

TM AI Cobot

S Series Specifications

Model		TM5S	TM7S	TM5S-M	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
Payload		5 kg	7 kg	5 kg	7 kg	5 kg	7 kg
Reach		900mm	700mm	900mm	700mm	900mm	700mm
Joint Ranges	J1, J2, J4, J5, J6	+ / - 360°					
	J3	+ / - 158°	+ / - 152°	+ / - 158°	+ / - 152°	+ / - 158°	+ / - 152°
Speed	J1, J2, J3	210° /s					
	J4, J5	225° /s					
	J6	450° /s					
Repeatability		+ / - 0.03mm					
Max. Speed		4 m/s					
Degrees of Freedom		6 Rotating Joints					
I/O	Control Box	Digital In: 16 / Digital Out: 16					
		Analog In: 2 / Analog Out: 2					
	Tool Conn.	Digital In: 3 / Digital Out: 3					
		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 and 24V 1.5A for tool					
IP Classification		IP54 (Robot Arm) (IP54 Control Box)		IP54 (Robot Arm)		IP54 (Robot Arm) (IP54 Control Box)	
Power consumption		Typical 240 watts					
Temperature		0 - 50°C					
Cleanliness		ISO Class 3					
Power supply		100-240 VAC, 50-60Hz		24-60 VDC		100-240 VAC, 50-60Hz	
I/O Interface		3x COM 1x HDMI 3x LAN 4x USB2.0 2x USB3.0					
Communication		RS-232 / RS-422 / RS-485, Ethernet, Modbus TCP/RTU (master & slave)					
		PROFINET (optional), EtherNet/IP (optional)					
Programming environment		TMflow (flowchart / script based)					
Certification		CE (regional model), SEMI S2 (option)					
AI & Robot Vision							
AI Function	Classification, Object Detection, Segmentation, Anomaly Detection, AI OCR					N/A	
Application	Positioning, 1D/2D Barcode Reading, OCR, 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 100mm - ∞						
Eye to Hand (Option)	Support max. 2x GigE 2D cameras or 1x GigE 2D camera + 1x 3D Camera* (2)						
<p>** (1) The data in these tables are measured by TM Laboratory and the working distance is 100mm. It should be noted 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.</p> <p>* (2) Refer to the official website of TM Plug&Play for camera models compatible to TM Robot.</p>							

Model		TM12S	TM14S	TM25S	TM12S-M	TM14S-M	TM25S-M	TM12S-X	TM14S-X	TM25S-X
Weight		33.3 kg	33 kg	80.6 kg	33.3 kg	33 kg	80.6 kg	33 kg	32.7 kg	80.3 kg
Payload		12 kg	14 kg	25 kg	12 kg	14 kg	25 kg	12 kg	14 kg	25 kg
Reach		1300mm	1100mm	1902mm	700mm	900mm	700mm	1300 mm	1100 mm	1902mm
Joint Ranges	J1, J2, J4, J5, J6	+/- 360°								
	J3	+/- 162°	+/- 163°	+/- 166°	+/- 162°	+/- 163°	+/- 166°	+/- 162°	+/- 163°	+/- 166°
Speed	J1, J2	130°/s		100°/s	130°/s		100°/s	130°/s		100°/s
	J3	210°/s		130°/s	210°/s		130°/s	210°/s		130°/s
	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
Repeatability		+/- 0.03mm		+/- 0.05mm	+/- 0.03mm		+/- 0.05mm	+/- 0.03mm		+/- 0.05mm
Max. Speed		4 m/s		5 m/s	4 m/s		5 m/s	4 m/s		5 m/s
Degrees of Freedom		6 Rotating Joints								
I/O	Control Box	Digital In: 16 / Digital Out: 16								
		Analog In: 2 / Analog Out: 2								
	Tool Conn.	Digital In: 3 / Digital Out: 3								
		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 and 24V 1.5A for tool								
IP Classification		IP54 (Robot Arm) (IP54 Control Box)			IP54 (Robot Arm)			IP54 (Robot Arm) (IP54 Control Box)		
Power consumption		400W		500W	400W		500W	400W		500W
Temperature		0 - 50°C								
Cleanliness		ISO Class 3								
Power supply		100-200 VAC, 50-60Hz		220-240 VAC, 50-60 Hz	24-60 VDC		48-60 VDC	100-200 VAC, 50-60Hz		220-240 VAC, 50-60 Hz
I/O Interface		3x COM 1x HDMI 3x LAN 4x USB2.0 2x USB3.0								
Communication		RS-232 / RS-422 / RS-485, Ethernet, Modbus TCP/RTU (master & slave) PROFINET (optional), EtherNet/IP (optional)								
Programming environment		TMflow (flowchart / script based)								
Certification		CE (regional model), SEMI S2 (option)								
AI & Robot Vision										
AI Function		Classification, Object Detection, Segmentation, Anomaly Detection, AI OCR						N/A		
Application		Positioning, 1D/2D Barcode Reading, OCR, 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 100mm - ∞								
Eye to Hand (Option)		Support max. 2x GigE 2D cameras or 1x GigE 2D camera + 1x 3D Camera* ⁽²⁾								

TM AI Cobot

Specifications

Model		TM5-700	TM5-900	TM5M-700	TM5M-900	TM5X-700	TM5X-900
Weight		22.1 kg	22.6 kg	22.1 kg	22.6 kg	21.8 kg	22.3 kg
Payload		6 kg	4 kg	6 kg	4 kg	6 kg	4 kg
Reach		700mm	900mm	700mm	900mm	700mm	900mm
Joint Ranges	J1, J6	+ / - 270°				+ / - 360°	
	J2, J4, J5	+ / - 180°				+ / - 360°	
	J3	+ / - 155°					
Speed	J1, J2	180° /s					
	J3	225° /s					
	J4	225° /s					
	J5	225° /s					
	J6	225° /s					
Repeatability		+ / - 0.05mm					
Max. Speed		4 m/s					
Degrees of Freedom		6 Rotating Joints					
I/O	Control Box	Digital In: 16 / Digital Out: 16					
		Analog In: 2 / Analog Out: 2					
	Tool Conn.	Digital In: 4 / Digital Out: 4					
		Analog In: 1 / Analog Out: 0					
I/O Power supply		24V 2.0A for control box and 24V 1.5A for tool					
IP Classification		IP54 (Robot Arm); (IP54 Control Box)					
Power consumption		Typical 220 watts					
Temperature		0 - 50°C					
Cleanliness		ISO Class 3					
Power supply		100-240 VAC, 50-60Hz	24-60 VDC		100-240 VAC, 50-60Hz		
I/O Interface		3x COM 1x HDMI 3x LAN 4x USB2.0 2x USB3.0					
Communication		RS-232 / RS-422 / RS-485, Ethernet, Modbus TCP/RTU (master & slave) PROFINET (optional), EtherNet/IP (optional)					
Programming environment		TMflow (flowchart / script based)					
Certification		CE (regional model), SEMI S2 (option)					
AI & Robot Vision							
AI Function		Classification, Object Detection, Segmentation, Anomaly Detection, AI OCR				N/A	
Application		Positioning, 1D/2D Barcode Reading, OCR, 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 100mm - ∞					
Eye to Hand (Option)		Support max. 2x GigE 2D cameras or 1x GigE 2D camera + 1x 3D Camera* (2)					
<p>** (1) The data in these tables are measured by TM Laboratory and the working distance is 100mm. It should be noted 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.</p> <p>* (2) Refer to the official website of TM Plug&Play for camera models compatible to TM Robot.</p>							

TM12	TM14	TM16	TM20	TM12M	TM14M	TM16M	TM20M	TM12X	TM14X	TM20X	
32.8 kg	32.5 kg	32 kg	32.8 kg	32.8 kg	32.5 kg	32 kg	32.8 kg	32.5 kg	32.2 kg	32.5 kg	
12 kg	14 kg	16 kg	20 kg	12 kg	14 kg	16 kg	20 kg	12 kg	14 kg	20 kg	
1300mm	1100mm	900mm	1300mm	1300mm	1100mm	900mm	1300mm	1300mm	1100mm	1300mm	
+ / - 270°								+ / - 360°			
+ / - 270°								+ / - 360°			
166°/s	163°/s	155°/s	166°/s	166°/s	163°/s	155°/s	166°/s	166°/s	163°/s	166°/s	
120/s	120/s	120/s	90/s	120/s	120/s	120/s	90/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	120°/s	
180°/s	150/s	180°/s	150°/s	180°/s	150/s	180°/s	150°/s	180°/s	150/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	225°/s	180°/s	180/s	180°/s	225°/s	180°/s	180/s	225°/s	
+ / - 0.1mm											
4 m/s											
6 Rotating Joints											
Digital In: 16 / Digital Out: 16											
Analog In: 2 / Analog Out: 2											
Digital In: 3 / Digital Out: 3											
DO_0 (DO-0/AI) / DO_1 (DO-1/RS485+) / DO_2 (DO-2/RS485-)											
24V 2.0A for control box and 24V 1.5A for tool											
IP54 (Robot Arm); (IP54 Control Box)											
Typical 300 watts											
0 - 50°C											
ISO Class 3											
100-240 VAC, 50-60Hz				22-60 VDC			24-60 VDC		100-240 VAC, 50-60Hz		
3x COM 1x HDMI 3x LAN 4x USB2.0 2x USB3.0											
RS-232 / RS-422 / RS-485, Ethernet, Modbus TCP/RTU (master & slave)											
PROFINET (optional), EtherNet/IP (optional)											
TMflow (flowchart / script based)											
CE (regional model), SEMI S2 (option)											
AI & Robot Vision											
Classification, Object Detection, Segmentation, Anomaly Detection, AI OCR								N / A			
Positioning, 1D/2D Barcode Reading, OCR, Defect Detection, Measurement, Assembly Check											
2D Positioning: 0.1mm* (1)											
Auto-focused color camera with 5M resolution, Working distance 100mm - ∞											
Support max. 2x GigE 2D cameras or 1x GigE 2D camera + 1x 3D Camera* (2)											

