

DASEA[®] Regenbio benchtop fermenter

Specifically Designed for Fermentation Processes



Designed for BioProcess

● INTRODUCTION

DASEA® Regenbio benchtop fermenter is an independently developed product specifically designed for microbial fermentation processes, with Digitalized, Automated, Scalable, Enclosed, and Activated (DASEA®) features. It is equipped with a human-machine interface (HMI) ecosystem, enabling simplified and efficient operation. The fermenter utilizes a medium to large scale PLC master control system for precise control and comprehensive functionality, supporting customization. The fermenter ensures excellent microbial cultivation with its precise parameter control and powerful data management capabilities. And ideal for diverse bacterial species including anaerobic bacteria, facultative anaerobic bacteria and aerobic bacteria in R&D and PD scale.

● FEATURES

PLC master control for precise and comprehensive functionality

Customized impellers and detectors to meet diverse process needs

Multi-level access, audit trail, batch reports, log record

User friendly HMI

High-Quality borosilicate glass and 316L stainless steel

Design with pressure protection, emergency stop and power recovery

Deep localization on supply chain

Designed for different bioprocess development



Single-Vessel Process Optimization



Multi-Vessel Parallel Cultivation

● MODULES



Agitation Module

- High-torque servo motor for stable and precise mixing.
- Customized agitation blades designed through CFD simulation.
- Radial magnetic coupling to prevent seal leakage.
- Programmable timing and DO-linked control.



Temperature Control Module

- A-grade PT100 temperature sensor for precise measurement and minimal interference.
- Optimized heating pad to prevent overheating and ensure stable operation.
- Silent, high-quality cooling water valve with filtration to maintain cleanliness.
- Redesigned cooling tube baffles to prevent leakage and contamination risks.



Gas Inlet Module

- Standard float flowmeter for manual flow control.
- Optional automatic gas flow controller with timing and metabolic parameter calculation.
- DO-linked programmable timing control.
- Optional oxygen bypass with manual and automatic modes.



Liquid Inlet Module

- Standard four-channel high-precision peristaltic pumps.
- Timing control with DO linkage for automated regulation.
- Vessel lid with multiple spare ports for versatile culture modes



Anti-foaming Module

- Mechanical defoaming paddle.
- Defoaming electrode in a closed loop with peristaltic pumps, featuring automatic defoaming, detection, and alarm, with a manual defoaming option for safety and reliability.



Sampling Module

- Diverse sampling options to accommodate different user needs.
- Negative pressure design for safe microorganism sampling in compliance with biosafety standards.



Condensation Module

- Cooling water condenses exhaust, fitting high microbial gas flow.
- Electromagnetic valves ensure safe and secure control.
- Quick connectors provide a reliable and easy connection.



Detection Modulea

Standard Monitoring/Control:

- Temperature, airflow, pH, defoaming, DO, and feeding rate control Four-channel supplement control and stirring speed regulation.

Optional Monitoring/Control:

- Live cell detection
- Exhaust gas analysis
- Culture and supplement weight monitoring
- Two additional electrode ports for future use

● SPECIFICATIONS



Controller

Item	Specification
Master Control	PLC control board
Touchscreen	15-inch color touchscreen with 1024*600 resolution
Peristaltic Pumps	4 high-precision peristaltic pumps with a speed range of <200 RPM
Agitation Speed	0-3000RPM
Gas Mass Flow Meter	Medium: air, optional oxygen; Type: rotor flow meter, optional mass flow meter
Heating Blanket	200W
Temperature Sensor	PT100, Range 0-150℃, Accuracy ±0.1℃, Control Accuracy ±0.1℃
DO	Range: 0-212%, Accuracy ±1%; Special Impedance VP Interface, Anti-Interference
pH	Range: 0-14, Accuracy ±0.01; Special Impedance VP Interface, Anti-Interference



Vessel

Item	Specification
Vessel Material	Glass: Single-walled high borosilicate glass (HBG) Stainless steel: 304 bracket, 316L top cover and fittings
Sterilization	Autoclaved
Overall Volume	3L、 7L、 13L
Working Volume	2L、 5L、 10L
Inoculation	Includes peristaltic pump inoculation, differential pressure inoculation, needle inoculation, flame sterilization inoculation, and other methods
Pressure	Pressure Rating: ordinary pressure, can reach 0.05Mpa under safety measures; Control Mode: manual, optional automatic control.



Basic Parameters


Item	Specification
Input Power	AC220V±10V
Total Power Consumption	1.5KW




Expansion Options

· Bacteria Detection	· Vessel pressure detection and control
· Online monitor on methanol/ethanol	· Vessel weighing
· Online monitor on exhaust, O ₂ and CO ₂	· Feed Weigh


● APPLICATIONS




Biopharmaceuticals




Chemical and energy



Food and beverage



Agricultural technology



Others

Designed for different bioprocess development
to diverse application needs

● ORDER INFORMATION

Product	Specifications	P/N
DASEA® Regenbio benchtop fermenter		
DASEA® Regenbio benchtop fermenter	2L	aBioR-02-FG
DASEA® Regenbio benchtop fermenter	5L	aBioR-05-FG
DASEA® Regenbio benchtop fermenter	7L	aBioR-07-FG
DASEA® Regenbio benchtop fermenter	10L	aBioR-10-FG
Consumables		
Disposable consumable bag	2/5/7/10L	aBioR-CON-001-FG

Empowering the Cell Manufacturing with DASEA® Technology Make Regeneration Clinically Accessible and Affordable



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