SYNTEC

Dedicated Lathe Functions

Category	Item	Unit	Remark	General purpose 6 series TA	General purpose 6 series TB	General purpose 11 series TA**	General purpose 11 series TB	Serial 6 series TA-E	Serial 21 series TA	Serial 21 series TA-E	Serial 21 series TB	Serial 21 series TB-E	Serial 22 series TA	Serial 22 series TB	Serial 200 series TB-5	Serial 210 series TB-H	Serial 210 series TB-H5	Serial 220 series TB	Serial 220 series TB-5
Product spec	Max. Axes group in system	Axes group		1	2	2	2	1	2	2	2	2	2	2	4	4	4	4	4
	Max. PLC axes group	Axes group		—	1	1	1	—	1	1	1	1	1	1	3	3	3	3	3
	Standard controlled axes (standard)	Axis		3	4	4	8	3	4	6	6	6	4	6	12	12	12	12	12
	Max. controlled axes (option)	Axis		3	4	4	8	4	4	8	8	8	4	8	16	16	16	16	16
	Max. Number of spindles	Axis		2	2	2	6	1	2	4	4	4	2	4	6	6	6	6	6
	Max. Axes in synchronous control (single axes group)	Axis		3	4	4	4	3	4	4	4	4	4	4	5	4	5	4	5
	Min. Control unit-mm			0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	Max. Number of work coordinates system	Set		32	32	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Max. Groups of tool compensation	Set		96	96	96	96	32	96	96	96	96	96	96	96	96	96	96	96
	Number of multi-channel function groups	Set		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	Number of pre-read segments			64	64	1000	1000	1000	1000	1000	1000	1000	1000	1000	2000	2000	2000	2000	2000
	Segment process time			300	300	1000	1000	300	1000	1000	1000	1000	1000	1000	4000	1000	4000	1000	4000
Hardware spec	Storage DISKA	MB		256	256	512	512	512	512	512	512	512	512	512	4096	256	256	4096	4096
	I/O standard	Point		32/32	32/32	32/32	64/64	32/32	32/32	32/32	32/32	32/32	32/32	32/32	32/32	32/32	32/32	32/32	32/32
	I/O optional	Point		None	None	None	128/128	—	96/96	96/96	96/96	96/96	96/96	96/96	128/128	96/96	96/96	128/128	128/128
	DA	Set		2	2	2	2	2	2	2	2	2	2	2	—	2	2	2	2
	Display	Inch		8	8	10.4	10.4	8	8/10.4	8/10.4	8/10.4	8/10.4	8/10.4/15	8/10.4/15	8/10.4	8/10.4/rear half***	8/10.4/rear half***	10.4/15	10.4/15
	CF card	Set	Frontal port	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	USB	Set		2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2
	RJ-45	Set		1	1	1	1	1	1	1	1	1	2	2	2	1	1	2	2
	VGA output	Set		—	—	—	—	—	—	—	—	—	—	—	1	1***	1***	—	—
	PS/2	Set	Rear port	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
	RS-232	Set		—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
	RS-422	Set		—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
	RS-485	Set		1	1	1	1	1	1	1	1	1	1	1	—	1	1	1	1
	USB	Set		—	—	—	—	—	—	—	—	—	2	2	2	—	—	2	2
	SRI	Set		—	—	—	—	1	—	1	—	1	1	—	1	1	1	1	1
Servo control	General purpose (A/B phase)			O	O	O	O	—	—	—	—	—	—	—	—	—	—	—	—
	General purpose (CW/CCW)			O	O	O	O	—	—	—	—	—	—	—	—	—	—	—	—
	Mechatrolink II			—	—	—	—	—	O	—	O	—	—	—	O	O	O	O	O
	Mechatrolink III			—	—	—	—	O	—	O	—	O	O	—	—	O	O	O	O
	EtherCAT			—	—	—	—	O	—	O	—	O	O	—	O	O	O	O	O
	RTEX			—	—	—	—	O	—	O	—	O	O	—	—	O	O	O	O
Compensation	Back gap compensation			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Pitch error compensation			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Spike compensation			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Temp. Rise compensation			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	2D compensation			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Operation	Handwheel simulation			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Program empty run			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Selective stop			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Segment execution			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Virtual handwheel			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Pause point start			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Tool interrupt point start			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Tool retract			—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Offset setting			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Handwheel offset function			—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Program input	Selective jump			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	B-STOP/ program end			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Absolute zero coordinates system		G92/G92.1	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Interrupt MACRO		M96/M97	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	M 198 call subroutine			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	G-code extension			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
High speed high precision	Constant Jerk control			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Cross-segment S-curve acceleration/ deceleration			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Auto deceleration at corner			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Corner radius speed limit			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Multiple high speed high precision parameter set			—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	User quick parameter			—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	SPA function			—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Virtual circle radius function			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	High speed high precision control mode i		G05.1Q1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	High speed high precision control mode ii		G05P1000 0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	NURBS interpolation function			—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Category	Function	Remark/Code	1	2	3	4	5	6	7	8	9
Tool management	Auto tool align screen		—	—	—	—	—	—	—	—	—
	Auto work measurement	Renishaw h/w required	O	O	O	O	O	O	O	O	O
	Tool lifespan management	Only the screen; function requires customization	O	O	O	O	O	O	O	O	O
Auxiliary function	Mechanical lock (R-Bit)		O	O	O	O	O	O	O	O	O
	Software travel limit		O	O	O	O	O	O	O	O	O
	Spindle speed detection		O	O	O	O	O	O	O	O	O
	Axial coupling function		O	O	O	O	O	O	O	O	O
	Axial dynamic coupling function		O	O	O	O	O	O	O	O	O
	Feedback coupling function		O	O	O	O	O	O	O	O	O
	Threading quick tool retract		O	O	O	O	O	O	O	O	O
	Virtual axis function		O	O	O	O	O	O	O	O	O
	Axle exchange function		O	O	O	O	O	O	O	O	O
	Axial torque control		—	—	O	O	O	O	O	O	O
	Serial adjustment function (CNC axis)		—	—	O	O	O	O	O	O	O
	Driver data display (CNC axis)		—	—	O	O	O	O	O	O	O
	Spindle adaptation function (CNC axis)		—	—	O	O	O	O	O	O	O
	Serial PLC axis		—	—	O	O	O	O	O	O	O
	High speed spindle positioning	SYNTEC spindle required	—	—	O	O	O	O	O	O	O
	ROT element		—	—	O	O	O	O	O	O	O
	Dipole foreground/ background configuration		—	O	—	O	O	O	O	O	O
	Data backup and recover	Maker backup	O	O	O	O	O	O	O	O	O
	Start-up screen customization		O	O	O	O	O	O	O	O	O
	My favorite	Only support ARM 8-key system	—	O	O	O	O	O	—	O	O
	Project protection function		O	O	O	O	O	O	O	O	O
	Access management		O	O	O	O	O	O	O	O	O
	Remote AP monitoring		O	O	O	O	O	O	O	O	O
Programming	Background edit		O	O	O	O	O	O	O	O	O
	Edit protection		O	O	O	O	O	O	O	O	O
	Real time syntax check of processing program		O	O	O	O	O	O	O	O	O
PLC	PLC diagnosis function (FORCE I-point)		—	O	O	O	O	O	O	O	O
DATA TRANSFER FUNCTION	NETWORK		O	O	O	O	O	O	O	O	O
	FTP		O	O	O	O	O	O	O	O	O
	RS-485		O	O	O	O	O	O	O	O	O
	DNC(Network)		O	O	O	O	O	O	O	O	O
	DNC(USB)		O	O	O	O	O	O	O	O	O
Data display	Operation history display		O	O	O	O	O	O	O	O	O
	Graphic simulation		O	O	O	O	O	O	O	O	O
	Partial graphic simulation		O	O	O	O	O	O	O	O	O
	Dynamic multi-language switch-over		—	O	O	O	O	O	O	O	O
G-code	Oval cutting (clockwise)	G02.1	O	O	O	O	O	O	O	O	O
	Parabolic cutting (clockwise)	G02.2	O	O	O	O	O	O	O	O	O
	Cylinder interpolation	G07.1	O	O	O	O	O	O	O	O	O
	Start-up polar coordinates	G12.1	O	O	O	O	O	O	O	O	O
	OD/ID turning cycle	G20	O	O	O	O	O	O	O	O	O
	Threading cycle	G21	O	O	O	O	O	O	O	O	O
	Intermediate threading feed cycle	G21.2	O	O	O	O	O	O	O	O	O
	End face turning cycle	G24	O	O	O	O	O	O	O	O	O
	Jump function	G31	O	O	O	O	O	O	O	O	O
	Treading	G33	O	O	O	O	O	O	O	O	O
	Variable pitch threading	G34	O	O	O	O	O	O	O	O	O
	Polygon turning	G51.2	O	O	O	O	O	O	O	O	O
	Work coordinates system setting	G54~g59.9	O	O	O	O	O	O	O	O	O
	Mirror function (lathe)	G68	O	O	O	O	O	O	O	O	O
	Complex turning cycle	G72~g78	O	O	O	O	O	O	O	O	O
	Fixing cycle for drilling	G80，g83-g89	O	O	O	O	O	O	O	O	O
	Absolute zero coordinates system preset	G92.1	O	O	O	O	O	O	O	O	O
	Inverse time feed	G93	—	—	—	—	—	—	—	—	—
	Constant surface cutting speed	G96	O	O	O	O	O	O	O	O	O
	Spindle synchronization function	G114.1	—	—	O	—	O	O	O	O	O
	Spindle load function	G114.3	—	—	O	—	O	O	O	O	O

Remark
* Only sell in Mainland China
** Only sell in Taiwan
*** VGA is only provided in the rear half
**** 210TB-H5 is only 10.4".

O: standard function,
△: optional function,
—: Not available function