

TM AI Cobot S Series Specification



Specification						
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
Maximum Payload	5kg	7kg	5kg	7kg	5kg	7kg
Reach	946mm	758mm	946mm	758mm	946mm	758mm
Joint ranges	J1, J2, J4, J5, J6	+/- 360°				
	J3	+/- 158°	+/- 152°	+/- 158°	+/- 152°	+/- 158°
Speed	J1, J2, J3	210°/s				
	J4, J5	225°/s				
	J6	450°/s				
	Max. Speed	4.5m/s				
Repeatability	+/- 0.03 mm					
Degree 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; 24V 1.5A for tool					
IP Classification	IP54 (Robot Arm); IP54 (Control Box)		IP54 (Robot Arm)		IP54 (Robot Arm); IP54 (Control Box)	
Typical Power Consumption	240 watts					
Temperature	0~50°C					
Cleanliness	ISO Class 3					
Power Supply	100~240 VAC, 50~60 Hz		24~60 VDC		100~240 VAC, 50~60 Hz	
I/O Interface	3×COM、1×HDMI、3×LAN、4×USB2.0、2×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, SEMI S2 (optional)					
AI & Robot Vision						
AI Function	Classification, Object Detection, Segmentation, Anomaly Detection, AI OCR					
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 100 mm ~ ∞					
Eye to Hand (Optional)	Support Maximum 2× GigE 2D cameras or 1× GigE 2D Camera + 1× 3D Camera ^{*(2)}					
N/A						

^{*(1)}The data in this table 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.

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

Specification									
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
Reach	1300mm	1100mm	1902mm	1300mm	1100mm	1902mm	1300mm	1100mm	1902mm
Joint ranges	J1, J2, J4, J5, J6	+/- 360°							
	J3	+/- 162°	+/- 159°	+/- 166°	+/- 162°	+/- 159°	+/- 166°	+/- 162°	+/- 159°
Speed	J1, J2	130°/s	100°/s	100°/s	130°/s	100°/s	130°/s	100°/s	100°/s
	J3	210°/s	130°/s	130°/s	210°/s	130°/s	210°/s	130°/s	130°/s
	J4	225°/s	195°/s	195°/s	225°/s	195°/s	225°/s	195°/s	195°/s
	J5	225°/s	210°/s	210°/s	225°/s	210°/s	225°/s	210°/s	210°/s
	J6	450°/s	225°/s	225°/s	450°/s	225°/s	450°/s	225°/s	225°/s
	Max. Speed	4.5m/s	5.2m/s	5.2m/s	4.5m/s	5.2m/s	5.2m/s	4.5m/s	5.2m/s
Repeatability	+/- 0.03 mm		+/- 0.05 mm	+/- 0.03 mm		+/- 0.05 mm	+/- 0.03 mm		+/- 0.05 mm
Degree 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; 24V 1.5A for tool								
IP Classification	IP54 (Robot Arm); IP54 (Control Box)			IP54 (Robot Arm)			IP54 (Robot Arm); IP54 (Control Box)		
Typical Power Consumption	400W	600W	600W	400W	600W	600W	400W	600W	600W
Temperature	0~50°C								
Cleanliness	ISO Class 3								
Power Supply	100~240 VAC, 50~60 Hz	200~240 VAC, 50~60 Hz	24~60 VDC	48~60 VDC	100~240 VAC, 50~60 Hz	200~240 VAC, 50~60 Hz	24~60 VDC	48~60 VDC	200~240 VAC, 50~60 Hz
I/O Interface	2×COM、1×HDMI、3×LAN、2×USB2.0、4×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, SEMI S2 (optional)								
AI & Robot Vision									
AI Function	Classification, Object Detection, Segmentation, Anomaly Detection, AI OCR								
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 100 mm ~ ∞								
Eye to Hand (Optional)	Support Maximum 2× GigE 2D cameras or 1× GigE 2D Camera + 1× 3D Camera ^{*(2)}								
N/A									

^{*(1)}The data in this table 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.

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

TM AI Cobot Specification



Specification						
Model	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
Joint ranges	J1,J6	+/- 270°	+/- 270°	+/- 270°	+/- 270°	+/- 360°
	J2,J4,J5	+/- 180°	+/- 180°	+/- 180°	+/- 180°	+/- 360°
	J3	+/- 155°				
Speed	J1,J2	180°/s				
	J3	225°/s				
	J4	225°/s				
	J5	225°/s				
	J6	225°/s				
Max. Speed	4 m/s					
Repeatability	+/- 0.05 mm					
Degree Of Freedom	6 rotating joints					
I/O	Control box	Digital In: 16 / Digital Out: 16 Analog In: 2 / Analog Out: 1				
	Tool Conn.	Digital In: 4 / Digital Out: 4 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 Consumption	220 watts					
Temperature	0-50°C					
Cleanliness	ISO Class 3					
Power Supply	100-240 VAC, 50-60 Hz	22-60 VDC			100-240 VAC, 50-60 Hz	
I/O Interface	3×COM、1×HDMI、3×LAN、4×USB2.0、2×USB3.0					
Communication	RS-232, Ethernet, Modbus TCP/RTU (master & slave) PROFINET (optional), EtherNet/IP (optional)					
Programming Environment	TMflow (flowchart/script based)					
Certification	CE, SEMI S2 (optional)					
AI & Robot Vision						
AI Function	Classification, Object Detection, Segmentation, Anomaly Detection, AI OCR					
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 100 mm ~ ∞					
Eye to Hand (Optional)	Support Maximum 2× GigE 2D cameras or 1× GigE 2D Camera + 1× 3D Camera* ⁽²⁾					
N/A						

*⁽¹⁾The data in this table 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.

*⁽²⁾Refer to the official website of TM Plug&Play for camera models compatible to TM Robot.

Specification											
TM12	TM14	TM16	TM20	TM12M	TM14M	TM16M	TM20M	TM12X	TM14X	TM16X	TM20X
32.8kg	32.5kg	32kg	32.8kg	32.8kg	32.5kg	32kg	32.8kg	32.5kg	32.2kg	31.7kg	32.5kg
12kg	14kg	16kg	20kg	12kg	14kg	16kg	20kg	12kg	14kg	16kg	20kg
1300mm	1100mm	917mm	1300mm	1300mm	1100mm	917mm	1300mm	1300mm	1100mm	917mm	1300mm
+/- 270°	+/- 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 m/s											
+/- 0.1 mm											
6 rotating joints											
Digital In: 16 / Digital Out: 16											
Analog In: 2 / Analog Out: 1											
Digital In: 4 / Digital Out: 4											
Analog In: 1 / Analog Out: 0											
24V 2.0A for control box; 24V 1.5A for tool											
IP54 (Robot Arm); IP32 (Control Box)											
300 watts											
0-50°C											
ISO Class 3											
100-240 VAC, 50-60 Hz			22-60 VDC			24-60 VDC		100-240 VAC, 50-60 Hz			
3×COM、1×HDMI、3×LAN、4×USB2.0、2×USB3.0											
RS-232, Ethernet, Modbus TCP/RTU (master & slave) PROFINET (optional), EtherNet/IP (optional)											
TMflow (flowchart/script based)											
CE, SEMI S2 (optional)											
AI & Robot Vision											
Classification, Object Detection, Segmentation, Anomaly Detection, AI OCR											
Positioning, 1D/2D Barcode Reading, OCR, Defect Detection, Measurement, Assembly Check											
2D Positioning: 0.1 mm* ⁽¹⁾											
Auto-focused color camera with 5M resolution, Working distance 100 mm ~ ∞											
Support Maximum 2× GigE 2D cameras or 1× GigE 2D Camera + 1× 3D Camera* ⁽²⁾											
N/A											

*⁽¹⁾The data in this table 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.

*⁽²⁾Refer to the official website of TM Plug&Play for camera models compatible to TM Robot.