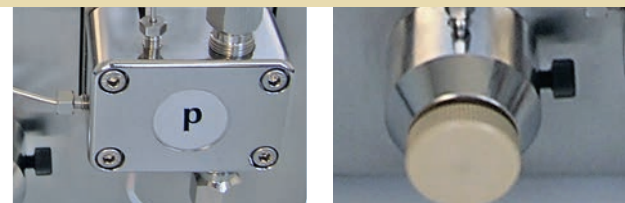




## WADose HPLC Pump



**A smart, accurate dosing pump for pilot plants, laboratories, test facilities and production**

- Range 0.002... 50 ml/min up to 400 bar
- Plug & Work with flow meter mini-CORI-FLOW®
- Handling over build-in touch display or analog signals, RS232
- Pump head made of stainless steel or PEEK
- Integrated pressure sensor with pressure control

## WADose HPLC pump

WADose is a smart, precise dosing pump for dosing of liquids in laboratory and pilot plants, test facilities and production.

The low-pulsation dual-piston pump is accurate driven by an intelligent controller with stepper motor for smallest steps and dosages. The pressure range goes from atm up to 400 bar.

The handling of WADose goes via a user-friendly graphical touch-display or external analog signals/RS232.

With the built-in intelligent mass flow control interface for mini CORI-FLOW® Mass Flow Meter, the actual flow rate is in fact controlled.

A built-in pressure sensor can be used for direct pressure control and/or pressure monitoring. Safety shutdown in case of overpressure is hard-coded of course.

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

This uncertainty always exists when you have no way to monitor the pump or directly via time-dependent gravimetric measurement. Defects or wear on pumps, unexpectedly high back pressures, lack of dosing liquid, leaks, air bubbles, constipation – all of these reasons can in better faith result, that is not being pumped the desired amount of liquid.

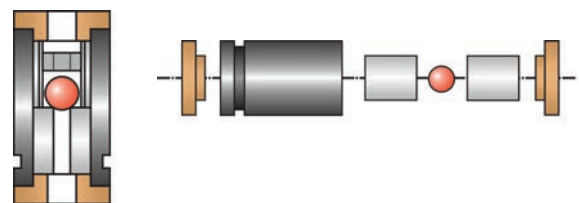
The newly developed HPLMC pumps (high-pressure-liquid-MASS-controlled pumps) are metering and monitoring in situ pressure and flow nearly pulseless in a process.

The peculiarity is that the pumped quantity is controlled by a newly developed Coriolis mass flow sensor and precisely measured. The dosage is in a continuously self-monitoring control loop.

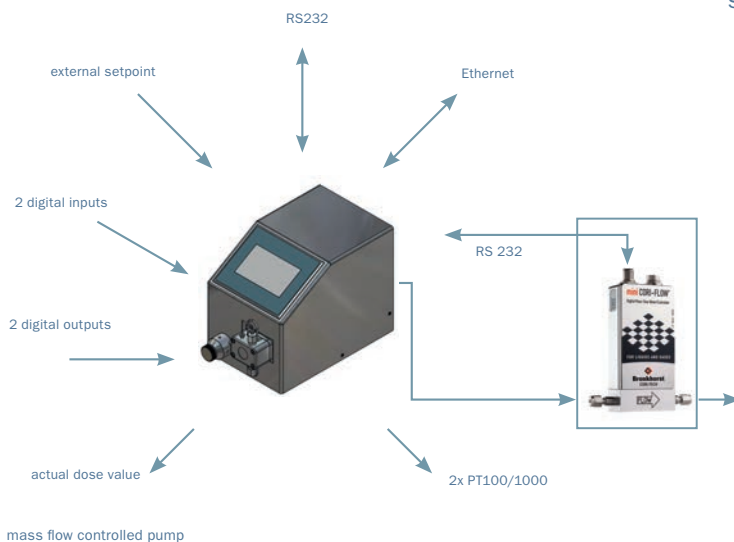
**Thus absolutely ensures that the pump also pumps really what it should pump!**

### The pump principle

The pump head of WADose is based on a two-piston conveyor system. It operates on the principle of short-stroke piston technology with only two check valves made of sapphire. The delivery piston operates at a stroke length of 2 mm and the damping piston having 1 mm.



This results in a delivery volume of 20 µl per stroke during analytical pump head. The smaller volume of the micro head is greatly reduced. The two pump pistons are arranged in opposite directions. During the delivery piston displaces the liquid in the pump head, takes the damping piston on the pressure side the half of the delivery volume. To bridge the induction phase of the delivery piston pushes the damping piston the volume taken up outside. This low output per stroke, in conjunction with a relatively high stroke frequency, resulting in a low residual pulsation. Using a speed controlled stepper motor provides uniform support even in strongly varying back pressure.



back view

## Specifications

Dosing ranges: Micro 0,002...2 ml/min  
 Analytic: 0,01...10 ml/min  
 Preparative: 0,05...50 ml/min  
 (based on water and isopropanol @ 1 barg)

Pressure range: atm...400 barg (50 ml/min up to 200 barg)

Pressure sensor: 0...400 barg -> 0.5% FS

Temperature range: standard 35 °C, Model TU -20 °C...+130 °C

Viscosity: up to 80 mPa.s

External setpoint: 0...10 Vdc (other on request) for speed, massflow or pressure

External actual value: 0...10 Vdc (other on request) for mass flow and/or pressure

Mass flow interface: digital RS 232 for mini-CORI-FLOW®, LIQUI-FLOW® from Bronkhorst High-Tech B. V.

Readout with mini-CORI-FLOW®: volume flow, pressure, trend, mass flow, density, temperature, batch counter

Touch display: TFT 480 x 270 Pixel

Fittings: in 1/8" clamping ring  
 out 1/16" clamping ring (with included adaptor 1/8" clamping ring possible)

Weight: 6 kg

Operating modes: – volume dosing  
 – mass dosing  
 – pressure controlled

Ventilation valve: integrated – handling over frontside

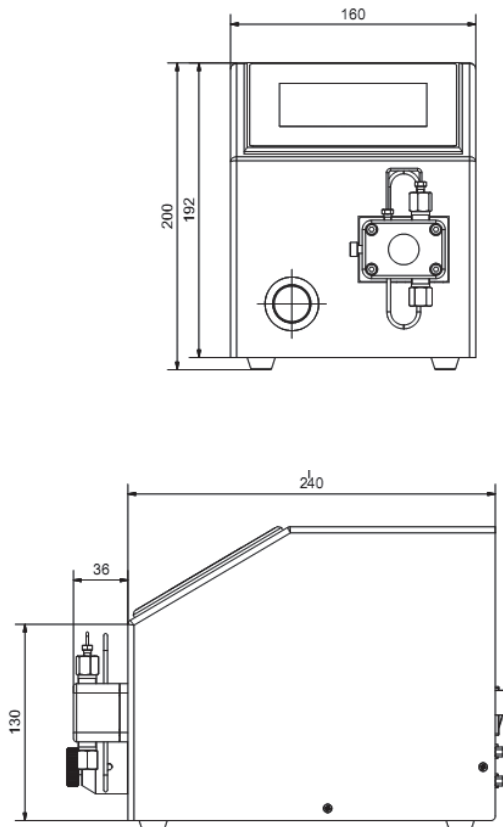
Materials: fluid touched: stainless steel or Peek

housing: brushed stainless steel

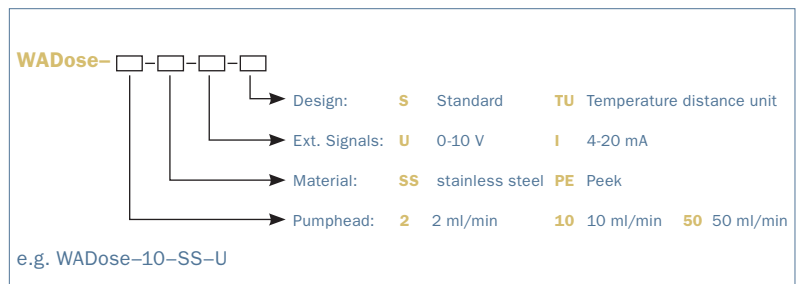
Power supply: external mains adaptor  
 90...264 Vac /150 W (included)

Interfaces: 2 x digital In 24 Vdc  
 2 x digital Out 24 Vdc  
 RS 232  
 analog In 0 – 10 V or 4 – 20 mA  
 analog Out 0 – 10 V or 4 – 20 mA

## Dimensions:



## Model number identification:

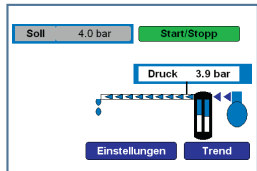


## Possible external connection (15-pin SUB-D female jack):

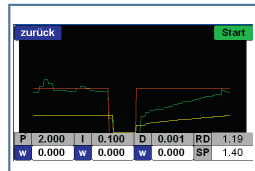
Pin	name	signal	mass mode	pressure mode	volume mode
1	0Vdc	GND			
2	analog Out (Ifm)	0..10 Vdc / 4-20 mA	measure flow	-	-
3	analog In (Ifm)	0..10 Vdc / 4-20 mA	setpoint flow	-	-
4	0Vdc	GND			
5	analog Out (p)	0..10 Vdc	measure pressure	measure pressure	measure pressure
6	analog In (Set P)	0..10 Vdc	-	setpoint pressure	setpoint volume flow
7	0Vdc	GND			
8	digital In 1	+24 Vdc	external start/stop	external start/stop	external start/stop
9	digital In 2	+24 Vdc	alarm reset	alarm reset	alarm reset
10	digital Out 1	+24 Vdc	alarm (flow)	-	-
11	digital Out 2	+24 Vdc	alarm (pressure)	alarm (pressure)	alarm (pressure)
12	0Vdc	GND			
13	analog In /Pt100	0..10 Vdc / PT100	optional	optional	optional
14	24Vdc	+24 Vdc / 1 A			
15	24Vdc	+24 Vdc / 1 A			

## Graphical user interface

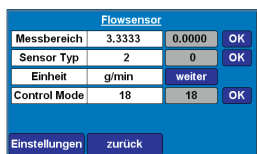
Examples of the user interface / visualisation



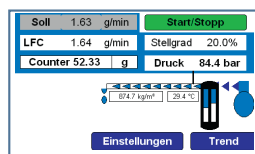
Controlled pressure



Trend



Parameter advanced



Mass flow

## Options and accessories

- pressure sensor optimized for special range
- external output for density and temperature
- mini CORI-FLOW®-massflowmeter, Typ M12, M13, M14
- WD90001 Ventilation syringe and tube and fitting 1/16"
- WD90007 Pulsation damper, stainless steel, 100 bar
- WD90010 Temperature head, max. +130 °C
- WD10001 Pump head (incl. check valves), 2 ml/min, stainless steel
- WD10002 Pump head (incl. check valves), 10 ml/min, stainless steel
- WD10003 Pump head (incl. check valves), 50 ml/min, stainless steel
- WD10004 Pump head (incl. check valves), 2 ml/min, Peek
- WD10005 Pump head (incl. check valves), 10 ml/min, Peek
- WD10006 Pump head (incl. check valves), 50 ml/min, Peek
- WD10007 Check valve (2 pc. necessary)
- WD90020 Check valve with spring (2 pc. necessary)



WADose with optional distance unit and tempered pump head for lower or higher temperature (cooling or heating)

distribute by: