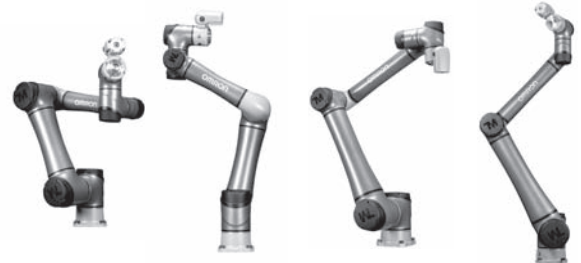


OMRON TM Collaborative Robot, S Series

TM S Series

S Series Collaborative Robot (Cobot) for assembly, palletizing, inspection, logistics and many other applications

- Designed to promote a safe and harmonious workplace between humans and machines.
- 31 safety functions, all ISO 13849-1, Cat.3, PLd, certified.
- Full ISO 10218-1 compliance.
- Easy-to-use graphical programming environment for quick startup and operation.
- Built-in vision-based robot control enables visual servoing, inspection, and measurement operations.
- Optional camera and Landmark allows for truly flexible, fast changeover.
- Capability to integrate with mobile robots enables fully autonomous machine tending and logistics handling applications.



Part Number Structure

RT6 - □□□□□□□□

1 2 3 4 5 6 7 8

No.	Item	Specifications	Symbol
1		TMS Series	6
2	Model Type	TM5S	0
		TM7S	6
		TM12S	1
		TM14S	2
3	Power Source	AC	0
		DC *1	1
4	Vision	Standard Model with Integrated Camera	0
		X Model without Camera	1
5 & 6	Arm Length (mm)	700 (TM7S)	70
		900 (TM5S)	90
		1300 (TM12S)	13
		1100 (TM14S)	11
7	Option	Standard	0
		SEMI	1
		Fieldbus	2
		SEMI, Fieldbus	5
8	Cable Length (m)	Standard Length (1.5 for DC unit / 3 for AC unit)	4
		Extended Length (3 for DC unit /12 for AC unit)	5

*1. DC powered Cobots are capable of mobile operation when paired with an Autonomous Mobile Robot.

TM S Series

Ordering Information

Standard Units Ordering Information

Product Model	Maximum Payload (kg)	Reach (mm)	Integrated Camera	Extended Cable *1	DC Power Source *2	SEMI S2 Certified *3	Global P/N
TM5S	5	900	Yes	No	No	No	RT6-0009004
TM5S, 12 m cable				Yes			RT6-0009005
TM5S-X			No	No			RT6-0019004
TM5S-X, 12 m cable				Yes			RT6-0019005
TM5S-M			Yes	No	Yes		RT6-0109004
TM5S-M, 3 m cable				Yes			RT6-0109005
TM7S	7	700	Yes	No	No	No	RT6-6007004
TM7S, 12 m cable				Yes			RT6-6007005
TM7S-X			No	No			RT6-6017004
TM7S-X, 12 m cable				Yes			RT6-6017005
TM7S-M			Yes	No	Yes		RT6-6107004
TM7S-M, 3 m cable				Yes			RT6-6107005
TM12S	12	1300	Yes	No	No	No	RT6-1001304
TM12S, 12 m cable				Yes			RT6-1001305
TM12S-X			No	No			RT6-1011304
TM12S-X, 12 m cable				Yes			RT6-1011305
TM12S-M			Yes	No	Yes		RT6-1101304
TM12S-M, 3 m cable				Yes			RT6-1101305
TM12S-M SEMI			No		Yes	RT6-1101314	
TM14S	14	1100	Yes	No	No	No	RT6-2001104
TM14S, 12 m cable				Yes			RT6-2001105
TM14S-X			No	No			RT6-2011104
TM14S-X, 12 m cable				Yes			RT6-2011105
TM14S-M			Yes	No	Yes		RT6-2101104
TM14S-M, 3 m cable				Yes			RT6-2101105
TM14S-M SEMI			No		Yes	RT6-2101114	

*1. The default cable length is 1.5 m for DC units and 3 m for AC units. The extended cable length is 3 m for DC units and 12 m for AC Units.

*2. Standard Omron Cobots use AC as the power source. DC powered cobots are capable of mobile operation when paired with an Autonomous Mobile Robot.

*3. SEMI (Semiconductor Equipment and Materials International) is the central global network of manufacturers of micro and nano electronics that issues safety guidelines. SEMI S2 is the most well-known standard in semiconductor manufacturing equipment for Environmental, Health, and Safety (EHS).

Fieldbus Units Ordering Information

Product Model	Maximum Payload (kg)	Reach (mm)	Integrated Camera	Extended Cable *1	DC Power Source *2	SEMI S2 Certified *3	Global P/N
TM5S, Fieldbus	5	900	Yes	No	No	No	RT6-0009024
TM5S, 12 m cable, Fieldbus				Yes			RT6-0009025
TM5S-X, Fieldbus			No	No			RT6-0019024
TM5S-X, 12 m cable, Fieldbus				Yes			RT6-0019025
TM5S-M, Fieldbus			Yes	No	Yes		RT6-0109024
TM5S-M, 3 m cable, Fieldbus				Yes			RT6-0109025
TM7S, Fieldbus	7	700	Yes	No	No	No	RT6-6007024
TM7S, 12 m cable, Fieldbus				Yes			RT6-6007025
TM7S-X, Fieldbus			No	No			RT6-6017024
TM7S-X, 12 m cable, Fieldbus				Yes			RT6-6017025
TM7S-M, Fieldbus			Yes	No	Yes		RT6-6107024
TM7S-M, 3 m cable, Fieldbus				Yes			RT6-6107025
TM12S, Fieldbus	12	1300	Yes	No	No	No	RT6-1001324
TM12S, 12 m cable, Fieldbus				Yes			RT6-1001325
TM12S-X, Fieldbus			No	No			RT6-1011324
TM12S-X, 12 m cable, Fieldbus				Yes			RT6-1011325
TM12S-M, Fieldbus			Yes	No	Yes		RT6-1101324
TM12S-M, 3 m cable, Fieldbus				Yes			RT6-1101325
TM12S-M SEMI, Fieldbus		No		Yes	RT6-1101354		
TM14S, Fieldbus	14	1100	Yes	No	No	No	RT6-2001124
TM14S, 12 m cable, Fieldbus				Yes			RT6-2001125
TM14S-X, Fieldbus			No	No			RT6-2011124
TM14S-X, 12 m cable, Fieldbus				Yes			RT6-2011125
TM14S-M, Fieldbus			Yes	No	Yes		RT6-2101124
TM14S-M, 3 m cable, Fieldbus				Yes			RT6-2101125
TM14S-M SEMI, Fieldbus		No		Yes	RT6-2101154		

*1. The default cable length is 1.5 m for DC units and 3 m for AC units. The extended cable length is 3 m for DC units and 12 m for AC Units.

*2. Standard Omron Cobots use AC as the power source. DC powered cobots are capable of mobile operation when paired with an Autonomous Mobile Robot.









*3. SEMI (Semiconductor Equipment and Materials International) is the central global network of manufacturers of micro and nano electronics that issues safety guidelines. SEMI S2 is the most well-known standard in semiconductor manufacturing equipment for Environmental, Health, and Safety (EHS).

Items Included with an S Series Cobot System

Item	Cobot	Cable	Robot Stick	Control Box	Calibration Plates	I/O Cables	Landmark	Ground wire	Jumper Wire	Power cable	SEMI Switch	SEMI ESTOP Cable
Description	TM5S, TM7S, TM12S, TM14S	3, 1.5, and 12 m options	Hand control to move cobot	Robot Control Box	Large plate	1 m	Not compatible with X model cobots	3 m	3 cm	For Control Box (3 cable: B, G, F) 1.8 m	SEMI Emergency OFF, SEMI cobots only	SEMI cobots only, 3 m
Quantity	1	1	1	1	1	1	2	2	2	1	1	1

TM S Series

Accessories And Optional Items

Appearance	Product Name	Description	Remarks	Part Number
	Landmark	Robot positioning tool as a reference to the environment.	Two included with purchase of a cobot. Not included with X model cobots	RT6-A000021
	Mobile Workstation (MWS)	MWS is a convenient tool for users to mount the cobot arm on work surface, and store the control box safely within. Users can easily move the MWS with the cobot to different work cells.	Compatible with OMRON TM5S, TM7S, TM5-700, and TM5-900.	RT6-A000010
	Robot stand	Similar to MWS, the robot stand can be easily moved with the cobot to different work stations.	Compatible with OMRON TM5S, TM7S, TM5-700, and TM5-900.	RT6-A000009
	SSD with cable	128 GB solid state hard drive.	SATA cable included. Recommended for external cameras image logging.	RT6-A000012
	Kit, calibration set with additional pin	Toolkit for teaching a precise tool center point (TCP) that can be used for manual workspace calibration within TMvision.	Required for TCP and manual vision calibration.	RT6-A000002
	Polarizer Light Module, S Series	Improves the reflection caused by the cobot's own light source on the surface of highly reflective objects.	For S Series Cobots only.	RT6-A000025
	Air Filter (ROHS)	Replacement air filter for the control box.	The filter must be changed regularly to maintain efficiency. The replacement procedure can be found in the Hardware Installation Manual.	19937-214F
	TM Screen (Teaching Pendant) with Pen	The TM Screen devices can be combined with the Robot Stick design to become a teaching pendant, and operate the cobot from the touch screen environment.	The TM Screen is only compatible with S Series units. No additional wiring is needed.	RT6-A000024

Software

Product Name	Add-On Product Names	Remarks	Part Number
TMflow	N/A	Software required to control the cobot. Free download	N/A
Super Software Dongle	USB dongles with below software licenses		RT6-A000026
	TM Identify & Measure	License, add-on to TMflow. Includes: identification of pose variation, specific color area size, subtract reference image, line/circle burr, counting and gauge.	
	TM External Vision	License, add-on to TMflow. Required when using eye-to-hand cameras.	
	TM OCR	License, add-on to TMflow. Includes: Text OCR and Number OCR.	

Specifications

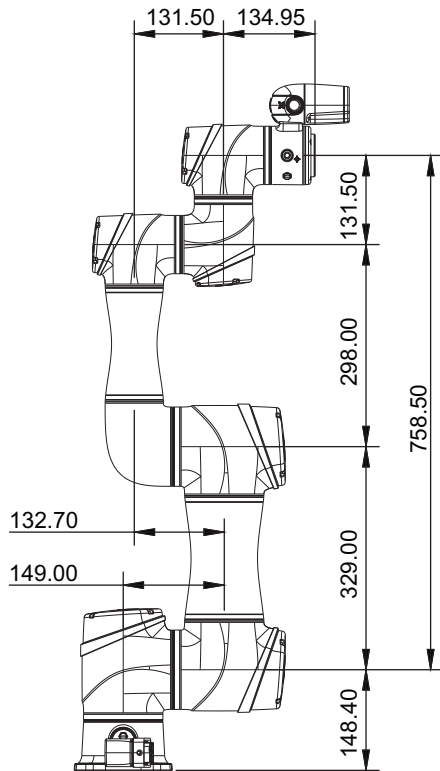
Product		TM5S	TM7S	TM12S	TM14S
Weight (With Camera / kg)		23.9	22.9	33.3	33
Weight (Without Camera / kg)		23.6	22.6	33	32.7
Maximum payload (kg)		5	7	12	14
Reach (mm)		900	700	1300	1100
Mounting		Wall, Table, Ceiling			
Joint ranges	J1, J2, J4, J5, J6	±360°			
	J3	±158°	±152°	±162°	±163°
Joint speed	J1, J2	180°/s		120°/s	
	J3	180°/s		180°/s	
	J4, J5	225°/s		225°/s	
	J6	450°/s		450°/s	
Average speed (m/s)		1.4	1.1	1.3	1.1
Repeatability (mm)		±0.03			
Degrees of freedom		6 rotating joints			
I/O Ports	Control Box	Digital In: 16 / Digital Out: 16 Analog In: 2 / Analog Out: 2			
	Tool Conn.	Digital In: 3 / Digital Out: 3			
I/O power supply		24 V 2.0 A for control box and 24 V 1.0 A for tool			
Ingress Protection		IP54 for Robot Arm, AC control Box, Robot Stick and TM Screen			
Cleanroom Class		ISO Class 3			
Operating Temperature and Humidity		0 to 50°C, 85% max. (with no condensation)			
Motor Power Supply		100 to 240 VAC, 50/60 HZ for AC Units; 24 to 60 VDC for DC units			
I/O Interface		2 × COM, 1 × HDMI, 3 × LAN, 2 × USB 2.0, 4 × USB 3.0			
Communication		RS232, Ethernet, Modbus TCP/RTU (master & slave) PROFINET (optional), EtherNet/IP (optional)			
Programming Environment		TMflow, flowchart based and script based			
Certification		SEMI S2 (optional)			
Robot Vision	Eye in Hand (Built in)	1.2 M / 5 M pixels, color camera (camera models only)			
	Eye to Hand (Optional)	Support Maximum 2 GigE 2D cameras			

TM S Series

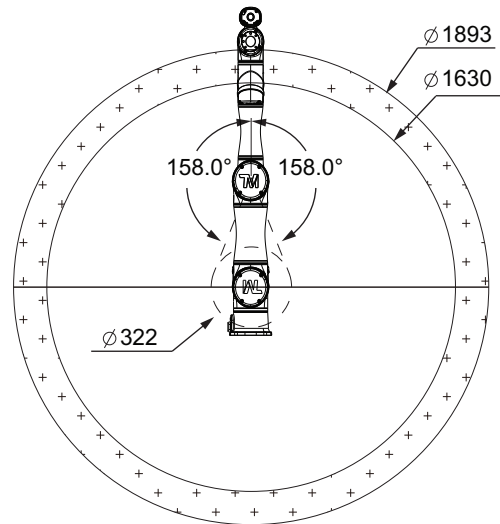
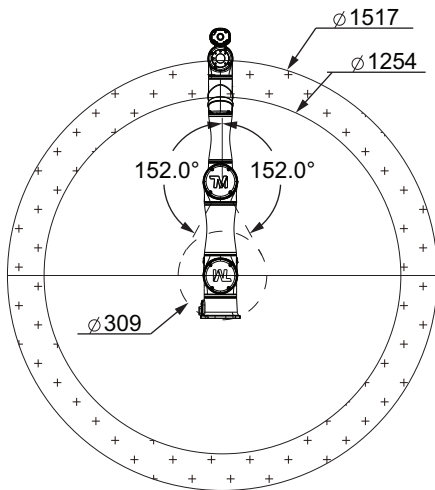
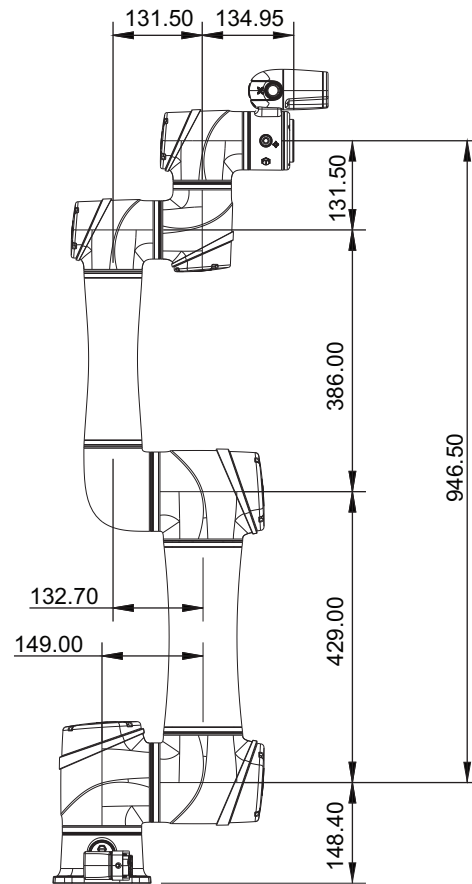
Dimensions

(Units: mm)

TM7S/TM7S-X/TM7S-M *

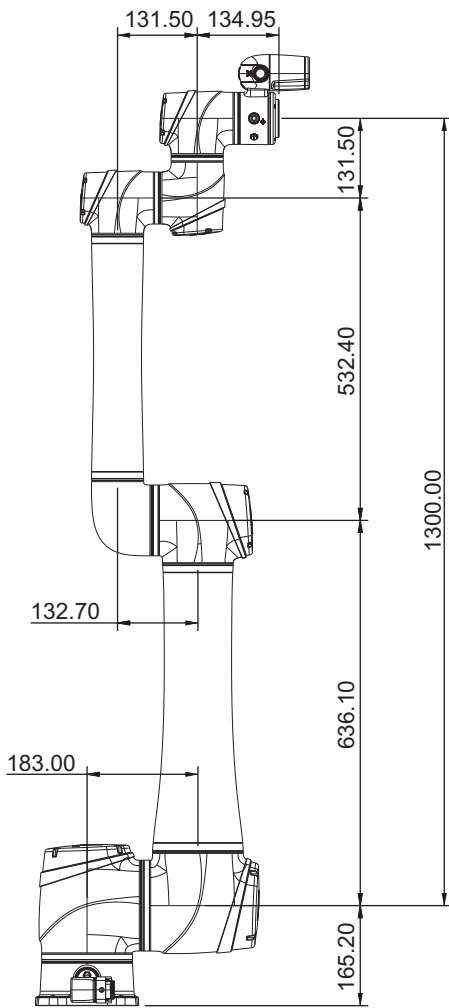


TM5S/TM5S-X/TM5S-M *

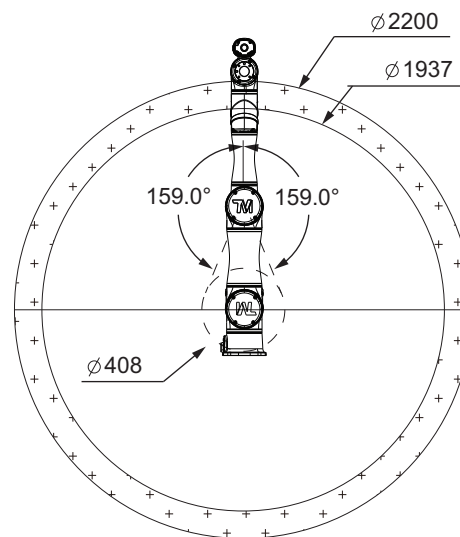
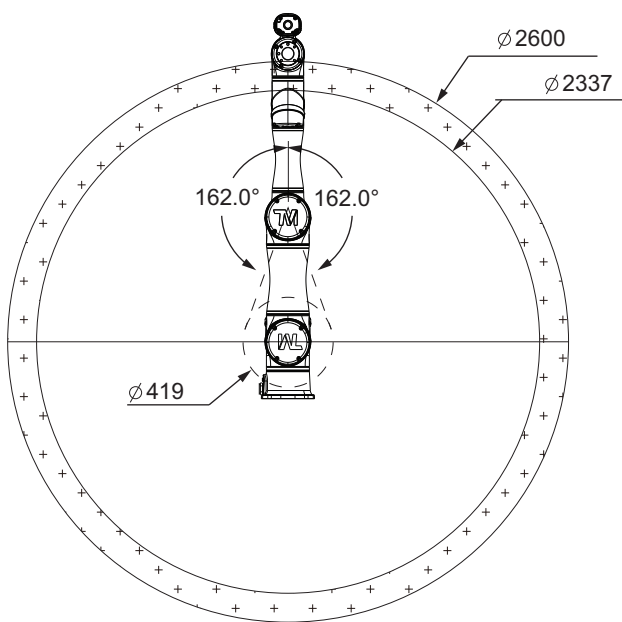
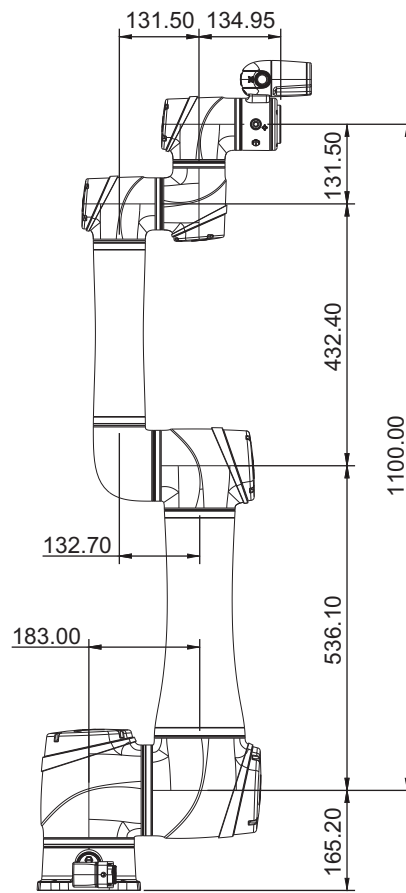


* Dimensions do not include the camera. Refer to the *Camera Flange dimensions* on page 8 for more information.

TM12S/TM12S-X/TM12S-M *



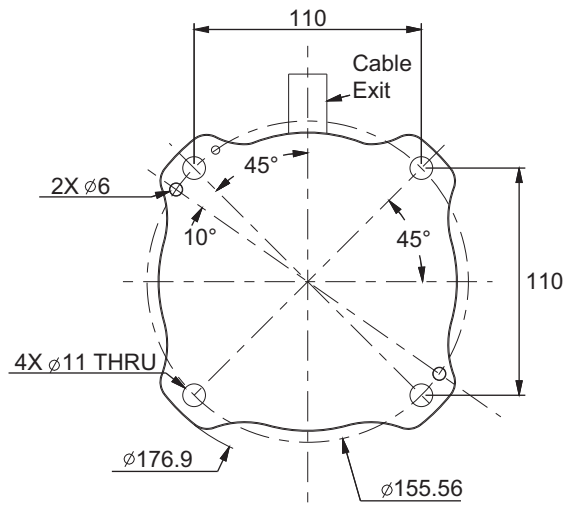
TM14S/TM14S-X/TM14S-M *



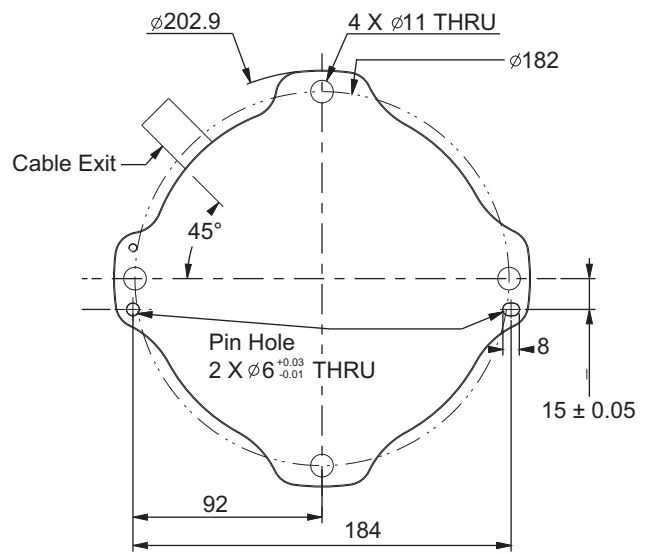
* Dimensions do not include the camera. Refer to the *Camera Flange dimensions* on page 8 for more information.

TM S Series

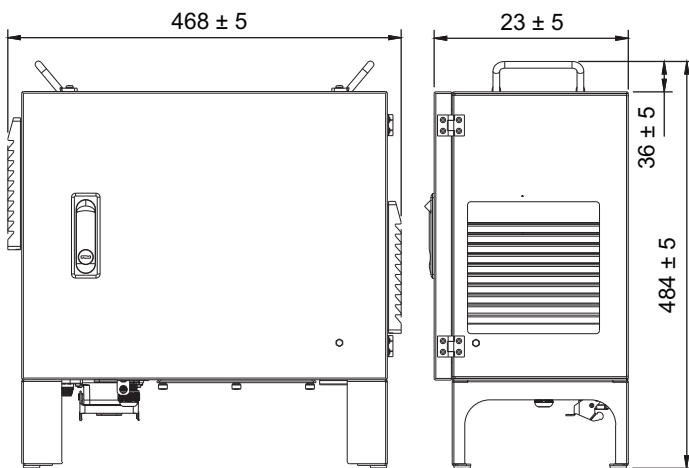
Footprint (TM5S/7S Models)



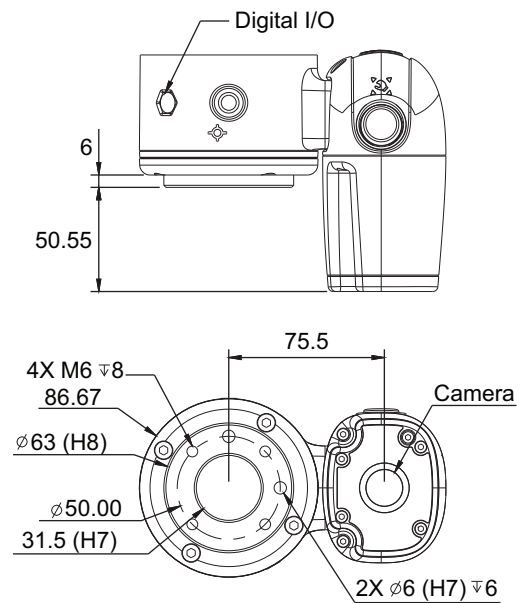
Footprint (TM12S/14S Models)



Control Box



Camera Flange



Related Manuals

Catalog Number	Title
I686	Omron TM Collaborative Robot S Series: TM5S and TM7S Hardware Installation Manual
I687	Omron TM Collaborative Robot S Series: TM12S and TM14S Hardware Installation Manual
I688	Omron TM Collaborative Robot S Series: Safety Manual
I689	Omron TM Collaborative Robot: Software Manual TMFlow, Version 2
I690	Omron TM Collaborative Robot: TMVision Software Manual, Version 2
I691	Omron TM Collaborative Robot S Series: Touch Screen User's Manual
I628	Omron TM Collaborative Robot: Mobile Work Station User's Manual
I629	Omron TM Collaborative Robot: Robot Stand User's Manual
I664	Omron TM Collaborative Robot: TMScript Language Manual

Terms and Conditions Agreement

Read and understand this catalog.

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranties.

- (a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.
- (b) Limitations. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE.

Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) Buyer Remedy. Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.

See <http://www.omron.com/global/> or contact your Omron representative for published information.

Limitation on Liability: Etc.

OMRON COMPANIES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.

Suitability of Use.

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

Programmable Products.

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

Performance Data.

Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

Change in Specifications.

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

Errors and Omissions.

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

Note: Do not use this document to operate the Unit.

OMRON Corporation Industrial Automation Company

Kyoto, JAPAN

Contact : www.ia.omron.com

Regional Headquarters

OMRON EUROPE B.V.

Wegalaan 67-69, 2132 JD Hoofddorp
The Netherlands
Tel: (31) 2356-81-300 Fax: (31) 2356-81-388

OMRON ASIA PACIFIC PTE. LTD.

438B Alexandra Road, #08-01/02 Alexandra
Technopark, Singapore 119968
Tel: (65) 6835-3011 Fax: (65) 6835-3011

OMRON ELECTRONICS LLC

2895 Greenspoint Parkway, Suite 200
Hoffman Estates, IL 60169 U.S.A.
Tel: (1) 847-843-7900 Fax: (1) 847-843-7787

OMRON ROBOTICS AND SAFETY TECHNOLOGIES, INC.

4225 Hacienda Drive, Pleasanton, CA 94588 U.S.A.
Tel: (1) 925-245-3400 Fax: (1) 925-960-0590

OMRON (CHINA) CO., LTD.

Room 2211, Bank of China Tower, 200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-6023-0333 Fax: (86) 21-5037-2388

Authorized Distributor:

©OMRON Corporation 2023 All Rights Reserved.
In the interest of product improvement,
specifications are subject to change without notice.

CSM_1_1

Cat. No. I889-E-01 0923 (0423)



**SCATTERGOOD
& JOHNSON LTD**
ELECTRICAL ENGINEERING & FLUID CONTROL DISTRIBUTORS

Est.1899

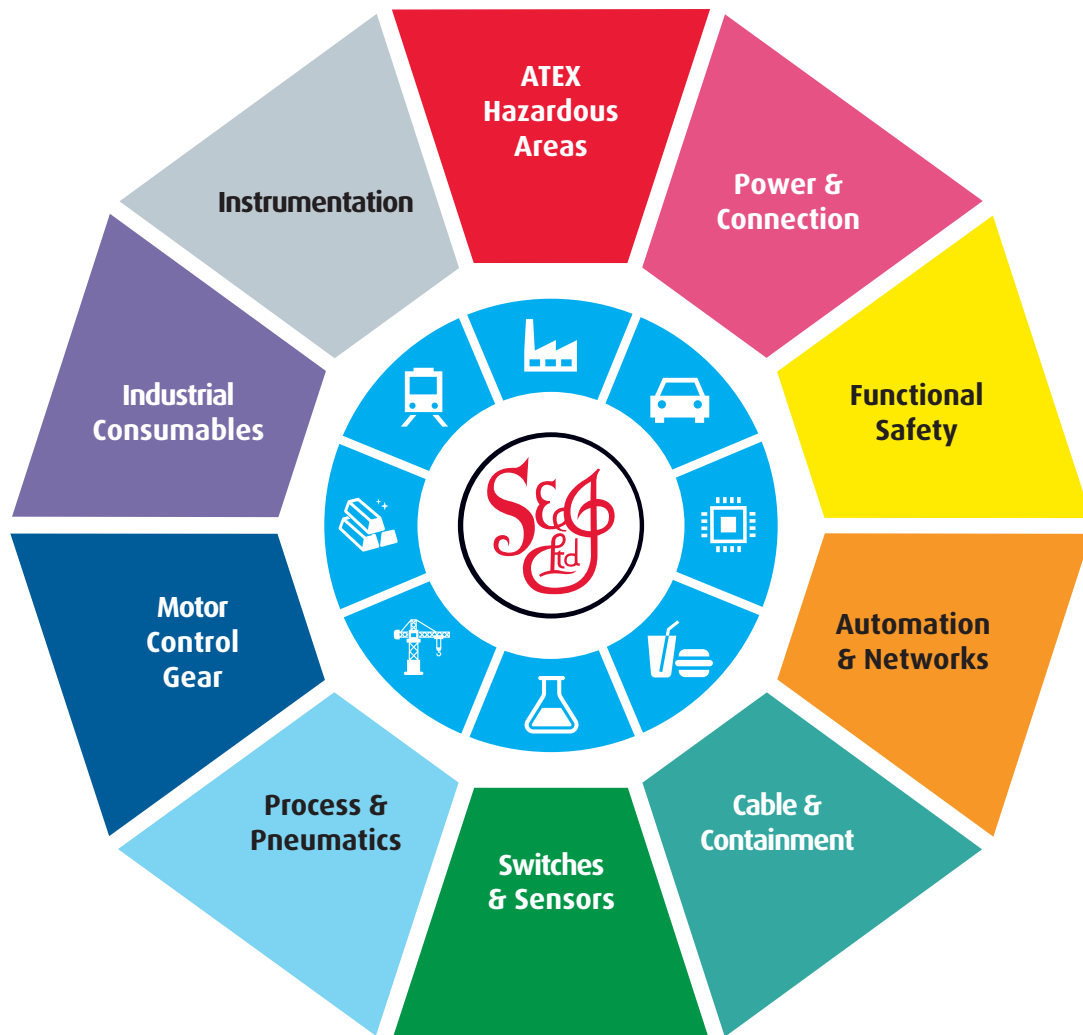
At Scattergood & Johnson Ltd, we pride ourselves on being a technical distributor to specialist industries.

Working with a range of quality product manufacturers across a number of specialist markets, we are not your average 'box shifter' - we are your technical and supply chain partner.

We fully support every product we sell - for free! Our internal team and external sales engineers can answer any product or application question, no matter the complexity.

Backing up this technical ability is a range of 50,000+ products available from stock for nationwide next day delivery (same day if required!), or you can collect what you need from any of our trade counters around the UK.

Select your specialist interest below to learn more about how we can help.



Online, In Branch and On the Road - Scattergood & Johnson Ltd, there when you need us.

www.scatts.co.uk