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Ecoline

Economical and powerful

Stackable pumps for dispensing and filling applications with variable flow rates

- Robust stainless steel housing (stackable)
- 2-digit potentiometer adjustable in 1% steps



Ecoline VC-MS/CA8-6

0.005–150 ml/min

8 channels
6 rollers

Ecoline VC-MS/CA4-12

0.003–83 ml/min

4 channels
12 rollers (low pulsation)

- Click'n'go cassettes with automatic pressure setting
- 3-stop tubing
- Differential pressure 1.0 bar ¹

¹ Possible with appropriate tubing material; tubing with small i.d.'s and/or cassettes with the pressure lever (see Page 60) may enable higher pressures.



Ecoline VC-Easy-Load®

0.23–1600 ml/min

1 channel
3 rollers

- Easily accessible pump-head
- Allows rapid tube change-over
- Pump-head PSF housing (Polysulfone)
- Standard tubing 1.6 mm WT
- Differential pressure 1.5 bar ¹

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



Ecoline VC-360

0.25–1300 ml/min

1 channel
3 convex rollers treat the liquid and tubing gently

- Hinged tube-bed for easy and rapid tube change-over
- Standard tubing 1.6 mm WT
- Differential pressure 1.5 bar ¹

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

Specifications

Motor type	DC motor
Speed	3.5 to 350 rpm
Speed setting	1–99%, resolution 1% 2-digit potentiometer
Power consumption	100 W
Mains connection	230V _{AC} /50Hz, 115V _{AC} /60Hz adjustable
Protection rating	IP 30

Size

Model	Depth/Width/Height
Ecoline VC-280	256 x 169 x 138 mm
Ecoline VC-380	256 x 169 x 138 mm
Ecoline VC-360	238 x 169 x 138 mm
Ecoline VC-Easy-Load®	285 x 169 x 138 mm
Ecoline VC-MS/CA8-6	313 x 169 x 138 mm
Ecoline VC-MS/CA4-12	281 x 169 x 138 mm

Weight

Model	Weight
Ecoline VC-280	5.2 kg
Ecoline VC-380	5.3 kg
Ecoline VC-360	4.9 kg
Ecoline VC-Easy-Load®	5.2 kg
Ecoline VC-MS/CA8-6	5.5 kg
Ecoline VC-MS/CA4-12	5.4 kg



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1 Available without pump-head: ISM 1077

2 Easy stackable

3 These pump-heads are also available as OEM versions. Ask for the detailed data sheet.

**Easily exchangeable rotor**

WT 1.6 mm, 2 or 3 rollers
VC-280 or VC-380

WT 2.4 mm, 2 or 3 rollers
VC-281 or VC-381

Ecoline VC-280

1.7–5400 ml/min

Ecoline VC-380

1.6–5000 ml/min

1 channel

2 or 3 convex rollers treat the liquid and tubing gently

- With exchangeable rotor e.g. for lower pulsation, higher flow rates, or elevated differential pressures
- Standard tubing 1.6 mm wall thickness (WT)
- Differential pressure 1.5 bar¹

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

Flow rates / Tubing

Model Type Channels Rollers			Ecoline VC-280 1 2		Ecoline VC-380 1 3		Ecoline VC-360 1 3		Ecoline VC-Easy-Load® 1 3	
Speed rpm			3.5	350	3.5	350	3.5	350	3.5	350
Tygon®ST R-3603/R-3607 Order No.	WT (mm)	Tubing i.d.(mm)	ml/min per channel		ml/min per channel		ml/min per channel		ml/min per channel	
			min.	max.	min.	max.	min.	max.	min.	max.
MF0001	1.6	0.8					0.25	25	0.23	23
MF0028	1.6	1.6	1.7	170	1.6	160	0.9	90	0.86	86
MF0030	1.6	3.2	6.6	660	5.9	590	3.5	350	3.2	320
SC0379	1.6	4.8	5.1	1500	13	1300	7.7	770	6.5	650
MF0031	1.6	6.4	25	2500	23	2300	13	1300	11	1060
MF0032	1.6	8.0	37	3700	34	3400			16	1600
SC0383	1.6	9.5	48	4800	44	4400				
SC0384	1.6	11.1	54	5400	50	5000				

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

Flow rates / Tubing

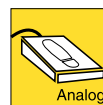
Model Type Channels Rollers		Ecoline VC-MS/CA8-6 8 6		Ecoline VC-MS/CA4-12 4 12	
Speed rpm		3.5	350	3.5	350
Tygon ST R-3603/R-3607 Order No.	Tubing i.d.(mm)	ml/min per channel		ml/min per channel	
		min.	max.	min.	max.
SC0189	0.13	0.005	0.49	0.003	0.32
SC0050	0.25	0.017	1.7	0.013	1.3
SC0053	0.51	0.067	6.7	0.055	5.5
SC0056	0.76	0.15	15	0.12	12
SC0059	1.02	0.26	26	0.20	20
SC0062	1.22	0.36	36	0.26	26
SC0065	1.52	0.53	53	0.36	36
SC0068	1.85	0.73	73	0.47	47
SC0071	2.54	1.2	120	0.68	68
SC0224	3.17	1.5	150	0.83	83

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

Ordering information

Model	Order No.	Flow rates ml/min per channel	Channels max.	Rollers
Ecoline VC-280 WT 1.6	ISM 1078	1.7 to 5400	1	2
Ecoline VC-380 WT 1.6	ISM 1079	1.6 to 5000	1	3
Ecoline VC-281 WT 2.4*	ISM 1085	13 to 4600	1	2
Ecoline VC-381 WT 2.4*	ISM 1080	12 to 4200	1	3
Rotor with 2 rollers WT 1.6	IS 3762	1.7 to 5400	1	2
Rotor with 3 rollers WT 1.6	IS 3763	1.6 to 5000	1	3
Rotor with 2 rollers, WT 2.4	IS 3757	13 to 4600	1	2
Rotor with 3 rollers, WT 2.4	IS 3754	12 to 4200	1	3
Ecoline VC-360	ISM 1076	0.25 to 1300	1	3
Ecoline VC-Easy-Load®	ISM 1091	0.23 to 1600	1	3
Ecoline VC-MS/CA8-6	ISM 1089	0.005 to 150	8	6
Ecoline VC-MS/CA4-12	ISM 1090	0.003 to 83	4	12
Ecoline without pump-head	ISM 1077			
Foot switch	IS 3572	see Page 61		
Spare cassettes MS/CA	IS 3510	see Page 60		

*For standard tubing 2.4 mm wall thickness 4.8 – 9.5 mm (3/16 – 3/8") inner diameter

Interfaces

- Speed control (0–5 or 0–10 V, 0–20 or 4–20 mA)
- Start/Stop, rotation direction

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Tubing for aggressive media see Page 35

Applications**Ecoline VC-280**

To apply protective lacquer to cartons

Ecoline VC-380

As recirculating pump for coolant in thermostat bath

Ecoline VC-360

Externally controlled spectrophotometer cuvette filling

Ecoline VC-MS/CA8-6

8-channel flushing of the tubing system of a digital fabric printing machine

Pump-heads Q1 and Q2

Q1 = stroke vol. 12.8 – 320 µl
Q2 = stroke vol. 28.8 – 720 µl

Q1 = flow rates 0.13 – 576 ml/min
Q2 = flow rates 0.29 – 1300 ml/min



Type	QP Q1.CSC	QP Q2.CSC	QP Q1.CSC-W	QP Q2.CSC-W	QP Q1.CSC-WT	QP Q2.CSC-WT
Order No.	FMI 205	FMI 212	FMI 320	FMI 321	FMI 219	FMI 218
Piston	Ceramic		Material and design like QP Q1.CSC and CP Q2.CSC but with isolation gland (2 extra ports 10–32 – female)		Material and design like QP Q1.CSC and CP Q2.CSC but with isolation gland and heating mantel	
Cylinder case	316 Stainless Steel					
Cylinder liner	Ceramic					
Lip seals	Rulon® AR					
Gland washers	PTFE					
Cylinder head seal	PTFE					
Max. temperature	177°C		Thanks to a barrier gland of fluid, gas, steam or whatever is needed, the pumped fluid can be isolated from the seal area and atmosphere. Slurries, particulates, crystal formers and anaerobics are easily handled.		Same barrier gland as described under CP Q1./Q2.CSC-W	
Max. differential pressure	6.9 bar				In addition, 2 cartridge heaters (1/4" diam. x 1 1/2" long) and 1 thermo-couple (1/8" diam. x 1" long) can be used for heating the pump-head.	
Main flow ports	1/4 NPT (female) Included: 2 stainless steel adaptors with thread 1/4 NPT (male) and fitting for tubing with 9.5 mm i.d.					
Tubing (must be ordered separately)	Tubing Tygon® ST R-3603 9.5 mm i.d. Order No. SC 0383 Accessories Low Flow Kit R 479 Order No. FMI 056		Included for barrier gland ports: 2 Polypropylene adaptors, thread 10–32 UNF and fitting for tubing with 3.2 mm i.d.		Not included: Tubing adaptors for: – barrier gland ports 1/8" NPT (female) – main flow ports 1/4" NPT (female)	

Other materials for wetted parts for:

Pump-heads Q1 and Q2 (see table below)

Q1 = stroke vol. 12.8 – 320 µl
Q2 = stroke vol. 28.8 – 720 µl

Q1 = flow rates 0.13 – 576 ml/min
Q2 = flow rates 0.29 – 1300 ml/min

Tubing and connections for pump-heads with the suffix -W or -WT (must be ordered separately)	
Description	Order No.
–2 stainless steel fittings for inlet/outlet, thread 1/4" NPT male, with fittings for tubing with 6.4 mm i.d.	FMI 060
–Tubing for inlet/outlet (Tygon ST R-3603) 6.4 mm i.d., 15 m long	MF 0031

Type / Order No.	QP Q1.CKC/FMI 352	QP Q1.CKC-W/FMI 356	QP Q1.CKY/FMI 358	QP Q1.CSY/FMI 359	QP Q1.SKY/FMI 361	QP Q1.SSY/FMI 363	QP Q1.SAN/FMI 365
Type/ Order No.	QP Q2.CKC/FMI 355	QP Q2.CKC-W/FMI 357	QP Q2.CKY/FMI 353	QP Q2.CSY/FMI 360	QP Q2.SKY/FMI 362	QP Q2.SSY/FMI 364	QP Q2.SAN/FMI 366
Piston	Ceramic	Ceramic	Ceramic	Ceramic	316 Stainless Steel	316 Stainless Steel	Ceramic
Cylinder Case	Kynar® ²	Kynar ²	Kynar ²	316 Stainless Steel	Kynar ²	316 Stainless Steel	316 Stainless Steel
Cylinder liner	Ceramic	Ceramic	Carbon	Carbon	Carbon	Carbon	316 Stainless Steel
Lip seals	Rulon AR	Rulon AR	Rulon AR	Rulon AR	Rulon J	Rulon J	PTFE
Gland washers	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
Cylinder head seal	none	none	none	PTFE	none	PTFE	PTFE
Max. temperature	100°C	100°C	100°C	177°C	60°C	60°C	177°C
Max. diff. pressure	4.1 bar	4.1 bar	4.1 bar	6.9 bar	4.1 bar	6.9 bar	6.9 bar
Main flow ports	For tubing up to 9.5 mm i.d.	For tubing up to 9.5 mm i.d. With isolation gland Fittings for tubing with 3.2 mm i.d.	For tubing up to 9.5 mm i.d.	1/4 NPT (female)	For tubing up to 9.5 mm i.d.	1/4 NPT (female)	PTFE tubing adaptor

¹ designed for sanitary applications

² Kynar = Fluorocarbon (PVDF)

Tubing cassettes

Developed and consistently improved by ISMATEC

Click'n'go cassette with automatic pressure mechanism



Click 'n' go Cassettes (The new standard with all ISMATEC® cassette pumps)

The new, innovative tubing cassette from ISMATEC, a consequence of the constant improvement of the cassettes with pressure lever, offers the following advantages:

- Automatic tubing pressure
- Calibrated, fatigue-free spring guarantees optimal, reproducible tubing pressure independent of diameter, material and state of the tubing
- Pumping conditions are defined and repeatable at a later date
- Incorrect adjustment of the pressure lever is no longer possible
- **Readjustment** of tubing pressure is **not necessary**
- Long-time channel to channel conformity
- **Ideal for non-monitored long-time use**

Click 'n' go cassettes are not suitable for:

- Hard tubing materials
- Differential pressure greater than 1 bar

For these conditions you should choose the pressure lever cassettes.

Ordering information for spare Click'n'go cassettes (included with the corresponding pump model).

Model	Material	Order No.
MS/CA Click'n'go	POM-C*	IS 3510
CA ¹ Click'n'go	POM-C*	IS 3710



¹ Replacement adaptors for CA cassettes
 Adaptor for CA cassettes | POM-C | IS 0123
 Adaptor for CA cassettes | PVDF | IS 3861
 Please order 2 adaptors each.

Option
Cassettes with adjustable pressure lever



ISMATEC pumps equipped with Click'n'go cassettes

Pressure Lever Cassettes (Optional)

The successful, tried and tested tubing cassettes for many years. The pressure lever allows you to set a different tubing pressure for each channel. Depending on the application, tubing material and diameter, an optimally adjusted tubing pressure can be set, i.e. just as high as necessary (can be favourable to the tubing life). For constant flow rates it may be necessary to periodically adjust the tubing pressure.

The pressure lever should not be used to adjust the flow rate! Such a 'calibration' can be unstable and is detrimental for tubing life.

These cassettes are available as an option. Under certain circumstances we recommend the use of these cassettes rather than the automatic click 'n' go cassettes:

- Under particular system conditions e.g. varying or high differential pressure
- When using very hard tubing material

Ordering information for cassettes with pressure lever
Must be ordered separately.

Model	Material	Order No.
MS/CA pressure lever	POM-C*	IS 0649
MS/CA pressure lever	PVDF*	IS 3629
CA ¹ pressure lever	POM-C*	IS 0122
CA ¹ pressure lever	PVDF*	IS 3820

PVDF = higher chemical resistance

*Material properties

POM-C	Polyoxymethylen Copolymer
PVDF	Polyvinylidene Fluoride