

TM Series Collaborative Robot

Human-machine collaboration taken to the next level





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Integrated

Assembly made easy with
integrated vision.

Intelligent

3D robot position guidance with
advanced 2D vision.

Interactive

Easy, safe collaboration with intuitive,
hands-on teaching.



2D vision powers 3D robot position guidance

Omron's intelligent solution for 3D precision guidance makes on-the-fly position calibration easy. With built-in vision, the Collaborative Robot interacts with machines as efficiently as a human operator.

To train the cobot, simply fix the TM Landmark marker somewhere within your workspace and teach your application directly using your hands. It will remember all points associated with the task.



Faster setup with built-in vision

The Omron TM Collaborative Robot features a built-in vision system. The integrated camera localizes objects in a wide field of vision, and the image-enhancement light enables object recognition under almost any conditions. The vision system improves reliability, consistency, and high-precision placement. Also included are functions such as pattern matching, barcode reading, and color classification. Combined, these features enable inspection, measurement and sorting.

- TM Landmark system provides automatic vision calibration
- Vision robot guidance improves accuracy
- Provides fast application or product changes

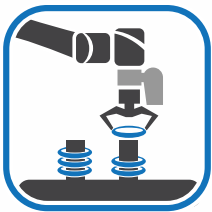


Adaptable to your needs

Omron TM Robot's industrial applications

The introduction of the new Collaborative Robot is geared towards manufacturers seeking to boost production and reduce employee fatigue by automating repetitive tasks such as machine tending, loading and unloading, assembly, screw driving, gluing, testing or soldering.

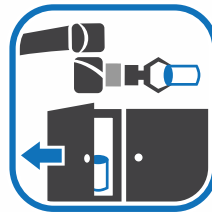
Whether you're working in automotive, semiconductor, secondary packaging for food, plastics, or machine tools, the Omron TM Collaborative Robot is designed to adapt to almost any industry.



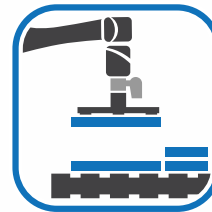
Assembly



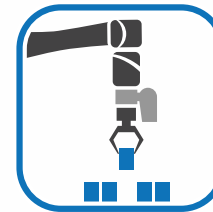
Dispensing



Machine
Tending



Palletizing



Pick
and Place



Screwdriving



Visual
Inspection



Flexibility for your factory

Easy configuration to complete any task

The Omron TM Collaborative Robot is so versatile it can be assigned to almost any task.

Respond to any manufacturing need by configuring the robot at will, maximizing your resources and increasing productivity.

Simple, efficient and fast tooling integration

With the help of Plug and Play technology, TM Robots can connect to a wide variety of readily available grippers and end of arm tooling products available on the market. This allows users to easily integrate third party peripherals to the robot, significantly reducing time and cost.

Teaching is safe, interactive and simple

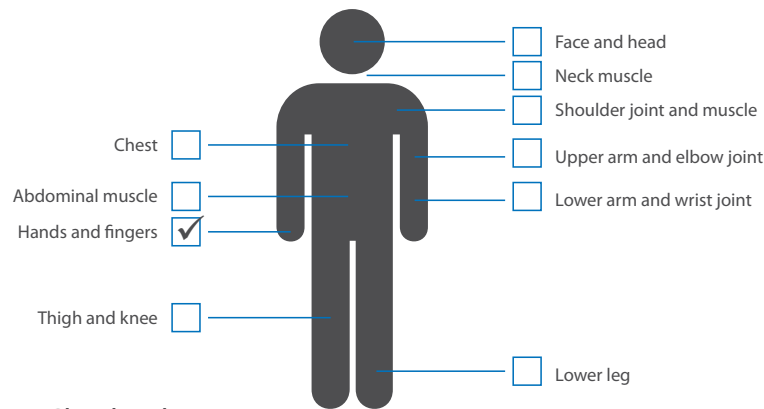
The Collaborative Robot boosts application performance while ensuring the safety of operators. This product complies with the combined scope of ISO 10218-1:2011 and ISO/TS-15066 and can be programmed with both speed and force limits.

In addition to guided safety setup, this interactive solution includes a feature known as TMFlow™ that writes the program for you while you teach the steps.

Once teaching is complete, you can use TMFlow™ to configure each step with additional parameters. Visual-based teaching and programming provide an intuitive environment for non-programmers.



The TM's software interface
simplifies risk assessment



1. Check risk parts

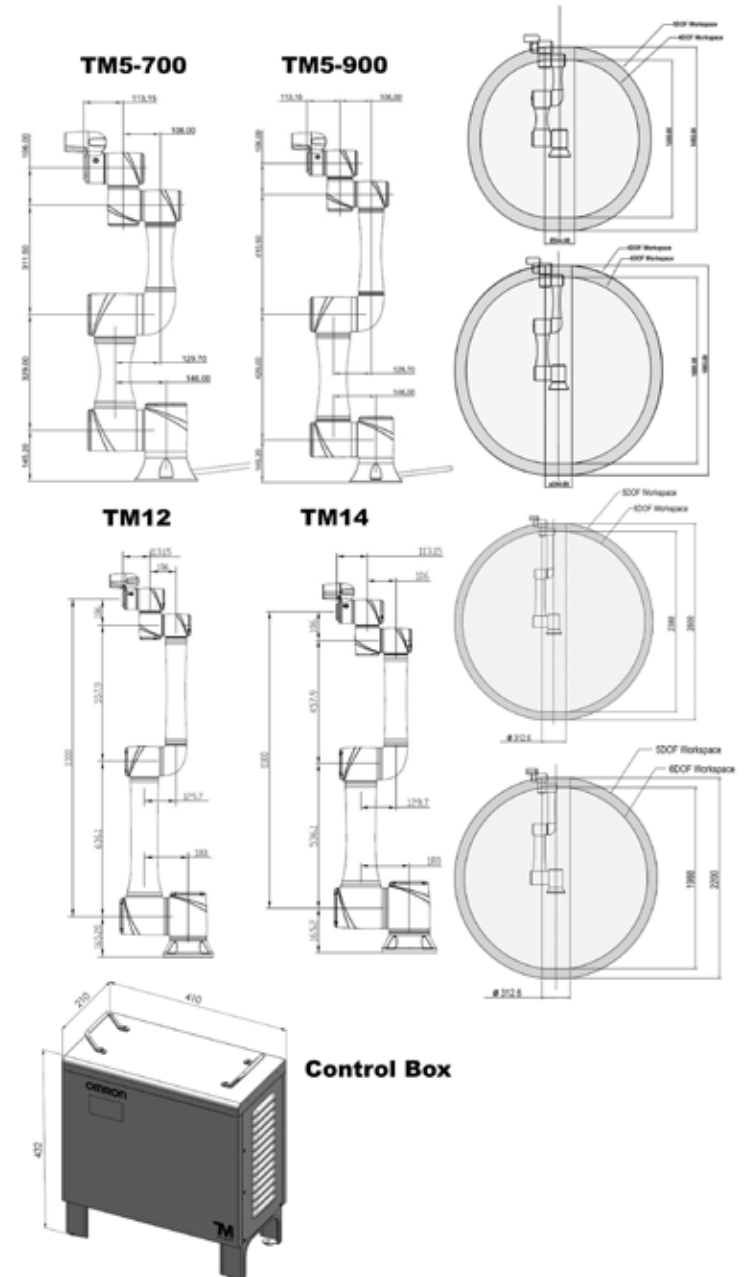
2. Robot will adjust and set the speed limit automatically

TMFlow™ is an innovative flow-based robot editing software. Each function is shown graphically and features intuitive click and drag programming. Users without coding experience can complete a visual pick & place program in as little as 5 minutes.



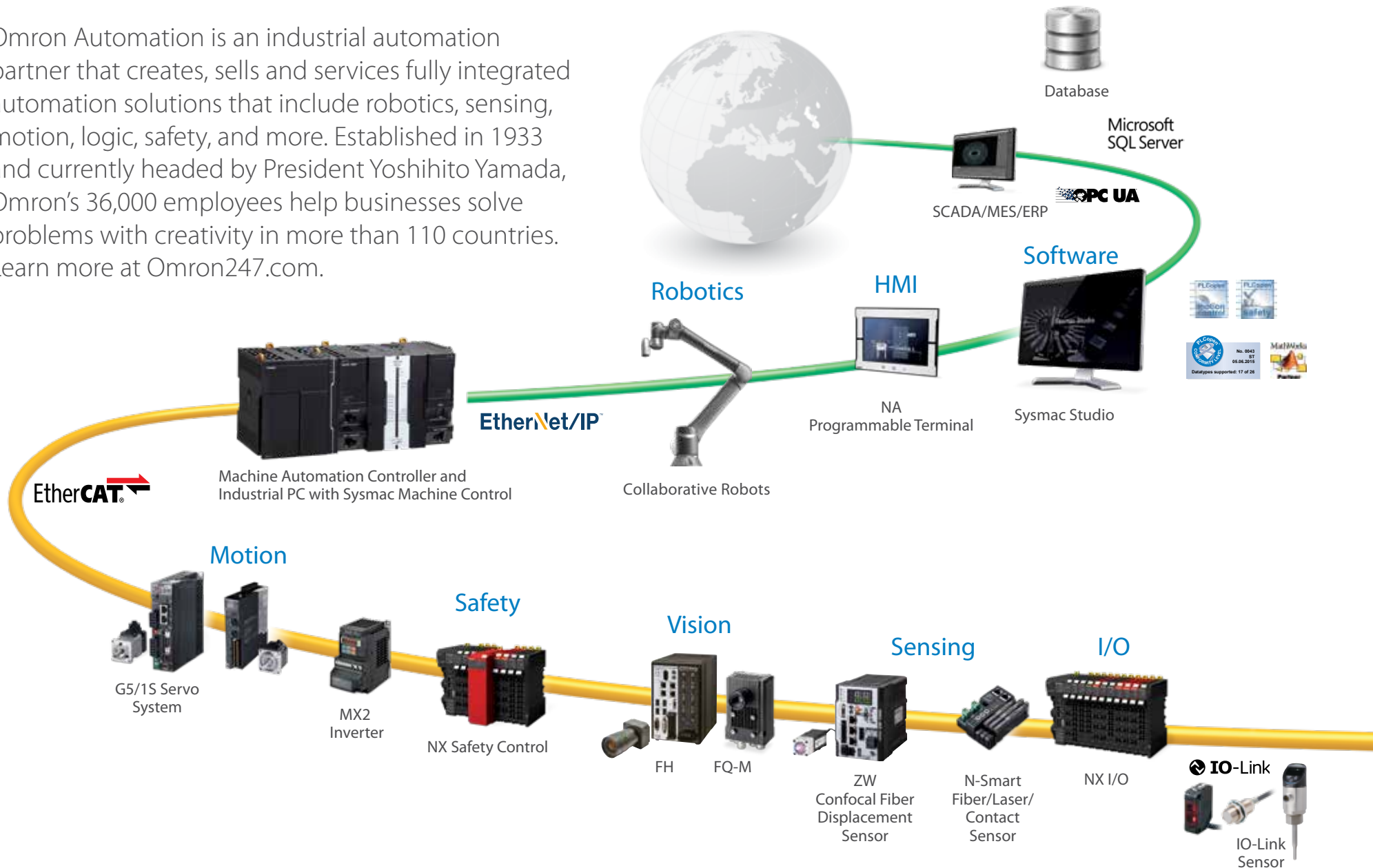
Specifications

Model		TM5				TM12		TM14	
		TM5-700	TM5M-700	TM5-900	TM5M-900	TM12	TM12M	TM14	TM14M
Weight (kg)		22.1		22.6		33.3		32.6	
Max Payload (kg)		6		4		12		14	
Reach (mm)		700		900		1300		1100	
Max speed (m/s)		1.1		1.4		1.3		1.1	
Joint ranges	J1	±270°				±270°			
	J2, J4, J5	±180°				±180°			
	J3	±155°				±166°		±163°	
	J6	±270°				±270°			
Joint speeds	J1, J2	180°/s				120°/s			
	J3	180°/s				180°/s			
	J4, J5	225°/s				180°/s		150°/s	
	J6	225°/s				180°/s			
Repeatability (mm)		±0.05				±0.1			
IP (arm)		IP54							
Operating Temperature (°c)		0 to 50							
Power supply		100-240 VAC, 50-60 Hz	20-60 VDC	100-240 VAC, 50-60 Hz	20-60 VDC	100-240 VAC, 50-60 Hz	20-60 VDC	100-240 VAC, 50-60 Hz	20-60 VDC
Max power capacity (w)		1400	1500	1400	1500	2200	1500	2200	1500
I/O Ports		Control box/Tool							
	Digital in	16/4							
	Digital out	16/4							
	Analog in	2/1							
	Analog out	1/0							
I/O interface		3 X COM, 1 X HDMI, 3 X LAN, 4 X USB2.0, 2 X USB3.0							
Communication		3 X RS232, TCP/IP(Master), Modbus TCP/RTU (Master & Slave)							
Integrated Camera		5M pixels, color (AOI tasks: 5M; Others: 1.2M)							
I/O Power supply		24V 1.5A (Control box and Tool)							
Programming environment		TMFlow™, flow chart based							
SEMI S2 certified		Yes, as an option							



Integrated solutions

Omron Automation is an industrial automation partner that creates, sells and services fully integrated automation solutions that include robotics, sensing, motion, logic, safety, and more. Established in 1933 and currently headed by President Yoshihito Yamada, Omron's 36,000 employees help businesses solve problems with creativity in more than 110 countries. Learn more at Omron247.com.





OMRON AUTOMATION AMERICAS HEADQUARTERS • Chicago, IL USA • 847.843.7900 • 800.556.6766 • www.omron247.com

OMRON CANADA, INC. • HEAD OFFICE

Toronto, ON, Canada • 416.286.6465 • 866.986.6766 • www.omron247.com

OMRON ELECTRONICS DE MEXICO • HEAD OFFICE

México DF • 52.55.59.01.43.00 • 01-800-226-6766 • mela@omron.com

OMRON ELECTRONICS DE MEXICO • SALES OFFICE

Apodaca, N.L. • 52.81.11.56.99.20 • 01-800-226-6766 • mela@omron.com

OMRON ELETRÔNICA DO BRASIL LTDA • HEAD OFFICE

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