



## 2 ltr Parallel Synthesizer

Description	M4 or M6					
	2413	2423	2433	2415	2425	2435
Model	2413	2423	2433	2415	2425	2435
Design pressure	100 bar	200 bar	350 bar	100 bar	200 bar	350 bar
Design temperature	300°C			500°C		
Material of Construction	SS316, Hastelloy , Monel, Nickel, Titanium, Zirconium etc.					
Vessel ID	101.6mm					
Vessel internal height	303 mm					
Minimum Stirrable volume	130 ml					
Head mounting style	Removable head and vessel design					
Heating <sup>1</sup>	External electrical ceramic band heater with cladding & insulation. <sup>1</sup>					
Motor & drive	¼ hp ex-proof gas group IIB motor (zone 1) with 100-1450 RPM					
Shaft sealing	Magnetic drive coupling, (M-40, Torque Capacity: 40 kg-cm) Material of Bush- carbon filled PTFE (CFT)					
Stirrer	2 Stage Solid Shaft with 6-bladed pitch blade turbine stirrer					
External fittings	<ul style="list-style-type: none"> <li>Pressure gauge with vacuum protection</li> <li>Safety rupture disc (Inconel) with vacuum protection</li> <li>Gas inlet-valve &amp; liquid sampling valve mounted on common dip tube</li> <li>Vent needle valve</li> </ul> Note: All needle valves shall be ¼" NPT end connections					
Internal fittings	<ul style="list-style-type: none"> <li>Helical Cooling coil<sup>2</sup></li> <li>Thermowell (with RTD PT100 temperature sensor)</li> <li>Dip tube</li> </ul>					
Gasket	PTFE Gasket			Spiral wound Grafoil Gasket		
Closure Type	Split clamp with clamp bolts					
Magnetic Drive Cooling System	Water Pump and 10Ltr. Tank with tubing for circulating water to cool the magnetic drive					
Auto Cooling System	Auto-cooling system with water pump, for forced cooling SS tank & hose pipes for exothermic reaction & faster cooling.					
Control Panel	SS Control panel with, <ul style="list-style-type: none"> <li>Programmable P.I.D temperature controller with high temperature alarm</li> <li>Variable frequency drive for motor speed control</li> </ul>					
Power Supply	1 $\phi$ , 220VAC 50 Hz					
Mounting	SS Trolley					

**Note:**

1- Cascade temperature controller shall be provided for 500°C

2- For 200 bar and 350 bar, serpentine coil shall be provided instead of helical coil



# Enquiry guide for customized 500 ml models

Enquiry code model is **Standard Model no-A-B-C-D1-D2-E-F-H-I-J** where A, B, C, D1, D2, E, F, H, I, J options can be selected from the below tables. The below options will be in place of standard supply.

## Options

A		Material of Construction	
SS 316 L	316L	Inconel 625	IN5
Hastelloy C276	HC6	Nickel 200	NK2
Hastelloy C 22	HC2	Titanium Gr. 2	TI2
Hastelloy B	HB	Zirconium 702	ZR7
Monel 400	MN4	Tantalum	ZR7
Inconel 600	IN6	Tantalum lined	TNL

  

B		Head Mounting Style	
Fixed head with pneumatic vessel raising lowering	P		
Fixed head with pneumatic vessel raising lowering & tilting	PT		

  

C		Heating Style	
Electrical Ex-Proof, IIB + H <sub>2</sub> certified	EA		
Welded SS 304 jacket with insulation	JS		

  

D1		RPM	
Up to 3000 rpm	RT		
Gear box up to 440 rpm	R4		

  

D2		Motor Type	
¼ hp Ex-Proof gas group IIC (Zone 1)	XC		
¼ hp Ex-Proof CE ATEX certified II 2G Ex de IIC T4	AZ		
¼ hp Ex-Proof CE ATEX certified Class 1 Div 2 group A, B, C, D	CD		

  

E		Stirrer Options*	
Hollow shaft with gas induction impeller	SH		
Anchor ( with serpentine cooling coil, max 100 rpm)	SA		
Spiral ( No cooling coil, max 100 rpm)	SS		

  

F		Valves & Fittings**	
Serpentine cooling coil	SCC		
Ball valve powder inlet ( ¼ ")	BVP		
Flush bottom valve ( 10 mm)	FBV		
Baffles ( with serpentine cooling coil)	BFL		

  

H		Control Panel	
Touch Screen – HMI panel	TSP		

  

I		Mounting & Overall Dimensions (W x D x H)	
SS Trolley	TL		

  

J		Certifications***	
Design approval as per ASME code by notified body	DAC		
CE-PED 2014 / 68 / EU	PED		
ASME U stamp coded	ASU		
ATEX certified reactor 2014 / 34 / EU	ASA		
CE marked panel & electrical parts	ECE		
UL / CSA marked panel & electrical parts	USC		

### Note:

- Customer is advised to select best suited options for most optimized price & delivery.
- All above options may not be available / possible with all models.
- Customization of volume, material, pressure, temperature etc. may be possible on request
- Different power supply options may be possible on request.
- Overall dimensions are indicative, they may change depending on the optional accessories or specific design modifications opted.

\*Stirrer options can be in place of standard or additional multiple interchangeable.

\*\*\*Country specific certification like CRN for Canada, AS1210 for Australia & DOSH for Malaysia can be offered on request