

# Robotic Automation

## Industrial Robots Datasheets

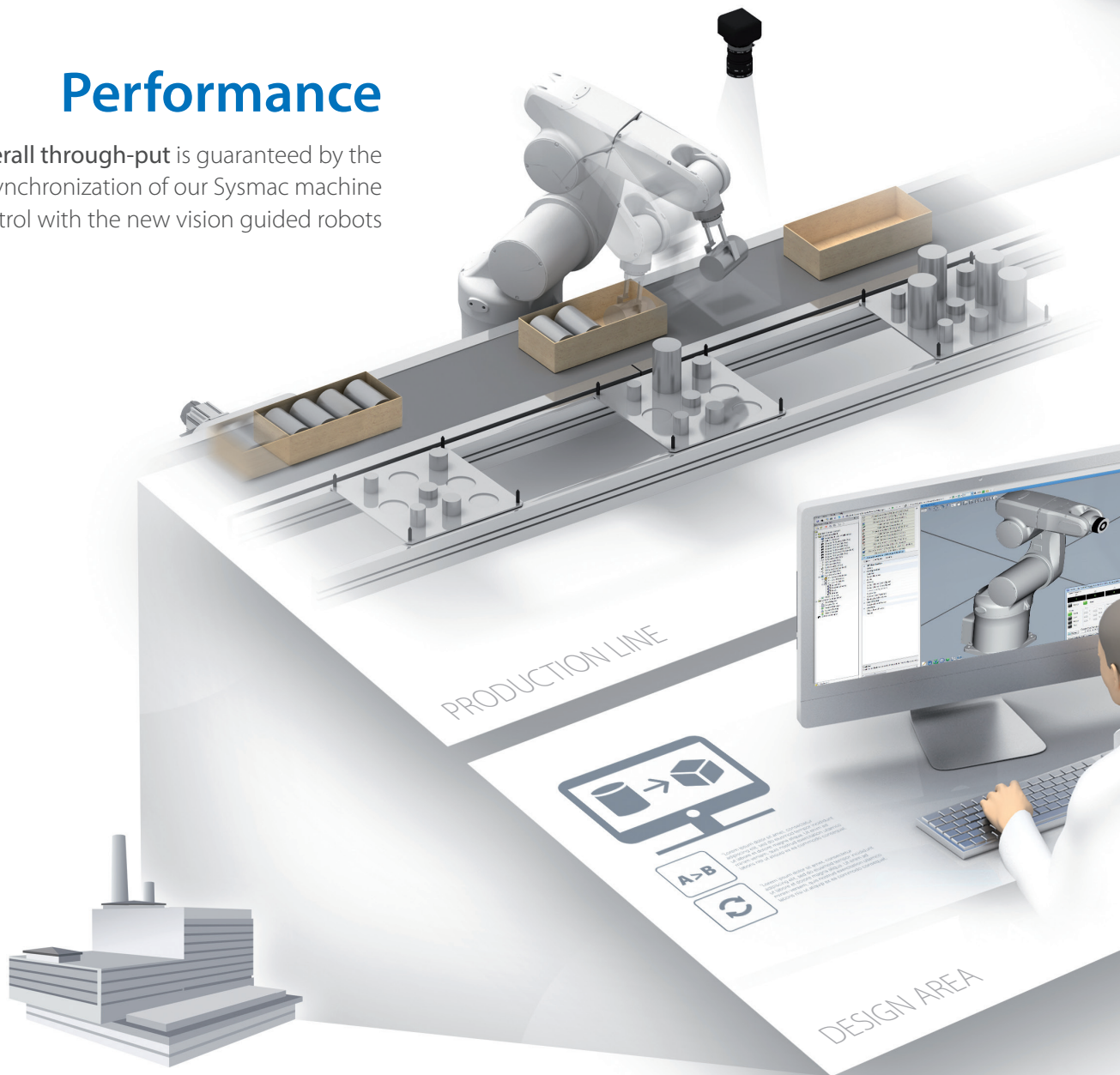


# The Omron's 5 benefits

The new Omron Robotic Automation enhances the most demanding manufacturing lines providing **5 main benefits**

## Performance

Overall through-put is guaranteed by the synchronization of our Sysmac machine control with the new vision guided robots



Smart Factory

## Quick Delivery

5 huge automated warehouses to provide parts in short time.

## Simple

Shortening the startup and maintenance time by the integrated software environment that controls the line.

## Efficient

All the production data coming from robots, controllers, sensors are collected, shared and managed to optimize the productivity.

## Flexible

Software assisted system generates automatically the new programming code.





# Industrial robots - 49 models in 3 categories - provide unique solutions

## Manufacturing site innovation by using robots for various applications

Omron offers robotic automation solutions for applications from cutting-edge production facilities to manual operation processes by using our wide variety of control devices and integrating robotics into automation.

### Parallel robots

The Hornet and Quattro are parallel robots ideal for use in the food and beverage, pharmaceutical, and healthcare industries. The Quattro that is a four-axis parallel robot with a high payload capacity achieves high speed and high precision.

### Feature

- The servo amplifier and controller are fully embedded into the robot, reducing wiring and saving valuable floor space



Hornet 565  
Quattro 650/800





Cobra 350  
eCobra 600/800  
eCobra 800 Inverted



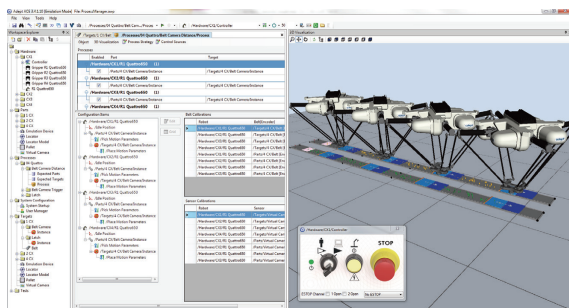
Viper 650/850

**SCARA robots**

High-performance four-axis SCARA robots are ideal for mechanical assembly, material handling, packaging, machine tending, and screw driving. Floor or overhead mounting models are available.

**Articulated robots**



Six-axis articulated robots are ideal for mechanical assembly, material handling, packaging, and palletizing.



**Automation Control Environment (ACE)**





All-in-one software features a simulation function, providing an effective way to deploy applications. ACE provides a host of innovative features that allow you to increase productivity while streamlining configuration setup.

# Robot Lineup

Industry			Recommended process and application	Parallel robot	
Food & Beverage	Digital	Automobile			
				Hornet 565	Quattro 650/800
			Primary packing	●	●
			Secondary packing	●	●
			Aligning, packaging	●	●
			Shipping and receiving (palletizing)		
			Tightening units		
			General assembling		
			Deburring and polishing		
			Sealing		
			Measuring, inspection, testing		●
			Resin molding		
			Press operation handling		
			Machine loading		
			Sealing		
			Measuring, inspection, testing		
			Material handling		
			Mounting	Inverted	
			Payload capacity	3 kg (8 kg *1)	600: 6 kg (15 kg *2) 800: 4 kg (10 kg *2)
			Radius	565 mm	650 to 800 mm
			Reach	---	---
			Position repeatability	±0.10 mm	±0.10 mm

\*1. without rotation axis

\*2. Quattro using P30

SCARA robot			Articulated robot
			
Cobra 350	eCobra 600/800	eCobra 800 Inverted	Viper 650/850
●	●	●	
●	●	●	●
	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
			●
	●	●	●
	●	●	●
	●	●	●
	●	●	●
			●
Table / Floor		Inverted	Table/Floor/Inverted
5 kg	5.5 kg	5.5 kg	5 kg
---	---	---	---
350 mm	600 to 800 mm	800 mm	653 to 855 mm
±0.015 mm	±0.017 mm	±0.017 mm	±0.02 to 0.03 mm

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# Hornet 565

Parallel robot ideal for use in the food and beverage, pharmaceutical, and healthcare industries



- Ethernet capability to control the robot through the familiar programming language (IEC 61131-3) of Machine Automation controller NJ/NX series
- The amplifier and controller built into the robot reduces the number of cables
- Tracks up to a conveyor speed of 1.4 m/s
- Designed with a high payload to support multi-hand (multi-picking)
- Supports fast Pick & Place on a fast conveyor
- Helps reduce mounting cost and robot vibration
- Maximum working diameter 1,130 mm
- Working height 425 mm
- Maximum payload 8 kg
- Weight 52 kg
- Protection IP65 \*2

## Specifications

Product name		Hornet	
		565	
Size		3 axes	4 axes
Type			
Model		1720□-45600	1720□-45604
Number of axes		3	4
Mounting		inverted	
Working volume	X,Y axis (stroke)	1130 mm	
	Z axis (stroke)	425 mm	
	theta axis (rotation angle)	-	±360°
Maximum Payload		8 kg	3 kg
Repeatability		±0.10 mm	
Cycle times, sustained (at 20°C ambient)	Payload 0.1 kg	0.32 s *1	0.35 s *1
	Payload 1.0 kg	0.34 s *1	0.37 s *1
	Payload 3.0 kg	0.38 s *1	0.42 s *1
Power Requirements		24 VDC: 6 A 200 to 240 VAC: 10 A, single-phase	
Protection	Base	IP65 *2	
	Platform	IP67	
Environment Requirements	Ambient Temperature	1 to 40°C	
	Humidity Range	5 to 90% (non-condensing)	
Weight		52 kg	
Basic configuration	Controller	eAIB	
	On-board I/O (Input/Output)	12/8	
	Conveyor tracking input	2	
	RS-232C serial communications port	1	
	Programming environment	ACE, PackXpert, PLC	
	ePLC Connect	Yes	
Connectable controller *3		SmartController EX, NJ/NX Series *4	
ePLC I/O		Yes	

\*1. Adept cycle, in mm (25/305/25)

\*2. IP67: arms and platform, IP65:underside of robot, IP20: topside of robot, IP65:topside of robot (with option cover)

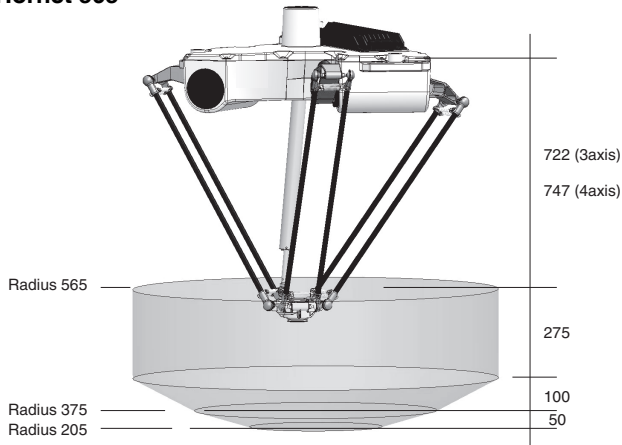
\*3. Choose a controller to suit your application.

\*4. The robot version 2.3.C is required to connect with the NX/NJ Series.

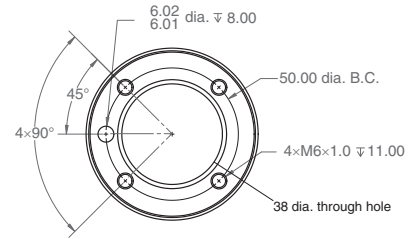
# Dimensions

(Unit: mm)

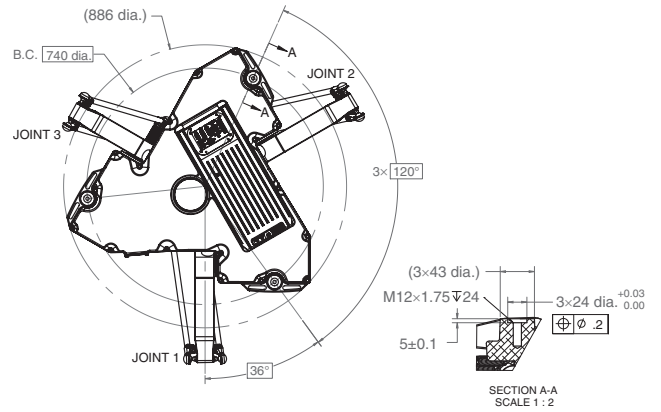
## Hornet 565



## Flange



## Footprint



## Front panel



# Robot Parts Code and Bundled Accessories

Type	Hornet	Hornet Add-On
<b>Hornet 565 3Axis</b>	17201-45600	17203-45600
<b>Hornet 565 4Axis</b>	17201-45604	17203-45604
<b>Overview</b>	Robot + eAIB with fully integrated controller	Robot + eAIB required connection cables
<b>Purpose</b>	Typical for use in single robot system	Typically added to systems with an existing SmartController EX to create multi-robot systems
<b>Bundled Accessories</b>	<ul style="list-style-type: none"> <li>• XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>• Front panel kit (90356-10358)</li> </ul>	<ul style="list-style-type: none"> <li>• XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>• XSYS cable, 5m/15 ft (11585-000)</li> <li>• DB9 splitter (00411-000)</li> <li>• 1394 latch cable, 5m/15 ft, 13632-045)</li> <li>• eV+ license to connect to controller (14529-103)</li> </ul>

**Note:** OMRON also provides other types of model. Ask your OMRON sales representative for details.

# Quattro 650H/HS

## Four-axis parallel robot achieves high speed and high precision

- Ethernet capability to control the robot through the familiar programming language (IEC 61131-3) of Machine Automation controller NJ/NX series
- Four-axis arm evenly distributes the load on the robot
- Fast and high-precision conveyance and assembly
- Designed with a high payload to support multi-hand (multi-picking)
- Supports fast Pick & Place on a fast conveyor
- Meets the sanitary standards of the United States Department of Agriculture for prevention of product contamination
- Maximum working diameter 1,300 mm
- Working height 500 mm
- Maximum payload 15 kg
- Weight 117 kg
- Protection IP66 (HS type)



## Specifications

Product name		Quattro	
		650	
Size		H	HS
Type		1720□-2600□	1720□-2601□
Model		1720□-2600□	1720□-2601□
Number of axes		4	4
Mounting		inverted	
Working volume	X,Y axis (stroke)	1300 mm	
	Z axis (stroke)	500 mm	
	theta axis (rotation angle)	0° (fixed) (P30)	
		±46.25° (P31)	
±92.5° (P32)			
Maximum Payload		6 kg (P30: 15kg)	
Repeatability		±0.10mm	
Cycle times, sustained (at 20°C ambient)	Payload 0.1 kg	0.30s *1, 0.46 s *2	
	Payload 1.0 kg	0.36s *1, 0.47 s *2	
	Payload 2.0 kg	0.37s *1, 0.52 s *2	
	Payload 4.0 kg	0.41s *1, 0.58 s *2	
	Payload 6.0 kg	0.43s *1, 0.61 s *2	
Power Requirements		24 VDC: 11 A (eAIB, SmartController) 200 to 240 VAC: 10 A, single-phase	
Protection	Base	IP65 (with optional cable sealing kit)	IP66
	Tooling	IP67	IP67
Environment Requirements	Ambient Temperature	1 to 40°C	
	Humidity Range	5 to 90% (non-condensing)	
Weight		117 kg	
USDA-Accepted for meat and poultry processing		---	Yes
Basic configuration	Controller	SmartController EX	
	On-board I/O (Input/Output)	12/8	
	Conveyor tracking input	4	
	RS-232C serial communications port	1	
	Programming environment	ACE, PackXpert, PLC	
	ePLC Connect	Yes	
	ePLC I/O	Yes	
Connectable controller *3		SmartController EX, NJ/NX Series *4	

\*1. Adept cycle, in mm (25/305/25)

\*2. Extended cycle, in mm (25/700/25)

\*3. Choose a controller to suit your application.

\*4. The robot version 2.3.C is required to connect with the NX/NJ Series.

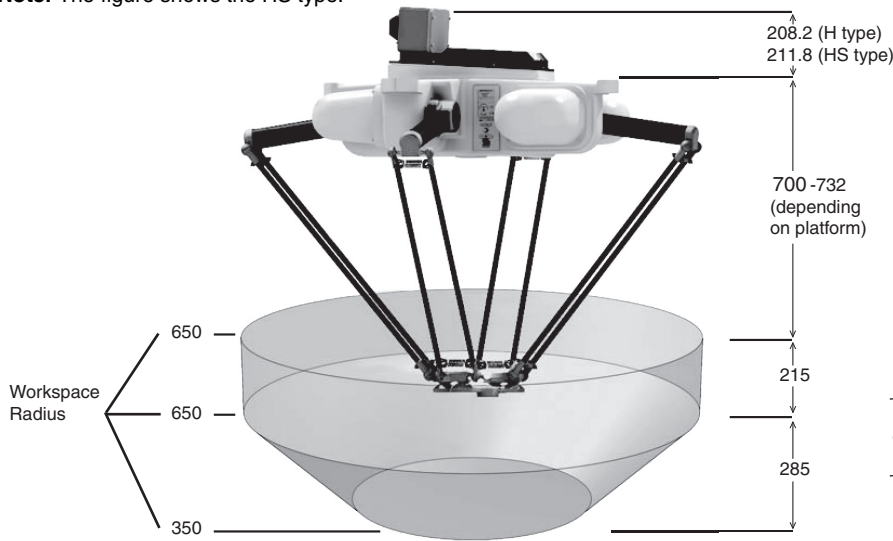


# Dimensions

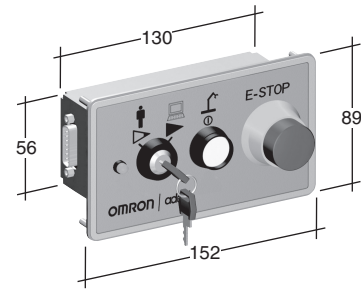
(Unit: mm)

## Quattro 650H/HS

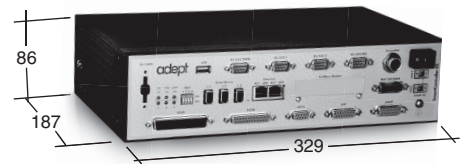
Note: The figure shows the HS type.







## Front panel



## SmartController EX



Four choices of platform offer different ranges of rotation.

Appearance				
Type	P30	P31	P32	P34
Rotation angle	No rotation	$\pm 46.25^\circ$	$\pm 92.5^\circ$	$\pm 185^\circ$
Maximum Payload	H: 15 Kg, HS: 12 Kg	H: 6 Kg, HS: 3 Kg	H: 6 Kg, HS: 3 Kg	H: 6 Kg, HS: 3 Kg

Note: The platform appearances of the H type are shown above. The platform of the HS type is made of stainless steel.

## Robot Parts Code and Bundled Accessories

Type	Quattro with EX Controller	Quattro Add-On
Quattro 650H P30	17204-26000	17203-26000
Quattro 650H P31	17204-26001	17203-26001
Quattro 650H P32	17204-26002	17203-26002
Quattro 650H P34	17204-26004	17203-26004
Quattro 650HS P30	17204-26010	17203-26010
Quattro 650HS P31	17204-26011	17203-26011
Quattro 650HS P32	17204-26012	17203-26012
Quattro 650HS P34	17204-26014	17203-26014
Overview	Robot + eAIB+ SmartController EX + required connection cables	Robot + eAIB + required connection cables
Purpose	Typical for use in single robot system and multi-robot systems.	Typically added to systems with an existing SmartController EX to create multi-robot systems
Bundled Accessories	<ul style="list-style-type: none"> <li>XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>SmartController EX (09200-000)</li> <li>XSYS cable, 5m/15 ft (11585-000)</li> <li>1394 latch cable, 5m/15 ft, 13632-045)</li> <li>Front panel kit (90356-10358)</li> <li>eV+ license to connect to controller (14529-103)</li> </ul>	<ul style="list-style-type: none"> <li>XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>XSYS cable, 5m/15 ft (11585-000)</li> <li>DB9 splitter (00411-000)</li> <li>1394 latch cable, 5m/15 ft, 13632-045)</li> <li>eV+ license to connect to controller (14529-103)</li> </ul>

Note: OMRON also provides other types of model. Ask your OMRON sales representative for details.

# Quattro 800H

## Four-axis parallel robot achieves high speed and high precision

- Ethernet capability to control the robot through the familiar programming language (IEC 61131-3) of Machine Automation controller NJ/NX series
- Four-axis arm evenly distributes the load on the robot
- Fast and high-precision conveyance and assembly
- Designed with a high payload to support multi-hand (multi-picking)
- Supports fast Pick & Place on a fast conveyor
- Maximum working diameter 1,600 mm
- Working height 500 mm
- Maximum payload 10 kg
- Weight 117 kg
- Protection IP65 (with optional cable sealing kit)



## Specifications

<b>Product name</b>		<b>Quattro</b>
	<b>Size</b>	<b>800</b>
	<b>Type</b>	<b>H</b>
<b>Model</b>		1720□-2630□
<b>Number of axes</b>		4
<b>Mounting</b>		inverted
<b>Working volume</b>	<b>X,Y axis (stroke)</b>	1600 mm
	<b>Z axis (stroke)</b>	500 mm
	<b>theta axis (rotation angle)</b>	0° (fixed) (P30)
		±46.25° (P31)
±92.5° (P32)		
±185° (P34)		
<b>Maximum Payload</b>		4 kg (P30:10 kg)
<b>Repeatability</b>		±0.10 mm
<b>Cycle times, sustained (at 20°C ambient)</b>	<b>Payload 0.1 kg</b>	0.33 s *1, 0.48 s *2
	<b>Payload 1.0 kg</b>	0.38 s *1, 0.50 s *2
	<b>Payload 2.0 kg</b>	0.40 s *1, 0.55 s *2
	<b>Payload 4.0 kg</b>	0.45 s *1, 0.62 s *2
<b>Power Requirements</b>		24 VDC: 11 A (eAIB, SmartController) 200 to 240 VAC: 10 A, single-phase
<b>Protection</b>	<b>Base</b>	IP65 (with optional cable sealing kit)
	<b>Tooling</b>	IP67
<b>Environment Requirements</b>	<b>Ambient Temperature</b>	1 to 40°C
	<b>Humidity Range</b>	5 to 90% (non-condensing)
<b>Weight</b>		117 kg
<b>Basic configuration</b>	<b>Controller</b>	SmartController EX
	<b>On-board I/O (Input/Output)</b>	12/8
	<b>Conveyor tracking input</b>	4
	<b>RS-232C serial communications port</b>	3
	<b>Programming environment</b>	ACE, PackXpert, PLC
	<b>ePLC Connect</b>	Yes
	<b>ePLC I/O</b>	Yes
<b>Connectable controller *3</b>		SmartController EX, NJ/NX Series *4

\*1. Adept cycle, in mm (25/305/25)

\*2. Extended cycle, in mm (25/700/25)

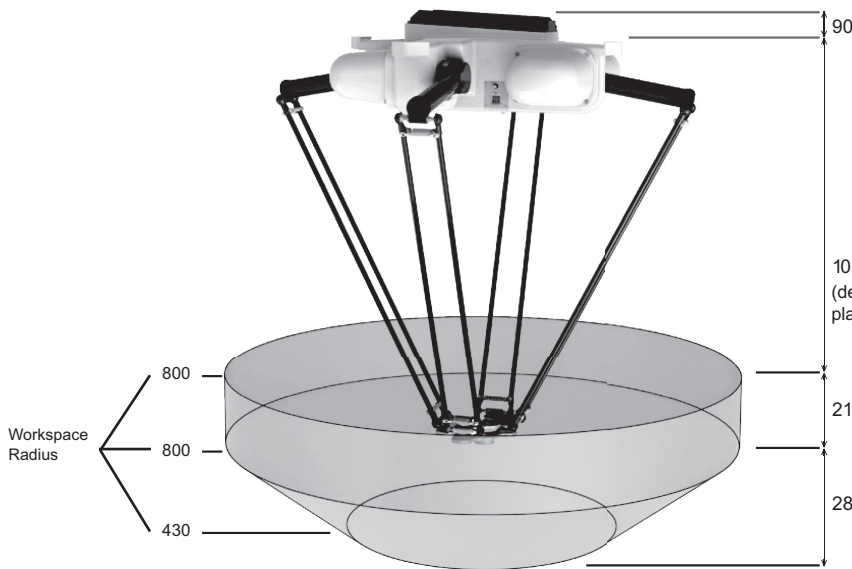
\*3. Choose a controller to suit your application.

\*4. The robot version 2.3.C is required to connect with the NX/NJ Series.

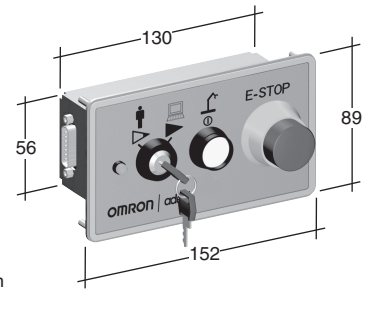
# Dimensions

(Unit: mm)

## Quattro 800H

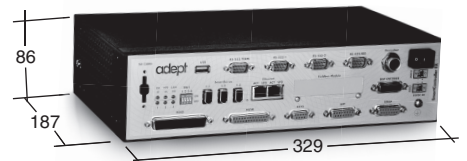


## Front panel







1005 – 1033  
(depending on platform)

## SmartController EX



Four choices of platform offer different ranges of rotation.

Appearance				
Type	P30	P31	P32	P34
Rotation angle	No rotation	$\pm 46.25^\circ$	$\pm 92.5^\circ$	$\pm 185^\circ$
Maximum Payload	10 Kg	4 Kg	4 Kg	4 Kg

## Robot Parts Code and Bundled Accessories

Type	Quattro with EX Controller	Quattro Add-On
Quattro 800H P30	17204-26300	17203-26300
Quattro 800H P31	17204-26301	17203-26301
Quattro 800H P32	17204-26302	17203-26302
Quattro 800H P34	17204-26304	17203-26304
Overview	Robot + eAIB+ SmartController EX + required connection cables	Robot + eAIB + required connection cables
Purpose	Typical for use in single robot system and multi-robot systems.	Typically added to systems with an existing SmartController EX to create multi-robot systems
Bundled Accessories	<ul style="list-style-type: none"> <li>XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>SmartController EX (09200-000)</li> <li>XSYS cable, 5m/15 ft (11585-000)</li> <li>1394 latch cable, 5m/15 ft, 13632-045)</li> <li>Front panel kit (90356-10358)</li> <li>eV+ license to connect to controller (14529-103)</li> </ul>	<ul style="list-style-type: none"> <li>XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>XSYS cable, 5m/15 ft (11585-000)</li> <li>DB9 splitter (00411-000)</li> <li>1394 latch cable, 5m/15 ft, 13632-045)</li> <li>eV+ license to connect to controller (14529-103)</li> </ul>

Note: OMRON also provides other types of model. Ask your OMRON sales representative for details.



# Cobra 350

## Small SCARA robot for precision machining, assembly, and material handling

- Ethernet capability to control the robot through the familiar programming language (IEC 61131-3) of Machine Automation controller NJ/NX series
- High repeatability suitable for precision assembly
- High payload for screw-driving tools
- The separate amplifier with a built-in controller minimizes the robot footprint
- Reach 350 mm
- Maximum payload 5 kg
- Weight 20 kg
- Protection IP20
- Cleanroom class 10 option



## Specifications

Product name		Cobra
	Size	350
Model		1720□-13000
Number of axes		4
Mounting		table/floor
Reach		350 mm
Maximum Payload		5 kg
Repeatability	XY	±0.015 mm
	Z	±0.01 mm
	Theta	±0.005°
Joint Range	Joint 1	±155°
	Joint 2	±145°
	Joint 3	200 mm
	Joint 4	±360°
Joint Speeds	Joint 1	720°/s
	Joint 2	720°/s
	Joint 3	2000 mm/s
	Joint 4	2400°/s
Power Requirements		24 VDC: 6 A 200 to 240 VAC: 10 A, single-phase
Protection		IP20
Environment Requirements	Ambient Temperature	5 to 40°C
	Humidity Range	5 to 90% (non-condensing)
Weight		20 kg
Basic configuration	Controller	eAIB
	On-board I/O (Input/Output)	12/8
	Conveyor tracking input	2
	RS-232C serial communications port	1
	Programming environment	ACE, PackXpert, PLC
	ePLC Connect	Yes
	ePLC I/O	Yes
Connectable controller *1		eMotionBlox-40R, SmartController EX, NJ/NX Series *2

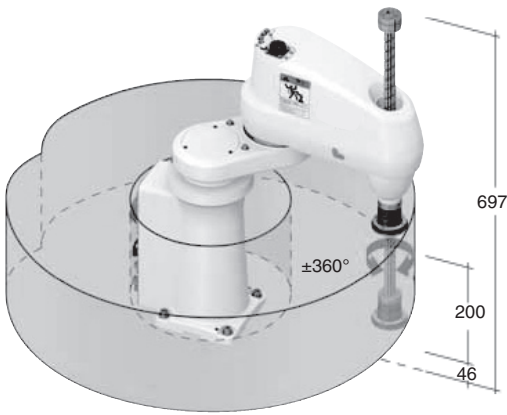
\*1. Choose a controller to suit your application.

\*2. The robot version 2.3.C is required to connect with the NX/NJ Series.

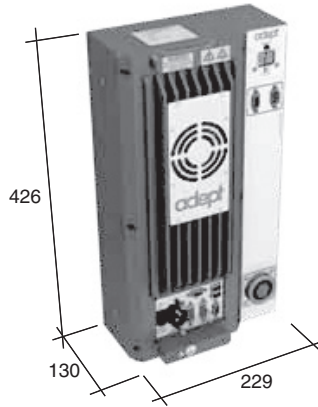
# Dimensions

(Unit: mm)

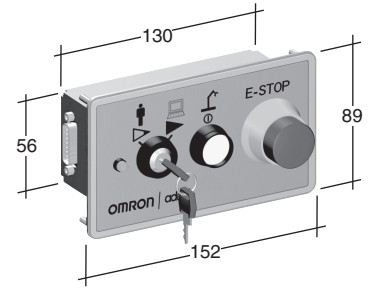
**Cobra 350**



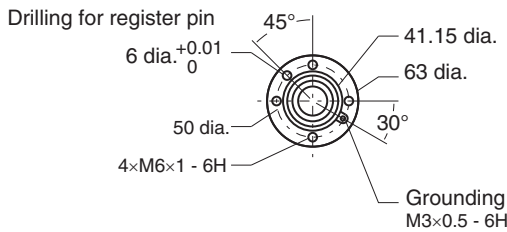
**eMotion Blox-40R**



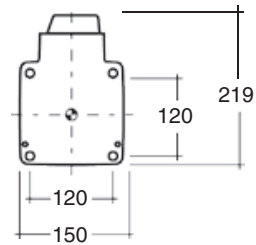
**Front panel**



**Flange**



**Footprint**



## Robot Parts Code and Bundled Accessories

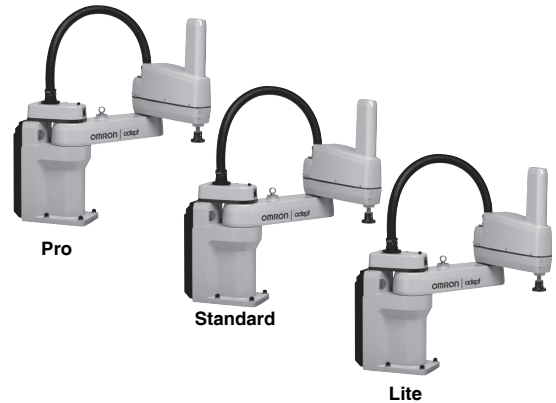
Type	Cobra 350	Cobra 350 Add-On
<b>Cobra 350</b>	17201-13000	17203-13000
<b>Overview</b>	Robot + eMotionBlox amplifier with fully integrated controls	Robot + eMotionBlox + required connection cables
<b>Purpose</b>	Typical for use in single robot system	Typically added to systems with an existing SmartController EX to create multi-robot systems
<b>Bundled Accessories</b>	<ul style="list-style-type: none"> <li>• XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>• Front panel kit (90356-10358)</li> </ul>	<ul style="list-style-type: none"> <li>• XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>• XSYS cable, 5m/15 ft (11585-000)</li> <li>• DB9 splitter (00411-000)</li> <li>• 1394 latch cable, 5m/15 ft, 13632-045)</li> <li>• eV+ license to connect to controller (14529-103)</li> </ul>

**Note:** OMRON also provides other types of model. Ask your OMRON sales representative for details.

# eCobra 600 Lite/Standard/Pro

## Mid-size SCARA robot for precision machining, assembly, and material handling

- Ethernet capability to control the robot through the familiar programming language (IEC 61131-3) of Machine Automation controller NJ/NX series
- High repeatability suitable for material handling and precision assembly
- High payload for screw-driving tools
- The amplifier and controller built into the robot reduces the number of cables
- Choose the right robot for you application from three different types
- Reach 600 mm
- Maximum payload 5.5 kg
- Weight 41 kg
- Protection IP20
- Cleanroom class 10 option



## Specifications

Product name		eCobra		
		600		
Size		600 Lite	600 Standard	600 Pro
Type				
Model		17000-16000	1710□-16000	1720□-16000
Number of axes		4	4	4
Mounting		table/floor		
Reach		600 mm		
Maximum Payload		5.5 kg		
Repeatability	XY	±0.017 mm		
	Z	±0.003 mm		
	Theta	±0.019°		
Joint Range	Joint 1	±105°		
	Joint 2	±157.5°		
	Joint 3	210 mm		
	Joint 4	±360°		
Inertia Moment (Max.)	Joint 4	450 kg-cm <sup>2</sup>		
Joint Speeds	Joint 1	386°/s		
	Joint 2	720°/s		
	Joint 3	1100mm/s		
	Joint 4	1200°/s		
Cycle times (Payload 2.0 kg)	Burst	0.66 s *1	0.55 s *1	0.39 s *1
	Sustained	0.66 s *1	0.55 s *1	0.45 s *1
Power Requirements		24 VDC: 6 A 200 to 240 VAC: 10 A, single-phase		
Protection		IP20		
Environment Requirements	Ambient Temperature	5 to 40°C		
	Humidity Range	5 to 90% (non-condensing)		
Weight		41 kg		
Basic configuration	Controller	eAIB		
	On-board I/O (Input/Output)	12/8, 4 Solenoid Output		
	Conveyor tracking input	No		2
	RS-232C serial communications port	No		1
	Programming environment	ACE	ACE, PackXpert, PLC	
	ACE Sight	No *2	Yes	
	ePLC Connect	No	Yes	
ePLC I/O	No	No	Yes	
Connectable controller *3		No	SmartController EX, NJ/NX Series *4	

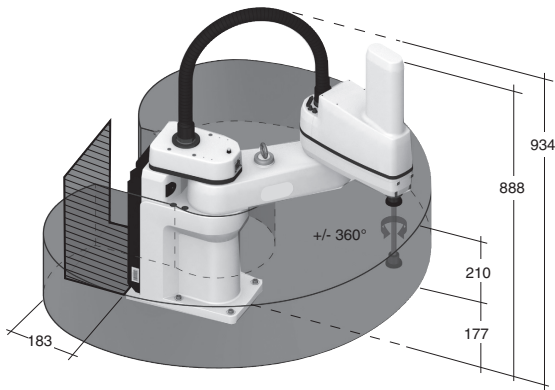
\*1. Adept cycle, in mm 25/305/25 (seconds, at 20°C ambient)  
 \*2. The SmartVision MX cannot be used with the Lite type.  
 \*3. Choose a controller to suit your application.  
 \*4. The robot version 2.3.C is required to connect with the NX/NJ Series.



# Dimensions

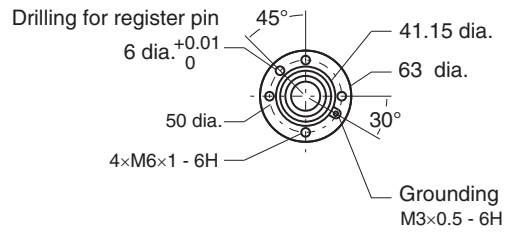
(Unit: mm)

## eCobra 600

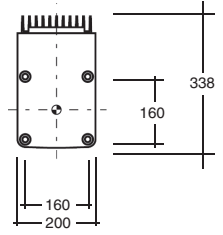


- Work Envelope: Radius 600 mm  
Inner Limit: Radius 163 mm  
Height: 210 mm
- ▨ Required clearance to open eAIB Chassis

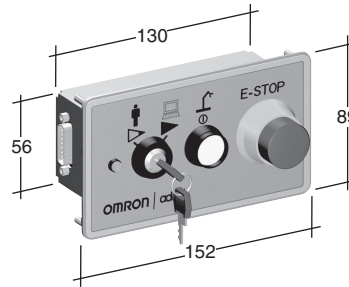
### Flange



### Footprint



### Front panel



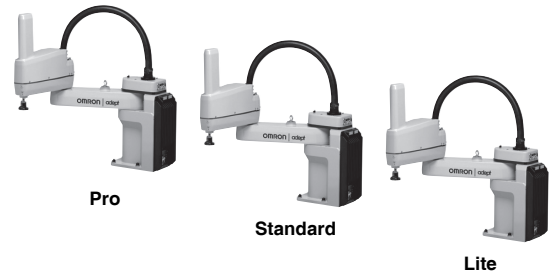
## Robot Parts Code and Bundled Accessories

Type	eCobra	eCobra Add-On
eCobra 600 Lite	17000-16000	---
eCobra 600 Standard	17101-16000	17103-16000
eCobra 600 Pro	17201-16000	17203-16000
Overview	Robot + eAIB with fully integrated controls	Robot + eAIB with required connection cables
Purpose	Typical for use in single robot system	Typically added to systems with an existing SmartController EX to create multi-robot systems
Bundled Accessories	<ul style="list-style-type: none"> <li>• XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>• Front panel kit (90356-10358)</li> </ul>	<ul style="list-style-type: none"> <li>• XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>• XSYS cable, 5m/15 ft (11585-000)</li> <li>• DB9 splitter (00411-000)</li> <li>• 1394 latch cable, 5m/15 ft, 13632-045)</li> <li>• eV+ license to connect to controller (14529-103)</li> </ul>

**Note:** OMRON also provides other types of model. Ask your OMRON sales representative for details.

# eCobra 800 Lite/Standard/Pro

## Large SCARA robot for precision machining, assembly, and material handling



- Ethernet capability to control the robot through the familiar programming language (IEC 61131-3) of Machine Automation controller NJ/NX series
- Reach is extended to 800 mm without compromising repeatability
- High payload for screw-driving tools
- The amplifier and controller built into the robot reduces the number of cables
- Choose the right robot for you application from three different types
- Reach 800 mm
- Maximum payload 5.5 kg
- Weight 43 kg
- Protection IP20 (IP65 option)
- Cleanroom class 10 option

## Specifications

Product name		eCobra		
		800		
Size		800 Lite	800 Standard	800 Pro
Type				
Model		17000-18000	1710□-18000	1720□-18000
Number of axes		4	4	4
Mounting		table/floor		
Reach		800 mm		
Maximum Payload		5.5 kg		
Repeatability	XY	±0.017 mm		
	Z	±0.003 mm		
	Theta	±0.019°		
Joint Range	Joint 1	±105°		
	Joint 2	±157.5°		
	Joint 3	210 mm		
	Joint 4	±360°		
Inertia Moment (Max.)	Joint 4	450 kg-cm <sup>2</sup>		
Joint Speeds	Joint 1	386°/s		
	Joint 2	720°/s		
	Joint 3	1100 mm/s		
	Joint 4	1200°/s		
Cycle times (Payload 2.0 kg)	Burst	0.73 s *1	0.62 s *1	0.44 s *1
	Sustained	0.73 s *1	0.62 s *1	0.54 s *1
Power Requirements		24 VDC: 6 A 200 to 240 VAC: 10 A, single-phase		
Protection		IP20 (IP65 option)		
Environment Requirements	Ambient Temperature	5 to 40°C		
	Humidity Range	5 to 90% (non-condensing)		
Weight		43 kg		
Basic configuration	Controller	eAIB		
	On-board I/O (Input/Output)	12/8, 4 Solenoid Output		
	Conveyor tracking input	No		2
	RS-232C serial communications port	No	1	
	Programming environment	ACE	ACE, PackXpert, PLC	
	ACE Sight	No *2	Yes	
	ePLC Connect	No	Yes	
ePLC I/O		No	Yes	
Connectable controller *3		No	SmartController EX, NJ/NX Series *4	

\*1. Adept cycle, in mm 25/305/25 (seconds, at 20°C ambient)

\*2. The SmartVision MX cannot be used with the Lite type.

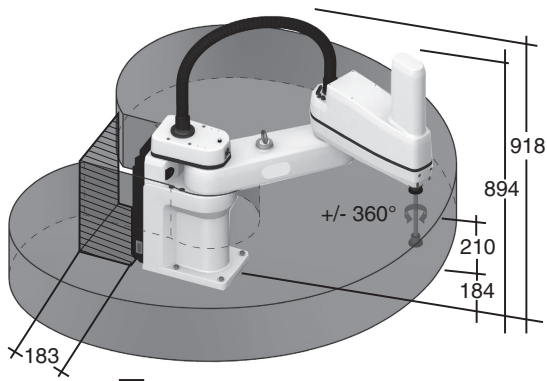
\*3. Choose a controller to suit your application.

\*4. The robot version 2.3.C is required to connect with the NX/NJ Series.

# Dimensions

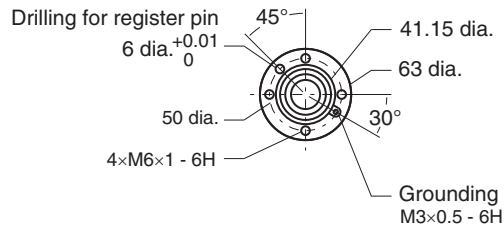
(Unit: mm)

## eCobra 800

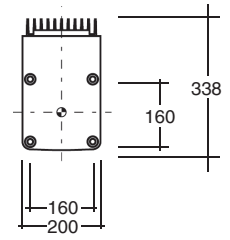


- Work Envelope: Radius 800 mm  
Inner Limit: Radius 164 mm  
Height: 210 mm
- Required clearance to open eAIB Chassis

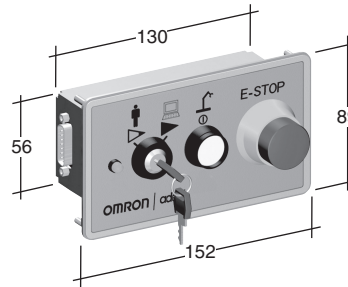
### Flange



### Footprint



### Front panel



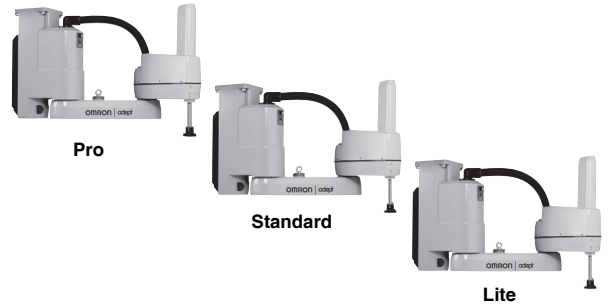
## Robot Parts Code and Bundled Accessories

Type	eCobra	eCobra Add-On
eCobra 800 Lite	17000-18000	---
eCobra 800 Standard	17101-18000	17103-18000
eCobra 800 Pro	17201-18000	17203-18000
Overview	Robot + eAIB with fully integrated controls	Robot + eAIB with required connection cables
Purpose	Typical for use in single robot system	Typically added to systems with an existing SmartController EX to create multi-robot systems
Bundled Accessories	<ul style="list-style-type: none"> <li>• XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>• Front panel kit (90356-10358)</li> </ul>	<ul style="list-style-type: none"> <li>• XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>• XSYS cable, 5m/15 ft (11585-000)</li> <li>• DB9 splitter (00411-000)</li> <li>• 1394 latch cable, 5m/15 ft, 13632-045)</li> <li>• eV+ license to connect to controller (14529-103)</li> </ul>

**Note:** OMRON also provides other types of model. Ask your OMRON sales representative for details.

# eCobra 800 Inverted Lite/Standard/Pro

## Overhead-mount large SCARA robot for precision machining, assembly, and material handling



- Ethernet capability to control the robot through the familiar programming language (IEC 61131-3) of Machine Automation controller NJ/NX series
- Overhead-mounting configuration for efficient use of space
- High payload for screw-driving tools
- The amplifier and controller built into the robot reduces the number of cables
- Choose the right robot for you application from three different types
- Reach 800 mm
- Maximum payload 5.5 kg
- Weight 51 kg
- Protection IP20 (IP65 option)
- Cleanroom class 10 option

## Specifications

Product name		eCobra Inverted		
		800		
Size		800 Lite	800 Standard	800 Pro
Type				
Model		17000-18400	1710□-18400	1720□-18400
Number of axes		4	4	4
Mounting		inverted		
Reach		800 mm		
Maximum Payload		5.5 kg		
Repeatability	XY	±0.017 mm		
	Z	±0.003 mm		
	Theta	±0.019°		
Joint Range	Joint 1	±23.5°		
	Joint 2	±156.5°		
	Joint 3	210 mm		
	Joint 4	±360°		
Inertia Moment (Max.)	Joint 4	450 kg-cm <sup>2</sup>		
Joint Speeds	Joint 1	386°/s		
	Joint 2	720°/s		
	Joint 3	1100 mm/s		
	Joint 4	1200°/s		
Power Requirements		24 VDC: 6 A 230 VAC: 10 A		
Protection		IP20 (IP65 option)		
Environment Requirements	Ambient Temperature	5 to 40°C		
	Humidity Range	5 to 90% (non-condensing)		
Weight		51 kg		
Basic configuration	Controller	eAIB		
	On-board I/O (Input/Output)	12/8, 4 Solenoid Output		
	Conveyor tracking input	No		2
	RS-232C serial communications port	No	1	
	Programming environment	ACE	ACE, PackXpert, PLC	
	ACE Sight	No *1	Yes	
	ePLC Connect	No	Yes	
ePLC I/O		No		Yes
Connectable controller *2		No	SmartController EX, NJ/NX Series *3	

\*1. The SmartVision MX cannot be used with the Lite type.

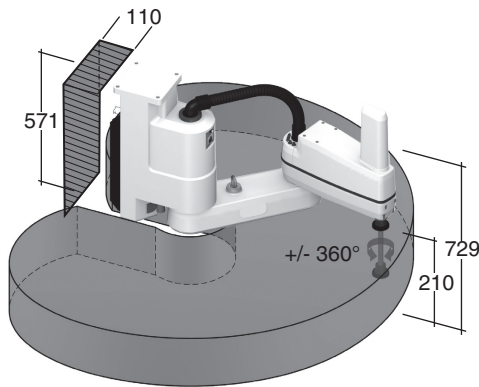
\*2. Choose a controller to suit your application.

\*3. The robot version 2.3.C is required to connect with the NX/NJ Series.

# Dimensions

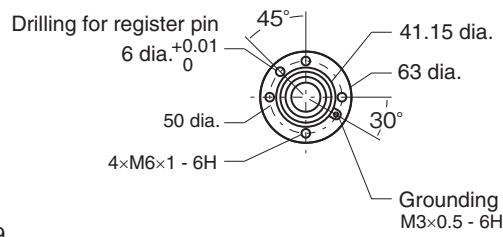
(Unit: mm)

## eCobra Inverted 800

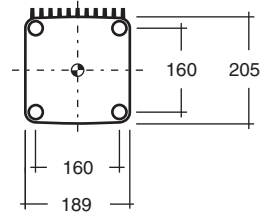


- Work Envelope: Radius 800 mm  
Inner Limit: Radius 167 mm  
Height: 210 mm
- Required clearance to open eAIB Chassis

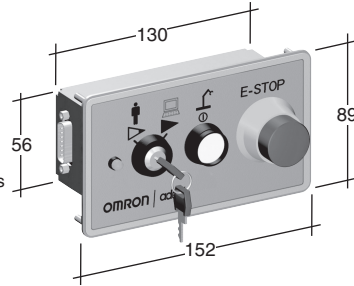
## Flange



## Footprint



## Front panel



# Robot Parts Code and Bundled Accessories

Type	eCobra	eCobra Add-On
eCobra 800 Inverted Lite	17000-18400	---
eCobra 800 Inverted Standard	17101-18400	17103-18400
eCobra 800 Inverted Pro	17201-18400	17203-18400
Overview	Robot + eAIB with fully integrated controls	Robot + eAIB with required connection cables
Purpose	Typical for use in single robot system	Typically added to systems with an existing SmartController EX to create multi-robot systems
Bundled Accessories	<ul style="list-style-type: none"> <li>XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>Front panel kit (90356-10358)</li> </ul>	<ul style="list-style-type: none"> <li>XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>XSYS cable, 5m/15 ft (11585-000)</li> <li>DB9 splitter (00411-000)</li> <li>1394 latch cable, 5m/15 ft, 13632-045)</li> <li>eV+ license to connect to controller (14529-103)</li> </ul>

**Note:** OMRON also provides other types of model. Ask your OMRON sales representative for details.

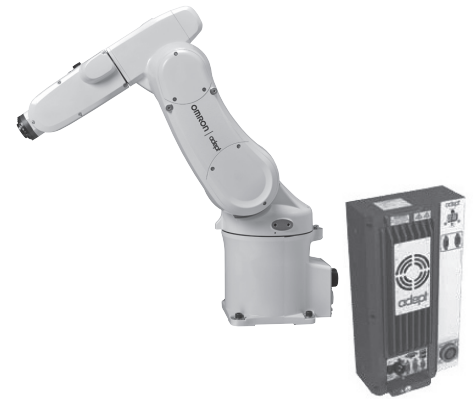


# Articulated Robots

# Viper 650

## Articulated robot for machining, assembly, and material handling

- Ethernet capability to control the robot through the familiar programming language (IEC 61131-3) of Machine Automation controller NJ/NX series
- A compact footprint using the amplifier with a built-in controller
- Diagnostics display enables faster trouble shooting
- High-resolution, absolute encoders to provide high accuracy, superior slow-speed following, and easy calibration
- High-efficiency, low-inertia Harmonic Drives and a lightweight arm to deliver maximum acceleration
- Reach 653 mm
- Maximum payload 5 kg
- Weight 28 kg
- Protection IP40 \*1
- Cleanroom class 10 option



## Specifications

Product name		Viper
	Size	650
Model		1720□-36000
Mounting		Table/Floor/Inverted
Number of axes		6
Reach		653 mm
Maximum Payload		5 kg
Repeatability	XYZ	±0.02 mm
Joint Range	Joint 1	±170°
	Joint 2	-190°, +45°
	Joint 3	-29°, +256°
	Joint 4	±190°
	Joint 5	±120°
	Joint 6	±360°
Inertia Moment (Max.)	Joint 4	0.295 kgm <sup>2</sup>
	Joint 5	0.295 kgm <sup>2</sup>
	Joint 6	0.045 kgm <sup>2</sup>
Joint Speeds	Joint 1	328°/s
	Joint 2	300°/s
	Joint 3	375°/s
	Joint 4	375°/s
	Joint 5	375°/s
	Joint 6	600°/s

Product name		Viper
	Size	650
Power Requirements		24VDC: 6A 200 to 240VAC: 10A, single-phase
Protection		IP40 *1
Environment Requirements	Ambient Temperature	5 to 40°C
	Humidity Range	5 to 90% (non-condensing)
Weight		28 kg
cULus Compliant		(Yes) *2
Basic configuration	Controller	eMotionBlox-60R
	On-board I/O (Input/Output)	12/8
	Conveyor tracking input	2
	RS-232C serial communications port	1
	Programming environment	ACE, PackXpert, PLC
	ePLC Connect	Yes
ePLC I/O		Yes
Connectable controller *3		eMotionBlox-60R, SmartController EX, NJ/NX Series *4

\*1. IP54: main body, IP65: robot joints (J4, J5, J6)

\*2. cULus option

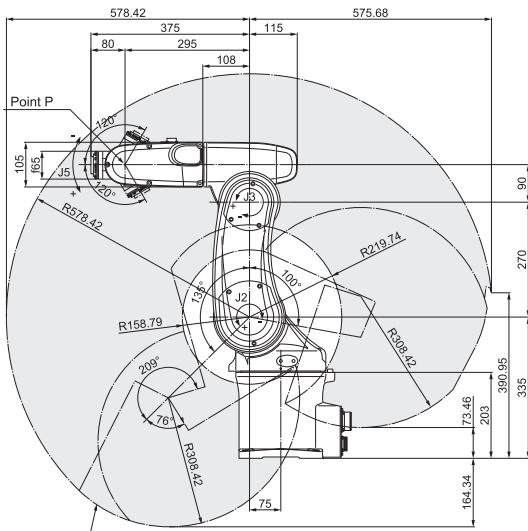
\*3. Choose a controller to suit your application.

\*4. The robot version 2.3.C is required to connect with the NX/NJ Series.

# Dimensions

(Unit: mm)

## Viper 650

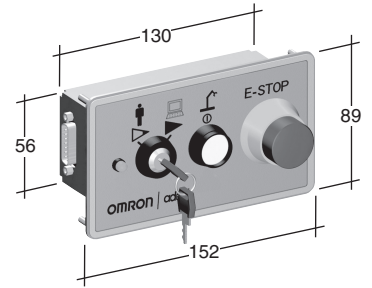


Workable space defined by point P

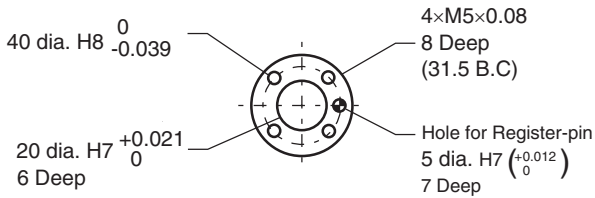
## eMotion Blox -60R



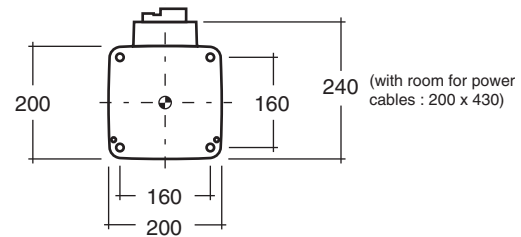
## Front panel



## Flange



## Footprint



# Robot Parts Code and Bundled Accessories

Type	Viper	Viper Add-On
Viper 650	17201-36000	17203-36000
Overview	Robot + eMotionBlox60N amplifier with fully integrated controls	Robot + eMotionBlox60N + required connection cables
Purpose	Typical for use in single robot system	Typically added to systems with an existing SmartController EX to create multi-robot systems
Bundled Accessories	<ul style="list-style-type: none"> <li>XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>Front panel kit (90356-10358)</li> </ul>	<ul style="list-style-type: none"> <li>XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>XSYS cable, 5m/15 ft (11585-000)</li> <li>DB9 splitter (00411-000)</li> <li>1394 latch cable, 5m/15 ft, 13632-045)</li> <li>eV+ license to connect to controller (14529-103)</li> </ul>

Note: OMRON also provides other types of model. Ask your OMRON sales representative for details.

# Articulated Robots

# Viper 850

## Articulated robot for machining, assembly, and material handling

- Ethernet capability to control the robot through the familiar programming language (IEC 61131-3) of Machine Automation controller NJ/NX series
- A compact footprint using the amplifier with a built-in controller
- Diagnostics display enables faster trouble shooting
- High-resolution, absolute encoders to provide high accuracy, superior slow-speed following, and easy calibration
- High-efficiency, low-inertia Harmonic Drives and a lightweight arm to deliver maximum acceleration
- Reach 855 mm
- Maximum payload 5 kg
- Weight 29 kg
- Protection IP40 \*1
- Cleanroom class 10 option



## Specifications

Product name		Viper
	Size	850
<b>Model</b>		1720□-38000
<b>Mounting</b>		Table/Floor/Inverted
<b>Number of axes</b>		6
<b>Reach</b>		855 mm
<b>Maximum Payload</b>		5 kg
<b>Repeatability</b>	XYZ	±0.03 mm
<b>Joint Range</b>	Joint 1	±170°
	Joint 2	-190°, +45°
	Joint 3	-29°, +256°
	Joint 4	±190°
	Joint 5	±120°
	Joint 6	±360°
<b>Inertia Moment (Max.)</b>	Joint 4	0.295 kgm <sup>2</sup>
	Joint 5	0.295 kgm <sup>2</sup>
	Joint 6	0.045 kgm <sup>2</sup>
<b>Joint Speeds</b>	Joint 1	250°/s
	Joint 2	250°/s
	Joint 3	250°/s
	Joint 4	375°/s
	Joint 5	375°/s
	Joint 6	600°/s

Product name		Viper
	Size	850
<b>Power Requirements</b>		24VDC: 6A 200 to 240VAC: 10A, single-phase
<b>Protection</b>		IP40 *1
<b>Environment Requirements</b>	<b>Ambient Temperature</b>	5 to 40°C
	<b>Humidity Range</b>	5 to 90% (non-condensing)
<b>Weight</b>		29 kg
<b>cULus Compliant</b>		---
<b>Basic configuration</b>	<b>Controller</b>	eMotionBlox-60R
	<b>On-board I/O (Input/Output)</b>	12/8
	<b>Conveyor tracking input</b>	2
	<b>RS-232C serial communications port</b>	1
	<b>Programming environment</b>	ACE, PackXpert, PLC
	<b>ePLC Connect</b>	Yes
	<b>ePLC I/O</b>	Yes
<b>Connectable controller *2</b>		eMotionBlox-60R, SmartController EX, NJ/NX Series *3

\*1. IP54: main body, IP65: robot joints (J4, J5, J6)

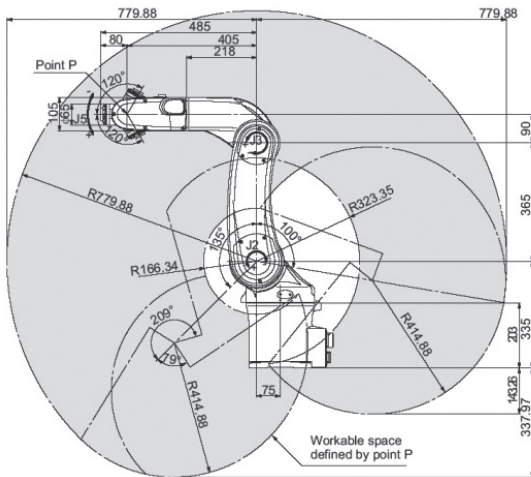
\*2. Choose a controller to suit your application.

\*3. The robot version 2.3.C is required to connect with the NX/NJ Series.

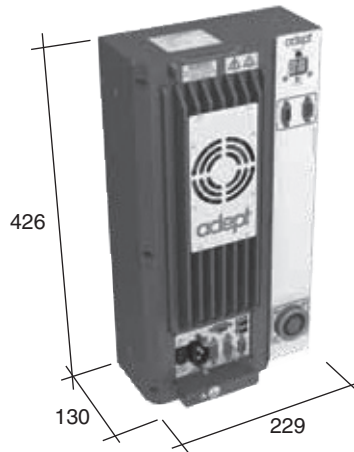
# Dimensions

(Unit: mm)

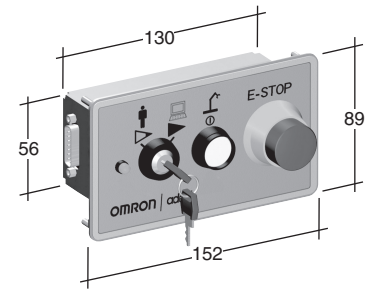
## Viper 850



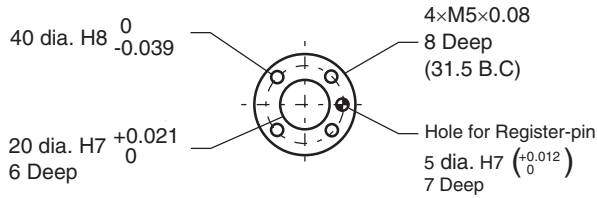
## eMotion Blox -60R



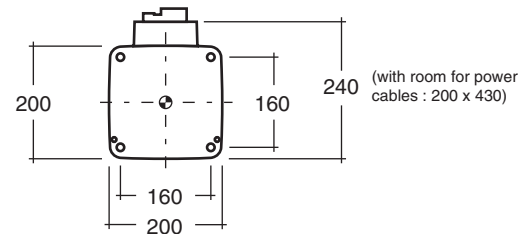
## Front panel



## Flange



## Footprint



# Robot Parts Code and Bundled Accessories

Type	Viper	Viper Add-On
Viper 850	17201-38000	17203-38000
Overview	Robot + eMotionBlox60N amplifier with fully integrated controls	Robot + eMotionBlox60N + required connection cables
Purpose	Typical for use in single robot system	Typically added to systems with an existing SmartController EX to create multi-robot systems
Bundled Accessories	<ul style="list-style-type: none"> <li>XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>Front panel kit (90356-10358)</li> </ul>	<ul style="list-style-type: none"> <li>XSYS cable with jumpers, 2m/6ft (13323-000)</li> <li>XSYS cable, 5m/15 ft (11585-000)</li> <li>DB9 splitter (00411-000)</li> <li>1394 latch cable, 5m/15 ft, 13632-045)</li> <li>eV+ license to connect to controller (14529-103)</li> </ul>

**Note:** OMRON also provides other types of model. Ask your OMRON sales representative for details.

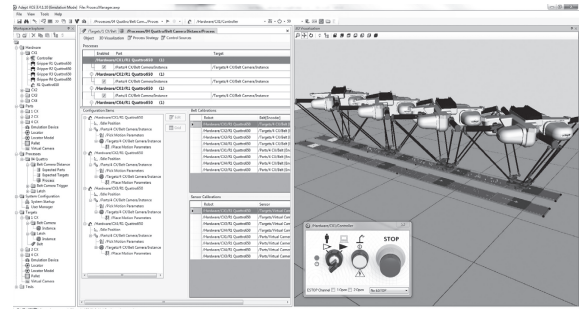
# Automation Control Environment (ACE)

**ACE provides a host of innovative features that allow you to increase productivity while streamlining configuration setup**

The ACE is a PC-based software package that helps you quickly and easily set up your robot system. The software makes it easy to configure single and multi-robot systems.



- ACE PackXpert is the intelligent software choice designed to manage packaging systems from integration to deployment
- ACE PackXpert provides the underlying robot programming based on the system configuration
- Built-in customization allows for any line configuration and advanced load balancing
- Wizard-based user-friendly interface to calibrate and teach the robots
- Tightly-integrated vision option (ACE Sight) enables vision-guided conveyor-tracking
- Display and share process statistics
- Built-in UI Builder to create a custom operator interface



## ACE PackXpert

The ACE PackXpert is intelligent software designed to manage a packaging line from integration and deployment through operation. The software walks you through the configuration of packaging applications by setting up process-specific items, such as controllers, robots, and conveyor belts.

**Scalable**

Manage robots on packaging lines

**Fast**

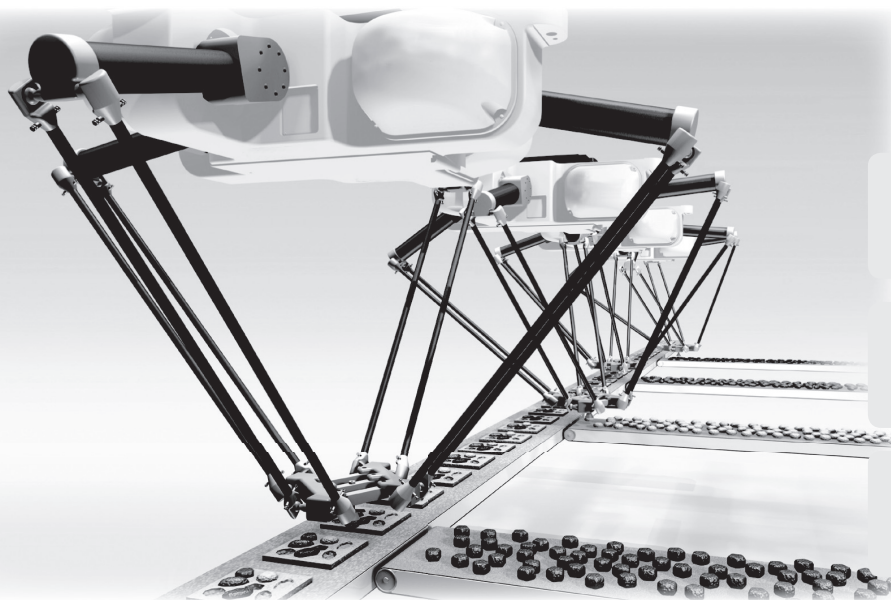
Deploy your application faster through a user-friendly GUI

**Reusable**

Use across a variety of applications

**Complete**

Adjust control settings through V+ and C#



**Versatile**

No lengthy programming required

**Adaptable**

Create your own operator interface with the built-in UI Builder

**Visual**

Get a 3D view of your packaging line



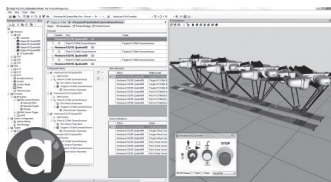
## ACE License Configuration

license	Explanation
ACE PackXpert	Enables full functionality of the ACE PackXpert software and includes one Controller license that would allow you to connect one controller. You will need to add the appropriate controller, vision, camera, and OPC server/client licenses required for your application.
ACE Sight Vision Software	Enables the ACE Sight software functionality. This license includes 1 Controller licence that would allow you to connect (and communicate with) 1 controller and 2 Camera licenses that would allow you to use up to 2 cameras.
Controller	Provides support for the controllers in the ACE PackXpert and ACE Sight. You must have one controller license for each controller you wish to use with the ACE PackXpert or ACE Sight. For example, 4 Controller licenses would allow you to connect (and communicate with) up to 4 controllers in your application.
Additional Camera Option	Provides support for physical cameras. You must have one Camera license for each physical camera you wish to use in your application. For example, 3 Camera licenses would allow you to use up to 3 physical cameras in your application.
Color Camera Option	Provides support for color vision.
OPC Server	Enables OPC data communications.
OPC Client	Provides OPC client capability for each controller (client). You must have one OPC Client license for each OPC client you wish to communicate with in your application. For example, 2 OPC Client licenses would allow you to use OPC data communications with 2 controllers in your application.

**Note:** When you create robot programs without using wizards, the ACE license is not required.

## System Requirements

Item	Requirement
Operating system (OS)	Windows Vista (32-bit version) / Windows 7 (32-bit/64-bit version) / Windows 8 (32-bit/64-bit version) / Windows 8.1 (32-bit/64-bit version) / Windows 10 (32-bit/64-bit version)
CPU	Intel® Core™ i7 or equivalent or faster recommended.
Main memory	2 GB min. (8 GB min. recommended.)
Video memory	512 MB min.
Hard disk	At least 1 GB of available space
Display	XGA 1,024 × 768, 16 million colors. WXGA 1,280 × 800 min. recommended
Communications ports	USB port (for hardware key), Ethernet port
Supported languages	Japanese, English, German, simplified Chinese



### Automation Control Environment (ACE)

The ACE is a PC-based software package that helps you quickly and easily set up your robot system. The ACE is available to download from Omron Adept Technologies Inc. website.  
<http://www.adept.com/Robots-Tool>

# SmartController EX

## High-performance robot motion controller capable of high-speed processing

- Controls up to four robots
- Gigabit Ethernet
- 12 inputs/8 outputs
- Ultra-compact form factor for high footprint efficiency
- Integration with configuration software ACE to control complex mechanisms through user-friendly interface



## Specifications

Item	Specifications	
Model	19300-000	
Grounding Method	Ground to less than 100 Ω	
Dimensions (Height × Depth × Width)	86 × 187 × 329 mm	
Weight	2.6 kg	
Power Supply	24 VDC±10%	
Current Consumption	5 A	
Power Consumption	120 W	
Operation Environment	Ambient Temperature	5 to 40°C
	Humidity Range	5 to 90% (non-condensing)
Mounting	Panel mount, rack mount, stack mount, desktop	
Communications Port	RS-232 (115 kbps), RS422/485, Gigabit Ethernet, DeviceNet	
On-board I/O (Input/Output)	12/8	
Conveyor tracking input	4	

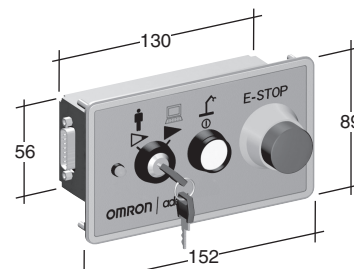
## Dimensions

(Unit: mm)

SmartController EX



Front panel



**Note:** Front Panel is provided with the SmartController EX.

# SmartVision MX

## Dependable vision system optimized for robot applications

- Fanless construction
- Supports up to eight cameras simultaneously
- Capable of processing high resolution and high frame rate images
- Dedicated software ACE Sight provides easy-to-use object location and inspection tools
- GigE PoE and USB 3.0 ports for a wide variety of cameras
- A wide operating temperature range and SSD ensure high reliability



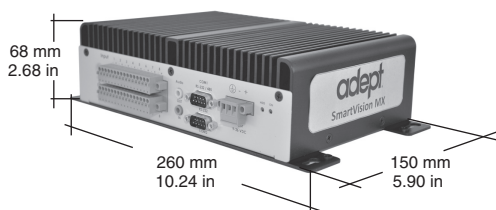
## Specifications

Item		Specifications
Model		14189-901
Grounding Method		Ground to less than 100 Ω
Dimensions (Height × Depth × Width)		68 × 150 × 260 mm
Weight		2.16 kg
CPU		Intel® Core™ i7
Main Memory		8 GB DDR3 RAM
Power Supply		10 to 32 VDC
Current Consumption		4.2 A (24 VDC), 7.0 A max. (when using 4 cameras)
Power Consumption		9 to 36 VDC
Operation Environment	Ambient Temperature	0 to 50°C
	Humidity Range	5 to 90% (non-condensing)
Communications Port	Ethernet	Gigabit Ethernet × 2, Gigabit Ethernet with PoE × 4 15.7 W per channel
	USB	USB 3.0 × 4, USB 2.0 × 2
	Display	DVI-D × 1 (up to 1,920 × 1,200 @60 Hz), DVI-I × 1 (up to 2,048 × 1,536 @75 Hz)
I/O		8 inputs, 8 outputs

## Dimensions

(Unit: mm)

### SmartVision MX





### Dongle



**Note:** The dongle is bundled with the ACE License. Insert the dongle into the USB port of the SmartVision MX.

## Camera Variations

GigE type						
						
<b>Model</b>	24114-100	24114-101	24114-200	24114-201	24114-250	24114-300
<b>Image elements</b>	1/4-inch CCD	1/4-inch CCD	1/3-inch CCD	1/3-inch CCD	1/1.8-inch CMOS	1-inch CMOS
<b>Effective pixels</b>	640(H) x 480(V)	640(H) x 480(V)	1296(H) x 996(V)	1296(H) x 996(V)	1600(H) x 1200(V)	2048(H) x 2048(V)
<b>Color/Monochrome</b>	Monochrome	Color	Monochrome	Color	Monochrome	Monochrome
<b>Frame rate</b>	120 fps	120 fps	30 fps	30 fps	60 fps	25 fps
<b>Trigger input</b>	<ul style="list-style-type: none"> <li>• Software trigger</li> <li>• External trigger</li> </ul>				• Software trigger	<ul style="list-style-type: none"> <li>• Software trigger</li> <li>• External trigger</li> </ul>
<b>I/F</b>	Gigabit Ethernet (1 Gbit/s)					
<b>Lens mounting</b>	<ul style="list-style-type: none"> <li>• C mount</li> <li>• CS mount</li> </ul>				• C mount	
<b>Power supply voltage</b>	PoE or 12 VDC					
<b>Power consumption (PoE/AUX)</b>	2.3 W/2.0 W		2.5 W/2.2 W		3.0 W	2.8 W/2.5 W
<b>Weight</b>	Approx. 90 g					

USB type			
			
<b>Model</b>	24164-100	24164-200	24164-300
<b>Image elements</b>	1/4-inch CCD	1/3-inch CCD	1-inch CMOS
<b>Effective pixels</b>	640(H) x 480(V)	1296(H) x 966(V)	2048(H) x 2048(V)
<b>Color/Monochrome</b>	Monochrome	Monochrome	Monochrome
<b>Frame rate</b>	120 fps	30 fps	90 fps
<b>Trigger input</b>	<ul style="list-style-type: none"> <li>• Software trigger</li> <li>• External trigger</li> </ul>		
<b>I/F</b>	USB 3.0		
<b>Lens mounting</b>	<ul style="list-style-type: none"> <li>• C mount</li> <li>• CS mount</li> </ul>		• C mount
<b>Power supply voltage</b>	Via USB 3.0 interface		
<b>Power consumption (PoE/AUX)</b>	2.4 W	3.0 W	3.2 W
<b>Weight</b>	80 g		

# Pendant T20 Pendant

## Excellent operability and ergonomic design

- Tested for a 1.5 meter drop onto industrial flooring
- Displays custom messages
- Emergency stop switch (dual channel circuit)
- Enable switches on back
- Lightweight for fatigue-free operation
- Bright display with backlight and contrast adjustment



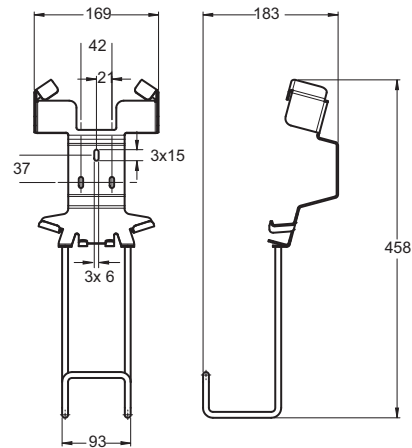
## Dimensions

(Unit: mm)

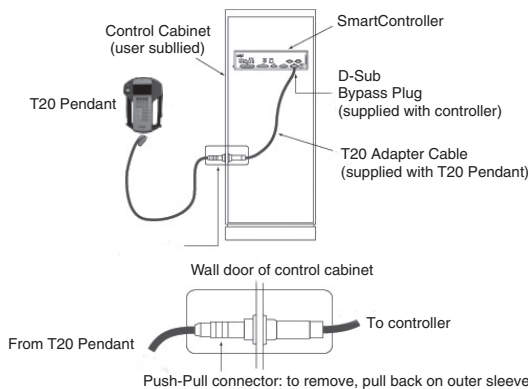
### T20 Pendant



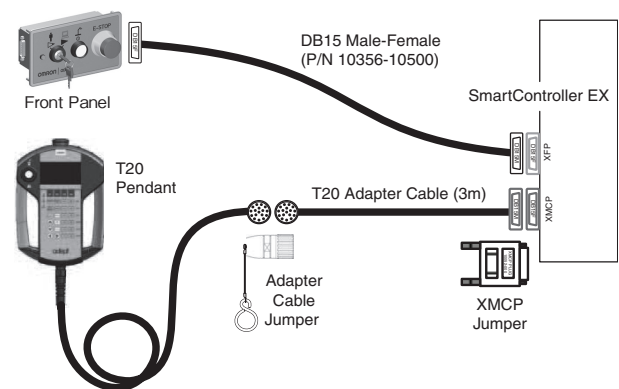
## Wall Bracket Dimensions - Optional



## Connection to SmartController



## Panel and Front panel Installation

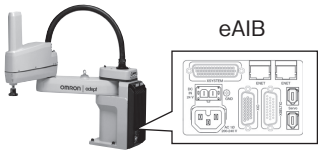

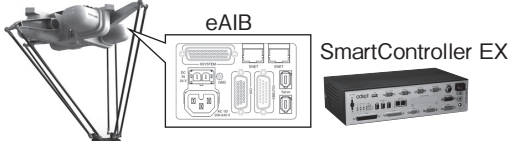


Name	Details	Model
Pendant	T20 Pendant, 10m Cable	10046-010
	T20 Pendant-Jumper Plug	10048-000
	T20 Pendant Wall Bracket	10079-000



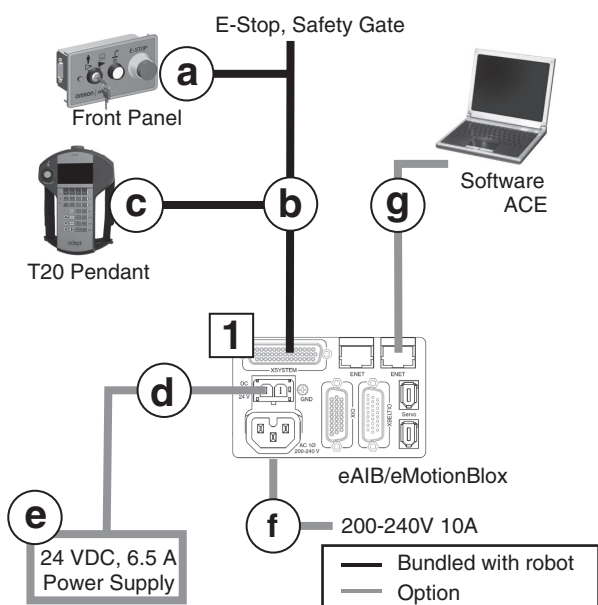
# System Configuration

## Amplifiers with Built-in Controller

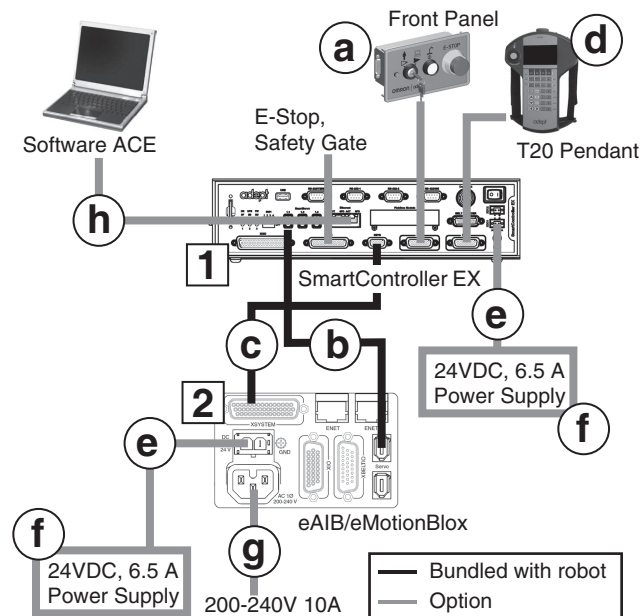
Robot	Description
Hornet 565, eCobra	Embedded into the robot. (eAIB) 
Cobra 350, Viper	A separate amplifier (eMotionBlox). Bundled with the robot. 
Quattro	A separate amplifier (SmartController EX). Bundled with the robot. (The SmartController EX can be sold separately.) 

## Basic configuration

### Control by eAIB/eMotionBlox



### Control by SmartController EX



## Cobra 350, eCobra, Viper, Hornet

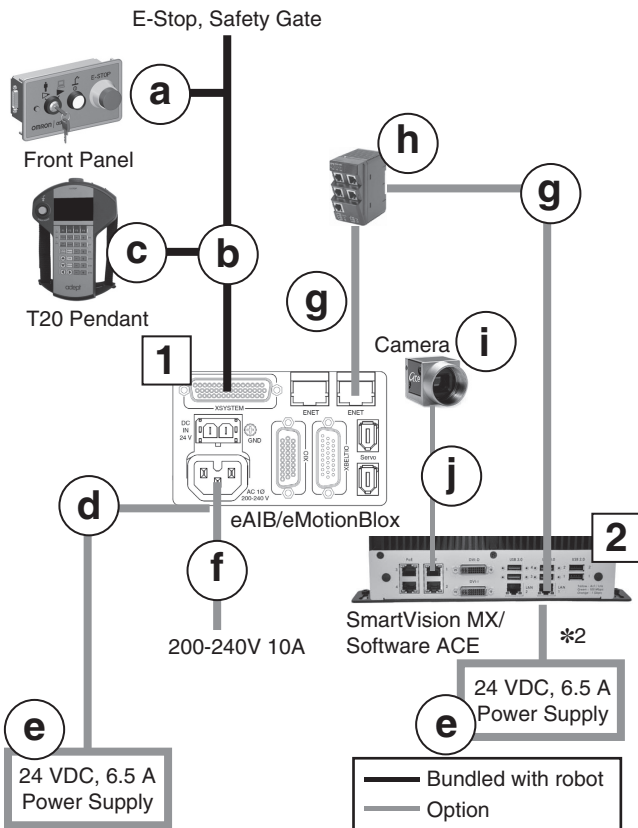
Part	Name	Model	Note	Qty
1	Robot	17□□□-□□□□□		1
a	Front Panel with Cable	90356-10358	Bundled with Robot	(1)
b	eAIB XSYSTEM Cable	13323-000	Bundled with Robot	(1)
c	T20 Pendant with Cable	10046-010		1
d	24 VDC Power Cable	04120-000		1
e	24 VDC, 6.5 A Power Supply	S8JX-G15024C or S8JX-G15024CD		1
f	AC Power Cable	04118-000		1
g	Ethernet Cable	XS6W-6LSZH8SS□□ □CM-Y		1
---	ACE PackXpert License	09187-000	When you create robot programs without using wizards, the ACE license is not required.	1

## Quattro

Part	Name	Model	Note	Qty
2	Robot	17204-2□□□□		1
1	SmartController EX	09200-000	Bundled with Robot	(1)
a	Front Panel with Cable	90356-10358	Bundled with Robot	(1)
b	IEEE 1394 cable	13632-045	Bundled with Robot	(1)
c	eAIB XSYS Cable	11585-000	Bundled with Robot	(1)
d	T20 Pendant with Cable	10046-010		1
e	24 VDC Power Cable	04120-000		2
f	24 VDC, 6.5 A Power Supply	S8JX-G15024C or S8JX-G15024CD		2
g	AC Power Cable	04118-000		1
h	Ethernet Cable	XS6W-6LSZH8SS□□□ □CM-Y		1
---	ACE PackXpert License	09187-000	When you create robot programs without using wizards, the ACE license is not required.	1

## Vision tracking robot system

Control by eAIB/eMotionBloX with SVMX (When using a vision system)



### Cobra 350, eCobra, Viper, Hornet

Part	Name	Model	Note	Qty
1	Robot	17□□□□-□□□□□□		1
a	Front Panel with Cable	90356-10358	Bundled with Robot	(1)
b	eAIB XSYSTEM Cable	13323-000	Bundled with Robot	(1)
c	T20 Pendant with Cable	10046-010		1
d	24 VDC Power Cable	04120-000		1
e	24 VDC, 6.5 A Power Supply	S8JX-G15024C or S8JX-G15024CD		2
f	AC Power Cable	04118-000		1
g	Ethernet Cable	XS6W-6LSZH8SS□□□CM-Y		2
h	Industrial Switching Hubs	W4S1-05C		1
2	SmartVision MX	14189-901	Bundling a 24 VDC connector	1
i	Camera	Refer to the Ordering Information.		1 *1
j	Camera cable	---	Bundled with Camera	1 *1
---	ACE PackXpert with ACE Sight Vision License	09187-010	Including 2 monochrome camera licenses *3	1

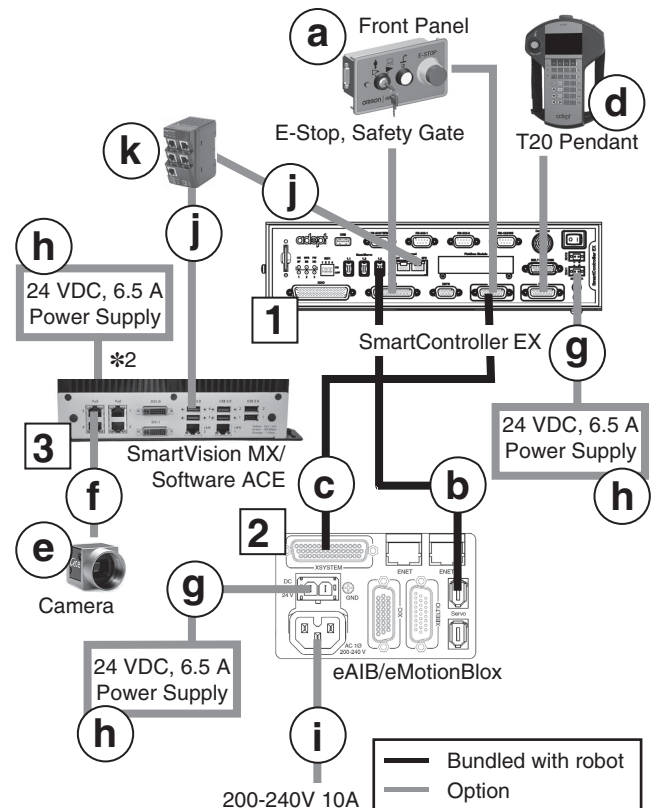
\*1. Qty depends on a system.

\*2. User-supplied shielded power cable.

\*3. When using color cameras, purchase the ACE License Color Camera Option (09287-040).

When using 3 or more cameras, purchase the ACE License Additional Camera Option (09287-000) for more than 2 cameras.

Control by SmartController EX (When using a vision system)



### Quattro

Part	Name	Model	Note	Qty
2	Robot	17204-2□□□□□		1
1	SmartController EX	09200-000	Bundled with Robot	(1)
a	Front Panel with Cable	90356-10358	Bundled with Robot	(1)
b	IEEE 1394 cable	13632-045	Bundled with Robot	(1)
c	eAIB XSYS Cable	11585-000	Bundled with Robot	(1)
d	T20 Pendant with Cable	10046-010		1
3	SmartVision MX	14189-901		1
e	Camera	Refer to the Ordering Information.		1 *1
f	Camera cable	---	Bundled with Camera	1 *1
g	24 VDC Power Cable	04120-000		2
h	24 VDC, 6.5 A Power Supply	S8JX-G15024C or S8JX-G15024CD		3
i	AC Power Cable	04118-000		1
j	Ethernet Cable	XS6W-6LSZH8SS□□□CM-Y		2
k	Industrial Switching Hubs	W4S1-05C		1
---	ACE PackXpert with ACE Sight Vision License	09187-010	Including 2 monochrome camera licenses *3	1

\*1. Qty depends on a system.

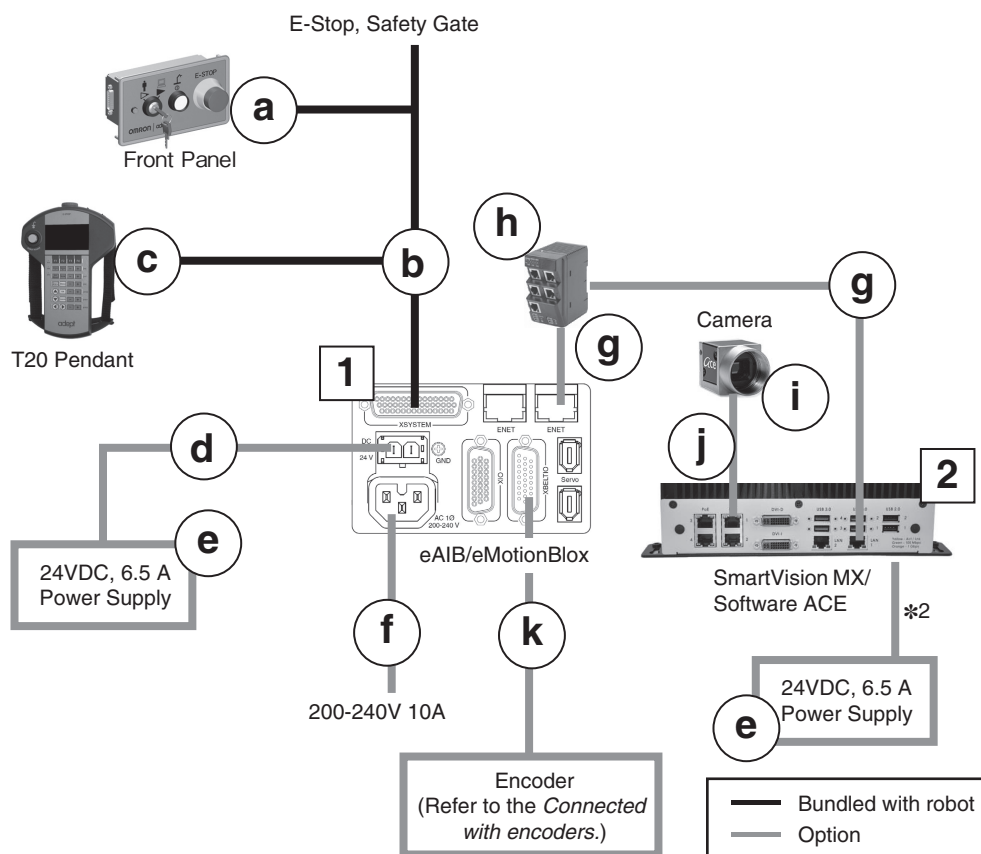
\*2. User-supplied shielded power cable.

\*3. When using color cameras, purchase the ACE License Color Camera Option (09287-040).

When using 3 or more cameras, purchase the ACE License Additional Camera Option (09287-000) for more than 2 cameras.

## Conveyor tracking robot system

Control by eAIB/eMotionBloX with SVMX (When using a vision system)



## Cobra 350, eCobra, Viper, Hornet

Part	Name	Model	Note	Qty
1	Robot	17□□□□-□□□□□□		1
a	Front Panel with Cable	90356-10358	Bundled with Robot	(1)
b	eAIB XSYSTEM Cable	13323-000	Bundled with Robot	(1)
c	T20 Pendant with Cable	10046-010		1
d	24 VDC Power Cable	04120-000		2
e	24 VDC, 6.5 A Power Supply	S8JX-G15024C or S8JX-G15024CD		1
f	AC Power Cable	04118-000		1
g	Ethernet Cable	XS6W-6LSZH8SS□□□CM-Y		2
h	Industrial Switching Hubs	W4S1-05C		1
2	SmartVision MX	14189-901	Bundling a 24 VDC connector	1
i	Camera	Refer to the <i>Ordering Information</i> .		1 *1
j	Camera cable	---	Bundled with Camera	1 *1
k	XBELTIO Cable	13463-000		1
---	ACE PackXpert with ACE Sight Vision License	09187-010	Including 2 monochrome camera licenses *3	1

\*1. Qty depends on a system.

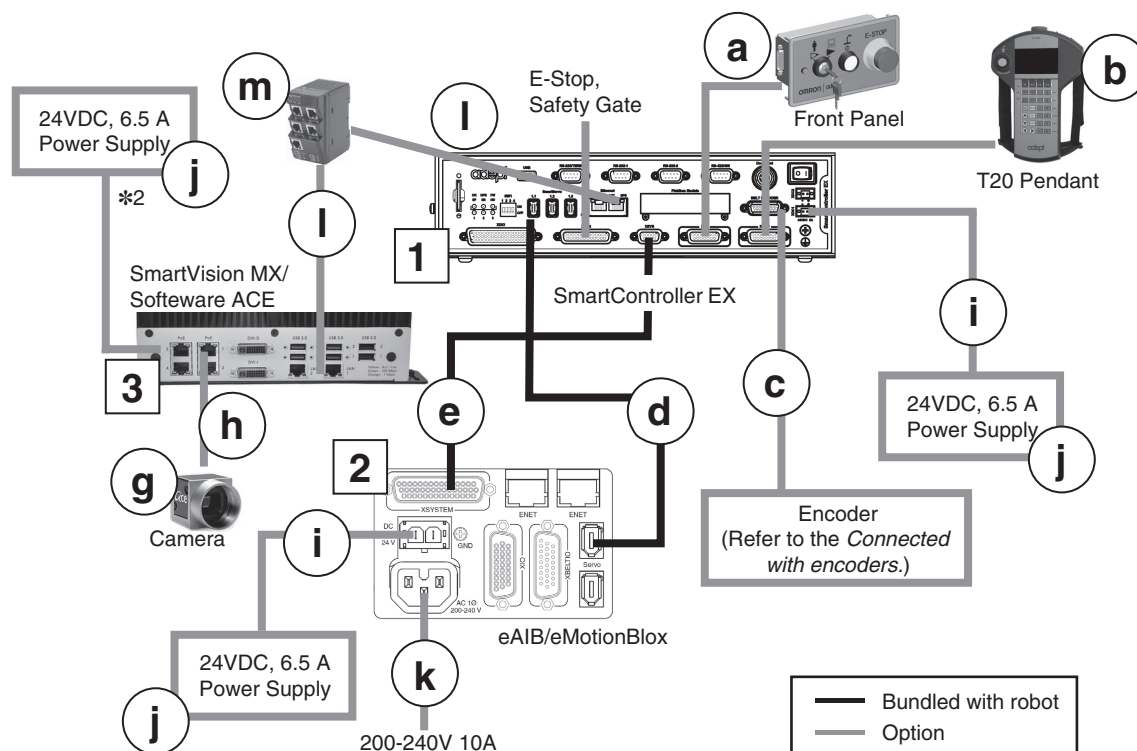
\*2. User-supplied shielded power cable.

\*3. When using color cameras, purchase the ACE License Color Camera Option (09287-040).

When using 3 or more cameras, purchase the ACE License Additional Camera Option (09287-000) for more than 2 cameras.

# Conveyor tracking robot system by SCEX

## Control by SCEX with SVMX (When using a vision system)



### Cobra 350, eCobra, Viper, Hornet

Part	Name	Model	Note	Qty
1	SmartController EX	19300-000		1
a	Front Panel with Cable	90356-10358	Bundled with SmartController EX	(1)
b	T20 Pendant with Cable	10046-010		1
c	SCEX-BELT, Y-Adapter Cable	09550-000		1
2	Robot Add on	17□□3-□□□□□		1
d	IEEE 1394 cable	13632-045	Bundled with Robot Add on	(1)
e	eAIB XSYS Cable	11585-000	Bundled with Robot Add on	(1)
f	DB9 splitter	00411-000	Bundled with Robot Add on (Not used in this configuration)	(1)
3	SmartVision MX	14189-901	Bundling a 24 VDC connector	1
g	Camera	Refer to the Ordering Information.		1 *1
h	Camera cable	---	Bundled with Camera	1 *1
i	24 VDC Power Cable	04120-000		2
j	24 VDC, 6.5 A Power Supply	S8JX-G15024C or S8JX-G15024CD		3
k	AC Power Cable	04118-000		1
l	Ethernet Cable	XS6W-6LSZH8SS□□ □CM-Y		2
m	Industrial Switching Hubs	W4S1-05C		1
---	ACE PackXpert with ACE Sight Vision License	09187-010	Including 2 monochrome camera licenses *3	1

- \*1. Qty depends on a system.
- \*2. User-supplied shielded power cable.
- \*3. When using color cameras, purchase the ACE License Color Camera Option (09287-040).  
When using 3 or more cameras, purchase the ACE License Additional Camera Option (09287-000) for more than 2 cameras.

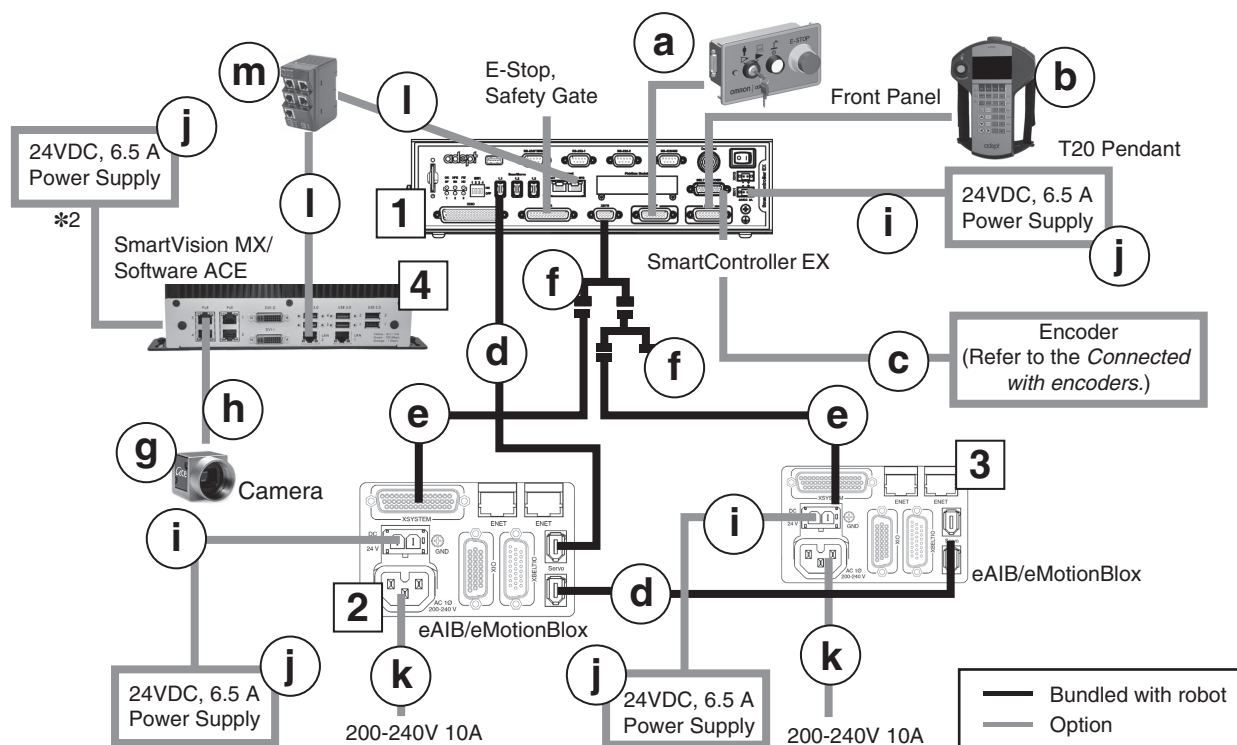
### Quattro

Part	Name	Model	Note	Qty
2	Robot	17204-2□□□□		1
1	SmartController EX	09200-000	Bundled with Robot	(1)
a	Front Panel with Cable	90356-10358	Bundled with Robot	(1)
d	IEEE 1394 cable	13632-045	Bundled with Robot	(1)
e	eAIB XSYS Cable	11585-000	Bundled with Robot	(1)
b	T20 Pendant with Cable	10046-010		1
c	SCEX-BELT, Y-Adapter Cable	09550-000		1
3	SmartVision MX	14189-901	Bundling a 24 VDC connector	1
g	Camera	Refer to the Ordering Information.		1 *1
h	Camera cable	---	Bundled with Camera	1 *1
i	24 VDC Power Cable	04120-000		2
j	24 VDC, 6.5 A Power Supply	S8JX-G15024C or S8JX-G15024CD		3
k	AC Power Cable	04118-000		1
l	Ethernet Cable	XS6W-6LSZH8SS□□ □CM-Y		2
m	Industrial Switching Hubs	W4S1-05C		1
---	ACE PackXpert with ACE Sight Vision License	09187-010	Including 2 monochrome camera licenses *3	1

- \*1. Qty depends on a system.
- \*2. User-supplied shielded power cable.
- \*3. When using color cameras, purchase the ACE License Color Camera Option (09287-040).  
When using 3 or more cameras, purchase the ACE License Additional Camera Option (09287-000) for more than 2 cameras.

# Conveyor tracking dual-robotics system

2 robots control by SCEX with SVMX (When using a vision system)



## Cobra 350, eCobra, Viper, Hornet

Part	Name	Model	Note	Qty
1	SmartController EX	19300-000		1
a	Front Panel with Cable	90356-10358	Bundled with SmartController EX	(1)
b	T20 Pendant with Cable	10046-010		1
c	SCEX-BELT, Y-Adapter Cable	09550-000		1
2, 3	Robot Add on	17□□3-□□□□□		2
d	IEEE 1394 cable	13632-045	Bundled with Robot Add on	(2)
e	eAIB XSYS Cable	11585-000	Bundled with Robot Add on	(2)
f	DB9 splitter	00411-000	Bundled with Robot Add on	(2)
4	SmartVision MX	14189-901	Bundling a 24 VDC connector	1
g	Camera	Refer to the Ordering Information.		1 *1
h	Camera cable	---	Bundled with Camera	1 *1
i	24 VDC Power Cable	04120-000		3
j	24 VDC, 6.5 A Power Supply	S8JX-G15024C or S8JX-G15024CD		4
k	AC Power Cable	04118-000		2
l	Ethernet Cable	XS6W-6LSZH8SS□□□CM-Y		2
m	Industrial Switching Hubs	W4S1-05C		1
---	ACE PackXpert with ACE Sight Vision License	09187-010	Including 2 monochrome camera licenses *3	1

\*1. Qty depends on a system.

\*2. User-supplied shielded power cable.

\*3. When using color cameras, purchase the ACE License Color Camera Option (09287-040).

When using 3 or more cameras, purchase the ACE License Additional Camera Option (09287-000) for more than 2 cameras.

## Quattro

Part	Name	Model	Note	Qty
2	Robot	17204-2□□□□		1
1	SmartController EX	09200-000	Bundled with Robot	(1)
a	Front Panel with Cable	90356-10358	Bundled with Robot	(1)
d	IEEE 1394 cable	13632-045	Bundled with Robot	(1)
e	eAIB XSYS Cable	11585-000	Bundled with Robot	(1)
b	T20 Pendant with Cable	10046-010		1
c	SCEX-BELT, Y-Adapter Cable	09550-000		1
3	Robot Add on	17203-2□□□□		1
d	IEEE 1394 cable	13632-045	Bundled with Robot Add on	(1)
e	eAIB XSYS Cable	11585-000	Bundled with Robot Add on	(1)
f	DB9 splitter	00411-000	Bundled with Robot Add on	(1)
4	SmartVision MX	14189-901	Bundling a 24 VDC connector	1
g	Camera	Refer to the Ordering Information.		1 *1
h	Camera cable	---	Bundled with Camera	1 *1
i	24 VDC Power Cable	04120-000		3
j	24 VDC, 6.5 A Power Supply	S8JX-G15024C or S8JX-G15024CD		4
k	AC Power Cable	04118-000		2
l	Ethernet Cable	XS6W-6LSZH8SS□□□CM-Y		2
m	Industrial Switching Hubs	W4S1-05C		1
---	ACE PackXpert with ACE Sight Vision License	09187-010	Including 2 monochrome camera licenses *3	1

\*1. Qty depends on a system.

\*2. User-supplied shielded power cable.

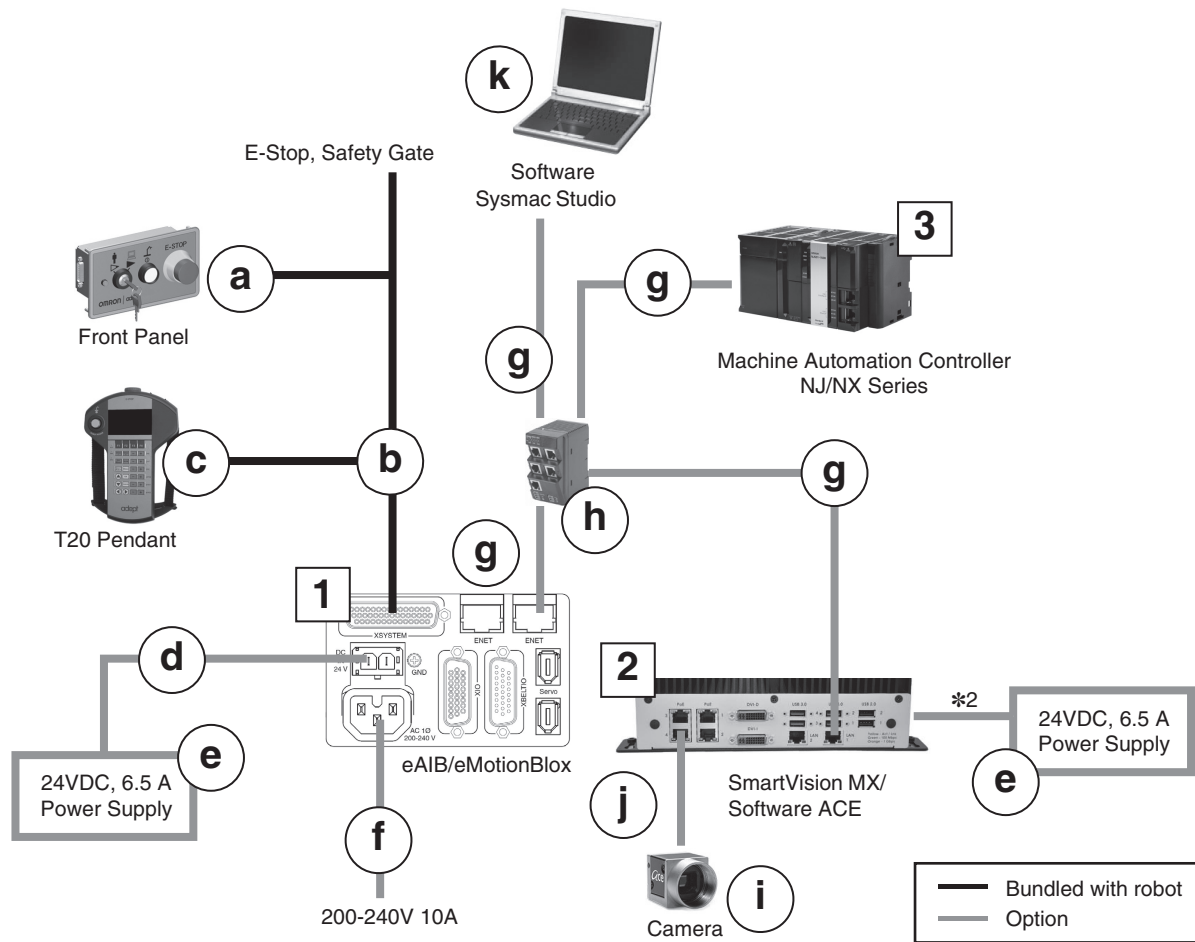
\*3. When using color cameras, purchase the ACE License Color Camera Option (09287-040).

When using 3 or more cameras, purchase the ACE License Additional Camera Option (09287-000) for more than 2 cameras.



# Vision tracking robot system

Control by eAIB/eMotionBlox (Status monitoring by NJ/NX Series)



## Cobra 350, eCobra, Viper, Hornet

Part	Name	Model	Note	Qty
1	Robot	17□□1-□□□□□		1
a	Front Panel with Cable	90356-10358	Bundled with Robot	(1)
b	eAIB XSYSTEM Cable	13323-000	Bundled with Robot	(1)
c	T20 Pendant with Cable	10046-010		1
d	24 VDC Power Cable	04120-000		1
e	24 VDC, 6.5 A Power Supply	S8JX-G15024C or S8JX-G15024CD		2
f	AC Power Cable	04118-000		1
g	Ethernet Cable	XS6W-6LSZH8SS□□□CM-Y		4
h	Industrial Switching Hubs	W4S1-05C		1
2	SmartVision MX	14189-901	Bundling a 24 VDC connector	1
i	Camera	Refer to the <i>Ordering Information</i> .		1 *1
j	Camera cable	---	Bundled with Camera	1 *1
3	Machine Automation Controller NJ/NX Series	NJ/NX		1
k	Automation software Sysmac Studio	SYSMAC-SE2□□□		1
---	ACE PackXpert with ACE Sight Vision License	09187-010	Including 2 monochrome camera licenses *3	1

\*1. Qty depends on a system.

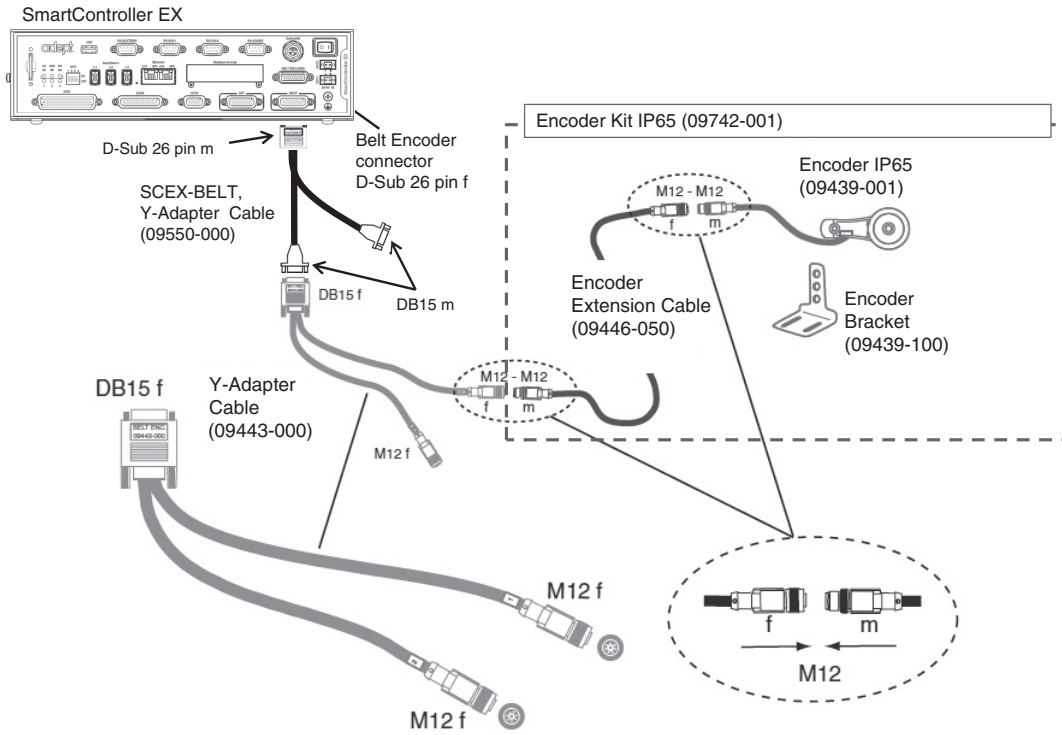
\*2. User-supplied shielded power cable.

\*3. When using color cameras, purchase the ACE License Color Camera Option (09287-040).

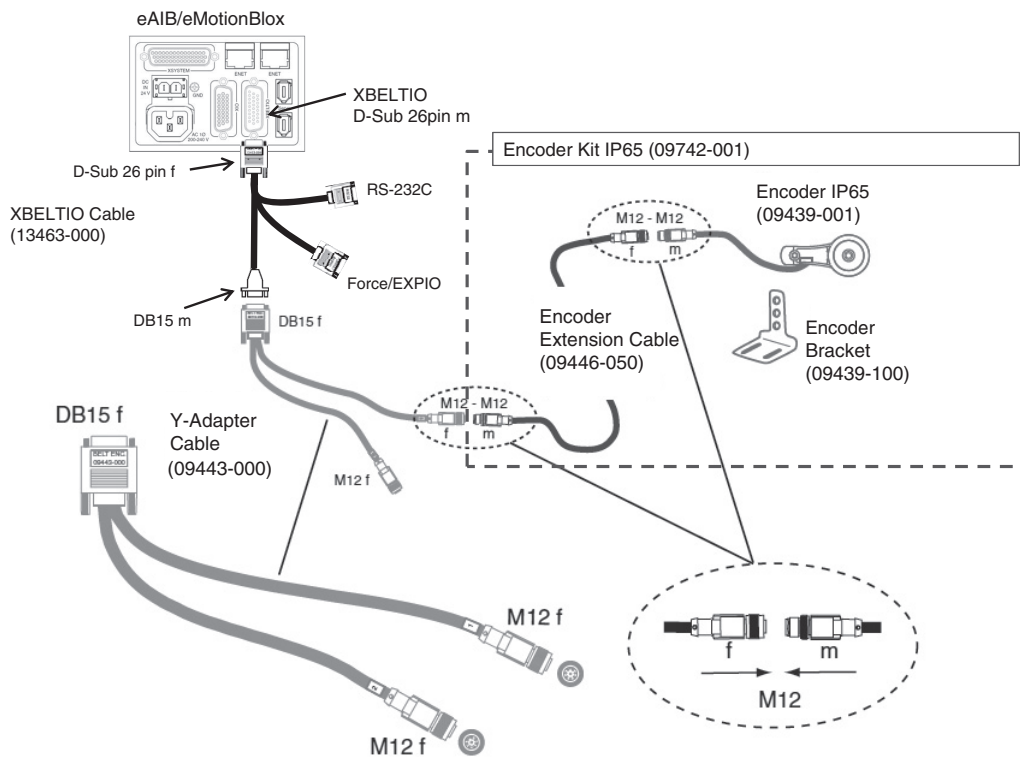
When using 3 or more cameras, purchase the ACE License Additional Camera Option (09287-000) for more than 2 cameras.

# Connected with encoders

## SmartController EX



## eAIB/eMotionBlox



## Protection and Cleanroom Classes

Type	Name	Specifications	Option	Remarks
Parallel Robots	Hornet 565	IP67: arms and platform IP65: underside of robot IP20: topside of robot Class 1000	IP65: topside of robot	The addition of the cable sealing kit raises the IP rating of the topside of the robot to IP65.
	Quattro 650H Quattro 800H	IP67: arms and platform Class 1000	IP65: robot base	The addition of the cable sealing kit raises the IP rating of the topside of the robot to IP65.
	Quattro 650HS	IP67: arms and platform IP66: robot base Class 1000	---	Mount the Cable Inlet Box (09564-000) on the topside of the robot.
SCARA Robots	Cobra 350	IP20	Class10 Cleanroom model	The version with the option has a different model number.
	eCobra 600	IP20	Class10 Cleanroom model	The version with the option has a different model number.
	eCobra 800 eCobra 800 Inverted	IP20	IP65, Class10 Cleanroom model	The version with the option has a different model number.
Articulated Robots	Viper 650 Viper 850	IP40	IP54: robot main body IP65: robot joints (J4, J5, J6) Class10 Cleanroom model	The version with the option has a different model number.

## Ordering Information

### Industrial Robots

Type	Name	Model	
Parallel Robots	Hornet 565 4AXIS	17201-45604	
	Hornet 565 3AXIS	17201-45600	
	Hornet 565 4AXIS (Add on)	17203-45604	
	Hornet 565 3AXIS (Add on)	17203-45600	
	Quattro 650H P30	17204-26000	
	Quattro 650H P31	17204-26001	
	Quattro 650H P32	17204-26002	
	Quattro 650H P34	17204-26004	
	Quattro 650HS P30	17204-26010	
	Quattro 650HS P31	17204-26011	
	Quattro 650HS P32	17204-26012	
	Quattro 650HS P34	17204-26014	
	Quattro 800H P30	17204-26300	
	Quattro 800H P31	17204-26301	
	Quattro 800H P32	17204-26302	
	Quattro 800H P34	17204-26304	
	Quattro 650H P30 (Add on)	17203-26000	
	Quattro 650H P31 (Add on)	17203-26001	
	Quattro 650H P32 (Add on)	17203-26002	
	Quattro 650H P34 (Add on)	17203-26004	
	Quattro 650HS P30 (Add on)	17203-26010	
	Quattro 650HS P31 (Add on)	17203-26011	
	Quattro 650HS P32 (Add on)	17203-26012	
	Quattro 650HS P34 (Add on)	17203-26014	
	Quattro 800H P30 (Add on)	17203-26300	
	Quattro 800H P31 (Add on)	17203-26301	
	Quattro 800H P32 (Add on)	17203-26302	
	Quattro 800H P34 (Add on)	17203-26304	
	SCARA Robots	Cobra 350	17201-13000
		eCobra 600 Lite	17000-16000
eCobra 600 Standard		17101-16000	
eCobra 600 Pro		17201-16000	
eCobra 800 Lite		17000-18000	
eCobra 800 Standard		17101-18000	
eCobra 800 Pro		17201-18000	
eCobra 800 Inverted Lite		17000-18400	
eCobra 800 Inverted Standard		17101-18400	
eCobra 800 Inverted Pro		17201-18400	
Cobra 350 (Add on)		17203-13000	
eCobra 600 Standard (Add on)		17103-16000	
eCobra 600 Pro (Add on)		17203-16000	
eCobra 800 Standard (Add on)		17103-18000	
eCobra 800 Pro (Add on)		17203-18000	
eCobra 800 Inverted Standard (Add on)		17103-18400	
eCobra 800 Inverted Pro (Add on)		17203-18400	
Articulated Robots		Viper 650	17201-36000
	Viper 850	17201-38000	
	Viper 650 (Add on)	17203-36000	
	Viper 850 (Add on)	17203-38000	

## Options

Type	Name/Specifications	Model
Robot Controller	SmartController EX	19300-000
Pendant	T20 Pendant with 10m Cable	10046-010
	T20 Pendant-Jumper Plug	10048-000
	T20 Pendant Wall Bracket	10079-000
Sensor Controllers	SmartVision MX	14189-901
Camera	GigE PoE, 640 x 480 dots, 120 fps, Monochrome, CCD (1/4-inch equivalent), camera cables included (10 m)	24114-100
	GigE PoE, 640 x 480 dots, 120 fps, Color, CCD (1/4-inch equivalent), camera cables included (10 m)	24114-101
	GigE PoE, 1296 x 996 dots, 30 fps, Monochrome, CCD (1/3-inch equivalent), camera cables included (10 m)	24114-200
	GigE PoE, 1296 x 996 dots, 30 fps, Color, CCD (1/3-inch equivalent), camera cables included (10 m)	24114-201
	GigE PoE, 1600 x 1200 dots, 60 fps, Monochrome, CMOS (1/1.8-inch equivalent), camera cables included (10 m)	24114-250
	GigE PoE, 2048 x 2048 dots, 25 fps, Monochrome, CMOS (1-inch equivalent), camera cables included (10 m)	24114-300
	USB3, 640 x 480 dots, 120 fps, Monochrome, CCD (1/4-inch equivalent), camera cables included (8 m)	24164-100
	USB3, 1296 x 966 dots, 30 fps, Monochrome, CCD (1/3-inch equivalent), camera cables included (8 m)	24164-200
	USB3, 2048 x 2048 dots, 25 fps, Monochrome, CMOS (1-inch equivalent), camera cables included (8 m)	24164-300
Belt Encoder (Conveyor-Tracking)	Encoder Kit IP65	09742-001
	Encoder IP65	09439-001
	Encoder Bracket	09439-100
	Y-Adapter Cable, 3 m	09443-000
	Encoder Extension Cable, 5 m	09446-050
	SCEX-BELT,Y-Adapter Cable	09550-000
	XBELTIO Cable	13463-000
Additional I/O Options	IO Blox 8 inputs/8 outputs (IO Blox - connects to robot)	90356-30200
	IO Blox 8 inputs/8 outputs (expansion - connects to previous IO Blox)	90356-30100
	IO Blox Extension Cable, 0.30m (connects IO Blox to IO Blox)	04679-003
	IO Blox Extension Cable, 3.0m (connects IO Blox to IO Blox)	04679-030
	IO Blox Extension Cable, 3.0m (connects IO Blox to robot)	04677-030
	Termination Block, 12inputs/8 outputs	90356-40100
Front panel	Front Panel	90356-10358
	Front Panel Cable	10356-10500
Power Supply/Cable	AC Power Cable	04118-000
	24 VDC Power Cable	04120-000
	24 VDC, 6.5 A, 150 W (Front Mounting), Power Supply	S8JX-G15024C *1
	24 VDC, 6.5 A, 150 W (DIN-Rail Mounting), Power Supply	S8JX-G15024CD *1
	1394 Cable, 4.5m	13632-045
	eAIB XSYSTEM Cable Assembly	13323-000
	DB9 Splitter	00411-000
	eAIB XSYS Cable	11585-000
	Ethernet Cable	XS6W-6LSZH8SS□□□CM-Y *2
Industrial Switching Hubs	W4S1-05C *3	
ACE License	Automation Control Environment (ACE)	Please download it from following URL: <a href="http://www.adept.com/Robots-Tool">http://www.adept.com/Robots-Tool</a>
	ACE PackXpert	09187-000
	ACE Sight Vision Software	01056-030
	Additional Camera Option	09287-000
	Color Camera Option	09287-040
	ACE PackXpert with ACE Sight Vision This license contains an ACE PackXpert license and an ACE Sight license.	09187-010

Type	Name/Specifications	Model
Related Products	Machine Automation Controller NJ/NX Series	NJ/NX *5
	Automation Software Sysmac Studio	SYSMAC-SE2□□□ *5
	Collection of software functional components Sysmac Library Adept Robot Control Library	SYSMAC-XR009 *6

**Note:** Contact your Omron representative for lenses, lights, and licenses.

\*1. Refer to the Switch Mode Power Supply Catalog (Cat.No.T041) for details.

\*2. Refer to the Industrial Ethernet Cables Catalog (Cat.No.G019) for details.

\*3. Refer to the Industrial Switching Hubs Catalog (Cat.No.V227) for details.

\*4. You must purchase all the required licenses at the time you purchase as the license cannot be added afterwards.

\*5. Refer to the Sysmac Catalog (Cat.No.P072) for details.

\*6. Refer to the Sysmac Library Catalog (Cat.No.P106) for details.



### Sysmac Library

The Sysmac Library is a collection of software functional components that can be used in programs for the NJ/NX Machine Automation Controllers.

Please download it from following URL and install to Sysmac Studio Automation Software.

[http://www.ia.omron.com/sysmac\\_library/](http://www.ia.omron.com/sysmac_library/)

The Adept Robot Control Library allows you to control parallel, SCARA, and articulated robots manufactured by Omron Adept Technologies Inc. from the NJ/NX Machine Automation Controller by using the same instructions and programming methods.



## Related Documentation

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Cat. No.	Manual
I590	Robot Safety Guide
I591	Cobra 350 Robot User's Guide
I592	Cobra 350 Robot ePLC Quick Setup Guide
I593	eCobra 600, 800, and 800 Inverted Robots User's Guide
I594	eCobra 600, 800, and 800 Inverted Robots ePLC Quick Setup Guide
I595	Hornet 565 Robot Quick Setup Guide
I596	Hornet 565 Robot User's Guide
I597	Quattro 650H/650HS/800H/800HS User's Guide
I598	Quattro 650H/650HS/800H/800HS ePLC Quick Setup Guide
I599	Viper 650/850 Robot with eMB-60R User's Guide
I600	Viper 650/850 ePLC Quick Setup Guide
I601	T20 Pendant User's Guide
I602	SmartController EX user's guide
I603	ACE User's Guide
I604	eV+ Language User's Guide
I605	eV+ Language Reference Guide
I606	eV+ Operating System User's Guide
I607	eV+ Operating System Reference Guide
I608	SmartVision MX User's Guide
I609	ACE Sight Reference Guide

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