011	1.02	0.13	31
SC0014	1.22	0.18	42
SC0017	1.52	0.26	62
SC0020	1.85	0.36	86
SC0023	2.54	0.62	150
SC0222	3.17	0.94	230



OEM versions of these pump-heads are also available. Ask for the detailed data sheet.



SB2V
ISM 734 + ISM 010
Standard tubing
3.2 to 8.0 mm i.d.
Wall thickness 1.6 mm



SB3V
ISM 734 + ISM 011
Standard tubing
0.8 to 4.8 mm i.d.
Wall thickness 1.6 mm

SB 2V / SB 3V

0.09–1100 ml/min

Order No. ISM 734

(depends on tube-bed)

+ Tube-bed set:

2-channel, SB 2V ISM 010 for Standard tubing 1.1 to 1100 ml/min
 3-channel, SB 3V ISM 011 for Standard tubing 0.09 to 530 ml/min

- Spring-loaded, exchangeable tube-beds
- Individual and continuously adjustable pressure setting per channel
- 6 rollers, **2 to 3 channels**, for Standard tubing
- Differential pressure 1.5 bar¹

Ideal for sensitive substances requiring a smooth pressure adjustment

Flow rates / Tubing SB2V				
Tygon ST R-3603/R-3607 Order No.	WT	Tubing	ml/min per channel	
	(mm)	i.d. (mm)	min.	max.
MF0030	1.6	3.2	1.1	260
SC0379	1.6	4.8	2.3	550
MF0031	1.6	6.4	3.7	890
MF0032	1.6	8.0	4.6	1100

Flow rates / Tubing SB3V				
Tygon ST R-3603/R-3607 Order No.	WT (mm)	Tubing i.d. (mm)	ml/min per channel	
			min.	max.
MF0001	1.6	0.8	0.09	22
MF0028	1.6	1.6	0.26	63
MF0030	1.6	3.2	0.99	240
SC0379	1.6	4.8	2.2	530