











JENIK PASSER **Parallel Bioreactor**

BIOJENIK ENGINEERING

Your Trusted Partner in Bioprocess Engineering

Biojenik Engineering has been providing innovation and reliable bioprocess engineering solution for over 15 years







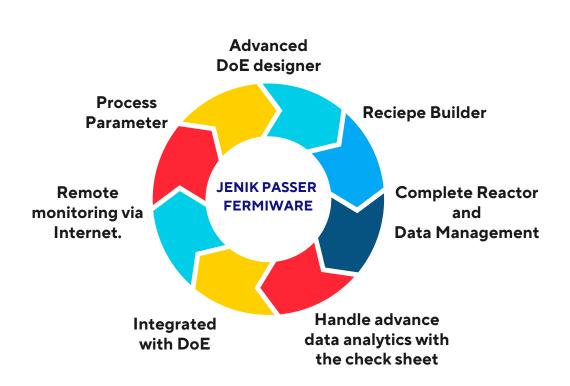


Parallel Bioreactor

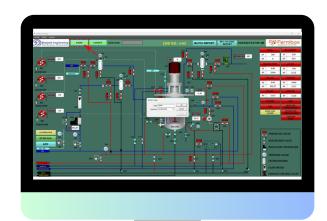
Parallel Bioreactor systems are designed to meet demanding requirements in both research and process development. Their modular design addresses the unique requirements of various applications in both cell culture and microbiology. It is ideal for cell line/strain screening and media optimization.

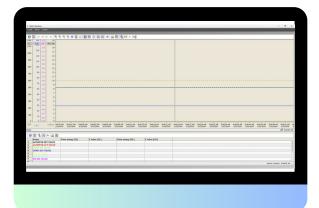
Application Areas

Fermentation | Cell Culture | Production Scale | Process Development and Optimization









Biojenik Engineering SCADA Software

Biojenik Engineering's SCADA software is designed for real-time monitoring and control, offering a range of features to improve efficiency and ensure compliance.

- Software: Siemens WinCC.
- Simulation and Auto-Tuning: Generates random process values for simulation and auto-tuning.
- Third-Party Integration: Free OPC server for third-party device integration.
- Remote Operation: Webex-based remote operation/control of setpoints.
- Customized Interface: Personalize display to show Process, Profiles, Set Points, and Cascade.
- Batch Management: Manage batches and track them using tags.
- Access Control: Different access levels for enhanced security.
- **Dosage Tracking:** Monitor and record material consumption during production.
- Real-Time Data Recording: Automatic recording and trending of setpoints and measurement values.
- Data Export: Export data to Excel for analysis and reporting.
- Data Comparison: Compare and analyze data for improved decision-making.
- Event Alarms & History: Alerts for issues, historical data access, and ANSI-18.2 compliant alarm management.
- Audit Trail: Record-keeping compliant with 21 CFR Part 11 standards.
- **Lifetime Support:** One-time license with lifelong updates and support.

Benefits:

- Simplifies process monitoring and control.
- Increases efficiency by automating tasks and tracking.
- Ensures compliance with regulatory standards.
- Provides actionable insights with data comparison and analysis.



Features and benefits

• Space-saving Design

Takes up minimal bench space

• Sterilizable Glass

Glass vessel can be easily sterilized

Multiple Control

Operate multiple reactors independently.

• Efficient Heating

Heating options for precise temperature control.

• Scalable

Single skid supports up to 12 reactors.

• Data Management

Complete process measurement and data handling.

• Sterile Sampling

Ensures contamination-free samples

• Simple Feeding

Easy-to-use feed bottle rack and accurate feeding system.

• Efficient Connectivity

Open-End OPC with Ethernet.

• Feeding System

High precise and linear control system

Perfusion Ready

Includes spin filter for perfusion processes.

User-friendly SCADA

Flexible SCADA with comprehensive features.

Technical Specification

S.No	Specifications	Microbial
1	Vessel	 Material: Glass (autoclavable), SS 316L Design: Single or jacketed vessel, Stainless steel top lid with clamping Closure: Screwed cap for secure sealing
2	Volume	 Geometric Volume: 500 ml, 750 ml, 1500 ml, 2500 ml Working Volume: 50-70% of geometric volume
3	Agitator Assembly	 Material: SS 316L Baffles: 4 baffles attached with top lid or around the vessel wall Drive: Types: Direct/Magnetic/Interchangeable drive system with Servo/DC Motor Speed: 25 to 2000 rpm Impeller: Ruston type for Radial flow mixing, 6 blades, 2 nos. Marine type Axial flow mixing (on request) Pitch blade for Axial flow mixing (on request)
4	Skid Arrangement	 500 ml x 4 vessel: single skid 500 ml x 8 vessel: double skid 500 ml x 12 vessel: single skid 750 ml, 1000 ml, 1500 ml, 2500 ml x 2, 4, 8, or 12 vessels: single & double skid
5	Heating/Cooling	Single wall vessel with heating pad and cooling finger Jacketed vessel with heating and cooling circuit
6	Perfusion / Rotor Filter	 Internal Perfusion Filter, External Perfusion (Available on Request) Cell retention filter with pore size from 5µm to 20µm (smaller pore sizes available on request) Fixed with shaft
7	Sampling System	Sampling system with a glass tube for hygienic sampling Includes dip tube
8	Ports and Needles	 Port Sizes: 4mm, 6mm, 12mm. PG 13.5mm for sensors.

9	Aeration	 Straight Tube: Submerged aeration for efficient dispersion of bubbles Ring Sparger: Submerged aeration for superior dispersion of bubbles Sintered Sparger: Submerged fine efficient low gas flow Filter: Absolute disposable filter (0.2µm)
10	Aeration System	 Single Gas (Air) Two Gas Mixing (Air + O2) - (Optional) Four Gas Mixing (Air, N2, O2, CO2) - (Optional) Mixed gas combination based on customer request (Optional) All gas lines equipped with rotometer Gas line with MFC (Optional) Maximum Gas flow: 2vvm
11	Gas Line Accessories	 Gas pressure control valve Check valve Pressure gauges Flowmeters Hypodermic needle Sterile needle (replaces hypodermic needle)
12	Gas Ranges	 Air: 2 vvm O2: 0.5 vvm N2: 1 vvm CO2: 0.1 vvm Various ranges selectable as per process requirements
13	Gas Exhaust	 Absolute disposable filter (99.9999% efficiency), 0.2µm Gas condenser (water-cooled) mounted in the vent line
14	Feeding System	 Standard: 4 x fixed speed pumps, 1 x variable speed pump, Additional (on request) Flow: silicone tube inner diameter(ID): 1mm to 3.2mm- 0.004mL/min to 40 mL/min Speed range: 0.1 to 100 RPM

Control Module

Speed Controller

- Type: Direct digital control system.
- Control: Cascades with DO controller via HMI on JENIK SCADA.

Temperature Controller

- Suitable to control the process temperature by active the cooling/heating valve / Circulating water.
- Operate by JENIK SCADA measurement: 5°C to 70°C
- Accuracy: ±1°C

pH Controller

- Sensor: Sterilizable gel-type pH probe.
- Control: Activates acid/base dosing pump.
- Range: 2 to 12 pH.

DO (Dissolved Oxygen) Controller

- Sensor: Polarographic
- Optical (Optional)
- Control: Final element pulsed valve or MFC cascaded with gas mixing station, agitator, and feed pump.
- Range: 0 to 100%.

CO2 Controller

- Sensor: Sterilizable CO2 probe with transmitter.
- Control: Cascades with pH and gas lines.
- Range: 0 to 1000 mbar.

Antifoam/Level Controller

- Sensor: Conduct-type probe.
- Control: Activates antifoam correction agent pump; level control activates feed or harvest pump.

Optical Density / Turbidity Controller

- Sensor: Sterilizable OD measurement probe.
- Control: Activates dosing pump or valve.
- Range: 0 to 30 g/L, 0 to 4 CU, 5 to 4000 FTU.

Redox/ORP Controller

- Sensor: Sterilizable ORP probe.
- Control: Activates dosing pump or valve.
- Range: +400 to -400V.

JENIK SCADA (PC Interface)

- Suitable PC or laptop with inbuilt Windows OS and runtime license for JENIK SCADA.
- Software: Customized process control interface for real-time monitoring.
- Functions: Profile, cascade, and manual operation; event logging for all parameters.
- Data Management: Online recording, data export to Excel, and customizable access levels.

HMI Touchscreen Panel

 PLC control with 10" & 12" HMI (Touch screen panel), SCADA with PC (Optional)

Remote Monitoring

• Compatibility: Local HMI visualization from remote PC or Android mobile via web-based interface.

Exit Gas Analyzer

- O2 Measurement: 0 to 20%.
- CO2 Measurement: 0 to 20%.
- Optional: CH4, H2S, NH4, H2, CO2 available upon request.
- Integrate the data with SCADA software (Optional)

Gravimetric Feed System

- Type: Load cell system with high accuracy (less than 0.01g).
- Control: Cascades with dosing pump, DO, and OD loops.

Light Hood

- Material: Stainless steel with LED.
- Control: Adjustable intensity from 0 to 100% via SCADA.

Accessories

- Chiller Water / Hot water Circulator
- Air Compressor
- Steam Generator
- Autoclave

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