



# ***TWIN BIOREACTOR***

## ***BIO-TEC-TWIN***

Fermentations and Bioprocesses; Animal and M.O. cell cultures (bacteria, fungi and yeasts); Enzymatic and Acid Hydrolysis; Biomass, Biofuels and 2G Ethanol; Production of Enzymes, Vaccines and Pharmaceuticals; Biological Control, Bioinoculants and Biofertilizers; Bioremediation and Waste Treatment; Studies in Mining and Ore Biolixiviation; Production of oils, creams and cosmetics; Chemical reactions.

## Technical Characteristics

### BIO-TEC-TWIN

- ON/OFF button: With luminous indication on the 'power' symbol ;
- Energy cable: According to NBR14136 w/ standard IEC tripolar adapter ;
- Max Environmental Conditions: 0 to 50 °C at 80% RH ;
- Module: -15 inch touch screen - USB port for data storage - Ethernet port for remote access - Extra analog and digital ports (input and output) - Digital pressure sensor and relief valve - Cable for level/foam sensor - Has connections/inputs for: - Temperature sensor (Pt-100) - Digital pH sensor - Digital dissolved oxygen sensor (polarographic or optical) - gas mixer - O<sub>2</sub>/CO<sub>2</sub> gas sensor - Up to 5 peristaltic pumps - Stirring engine - Mass controller - Rotameter;
- Power/Voltage: 2000W/ 220V single phase ;
- Software: - Shake/rotation control loop - Foam level control loop through peristaltic pump - Pressure control loop with sensor and depressurization valve - Temperature control loop through blanket and coil or thermostated bath - pH control loop through peristaltic pumps or CO<sub>2</sub> injection (gas mixer) - Dissolved oxygen control loop with cascade, depending on the actuators purchased - Control loop for gas mixer - Monitoring of oxygen and carbon dioxide gas - Torque monitoring - Magnification for several variables, such as redox, conductivity, viable cells, turbidity, among others upon request.;

### Benefits and Advantages

- Eliminates the use of external computers and stores data in the internal memory and via pen-drive
- Automation of process parameters, remote access and software for up to 20 users with different access levels
- Provides safe and aseptic sampling
- Known, controlled and reproducible cultivation conditions, with greater homogeneity and standardization of batches
- Gain in productivity and efficiency