

M series

STANDARD PILOT STERILIZABLE IN PLACE SOLUTIONS

M Series
your
scaling up
guide

Cosmeceutical

Nutraceutical



STANDARD STERILIZABLE IN PLACE SOLUTIONS



TK connection rather than TC ensures a better cleanibility and easier sterilization

Re-sterilizable addition system (steam bridge)

Multiple sensors options pH, dO2, Redox, Total Cell density, Viable Cell density, Conductivity,dCO2

Double jacket (side/bottom)

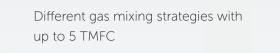
Increased heat transfer efficiency
It ensures optimal temperature control and
sterilization even at minimum volumes

Top agitation, accurate **brushless motor**, from 1 to 2000

Online absorbed Torques (Nm) and Power (W) measurements obtaining an indirect density indication of the culture broth.



Tri-Clamp stainless steel piping cGMP designed to provide a smooth, and non-contaminating environment. Provides leak-tight connections and it is flexible and adaptable to other forms of piping.



SOLARIS





19" coloured touch screen industrial HMI
SBC16: smart controller designed to provide an high level of automated management of the fermentation/ cultivation processes

Customizable PID or factory default



Separate drains cooling return, condense to waste, hot condense return

Compact design

N.2 heat exchangers and recirculating pump

Modbus Digital sensors

Why a digital sensor?

Digital sensors (including Cell Density products) have been integrated to the Solaris PCS and Leonardo controlling software, giving the user many benefits over traditional analog sensor outputs. Such benefits include a robust communication protocol not susceptible to signal loss, in-software sensor diagnostic information, parallel calibration/batch calibrations and more.

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Gas mixing

Hardware and software adaptability are key to enable the best aeration strategy for each process. Thermal mass flow controllers (TMFC) allow precise flow rate control of individual gasses. Up to 5 TMFC's can be configured within each PCS cube and integrated to the controlling software. The powerful software and control platform allows precise cascade adjustment of multiple parameters to manage gas transfer, OTR, kLa, etc.

- n.1 TMFC included in "entry" level system; additional available as optional
- Various agitator and baffle designs available
- Automatic gas mixing algorithms
- Toro, sintered and other spargers available





USER-FRIENDLY SOFTWARE

Solaris controlling software offers a simply laid out, yet powerful platform for experimental design planning and process control. The graphical user interface enables the intuitive selection and adjustment of control functions.

Extracted data is compatible with Window Excel but, in addition, Solaris offers a platform where fermentation data can be easily exported in real time and thus managed. This software is included in the supply and can be installed on an unlimited numer of the client's PC or laptops.



Workflow page



atencion.clientes@pure-process.com

Data sheet

Solaris Code	M serie 30	M serie 50	M serie 75	M serie 100	M serie 150	M serie 200
Total Volume (liters)	30,00	50,00	75,00	100,00	150,00	200,00
Ratio D/H	1:3.0	1:3.0	1:3.0	1:3.0	1:3.0	1:3.0
Min. Working Volume (liters)	4,50	7,50	11,00	15,00	22,00	30,00
Max. Working Volume (liters)	21,00	36,00	55,00	75,00	110,00	145,00
Working temperature range			0-1	35°C		
Working pressure range			Up to	o 2 bar		
Design			Stainless Steel	Jacketed Vessel		
Materials		Parts in contac	ct with the culture	AISI 316 L - other	parts AISI 304	
Stirring						
Drive		[Brushless Motor, T	op Direct Assembl	У	
Impellers		Select from: R	Rushtons impellers	s, Marine Impellers,	Pitched blade	
Thermoregulation						
			PID Control - /	Accuracy 0,1 °C		
Control		Jacket	steam and electric	c heaters / cooling	source	
Gas control & gas mixing						
Sparger and overlay Gas			TA	MFC		
Confrol Gas Mixing (Air,CO ₂ ,O ₂ ,N ₂)		n 1		noid valves, n° of TN	MEC.	
Sparger type	Salac			crobubbling both p		n filter
Exhaust	Jeice			,2 µm filter (option)		TI TILLET
Options			Condenser and o	,z prir nicer (option,		
Double mechanical seal						
Vessel empty sterilization						
Electrical heaters						
Resterilizable addition system:	Steam bridge (m	nanual or automatio	c)			
Peristaltic pumps (WM 114, WM	_					
Gravimetric flow control (feed		hrough weight me	asurement)			
Manual and automatic SIP harv		5 5	- ,			
CIP system: removable spray b						

Controls

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SOLARIS BIOTECHNOLOGY srl

Via Bachelet, 58 - 46047 Porto Mantovano Mantova - Italy

Mantova - Italy Phone: +39 0376 408760 Fax: +39 0376 385108 Email: info@solarisbiotech.com

www.solarisbiotech.com