

INNOVATIVE CULTIVATION SOLUTIONS



1L Double Jacketed Dish
Bottom Vessel



1L Single Wall Dish
Bottom Vessel



Winpact One System

Winpact One Fermentation System

Specification

** Expansion module (FS-06-EPM) required.

Control unit	Control panel	8" Color touch-screen interface
	Communication port	Remote software control through Ethernet, up to 16 systems per PC
		Data export through USB port
		Analog AUX port for system extension
	Program storage	Up to 59,994 process programs
	Log data storage	Up to 100 process monitoring data files
	Cabinet material	ABS front panel and painted iron housing
	Dimension	Footprint: W x L = 9.84" x 20.08" (250 mm x 510 mm), Height: 19.69" (500 mm)
Rated voltage	110V~/220V; 50/60 Hz, 10A	
Weight	Approx. 61.73 lb (28 kg)	
Aeration	Inlet gas flow-meter	0,0.1-1 LPM (0.5 L), 0, 0.2-2.5 LPM (1 L), 0, 1-10 LPM (3, 5 L), 0, 2-25 LPM (10 L)
	Sparger	L-shape (500ml, 1L); Ring sparger (3L and above); Micro-sparger (C type vessels)
	Baffle	316L stainless steel baffles; 0.5-3L vessel: fixed, unmovable; 5L and above vessel: removable
Temperature	Heating	1. Thermostat system: built-in heat exchanger (550W heater, water circulation pump) 2. Dry heating system (heating blanket or heating base unit)
	Cooling	Built-in water module and external water circulator (optional)
	Range	- FS-V-A/ B series: 5°C(41°F) above coolant up to 60°C(140°F)
		- FS-V-C series (Double Jacketed): 5°C (41°F) above coolant up to 60°C (140°F)
		- FS-V-C series (Single Wall): without temp control
Probe	- FS-V-D series : 5°C(41°F) above coolant up to 90°C (194°F)	
Control mode	Platinum RTD probe (PT-100), non autoclavable	
Agitation	Drive	Manual or programmable 15-step PID control
	Speed range	Removable top brushless motor
		a. For Pitched blade impeller: 30-300 rpm b. For Rushton impeller: 30-1800 rpm(0.5, 1L); 30-1200 rpm(3, 5L); 30-1000 rpm(10L)
	Resolution	1 rpm increment
	Impeller	2 impellers for 0.5-1 L vessel and 0.5-5 L Double Jacketed Vessel; 3 impellers for 3 L vessel and above; for 10 L Double Jacketed Vessel; Note: customized impellers are available upon ordering
Control mode	Manual or programmable 15-step PID control	
pH	Range	0 -14 (2-12 for maximum precision)
	Resolution	0.01 pH
	Probe	Gel-filled electrode, autoclavable
	Control mode	Manual/acid start/programmable 15-step PID control with adjustable deadband **pH Stat with smart feeding technology
DO	Range	0-200%, Control range: 0-100%, adjustable
	Resolution	0.1%
	Probe	Polarographic DO sensor; autoclavable
	Control mode	DO cascade response: 1-stage or 2-stage** a. Increase or decrease agitation speed
		**b. Supply external oxygen source (Gas Inlet Control Module required, optional device) **c. Adjust DO level using gas mixing control (gas mixing station module required, optional device) Substrate feeding strategy **DO Stat with smart feeding technology
ORP(optional)**	Measurement range	± 2000 mV
	Resolution	1 mV
	Probe	Gel-filled electrode: autoclavable
Foam / level	Probe	316 L stainless steel protector with insulated PTFE tube, autoclavable, adjustable sensitivity control
	Control mode	Foam: on/off switch Level: on/off switch control with wet/dry probe set up
Peristaltic pump	Pump number	3 built-in Watson Marlow pumps; 1 external pump expandable: MU-D series required (optional); **2 external pumps expandable:
		-1 external pump: MU-D series required (optional)
		-1 external pump: 4-20mA or DC 0-10V analog input
	Motor type	Precise stepping motor; minimum speed is 1 rpm
	Speed range	0, 1-65rpm
Resolution	1rpm	
Control mode	Manual or programmable 15-step feeding control; pump can be assigned for acid, base, antifoam and substrate; **flow rate & total volume calculation	
Exhaust	Device type	316 L stainless steel condenser

Vessel Specification

Vessel	Double Jacketed (FS-V-A series)					Single Wall (FS-V-B series)				Air Lifter (FS-V-C series)
Working volume	500 ml	1 L	3 L	5 L	10 L	1 L	3 L	5 L	10 L	5 L
Total volume	1 L	1.5 L	3.8 L	6.8 L	12.5 L	1.5 L	3.8 L	6.8 L	12.5 L	7 L

Vessel	Single Wall with Heating Blanket (FS-V-B series)			Single Wall with Heating Base Unit (FS-V-D series)			
Working volume	1 L	3 L	5 L	10 L	3 L	5 L	10 L
Total volume	1.5 L	3.8 L	6.8 L	12.5 L	3.7 L	6.7 L	13.1 L

*All vessels are made of borosilicate glass and 316L stainless steel for headplate and all fittings.

Utility Requirement

Power source	100-120V / 210-230V, 50-60Hz with electrical safety cutoff switch
Water source	0.4-1 bar (5.8-14.5 psi); water supplied to fermentors should be at least 15°C below the set operating temperature
Air source	0.5-2 bar, must be dry, oil-free and filtered
Sterilization	Autoclave; size of the autoclave's inner chamber must be able to accommodate vessel with condenser attached

Optional Devices and Accessories

				
pH Probe	DO Probe	Temperature Probe	ORP Probe	Gas Inlet Control Module
				
Mass Flow Controller	Winpact Humidifier FS-O-HMD (solid state only)	CO ₂ Gas Analyzer	Gas Mixing Station	Gas Mixing Station with Mass Flow Controller
				
External Pump	Brushless Motor	Lighting Module	Composite Handle	Vessel Stand
				
Headplate Stand	Feeding Bottle Loading Port	Fermentation Bottle Holder	Motor Shaft Protection Cap	Stainless Steel Supporting Foot
	<p>Other Optional Devices:</p> <ul style="list-style-type: none"> • Antifoam Probe • Impellers <ul style="list-style-type: none"> • Rushton 6 Blade Impeller • Pitched Blade Impeller • Foam Breaker • Broken Type Impeller (solid state only) • Anchor Type Impeller (solid state only) • Spiral Type Impeller (solid state only) • Sampling Devices <ul style="list-style-type: none"> • Triport Sampling Device • Dual Ports Sampling Device • Ball Valve Sampling Device • Pneumatic Sampling Device • EZScript Software • Optical Density Sensor Modules • Quad Loading Port • Stainless Steel Condenser • Protective Cover for Sterilization (solid state only) 			
Consumable Kit				

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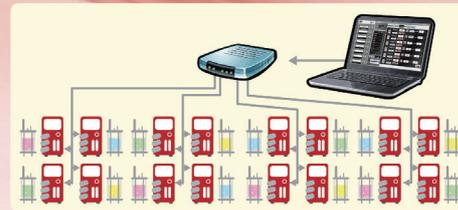
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The most versatile, price and space saving fermentation system is now available from our Winpact fermentation product line-the Winpact One Fermentation System. Winpact One is not only compact in size but also provides all the necessary tools as a standard instrument. The duo heating system allows you to choose any vessel type up to 10L for whichever application needs. The optional expansion module allows you to add additional devices to enhance the capability of the system. All necessities such as temperature, anti-foam, pH and DO probe are included in standard package.



Compatible with any vessel types up to 10 liter

Winpact One Fermentation System (FS-06 series)

Special Features:

- Duo heating system, thermostat and dry heating combined in one
- Most versatile and compact system on the market ((WxLxH) 250x510x500mm)
- 4 interchangeable types of autoclavable glass vessels
- Control up to 16 systems from a single interface
- Compatible with microbial and cell culture applications
- Intuitive user interface for self-explanatory time with multi-language support
- Ethernet communication with Winpact SCADA software, and IP addressing
- Expansion module available for system upgrade for optional devices

System Specification

Controller	Duo heating system controller				
	Built-in rotameter				
	3 built-in pump heads				
Vessel	Double Jacketed Dish Bottom Vessel (includes glass body, head plate, T-handling bar, 2 probe adaptors)	Single Wall Dish Bottom Vessel (includes glass body, head plate, T-handling bar, 2 probe adaptors)	Air Lifter Vessel (includes glass body, head plate, draft tube, T-handling bar, 2 probe adaptors)	Single Wall Dish Bottom Vessel with Heating Blanket (includes glass body, head plate, T-handling bar, 2 probe adaptors and heating blanket)	Single Wall Plain Bottom Vessel with Heating Base Unit (includes glass body, head plate, T-handling bar, 2 probe adaptors and heating base unit)
	Rushton-type impellers		No impellers	Rushton-type impellers	
	Baffle assembled		Draft tube assembled	Baffle assembled	
	Condenser assembled				
	Air sparger assembled		Micro sparger assembled	Air sparger assembled	
Agitation motor	Brushless motor		N / A	Brushless motor	
Probes	1x pH probe and 1x probe cable				
	1x DO probe and 1x probe cable				
	1x Temperature probe and 1x probe cable				
	1x Anti-foam/level sensor and 1x probe cable				
Start-up kit	Complete start-up kit includes silicone tubes, tube clamps, metal connector and autoclavable disc filters. Please see p.35 for details.				

* For FS-V-A, FS-V-B and FS-V-D series, the standard impeller is Rushton-type; pitched blade is available for cell culture upon request.

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