



BIOJENIK ENGINEERING

Towards Bio engineering Technology & Solutions



Customized Bioreactor | Fermenter

Biocalorimeter

BIOJENIK ENGINEERING

Your Trusted Partner in Bioprocess Engineering

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



www.biojenikengineering.com

BIOCALORIMETER

Bio calorimeter, fabricate and attempt to improve the sensitivity of calorimetric signals in the following ways:

- High sensitive RTDs (1mK) were installed in both reactor and jacket side and a robust temperature control strategy elicits response even there was a step change of 1mK in the reactor.
- Effect of ambient temperature fluctuations on the estimated calorimetric signals was reduced by insulating the jacketed surface by a vacuum and the heat loss through head plate was minimized by thermo stating it to the reactor operational temperature.

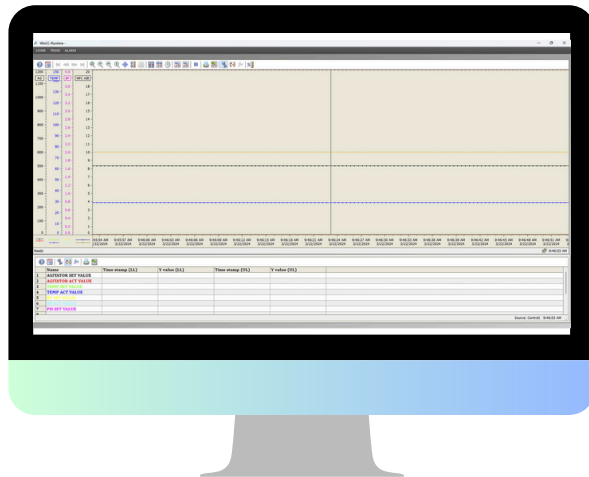
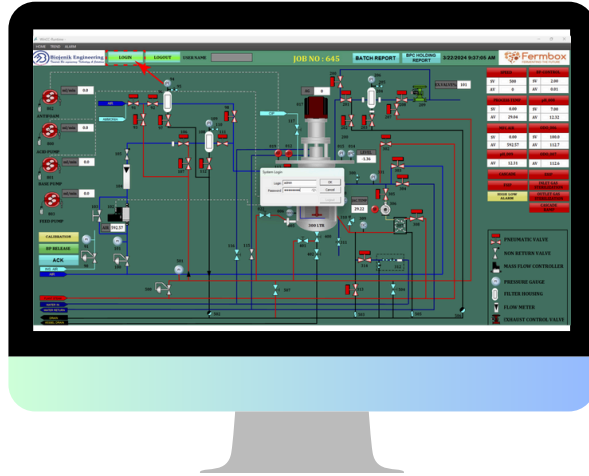


General Features

- Special design used to lightly shear sensitive cells Gas raiser achieved with draft tube or baffles
- Different wave length light source available to cultivate phototrophic microorganism
- Available in different volume Remote access via PC or Tablet
- Mean density gradient between riser and down comer regions causes continuous circulation.
- More than one no. of raiser ensures 100% gas distrubution
- Remote access via PC or Tablet Gas bubbles are available in micron or fine holes sparger

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.

Technical Specification

Specifications	Details
Measurement Principle	<ul style="list-style-type: none">Heat flow or power compensation method.
Measurement Range	<ul style="list-style-type: none">0.1 μW to 100 W (adjustable based on application).
Temperature Range	<ul style="list-style-type: none">-20°C to 150°C.
Temperature Accuracy	<ul style="list-style-type: none">\pm0.01°C.
Pressure Range	<ul style="list-style-type: none">Up to 100 bar (customizable for higher pressures).
Volume Range	<ul style="list-style-type: none">1 mL to 10 L (depending on the model).
Sample Types	<ul style="list-style-type: none">Liquid, solid, gas, or slurries.
Stirring System	<ul style="list-style-type: none">Integrated magnetic or mechanical stirring with adjustable speeds (10–2000 RPM).
Data Resolution	<ul style="list-style-type: none">16-bit or 24-bit A/D conversion for high precision.
Sensitivity	<ul style="list-style-type: none">0.1 μW or better.
Dynamic Range	<ul style="list-style-type: none">Wide range with auto-adjustment.
Reaction Modes	<ul style="list-style-type: none">Isothermal, non-isothermal, and scanning modes.
Control Software	<ul style="list-style-type: none">User-friendly software with real-time data visualization and analysis.
Calibration	<ul style="list-style-type: none">Automatic or manual calibration options.
Safety Features	<ul style="list-style-type: none">Over-pressure valves, temperature cutoff, and alarms for abnormal conditions.
Cooling System	<ul style="list-style-type: none">Peltier or liquid-based cooling options for precise temperature control.
Heating System	<ul style="list-style-type: none">Integrated electric or oil bath heating system.
Integration	<ul style="list-style-type: none">Compatible with SCADA and other laboratory control systems.
Data Export	<ul style="list-style-type: none">Formats supported include CSV, Excel, and PDF.
Sensor Types	<ul style="list-style-type: none">High-sensitivity thermopiles, thermistors, or RTDs.
Reaction Vessel Material	<ul style="list-style-type: none">Glass, stainless steel, or PFA-coated vessels for chemical compatibility.

Real-Time Monitoring	<ul style="list-style-type: none"> Parameters include temperature, pressure, pH, and reaction enthalpy.
Sample Accessibility	<ul style="list-style-type: none"> Options for in situ sampling and injection.
Automation Features	<ul style="list-style-type: none"> Automated sampling, reagent addition, and cleaning.
Energy Consumption	<ul style="list-style-type: none"> Low energy design for sustainability.
Light Integration	<ul style="list-style-type: none"> LED illumination for photochemical or photobiological experiments (optional).
Gas Flow Control	<ul style="list-style-type: none"> Mass flow controllers for precise gas addition.
User Interface	<ul style="list-style-type: none"> Touchscreen display or PC-based operation.
Dimensions	<ul style="list-style-type: none"> Compact benchtop design: typical dimensions (W×D×H) 50 cm × 40 cm × 30 cm.
Weight	<ul style="list-style-type: none"> Approximately 20–50 kg (varies by model).
Compliance Standards	<ul style="list-style-type: none"> Meets cGMP, ISO 9001, and other relevant quality standards.
Power Supply	<ul style="list-style-type: none"> 220–240V AC, 50/60 Hz (customizable for regional standards).
Warranty	<ul style="list-style-type: none"> 1–3 years with optional extended warranty.
Accessories	<ul style="list-style-type: none"> Optional accessories include additional sensors, external pumps, and auxiliary cooling systems.

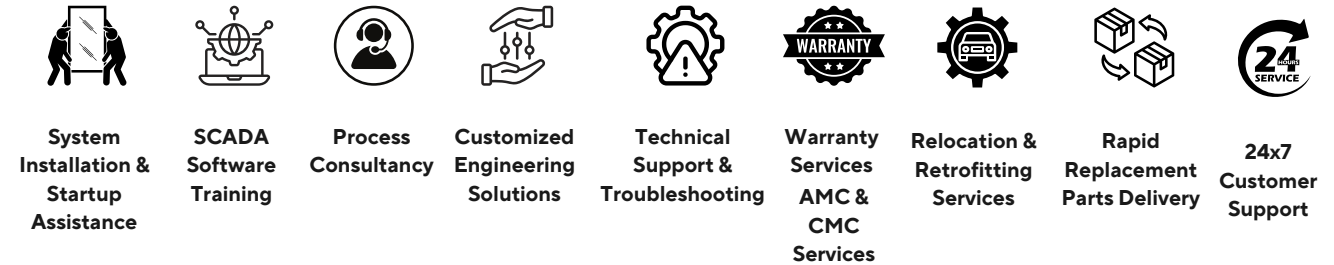


Our Valuable Clients



Biojenik Engineering Services

We offer a comprehensive range of services to ensure the smooth operation and longevity of your systems:



Our Certifications



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+91 - 98407 02137
+91 - 9003003951

Email Us Now!



sales@biojenikengineering.com
info@biojenikengineering.com



FACTORY ADDRESS

No. 3A, Sathish Nagar, Thirumudivakkam, Chennai – 600044, Tamil Nadu, India.