Collaborative Robots
TM12/14

Collaborative robot for assembly, packaging, inspection and logistics

- Built-in vision-based robot control enables visual servoing, inspection, and measurement.
- TMvision and landmark allows truly flexible, fast changeover.
- Easy-to-use graphical programming environment for quick startup.
- Plug & Play ecosystem makes it versatile for many manufacturing needs.
- Designed to promote a safer workplace with harmony between humans and machines.
- Integration with mobile robots provides fully autonomous logistics handling for a conveyor-less system.

TM12   TM14

Specifications

		TM12/14					
Product Name		**TM12**	**TM12M**	**TM12M SEMI**	**TM14**	**TM14M**	**TM14M SEMI**
Model		**RT6-1001300**	**RT6-1101300**	**RT6-1101310**	**RT6-2001100**	**RT6-2101100**	**RT6-2101110**
Weight (kg)		33.3			32.6		
Max Payload (kg)		12			14		
Reach (mm)		1300			1100		
Typical Speed (m/s)		1.3			1.1		
Joint Range	Joint 1	±270°					
	Joint 2, 4, 5	±180°					
	Joint 3	±166°			±163°		
	Joint 6	±270°					
Joint Speeds	Joint 1, 2	120°/s					
	Joint 3	180°/s					
	Joint 4, 5	180°/s			150°/s		
	Joint 6	180°/s					
Repeatability (mm)		±0.1					
IP		IP54 (robot arm), IP32 (control box)					
Operating Temperature (°C)		0 to 50					
Power Supply		100-240 VAC, 50-60 Hz	22-60 VDC	22-60 VDC	100-240 VAC, 50-60 Hz	22-60 VDC	22-60 VDC
I/O Ports	Control Box	Digital In: 16 Digital Out: 16 Analog In: 2 Analog Out: 1					
	Tool	Digital In: 4 Digital Out: 4 Analog In: 1 Analog Out: 0					
I/O Interface		3 X COM, 1 X HDMI, 3 X LAN, 4 X USB2.0, 2 X USB3.0					
Communication		RS232, Ethernet(master), Modbus TCP/RTU (master & slave)					
Integrated Camera		5M pixels, color (AOI tasks: 5M/1.2M; others:1.2M)					
I/O Power Supply		24V 1.5A (control box and tool)					
Programming Environment		TMflow, flowchart based					
SEMI S2 Certified		No	No	Yes	No	No	Yes

*Manufactured by Techman Robot Inc.

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Dimensions
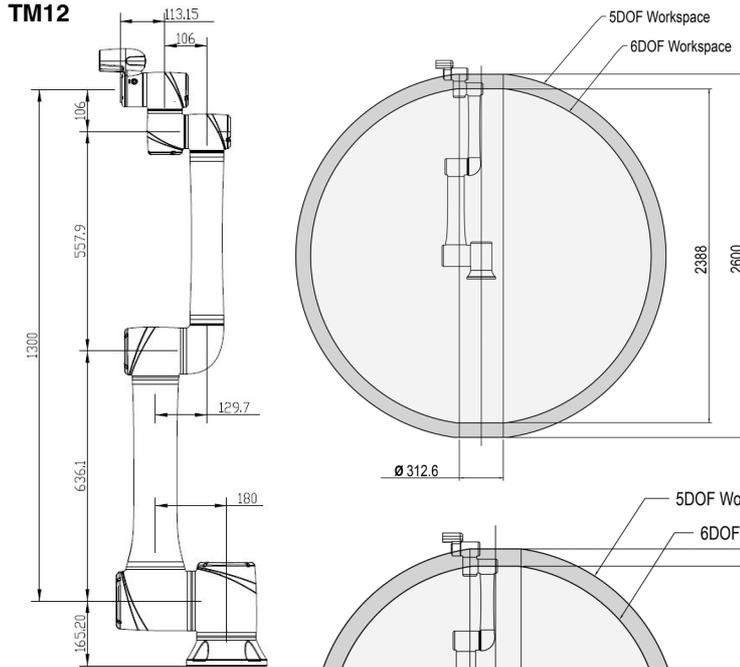
TM12

TM14

Footprint
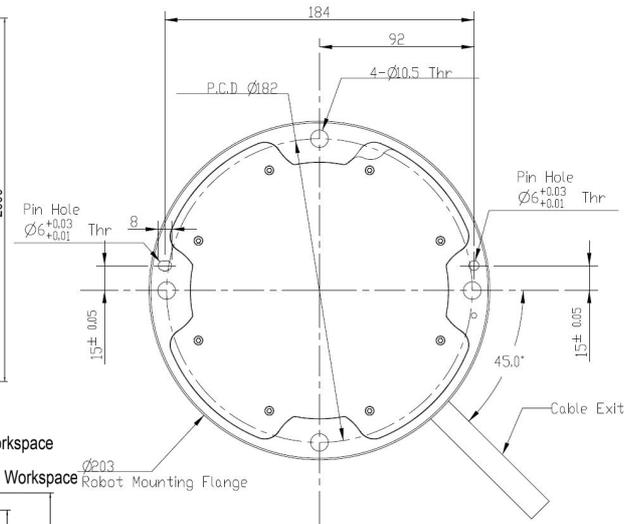
Flange
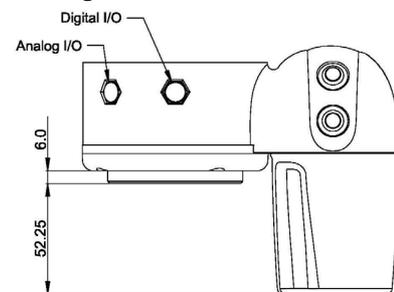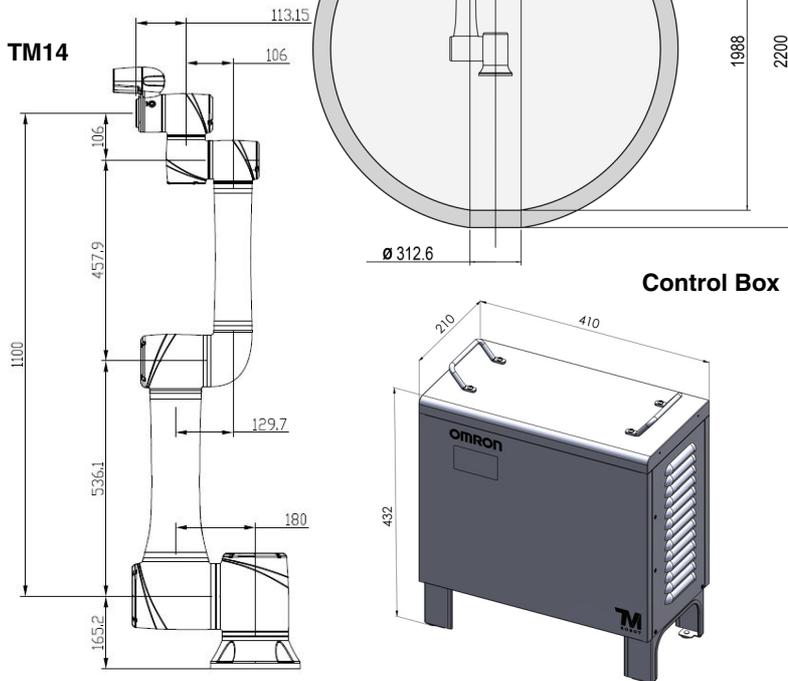
Control Box
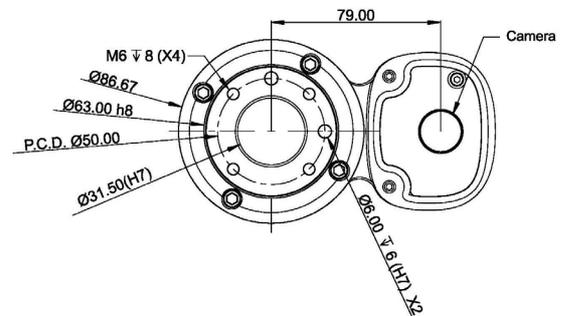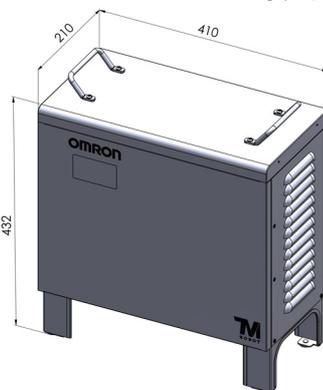
Robot Parts Code and Bundled Accessories

Type	TM12			TM14		
Product Name	TM12	TM12M	TM12M SEMI	TM14	TM14M	TM14M SEMI
Model	RT6-1001300	RT6-1101300	RT6-1101310	RT6-2001100	RT6-2101100	RT6-2101110
Overview	Robot with built-in vision system and control box			Robot with built-in vision system and control box		
Purpose	Typical for use in programming environment			Typical for use in programming environment		
Bundled Accessories	• TM12 robot arm (1) • Robot stick (1) • Control box (1) • Calibration plates (one large and one small) • IO cables (2) • TM landmark (2) • Ground wire (1) • Power cable for the control box (4 standard model, 1 mobile model) • SEMI emergency OFF switch (SEMI model only)			• TM14 robot arm (1) • Robot stick (1) • Control box (1) • Calibration plates (one large and one small) • IO cables (2) • TM landmark (2) • Ground wire (1) • Power cable for the control box (4 standard model, 1 mobile model) • SEMI emergency OFF switch (SEMI model only)		

Accessories & Software

Accessories

Appearance	Product Name	Remarks	Model
	Landmark	-	RT6-A000008
	Mobile Workstation (MWS)	Compatible with OMRON TM5 only.	RT6-A000010
	Robot stand	Compatible with OMRON TM5 only. Height adjustable.	RT6-A000009
	SSD with cable	128 GB. SATA cable. Required for external cameras image logging.	RT6-A000012
	Kit, calibration set with additional pin	Required for TCP and manual vision calibration.	RT6-A000002
	Robot stick stand	-	RT6-A000000
	Pneumatic control box	Compatible with KILEWS screw driving solution kit. Recommended to attach to the robot stand.	RT6-A000015

Recommended Plug & Play Hardware

Appearance	Category	Product Name	Manufacturer SKU Number
	Grippers	Robotiq Adaptive Gripper 2-Finger 85/140 TM Kit	85 kit: AGC-OMRON-KIT-85 140 kit: AGC-OMRON-KIT-140
		Robotiq Hand-E	HND-OMRON-KIT
		Schunk Co-act EGP for OMRON TM robot	1325501
	Screw Driving	KILEWS Screw Driving Solution	-
	Vision	Basler industrial camera	acA2500-14gc acA2500-14gm
	Cabling/Dresser	igus 3D e-chain OMRON TM kit	-

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Appearance	Category	Product Name	Manufacturer SKU Number
	Force Sensor	ATI Axia80	9105-TM-Axia80
		Robotiq FT-300	FTS-300-OMRON-KIT

Software

| Model Number	Product Name	Add-On Model Numbers	Add-On Product Names	Remarks
RT6-A000004	USB Dongle	-	-	*Required for all extra software licenses
N/A, Free Download	TMflow	-		
-		RT6-S100000	TM Identify & Measure	License, add-on to TMflow
		RT6-S100002	TM External Vision	License, add-on to TMflow
		RT6-S100003	TM OCR	License, add-on to TMflow
RT6-S200001	TMflow Editor License	-		
-		RT6-S100005	TMflow Editor - Offline AOI	License, add-on to TMflow Editor

Related Manuals

| Manual No.	English Title
I623	TM5 Regular Payload Series Hardware Installation Manual
I624	TM12 & TM14 Medium & Heavy Payload Series Hardware Installation Manual
I625	Safety Manual
I626	Software Manual TMflow
I627	Software Manual TMvision
I628	TM Mobile Work Station Manual
I629	TM Robot Stand Manual
I630	Pneumatic Control Box Manual

Dimensions

Mobile Work Station (MWS)

700
475
808
150
729
700

Robot Stand

4X M10
110
81
300
110
900
700
200
630
180
750

Pneumatic Control Box

300
160

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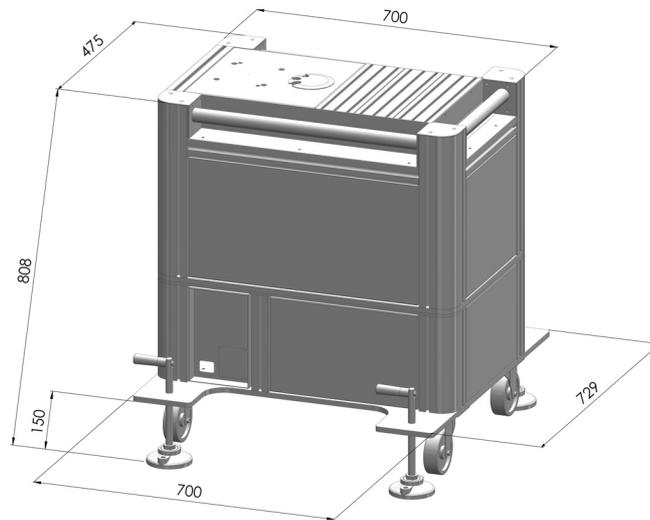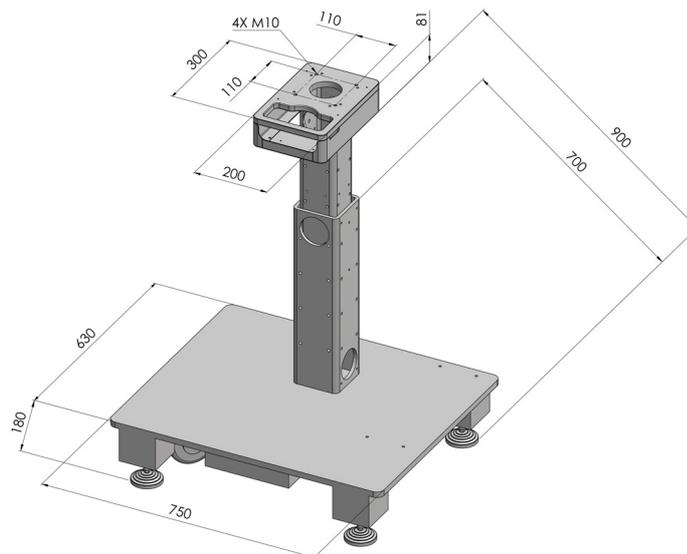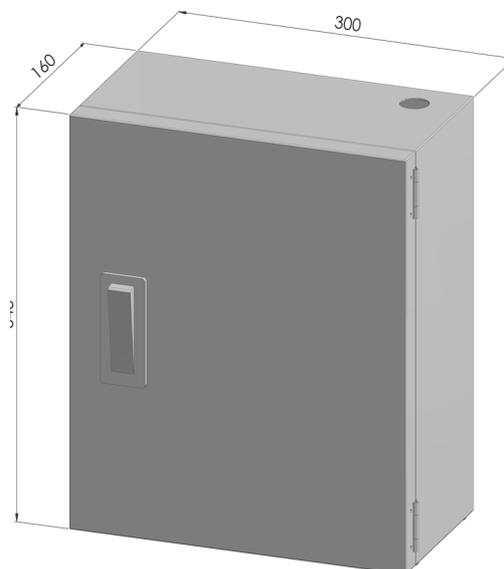
Collaborative Robots

Model Number Structure

TM5-700

RT6 - 0 0 0 7 0 0 0
(1)   (2) (3) (4) (5) (6) (7) (8)

No.	Item	Symbol	Specifications
(1)	Collaborative Robots - Techman		
(2)	Model Type	0	TM5
		1	TM12
		2	TM14
(3)	Mount Type	0	Standard
		1	Mobile
(4)	Eye in Hand	0	Standard
(5)(6)	Arm Length	70	700 (TM5)
		90	900 (TM5)
		13	1300 (TM12)
		11	1100 (TM14)
(7)	Semi	0	Standard
		1	Semi
(8)	Options	0	Standard

Model Number List

Type	Model
TM5-700	RT6-0007000
TM5M-700	RT6-0107000
TM5M-700 SEMI	RT6-0107010
TM5-900	RT6-0009000
TM5M-900	RT6-0109000
TM5M-900 SEMI	RT6-0109010
TM12	RT6-1001300
TM12M	RT6-1101300
TM12M SEMI	RT6-1101310
TM14	RT6-2001100
TM14M	RT6-2101100
TM14M SEMI	RT6-2101110

Note: The purpose of this model number structure is to provide understanding of the meaning of specifications from the model number. Models are not available for all combinations of code numbers.

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Authorized Distributor:

Controllers & I/O
• Machine Automation Controllers (MAC) • Motion Controllers
• Programmable Logic Controllers (PLC) • Temperature Controllers • Remote I/O

Robotics
• Industrial Robots • Mobile Robots

Operator Interfaces
• Human Machine Interface (HMI)

Motion & Drives
• Machine Automation Controllers (MAC) • Motion Controllers • Servo Systems
• Frequency Inverters

Vision, Measurement & Identification
• Vision Sensors & Systems • Measurement Sensors • Auto Identification Systems

Sensing
• Photoelectric Sensors • Fiber-Optic Sensors • Proximity Sensors
• Rotary Encoders • Ultrasonic Sensors

Safety
• Safety Light Curtains • Safety Laser Scanners • Programmable Safety Systems
• Safety Mats and Edges • Safety Door Switches • Emergency Stop Devices
• Safety Switches & Operator Controls • Safety Monitoring/Force-guided Relays

Control Components
• Power Supplies • Timers • Counters • Programmable Relays
• Digital Panel Meters • Monitoring Products

Switches & Relays
• Limit Switches • Pushbutton Switches • Electromechanical Relays
• Solid State Relays

Software
• Programming & Configuration • Runtime