Collaborative Robots

# TM5

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

- Designed to promote a safe and harmonious workplace between humans and machines.
- Easy-to-use graphical programming environment for quick startup and operation.
- Built-in vision-based robot control enables visual serving, inspection, and measurement operations.
- TMvision and Landmark allow truly flexible, fast changeover.
- Plug & Play ecosystem provides the tools and versatility for many manufacturing needs.
- Capability to integrate with mobile robots enables fully autonomous machine tending and logistics handling applications.
- Food Grade Grease* option available (supplied with food grade grease).

TM5-700 TM5-900

## TM5 Ordering Information

| Type | Power Source | Integrated Camera | Reach | SEMI S2 Certified | Food Grade Grease* | Fieldbus | Cable Length | Part Number |
|---|---|---|---|---|---|---|---|---|
| TM5 | AC | Yes | 700 mm | No | No | No | 3 m | RT6-0007001 |
| | | | | | | Yes | | RT6-0007021 |
| | | | | | Yes | No | | RT6-0007031 |
| | | | | | | Yes | | RT6-0007041 |
| | | | | | No | No | 12 m | RT6-0007002 |
| | | | | | | Yes | | RT6-0007022 |
| | | No | | | | No | 3 m | RT6-0017001 |
| | | | | | | Yes | | RT6-0017021 |
| | | | | | Yes | No | | RT6-0017031 |
| | | | | | | Yes | | RT6-0017041 |
| | | | | | No | No | 12 m | RT6-0017002 |
| | | | | | | Yes | | RT6-0017022 |
| | DC | Yes | | | | No | 1.5 m | RT6-0107001 |
| | | | | | | Yes | | RT6-0107021 |
| | | | | Yes | | No | | RT6-0107011 |
| | | No | | No | | | | RT6-0117001 |
| | | | | | | Yes | | RT6-0117021 |
| | AC | Yes | 900 mm | No | No | No | 3 m | RT6-0009001 |
| | | | | | | Yes | | RT6-0009021 |
| | | | | | Yes | No | | RT6-0009031 |
| | | | | | | Yes | | RT6-0009041 |
| | | | | | No | No | 12 m | RT6-0009002 |
| | | | | | | Yes | | RT6-0009022 |
| | | No | | | | No | 3 m | RT6-0019001 |
| | | | | | | Yes | | RT6-0019021 |
| | | | | | Yes | No | | RT6-0019031 |
| | | | | | | Yes | | RT6-0019041 |
| | | | | | No | No | 12 m | RT6-0019002 |
| | | | | | | Yes | | RT6-0019022 |
| | DC | Yes | | | | No | 1.5 m | RT6-0109001 |
| | | | | | | Yes | | RT6-0109021 |
| | | | | Yes | | No | | RT6-0109011 |
| | | No | | No | | | | RT6-0119001 |
| | | | | | | Yes | | RT6-0119021 |

* Food Grade Grease robots are not FDA certified. They are only suitable for select food-related applications, and require an evaluation and risk assessment of the use environment.

## Items Included with a TM5 Robot System

| Item | Robot | Cable | Robot Stick | Control Box | Calibration Plates | I/O Cables | Landmark | Ground wire | Jumper Wire | Power cable | SEMI Switch | SEMI ESTOP Cable |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Description** | TM5-700 or TM5-900 | 3, 1.5, and 12 m options | Hand control to move robot | Robot Control Box | Large and small. Not with X model robots | 1 m | Not with X model robots | 3 m | 3 cm | For Control Box (3 cable: B, G, F) 1.8 m | SEMI Emergency OFF, SEMI robots only | SEMI robots only, 3 m |
| **Quantity** | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |

## Part Number Structure

**RT6 - □ □ □ □ □ □ □ □**

**1 2 3 4 5 6 7 8**

| No. | Item | Specifications | Symbol |
|---|---|---|---|
| (1) | Techman Series | | |
| (2) | Model Type | TM5 | 0 |
| (3) | Power Source | AC | 0 |
| | | DC | 1 |
| (4) | Integrated Camera | Standard | 0 |
| | | X Model (no camera) | 1 |
| (5)(6) | Arm Length | 700 | 70 |
| | | 900 | 90 |
| (7) | Option | Standard | 0 |
| | | Semi | 1 |
| | | Fieldbus | 2 |
| | | Food Grade Grease | 3 |
| | | Food Grade Grease, Fieldbus | 4 |
| (8) | Cable Length | Standard Length (1.5 m / 3 m)*1 | 1 |
| | | Extended Length (12 m)*2 | 2 |

*1 A 1.5 meter cable is standard for DC models and a 3 meter cable is standard for AC models.
*2 A 12 meter cable is available for all AC models except for the Food Grade Grease units.

## Specifications

| Product Name | | TM5-700 | | TM5X-700 | | TM5-900 | | TM5X-900 | |
|---|---|---|---|---|---|---|---|---|---|
| **Power Source** | | **AC** | **DC** | **AC** | **DC** | **AC** | **DC** | **AC** | **DC** |
| **Weight (kg)** | | 22.1 | | 21.8 | | 22.6 | | 22.3 | |
| **Controller Weight (kg)** | | 13.5 | 14.5 | 13.5 | 14.5 | 13.5 | 14.5 | 13.5 | 14.5 |
| **Max Payload (kg)** | | 6 | | | | 4 | | | |
| **Reach (mm)** | | 700 | | | | 900 | | | |
| **Mounting** | | Wall, Table, Ceiling | | | | | | | |
| **Average Speed (m/s)** | | 1.1 | | | | 1.4 | | | |
| **Joint Range** | **Joint 1** | ±270° | | ±360° | | ±270° | | ±360° | |
| | **Joint 2, 4, 5** | ±180° | | ±360° | | ±180° | | ±360° | |
| | **Joint 3** | ±155° | | | | | | | |
| | **Joint 6** | ±270° | | ±360° | | ±270° | | ±360° | |
| **Joint Speeds** | **Joint 1, 2, 3** | 180°/s | | | | | | | |
| | **Joint 4, 5, 6** | 225°/s | | | | | | | |
| **Repeatability (mm)** | | ±0.05 | | | | | | | |
| **Ingress Protection** | | IP54 (robot arm), IP32 (control box), IP40 (robot stick) | | | | | | | |
| **Cleanroom Class** | | ISO Class 3 | | | | | | | |
| **Operating Temperature and Humidity** | | 0 to 50°C, 85% max. (with no condensation) | | | | | | | |
| **Storage Temperature and Humidity** | | -20 to 60°C, 75% max. (with no condensation) | | | | | | | |
| **Operating and Storage Environment** | | No corrosive gases or exposure to water-soluble cutting oil.*1 | | | | | | | |
| **Motor Power Supply** | | 100 to 240 VAC, 50/60 Hz | 22 to 60 VDC | 100 to 240 VAC, 50/60 Hz | 22 to 60 VDC | 100 to 240 VAC, 50/60 Hz | 22 to 60 VDC | 100 to 240 VAC, 50/60 Hz | 22 to 60 VDC |
| **Robot Arm Cable Length** | | 3 m or 12 m | 1.5 m | 3 m or 12 m | 1.5 m | 3 m or 12 m | 1.5 m | 3 m or 12 m | 1.5 m |

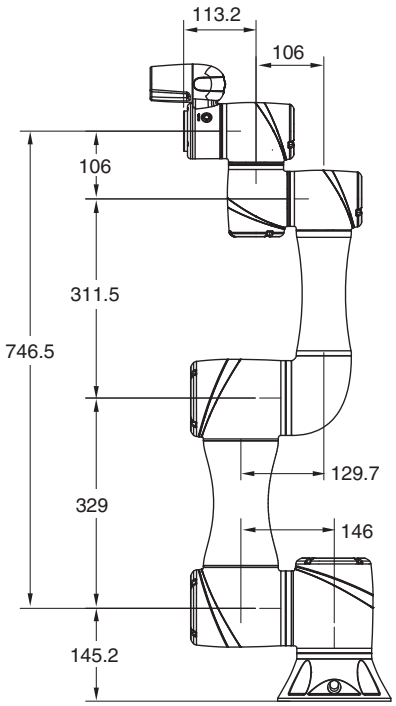
| Product Name | | TM5-700 | | TM5X-700 | | TM5-900 | | TM5X-900 | |
|---|---|---|---|---|---|---|---|---|---|
| Power Source | | AC | DC | AC | DC | AC | DC | AC | DC |
| I/O Ports | Control Box | Digital In: 16, Digital Out: 16<br>Analog In: 2, Analog Out: 1 | | | | | | | |
| | Tool | Digital In: 4, Digital Out: 4<br>Analog In: 1, Analog Out: 0 | | | | | | | |
| I/O Interface | | COM: 3, HDMI: 1, LAN: 3, USB2.0: 4, USB3.0: 2 | | | | | | | |
| Communication | | RS232, Ethernet (master), Modbus TCP/RTU (master & slave), PROFINET (optional), EtherNet/IP (optional) | | | | | | | |
| I/O Power Supply | | 24 VDC 2.0 A (control box) / 24 VDC 1.5 A (tool) | | | | | | | |
| Programming Environment | | TMflow, flowchart based | | | | | | | |
| Integrated Camera Available | | 5 MP, color | | None | | 5 MP, color | | None | |
| SEMI S2 Certified*2 Available | | No | Yes | No | Yes | No | Yes | No | Yes |
| Fieldbus Available | | EtherNet/IP, PROFINET*3 | | | | | | | |

*1 If water-soluble cutting oil is present, use a protective sleeve to prevent damage to the robot housing. OMRON offers enhanced joint covers for these applications. Contact your local OMRON representative for more information.
*2 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).
*3 A Fieldbus upgrade is available for HW3.2 robots with TMflow v1.80 or higher. Contact your local OMRON representative for more information. The Fieldbus option is not available for SEMI S2 certified robots.

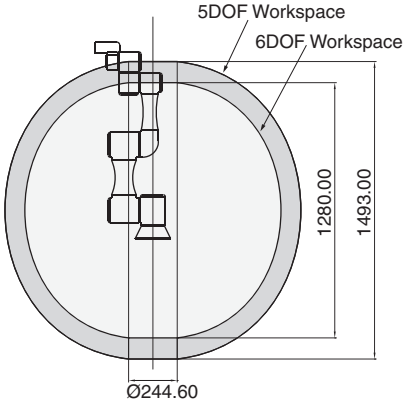
# Dimensions

(Unit: mm)

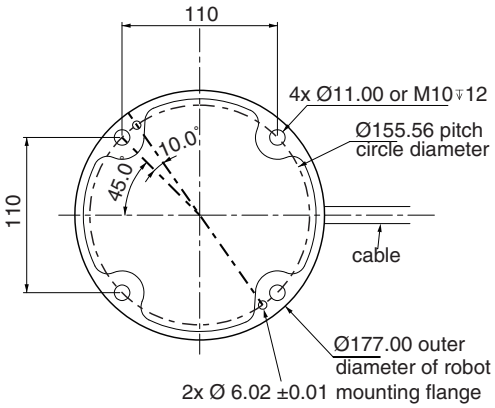
**TM5-700**



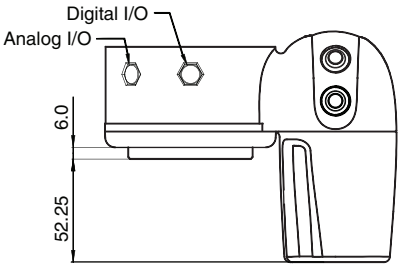

**Workspace Side View**

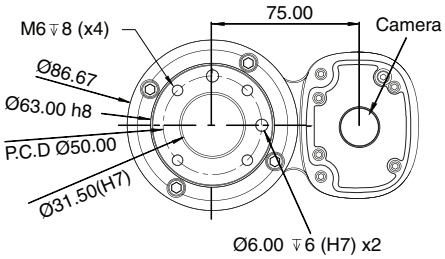



**Footprint**

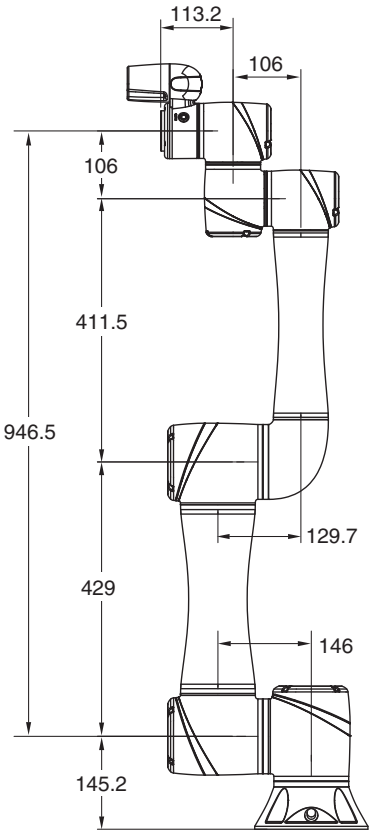



**Flange**

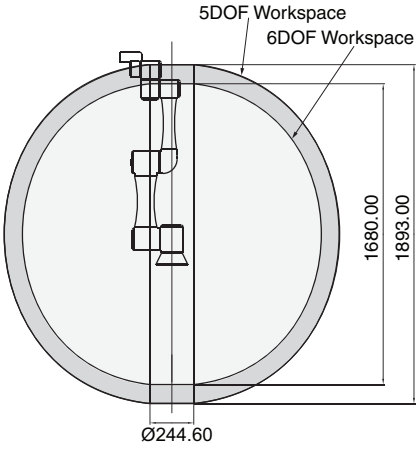


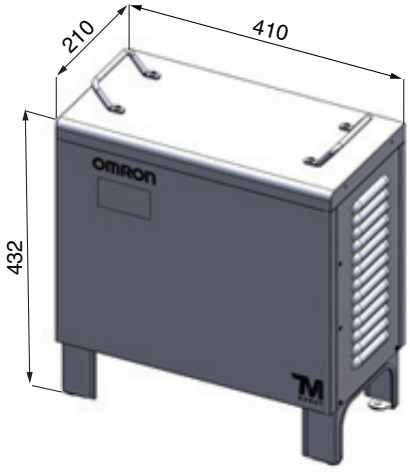

**TM5-900**




**Workspace Side View**




**Control Box**



# TM12/14

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

- Designed to promote a safe and harmonious workplace between humans and machines.
- Easy-to-use graphical programming environment for quick startup and operation.
- Built-in vision-based robot control enables visual serving, inspection, and measurement operations.
- TMvision and Landmark allow truly flexible, fast changeover.
- Plug & Play ecosystem provides the tools and versatility for many manufacturing needs.
- Capability to integrate with mobile robots enables fully autonomous machine tending and logistics handling applications.
- Food Grade Grease* option available (supplied with food grade grease).

**TM12** **TM14**

## TM12 and TM14 Ordering Information

| Type | Power Source | Integrated Camera | Reach | SEMI S2 Certified | Food Grade Grease* | Fieldbus | Cable Length | Part Number |
|---|---|---|---|---|---|---|---|---|
| TM12 | AC | Yes | 1300 mm | No | No | No | 3 m | RT6-1001301 |
| | | | | | | Yes | | RT6-1001321 |
| | | | | | Yes | No | | RT6-1001331 |
| | | | | | | Yes | | RT6-1001341 |
| | | | | | No | No | 12 m | RT6-1001302 |
| | | | | | | Yes | | RT6-1001322 |
| | | No | | | | No | 3 m | RT6-1011301 |
| | | | | | | Yes | | RT6-1011321 |
| | | | | | Yes | No | | RT6-1011331 |
| | | | | | | Yes | | RT6-1011341 |
| | DC | Yes | | Yes | No | No | 12 m | RT6-1011302 |
| | | | | | | Yes | | RT6-1011322 |
| | | | | | | No | 1.5 m | RT6-1101301 |
| | | | | | | Yes | | RT6-1101321 |
| | | | | | | No | | RT6-1101311 |
| | | No | | No | | | | RT6-1111301 |
| | | | | | | Yes | | RT6-1111321 |
| TM14 | AC | Yes | 1100 mm | No | No | No | 3 m | RT6-2001101 |
| | | | | | | Yes | | RT6-2001121 |
| | | | | | Yes | No | | RT6-2001131 |
| | | | | | | Yes | | RT6-2001141 |
| | | | | | No | No | 12 m | RT6-2001102 |
| | | | | | | Yes | | RT6-2001122 |
| | | No | | | | No | 3 m | RT6-2011101 |
| | | | | | | Yes | | RT6-2011121 |
| | | | | | Yes | No | | RT6-2011131 |
| | | | | | | Yes | | RT6-2011141 |
| | | | | | No | No | 12 m | RT6-2011102 |
| | | | | | | Yes | | RT6-2011122 |
| | DC | Yes | | Yes | No | No | 1.5 m | RT6-2101101 |
| | | | | | | Yes | | RT6-2101121 |
| | | | | | | No | | RT6-2101111 |
| | | No | | No | | | | RT6-2111101 |
| | | | | | | Yes | | RT6-2111121 |

* Food Grade Grease robots are not FDA certified. They are only suitable for select food-related applications, and require an evaluation and risk assessment of the use environment.

## Items Included with a TM12/TM14 Robot System

| Item | Robot | Cable | Robot Stick | Control Box | Calibration Plates | I/O Cables | Landmark | Ground Wire | Jumper Wire | Power cable | SEMI Switch | SEMI ESTOP Cable |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Description** | TM12, TM14 | 3, 1.5, or 12 m options | Hand control to move robot | Robot Control Box | Large, small. (Not X model robots) | 1 m | Not with X model robots | 3 m | 3 cm | For Control Box (3 cable: B, G, F)1.8 m | SEMI Emergency OFF, SEMI robots only | SEMI robots only, 3 m |
| **Quantity** | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |

## Part Number Structure

**RT6 - □ □ □ □ □ □ □ □**

**1 2 3 4 5 6 7 8**

| No. | Item | Specifications | Symbol |
|---|---|---|---|
| (1) | Techman Series | | |
| (2) | Model Type | TM12 | 1 |
| | | TM14 | 2 |
| (3) | Power Source | AC | 0 |
| | | DC | 1 |
| (4) | Integrated Camera | Standard | 0 |
| | | X Model (no camera) | 1 |
| (5)(6) | Arm Length | 1300 (TM12) | 13 |
| | | 1100 (TM14) | 11 |
| (7) | Option | Standard | 0 |
| | | Semi | 1 |
| | | Fieldbus | 2 |
| | | Food Grade Grease | 3 |
| | | Food Grade Grease, Fieldbus | 4 |
| (8) | Cable Length | Standard Length (3 m/1.5 m)*1 | 1 |
| | | Extended Length (12 m)*2 | 2 |

*1 A 1.5 meter cable is standard for DC models and a 3 meter cable is standard for AC models.
*2 A 12 meter cable is available for all AC models except for the Food Grade Grease units.

## Specifications

| Product Name | | TM12 | | TM12X | | TM14 | | TM14X | |
|---|---|---|---|---|---|---|---|---|---|
| **Power Source** | | **AC** | **DC** | **AC** | **DC** | **AC** | **DC** | **AC** | **DC** |
| **Weight (kg)** | | 32.8 | | 32.5 | | 32.5 | | 32.2 | |
| **Controller Weight (kg)** | | 13.8 | 14.5 | 13.8 | 14.5 | 13.8 | 14.5 | 13.8 | 14.5 |
| **Max Payload (kg)** | | 12 | | | | 14 | | | |
| **Reach (mm)** | | 1300 | | | | 1100 | | | |
| **Mounting** | | Wall, Table, Ceiling | | | | | | | |
| **Average Speed (m/s)** | | 1.3 | | | | 1.1 | | | |
| **Joint Range** | **Joint 1** | ±270° | | ±360° | | ±270° | | ±360° | |
| | **Joint 2, 4, 5** | ±180° | | ±360° | | ±180° | | ±360° | |
| | **Joint 3** | ±166° | | | | ±163° | | | |
| | **Joint 6** | ±270° | | ±360° | | ±270° | | ±360° | |
| **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 | | | | | | | |
| **Ingress Protection** | | IP54 (robot arm), IP32 (control box), IP40 (robot stick) | | | | | | | |
| **Cleanroom Class** | | ISO Class 3 | | | | | | | |
| **Operating Temperature and Humidity** | | 0 to 50°C, 85% max. (with no condensation) | | | | | | | |
| **Storage Temperature and Humidity** | | -20 to 60°C, 75% max. (with no condensation) | | | | | | | |
| **Operating and Storage Environment** | | No corrosive gases or exposure to water-soluble cutting oil*1 | | | | | | | |
| **Power Supply** | | 100 to 240 VAC, 50/60 Hz | 22 to 60 VDC | 100 to 240 VAC, 50/60 Hz | 22 to 60 VDC | 100 to 240 VAC, 50/60 Hz | 22 to 60 VDC | 100 to 240 VAC, 50/60 Hz | 22 to 60 VDC |
| **Robot Arm Cable Length** | | 3 m or 12 m | 1.5 m | 3 m or 12 m | 1.5 m | 3 m or 12 m | 1.5 m | 3 m or 12 m | 1.5 m |

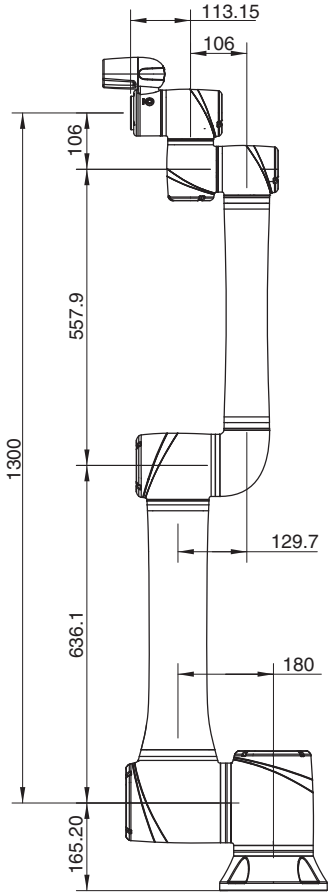
| Product Name | | TM12 | | TM12X | | TM14 | | TM14X | |
|---|---|---|---|---|---|---|---|---|---|
| Power Source | | AC | DC | AC | DC | AC | DC | AC | DC |
| I/O Ports | Control Box | Digital In: 16, Digital Out: 16 Analog In: 2, Analog Out: 1 | | | | | | | |
| | Tool | Digital In: 4, Digital Out: 4 Analog In: 1, Analog Out: 0 | | | | | | | |
| I/O Interface | | COM: 3, HDMI: 1, LAN: 3, USB2.0: 4, USB3.0: 2 | | | | | | | |
| Communication | | RS232, Ethernet (master), Modbus TCP/RTU (master & slave), PROFINET (optional), EtherNet/IP (optional) | | | | | | | |
| I/O Power Supply | | 24 VDC 2.0 A (control box) / 24 VDC 1.5 A (tool) | | | | | | | |
| Programming Environment | | TMflow, flowchart based | | | | | | | |
| Integrated Camera Available | | 5 MP, color | | None | | 5 MP, color | | None | |
| SEMI S2 Certified*2 Available | | No | Yes | No | Yes | No | Yes | No | Yes |
| Fieldbus Available | | EtherNet/IP, PROFINET*3 | | | | | | | |

*1 If water-soluble cutting oil is present, use a protective sleeve to prevent damage to the robot housing. OMRON offers enhanced joint covers for these applications. Contact your local OMRON representative for more information.
*2 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).
*3 A Fieldbus upgrade is available for HW3.2 robots with TMflow v1.80 or higher. Contact your local OMRON representative for more information. The Fieldbus option is not available for SEMI S2 certified robots.

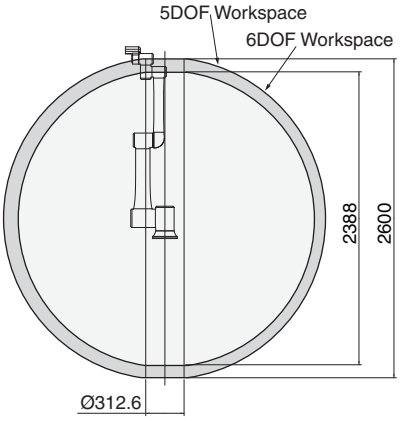
# Dimensions

**(Unit: mm)**

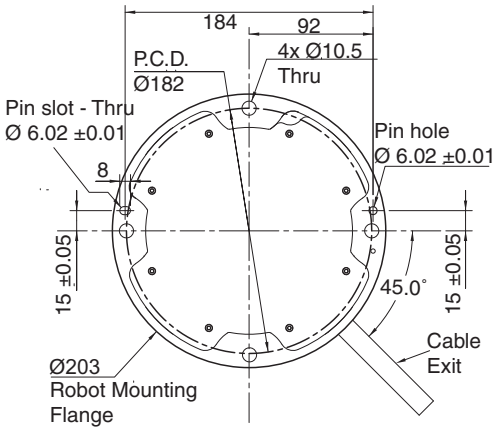
**TM12**



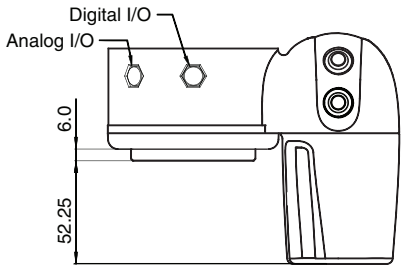

**Workspace Side View**

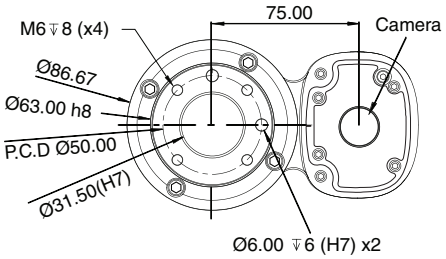



**Footprint**

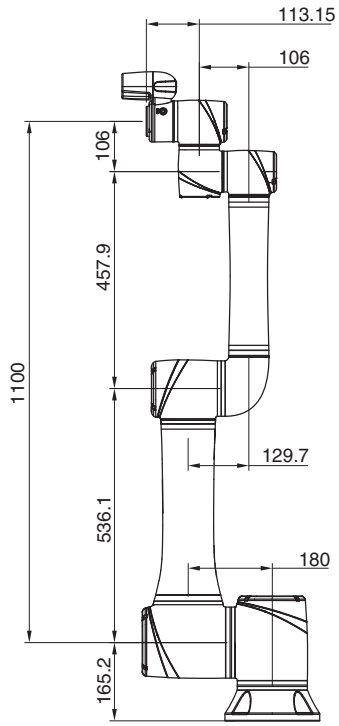



**Flange**

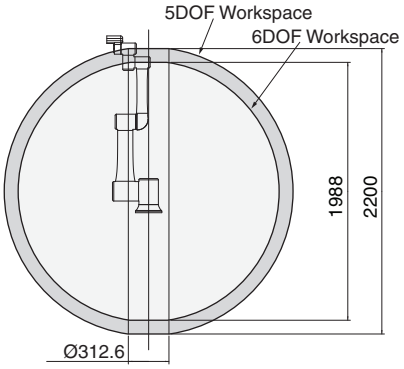


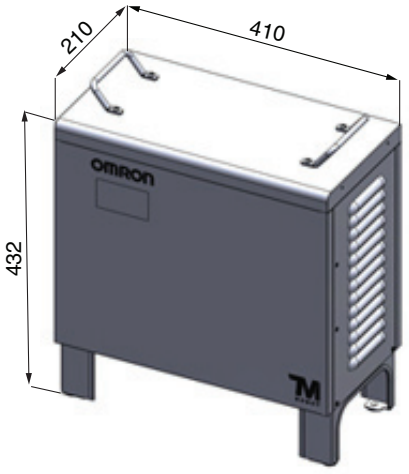

**TM14**




**Workspace Side View**




**Control Box**



# TM16

## Increased power and versatility for assembly, packaging, inspection, and logistics

- The combined 16 kg payload capacity and 900 mm reach expands material handling capabilities.
- Easy-to-use graphical programming environment for quick startup and operation.
- Built-in vision-based robot control enables visual serving, inspection, and measurement operations.
- TMvision and Landmark allow truly flexible, fast changeover.
- Plug & Play ecosystem provides the tools and versatility for many manufacturing needs.
- Capability to integrate with mobile robots enables fully autonomous machine tending and logistics handling applications.

## TM16 Ordering Information

| Type | Power Source | Integrated Camera | Reach | SEMI S2 Certified | Fieldbus | Cable Length | Part Number |
|---|---|---|---|---|---|---|---|
| TM16 | AC | Y | 900 mm | N | N | 3 m | RT6-3009001 |
| | | N | | | | | RT6-3019001 |
| | | Y | | | Y | | RT6-3009021 |
| | | N | | | | | RT6-3019021 |
| | DC | Y | | | N | 1.5 m | RT6-3109001 |
| | | N | | | | | RT6-3119001 |
| | | Y | | | Y | | RT6-3109021 |
| | | N | | | | | RT6-3119021 |
| | | Y | | Y | N | | RT6-3109011 |

## Global Part Number Structure

**RT6 - □ □ □ □ □ □ □ □**

**1 2 3 4 5 6 7 8**

| No. | Item | Specifications | Symbol |
|---|---|---|---|
| (1) | Techman Series | | |
| (2) | Model Type | TM16 | 3 |
| (3) | Power Source | AC | 0 |
| | | DC | 1 |
| (4) | Integrated Camera | Standard | 0 |
| | | X Model (no camera) | 1 |
| (5)(6) | Arm Length | 900 | 9 |
| (7) | Option | Standard | 0 |
| | | Semi | 1 |
| | | Fieldbus | 2 |
| (8) | Cable Length | Standard Length (1.5 m / 3 m)*1 | 1 |

*1 A 1.5 meter cable is standard for DC models and a 3 meter cable is standard for AC models.

## Items Included with a TM16 Robot System

| Item | Robot | Cable | Robot Stick | Control Box | Calibration Plates | I/O Cables | Landmark | Ground wire | Jumper Wire | Power cable | SEMI Switch | SEMI ESTOP Cable |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Description** | TM16 | 3 meter cable for AC unit and 1.5 meter cable for DC unit | Hand control to move robot | Robot Control Box | Large and small. Not with X model robots | 1 m | Not with X model robots | 3 m | 3 cm | For Control Box (3 cable: B, G, F) 1.8 m | SEMI Emergency OFF, SEMI robots only | SEMI robots only, 3 m |
| **Quantity** | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |

## Specifications

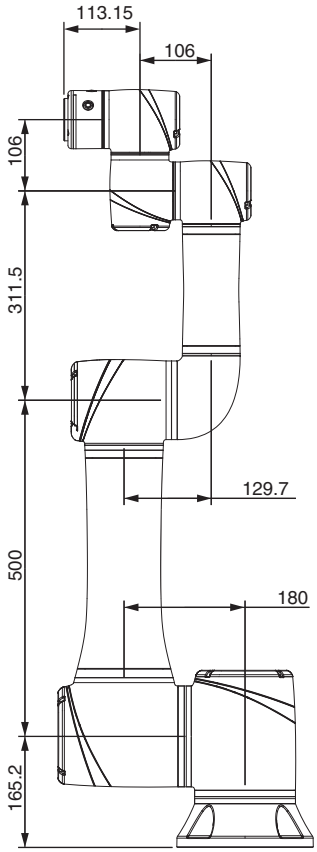
| **Product Name** | | **TM16** | | **TM16X** | |
|---|---|---|---|---|---|
| **Power Source** | | **AC** | **DC** | **AC** | **DC** |
| **Weight (kg)** | | 32.2 | | 31.9 | |
| **Controller Weight (kg)** | | 14.1 | | | |
| **Max Payload (kg)** | | 16 | | | |
| **Reach (mm)** | | 900 | | | |
| **Mounting** | | Wall, Table, Ceiling | | | |
| **Average Speed (m/s)** | | 1.1 | | | |
| **Joint Range** | **Joint 1** | ±270° | | ±360° | |
| | **Joint 2, 4, 5** | ±180° | | ±360° | |
| | **Joint 3** | ±155° | | | |
| | **Joint 6** | ±270° | | ±360° | |
| **Joint Speeds** | **Joint 1, 2** | 120°/s | | | |
| | **Joint 3, 4, 5, 6** | 180°/s | | | |
| **Repeatability (mm)** | | ±0.1 | | | |
| **Ingress Protection** | | IP54 (robot arm), IP32 (control box), IP40 (robot stick) | | | |
| **Cleanroom Class** | | ISO Class 3 | | | |
| **Operating Temperature and Humidity** | | 0 to 50°C, 85% max. (with no condensation) | | | |
| **Storage Temperature and Humidity** | | -20 to 60°C, 75% max. (with no condensation) | | | |
| **Operating and Storage Environment** | | No corrosive gases or exposure to water-soluble cutting oil.*1 | | | |
| **Motor Power Supply** | | 110 to 240 VAC, 50/60 Hz | 22 to 60 VDC | 110 to 240 VAC, 50/60 Hz | 22 to 60 VDC |
| **Robot Arm Cable Length (m)** | | 3 | 1.5 | 3 | 1.5 |
| **I/O Ports** | **Control Box** | Digital In: 16, Digital Out: 16<br>Analog In: 2, Analog Out: 1 | | | |
| | **Tool** | Digital In: 4, Digital Out: 4<br>Analog In: 1, Analog Out: 0 | | | |
| **I/O Interface** | | COM: 3, HDMI: 1, LAN: 3, USB2.0: 4, USB3.0: 2 | | | |
| **Communication** | | RS232, Ethernet (master), Modbus TCP/RTU (master & slave), PROFINET (optional), EtherNet/IP (optional) | | | |
| **I/O Power Supply** | | 24 VDC 2.0 A (control box) / 24 VDC 1.5 A (tool) | | | |
| **Programming Environment** | | TMflow, flowchart based | | | |
| **Integrated Camera Available** | | 5 MP, color | None | 5 MP, color | None |
| **SEMI S2 Certified*2 Available** | | No | Yes | No | No |
| **Fieldbus Available** | | EtherNet/IP, PROFINET | | | |

*1 If water-soluble cutting oil is present, use a protective sleeve to prevent damage to the robot housing. OMRON offers enhanced joint covers for these applications. Contact your local OMRON representative for more information.
*2 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).

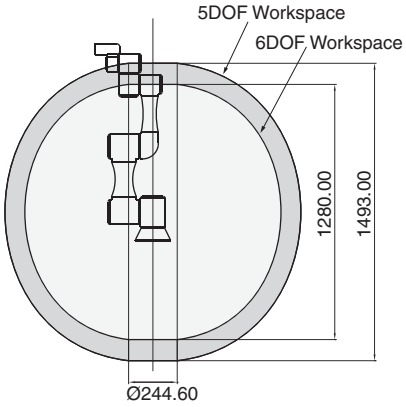
# Dimensions

(Unit: mm)

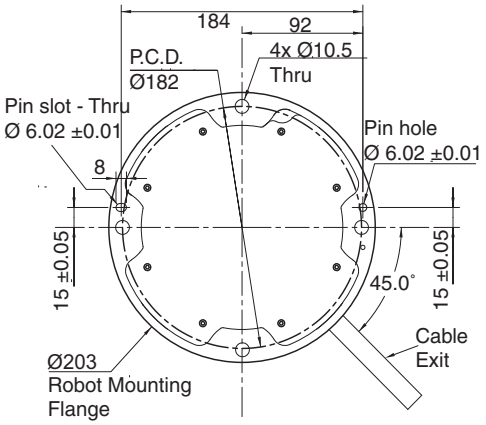
### TM16



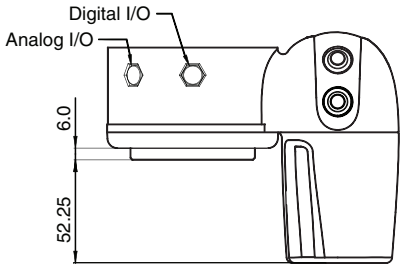

### Workspace Side View

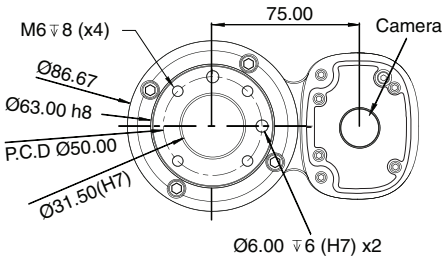



### Footprint

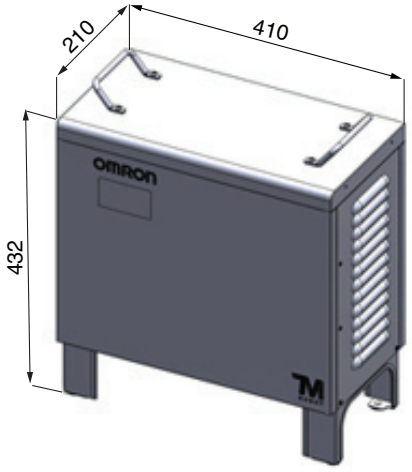



### Flange




### Control Box



# TM20

## Increased power and versatility for assembly, packaging, inspection, and logistics

- The combined 20 kg payload capacity and 1300 mm reach expands material handling capabilities.
- Easy-to-use graphical programming environment for quick startup and operation.
- Built-in vision-based robot control enables visual serving, inspection, and measurement operations.
- TMvision and Landmark allow truly flexible, fast changeover.
- Plug & Play ecosystem provides the tools and versatility for many manufacturing needs.
- Capability to integrate with mobile robots enables fully autonomous machine tending and logistics handling applications.

## TM20 Ordering Information

| Type | Power Source | Integrated Camera | Reach | Fieldbus | Cable Length | Part Number |
|---|---|---|---|---|---|---|
| TM20 | AC | Y | 1300 mm | N | 3 m | RT6-4001301 |
| | | | | Y | | RT6-4001321 |
| | | | | N | 12 m | RT6-4001302 |
| | | | | Y | | RT6-4001322 |
| | | N | | N | 3 m | RT6-4011301 |
| | | | | Y | | RT6-4011321 |
| | | | | N | 12 m | RT6-4011302 |
| | | | | Y | | RT6-4011322 |
| | DC | Y | | N | 1.5 m | RT6-4101301 |
| | | | | Y | | RT6-4101321 |
| | | N | | N | | RT6-4111301 |
| | | | | Y | | RT6-4111321 |

## Global Part Number Structure

**RT6 - □ □ □ □ □ □ □ □**

**1 2 3 4 5 6 7 8**

| No. | Item | Specifications | Symbol |
|---|---|---|---|
| (1) | Techman Series | | |
| (2) | Model Type | TM20 | 4 |
| (3) | Power Source | AC | 0 |
| | | DC | 1 |
| (4) | Integrated Camera | Standard | 0 |
| | | X Model (no camera) | 1 |
| (5)(6) | Arm Length | 1300 | 13 |
| (7) | Option | Standard | 0 |
| | | Semi | 1 |
| | | Fieldbus | 2 |
| (8) | Cable Length | Standard Length (1.5 m / 3 m)*1 | 1 |
| | | Extended Length (12m)*2 | 2 |

*1 A 1.5 meter cable is standard for DC models and a 3 meter cable is standard for AC models.
*2 A 12 meter cable is available for all AC models.

## Items Included with a TM20 Robot System

| Item | Robot | Cable | Robot Stick | Control Box | Calibration Plates | I/O Cables | Landmark | Ground wire | Jumper Wire | Power cable | SEMI Switch | SEMI ESTOP Cable |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Description** | TM20 | 3 meter cable for AC unit and 1.5 meter cable for DC unit | Hand control to move robot | Robot Control Box | Large and small. Not with X model robots | 1 m | Not with X model robots | 3 m | 3 cm | For Control Box (3 cable: B, G, F) 1.8 m | SEMI Emergency OFF, SEMI robots only | SEMI robots only, 3 m |
| **Quantity** | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |

## Specifications

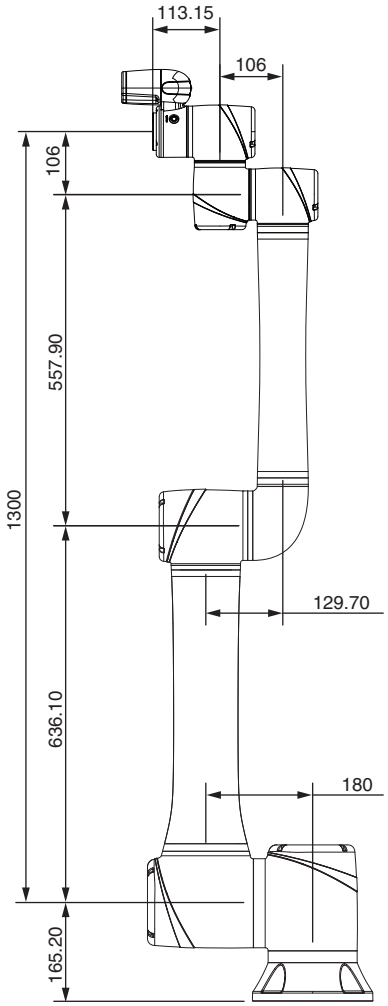
| **Product Name** | | **TM20** | | **TM20X** | |
|---|---|---|---|---|---|
| **Power Source** | | **AC** | **DC** | **AC** | **DC** |
| **Weight (kg)** | | 33 | | 33 | |
| **Controller Weight (kg)** | | 14.1 | | | |
| **Max Payload (kg)** | | 20 | | | |
| **Reach (mm)** | | 1300 | | | |
| **Mounting** | | Wall, Table, Ceiling | | | |
| **Average Speed (m/s)** | | 1.3 | | | |
| **Joint Range** | **Joint 1** | ±270° | | ±360° | |
| | **Joint 2, 4, 5** | ±180° | | ±360° | |
| | **Joint 3** | ±166° | | | |
| | **Joint 6** | ±270° | | ±360° | |
| **Joint Speeds** | **Joint 1, 2** | 90°/s | | | |
| | **Joint 3** | 120°/s | | | |
| | **Joint 4** | 150°/s | | | |
| | **Joint 5** | 180°/s | | | |
| | **Joint 6** | 225°/s | | | |
| **Repeatability (mm)** | | ±0.1 | | | |
| **Ingress Protection** | | IP54 (robot arm), IP32 (control box), IP40 (robot stick) | | | |
| **Cleanroom Class** | | ISO Class 3 | | | |
| **Operating Temperature and Humidity** | | 0 to 50°C, 85% max. (with no condensation) | | | |
| **Storage Temperature and Humidity** | | -20 to 60°C, 75% max. (with no condensation) | | | |
| **Operating and Storage Environment** | | No corrosive gases or exposure to water-soluble cutting oil. | | | |
| **Motor Power Supply** | | 110 to 240 VAC, 50/60 Hz | 24 to 60 VDC | 110 to 240 VAC, 50/60 Hz | 24 to 60 VDC |
| **Robot Arm Cable Length (m)** | | 3 or 12 | 1.5 | 3 or 12 | 1.5 |
| **I/O Ports** | **Control Box** | Digital In: 16, Digital Out: 16<br>Analog In: 2, Analog Out: 1 | | | |
| | **Tool** | Digital In: 4, Digital Out: 4<br>Analog In: 1, Analog Out: 0 | | | |
| **I/O Interface** | | COM: 3, HDMI: 1, LAN: 3, USB2.0: 4, USB3.0: 2 | | | |
| **Communication** | | RS232, Ethernet (master), Modbus TCP/RTU (master & slave), PROFINET (optional), EtherNet/IP (optional) | | | |
| **I/O Power Supply** | | 24 VDC 2.0 A (control box) / 24 VDC 1.5 A (tool) | | | |
| **Programming Environment** | | TMflow, flowchart based | | | |
| **Integrated Camera Available** | | 5 MP, color | | None | |
| **SEMI S2 Certified*1 Available** | | No | Yes | No | No |
| **Fieldbus Available** | | EtherNet/IP, PROFINET | | | |

*1 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).

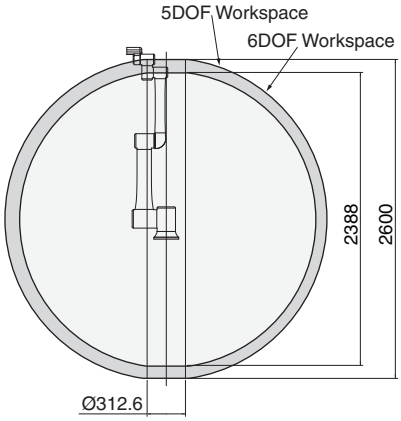
# Dimensions

(Unit: mm)

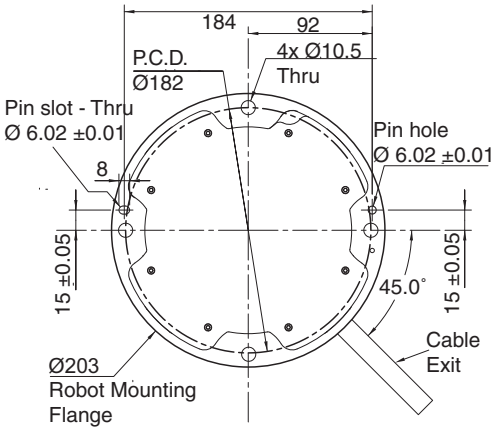
### TM20/20X



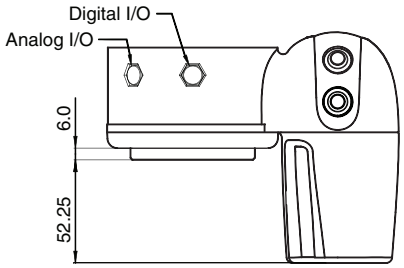

### Workspace Side View

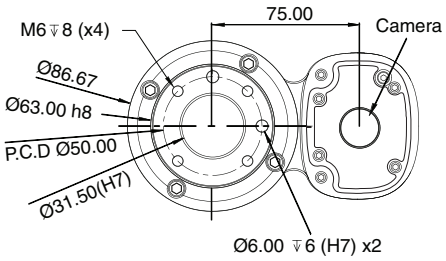



### Footprint

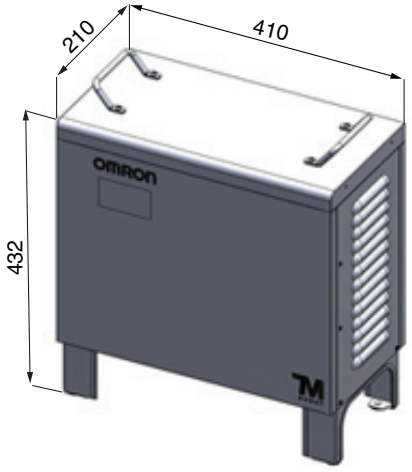



### Flange




### Control Box



# Accessories & Software

## Accessories

| Appearance | Product Name | Description | Remarks | Part Number |
|---|---|---|---|---|
| | Landmark | Robot positioning tool as a reference to the environment. | Two included with purchase of a robot. Not included with X model robots | RT6-A000021 |
| | Mobile Workstation (MWS) | MWS is a convenient tool for users to mount the robot arm on work surface, and store the control box safely within. Users can easily move the MWS with the robot to different work cells. | Compatible with OMRON TM5 only. | RT6-A000010 |
| | Robot stand | Similar to MWS, the robot stand can be easily moved with the robot to different work stations.EtherNet/IP | Height adjustable.Compatible with OMRON TM5 only. | 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 |
| | Robot stick stand | Mounting fixture for the robot stick. | Can be used on desktops, walls, and MWS. | RT6-A000000 |
| | Pneumatic control box | Controls the inputs and outputs and monitors air pressure for Kilews screw driving applications. | Compatible with Kilews screw driving solution kit only. Recommended to attach to the robot stand. | RT6-A000015 |
| | Polarizer Light Module | Improves the reflection caused by the robot's own light source on the surface of highly reflective objects. | For TM5/12/14/16/20 models with HW 3.2 or above. | RT6-A000022 |
|  | 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. | 19936-443F |
| | Teach Pendant | A handheld operating teach pendant. 10.1 inch WXGA resolution panel. | NexCobot Teach Pendant model TP-100-1. | RT6-A000020 |

## Software

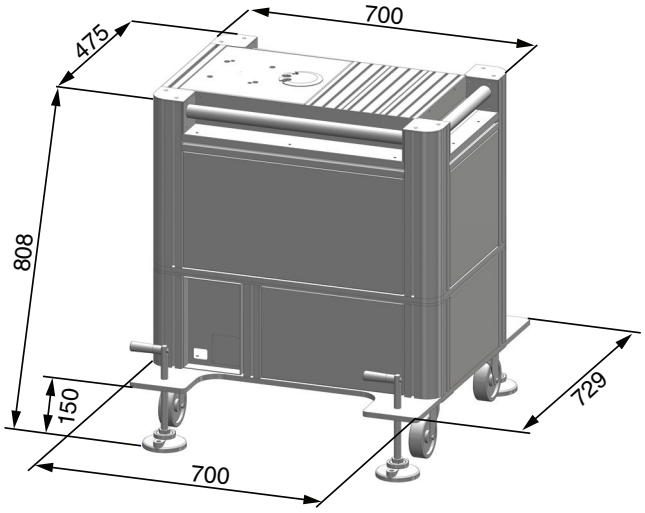
| Product Name | Add-On Product Names | Remarks | Part Number | Add-On Part Numbers |
|---|---|---|---|---|
| USB Dongle | - | Required for all extra software licenses. | RT6-A000004 | - |
| TMflow | - | Software required to control the cobot. Free download | - | - |
| | TM Identify & Measure | License, add-on to TMflow. Includes: identification of pose variation, specific color area size, subtract reference image, line/ circle burr, counting and gauge. | - | RT6-S100000 |
| | TM External Vision | License, add-on to TMflow. Required when using eye-to-hand cameras. | - | RT6-S100002 |
| | TM OCR | License, add-on to TMflow. Includes: Text OCR and Number OCR. | - | RT6-S100003 |
| | License, OMRON-TM Operator Suite | License, includes 2 USB Dongles (1 for laptop/PC, and 1 for additional IPC) | - | RT6-S100006 |
| | License, OMRON-TM Operator Runtime | License, includes 1 USB Dongles (for additional IPC) | - | RT6-S100007 |
| | License, TMStudio Palletizing Wizard Export | License, includes 1 USB Dongles (for additional IPC) | - | RT6-S100008 |
| | License, OMRON-TM Operator Runtime and Palletizing Wizard Export | License, includes 1 USB Dongles (for additional IPC) | - | RT6-S100009 |

| Product Name | Add-On Product Names | Remarks | Part Number | Add-On Part Numbers |
|---|---|---|---|---|
| TMflow Editor | - | License, provides a convenient way to open and edit project offline. | RT6-S200001 | - |
| | TMflow Editor - Offline AOI | License, add-on to TMflow Editor. Enables TMflow Editor to offline edit a TMflow project that includes AOI vision. | - | RT6-S100005 |

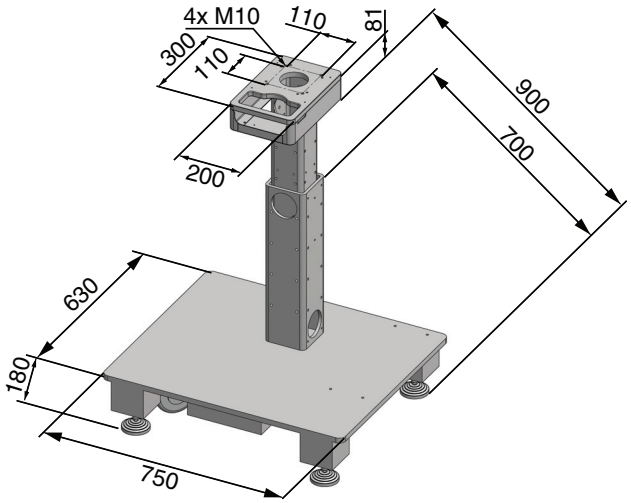
## Accessories Dimensions

(Unit: mm)

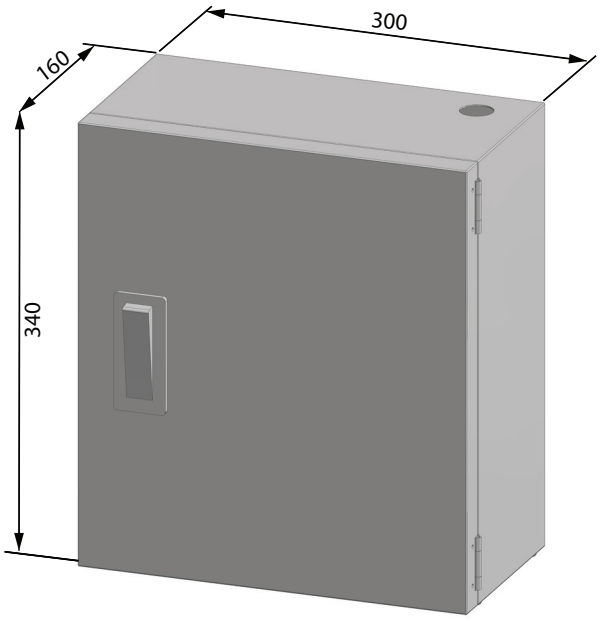
**Mobile Work Station (MWS)**




**Robot Stand**




**Pneumatic Control Box**



# Recommended Plug & Play Hardware

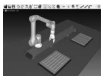
| Category | Appearance | Company | Product Name | Manufacturer SKU Number* | Description |
|---|---|---|---|---|---|
| Grippers | | Robotiq | Adaptive Gripper 2-Finger 85/140 for OMRON TM robot | 85 kit: AGC-OMRON-KIT-85<br>140 kit: AGC-OMRON-KIT-140 | A 2-finger adaptive gripper that can adapt to parts of various shapes and sizes. Comes in two stroke options – 85 mm and 140 mm. Each kit includes:<br>- End effector coupling kit<br>- 10 m communication cable<br>- RS485 to RS232 converter<br>- RS485 to USB converter<br>- Screw kit<br>- Quick start guide |
| | | | Hand-E gripper for OMRON TM robot | HND-OMRON-KIT | A 2-finger parallel gripper with an IP67 rating. 50 mm stroke. Each kit includes:<br>- Fingertip starting kit<br>- End effector coupling kit<br>- 10 m communication cable<br>- RS485 to RS232 converter<br>- RS485 to USB converter<br>- Screw kit<br>- Quick start guide |
| | | | *E*Pick for OMRON TM robot | VAC-OMRON-EPICK-KIT1 | A vacuum gripper that uses an integrated vacuum generator. Each kit includes:<br>- Basic gripper unit<br>- End effector coupling kit<br>- 10 m communication cable<br>- RS485 to RS232 converter<br>- RS485 to USB converter<br>- Quick start guide<br>- Vacuum cup(s): 1.5 bellows, 55 mm dia.<br><br>KIT1 includes 1 vacuum cup<br>KIT2 has a suction system for 2 cups<br>KIT4 has a suction system for 4 cups |
| | | | | VAC-OMRON-EPICK-KIT2 | |
| | | | | VAC-OMRON-EPICK-KIT4 | |
| | | | *Air*Pick for OMRON TM robot | VAC-OMRON-AIRPICK-KIT1 | A vacuum gripper that uses an external pneumatic supply. Each kit includes:<br>- Basic gripper unit<br>- Tubing 8 mm x 8 m<br>- End effector coupling kit<br>- RS485 to RS232 converter<br>- RS485 to USB converter<br>- Quick start guide<br>- Vacuum cup(s): 1.5 bellows, 55 mm dia.<br><br>KIT1 includes 1 vacuum cup<br>KIT2 has a suction system for 2 cups<br>KIT4 has a suction system for 4 cups |
| | | | | VAC-OMRON-AIRPICK-KIT2 | |
| | | | | VA-OMRON-AIRPICK-KIT4 | |
| | | | I/O Coupling | IO-CPL-OMRON-KIT | Component that connects the Robotiq adaptive/vacuum gripper to the wrist of the OMRON TM robot to eliminate the need for an external serial communication cable. Each kit includes:<br>- I/O Coupling<br>- Screw kit<br>- Micro-USB to USB cable<br>- 16G USB Stick |
| | | | Dual-Grip Adapter Plate | AGC-APL-159-002 | Adapter plate and mounting screws to mount two grippers onto the OMRON TM robot. |
| | | | 2F-85 Dual kit for OMRON Robots<br>2F-140 Dual kit for OMRON Robots<br>HAND-E Dual kit for OMRON Robots | OMRON-DUAL-AGC-85<br>OMRON-DUAL-AGC-140<br>OMRON-DUAL-HND | Kit that enables dual gripper setting. Each kit includes:<br>- Chosen gripper x 2<br>- Mechanical coupling x 2<br>- USB to RS485 Adapter<br>- Communication Cable<br>- M12 5 Pins Splitter<br>- Dual-Grip Adapter Plate<br>- Screw kit x 2 |
| | | OnRobot | RG2 Gripper | 102012 | Electric 2-finger gripper. Each kit includes:<br>- RG2 Gripper<br>- Fingertip adapters (pre-mounted)<br>- Integrated Quick OnRobot Changer (tool side)<br>- Torx key |

| Category | Appearance | Company | Product Name | Manufacturer SKU Number* | Description |
|---|---|---|---|---|---|
| Grippers | | OnRobot | RG2-FT | 102075 | The RG2-FT has 2 force/torque sensors and 2 time-of-flight-based proximity sensors integrated in the fingertips. It is a state of the art gripper with added sensing and intelligence, capable of controlling the robot and itself to achieve what the operator would like it to do, even when the exact parameters cannot be programmed in advance. It includes:<br>- RG2-FT Gripper<br>- Fingertip adapter (pre-mounted)<br>- Cable<br>- Cable holder and screws<br><br>Required for mounting on the robot:<br>- single Quick OnRobot Changer (robot side)<br>- dual Quick OnRobot Changer (robot side)<br>- HEX QC<br><br>Required for connecting to the robot:<br>- connection kit with compute box |
| | | | RG6 Gripper | 102021 | Electric 2-finger gripper with larger stroke.<br>Each kit includes:<br>- RG2 Gripper<br>- Fingertip adapters (pre-mounted)<br>- Integrated Quick OnRobot Changer (tool side)<br>- Torx key |
| | | | VG10 Electric Vacuum Gripper | 101661 | Flexible and adjustable electrical vacuum gripper.<br>Each kit includes:<br>- VG10 Gripper<br>- 30 mm dia. suction cups x 16 (pre-mounted)<br>- Integrated Quick OnRobot Changer (tool side)<br>- 40 mm dia. suction cups x 4<br>- 15 mm dia. suction cups x 4<br>- Blind screws x16<br>- Positioning arrows<br>- Torx key |
| | | | Single Pad Gecko | 104086 SP1<br>104087 SP3<br>104088 SP5 | Compact, lightweight Gecko Single Pad Gripper requires no cables, electricity, air or programming. The Gecko SP is available in 3 sizes; SP1, SP3, and SP5 named after the gripper payload in kilos, featuring the ability to lift a wide range of flat, smooth, shiny or perforated surfaces. Options are:<br>- Gecko SP1 (with 35 mm pad)<br>- Gecko SP3 (with 60 mm pad)<br>- Gecko SP5 (with 75 mm pad) |
| | | | OMRON TM Robot Kit | 102359 | This kit must be purchased for the use of OnRobot grippers on OMRON TM collaborative robot.<br>Each kit includes:<br>- Compute Box<br>- Power supply<br>- Adapter plate (included in all kits but only necessary for VG10 and Gecko grippers)<br>- USB stick with software components and User Manual<br>- Device cable 5 m<br>- UTP cable 0.5 m<br>- I/O cable 0.3 m<br>- Cable management hook/loop |
| | | | 3FG15-3 Finger Gripper | 103666 | The 3FG15 is ideal for gripping a wide range of cylindrical objects in machine-tending applications such as CNC lathe machines. The gripper design automatically centers workpieces, with payload up to 15 kg. It includes:<br>- 3FG15<br>- Torx Key T20<br>- 3 x Steel Fingertip 13 dia.<br>- 3 x Rubber Fingertip 16.5 dia. |
| | | | Soft Gripper | 103546 SG Base Part<br>103689 SG-a-H<br>103860 SG-a-S<br>103691 SG-b-H | This is available with three interchangeable silicon-molded cups to handle a wide array of irregular shapes and delicate items, making it ideal for pick-and-place applications in food and beverage and other “clean” production applications. The silicon cups are dishwasher-safe and comply with FDA 21 CFR (for non-fatty items) and EC 1935/2004 for food handling. Maximum payload of 2.2 kg, and grip dimensions range from 11 mm to 118 mm, depending on cup used. |
| | | | F2G7 Parallel Gripper | 106376 | This parallel gripper is used for tight spaces and demanding payloads. Ready for use almost anywhere, with IP67 rating for harsh environments and ISO Class 5 certification for cleanroom use. |
| | | | MG10 Magnet Gripper | 105202 | This versatile electric magnetic gripper is used for safe and precise collaborative applications. Built-in intelligence with easily adjustable force and part detection ensures reliable handling of a wide range of part sizes and weights. |
| | | | VGC10 | 102844 | This flexible electric vacuum gripper has changeable suction cup options for unlimited customization possibilities. It’s smaller and half the weight of VG10 but with the same payload. It includes:<br>- 40 mm dia. Vacuum Cups<br>- 30 mm dia. Vacuum Cups<br>- 15 mm dia. Vacuum Cups<br>- Fittings<br>- Push-in fittings<br>- M6 x 10 mm Screws<br>- Blind Screws<br>- Torx T30<br>- 3 mm hex keys<br>- Adapter Plate<br>- Extension pipe 50 mm |

| Category | Appearance | Company | Product Name | Manufacturer SKU Number* | Description |
|---|---|---|---|---|---|
| Grippers | | | VGP20 Vacuum Gripper | 107242<br>107567 | This powerful electric vacuum gripper is ideal for cardboard box palletizing. Built-in intelligence and multichannel functionality ensures failsafe, flexible operation.<br>The following attachment is required to prevent mechanical interference with camera module:<br>- VGP20 Extender 50 mm |
| | | Schmalz | ROB-SET ECBPi OMRON | 10.03.01.00544 | Complete vacuum gripper for collaborative robots.<br>Each kit includes:<br>- Vacuum generator (ECBPi)<br>- End-effector coupling kit<br>- Connection cable<br>- Mounting flange<br>- Flat suction cup<br>- Bellows suction cup<br>- Bolts and t-nuts<br>- Operating instructions |
| | | | ROB-SET FXCB OMRON | 10.01.43.00120 | Area gripper equipped with integrated pneumatic vacuum generation. (Needs external air supply.)<br>Each kit includes:<br>- Pneumatic area gripper (FXCB)<br>- Connection cable<br>- Mounting flange<br>- Bolts and t-nuts<br>- Operating instructions |
| | <br> | Schunk | Co-act EGP-C 40-N-N-TMID<br>Co-act EGP-C 40-N-N-TMEK<br>Co-act EGP-C 64-N-N-TMEK | 1374363<br>1375931<br>1400578 | Electric 2-finger parallel gripper certified for collaborative operation. Actuation and communication via 24 VDC and digital I/O.<br>Each kit includes:<br>- Co-act EGP-C gripper<br>- Assembly and Operating Manual<br>- Accessory pack |
| | | | Co-act AUB EGP 40/12<br>Co-act AUB EGP 40/24<br>AUB Co-act EGP 64/20<br>AUB Co-act EGP 64/40 | 1401285<br>1401286<br>1401294<br>1401297 | Gripping fingers for Co-act EGP-C. |
| | | SMC | Air Gripper | JMHZ2X7400B-TM | Air gripper equipped with a high precision linear guide. Compact, lightweight product with high gripping force due to air operation. Operate by simply connecting one air supply tube and an electrical wiring M8 connector.<br>Each kit includes:<br>- Air gripper unit<br>- Parallel pin (6 x 10 mm) x 1<br>- Hexagon socket head cap screw (M6 x 23) x 4<br>- Protective cover x 1 set (valve side, S.W side)<br>- Hexagon socket head cap screw (M4x10) x 4<br>- Tube for piping (TU0425BU) 2 m<br>- User manual |
| | | | Vacuum Gripper | ZXP-X1 | Operate by simply connecting one compressed air supply tube and an electrical wiring M8 connector. The wide variety of SMC suction cup variations can apply to a wide range of picking applications. The adsorbing detection is made easy with sensor signals.<br>Each kit includes:<br>- Vacuum gripper unit<br>- Robot mounting flange<br>- 6 x 10, parallel pin<br>- 8 pcs x M6 x 10, Hexagon socket head cap screw<br>- 2 m, Polyurethane tube: TU0604<br>- Plug 4 pcs (cup mounting flange)<br>- 4 pcs x suction cup with adapter (suction cup) |
| | | CKD | Compact Gripper RLSH-TM | RLSH-A20D1N-L1-FY2-TM | Small, lightweight, pneumatic gripper with high gripping force. Easy installation with a dedicated common flange and tool-less replacement with a clamp ring, and teaching support is supported with the dedicated software “Pneumatic Gripper.” Equipped with an edgeless resin cover and an LED indicator lamp that is visible 360°, it is designed with consideration for safety and supports the introduction of collaborative robots by all customers. |
| | | | Long Stroke Gripper RHLF-TM | RHLF-16CS-FY2-TM | |
| | | | 3-way Finger Gripper RCKL-TM | RCKL-16CS-FY3-TM | |

| Category | Appearance | Company | Product Name | Manufacturer SKU Number* | Description |
|---|---|---|---|---|---|
| Tool Changers | | KOSMEK | Robotic Tool Changer | Master Cylinder:<br>SWR0070-M□-□<br>SWR0120-M□-□<br>Conversion Plate Set:<br>SWRZ0070-MF4<br>SWRZ0120-MF4<br>Tool Adapter:<br>SWR0070-T- □<br>SWR0120-T-□ | High-precision robotic tool changer with many features enables multiple functions of robots and setup time reduction. It enhances the productivity of the automated production line. |
| | | | Manual Robotic Hand Changer | Master Cylinder SXR0030-M;<br>Adapter Plate SXRZ0030-MF4;<br>Tool Adapter SXR0030-TF4 | Manual Robotic Hand Changer enables quick, intuitive change of robotic tools. Technical knowledge is not required -- operators with diverse skills levels can easily use the Manual Robotic Hand Changer.<br>Adapter Plate includes:<br>- Parallel Pin dia. 5×8<br>- Parallel Pin dia. 6×12<br>- 4 Hexagonal Socket Low Head Cap Screws (M6×1×10)<br>- 4 Hexagonal Socket Head Cap Screws (M5×0.8×14) |
| | | OnRobot | Quick OnRobot Changer Robot side 4.5 A | 104277 | Manual tool changer to attach on the robot's end-of-arm. Either the Quick OnRobot Changer (robot side) or the Dual Quick OnRobot Changer must be purchased for use of all OnRobot grippers.<br>Each kit includes:<br>- Quick OnRobot Changer robot side<br>- Screws<br>- Torx key |
| | | | Quick OnRobot Changer - Tool side | 102014 | Manual tool changer to attach on the tool side. (All OnRobot grippers have this component integrated, so this is only necessary when user is developing their own tool.) |
| | | | Quick OnRobot Changer Kit 4.5 A | 105925 | Each kit includes:<br>- Quick OnRobot Changer (robot side) x 1<br>- Quick OnRobot Changer (tool side) x 2<br>- Torx key<br>- Screws and pins |
| | | | Dual Quick OnRobot Changer 4,5A | 104293 | Manual tool changer to attach on the robot's end-of-arm for dual gripper configuration. Either the Quick OnRobot Changer (robot side) or the Dual Quick OnRobot Changer must be purchased for use of all OnRobot grippers.<br>Each kit includes:<br>- Dual Quick OnRobot Changer<br>- Screws<br>- Torx key |
| 3D Bin Picking | | Pick-it | Pick-it M | PI-M-2.0 | Plug & Play 3D camera and software for picking objects sized 50x50x10 mm or larger.<br>Each kit includes:<br>- Pre-calibrated 3D camera<br>- Pick-it software<br>- Industrial processor<br>- 3G dongle to connect directly to Pick-it support<br>- Calibration plate and ROi box teaching markers<br>- All connection cables (plug & play)<br>- Quick start guide |
| | | | Pick-it M-HD | PI-M-HD | Plug & Play 3D camera and software for picking objects sized 10x10x5mm or larger.<br>Each kit includes:<br>- Pre-calibrated 3D camera<br>- Pick-it software<br>- Industrial processor<br>- 3G dongle to connect directly to Pick-it support<br>- Calibration plate and ROi box teaching markers<br>- All connection cables (plug & play)<br>- Quick start guide |
| Screw Driving | | Kilews | Screw Driving Solution Kit | - | Kilews screwdriver kit and pneumatic control box. Each kit includes:<br>- Screwdriver SKD-BN512LM<br>- Power Controller SKP-32BC-60W<br>- Flange E31700-3<br>- Air Nozzle KD-TM-B500<br>- Signal box<br>- Pneumatic control box<br>- Installation guide |
| | | OnRobot | Screwdriver | 103961<br>105121<br>104363<br>104374<br>105870 | Smart screwdriver with screw feeder easily automates multiple screw driving processes with no downtime for manual changeovers. Precise torque control and intelligent error detection ensure quality and consistency.<br>The following accessories are required depending on the screw size.<br>- Screwdriver Accessory Kit Metric: Screwdriver bits system for various screw types and sizes<br>- Screw Feeder M1-6: Automatic feeder for M1 to 6 size screws<br>- Screw Feeder M2-6: Automatic feeder for M2 to 6 size screws<br>- Angle Bracket |

| Category | Appearance | Company | Product Name | Manufacturer SKU Number* | Description |
|---|---|---|---|---|---|
| Vision | | Basler | GigE camera, color, 5 MP, CMOS 2/3 inch, 23 fps | acA2440-20gc, Global Shutter | External camera for eye-to-hand robot applications.Maximum 2 external cameras per robot. |
| | | | GigE camera, mono, 5 MP, CMOS 2/3 inch, 23 fps | acA2440-20gm, Global Shutter | |
| | | | GigE, camera, color, 10 MP, CMOS 1/2.3 inch, 10 fps | acA3800-10gc, Rolling Shutter | |
| | | | GigE, camera, mono, 10 MP, CMOS 1/2.3 inch, 10 fps | acA3800-10gm, Rolling Shutter | |
| | | | GigE, camera, color, 12.2 MP, CMOS 1/1.7 inch, 8 fps | acA4024-8gc, Rolling Shutter | |
| | | | GigE, camera, mono, 12.2 MP, CMOS 1/1.7 inch, 8 fps | acA4024-8gm, Rolling Shutter | |
| | | | GigE camera, color, 5 MP, CMOS 1/2.5 inch, 14 fps | acA2500-14gc, Rolling Shutter | External camera for eye-to-hand robot applications.Maximum 2 external cameras per robot. |
| | | | GigE camera, mono, 5 MP, CMOS 1/2.5 inch, 14 fps | acA2500-14gm, Rolling Shutter | |
| | | | GigE camera, color, 5 MP, CMOS 1 inch, 21 fps | acA2500-20gc, Global Shutter | |
| | | | GigE camera, mono, 5 MP, CMOS 1 inch, 21 fps | acA2500-20gm, Global Shutter | |
| | | Canon | Canon Industrial Imaging Platform Vision Edition for OMRON model | Vision Edition-T | Vision Edition-T is a dedicated model for Omron's TM series of collaborative robots. The unit uses network camera pan-tilt-zoom functionality to perform image processing over a wider range, sending these results to the robot. This product provides more recognition and image processing of robot surroundings, more reach and angle of view, and further expansion of robot abilities. |
| Force Sensor | | ATI | Axia80 | 9105-TM-Axia80 | Six-axis force/torque sensor with EtherCAT communication.<br>Each kit includes:<br>- Interface plate<br>- Power and Ethernet cable<br>- Digital delivery of calibration documents and user manual |
| | | Robotiq | FT-300 | FTS-300-OMRON-KIT | Six-axis force/torque sensor with RS485 Serial Communication.<br>Each kit includes:<br>- Coupling<br>- RS485 to RS232 converter<br>- Power and communication cable with USB adapter<br>- Screw kit |
| | | OnRobot | HEX-E/H | - 100551 HEX-H w/ EtherCAT Converter & Flange A<br>- 100535 HEX-E w/ EtherCAT Converter & Flange A | HEX six-axis force torque sensors use a unique, optical principle to detect the smallest forces acting on the tool, with EtherCAT communication. The OnRobot force control software package is optimized for these sensors. It includes:<br>- HEX-E or HEX H<br>- Mounting plate<br>- Screws<br>- Cable<br>- Torx key<br>Required to connect the sensor to the robots:<br>- Connection kit with Compute Box |
| 7th Axis | | Ewellix | LIFTKIT | LIFTKIT-OM-601 | A ready-to-install system that includes a telescopic column with a mounting interface and controller. Stroke options (mm): 500, 600, 700, 800, 900.<br>Each kit includes:<br>-Telescopic pillar<br>-Controller<br>-TM attachment plate<br>-Bottom fixation plate<br>-Handswitch<br>-Cables and screws |
| Connectivity | | ADLINK | EtherCAT I/O Expansion Modules KIT | EPS - 9905+6000+2032+1132 | A Kit that includes: chassis w/ EtherCAT ports and voltage input, 32-channel digital output module, 32-channel digital input module. |
| | | | EtherCAT I/O Expansion Modules (DO Module) | EPS-2032 | 32-channel digital output module. |
| | | | EtherCAT I/O Expansion Modules (DI Module) | EPS-1132 | 32-channel digital input module. |
| | | Advantech | Serial Device Server EKI-1524-CE | EKI-1524-CE | External device with serial ports that communicates with the robot via TCP/IP. |
| | | | Modbus to PROFINET Gateways | EKI-1242IPNMS | A gateway to transform OMRON TM cobot's Modbus to PROFINET, whereby OMRON TM cobot as slave could communicate with PROFINET master devices. |

| Category | Appearance | Company | Product Name | Manufacturer SKU Number* | Description |
|---|---|---|---|---|---|
| Cable Management | | Murrplastik | FHS-C-SET TM5 (TM5-700 & TM5-900) | 83693500 | Cable management dress pack.<br>Each kit includes:<br>- Conduit (Cable routing hose, Length:2 m, Interior dia.: ~21 mm)<br>- 4 x Attachment straps<br>- 2 x End plugs<br>- Cable insertion tool<br>- Installation instructions |
| | | | FHS-C-SET TM12 / TM14 (TM12 & TM14) | 83693501 | |
| | | | FHS-RS-SET TM5 (TM5-700 & TM5-900 | 83693506 | Cable management dress pack.<br>Each kit includes:<br>- Conduit (Cable routing hose, Length:2 m, Interior dia.: ~21 mm)<br>- 2 x Conduit clamps<br>- Self-retracting hose guide (2 x Ball joint fixing, Ball joint strain relief, Feedback system, System holder)<br>- Tool-end clamp<br>- End sleeve<br>- Cable puller<br>- Installation instructions |
| | | | FHS-RS-SET TM12 / TM14 (TM12 & TM14) | 83693507 | |
| Simulation Software |  | RoboDK | RoboDk Simulation Software | N/A, Download | RoboDK is a powerful and cost-effective simulator and programming tool. No programming skills are required to generate complex robot path. Custom 3D model can be imported to quickly simulate real life application. |
| Teach Pendant | | NexCobot | TP Package-Plug&Play for OM | TP-100-1 | A handheld operating teach pendant, well-integrated with OMRON TM Robot. Features an ergonomic housing with safety elements, 10.1 inch WXGA resolution panel and multi-touch p-cap. |

Manufacturer SKU numbers are 3rd party part numbers, not OMRON part numbers.

# Related Manuals

| Cat. No. | Title |
|---|---|
| **I623** | TM5 Regular Payload Series Hardware Installation Manual |
| **I624** | TM12 & TM14 Medium & Heavy Payload Series Hardware Installation Manual |
| **I678** | TM16 & TM20 Series Hardware Installation 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 |
| **I648** | Safety Manual |
| **I662** | TM Operator Platform Manual |
| **I664** | TM Script Language Manual |
| **I848** | Expression Editor and Listen Node Reference Guide |
| **I853** | TM Conveyor Tracking Manual |

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