



Level



Pressure



Flow



Temperature



Liquid  
Analysis



Registration



Systems  
Components



Services



Solutions

Technical Information

# Liquiport 2000

Automatic sampler for liquid media



## Application

Municipal and industrial sewage treatment plants:

- Self-monitoring
- Process monitoring
- Monitoring of indirect dischargers
- Manhole monitoring

Authorities and Water Conservancy Boards:

- Water protection and water quality
- Monitoring of indirect/direct dischargers
- Labs and hydrological institutes
- Sampling of liquid media

## Your benefits

Simple and user-friendly:

- Menu-guided operation with "Quick-Setup" for rapid commissioning
- Parts conveying media can be mounted easily and without tools, for easy cleaning and maintenance
- Sampler compartment can be sealed and carried separately, for easy and safe sample transportation

Communicative:

- Integrated data logger for recording measured values and sample statistics
- RS232 interface for configuring and for data transmission
- Multi-parameter probes can be connected (optional)

Safe:

- Lockable sample base prevents sample manipulation
- ATEX II2G certification (optional) for safe operation in Ex areas, Zone 1

Innovative:

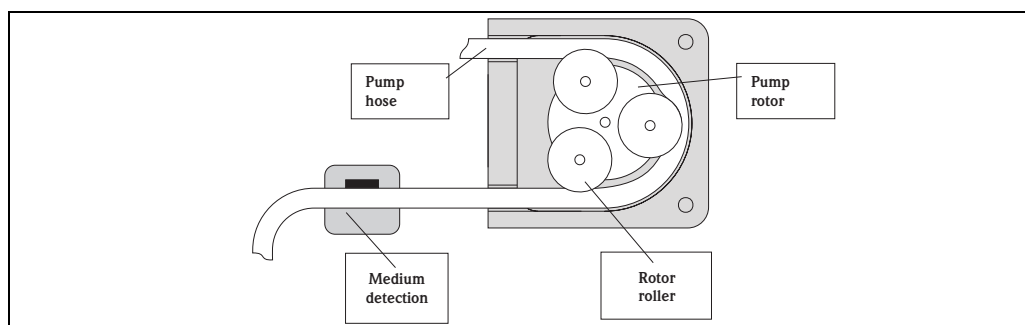
- Zeolite cooling (optional), for battery-powered and mobile sample cooling

## Function and system design

### Measuring principle

The Liquiport 2000 is a portable sampler for fully automated sampling and distribution of liquid media.

### Sampling principle



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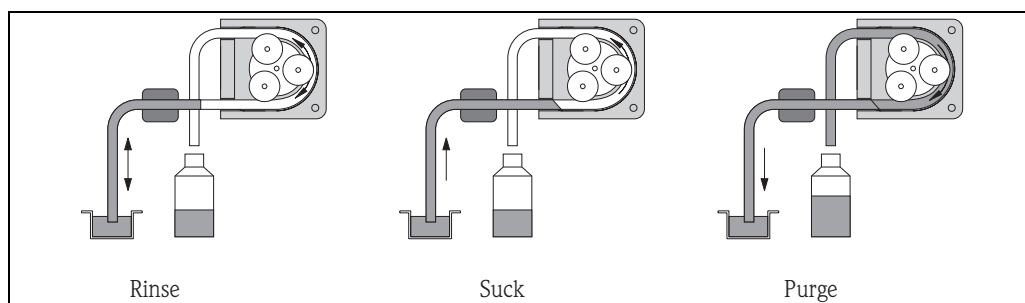
The functional principle of the peristaltic pump involves squeezing a flexible pump hose at one or several points and moving the squeezed point in the desired direction of fluid delivery. Moving the squeezed point is implemented by a pump rotor with rotor rollers on its circumference. The medium detection system controls the electronic volume calculation.

The medium detection system is a new system developed by Endress+Hauser. A pressure sensor is at the heart of the system. The pressure sensor detects the difference between a full and empty pump tube.

The advantages of the Endress+Hauser system:

- Intelligent: the suction height is automatically detected and does not have to be configured
- Maintenance-free: ceramic membrane

Sampling takes place in three steps:



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- Rinsing the suction line: the sampling liquid is sucked in until the medium detection system is triggered. Then the pump runs backwards and pushes the liquid back to the sampling point. The rinsing process can be repeated up to three times.
- Sucking the sampling liquid: the sampling liquid is sucked from the sampling point to the sampler and the sample volume is calculated electronically.
- Emptying the suction line: after sampling, the liquid left over in the suction line is pumped back to the sampling point.

### Sampling methods

The timer function in the control system makes sampling at defined times possible. Depending on the measured flow, samples can be taken in proportion with the quantity or flow. Sampling can also be triggered by an external signal, for event pacing at alarm values.

## Certificates and approvals

### CE-Mark

The sampler system fulfils the requirements demanded by the EU regulations. Endress+Hauser acknowledges successful unit testing by adding the CE mark.

### Ex approval

Liquiport 2000 is optionally available with the **ATEX II2G EEx dem[ib] IIC T4** certificate for operation in Ex-areas, Zone 1.

## Ordering information

### Liquiport 2000 portable sampler

Portable, battery-powered sampler with time, flow or event-controlled sampling of liquid media from 20..9999 ml using peristaltic pump. Menu-guided operation with "Quick-Setup", 2 digital inputs/outputs, 1 analog input. External diameter/height 480 mm x 700 mm; empty weight: approx. 19 kg; sampling height: 6 m, max. 8 m, length: max. 30 m, line connection ID 10 mm, supplied accessories: 6 m / 8 m suction line, ID 10 mm

#### Control unit

- |          |  |
|----------|--|
| <b>A</b> | 1x user mode                               |
| <b>B</b> | 7x user mode                               |
| <b>C</b> | 7x user mode, Interface Multisens C600R/XL |

#### Power supply

- |          |   |
|----------|---|
| <b>3</b> | Accumulator by customer supplied  |
| <b>1</b> | Accumulator 12V 12Ah + charger 230VAC, IP20, NC=Not for buffer charging operation       |
| <b>2</b> | Accumulator 12V 12Ah, w/o charger   |
| <b>4</b> | Accumulator 12V 12Ah + charger 230VAC, IP65 (adapted for buffer charging operation)     |
| <b>5</b> | Accumulator 12V 12Ah + charger 100-230VAC, IP30 (adapted for buffer charging operation) |

#### Operation language

- |          |         |
|----------|---------|
| <b>A</b> | German  |
| <b>B</b> | English |
| <b>C</b> | French  |
| <b>D</b> | Italian |
| <b>E</b> | Spanish |
| <b>F</b> | Dutch   |
| <b>G</b> | Danish  |
| <b>K</b> | Czech   |
| <b>P</b> | Polish  |

#### Sample distribution

- |          |  |
|----------|--|
| <b>A</b> | 1 x 20 litre composite container, PE (not with active cooling)   |
| <b>B</b> | 12 x 2 litre bottle, PE  |
| <b>C</b> | 24 x 1 litre bottle, PE  |
| <b>D</b> | 12 x 1 litre + 6 x 2 litre bottle, PE                            |
| <b>E</b> | 8 x 1.8 litre bottle, glass (not with active cooling)            |
| <b>F</b> | 12 x 0.7 litre bottle, glass                                     |
| <b>G</b> | 1 x 5 litre composite container, glass (not with active cooling) |

#### Electrical version

- |          |   |
|----------|---|
| <b>1</b> | Basic version                               |
| <b>2</b> | Basic version + RS232 cable + ReadWin® 2000 |

#### Peristaltic Pump

- |          |  |
|----------|--|
| <b>A</b> | 6 m suction height   |
| <b>B</b> | 8 m suction height   |
| <b>C</b> | Suction height 6 m + active cooling, Regeneration unit RPT20A-HC Order separatly |
| <b>D</b> | Suction height 8 m + active cooling, Regeneration unit RPT20A-HC Order separatly |

RPT20-

← Order code

<b>Liquiport 2000 Ex portable sampler</b>									
Portable, battery-powered sampler for use in Ex areas with time, flow or event-controlled sampling of liquid media from 20 to 9999 ml using peristaltic pump. Menu-guided operation with "Quick-Setup", 2 digital inputs/outputs, 1 analog input, standard outer diameter/height 480 mm x 700 mm, standard empty weight: approx. 25.5 kg, sampling height: 6 m, max. 8 m, length: max. 30 m, line connection ID 10 mm, supplied accessories: 6 m / 8 m suction line, ID 10 mm									
<b>Approval</b>									
A	ATEX II2G EEx dem(ib) IIC T4								
<b>Control unit</b>									
A	1x user mode								
B	7x user mode								
<b>Power supply</b>									
1	Ex-accumulator 12V 12Ah + charger								
2	Ex-accumulator 12V 12Ah								
3	Ex-accumulator 12V 12Ah + charger 100-240VAC								
<b>Operation language</b>									
A	German								
B	English								
C	French								
D	Italian								
E	Spanish								
F	Dutch								
G	Danish								
K	Czech								
P	Polish								
<b>Sample distribution</b>									
A	1 x 20 litre composite container, PE (not with active cooling)								
B	12 x 2 litre bottle, PE								
C	24 x 1 litre bottle, PE								
D	12 x 1 litre + 6 x 2 litre bottle, PE								
E	8 x 1.8 litre bottle, glass (not with active cooling)								
F	12 x 0.7 litre bottle, glass								
G	1 x 5 litre composite container, glass (not with active cooling)								
<b>Peristaltic pump</b>									
1	6 m suction height								
2	8 m suction height								
<b>Housing</b>									
1	Lower part PE, antistatic								
2	Lower part stainless steel, active cooling, (35kg, d=521mm), Regeneration unit RPT20A-HC order separately								
<b>Electrical version</b>									
1	Basic version								
2	Basic version + RS232 cable + ReadWin 2000								
<b>Mechanical version</b>									
A	Basic version								
RPT22-									← Order code

## Accessories

### Liquiport 2000 and Liquiport 2000 Ex accessories

Order code	Accessory
51004744	2 x Spare pump hose ZP6M
51004745	2 x Spare pump hose ZP8M
51002425	Suction filter cpl., for use with 10 mm line
50053928	Suction line, PVC meshed, clear, ID 10 mm
50070341	Suction line, NBR, black, ID 10 mm
51003971	Line connection nipple kit
51003198	Suction strainer V2A, 500 mm

Order code	Accessory
51003193	Distributor arm with locking screws
RPT20A-RA	Composite container conversion kit 20 l, PE
51003410	Composite container 20 l with cap
RPT20A-HD	Bottle base with active cooling
RPT20A-KA	Freezer cartridge for 12 x 2 l PE and 24 x 1 l PE

**Liquiport 2000 accessories**

Order code	Accessory
51003199	Battery 12 V 12 Ah
51003191	Suspension harness kit
RPT20A-FA	Bottles PE 12 x 2 l with cap
RPT20A-FB	Bottles PE 24 x 1 l with cap
RPT20A-FC	Bottles glass 8 x 1.8 l with cap
RPT20A-FD	Bottle PE 2 l with cap
RPT20A-FE	Bottle PE 1 l with cap
RPT20A-FF	Bottle glass 1.8 l with cap
RPT20A-FG	Bottle glass 0.7 l with cap
RPT20A-FH	Composite container 5.0 l, glass with cap
RPT20A-LA	Charger 230V, 12V/2.7A, IP20 ( <b>not</b> adapted for buffer charging operation)
RPT20A-LB	Charger 230V, 12V/3A, IP65 (adapted for buffer charging operation)
RPT20A-LC	Charger (wide range) 100 to 240 V, 12 V/2.0 A, IP30 (adapted for buffer charging operation)
RPT20A-LL	Cable adapter charger-accumulator
RPT20A-LK	Spare accumulator with charger adapter cable
RPT20A-RB	12 bottles PE conversion kit
RPT20A-RC	24 bottles PE conversion kit
RPT20A-RD	8 bottles glass conversion kit (from software V3.03)
RPT20A-RE	12 bottles glass conversion kit
RPT20A-RF	Composite container conversion kit 5 l, glass
RPT20A-HC	Regeneration oven for zeolite cooling base

**Liquiport 2000 Ex accessories**

Order code	Accessory
RPT22A-LA	Charger 12 V/ 2.7 A IP20 for Ex battery
RPT22A-LC	Charger (wide range) 100 to 240 V, 12 V/2.0 A, IP30, for Ex battery
RPT22A-LK	Ex battery 12 V 12 Ah lead gel
RPT22A-LL	Ex battery cable adapter - standard charger RPT20
RPT22A-FA	Bottles PE 12 x 2 l with cap
RPT22A-FB	Bottles PE 24 x 1 l with cap
RPT22A-FC	Bottles glass 8 x 1.8 l with cap
RPT22A-FD	Bottle PE 2 l with cap
RPT22A-FE	Bottle PE 1 l with cap
RPT22A-FF	Bottle glass 1.8 l with cap
RPT22A-FG	Bottle glass 0.7 l with cap
RPT22A-FH	Composite container 5.0 l, glass with cap