

## 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 and 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.



TM5-700

TM5-900

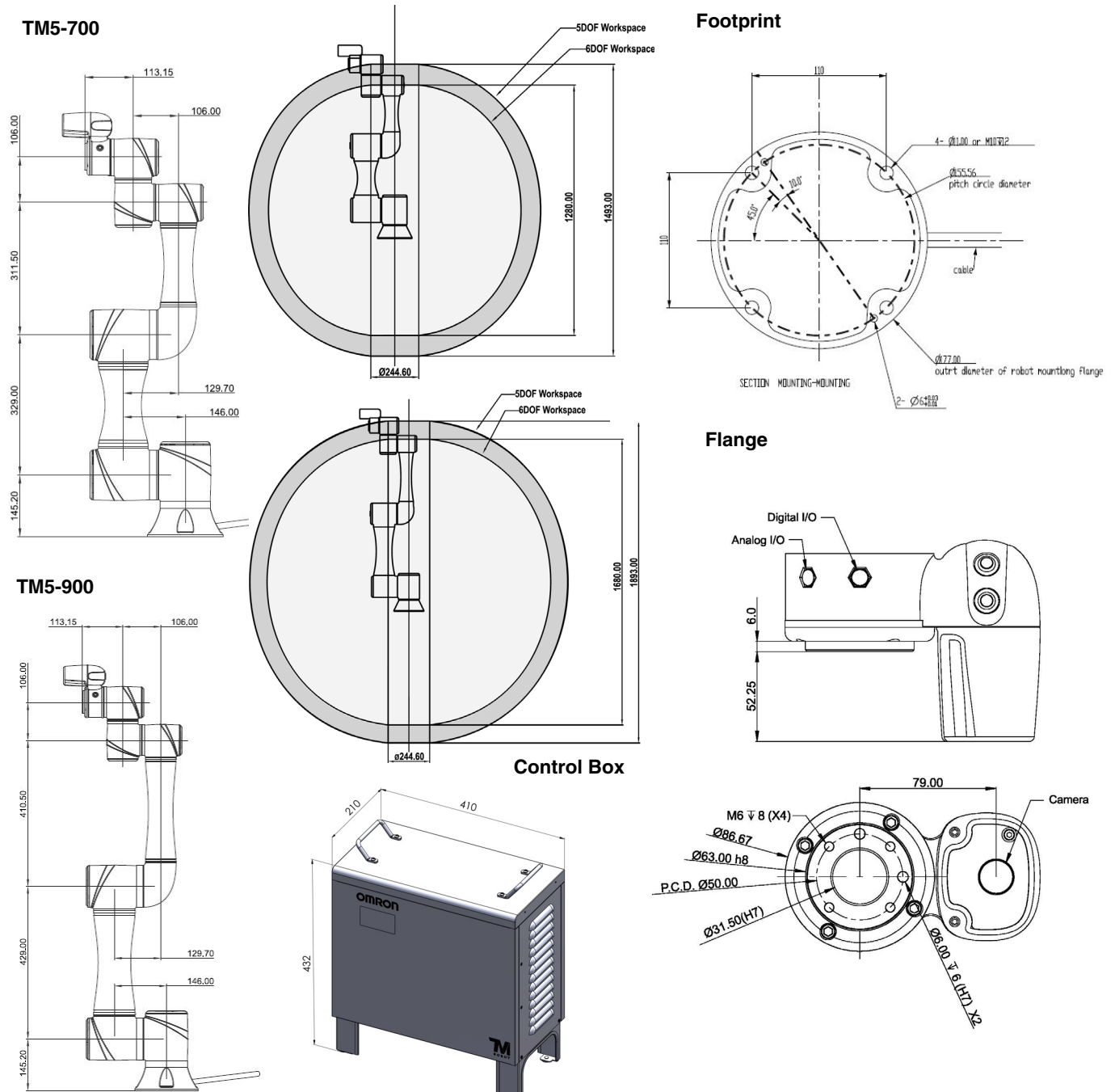
## Specification

Product Name		TM5					
		TM5-700	TM5M-700	TM5M-700 SEMI	TM5-900	TM5M-900	TM5M-900 SEMI
Model		RT6-0007000	RT6-0107000	RT6-0107010	RT6-0009000	RT6-0109000	RT6-0109010
Weight (kg)		22.1			22.6		
Max Payload (kg)		6			4		
Reach (mm)		700			900		
Typical Speed (m/s)		1.1			1.4		
Joint Range	Joint 1	±270°					
	Joint 2, 4, 5	±180°					
	Joint 3	±155°					
	Joint 6	±270°					
Joint Speeds	Joint 1, 2, 3	180°/s					
	Joint 4, 5, 6	225°/s					
Repeatability (mm)		±0.05					
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.

# Dimensions

(Unit: mm)



## Robot Parts Code and Bundled Accessories

Type	TM5-700			TM5-900		
	Product Name	TM5-700	TM5M-700	TM5M-700 SEMI	TM5-900	TM5M-900
Model	RT6-0007000	RT6-0107000	RT6-0107010	RT6-0009000	RT6-0109000	RT6-0109010
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	<ul style="list-style-type: none"> <li>TM5-700 robot arm (1)</li> <li>Robot stick (1)</li> <li>Control box (1)</li> <li>Calibration plates (one large and one small)</li> <li>IO cables (2)</li> <li>TM landmark (2)</li> <li>Ground wire (1)</li> <li>Power cable for the control box (4 standard model, 1 mobile model)</li> <li>SEMI emergency OFF switch (SEMI model only)</li> </ul>			<ul style="list-style-type: none"> <li>TM5-900 robot arm (1)</li> <li>Robot stick (1)</li> <li>Control box (1)</li> <li>Calibration plates (one large and one small)</li> <li>IO cables (2)</li> <li>TM landmark (2)</li> <li>Ground wire (1)</li> <li>Power cable for the control box (4 standard model, 1 mobile model)</li> <li>SEMI emergency OFF switch (SEMI model only)</li> </ul>		

# Collaborative Robots TM12/14

## Collaborative robot for assembly, packaging, inspection and logistics

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TM12

TM14

## Specifications

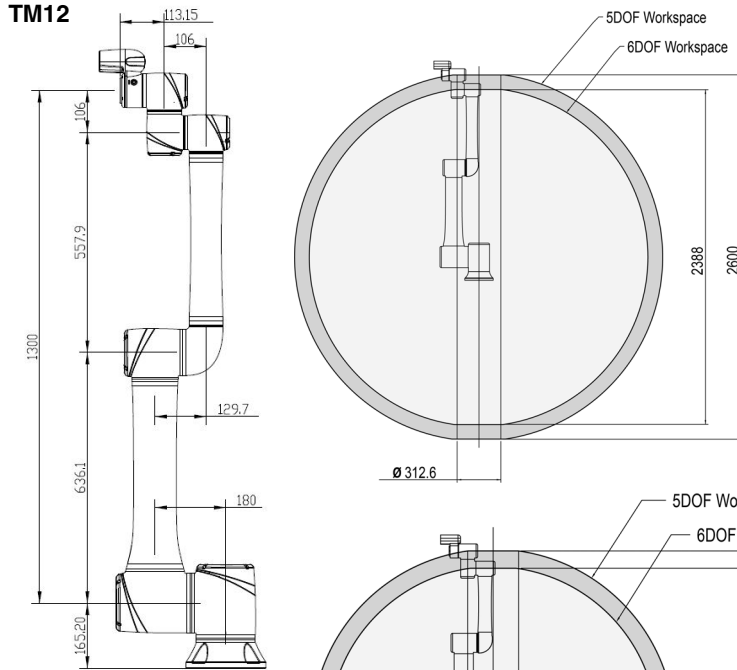
		TM12/14					
Product Name		TM12	TM12M	TM12M SEMI	TM14	TM14M	TM14M SEMI
Model		RT6-1001300	RT6-1101300	RT6-1101310	RT6-2001100	RT6-2101100	RT6-2101110
Weight (kg)		33.3			32.6		
Max Payload (kg)		12			14		
Reach (mm)		1300			1100		
Typical Speed (m/s)		1.3			1.1		
Joint Range	Joint 1	±270°					
	Joint 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.

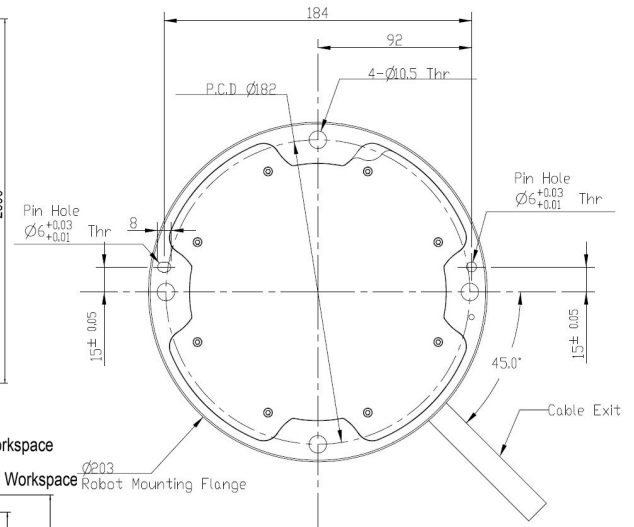
# Dimensions

(Unit: mm)

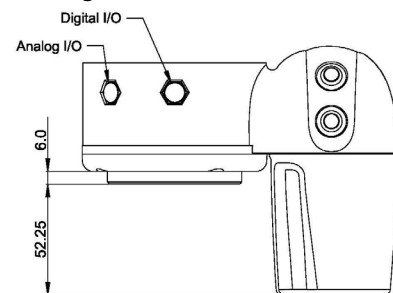
## TM12



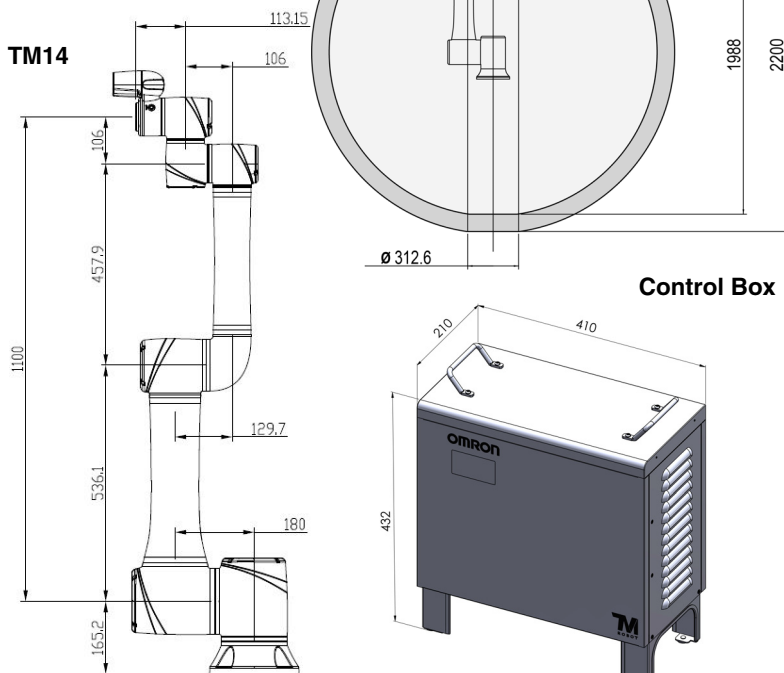
## Footprint



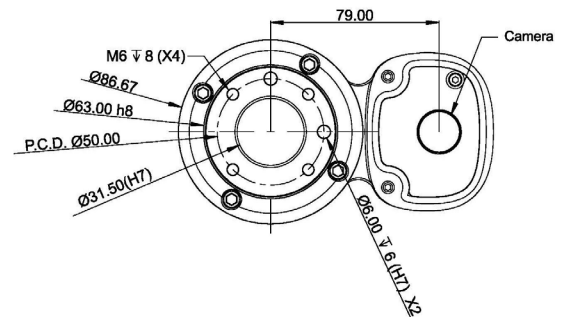
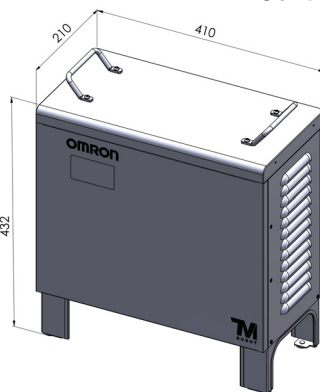
## Flange



## TM14



## 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	<ul style="list-style-type: none"> <li>TM12 robot arm (1)</li> <li>Robot stick (1)</li> <li>Control box (1)</li> <li>Calibration plates (one large and one small)</li> <li>IO cables (2)</li> <li>TM landmark (2)</li> <li>Ground wire (1)</li> <li>Power cable for the control box (4 standard model, 1 mobile model)</li> <li>SEMI emergency OFF switch (SEMI model only)</li> </ul>			<ul style="list-style-type: none"> <li>TM14 robot arm (1)</li> <li>Robot stick (1)</li> <li>Control box (1)</li> <li>Calibration plates (one large and one small)</li> <li>IO cables (2)</li> <li>TM landmark (2)</li> <li>Ground wire (1)</li> <li>Power cable for the control box (4 standard model, 1 mobile model)</li> <li>SEMI emergency OFF switch (SEMI model only)</li> </ul>		



# 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	-

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

## Software

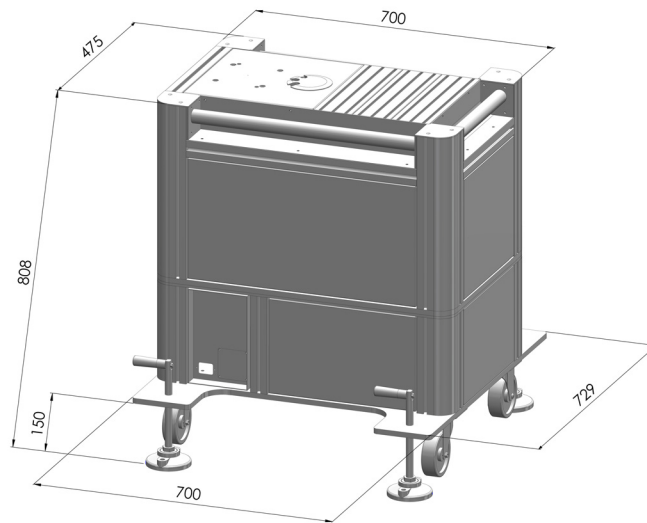
Model Number	Product Name	Add-On Model Numbers	Add-On Product Names	Remarks
RT6-A000004	USB Dongle	-	-	*Required for all extra software licenses
N/A, Free Download	TMflow	-	-	-
-	-	RT6-S100000	TM Identify & Measure	License, add-on to TMflow
-	-	RT6-S100002	TM External Vision	License, add-on to TMflow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

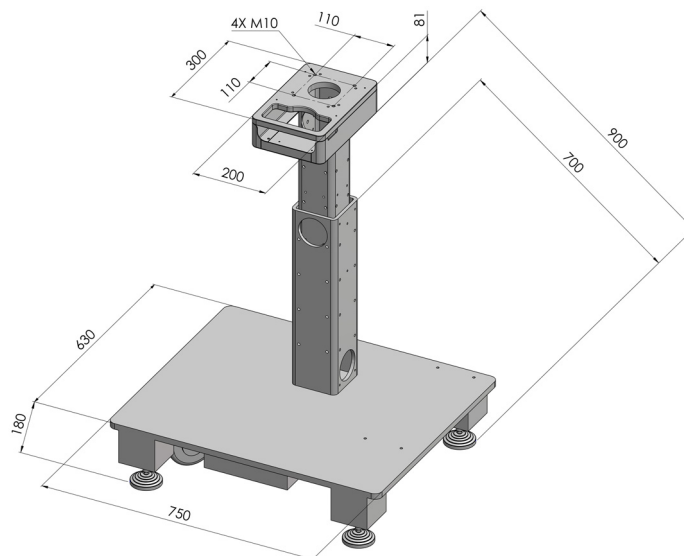
Manual No.	English Title
I623	TM5 Regular Payload Series Hardware Installation Manual
I624	TM12 & TM14 Medium & Heavy Payload Series Hardware Installation Manual
I625	Safety Manual
I626	Software Manual TMflow
I627	Software Manual TMvision
I628	TM Mobile Work Station Manual
I629	TM Robot Stand Manual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

# Dimensions

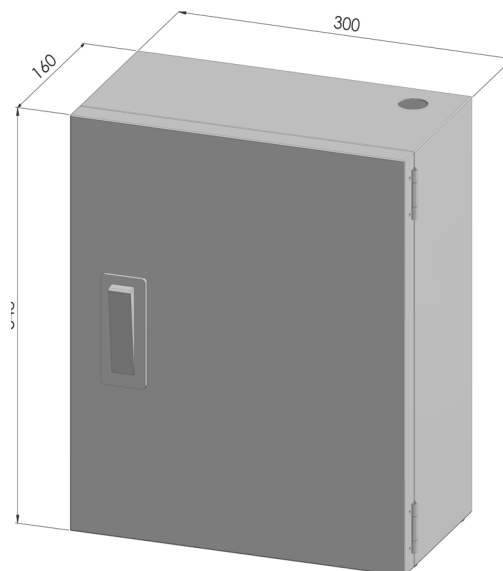
## Mobile Work Station (MWS)



## Robot Stand



## Pneumatic Control Box



# 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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