



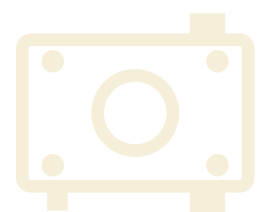
## WADose LITE HP

## HPLC pumps



**An intelligent, precise dosing pump for technical centres, laboratories, test benches and production facilities**

- Dosing range 0.001...40 ml/min up to 400 bar
- Plug & work with mini CORI-FLOW™ flowmeter
- Easy operation and integration in control systems
- Pump head made of stainless steel or PEEK
- Integrated pressure monitoring and control system
- Low-pulsation dosing
- Tempering or cooling for liquefied gases



## WADose HPLC pump

Pump models of the WADose series are intelligent, precise pumps for dosing tasks with fluids in technical centres, laboratories, test benches and production facilities. They can be easily integrated into existing control systems.

The WADose LITE is operated via user-friendly and well legible keypad.

The low-pulsation dual-piston pump is run by an intelligent control system with a precise working step motor for very small step and dosage rates. The backpressure can range from atmospheric level up to 400 bar.

With the intelligent, optional mass flow interface for a mini CORI-FLOW™ mass flowmeter, the actual flow rate is measured or indicated in-situ, while being controlled independently from viscosity or density.

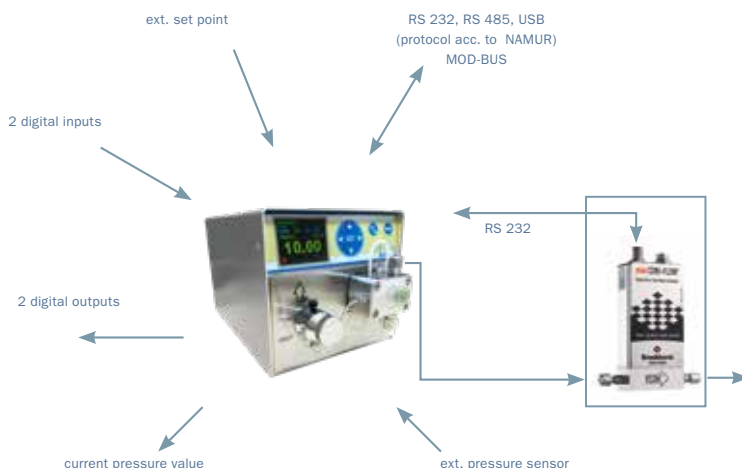
### Does my pump really do what it should?

Concerns always remain, if there is no installed option to monitor the pump directly or if time-dependent gravimetric measurements are not used. Wear off effects or pump defects, sudden and excessive pressure changes, influence of compressibility factors, lack of dosing medium, leaks, air pockets and blockages may lead to situations in which the desired amount of fluid is not delivered.

Ability to measure and to monitor the liquid flow in a precise manner using newly developed CORIOLIS mass flowmeters adds another unique feature to the application range of WADose pump family.

The dosing system is located within a continuously self-monitoring control circuit.

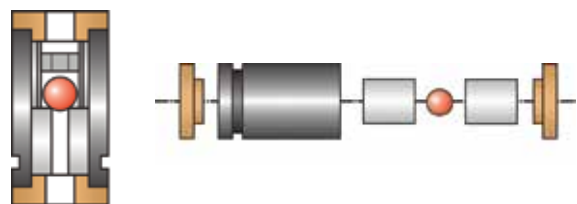
### Mass flowmeter configured pump ensures correct and precise dosing!



Mass-flow measurement using integrated pump control system

## Operating principle

The WADose pump head is based on a dual-piston delivery system. It works according to the principle of a short-stroke piston technology, whereby only two sapphire ball check valves are necessary for the proper function. The stroke length of delivery and damping pistons is 2 mm and 1 mm respectively. This results in a stroke volume of approx. 20 µl for each piston considering analytical and preparative head models. The microhead pump model has a significantly reduced stroke volume.



Such low stroke volumes in combination with a relatively high stroke frequency result in a limited residual pulsation. Through the opposing, serial arrangement of the pistons, half of the delivery volume in the damping piston within the pressure range is pumped on through while the delivery piston displaces the fluid in the head. To bridge the suction phase of the delivery piston, the damping piston ejects the volume absorbed.

Step motor-based speed control system ensures steady medium delivery even at harsh conditions related to fluctuating back pressure.



Rear view of WADose LITE HP

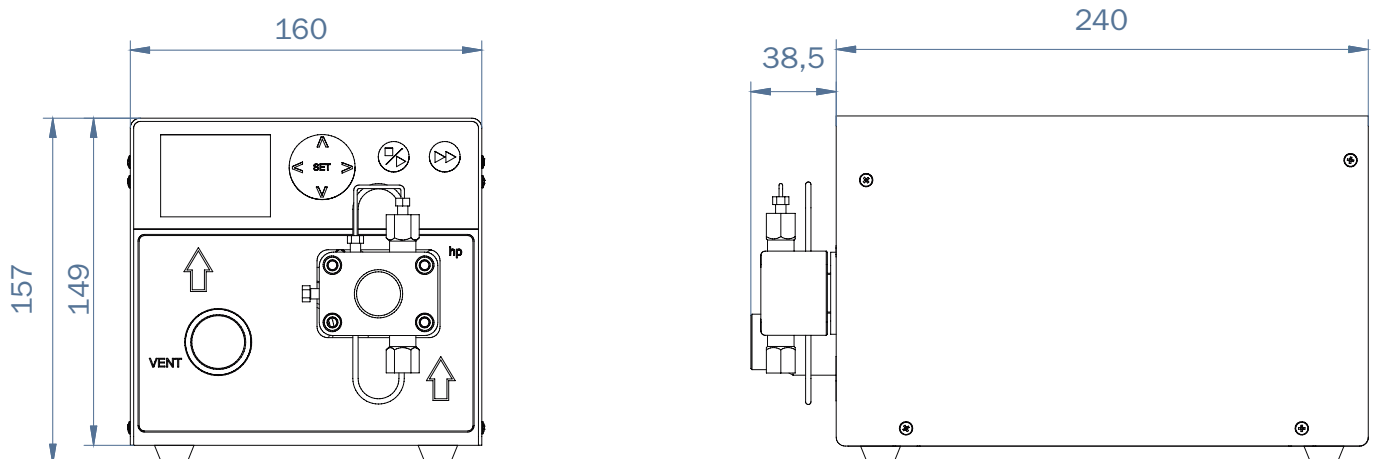
## Specifications

<b>Dosage amounts:</b>	Micro 0.001...2 ml/min Analytical: 0.005...10 ml/min Preparative: 0.02...40 ml/min PEEK model: max. 30 ml/min (based on H <sub>2</sub> O at 1 barg)
<b>Pressure range:</b>	atm...400 barg (40 ml/min to 160 bar)
<b>Pressure sensor:</b>	0...400 barg → 0.5% of final value
<b>Temperature range:</b>	standard 40°C, TU model -20 °C...+130 °C
<b>External set point:</b>	0...10 VDC, 4 – 20 mA for rpm, flow rate or pressure
<b>External actual value:</b>	0...10 VDC, 4 – 20 mA for flow rate or pressure
<b>Massflow interface:</b>	digital RS 232 for mini CORI-FLOW™, LIQUI-FLOW™ from Bronkhorst High-Tech B.V.
<b>Graphs with mini CORI-FLOW™:</b>	volumetric flow rate, pressure, trend ("PLUS") mass flow rate, density, temperature, batch quantity ("PLUS")
<b>Controls:</b>	keypad

<b>Mechanical connections:</b>	input 1/8" clamp ring, with adapter 1/4" output 1/16" clamp ring, with adapter 1/8"
<b>Weight:</b>	4.5 kg
<b>Operating modes:</b>	– volume transport – mass dosing – controlled pressure ("PLUS")
<b>Relief valve:</b>	integrated – manually controlled at the front in contact with media: stainless steel or PEEK, (ceramic, ruby, sapphire, PTFE/graphite, Kalrez)
<b>Materials:</b>	stainless steel, brushed
<b>Housing:</b>	via external mains adapter (included)
<b>Power supply:</b>	90...264 VAC /120 W
<b>Interfaces:</b>	2 x digital In 24 VDC 2 x digital Out 24 VDC MOD-BUS RTU, RS 232, RSB 485, USB analogue In 0 – 10 V or 4 – 20 mA analogue Out 0 – 10 V or 4 – 20 mA

## Dimensions (mm)

WADose LITE HP

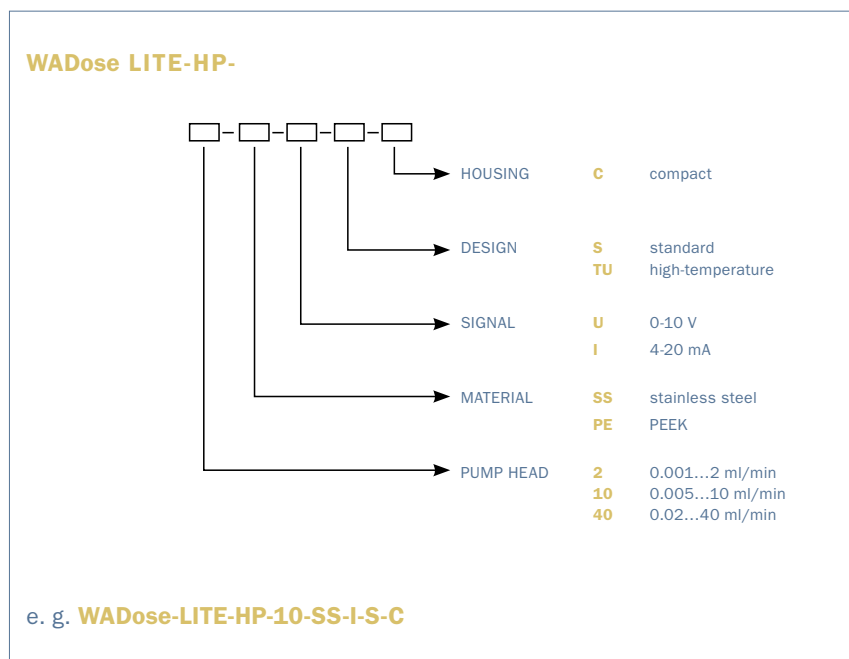


The indicated dimensions are approximate dimensions and may be changed without prior notice.

## Options and accessories

- Pressure sensor modified for special measuring range
- Mini CORI-FLOW™ mass flowmeter
- WD90007 pulsation damper, stainless steel, 100 bar
- WD90010 tempering head, max. +130°C/min. -20°C
- WD90337 double ball check valve (2 pieces required)
- WD90338 input fitting for double ball check valve
- WD90339 output fitting for double ball check valve
- WD10001 pump head (incl. valves), 2 ml/min, stainless steel
- WD10002 pump head (incl. valves), 10 ml/min, stainless steel
- WD10003 pump head (incl. valves), 40 ml/min, stainless steel
- WD10004 pump head (incl. valves), 2 ml/min, PEEK
- WD10005 pump head (incl. valves), 10 ml/min, PEEK
- WD10006 pump head (incl. valves), 30 ml/min, PEEK

## Model number key:



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