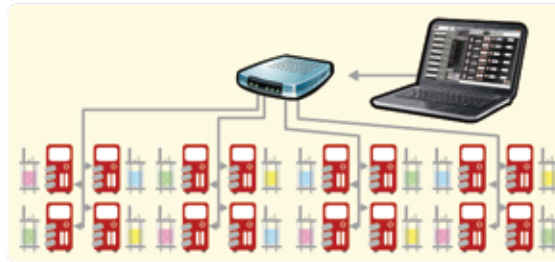


Winpact One Fermentation System



FS-06



Remote control software connects up to 16 systems (16 vessels) at the same time via PC



Compatible with any vessel types up to 10 liter

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				
Agitation motor	Air sparger assembled		Micro sparger assembled	Air sparger assembled	
	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				
Start-up kit	1x Anti-foam/level sensor and 1x probe cable				
	Complete start-up kit includes silicone tubes, tube clamps, metal connector and autoclavable disc filters. Please see p.35 for details.				

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	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	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	10 psig (0.69 bar), 14.5 psig (1 bar) maximum; (water supplied to fermenter must be softened and at least 15°C below set operating temperature)
Air source	10 psig (0.69 bar), 29.0 psig (2 bar) maximum; air 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



Bioreactor / Fermentor

Specification

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	Orifice ring
	Baffle	Removable 316L stainless steel baffles
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	Cooling coil valve and an external chiller
	Range	with FS-V-A / B / C series : 5°C (41°F) above coolant up to 60°C (140°F); with FS-V-D series :5°C (41°F) above coolant up to 90°C (194°F)
	Probe	Platinum RTD probe (PT-100), non autoclavable
	Control mode	Manual or programmable 15-step PID control
Agitation	Drive	Removable top brushless motor
	Speed range	a. For extremely shear-sensitive cell line: 30-300 rpm b. For fermentation and cell culture: 30-1200 rpm (0.5-5 L) and 30-1000 rpm (10 L)
	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	2 - 12 pH
	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%
	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 (oxygen enrichment module required, optional device) **c. Adjusting DO level using gas mixing control (gas mixing station module required, optional device) **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, **1-2 external pump extendable (MU-D series required, optional)
	Motor type	Precise stepping motor; minimum speed is 1 rpm
	Speed range	0 - 65 rpm
	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

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

