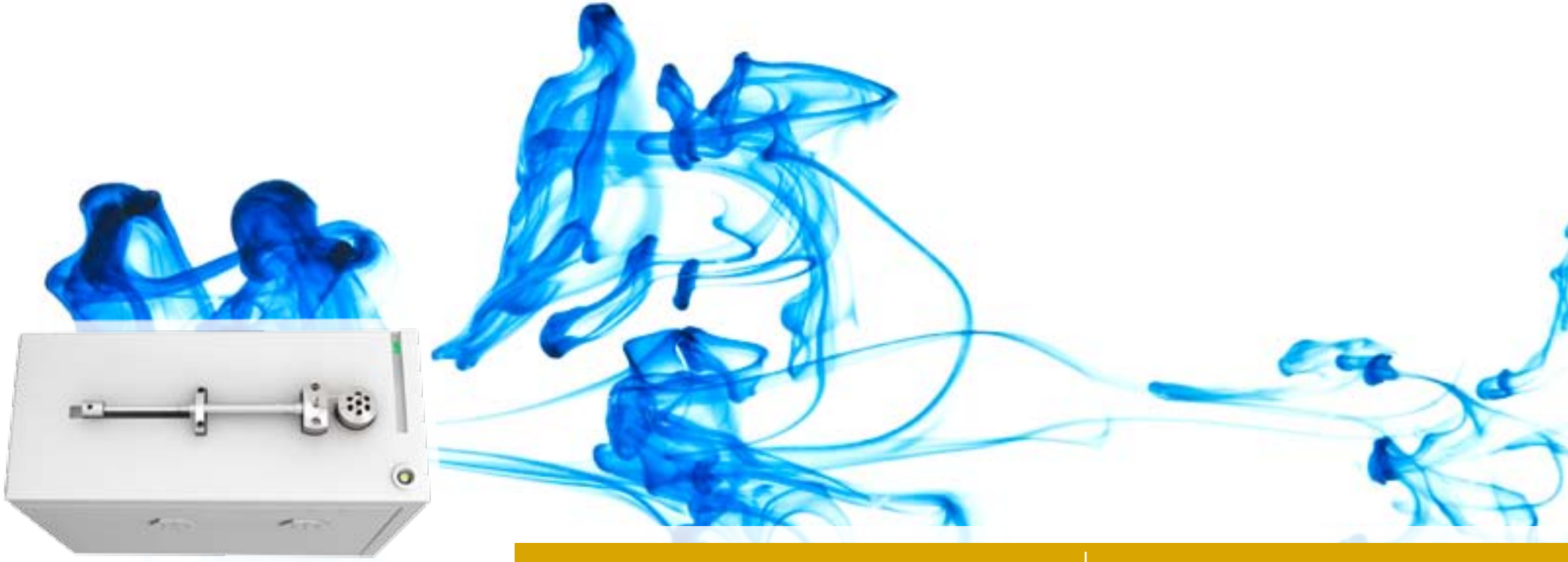
Spark HOLLAND



Spark Holland introduces HPD™

High Pressure Dispenser

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HPD™

High Pressure Dispenser

HPD™

A syringe based dispenser resisting HPLC pressure

Designed for volumetric on-line reagent delivery

Traditional volumetric dispensers are designed for pipetting reagents or samples into vials or wells at ambient pressure or a few Bar at most. On-line volumetric reagent delivery however, may require the ability to introduce reagents into a system with a high working pressure. The HPD™ was originally designed by Spark for SPE solvent delivery in on-line SPE-LC systems, but other applications are easy to imagine. Think of pre-column reagent addition for on-line derivatization in HPLC, post-column reagent addition for detection enhancement, etc.

Tailor the HPD™ for your on-line SPE application

In most cases the HPD™ is used in combination with our Automated Cartridge Exchange (ACE™) system and our autosampler to create a system for on-line SPE-LC (see brochure on ACE™ and on-line SPE cartridges). The HPD™ comes in a range of models that help you configure an on-line (or at-line/ off-line) SPE system for virtually any application. The HPD™ -dual is equipped with two syringes for parallel operation to support high-throughput assays. The HPD™-mix has 1 up to 4 additional Solvent Selection solenoid Manifolds (SSM) that allow selection from as many as 24 different solvents (in the case of 4 manifolds). You may also use this option to select from 24 sample bottles for on-line SPE of very large sample amounts. Load 100 ml water samples into on-line SPE-LC-MS for environmental analysis! For rapid method development the HPD™ can mix any two of the available solvents in ratios between 10 and 90%. With so many options, it will be hard to imagine an application you cannot support.

The standard HPD™ has a flow rate ranging from 0.1 – 10 ml/min. This is perfect for almost any on-line SPE application. For applications requiring micro volume dispensing against relatively high pressures, a special HPD™-micro version is available. HPD™-micro has a flow rate ranging from 10 - 1000 µl/min against a maximum backpressure of 5 MPA (700 psi).

SparkLink PC control software

After configuring an analytical system including the HPD™, you need full control of every Spark Holland system component for maximum flexibility in assay development. Our SparkLink software provides just that. That does not mean that you can't use any third party instruments as components for your system. Just be aware that SparkLink will have limited control options for third party instruments. A special "Easy Access" control level allows for rapid start up of methods and method development with pre-programmed system parameters. Note that SparkLink is able to control two HPD™'s in a single system.

No worry OEM partnering

Spark is recognized for its OEM service and capabilities and for HPD™ we make no exception! We are open to discuss any customization of hard- and software. We provide a range of communication interfaces and comprehensive software integration support. Test us!

Reassuring reliability

Spark has more than 27 years of experience in development and innovation of sample handling technology. The robustness of our instruments has been proven in more than 25,000 autosamplers and over 1,000 systems for on-line SPE ... reassuring numbers if you demand a reliable partner in HPLC.

- Accurate volume delivery at controlled flow rates
- Independent of backpressure up to 300 Bar
- Selects from 4-24 solvents... or samples!
- On-line solvent mixing
- Dual-syringe version for high throughput

Specifications

HPD™		
High-pressure syringe	2 mL stainless steel syringe	
Flow-rates	0.1 – 10 ml/min	
Flow-rate accuracy	‹ 2%.	
Volume ranges	0.1 – 1 ml, in 0.01 ml incr. 0.1 - 1 – 10 ml, in 0.1 ml incr. 10 – 100 ml, in 1 ml incr.	
Volume accuracy	‹ 1%	
Maximum pressure	300 Bar	4300 psi (30 MPa)
Pressure readout	0 – 300 bar Accuracy: better than 5%	
Syringe valve	High pressure 6-to-1 port valve	Valco C5-2006
pH range	pH 1.0 – 12.5	For pH ‹ 2.3, solvents should not contain acids which will corrode stainless steel
Solvent selection	Standard 4 solvents. 9, 14 or 24 solvents for HPD™-mix versions with 1, 2 or 4 additional solvent selection manifolds (SSMs)	See also under options
Communication	**Inputs:** 2 programmable TTL conditional digital inputs **Outputs:** 2 programmable contact closures (max. 28 V – 1A) **Pressure output:** 0-3 V DC, output current max. 5 mA	
PC interface	RS 232	
Control software	SparkLink™ 4.00 PC control	
Power requirements	115/230 Vac, -20%/+15%. 50/60 Hz, max. 150 VA	
Dimensions	Footprint: 150x285x355 mm (WxDxH)	
Weight	HPD™-standard 11 kg HPD™-dual 14 kg	
Working environment	5 – 40°C, 20-80% RH	Storage temperature: -25 – 60°C

Specifications

Compliances	
Safety	CE; CSA (UL) EN61010-1 Machine safety: 2006/42/EC EMC requirements: 2004/108/EC Low voltage safety: 2006/95/EC
Installation category	II (according to IEC-1010)
Pollution degree	2 (according IEC-664)
Quality	ISO 9001 certified

Optional HPD™ versions	
HPD™ Mix The standard HPD™ can be equipped with 1, 2 or 4 Solvent Selection Manifolds (SSM) to allow selection from 9, 14, or 24 solvents respectively. Selected ports are indicated by LEDs. SSM 1 can be used for solvent mixing. Mix ratio: 10% – 90%; accuracy: 3%. For a HPD™-mix with 2 SSMs, the SSMs may be mounted at left or right hand side of the HPD™.	
HPD™-dual HPD™ with 2 independently operating syringes and syringe valves HPD™-dual cannot be equipped with SSM's	
HPD™-micro The HPD™-micro has better volume accuracy and can dispense at lower flow rates It is equipped with a glass syringe and has therefore a limited pressure range.	
Syringe	250 µl glass syringe
Flow-rates	12 – 1000 µl/min
Flow-rate accuracy	‹ 1%
Volume ranges	0 – 100 µl, in 1 µl incr. 100 – 2000 µl, in 10 µl incr.
Volume accuracy	‹ 1%
Maximum pressure	50 Bar or 717 psi (5MPa)

Ordering information

HPD™ versions	
HPD™-standard	SP730.300
HPD™-mix 1x SSM left side mounted	SP730.320
HPD™-mix 2x SSM left side mounted	SP730.420
HPD™-mix 2x SSM right side mounted	SP730.410
HPD™-mix 4x SSM	SP730.520
HPD™-dual	SP730.360
HPD™-micro	SP730.307

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