

High Precision Pumps

- **Valve-less ceramic pumps**
- **High degree of precision and reproducibility**
- **Large variety of pump heads available**
- **Detachable remote controller**
- **PC / TTL / Analogue Interface**



HPLH V - series pumps

The successful microprocessor controlled pump.

The system consists of an ergonomic pump housing and a detachable programming and operating unit with keypad and alphanumeric display. All relevant parameters, e.g. volume, flowrate and flow direction, are set via the keypad on the control unit, which can be used remotely from the pump. The keypad has 3 function- and 2 hotkeys, plus an analogue encoder wheel for fast data entry, enabling intuitive adjustment of the set values. The backlit LCD shows both set and actual volumes, flowrate, and other functions.

A choice of units of volume, flowrate and specific weight can be pre-programmed, e.g. μl , ml, mg, g, $\mu\text{l/s}$, ml/m. The PCON C controller has a RS232 interface as standard and the analogue and digital I/O ports provide full flexibility.

Connection to the analogue input allows the pre-programmed flowrate to be overridden by a voltage or current signal. The analogue output (0-10 V and 0-24 mA) can then be used to record and read out the actual flowrate.


The pump heads are encased in robust stainless steel bodies and are available in 20 μl , 200 μl , 300 μl and 1000 μl stroke volumes. They are also available with or without piston rinse port. The models „VCS“ have a rinse port integrated into the ceramic cylinder, no piston sealing is necessary.

All wetted parts are made of ceramic (99,7% Al_2O_3), PVDF.

Versions with other plastics (e.g. ETFE, PEEK) on demand.



Technical Data	HPLH 20	HPLH 200	HPLH 300	HPLH 1000
Min. dispensing volume [µl]	1.0	10.0	20.0	50.0
Max. dispensing volume per step [l]	100	100	100	100
Continuous dispensing	Yes	Yes	Yes	Yes
Time programmed dispensing	Yes	Yes	Yes	Yes
Flowrate range [ml/min]	0.0115 – 10.0	0.115 – 100.0	0.230 – 150.0	0.575 – 400.0
Dosing accuracy [%]	< ± 1.0	< ± 1.0	< ± 1.0	< ± 1.0
Coefficient of Variation, CV [%]	< ± 0.5	< ± 0.5	< ± 0.5	< ± 0.5
User Calibration	Yes	Yes	Yes	Yes
PC Interface	RS 232	RS 232	RS 232	RS 232
Analogue interface	Yes	Yes	Yes	Yes
TTL input	Yes	Yes	Yes	Yes
Power supply	24 VDC	24 VDC	24 VDC	24 VDC
Dimensions HxWxD [mm]	145 x 170 x 170	145 x 170 x 170	145 x 170 x 170	200 x 107 x 250
Pump head materials	Al ₂ O ₃ PVDF	Al ₂ O ₃ PVDF	Al ₂ O ₃ PVDF	Al ₂ O ₃ PVDF
Weight [kg]	2.5	2.5	2.5	3.0
Protection class according to DIN EN 60529	IP 43	IP 43	IP 43	IP 43

Order Information	Part Number			
 <p>V Ceramic encased with PVDF, integrated into stainless steel body, without rinse port</p>	70940-0000	70950-0000	-	70970-0000
 <p>VS ceramic encased with PVDF, integrated into stainless steel body, with rinse port</p>	-	-	-	70975-0000
 <p>VCS ceramic encased with PVDF, integ- rated into stainless steel body, with rinse port integrated into ceramic</p>	70947-0000	70957-0000	70967-0000	-

For all pump heads: wetted parts are only PVDF and ceramic (Al₂O₃, 99,7 %)

Accessories	Part Number	Description
RS 232 extension cable	30275-0051	RS 232 extension cable 1.8 m
RS 232 to USB adapter	30244-0000	RS 232 to USB adapter
Power supply 24VDC	60732-0000	External power supply 24VDC, 100 – 240VAC for HPLH 20 - HPLH 300
Power supply 24VDC	60734-0000	External power supply 24VDC, 100 – 240VAC for HPLH 1000
Software	Upon request	Control software

High Precision Pumps

- **Integrated rinse pump**
- **High degree of precision and reproducibility**
- **Detachable remote controller**
- **PC / TTL / Analogue Interface**



HPLH V-series pumps with integrated rinse pump

The successful microprocessor controlled pump.

The system consists of an ergonomic pump housing and a detachable programming and operating unit with keypad and alphanumeric display. All relevant parameters, e.g. volume, flowrate and flow direction, are set via the keypad on the control unit, which can be used remotely from the pump. The keypad has 3 function- and 2 hotkeys, plus an analogue encoder wheel for fast data entry, enabling intuitive adjustment of the set values. The backlit LCD shows both set and actual volumes, flowrate, and other functions.

A choice of units of volume, flowrate and specific weight can be pre-programmed, e.g. μl , ml, mg, g, $\mu\text{l/s}$, ml/m. The PCON C controller has a RS232 interface as standard and the analogue and digital I/O ports provide full flexibility.

Connection to the analogue input allows the pre-programmed flowrate to be overridden by a voltage or current signal. The analogue output (0-10 V and 0-24 mA) can then be used to record and read out the actual flowrate.

The pump heads are encased in robust stainless steel bodies and are available in 20 μl , 200 μl , 300 μl and 1000 μl stroke volumes. They are also available with or without piston rinse port. The models „VCS“ have a rinse port integrated into the ceramic cylinder, no piston sealing is necessary.

All wetted parts are made of ceramic (99,7% Al_2O_3), PVDF.

Versions with other plastics (e.g. ETFE, PEEK) on demand.



Technical Data	HPLH 20	HPLH 200	HPLH 300	HPLH 1000
Min. dispensing volume [µl]	1.0	10.0	20.0	50.0
Max. dispensing volume per step [l]	100	100	100	100
Continuous dispensing	Yes	Yes	Yes	Yes
Time programmed dispensing	Yes	Yes	Yes	Yes
Flowrate range [ml/min]	0.0115 – 10.0	0.115 – 100.0	0.230 – 150.0	0.575 – 400.0
Dosing accuracy [%]	< ± 1.0	< ± 1.0	< ± 1.0	< ± 1.0
Coefficient of Variation, CV [%]	< ± 0.5	< ± 0.5	< ± 0.5	< ± 0.5
User Calibration	Yes	Yes	Yes	Yes
PC Interface	RS 232	RS 232	RS 232	RS 232
Analogue interface	Yes	Yes	Yes	Yes
TTL input	Yes	Yes	Yes	Yes
Power supply	24 VDC	24 VDC	24 VDC	24 VDC
Dimensions HxWxD [mm]	200 x 150 x 230	200 x 150 x 230	200 x 150 x 230	200 x 150 x 250
Pump head materials	Al ₂ O ₃ PVDF	Al ₂ O ₃ PVDF	Al ₂ O ₃ PVDF	Al ₂ O ₃ PVDF
Weight [kg]	3.1	3.1	3.1	3.6
Protection class according to DIN EN 60529	IP 43	IP 43	IP 43	IP 43

Order Information	Part Number			
<p>VS ceramic encased with PVDF, integrated into stainless steel body, with rinse port</p>	-	-	-	61779-0000
<p>VCS ceramic encased with PVDF, integrated into stainless steel body, with rinse port integrated into ceramic</p>	61772-0000	61775-0000	61777-0000	-

For all pump heads: wetted parts are only PVDF and ceramic (Al₂O₃, 99,7 %)

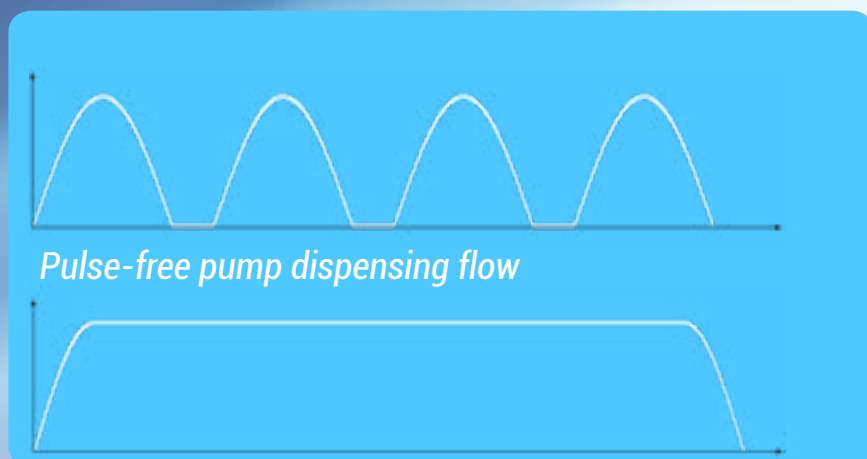
Accessories	Part Number	Description
RS 232 extension cable	30275-0051	RS 232 extension cable 1.8 m
RS 232 to USB adapter	30244-0000	RS 232 to USB adapter
Power supply 24VDC	60732-0000	External power supply 24VDC, 100 – 240VAC for HPLH 20 - HPLH 300
Power supply 24VDC	60734-0000	External power supply 24VDC, 100 – 240VAC for HPLH 1000
Software	Upon request	Control software for contiburette

Pulse-free Pumps

- Valve-less ceramic pulse-free pump
- Highly inert ceramic pump head
- Detachable remote controller
- PC / TTL / Analogue Interface



Piston pump dispensing flow



Pulse-free Pumps

The pump HPLH PF „pulse-free“ employs two interdependently controlled pump heads. The result is a pulse-free flow without the need for secondary pulse dampeners. Unlike syringe pumps the flow is continuous without the need for refill cycles or valve switching. Apart from separate housing chambers for pumps and PC board, this pulse-free pump features the same performance as the standard HPLH pumps. The pump has a user interface for fast and easy numeric input of all relevant parameters e.g. volume, flowrate, flow direction and time.

The system consists of an ergonomic pump housing and a detachable programming and operating unit with keypad and alphanumeric display. All relevant parameters, e.g. volume, flowrate and flow direction, are set via the keypad on the control unit, which can be used remotely from the pump. The keypad has 3 function- and 2 hotkeys, plus an analogue encoder wheel for fast data entry, enabling intuitive adjustment of the set values. The backlit LCD shows both set and actual volumes, flowrate, and other functions. A choice of units of volume, flowrate and specific weight can be pre-programmed, e.g. μl , ml, mg, g, $\mu\text{l/s}$, ml/m. The PCON PF controller has a RS232 interface as standard and the analogue and digital I/O ports provide full flexibility.

Connection to the analogue input allows the pre-programmed flowrate to be overridden by a voltage or current signal. The analogue output (0-10 V and 0-24 mA) can then be used to record and read out the actual flowrate.

All wetted parts are made of ceramic (99,7% Al_2O_3), PVDF and FEP.



Technical Data	HPLH PF 20	HPLH PF 200
Min. dispensing volume [μ l]	2.0	20.0
Max. dispensing volume per step [l]	100	100
Continuous dispensing	Yes	Yes
Time programmed dispensing	Yes	Yes
Flowrate range [ml/min]	0.030 – 10.0	0.3 – 100.0
Dosing accuracy [%]	$< \pm 1.0$	$< \pm 1.0$
Coefficient of Variation, CV [%]	$< \pm 0.5$	$< \pm 0.5$
User Calibration	Yes	Yes
PC Interface	RS 232	RS 232
Analogue interface	Yes	Yes
TTL input	Yes	Yes
Power supply	24 VDC	24 VDC
Dimensions HxWxD [mm]	200 x 190 x 170	200 x 190 x 170
Pump head materials	Al ₂ O ₃ PVDF	Al ₂ O ₃ PVDF
Weight [kg]	3.7	3.7
Protection class according to DIN EN 60529	IP 43	IP 43

Order information	Part Number	
HPLH PF	70980-0000	70985-0000



Accessories	Part Number	Description
RS232 interface cable	30275-0051	Interface cable 1.8 m for connection to PC
RS 232 to USB adapter	30244-0000	RS 232 to USB adapter
Power supply 24VDC	60732-0000	Power supply 24VDC 100 – 240VAC
Software	Upon request	Control software for contiburette