

Technical Specifications VS-050/ VS-060

Item		Specifications	
Model of robot unit		VS-050	VS-060
Axes		6	
Position detection		Absolute encoder	
Drive motor and brake		All-axis servo motor / all-axis brake	
Total arm length (No. 1 arm + No. 2 arm)		505(250+255)mm	605(305+300)mm
Maximum motion area(Point P)		505mm	605mm
Motion range	J1 (No.1 axis)	±170°(*4)	
	J2 (No.2 axis)	±120°	
	J3 (No.3 axis)	+151°, -120°	+155°, -25°
	J4 (No.4 axis)	±270°	
	J5 (No.5 axis)	±120°(*5)	
	J6 (No.6 axis)	±360°	
Maximum payload		4kg	
Maximum joint speed	J1	425deg/sec	
	J2	340deg/sec	283.33deg/sec
	J3	385.72deg/sec	309.35deg/sec
	J4	425deg/sec	
	J5	327.01deg/sec	
	J6	680deg/sec	
Cycle time(*1)		0.35sec	
Position repeatability(at the center of an end-effector mounting face)(*2)		±0.02mm	
Maximum allowable moment of inertia	J4,J5	0.2kgm ²	
	J6	0.05kgm ²	
Maximum allowable moment	J4,J5	6.66 Nm	
	J6	3.13 Nm	
Signal line / Air pipe solenoid valve (option)	Signal line	10(for proximity sensor signals, etc.)(*6)(*7)	
	Air pipe solenoid valve 3	5 systems(φ4×4, φ4×1) 2 × solenoid valves (2 position, double solenoid)	
Communication Interface Flange-A(optional)		17 (power wire for cameras, etc.) (*7)	
		LAN×1(1000BASE-T)(*8)	
Air source	Normal pressure	0.20Mpa - 0.39Mpa	
	Maximum allowable pressure	0.49Mpa	
Airborne noise (equivalent continuous A-weighted sound pressure level)		65 dB or less	
Protection grade		Protected type : IP67 9 (option) Dust & splash proof type : wrist IP65 / unit IP54 (option) Cleanroom type : ISO class 3 / 5 (option)	
Weight		Approx. 27kg	Approx. 28kg

*1.Time required for a robot to move a 1 kg payload between two points 300 mm apart at a height of 25 mm.

*2.Position repeatability is the precision at constant ambient temperature.

*3.Controllable by use of the embedded solenoid valve only for φ4×4.

*4.Limited motion range when wall mounted. For details, please contact our sales representative.

*5.When communication interface flange-A is selected, the motion range of J5 is +120 and -110.

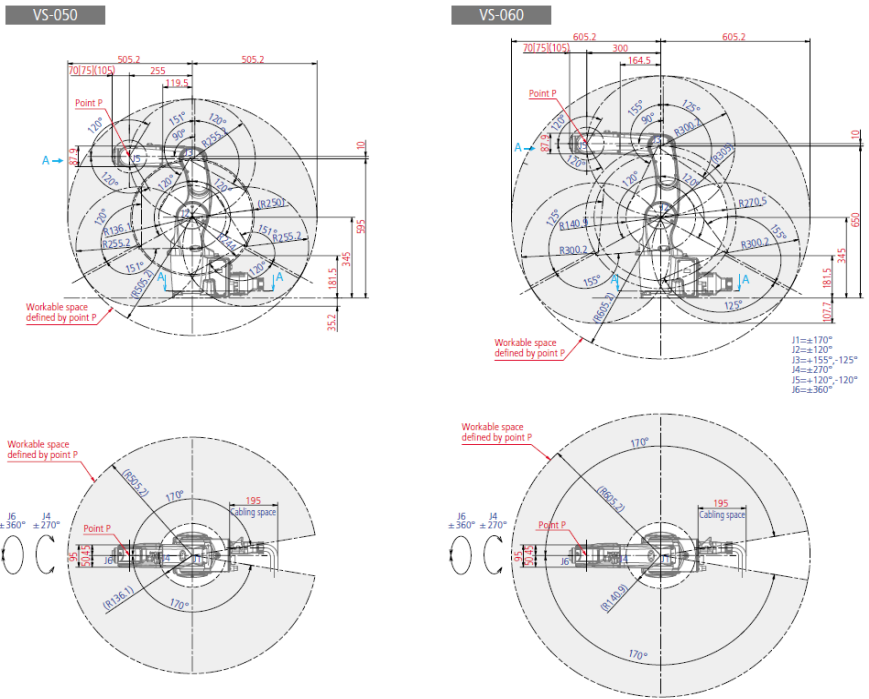
*6.There are 4 of these lines (proximity sensors or other signal lines) when selected together with communication interface flange-A.

*7.Allowable current is limited.

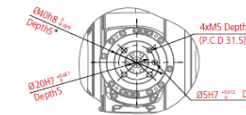
*8.The LAN cable to connect to the connector panel is 20 m or shorter.

*9.The robot interior is air-pressurized to maintain protective class IP67. Use the air-purge unit to remove air. Do not use the robot underwater.

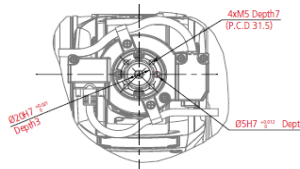
External Dimensions and workable space Unit:mm



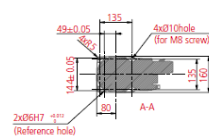
Detailed drawing of end-effector mounting face (Standard Flange) (View A)



Detailed drawing of end-effector mounting face (Communication Interface Flange-A) (View A)



Detailed drawing of base mounting face (Top view)



*These external dimensions cannot be used with hand tools to fix or determine position on any robot except standard type.

The values in brackets [] are of the cleanroom type (ISO class 3 / 5) The values in parentheses () indicate communication interface flange-A

Legend

VS [] [] [] [] [] - A V6 - [] [] [] [] [] - [] N [] N [] - [] NNN					
Model : VS: DENSO 5- and 6-axis robots	Mounting orientation : A: All directions	Axes : V6: 6-axis	Compliant standard : N: Standard specification U: UL specification	Flange : N: Standard flange A: Communication interface flange-A ¹	Paint / Surface finish : N: DENSO standard colors ² A: Unpainted ³
Total arm length : 060 A3 : 505mm 060 A3 : 605mm	Protected : NN: Standard type W7: Protected type (IP67) W4: Dust & splash proof type (wrist: IP65, unit: IP54) C3: Cleanroom type (ISO class 3) C5: Cleanroom type (ISO class 5)	Connector panel : N: Rear connector panel A: Bottom connector panel	Signal lines / Air pipe solenoid valve : A: 2 x solenoid valves (2 position, double solenoid) N: Specification without signal lines / air pipe solenoid valve		
1: Available when standard type is selected 2: When standard type is selected 3: When protected type (IP67) is selected (DENSO standard colors are a special specification (option)) For details, please contact our sales representative.					

Standard Components

Group	Item	Q'ty
Robot & Accessoires	Robot unit	1
	Motor & encode cable (option)	1
	Sheet of direction indicator labels	1
	Connector set for hand signals (for CN20 and CN21)	1 set
	Dowel pins (internally threaded positioning pin and diamond-shaped pin)	1 set
Controller & Accessoires	Robot controller	1
	Power cable (5m)	1
	Pendantless conector (Dummy connector)	1
	Cable clamp	1
Software etc.	WINCAPS III trial version installer disc	1
	Manuals ("Manual Pack disc" and "Safety Precautions")	1 set
	Warning label	1