TM Al Cobot S Series Specification

			Speci	fication							
	lodel	TM5S			TM7S-M	TM5S-X	TM7S-X				
Weight		23.9 kg	22.9 kg	23.9 kg	22.9 kg	23.6 kg	22.6 kg				
Maximum Payload		5kg	7kg	5kg	7kg	5kg	7kg				
Reach		946mm	758mm	946mm 758mm		946mm	758mm				
Joint ranges	J1, J2, J4, J5, J6										
Jointranges	J3	+/- 158°	+/- 152°	+/- 158° 210°/s	+/- 152°	+/- 158°	+/- 152°				
	J1, J2, J3										
Speed	J4, J5										
	J6	450°/s									
	. Speed	4.5π/s									
	atability	+/- 0.03 mm									
Degree (Of Freedom	6 rotating joints									
	Control box	Digital In: 16 / Digital Out: 16									
I/O	CONTROLBOX	Analog In: 2 / Analog Out: 2									
1,70	Tool Conn.	Digital In: 3 / Digital Out: 3									
	Tool comi.	DO_0 (DO-0/AI) / DO_1 (DO-1/RS485-) / DO_2 (DO-2/RS485+)									
I/O Power Supply		24V 2.0A for control box; 24V 1.5A for tool									
IP Classification		IP54 (Robot Arm);	IP54 (Robot Arm); IP54 (Control Box)								
Typical Power Consumption		240 watts									
Temperature		0~50°C									
Clea	nliness	ISO Class 3 100~240 VAC. 50~60 Hz 24~60 VDC 100~240 VAC. 50~60 Hz									
	r Supply	100~240 V/	100~240 VAC, 50~60 Hz								
I/O Interface		3×COM、1×HDMI、3×LAN、4×USB2.0、2×USB3.0									
Comm	unication	RS-232/RS-422/RS-485, Ethernet, Modbus TCP/RTU (master & slave)									
		PROFINET (optional), EtherNet/IP (optional)									
	ng Environment	TMflow (flowchart/script based) CE, SEMI S2 (optional)									
Certi	fication										
			Robot Vision								
Al Fi	unction	Classification, C									
Application											
• • • • • • • • • • • • • • • • • • • •		De									
	ng Accuracy										
	Eye in Hand (Built in) Auto-focused color camera with 5M resolution, Working distance 100 mm ~ ∞						I/A				
Eye to Hand (Optional) Support Maximum 2× GigE 2D cameras or 1× GigE 2D Camera + 1× 3D Camera * (2)											
				100mm. It should be no							
	_			ambient light source, o	bject characteristics,						
	_	at will affect the change	•								
* ⁽²⁾ Refer to the of	fficial website of TM P	lug&Play for camera m	odels compatible to TM	A Robot.							

									_			
				Specifi	cation							
1	Model	TM12S	TM14S	TM25S	TM12S-M	TM14S-M	TM25S-M	TM12S-X	TM14S-X	TM25S-X		
Weight		33.3 kg	33 kg	80.6Kg	33.3 kg	33 kg	80.6 Kg	33 kg	32.7 kg	80.3 Kg		
Maximum Payload		12kg	14kg	25kg	12kg	14kg	25kg	12kg	14kg	25kg		
F	Reach		1100mm	1902mm	1300mm	1100mm	1902mm	1300mm	1100mm	1902mm		
Joint ranges	J1, J2, J4, J5, J6					+/- 360°						
Jointranges	J3	+/- 162°	+/- 159°	+/- 166°	+/- 162°	+/- 159°	+/- 166°	+/- 162°	+/- 159°	+/- 166°		
	J1, J2	130°/s		100°/s	130)°/s	100°/s	130	0°/s	100°/s		
	J3	210°/s		130°/s	210)°/s	130°/s	210°/s		130°/s		
Speed	J4	225°/s		195°/s	225°/s		195°/s	225°/s		195°/s		
	J5	225°/s		210°/s	225°/s		210°/s	225°/s		210°/s		
	J6	450)°/s	225°/s	450°/s		225°/s	450°/s		225°/s		
Max	x. Speed	4.5m/s		5.2m/s	4.5m/s		5.2m/s	4.5m/s		5.2m/s		
Repo	eatability	+/- 0.	.03 mm	+/- 0.05 mm	+/- 0.	.03 mm	+/- 0.05 mm	+/- 0.03 mm		+/- 0.05 mm		
Degree	Of Freedom	6 rotating joints										
	Control box	Digital In: 16 / Digital Out: 16										
1/0	Control box	Analog In: 2 / Analog Out: 2										
1/0	ToolCom	Digital In: 3 / Digital Out: 3										
	Tool Conn.	DO_0 (DO-0/AI) / DO_1 (DO-1/RS485-) / DO_2 (DO-2/RS485+)										
I/O Po	wer Supply			24'	V 2.0A for co	ntrol box; 2	4V 1.5A for t	ool				
IP Cla	IP Classification		IP54 (Robot Arm); IP54 (Control Box) IP54 (Robot Arm)						IP54 (Robot Arm); IP54 (Control Box)			
Typical Power Consumption		40	OW	600W	40	0W	600W	40	0W	600W		
Tem	perature	0~50°C										
Cle	anliness					ISO Class 3						
Power Supply		100~240 VA	C, 50~60 Hz	200~240 VAC, 50~60 Hz	24~6	0 VDC	48~60 VDC	100~240 v	чс, 50~60 нz	200~240 VAC, 50~60 H		
I/O Interface				2×COM ·	1×HDMI、	3×LAN · 2	×USB2.0 \ 4	×USB3.0				
		RS-232/RS-422/RS-485 \ Ethernet \ Modbus TCP/RTU(master & slave)										
Comn	nunication	PROFINET (optional), EtherNet/IP (optional)										
Programmi	ing Environment	TMflow (flowchart/script based)										
Cert	tification				CE, S	EMI S2 (opti	ional)					
			Al & Robo	t Vision								
AI F	unction	Classification, Object Detection, Segmentation, Anomaly Detection, AI OCR										
Application			Posi	tioning, 1D/2D Barco								
			Defect I	Detection, Measurem								
Position	ing Accuracy	2D Positioning: 0.1 mm* (1)							1			
Eye in Hand (Built in)		Auto-focused color camera with 5M resolution, Working distance 100 mm ~ ∞							N/A			
Eye to Ha	and (Optional)	GigE 2D cameras or 1×	GigE 2D Car	nera+1×3D	Camera* (2)							
* ⁽¹⁾ The data in th	The data in this table are measured by TM laboratory and the working distance is 100mm. It should be noted that in											
practical applica	ractical applications, the relevant values may be different due to factors such as the on-site ambient light source, object											
characteristics, a	nd vision programmin	g methods th	nat will affec	t the change in accura	cy.							
		_		els compatible to TM R								

TM AI Cobot Specification

			Spec	ification							
Mod	lel	TM5-700	TM5-900	TM5M-700	TM5M-900	TM5X-700	TM5X-900				
Weight		22.1kg	22.6kg	22.1kg	22.6kg	21.8kg	22.3kg				
Maximum Payload		6kg	4kg	6kg	4kg	6kg	4kg				
Reach		746mm	946mm	746mm	946mm	746mm	946mm				
	J1,J6	+/- 270°	+/- 270°	+/- 270°	+/- 270°	+/- 360°	+/- 360°				
Joint ranges	J2,J4,J5	+/- 180°	+/- 180°	+/- 180°	+/- 180°	+/- 360°	+/- 360°				
	J3	+/- 155°									
	J1,J2			180	0°/s						
	J3	225°/s									
Speed	J4	225°/s									
	J5	225°/s									
	J6	225°/s									
Max. S				4 r	n/s						
Repeata	ability	+/- 0.05 mm									
Degree Of	Freedom	6 rotating joints									
	Control box	Digital In: 16 / Digital Out: 16									
I/O	Control box	Analog In: 2 / Analog Out: 1									
1/0	Tool Conn.	Digital In: 4 / Digital Out: 4									
Tool Colli.		Analog In: 1 / Analog Out: 0									
I/O Power Supply		24V 2.0A for control box; 24V 1.5A for tool									
IP Classification		IP54 (Robot Arm); IP32 (Control Box)									
Typical Power (Typical Power Consumption		220 watts								
Temper	ature	0-50°C									
Cleanli	iness	ISO Class 3									
Power S	Power Supply		C, 50-60 Hz		0 VDC	100-240 VAC, 50-60 Hz					
I/O Inte	erface		3×C0I	M · 1×HDMI · 3×LA	N · 4×USB2.0 · 2×	USB3.0					
Commun	ication		RS-23	2, Ethernet, Modbus	TCP/RTU (master &	slave)					
		PROFINET (optional), EtherNet/IP (optional)									
Programming I		TMflow (flowchart/script based)									
Certific	ation			CE, SEMI S	2 (optional)						
		Al & Ro	bot Vision								
Al Fund	ction	Classification, Object Detection, Segmentation, Anomaly Detection, AI OCR									
Application			Positioning, 1D/2D B								
		Defect Detection, Measurement, Assembly Check									
Positioning Accuracy		2D Positioning: 0.1 mm* (1)									
Eye in Hand (Built in)		Auto-focused color camera with 5M resolution, Working distance $100 \text{ mm} \sim \infty$ N/A Support Maximum $2 \times \text{GigE 2D cameras or } 1 \times \text{GigE 2D Camera} + 1 \times 3D \text{ Camera}^{(2)}$									
Eye to Hand			~	~							
		y TM laboratory and t	-								
		es may be different du		_	ht source, object						
		methods that will aff									
* ^[2] Refer to the officia	al website of TM Plu	g&Play for camera mo	dels compatible to T	M Robot.							

TM12 32.8kg 12kg 1300mm +/- 270°	TM14				Specifi	ication					
12kg 1300mm		TM16	TM20	TM12M	TM14M	TM16M	TM20M	TM12X	TM14X	TM16X	TM20X
1300mm	32.5kg	32kg	32.8kg	32.8kg	32.5kg	32kg	32.8kg	32.5kg	32.2kg	31.7kg	32.5kg
	14kg	16kg	20kg	12kg	14kg	16kg	20kg	12kg	14kg	16kg	20kg
1/ 2700	1100mm	917mm	1300mm	1300mm	1100mm	917mm	1300mm	1300mm	1100mm	917mm	1300mr
+/-210	+/- 270°	+/- 270°	+/- 270°	+/- 270°	+/- 270°	+/- 270°	+/- 270°	+/- 360°	+/- 360°	+/- 360°	+/- 360
+/- 180°	+/- 180°	+/- 180°	+/- 180°	+/- 180°	+/- 180°	+/- 180°	+/- 180°	+/- 360°	+/- 360°	+/- 360°	+/- 360
+/- 166°	+/- 163°	+/- 155°	+/- 166°	+/- 166°	+/- 163°	+/- 155°	+/- 166°	+/- 166°	+/- 163°	+/- 155°	+/- 166
120°/s	120°/s	120°/s	90°/s	120°/s	120°/s	120°/s	90°/s	120°/s	120°/s	120°/s	90°/s
180°/s	180°/s	180°/s	120°/s	180°/s	180°/s	180°/s	120°/s	180°/s	180°/s	180°/s	120°/s
180°/s	150°/s	180°/s	150°/s	180°/s	150°/s	180°/s	150°/s	180°/s	150°/s	180°/s	150°/s
180°/s	150°/s	180°/s	180°/s	180°/s	150°/s	180°/s	180°/s	180°/s	150°/s	180°/s	180°/s
180°/s	180°/s	180°/s	225°/s	180°/s	180°/s	180°/s	225°/s	180°/s	180°/s	180°/s	225°/s
					4 n						
					+/- 0.	1 mm					
					6 rotatir	ng joints					
					Digital In: 16 /						
					Analog In: 2 /	Analog Out: 1					
					Digital In: 4/						
					Analog In: 1 /						
					A for control b						
				IP54	(Robot Arm);	IP32 (Control	Box)				
					300 v	vatts					
					0-5	0°C					
						lass 3					
	100-240 VA	C, 50-60 Hz			22-60 VDC		24-60 VDC		100-240 VA	C, 50-60 Hz	
					HDMI、3×LA)			
				RS-232, Ethe	rnet, Modbus	TCP/RTU (ma	aster & slave)				
				PROFINE	T (optional),	EtherNet/IP (optional)				
				TM	Iflow (flowcha	art/script bas	ed)				
					CE, SEMI SZ	2 (optional)					
			AI & Rob	ot Vision							
	Classificati				omaly Detect	ion, AI OCR					
		Position	ning, 1D/2D Ba	arcode Readir	ng, OCR,						
		Defect Dete	ection, Measu								
			2D Positionir								
	Auto-focused	d color came	a with 5M res	olution, Work	ing distance :	100 mm ~ ∞		1	N,	/A	
S					Camera + 1×		(2)				

that in practical applications, the relevant values may be different due to factors such as the on-site ambient light

source, object characteristics, and vision programming methods that will affect the change in accuracy.

 $^{\star\,(2)}$ Refer to the official website of TM Plug&Play for camera models compatible to TM Robot.