

Scara robot

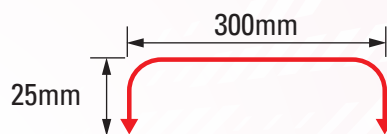
ES12



High speed handling

- Super rigid arm and servo controls give this horizontal articulated scara robot fast, high-accuracy operations
- High-speed operations meet demand to support a wide range of fields, from the handling of small parts to high precision assembly work

Cycle time of standard arch motion
ES12: 0.30sec

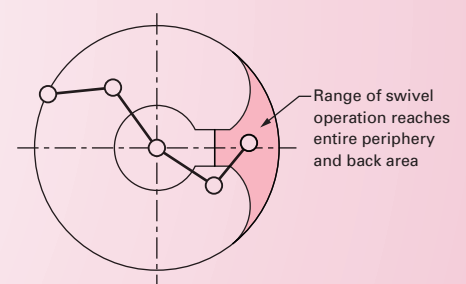


Prevent cable interference

- Hands with internal passage for wiring available to be mounted on tip of arm
- Wiring and piping can be run internally to the point where the hand is attached
- Minimize area in which robot cables interfere with peripheral equipment

Fully utilize installation space

- Possible to access entire periphery with swivel operation range
- Improves flexibility when considering robot layout



Robot model

ES○○-□□ □□-01

① ② ③ ④

- ① Payload
- ② Maximum reach (input the first two digits): 550, 700, 850mm
- ③ Vertical stroke (shows first two digits): 350, 450mm
- ④ Version

Robot specifications

Item	Specifications						
Robot model	ES12-5535-01	ES12-5545-01	ES12-7035-01	ES12-7045-01	ES12-8535-01	ES12-8545-01	
Structure	Horizontal articulation						
Number of axes	4						
Drive system	AC servo system						
Brake	Axes 1, 2, and 4: No brakes Axis 3: With brake						
Max. operating envelope	J1	±2.97rad(±170°)					
	J2	±2.53rad(±145°)			±2.67rad(±153°)		
	J3	350mm	450mm	350mm	450mm	350mm	450mm
	J4	±6.28rad(±360°)					
Max. velocity*4	J1	7.33rad/s(420°/s)			4.89rad/s(280°/s)		
	J2	7.85rad/s(450°/s)					
	J3	2800mm/s					
	J4	41.89rad/s(2400°/s)					
Payload(Max.)	3kg(12kg)						
Maximum pressing force of third axis	200N*7						
Max. allowable moment of inertia*1	0.3kg·m ² (0.025kg·m ² rated)						
Position repeatability	X and Y combined	±0.012mm		±0.015mm			
	J3 (Z)	±0.01mm					
	J4 (θ)	±0.005°					
Max. reach	550mm		700mm		850mm		
Air piping	Primary: φ6×2 Secondary: φ6×8*5						
Application wirings	Hand: 8 points input/8 points output (20 lines) Dedicated signal line for multipurpose hand (2 lines + 2 power lines) 1 Ethernet cable <100BASE-TX> (8 lines)*6						
Installation	Floor mount						
Ambient conditions	Ambient temperature: 0~40°C*2 Ambient humidity: 45~85%RH (without condensation) Vibration: Not more than 0.5G (4.9m/s ²)						
Environmental conditions*3	IP20						
Robot mass	65kg		67kg		69kg		

1[rad] = 180/m[°], 1[N·m] = 1/9.8[kgf·m]

*Explosion-proof is not available.

*1: Note that maximum allowable moment of inertia varies according to load conditions on the wrist.

*2: Permitted height is not higher than 1,000m above sea level. If used in higher place, permitted temperature is affected by height.

*3: Fluids that cause the deterioration of sealants, such as gasoline-based cutting fluids, chlorine, alkali, acids, and organic solvents, cannot be used.

*4: The maximum velocity in the chart is a maximum value. The maximum value may change depending on work programs and load conditions of the wrist.

*5: Secondary φ4 piping is possible with solenoid valve (option).

*6: Possible to use 8 lines for LAN wiring as spare wires, too.

*7: Downward pressing force that is possible on tip of load when maximum load is mounted, and axis 1, axis 2, and axis 4 are static. Use at values below those noted here.

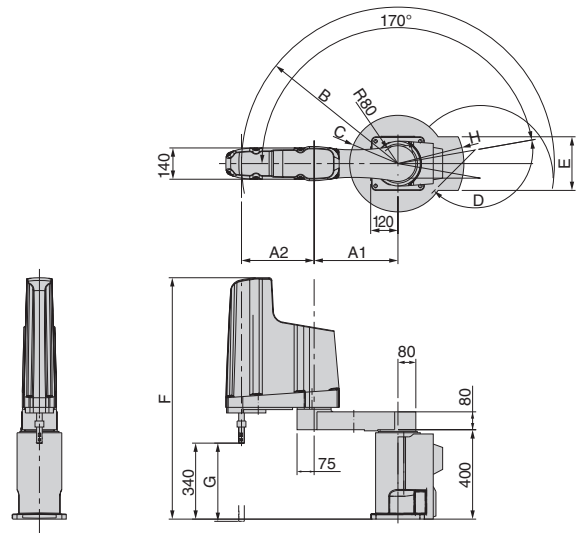
Also, an overload error occurs if pressure is applied for a long period of time. Use under conditions in which errors do not occur.

● The specifications are subject to changes without notice.

● In case that an end user uses this product for military purpose or production of weapon, this product may be liable for the subject of export restriction stipulated in the Foreign Exchange and Foreign Trade Act. Please go through careful investigation and necessary formalities for export.

Exterior dimensions and operating envelope

ES12-01



Max. reach	A1	A2	B	C	D	E	H
550mm	225	325	R550	R191	145°	240	R295
700mm	375		R700	R216			
850mm	525		R850	R278	153°	-	-

Vertical stroke	F	G
350mm	1080	350
450mm	1180	450

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