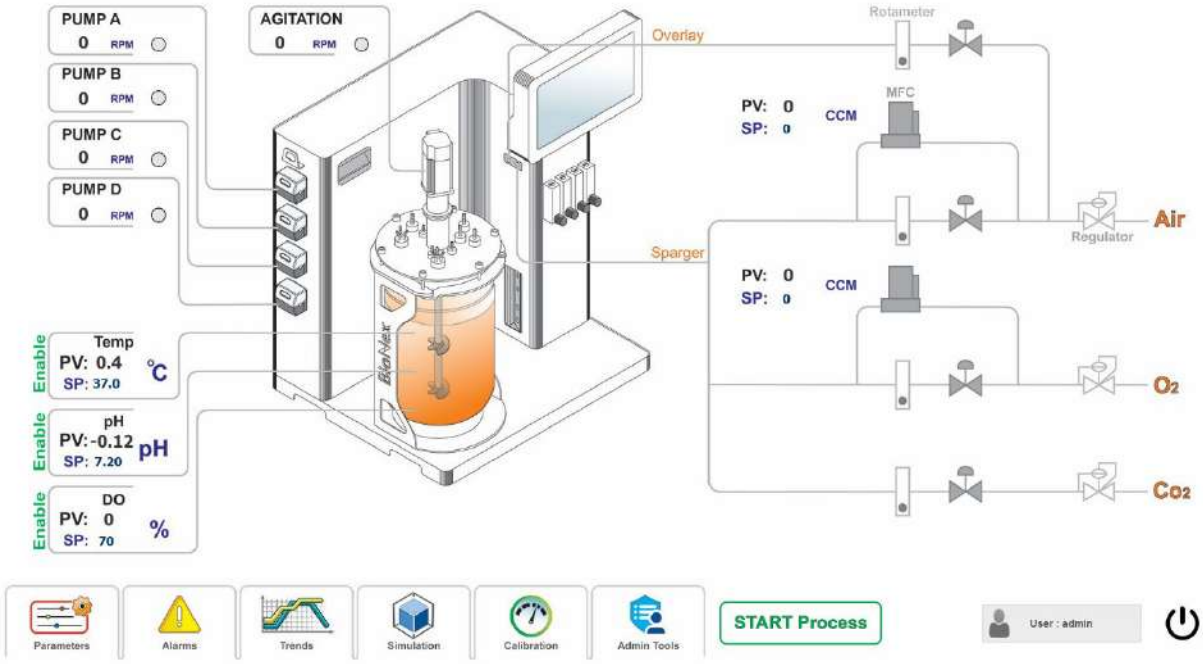


10 L fermenter

We specialize in supplying customers with a wide range of cell culture Bioreactor, and fermenter, and also offer services including design, installation, and commissioning.

Vessel	Borosilicate glass 3.3 Available in four different sizes: 10 L (Working Volume: 7 Liters) double-wall Round-bottom vessels without any dead space Saving valuable space in autoclaves
Temp Control	PID fully digitization signal processing, digitization control settings Control range 25-45°C, control precision ±0.1°C PT 100Ω Temp sensor Double-wall: System with water circulation system to control the temp inside vessel
DO Control	On-line check and measure; digital display. Range 0-300%, precision ±1%; Optical DO sensor and signal transmission line, Hamilton
PH Control	On-line check and measure, and digitization fully automatic control; Rotameter automatically adjusting CO2 Peristaltic pump automatically adjusting Acid Peristaltic pump automatically adjusting base Control range 2-12 pH Measure precision ±0.01 Control precision ±0.1 PH sensor and signal transmission line, Hamilton
Agitation	Bioreactor use top Delta servo motor Top mechanical agitator Speed range: 50-2000 rpm. Automatically control, with auto alarm function
Air Flow	Automatically adjusting with Rotameter (ON/OFF Time & Feedback From sensor)
Addition Lines	Acid Base Antifoam Feed
Feed Control Perfusion	Peristaltic pump automatically feeding and perfusion
Impeller	6-blade impeller, 3 Rushton impeller Stainless steel 316L Ratio = stirrer diameter 6blade / inner diameter reactor: 0.4
Sparger	10 L ring sparger with chicane, upwards-facing holes with 0.5 mm
Baffles	Flow resistance Improves mixing of medium at low stirring speeds and oxygen input Prevents the generation of fluid vortices at high stirring speeds 3 baffles on one ring Installation centered to the stirrer shaft
Control Panel	Siemens PLC & Tia portal program. 13.3” LCD touch screen operating panel One control tower for all optional vessel sizes

	Equipped with up to 4 integrated peristaltic pumps with variable speed Equipped with up to 4 Rotameter Quick couplings for connecting supplies and accessories
Software	User-friendly software for monitoring and operating the entire process Customized user and system settings for the best performance Easy setting and precise control of process parameters Monitoring set and actual values of all parameters during operation Properly defined alarms for absolute safety Real-time and continuous trend display of all process parameters Data storage and reporting for comparison of experiments and process optimization Intuitive Calibration menu for Temperature and pH & pO2 sensors Compliance option with 21 CFR Part 11 Remote access via PC, tablet or smartphone and control Complete audit trail supports regulatory inspections, while onboarding guidance assists less experienced operators. Electronic signatures User access control Historical batch data storage Secure data management Batch reporting The system is designed to support: FDA 21 CFR Part 11 GMP data integrity compliance
Technical Support	Installation Commissioning FAT/SAT Validation documentation (IQ - OQ) Operator training After-sales service


PUMP A
0 RPM
PUMP B
0 RPM
PUMP C
0 RPM
PUMP D
0 RPM
AGITATION
0 RPM
Overlay
Rotameter
MFC
PV: 0
SP: 0
CCM
Air
Regulator
Sparger
PV: 0
SP: 0
CCM
O2
Co2
Enable
Temp
PV: 0.4
SP: 37.0
°C
Enable
pH
PV: -0.12
SP: 7.20
pH
Enable
DO
PV: 0
SP: 70
%
Parameters
Alarms
Trends
Simulation
Calibration
Admin Tools
START Process
User : admin