

NEMESYS[®] HIGH PRESSURE

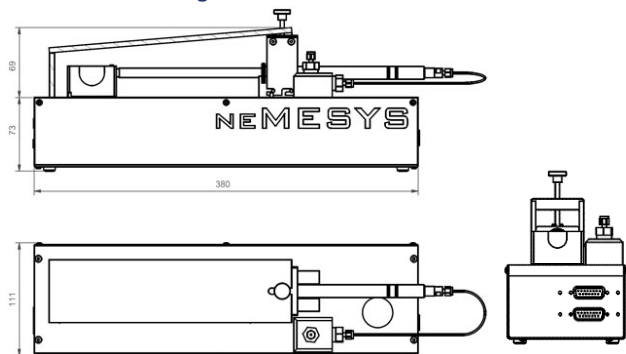
High Pressure Syringe Pump

Features

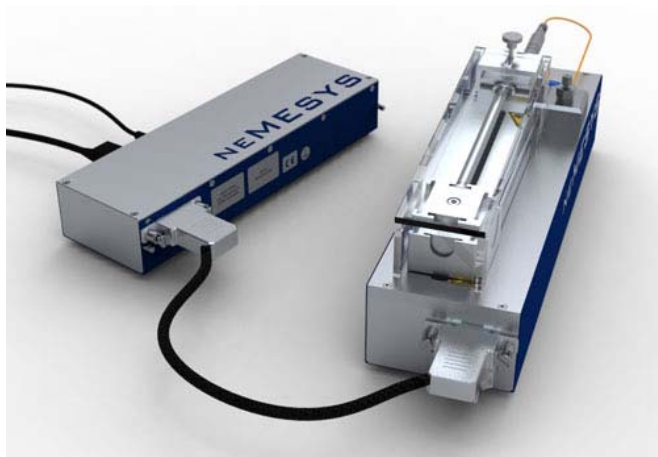
For dosing fluids into microfluidic systems with high pressures there is the need for special equipment that suits for this application. With the neMESYS High Pressure Syringe Pump a dosage with a pressure up to 250 bar is possible. The reachable pressure depends on the syringe you use.



Mechanical drawing



This module fits perfectly into a neMESYS Syringe Pump System. Simply connect this high pressure module to any other neMESYS module via a neMESYS interconnect cable.



Mechanical Data

Weight4.7 kg
Dimensions (L x W x H).....380 x 111 x 134 mm

Electrical Data

Power Supply Voltage24 VDC \pm 10%
Dosing Unit Current typical at 24 VDC0,5 A
Dosing Unit Current peak at 24 VDC2,8 A

Environment

Operating Temperature -10°C to 45°C
Storage Temperature -40°C to 45°C
Operating Humidity..... 20% to 80%, non-condens.
Storage Humidity..... 20% to 80%, non-condens.

Interfaces

CAN max. 1 Mbit / s
RS-232 max. 115200 bit/s

Configuration

Gear 33
Syringes stroke..... up to 140 mm

Supported Syringes

Harvard High Pressure Stainless Steel Syringes
Volume2.5 / 8 / 20 / 50 / 100 ml
Connection 1/16" Swagelok
Material syringestainless steel
Material seal FFKM

Dosing performance

Min. driving speed0.52 μ m/s
Max. driving speed5 mm/s
Min. increment..... 0.5 μ m
Step frequency (pulsation free)34.13 step/s
Max. shear force..... 1400 N

Syringes, pressures and flow rates

| Syringe size (ml) | Working pressure syringe | Testing pressure syringe | Max. pressure module | Min flow (μ l/min) | Max flow (ml/min) | Min. Vol. (nl) |
|-------------------|--------------------------|--------------------------|----------------------|-------------------------|-------------------|----------------|
| 2.5 | 480.0 bar | 620.0 bar | *250 bar | 0.026 | 8.225 | 0.285 |
| | 6961 psi | 8992 psi | 3625 psi | | | |
| 8 | *103.4bar | 275.8 bar | 203.4bar | 0.099 | 31.08 | 1.078 |
| | 1499 psi | 4000 psi | 2950 psi | | | |
| 20 | 51.7 bar | 103.4 bar | *50.4bar | 0.340 | 125.4 | 4.347 |
| | 749 psi | 1499 psi | 730 psi | | | |
| 50 | 51.7 bar | 103.4 bar | *22.5bar | 0.894 | 280.2 | 9.715 |
| | 749 psi | 1499 psi | 326 psi | | | |
| 100 | 51.7 bar | 103.4 bar | *15.1bar | 1.331 | 417.2 | 14.47 |
| | 749 psi | 1499 psi | 219 psi | | | |

* The bold printed values are the limiting values. If you use a 8 ml syringe it is the syringe which limits the pressure. By using a 2.5 ml, 20 ml, 50 ml and 100 ml syringe the module sets the pressure limit

The limit of the pressure sensor is 250 bar (3626 psi).

04.12.2009