



TME/3000 Anaerobic digestion 50L - 100L

Description

Anaerobic digestion is a collection of processes by which microorganisms break down biodegradable material in the absence of oxygen.

This pilot is composed by a main tank in glass 100L with pH and temperature measurement. A peristaltic pump allows to feed the reactor from a tank put over the balance.

A peristaltic pump, fixed speed, allows to recirculation of the biomass in the tank or the partial extraction of biomass using electro-pneumatics valves. The biomass is extracted in storage tank, the storage tank is put over the balance.

The pumps can be activated manually or automatically with the draw-off filling cycle.

An insulating heating coat allows to heat and to keep the biomass temperature in the reactor. The heating can be manual or controlled. A safety thermostat limits the heating.

A peristaltic pump (variable speed) allows to introduce a solution for pH adjustment, manually or automatically using the thresholds.

The gases produced are evacuated in the tank to a gas meter (in option).



PHOTO NOT CONTRACTUALLY BINDING

Educational goals

- **Show the different stages of anaerobic digestion**
- **Monitoring the process for several weeks**

Residence time distribution

Hydrodynamic study

Influence of reactor level 50L or 100L

Production of gas: Methane et CO₂

Influence of the parameters

Flowrate, pH and temperature

Experiments

Treatment of a substrate containing about 20% dry matter. The methanization degrades about half of dry matter, the solution contained in the reactor will be about 10% of dry matter.

Study of the anaerobic digestion process

- Mass Balance in steady state
- Gas produced balance products : Methane & CO₂.
- Pollution balance followed by OCD (Oxygen chemical Demand)



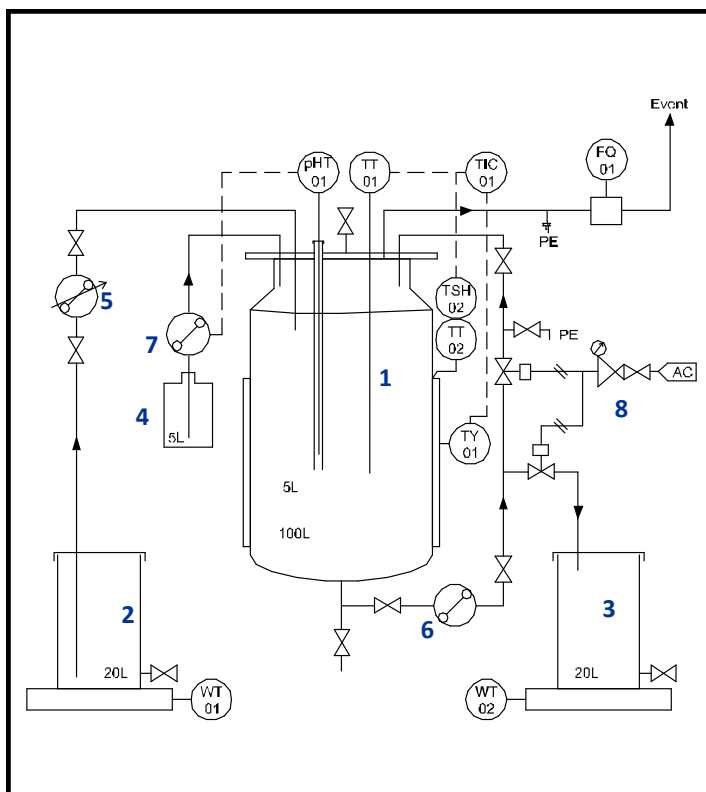
Unit delivered with educational handbook and technical documentation.



Possibility to customize the unit

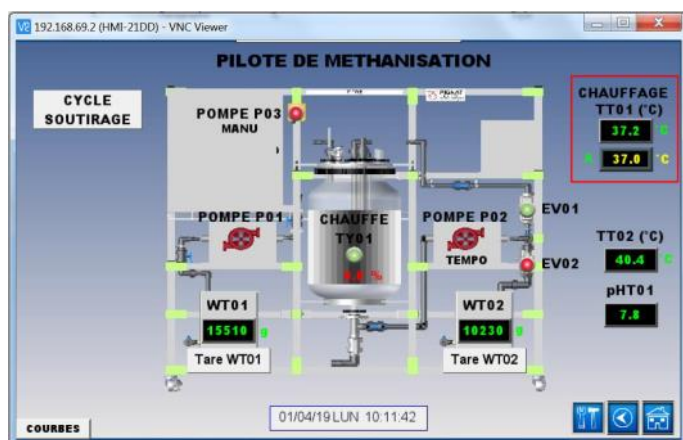


Commissioning on site. Training on site



Instrumentation: Temperature probe. pH transmitter. Safety thermostat. Gas meter. transmitted weight.

Supervision & data acquisition



Synoptic of the unit. Measurement display. Adjusting parameters. Curves in real times and historical.

General specifications

- 1 Glass vessel**, 100L, SS lid, draining valve. Insulating heating coat with viewing window. Electropneumatic valves for recirculation and draw-off. Sampling.
 - 2 Feeding tank** 20L, in PVC, removable lid, draining valve. Balance with SS tray.
 - 3 Draw-off tank** 20L, in PVC, removable lid, draining valve. Balance with SS tray.
 - 4 Storage tank** of pH solution, in PE, 5L.
 - 5 Feeding peristaltic pump** speed controller. Flexible Ø 25x35 mm.
 - 6 Draw-off peristaltic pump** fixed speed, 45tr/min.
 - 7 Peristaltic pump** addition of pH solution, variable speed.
 - 8 Circuit air**: isolating valve, setting valve, air pressure reducing.
- Option:** Ritter high accuracy drum-type gas meter.

Control unit

Electrical cabinet with :

- Main switch. Operating light indicator.
- Emergency stop.
- pH transmitter.
- USB port.
- Touch screen 10" color (Version 15" available).

Overall dimensions - Utilities



200 - 400 V
3φ - 50/60 Hz

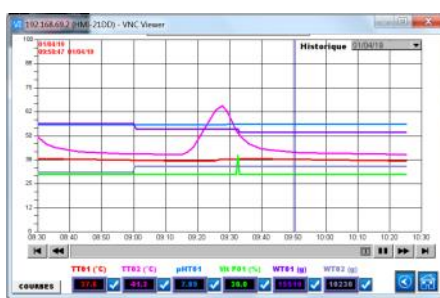
Compressed
air

Evacuation

Dim : 200 x 70 x 200cm - 300 kg
SS tubular framework 40 x 40mm



Pilotage of pump screen



Curves screen



Controls screen