SIP&CIP Standard Pilot Scale Fermenters FE-9

Equipment Design

The system consists of 75 liters fermenter (total volume), pre-assembled unit, control cabinet mounted on a stainless steel frame, supplied with all necessary piping, valves and instruments, automation, control panel (HMI).The system is designed for aerobic fermentations, closed aseptic operations.

The skid holds all the piping and all utilities need to be connected at one point of the skid.

The control is based on a PLC-SCADA control system, and it`s fully suitable for inline CIP and SIP.

Volume

Total Volume: 65 l

Maximum Working volume: 75 l

Ratio H: D

2.5: 1

Materials

All parts in contact with the culture are in AISI 316 L

Vessel: AISI 316 L

Other parts in AISI 304

Sight glass: Borosilicate

Materials are guaranteed by origin certificates, chemical analysis and mechanical characteristics.

Gaskets are FDA approved materials: EPDM and silicone

Operating conditions

Vessel project pressure: -1/+2.0 bar

Jacket project pressure: -1/+3.5 bar

Vessel project temperature: 133 °C

Type:	Mechanical coupling
Impellers:	n.3 6 blades disc impellers Rushton type or n.2 Marine Impeller (in height adjustable and removable)
Project Press:	-1/+3.0 bar
Project Temp:	-10 / 150 °C

Viscosity: 100 mPas

Density: 1100 kg/m^3

Material (product contacted): *AISI 316*

FE-90 connections		
Position	Qty	Description
Vessel lid	2	Spare (A.F,etc)
	2	Safety Valve
		Gas-out
	3	SALAS - Solaris Sterile Liquid Addition System
		n°2 spare (Steam-bridge,ect)
	1	Pressure probe
	1	Lamp
	1	Pneumatic Cover Lifting
Lower side wall	1	Spare
	3	pH & dO2 probes + spare
	1	PT100
	1	Sampling
Vessel	1	Stirrer

bottom	1	Bottom valve
Jacket in-out	1	Steam In
	1	Water in
	1	Jacket out
	3	Electric Heaters in

Utilities	Requirement
Electrical	power supply 100-230 Vac 50/60 Hz standard industrial connector IEC 10A 3 poles (L+N+GND)
Cooling Water (Inlet)	1,0-1,5 bar(g) 14,5-29,0 PSI(g)
Instrument air	6,0-6,5 bar (g)
Jacket Empty Air	1,0 bar(g), oil free compressed
Exhaust	Open
Water Out (Drain)	Open Drain
HP Steam	2,5-3,0 bar (g)
LP Steam	1,5-1,8 bar (g)
Condensate drain	Open drain