

LEAFLET for Clotho-1

Single channel SUP/HFF control station for one Clio or Thalia diaphragm Single-Use-Pump.

Product, model name	Clotho-1
Purpose	Single SUP/ HFF control
Single-Use-Pump size TM or CM	80, 100, 140
Drive gas pressure supply	>1 - <4 bar atmospheric
Drive gas vacuum supply	<0,1 bar absolute
Power supply	24 VDC, 2 amp
Hephaestus cabinet size	U2
Weight, kilo	3.5

Design

For use with one CellMembra or CellRetention Perfusion-Single-Use-Bioreactor's (P-SUB's) for high cell density cultivation operating in perfusion mode supplied by www.perfusecell.com. The P-SUB integrates both SUB, diaphragm Single-Use-Pump (SUP) and Hollow-Fibre-Filter (HFF) - all in one package – irradiated and ready to use.



Clotho-1 is small and compact - all electronics fits inside Hephaestus U2 Stainless Steel cabinet. Even with the 5" touch sensitive display. Clotho-2 shown at right.

Specification

When connection to a supply of pressure with sufficient capacity then one channel spec is:

- Stroke frequency, per minute: 0.5 - 20
- Stroke duration, seconds: 1 - 60
- Clio or Thalia size 80 diaphragm SUP
- Clio or Thalia size 100 diaphragm SUP
- Clio or Thalia size 140 diaphragm SUP
- CFF retentate velocity, m/s: 0.1 – 20

In & Out in front panel

- 24 VDC supply via Buccaneer socket
- Power on/off breaker with LED light
- Supply of pneumatic air via 8 mm hose from pressure supply
- Supply of vacuum via 8 mm hose from vacuum supply
- Single drive gas pressure via 8 mm hose to SUP
- RJ45 socket
- USB socket
- Single M12 multi pin connection to LASER sensor

Driving the SUP requires drive gas below and above atmospheric pressure. The drive gas is constantly adjusted via sets of proportional valves inside Clotho. Which control the pumped liquid broth from the SUP and the velocity of the broth through the HFF with high accuracy.

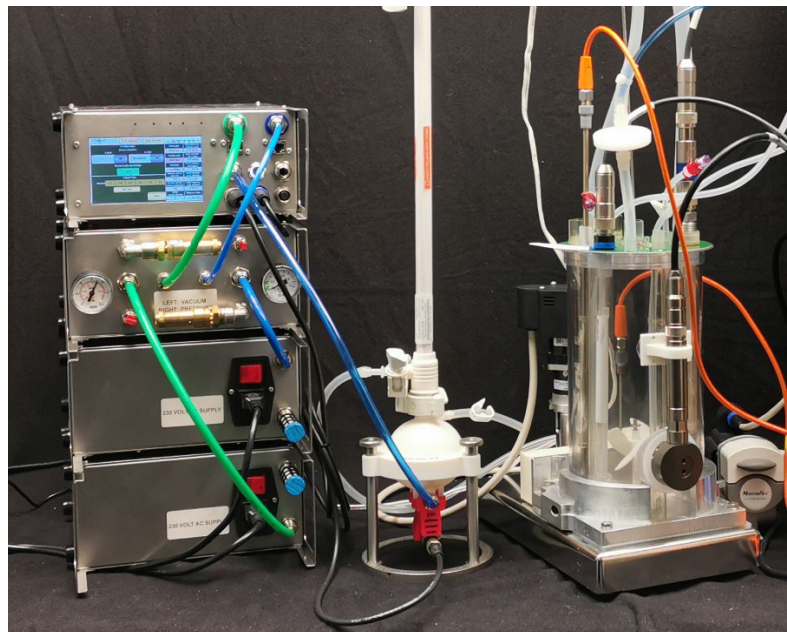
Sensors and actuators

- Pressure sensors
- Vacuum sensor
- Single laser sensor
- Proportional valve for positive drive gas pressure
- Proportional valve for negative drive gas pressure

Communication

- 5" touch sensitive TFT display for programming and info from the built-in webserver
- USB port for USB adapter/Wi-Fi
- RJ45 socket for IP/TCP for OPC-UA communication and software upgrades

Suitable supply of pressure and vacuum to CellMembra or CellRetention are build into Hephaestus cabinets are Alagonia. Check out the Sarpedon reservoir stabilising pressure/vacuum and reduce pulsation.



Clotho-1 is designed for operation of one CellMembra or CellRetention P-SUB's like the one 3.2 litre Vessel Volume seen here. Clotho-1 shown connected to Alagonia pumps for pressure and vacuum and Sarpedon reservoir for ease of use.

Lachesis can off course be driven by in lab installed pneumatic air and sufficient vacuum.