

Articulated Robots

Viper 650

EtherCAT (NJ501-R) version

Articulated robot for machining, assembly, and material handling

- EtherCAT connectivity to the Omron NJ501-R controller and programming through the familiar IEC 61131-3 programming language or scripting (eV+).
- 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 34 kg



Specifications

Product name		Viper		
		650		
Size				
Cleanroom/IP		Standard	Cleanroom	IP54/65
Part Number		RL6-2066000	RL6-2066020	RL6-2066010
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 ²		
	Joint 5	0.295 kgm ²		
	Joint 6	0.045 kgm ²		
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		
		650		
Size				
Cleanroom/IP		Standard	Cleanroom	IP54/65
Power Requirements		24 VDC: 6 A 200 to 240 VAC: 10 A, single-phase		
Protection	Base	IP40	IP40	IP54
	Robot Joints (J4, J5, J6)	IP40	IP40	IP65
Clean Class		---	Class10	---
Environment Requirements	Ambient Temperature	5 to 40°C		
	Humidity Range	5 to 90% (non-condensing)		
Weight		34 kg		
Basic configuration	Controller	eCS-ECAT		
	On-board I/O (Input/Output)	12/8		
	Conveyor tracking input	2		
	RS-232C serial communications port	1		
	Programming environment	Sysmac Studio 64-bit		
	ACE Sight	Yes		
	ePLC Connect	No		
	ePLC I/O	No		
Connectable controller		Omron NJ501-R Series		

(Unit: mm)

(with room for power cables : 200 x 430)

The front view shows a rectangular control panel with dimensions 130mm width and 89mm height. It features three indicator lights at the top: a red light labeled "STOP", a yellow light labeled "E-STOP", and a green light labeled "START". Below the lights are three buttons: "MODE SELECTION" (left), "E-STOP" (middle), and "POWER" (right). A large circular knob is positioned on the right side of the panel. The Omron logo is visible at the bottom center.

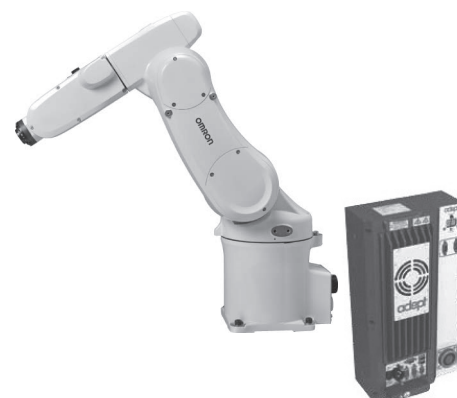
Type	Viper		
Cleanroom/IP	Standard	Cleanroom	IP54/65
Viper 650	RL6-2066000	RL6-2066020	RL6-2066010
Overview	Robot + eCS-ECAT Robot Controller		
Purpose	To be used in conjunction with NJ501-R Series controller, which can connect up to 8 robots via EtherCAT		
Bundled Accessories	• XSYSTEM cable with jumpers and Ethernet Management port, 1.8 m/6 ft (13323-100) • Front Panel kit (92546-10358) • Arm power/signal cable, 4 m/13 ft -Standard Model: 05020-000 -Cleanroom & IP54/65 Models: 05463-000		

Articulated Robots

Viper 650

Articulated robot for machining, assembly, and material handling

- Programmable through ACE software and eV+ language, or through the familiar IEC 61131-3 when using ePLC Connect.
- 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 34 kg



Specifications

Product name		Viper		
		650		
Size		Cleanroom/IP		
Cleanroom/IP		Standard	Cleanroom	IP54/65
Part Number		1720[]-36000	1720[]-36020	1720[]-36010
Mounting		Table/Floor/Inverted		
Number of axes		6		
Reach		653 mm		
Maximum Payload		5 kg		
Repeatability		±0.02 mm		
Joint Range	XYZ			
	Joint 1	±170°		
	Joint 2	-190°, +45°		
	Joint 3	-29°, +256°		
	Joint 4	±190°		
	Joint 5	±120°		
Inertia Moment (Max.)	Joint 6	±360°		
	Joint 4	0.295 kgm ²		
	Joint 5	0.295 kgm ²		
Joint Speeds	Joint 6	0.045 kgm ²		
	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		
		650		
Size		Cleanroom/IP		
Cleanroom/IP		Standard	Cleanroom	IP54/65
Power Requirements		24 VDC: 6 A 200 to 240 VAC: 10 A, single-phase		
Protection	Base	IP40	IP40	IP54
	Robot Joints (J4, J5, J6)	IP40	IP40	IP65
Clean Class		---	Class10	---
Environment Requirements	Ambient Temperature	5 to 40°C		
	Humidity Range	5 to 90% (non-condensing)		
Weight		34 kg		
cULus Compliant		(Yes) *1		
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, ePLC		
	ACE Sight	Yes		
	ePLC Connect	Yes		
	ePLC I/O	Yes		
Connectable controller *2		eMotionBlox-60R, SmartController EX, NJ/NX/NY Series *3		

*1. cULus option

*2. Choose a controller to suit your application.

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

(Unit: mm)

(with room for power cables : 200 x 430)

Technical drawing of a circular flange with a central hole and four bolt holes. The drawing includes dimensions for diameters, hole sizes, and positions. A detail view shows the thickness of the flange with dimensions 6.00, 9.00, 12.00, and 28.00. The main view shows a 4x M5 x 0.8 bolt circle with a diameter of 31.500. The central hole has a diameter of 20.000 with a tolerance of +0.021/0.000 and a surface finish of H7/▽6.0. The bolt holes have a diameter of 5.000 with a tolerance of +0.012/0.000 and a surface finish of H7/▽7.0. The flange has a total thickness of 28.00. The drawing is labeled 'Fig. 10-10'.

Front view of the terminal block showing dimensions: 130 (width), 89 (height), 152 (bottom width), and 56 (depth). The front panel features a 'MODE SELECTION' knob, a 'RESET POWER' button, an 'E-STOP' button, and the 'OMRON' logo.

Type	Viper			Viper Add-On		
Cleanroom/IP	Standard	Cleanroom	IP54/65	Standard	Cleanroom	IP54/65
Viper 650	17201-36000	17201-36020	17201-36010	17203-36000	17203-36020	17203-36010
Overview	Robot + eMotionBlox-60R amplifier with fully integrated controls			Robot + eMotionBlox-60R + 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	• XSYSTEM cable with jumpers, 1.8 m/6 ft (13323-000) • Front panel kit (92546-10358) • Arm power/signal cable, 4 m/13 ft - Standard Model: 05020-000) - Cleanroom & IP54/65 Models: 05463-000			• XSYSTEM cable with jumpers, 1.8 m/6 ft (13323-000) • XSYS cable, 4.5 m/15 ft (11585-000) • DB9 splitter (00411-000) • 1394 latch cable, 4.5 m/15 ft (13632-045) • eV+ interface to connect to controller (14529-103)		

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