SYNTEC MILLING CONTROLLER
MODEL 200MA-5, 200MB-5, 210MA-H5, 210MB-H5, 220MA-5 & 220MB-5

Category	Items	Five -Axis					
		200MA-5	200MB-5	210MA-H5	210MB-H5	220MA-5	220MB-5
Product Specification	Max. PLC Controlled Paths	4		4		4	
	Max. PLC Controlled Paths	3		3		3	
	Standard Axis	8	12	8	12	8	12
	Max. Axis (Optional)	9	16	9	16	9	16
	Max. Spindle	6		6		6	
	Max. Simultaneous Axis Control	5	5	5		5	
	Min. Control (mm)	0,0001		0,0001		0,0001	
	Max. number of program coordinate	100		100		100	
	Max. Number of Table Tools	96		96		96	
	Multi-Channel Function Group	4		4		4	
	Look-Ahead Blocks no.	2000		2000		2000	
	Block Processing timT	4000		4000		4000	

	Storage DISKA (MB)	256	4096	4096
	Standard I/O	32/32	32/32	32/32
	Optional I/O	96/96	96/96	128/128
	DA	1	2	—
Hardware Specifications	Monitor (Inch)	10.4/15	10,4	10.4/15
	CF Card	1	—	—
	CF Card	2	2	2
	USB	2	—	—
	RJ-45	2	1	2
	VGA Output	1	1***	—
	PS/2	1	—	—
	RS-232	1	—	—
	RS-422	1	—	—
	RS-485	1	1	1
	USB	2	—	2
	SRI	—	1	1

Category	Feature			
Servo Control	Pulse Train (A/B Phase)	—	—	—
	Pulse Train (CW/CCW)	—	—	—
	Mechatrolink II	O	O	—
	Mechatrolink III	—	O	O
	EtherCAT	—	O	O
	RTEX	—	O	O
Compensation	Backlash Compensation	O	O	O
	Pitch Error Compensation	O	O	O
	Angular Error Compensation	O	O	O
	Temperature Error Compensation	O	O	O
	2 Dimension Error Compensation	O	O	O
Operation	MPG Simulation	O	O	O
	Dry Run	O	O	O
	Optional Stop	O	O	O
	Single Block	O	O	O
	Virtual MPG	O	O	O
	Restart at Feedhold	O	O	O
	Restart at Break Point	O	O	O
	Tool Return	O	O	O
	Fixture Offsets	O	O	O
	MPG Offsets	O	O	O

Programming	Optional Skip	O	O	O
	B-Stop	O	O	O
	Absolute Zero Point Coordinate (G92/G92.1)	O	O	O
	Interrupt Macro (M96/M97)	O	O	O
	M198 call Subroutines	O	O	O
	Expandable G Code	O	O	O
HSHP	Constant Jerk Control	O	O	O
	Multiblocks S-curve motion plan	O	O	O
	Auto declaration in Corner	O	O	O
	Speed Limit for Round Radius	O	O	O
	Multiple Sets of HSHP Parameters	O	O	O
	Quick Parameter Setup	O	O	O
	SPA Feature	O	O	O
	Virtual Radius Funciton (for Rotary Axis)	O	O	O
	HSHP Control Mode I (G05.1 Q1)	O	O	O
	HSHP Control Mode II (G05P10000)	Δ	O	O
	NURBS Interpolation Ability	Δ	O	O
Tool Management	Auto Tool Setting	O	O	O
	Auto Tool Management	O	O	O
	Tool Life Management	O	O	O

Category	Feature			
Programming	Optional Skip	O	O	O
	B-Stop	O	O	O
	Absolute Zero Point Coordinate (G92/G92.1)	O	O	O
	Interrupt Macro (M96/M97)	O	O	O
	M198 call Subroutines	O	O	O
	Expandable G Code	O	O	O
HSHP	Constant Jerk Control	O	O	O
	Multiblocks S-curve motion plan	O	O	O
	Auto declaration in Corner	O	O	O
	Speed Limit for Round Radius	O	O	O
	Multiple Sets of HSHP Parameters	O	O	O
	Quick Parameter Setup	O	O	O
	SPA Feature	O	O	O
	Virtual Radius Funciton (for Rotary Axis)	O	O	O
	HSHP Control Mode I (G05.1 Q1)	O	O	O
	HSHP Control Mode II (G05P10000)	Δ	O	O
	NURBS Interpolation Ability	Δ	O	O
Tool Management	Auto Tool Setting	O	O	O
	Auto Tool Management	O	O	O
	Tool Life Management	O	O	O

	Machine Lock (R bit)		O	O	O
	Software Limit		O	O	O
	Spindle Speed Arrival Check		O	O	O
	Axis Synchronize Feature		O	O	O
	Dynamic Axis Synchronize Feature		O	O	O
	Dynamic Axis Synchronize Feature		O	O	O
	Rapid Retraction for Rigid Tapping		O	O	O
	Virtual Axis Feature		O	O	O
	Axis Change Feature		O	O	O
	Axial Torque Limit		O	O	O
	Serial Bus Setting Feature(CNC Axis)		O	O	O
Accessibility	Driver Information Display(CNC Axis)		O	O	O
	Spindle Application Feature(CNC Axis)		O	O	O
	Serial Bus PLC Axis		O	O	O
	ROT Element		O	O	O
	Dipole Front and Back System		O	O	O
	Data Backup Recovery		O	O	O
	Customized Opening Screen		O	O	O
	My Favorites (Only Eight key system supports)		O—	O	O
	Project Protection Feature		O	O	O
	Limit Access Manager		O	O	O
	Remote AP Monitor		O	O	O

Category	Feature			
Edit	Background Edit	O	O	O
	Edit Protection	O	O	O
	Immediate Grammar Check	O	O	O
PLC	PLC Diagnosis Feature(FORCE I Point)	O	O	O
Data Transfer	NETWORK	O	O	O
	FTP	O	O	O
	RS-485	O	O	O
	DNC(Network)	O	O	O
	DNC(USB)	O	O	O
Information Display	Operation CV Display	O	O	O
	Graphic Simulation	O	O	O
	Partial Graphic Simulation	O	O	O
	Dynamic Multi-Language Switch	O	O	O
Inclined Plane	Feature Coordinate(Inclined Plane Process G68.2, G68.3)	Δ	Δ	Δ
	Feature Coordinate Teach	Δ	Δ	Δ

Category	Feature			
5 axis feature	5 Axis RTCP (G43.4)	Δ	Δ	Δ
	Smooth TCP	Δ	Δ	Δ
G code command	High Precision Locus Control Mode (G05P10000)	Δ	O	O
	Smoothing Path Mode (G05.1)	O	O	O
	NURBS Interpolation (G06.2)	Δ	O	O
	Thread Cutting (G33)	O	O	O
	Auto Tool Measurement (G37)	O	O	O
	Tool of Offsets (G45~G48)	O	O	O
	High Speed Peck Drilling Cycle (G73)	O	O	O
	Left Handed Tapping (G74)	O	O	O
	High Precision Boring Cycle (G76)	O	O	O
	Drilling cycling (G81)	O	O	O
	Chopping (G81.1)	O	O	O
	Bottom Feed Hold Drilling Cycle (G82)	O	O	O
	Peck Drilling Cycle (G83)	O	O	O
	Tapping Cycle (G84)	O	O	O
	Boring Cycle (G85)	O	O	O
	High Speed Boring Cycle (G86)	O	O	O
	Back Boring Cycle (G87)	O	O	O
	Semi Automatic Finishing Boring Cycle (G88)	O	O	O
	Bottom Feed Hold Boring Cycle (G89)	O	O	O
	Multi-Group HSHP Parameter (G120.1)	O	O	O

Option		O	O	O
	Option-4 Enable Plugin Function	O	O	O
	Option-11 High Precision Contour Control (HPCC)	Δ	O	O
	Option-12 Rotation Tool Center Point (RTCP)	Δ	Δ	Δ
	Option-13 Feature Coordinate System	Δ	Δ	Δ
	Option-14 Parameter learning function			
	Option-15 Tapping Learning			
	Option-16Syntec Vision	Δ	Δ	Δ
	Option-17 Commercial Vision Software	Δ	Δ	Δ
	Option-18 CAD/CAM	Δ	Δ	Δ
	Option-19 3D Arc Interpolation	Δ	Δ	Δ
	Option-20 Pick and Place (All in one)	Δ	Δ	Δ
	Option-21 Four Axis Robot			
	Option-22 Five Axis Robot			
	Option-23 Six Axis Robot			
	Option-24 Gantry Robot			
	Option-25 Advanced Look-Ahead			
	Option-26 Smooth Tool Center Point(STCP)			
	Option-27 Multiple mechanisms for five-axis			
	Option-28 The 2nd coordinate supports feature coordinate system			
	Option-29 Four-axis Rotation Tool Center Point Control (4AXRTCP)			
	Option-31 High Speed Chamfering Contour Control			
	Option-32 ROT Servo Turret			
	Option-34 Wood Software			
	Option-35 3D Laser Scanning			
	Option-36 Wood Built-In CAM Function			

* Only sell in Mainland China
** Only sell in Taiwan
*** VGA is only provided in the rear half
O Standard function
△ Optional function
– Not available function