

Thermostat System with Double Jacketed Dish Bottom Vessel

Description

The double jacketed vessel is specially designed for temperature sensitive and shear-force sensitive cells such as mammalian and insect cell culture. With the thermostat system and pitched-blade impeller design, fragile cells can be gently mixed and cultivated for a long period of time without damaging cells themselves. The 2-stage DO cascade control ability allows users to maintain DO level automatically by changing agitation speed or introducing pure oxygen. Full accessories are offered as a standard package. In addition to that, our technical support team can help you tackle with difficult problems and give you immediate service for your cultivation work.



Features

- **Double jacketed vessel** provides sophisticated temperature control
- **Pitched-blade impellers** design for fragile cell lines
- **Colorful touch screen and Graphical user interface** for easy operation
- **2-stage DO cascade** for precise DO(Dissolved oxygen) level control
- **Real-time trend data recording** ensures best fermentation performance
- **Ethernet remote control** ability allows you navigate and operate your fermentation process from your desktop
- **No additional software required**
- **Low voltage DC brushless motor**
- **Quick connectors** for easy operation
- **4 built-in assignable and programmable peristaltic pump** for automatic pH, Antifoam and Feeding control
- **Full accessories** are offered as a standard package

Application:

Ideal for temperature sensitive and shear-force sensitive cells such as mammalian and insect cell culture.

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INNOVATIVE CULTIVATION SOLUTIONS

Thermostat System with Double Jacketed Dish Bottom Vessel includes:

Controller	Thermostat System Controller
	Built-in rotameter
	4x built-in pump head
Vessel	Double jacketed vessel (includes glass body, head plate, T handing bar, 2 probe adaptors)
	2 pcs of adjustable Pitched-blade impeller
	Baffle assembly
	Condenser assembly
Motor	Air sparger assembly
	Agitation motor
Probes	1x pH probe and 1x pH cable
	1x DO probe and 1x DO cable
	1x Temperature probe and 1x Temperature cable
	1x Foam/Level Sensor and 1x Foam/Level Sensor cable
Start-up Kit	Please see Page 43



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Specification

Vessel	Working volume(Liter)	3L	5L	7L	10L
	Total volume(Liter)	3.8	6.8	8.9	12.5
Control unit	Material	Borosilicate glass / 316L stainless steel for headplate and all fittings			
	Control panel	10.4" Colorful touch-screen interface			
	Communication port	Remote control through Ethernet (SCADA)			
		Data export through USB port RS-485 port for system extension			
	Program storage	Up to 59,994 process programs			
	Log data storage	Up to 10 process monitoring data files			
	Cabinet material	ABS front panel and painted iron housing			
	Dimension	Footprint: W x D = 400 x 500 mm (15.75" x 19.69") Height = 740 mm (29.13")			
Rated voltage	110V or 220V; 50/60 Hz				
Aeration	Inlet gas flow-meter	0, 1 – 10 LPM		0, 2 – 20 LPM	
	Sparger	Orifice ring			
	Baffle	Removable 316L stainless steel baffles			
Temperature	Control system	Thermostat system; Built-in heat exchanger (400 W heater/water circulation pump); Automatic cooling water valve			
	Range	5°C (41°F) above coolant up to 60°C (140°F)			
	Resolution	0.1°C			
	Probe	Platinum RTD probe (Pt 100)			
	Control mode	Programmable 15 steps PID control			
Agitation	Drive	Removable top brushless motor			
	Speed range	Two agitation motor types: a. For fermentation and cell culture: 30 – 1200 rpm b. For extremely shear-sensitive cell line: 5 – 300 rpm (optional)			
	Resolution	1 rpm			
	Impeller	Two impeller types: a. For shear-sensitive cell culture: 2 pcs of adjustable Pitched-blade impeller b. For fermentation: 3 pcs of adjustable Rushton-type impeller (optional) Note: Customized impellers are available			
	Control mode	Programmable 15 steps PID control			
pH	Range	2 -14 pH			
	Resolution	0.01 pH			
	Probe	Gel-filled electrode; Autoclavable			
	Control mode	PID, One point control with adjustable dead band			
DO	Range	0 – 200%			
	Resolution	0.1%			
	Probe	Polarographic DO sensor; Autoclavable			
	Control mode	Cascade function to response to a. Increase or decrease agitation speed b. Oxygen enrichment module (optional) c. Start substrate feeding program			
ORP	Measurement range	-/+ 2000 mV			
	Resolution	1 mV			
	Probe	Gel-filled electrode; Autoclavable (optional)			
Foam	Probe	316L stainless steel protector with insulated teflon tube; On/Off control			

Peristaltic pump	Pump number	4 Built-in pumps; One external pump (optional, RS-485 interface with relay output)
	Motor type	Precise stepping motor; minimum speed is 1 rpm
	Speed range	0 – 65 rpm
	Resolution	1 rpm
	Control mode	Programmable 15 steps feeding control; Pump can be assigned for Acid, Base, Antifoam and Substrate
Exhaust	Device type	316L stainless steel condenser
Utility requirement	Power supply	100-120V 50/60Hz or 210-230V 50/60Hz with electrical safety cutoff switch
	Water	2 Bar maximum (29 psi)
	Air	1 Bar maximum, must be dry, oil-free and filtered (14.5 psi)
	Autoclave	For sterilization

Ordering Information

Cat. No.	Description
FS-01-A03P-110/ 220V	Complete Thermostat Fermentation System for 3L Double Jacketed Vessel, 110V/ 220V
FS-01-A05P-110/ 220V	Complete Thermostat Fermentation System for 5L Double Jacketed Vessel, 110V/ 220V
FS-01-A07P-110/ 220V	Complete Thermostat Fermentation System for 7L Double Jacketed Vessel, 110V/ 220V
FS-01-A10P-110/ 220V	Complete Thermostat Fermentation System for 10L Double Jacketed Vessel, 110V/ 220V

Controller (includes Thermostat System Controller, Built-in rotameter and 4x built-in pump head)	
FS-01-110/ 220V	Winpact Thermostat System Controller, 110V/ 220V
Vessels (includes Double jacketed vessel, 2 pcs of adjustable Pitched-blade impeller, Baffle assembly, Condenser assembly and Air sparger assembly)	
FS-V-A03	3L Double Jacketed Vessel
FS-V-A05	5L Double Jacketed Vessel
FS-V-A07	7L Double Jacketed Vessel
FS-V-A10	10L Double Jacketed Vessel
Optional item	
FS-O-ORP-101	ORP monitoring kit, includes 120mm ORP probe, ORP probe cable, probe adaptor
FS-O-ORP-102	ORP monitoring kit, includes 225mm ORP probe, ORP probe cable, probe adaptor
FS-O-ORP-103	ORP monitoring kit, includes 325mm ORP probe, ORP probe cable, probe adaptor
FS-O-ORP-104	ORP monitoring kit, includes 425mm ORP probe, ORP probe cable, probe adaptor
FS-O-M3	Agitation Motor, 5-300rpm for 3, 5, 7, 10L Vessel
FS-O-OE	O ₂ Enrichment Module, includes Oxygen Enrichment Valve and Adjustable Flow Meter