

HN HOANG NGAN
Technology & Engineering Co., Ltd
Authorised Inovance Distributor

● **Contact us**

Hotline +84 9 6207 0538
Website www.hoangngantec.com.vn
Email info@hoangngantec.com.vn

- **Hanoi Head Office**
No. 87-89, Khuat Duy Tien, Thanh Xuan, Hanoi.
- **Warranty Center**
Lot 25-D14, Geleximco Industrial Park, Ha Dong, Hanoi.
- **Ho Chi Minh City Office**
No. 22, N1 Street, Vuon Lai Residential Area, An Phu Dong, District 12, Ho Chi Minh City.

INOVANCE
汇川技术

Inovance Robot Selection Guide



FORWARD, ALWAYS PROGRESSING

Robot Product Family

6-Axis Robot

IR-R4 Series

P 3



Load	4 kg
Arm length	560.6 mm
Model	IR-R4-56S-INT

IR-R4H (hollow wrist) Series

P 5



Load	4 kg
Arm length	545.7 mm
Model	IR-R4H-54S-INT

IRS311-7 Series

P 7



Load	7 kg
Arm length	717 mm / 911 mm
Model	IRS311-7-70TS-INT IRS311-7-90TS-INT

IR-R11 Series

P 9



Load	10 kg / 11.3 kg
Arm length	1101.6 mm / 901.9 mm
Model	IR-R10-110S-INT IR-R11-90S-INT

IR-R10 Series

P 11



Load	10 kg
Arm length	1422 mm
Model	IR-R10-140S-INT

IR-R20 Series

P 13



Load	20 kg / 10 kg
Arm length	1723 mm / 2045 mm
Model	IR-R20-170S-INT IR-R10-200S-INT

SCARA Robot

IR-S4 Series

P 15



Load	4 kg
Arm length	400 mm
Model	IR-S4-40Z15S-INT

IR-S7 Series

P 17



Load	7 kg
Arm length	500 mm / 600 mm / 700 mm
Model	IR-S7-50Z20S-INT IR-S7-60Z20S-INT IR-S7-70Z20S-INT

IR-S10 Series

P 19



Load	10 kg
Arm length	600 mm / 700 mm / 800 mm
Model	IR-S10-60Z20S-INT IR-S10-70Z20S-INT IR-S10-80Z20S-INT

IR-S20 Series

P 21



Load	20 kg
Arm length	800 mm / 1000 mm
Model	IR-S20-80Z42S-INT IR-S20-100Z42S-INT

IR-GS20 Series

P 23



Load	20 kg
Arm length	800 mm / 1000 mm
Model	IR-GS20-80Z42S-INT IR-GS20-100Z42S-INT

IR-S50 Series

P 25



Load	50 kg
Arm length	1200 mm
Model	IR-S50-120Z40S-INT

IR-TS4 Series

P 27



Load	4 kg
Arm length	350 mm
Model	IR-TS4-35Z15S-INT

IR-TS5 Series

P 29

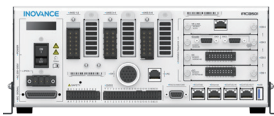


Load	5 kg
Arm length	550 mm
Model	IR-TS5-55Z15S-INT

Robot Controller

IRCB501 Series

P 31



IRCB501 High protection Series

P 33



6-Axis Robot

IR-R4H (Hollow wrist)

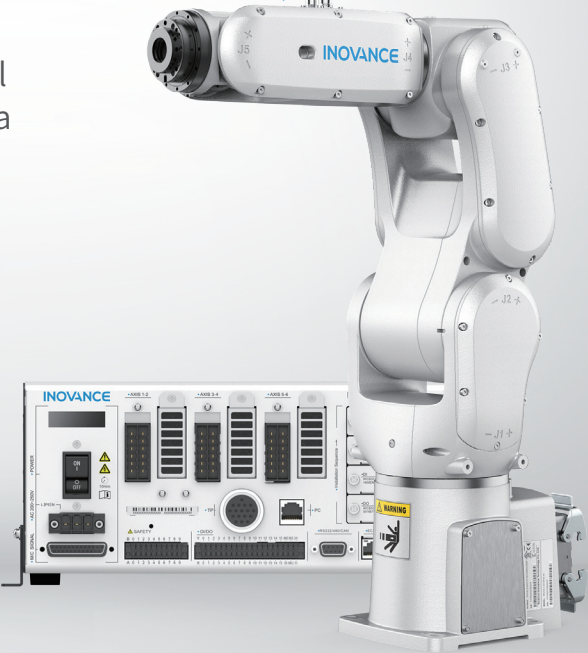
Robots featuring compact structure, with overall height and structural height reaching a new level in the industry, and short cycle time to adapt to a range of application scenarios.

Scope of Application

Handling and loading/unloading in 3C industry; handling in the photovoltaic industry; and assembly and dispensing.

Features

Load	4 kg
Arm length	545.7 mm
Repeatability	±0.02 mm
IP rating	IP40

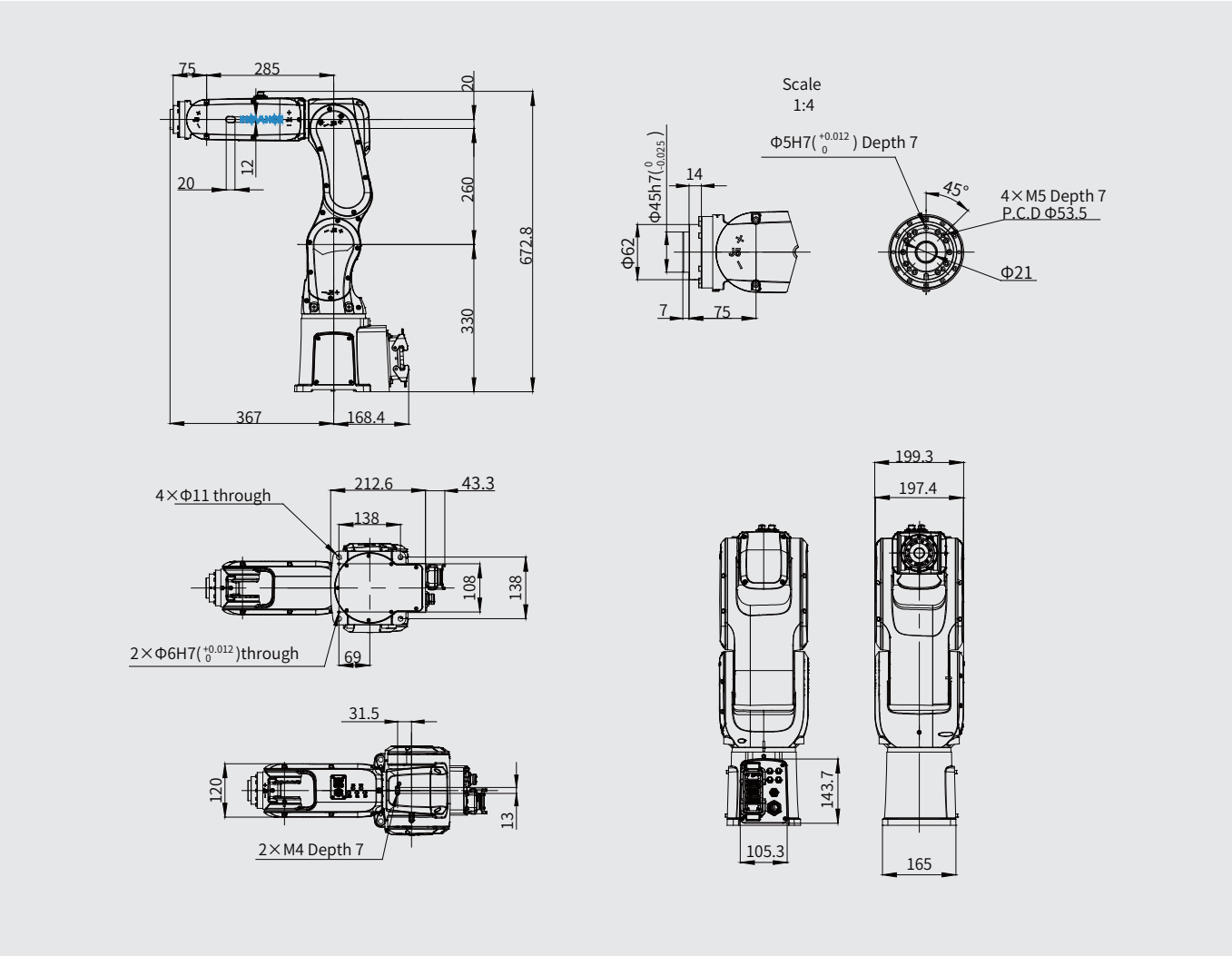


Technical Data

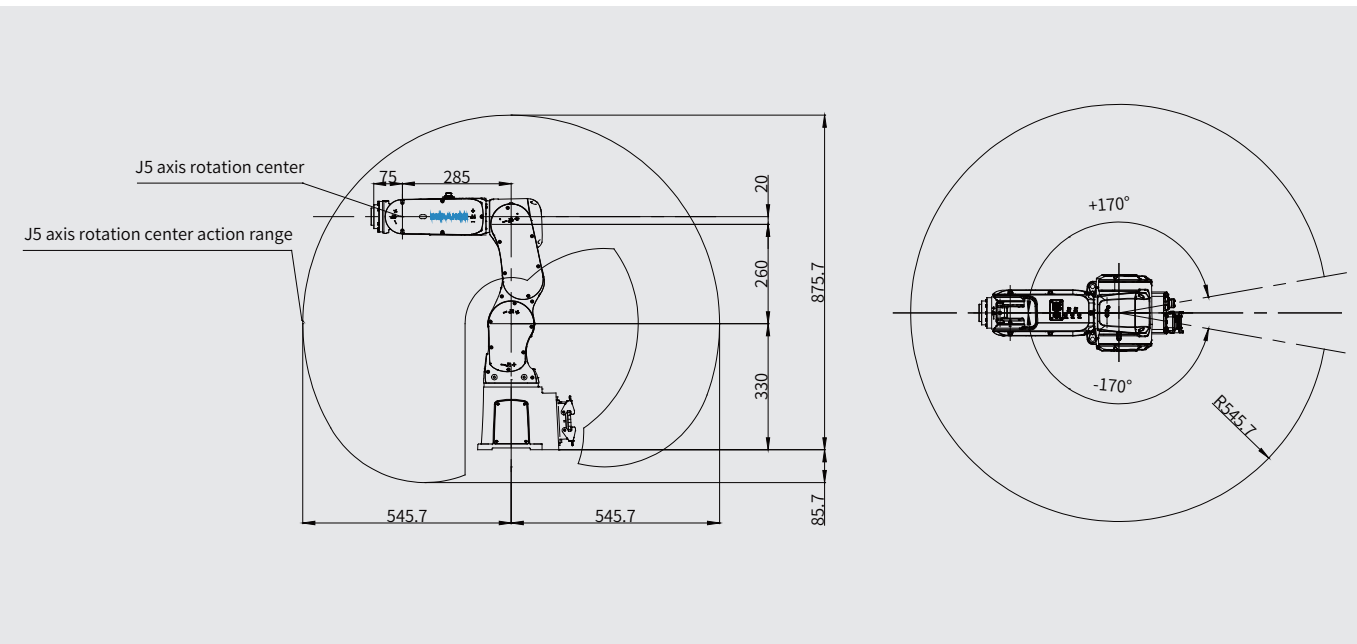
Model		IR-R4H-54S-INT
Structural style		Vertical axis cascading structure
Number of Axes		6 axes
Maximum reach		545.7 mm
Repeatability		±0.02 mm
Maximum load		4 kg
Cable		Standard:3m/5m/10m/15m High Flexible:3m/5m/10m/15m
IP rating		IP40
Maximum Axis Motion Velocity	J1	450° /s
	J2	460° /s
	J3	520° /s
	J4	560° /s
	J5	560° /s
	J6	900° /s
Axis Motion Range	J1	±170°
	J2	-120° to +110°
	J3	-65° to +195°
	J4	-190° to +190°
	J5	-120° to +120°
	J6	-360° to +360°
Allowed wrist torque	J4	8.86 N·m
	J5	8.86 N·m
	J6	4.9 N·m
	J4	0.2 kg·m ²
Allowed wrist inertia	J5	0.2 kg·m ²
	J6	0.067 kg·m ²
Customer Connections	Wiring	12 Signal lines 30V 0.5A; 8 signal lines 30V 0.2A
	Air	Φ4mm×4,0.59 MPa
Operating Conditions	Operating Ambient Temperature ^[1]	0°C ~45°C
	Ambient Humidity	5%~95%(Non-condensing)
	Maximum Temperature Gradient	1.5°C /min
Weight		24.5kg
Input power (average power consumption)		2kVA (0.5kW)
Noise ^[2]		≤ 80dB
Matching Controller		IRCB501 Drive-control integrated controller
Mounting Mode		Floor mounted
Certification		CE,cSGSUS,KCs,Kc

[1]: Ambient temperature: If the product is used in a low temperature environment similar to the lowest temperature of the specification, it is recommended to warm up for 10 minutes before operation.
[2]: Noise level: The operating conditions are 6-joint linkage, 100% speed and acceleration, and 50% duty cycle; the measurement position is the front of the robot, 1000 mm away from the action area, and 50mm above the base mounting surface.

Mounting Dimensions(mm)



Motion Range(mm)



6-Axis Robot

IR-R11 Series

Robots featuring compact structure, with overall height and structural height reaching a new level in the industry, and short cycle time to adapt to a range of application scenarios.

Scope of Application

Handling and loading/unloading in 3C industry; handling in the photovoltaic industry; and assembly and dispensing.

Features

Load	10 kg / 11.3 kg
Arm length	1101.6 mm / 901.9 mm
Repeatability	±0.02 mm
IP rating	IP40



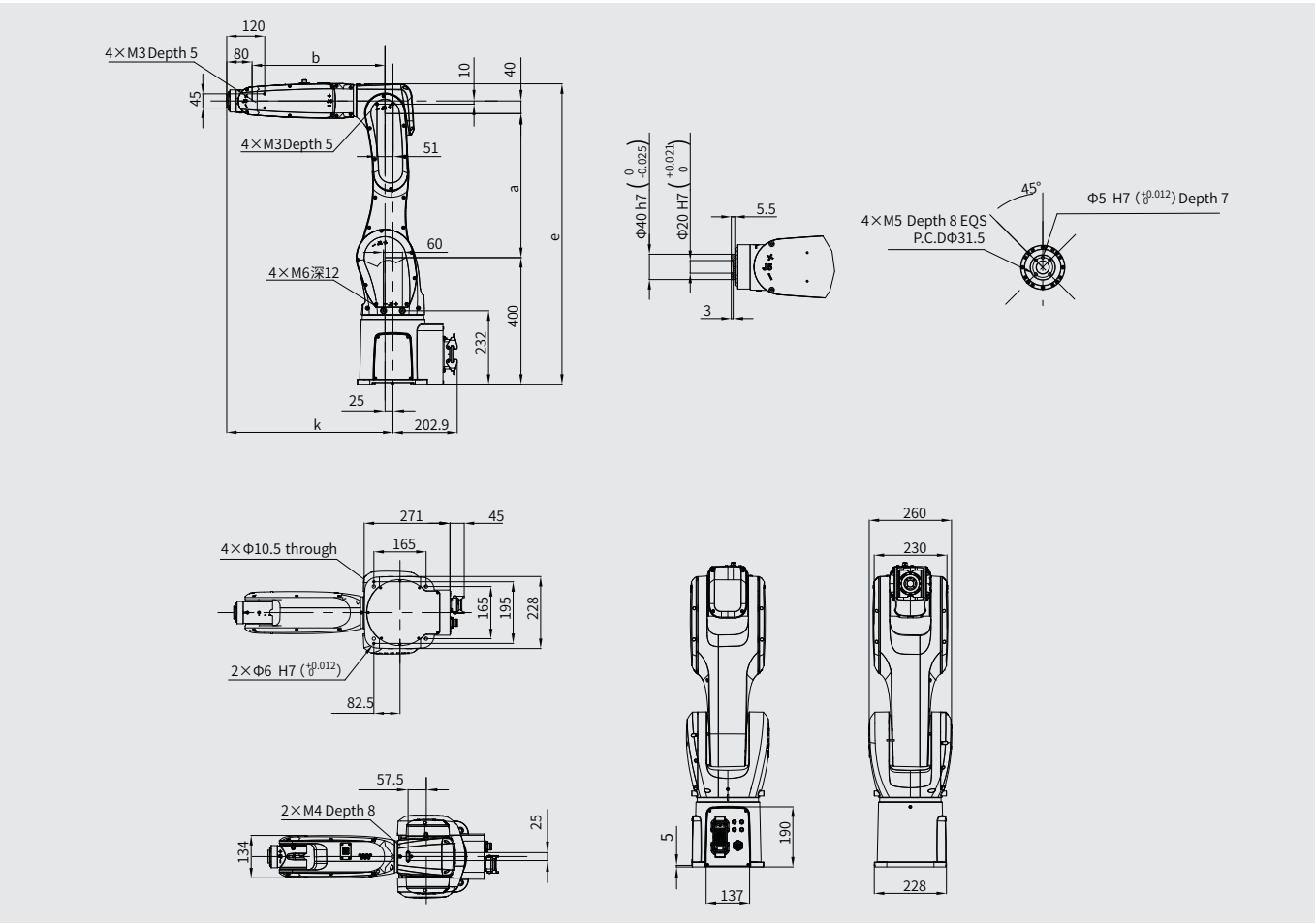
Technical Data

Model		IR-R10-110S-INT	IR-R11-90S-INT
Structural style		Vertical axis cascading structure	Vertical axis cascading structure
Number of Axes		6 axes	6 axes
Maximum reach		1101.6 mm	901.9 mm
Repeatability		±0.02 mm	±0.02 mm
Maximum load		10 kg	11.3 kg
Cable		Standard:3m/5m/10m/15m	High Flexible:3m/5m/10m/15m
IP rating		IP40	IP40
Maximum Axis Motion Velocity	J1	300° /s	300° /s
	J2	225° /s	225° /s
	J3	330° /s	330° /s
	J4	450° /s	450° /s
	J5	420° /s	420° /s
	J6	720° /s	720° /s
Axis Motion Range	J1	±170°	±170°
	J2	-135° to +100°	-135° to +100°
	J3	-66° to +210°	-66° to +210°
	J4	-190° to +190°	-190° to +190°
	J5	-125° to +125°	-125° to +125°
	J6	-360° to +360°	-360° to +360°
Allowed wrist torque	J4 Axis	18.59 N·m	20.45 N·m
	J5	18.59 N·m	20.45 N·m
	J6	9.8 N·m	10.8 N·m
Allowed wrist inertia	J4	0.6 kg·m²	0.6 kg·m²
	J5	0.6 kg·m²	0.6 kg·m²
	J6	0.2 kg·m²	0.2 kg·m²
Customer Connections	Wiring	12 Signal lines 30V 0.5A	12 Signal lines 30V 0.5A
	Air	Φ4mm×4,0.59 MPa	Φ4mm×4,0.59 MPa
Operating Conditions	Operationg Ambient Temperature ^[1]	0°C ~45°C	0°C ~45°C
	Ambient Humidity	5%~95%(Non-condensing)	5%~95%(Non-condensing)
	Maximum Temperature Gradient	1.5°C /min	1.5°C /min
Weight		48kg	45kg
Input power (average power consumption)		3kVA (0.6kW)	3kVA (0.6kW)
Noise ^[2]		≤ 75dB	≤ 75dB
Matching Controller		IRCB501 Drive-control integrated controller	IRCB501 Drive-control integrated controller
Mounting Mode		Floor mounted	Floor mounted
Certification		CE,cSGSUS,KCs,Kc	

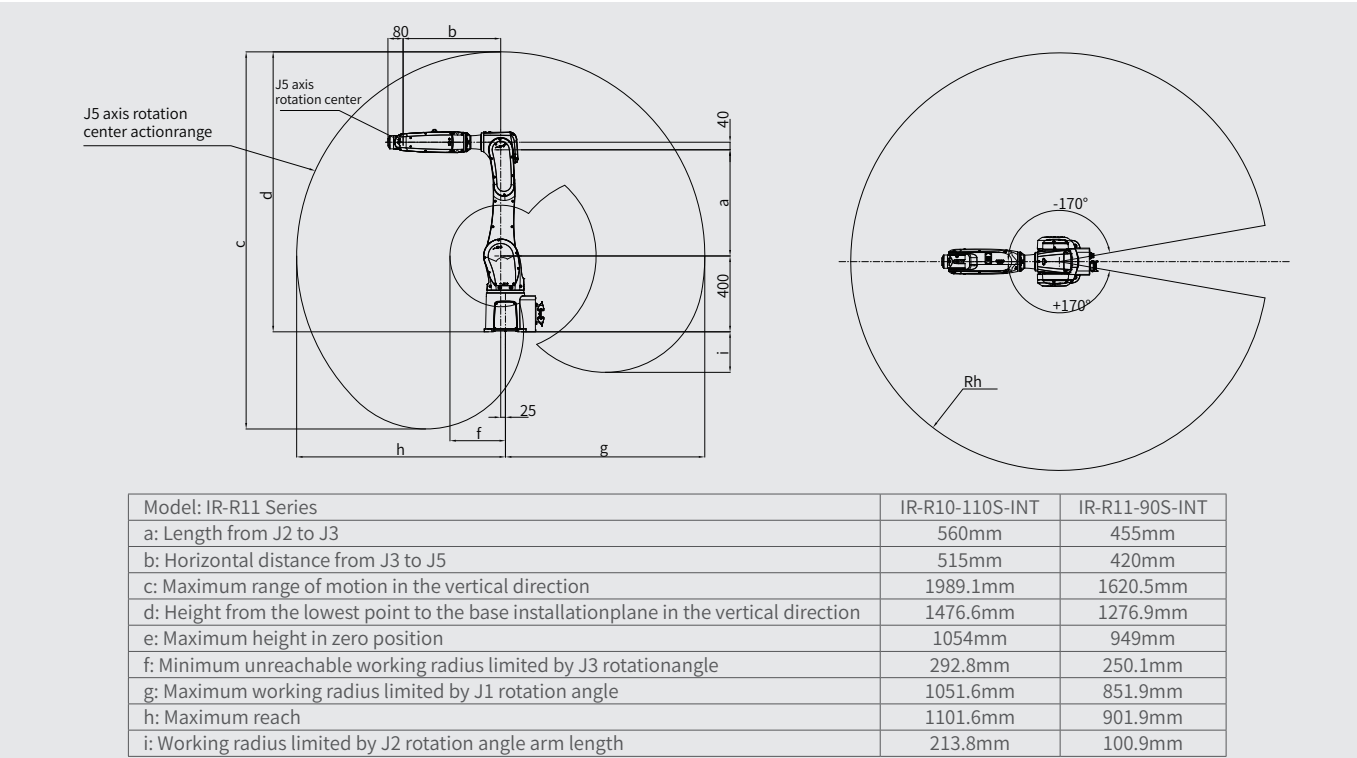
[1]: Ambient temperature: If the product is used in a low temperature environment similar to the lowest temperature of the specification, it is recommended to warm up for 10 minutes before operation.

[2]: Noise level: The operating conditions are 6-joint linkage, 100% speed and acceleration, and 50% duty cycle; the measurement position is the front of the robot, 1000 mm away from the action area, and 50mm above the base mounting surface.

Mounting Dimensions(mm)



Motion Range(mm)



6-Axis Robot

IR-R10 Series

Aesthetically designed robots with high motion speed and rigidity, together with dedicated motor and controller, providing customers with cost-effective solutions.

Scope of Application

Handling, machine loading/unloading, dispensing, deburring, grinding, polishing, welding, and more.

Features

Load	10 kg
Arm length	1422 mm
Repeatability	±0.05 mm
IP rating	IP65 (IP67 for wrist)

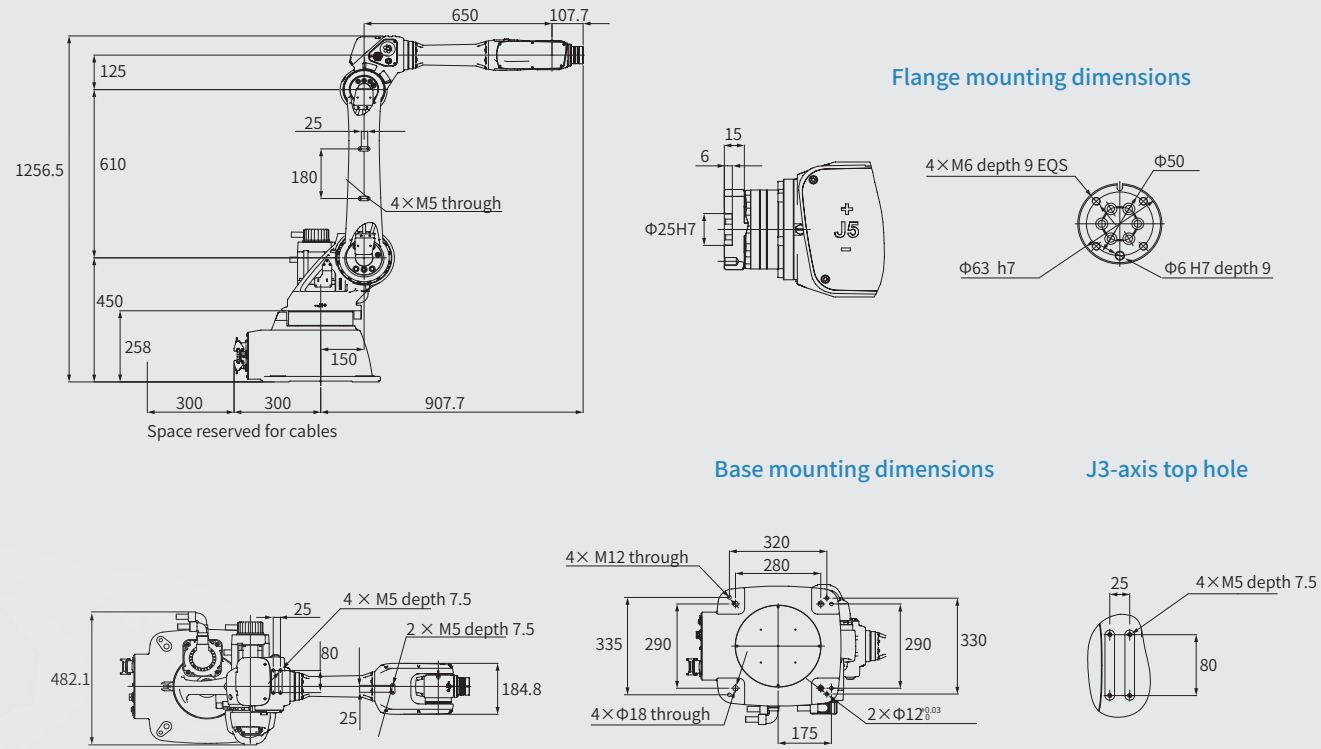


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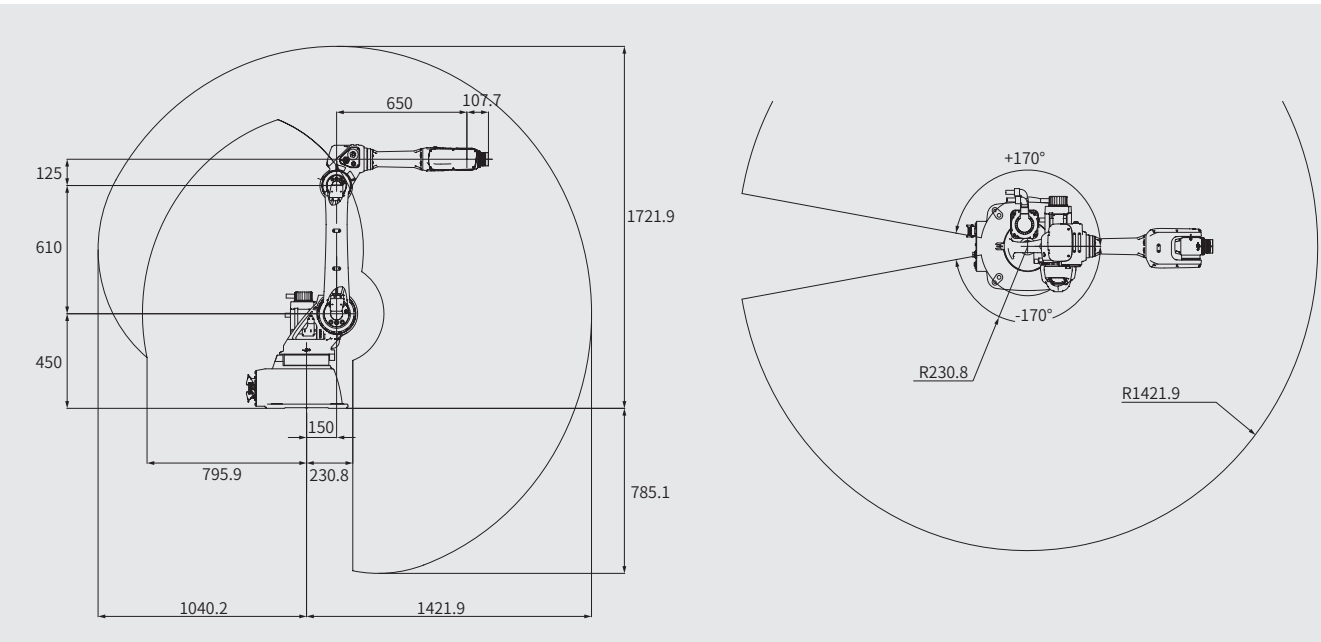
Model		IR-R10-140S-INT
Structural style		Vertical axis cascading structure
Number of Axes		6 axes
Maximum reach		1422mm
Repeatability		±0.05mm
Maximum load		10kg
Cable		Standard:3m/5m/10m/15m
IP rating		IP65 (IP67 for wrist)
Maximum Axis Motion Velocity	J1	200° /s
	J2	200° /s
	J3	200° /s
	J4	375° /s
	J5	375° /s
	J6	600° /s
Axis Motion Range	J1	-170° to +170°
	J2	-160° to +60°
	J3	-80° to +160°
	J4	-180° to +180°
	J5	-140° to +140°
	J6	-360° to +360°
Allowed wrist torque	J4	22N·m
	J5	22N·m
	J6	9.8N·m
Allowed wrist inertia	J4	0.63kg·m ²
	J5	0.63kg·m ²
	J6	0.2kg·m ²
Customer connections	Wiring	18 signal lines 30V 0.5A
	Air	Φ8 mm×1, 0.59 MPa
Operating conditions	Operating ambient temperature ^[1]	0°C ~45°C
	Ambient humidity	10%~80% (non-condensing)
	Maximum Temperature Gradient	1.5°C /min
Weight		130kg
Input power (average power consumption)		3kVA (0.6kW)
Noise ^[2]		≤ 80dB
Matching controller		IRCB501 high-protection drive-control integrated controller
Mounting mode		Floor mounted
Certification		CE,cSGSUs,KCs,Kc

[1]: Ambient temperature: If the product is used in a low temperature environment similar to the lowest temperature of the specification, it is recommended to warm up for 10 minutes before operation.
[2]: Noise level: The operating conditions are 6-joint linkage, 100% speed and acceleration, and 50% duty cycle; the measurement position is the front of the robot, 1000 mm away from the action area, and 50mm above the base mounting surface.

Mounting Dimensions(mm)



Motion Range(mm)



6-Axis Robot

IR-R20 Series

Easy-to-use and reliable robots featuring compact structure, high handling capacity and repeatability.

Scope of Application

Handling, loading/unloading, stamping, assembly, grinding, polishing, and more.

Features

Load	20 kg / 10 kg
Arm length	1723 mm / 2045 mm
Repeatability	±0.05 mm
IP rating	IP65 (IP67 for wrist)

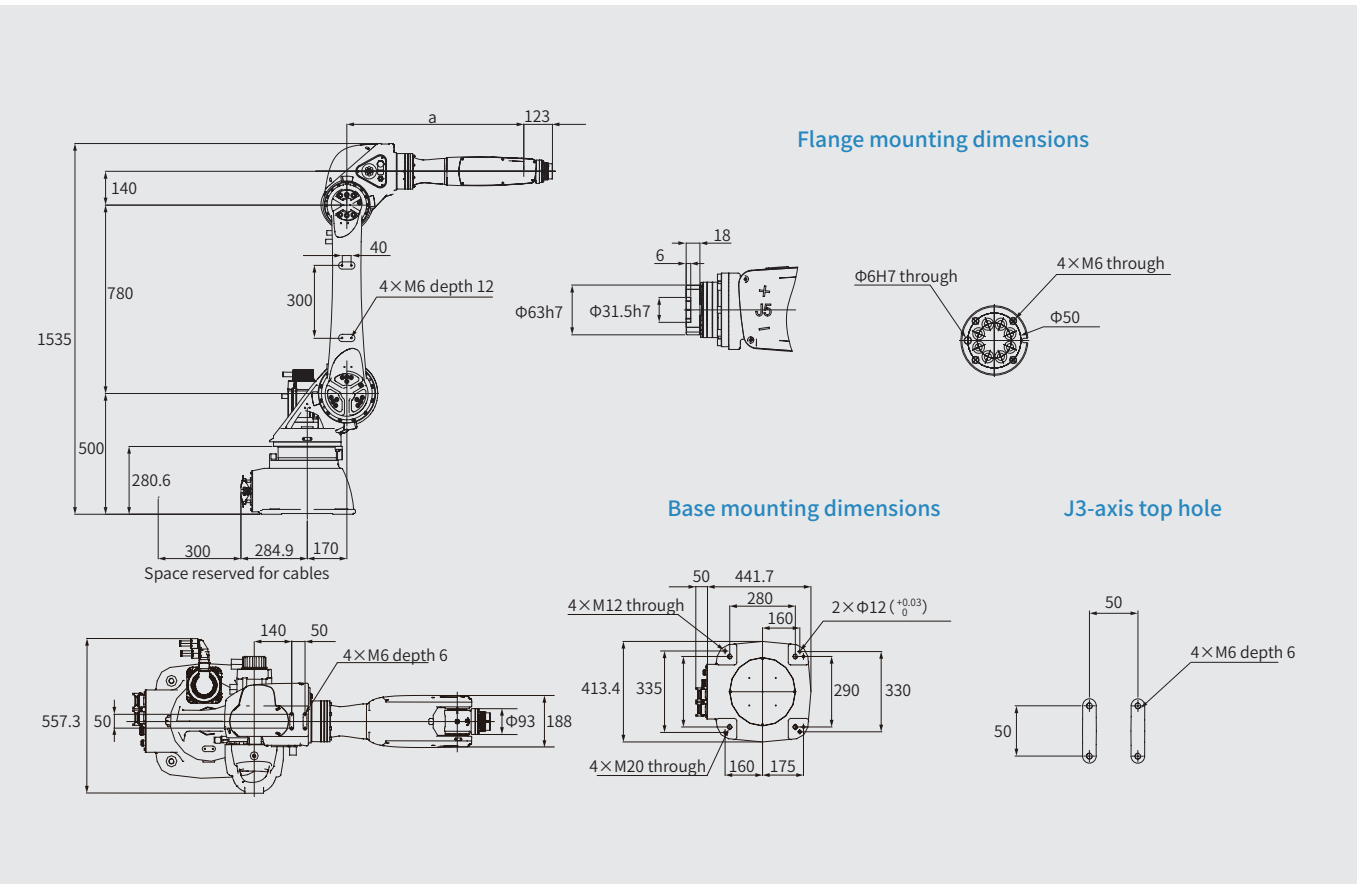


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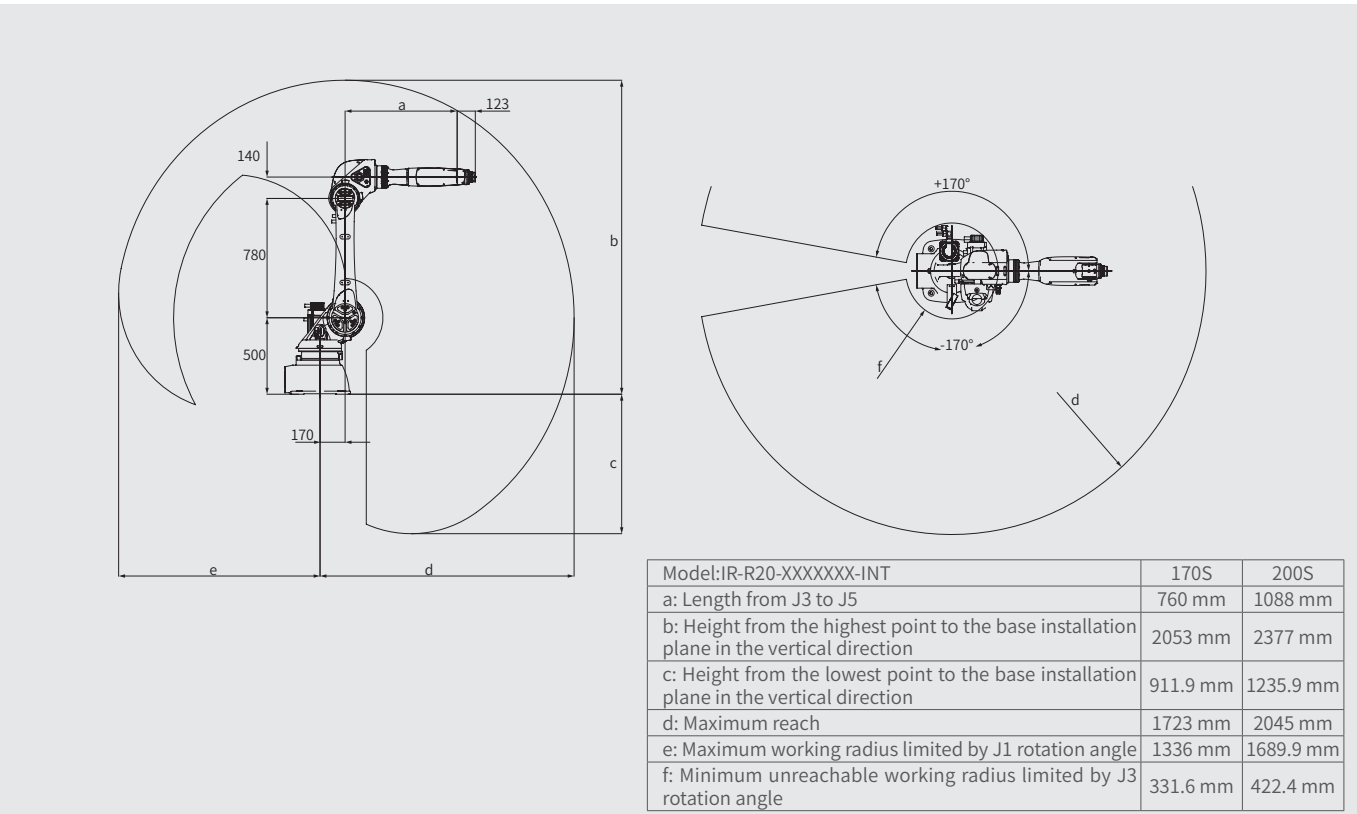
Model		IR-R20-170S-INT	IR-R10-200S-INT
Structural style		Vertical axis cascading structure	Vertical axis cascading structure
Number of Axes		6 axes	6 axes
Maximum reach		1723mm	2045mm
Repeatability		±0.05mm	±0.05mm
Maximum load		20kg	10kg
Cable		Standard:3m/5m/10m/15m	High Flexible:5m/10m/15m
IP rating		IP65 (IP67 for wrist)	IP65 (IP67 for wrist)
Maximum Axis Motion Velocity	J1	190° /s	190° /s
	J2	175° /s	175° /s
	J3	200° /s	200° /s
	J4	400° /s	400° /s
	J5	360° /s	360° /s
	J6	610° /s	610° /s
Axis Motion Range	J1	-170° to +170°	-170° to +170°
	J2	-155° to +80°	-155° to +80°
	J3	-75° to +160°	-75° to +160°
	J4	-180° to +180°	-180° to +180°
	J5	-140° to +140°	-140° to +140°
	J6	-360° to +360°	-360° to +360°
Allowed wrist torque	J4	42N·m	22N·m
	J5	42N·m	22N·m
	J6	20N·m	10N·m
Allowed wrist inertia	J4	1.18kg·m ²	1kg·m ²
	J5	1.18kg·m ²	1kg·m ²
	J6	0.5kg·m ²	0.2kg·m ²
Customer connections	Wiring	18 signal lines 30V 0.5A	18 signal lines 30V 0.5A
	Air	Φ8 mm×1, 0.59 MPa	Φ8 mm×1, 0.59 MPa
Operating conditions	Operating ambient temperature ^[1]	0°C ~45°C	0°C ~45°C
	Ambient humidity	10%~80%(non-condensing)	10%~80%(non-condensing)
	Maximum Temperature Gradient	1.5°C /min	1.5°C /min
Weight		240kg	245kg
Input power (average power consumption)		5kVA (1kW)	5kVA (1kW)
Noise ^[2]		≤ 80dB	≤ 80dB
Matching controller		IRCB501 high-protection drive-control integrated controller	
Mounting mode		Floor mounted	
Certification		CE,cSGSUS,KCs,Kc	

[1]: Ambient temperature: If the product is used in a low temperature environment similar to the lowest temperature of the specification, it is recommended to warm up for 10 minutes before operation.
[2]: Noise level: The operating conditions are 6-joint linkage, 100% speed and acceleration, and 50% duty cycle; the measurement position is the front of the robot, 1000 mm away from the action area, and 50mm above the base mounting surface.

Mounting Dimensions(mm)



Motion Range(mm)



SCARA Robot

IR-S4 Series

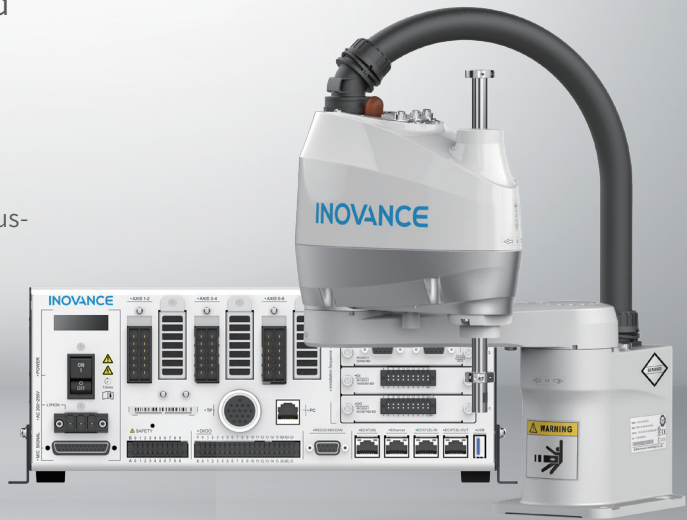
Robots with enhanced load capacity and multiple arm length options, suitable for large load applications in various industries.

Scope of Application

Assembly and dispensing in 3C industry, lithium battery industry, photovoltaic industry, and display industry.

Features

Load	4 kg
Arm length	400 mm
Efficiency	0.342s
Repeatability	±0.01 mm



Technical Data

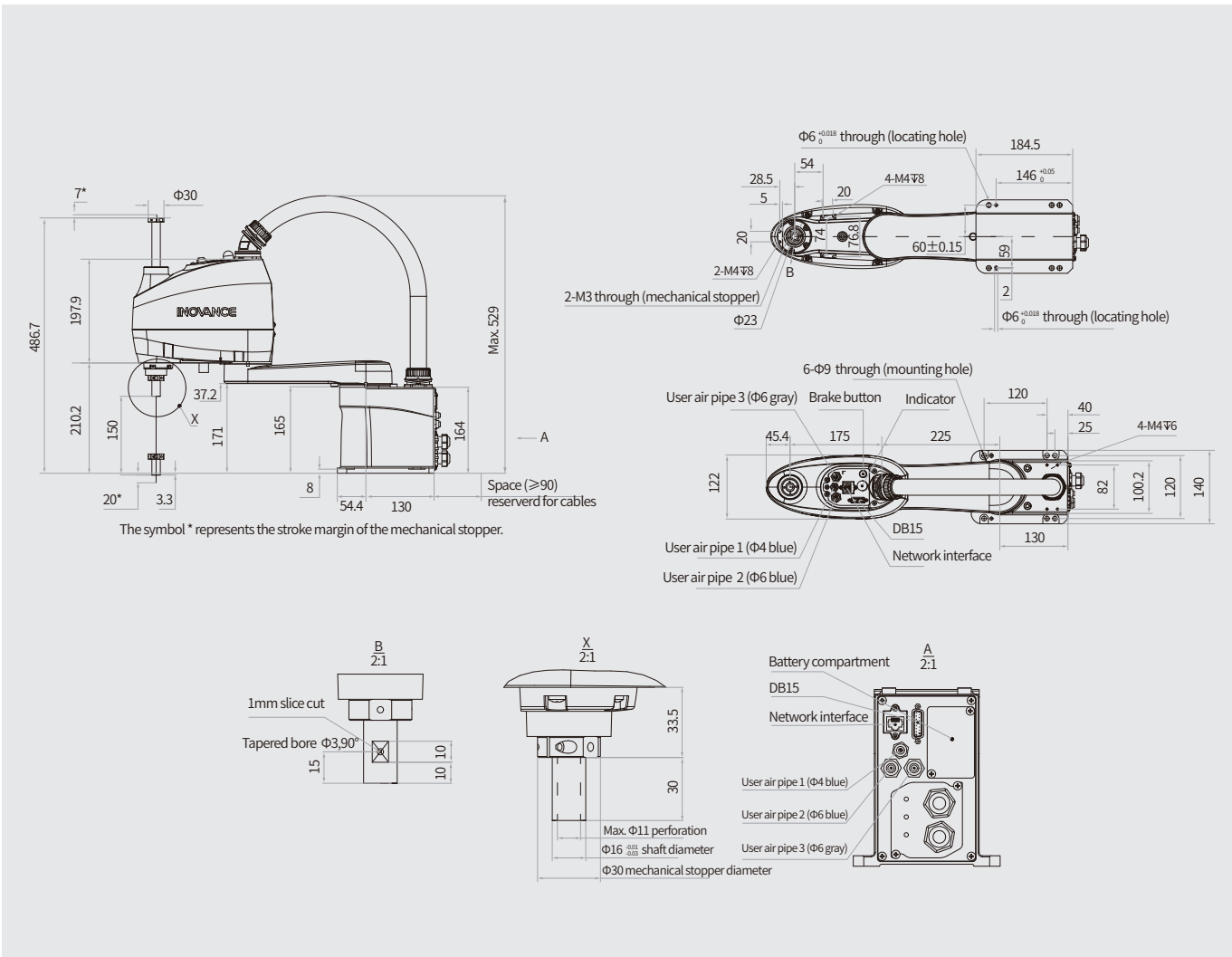
Model		IR-S4-40Z15S-INT
Arm length	Arm 1 + Arm 2	400 mm
	Arm 1	225 mm
	Arm 2	175 mm
Maximum speed	J1 + J2	7200 mm/s
	J3	1300 mm/s
	J4	2600°/s
	J1 + J2	±0.01 mm
Repeatability	J3	±0.01 mm
	J4	±0.01°
Handling capacity (load)	Rated	2 kg
	Maximum	4 kg
Allowable inertia moment of J4	Rated	0.005 kg.m ²
	Maximum	0.05 kg.m ²
Mounting hole		120×120 mm (4-Φ9 mm)
Weight (excluding cables)		12kg
Press-in force of J3		100 N
Cable		Standard:3m/5m/10m/15m High Flexible:3m/5m/10m/15m
Customer signal line		15 (15pin: D-sub)
Customer air piping		Φ6 mm×2, 0.59 MPa Φ4 mm×1, 0.59 MPa
Operating conditions	Ambient temperature ^[1]	5°C ~40°C (no excessive temperature changes)
	Relative humidity	10%~80%
Noise level ^[2]		L _{aeq} =70 dB(A)
Maximum motion range	J1	±132°
	J2	±141°
	J3	150 mm
	J4	±360°
Cycle time ^[3]		0.342s
Input power (average power consumption)		2kVA (0.3kW)
Certification		CE,cSGSus,KCs,Kc

[1]If this product is used in a low temperature environment close to the lowest temperature of the product specification, or if it is suspended for a long time due to holidays and nights, it is recommended to warm up for 10 minutes before running

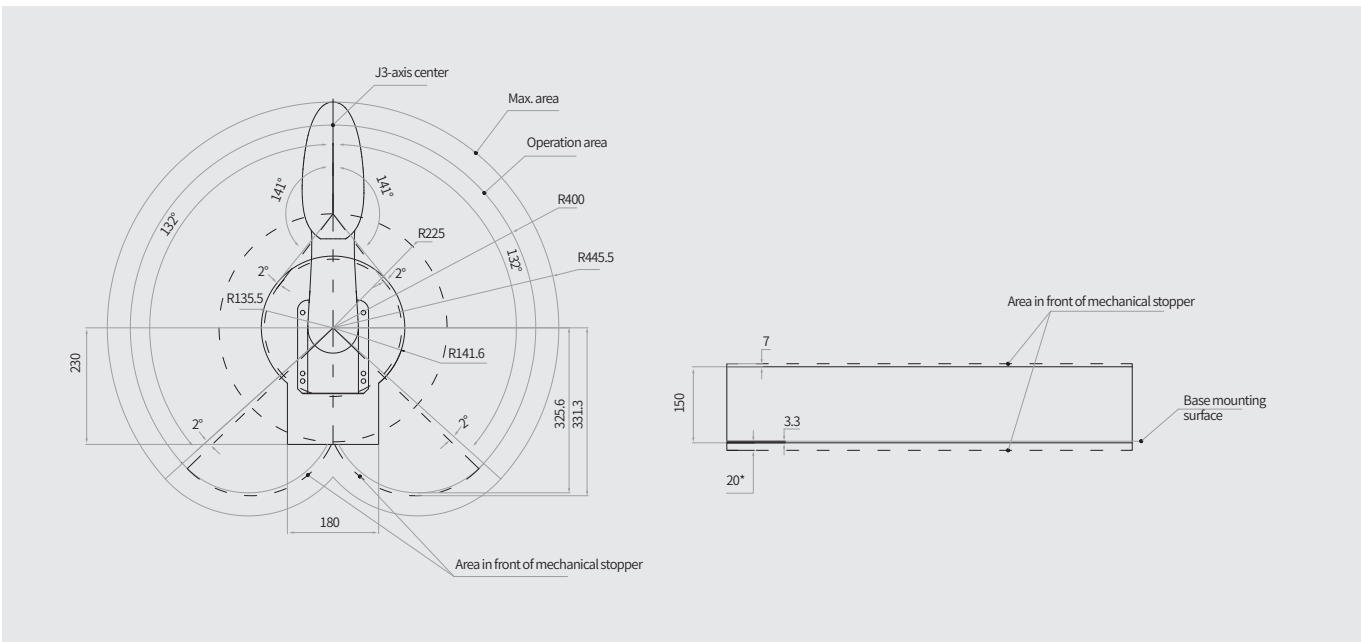
[2]Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.

[3]Standard cycle time for 3kg/4kg SCARA: 1kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 25 mm vertically)

Mounting Dimensions(mm)



Motion Range(mm)



SCARA Robot

IR-S7 Series

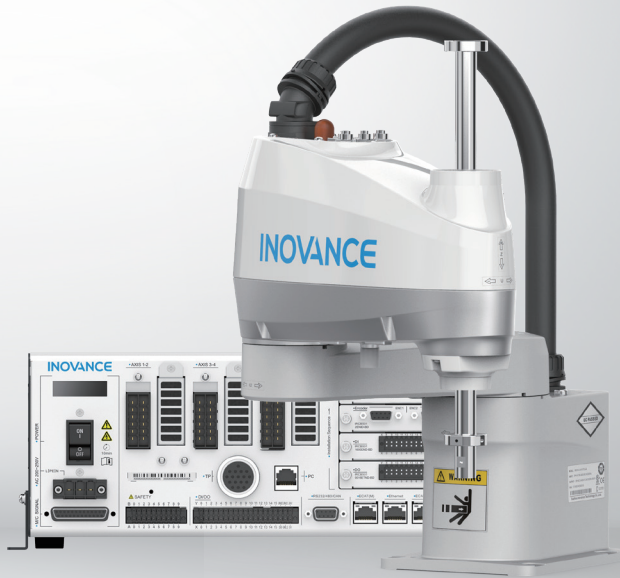
Robots with enhanced load capacity and multiple arm length options, suitable for large load applications in various industries.

Scope of Application

Assembly and dispensing in 3C industry, lithium battery industry, photovoltaic industry, and display industry.

Features

Load	7 kg
Arm length	500 mm / 600 mm / 700 mm
Efficiency	0.351s/0.36s/0.375s
Repeatability	J1 and J2: ±0.02 mm; J3: 0.01 mm; J4: ±0.01°



Technical Data

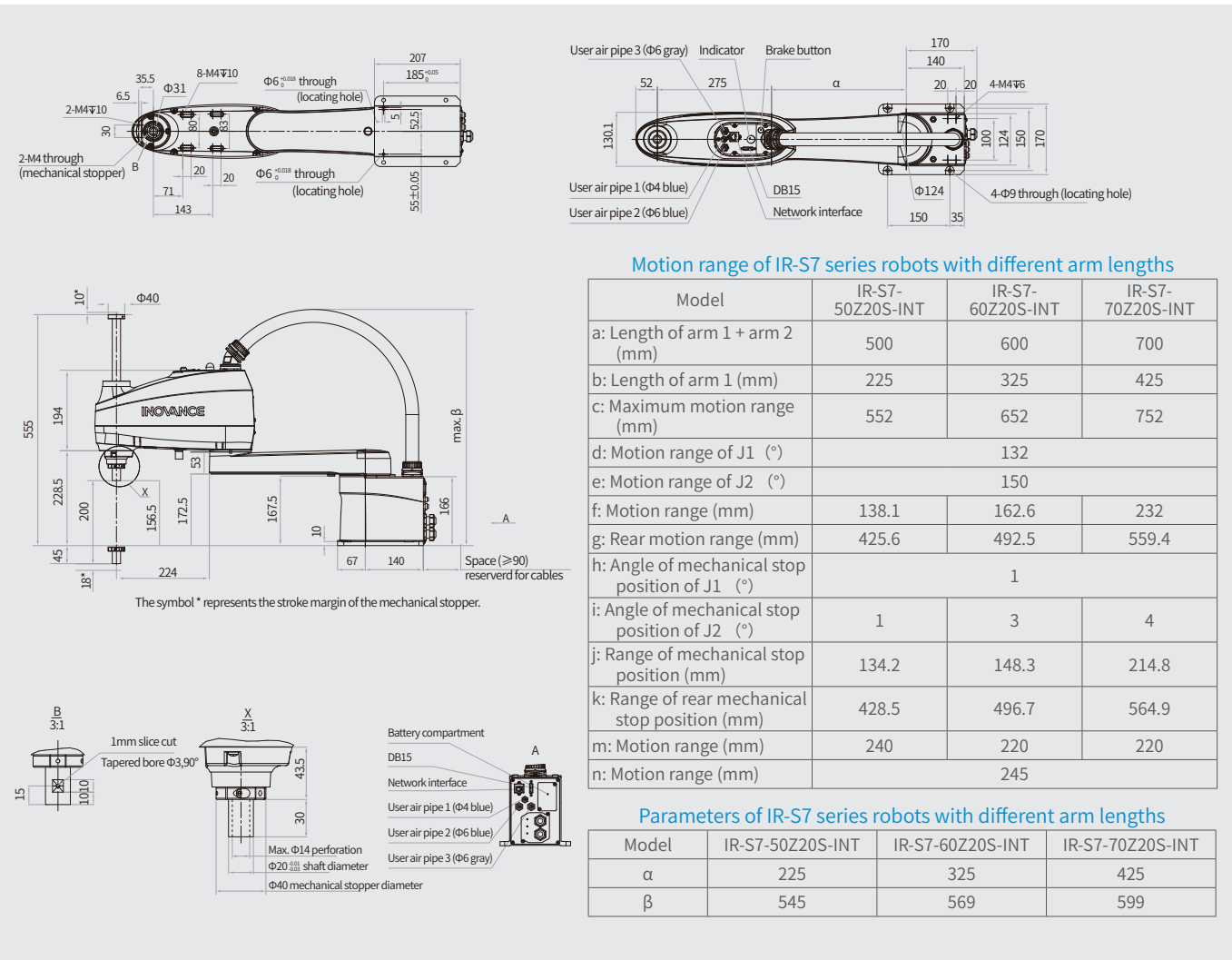
Model		IR-S7-50Z20S-INT	IR-S7-60Z20S-INT	IR-S7-70Z20S-INT
Arm length	Arm 1 + Arm 2	500 mm	600 mm	700 mm
	Arm 1	225 mm	325 mm	425 mm
	Arm 2	275 mm	275 mm	275 mm
Maximum speed	J1 + J2	7120 mm/s	7850 mm/s	8590 mm/s
	J3	1600 mm/s	1600 mm/s	1600 mm/s
	J4	2000° /s	2000° /s	2000° /s
	J1 + J2	±0.02 mm	±0.02 mm	±0.02 mm
Repeatability	J3	±0.01 mm	±0.01 mm	±0.01 mm
	J4	±0.01°	±0.01°	±0.01°
Handling capacity (load)	Rated	3 kg	3 kg	3 kg
	Maximum	7 kg	7 kg	7 kg
Allowable inertia moment of J4	Rated	0.01 kg.m ²	0.01 kg.m ²	0.01 kg.m ²
	Maximum	0.12 kg.m ²	0.12 kg.m ²	0.12 kg.m ²
Mounting hole		150×150 mm (4-Φ9 mm)		
Weight (excluding cables)		17kg	17.5kg	19kg
Press-in force of J3		150 N		
Cable		Standard:3m/5m/10m/15m High Flexible:3m/5m/10m/15m		
Customer signal line		15 (15pin: D-sub)		
Customer air piping		CAT5E Φ6 mm×2, 0.59 MPa Φ4 mm×1, 0.59 MPa		
Operating conditions	Ambient temperature ^[1]	5°C ~40°C (no excessive temperature changes)		
	Relative humidity	10%~80%		
Noise level ^[2]		Laeq=70 dB(A)		
Maximum motion range	J1	±132°		
	J2	±150°		
	J3	200 mm		
	J4	±360°		
Cycle time ^[3]		0.351s	0.36s	0.375s
Input power (average power consumption)		2kVA (0.3kW)		
Certification		CE,cSGSus,KCs,Kc		

[1]When used in a low-temperature environment approximating the lowest allowable temperature, or when idle for a longperiod of time due to holi days and nighttime, it is recommended to warm up the product for 10 minhutes before operating it.

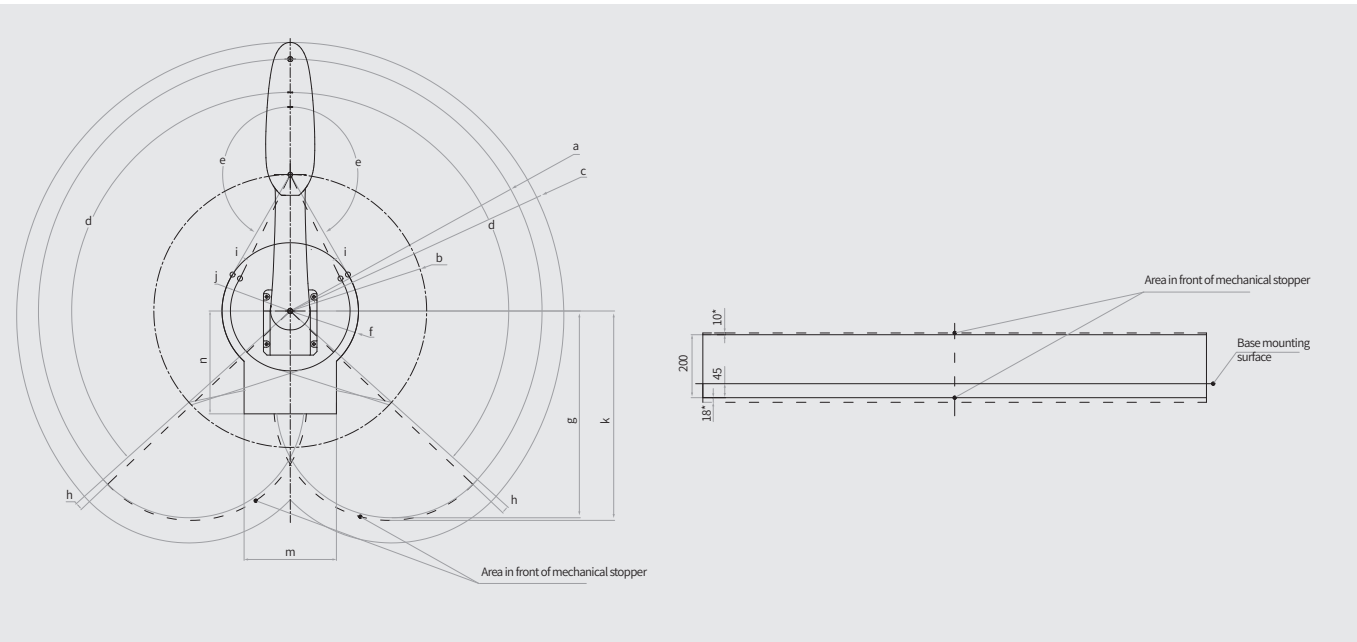
[2]Measured in front of the robot at a distance of 1000 mm from its operating area and at least 50 mm above the base mounting surface with four joints operating at 100% speed and acceleration, with a duty cycle of 50%.

[3]Time required for a 7 kg/10 kg SCARA robot to move a 2 kg payload between two points 300 mm apart at a height of 25 mm.

Mounting Dimensions(mm)



Motion Range(mm)



SCARA Robot

IR-S10 Series

Robots with enhanced load capacity and multiple arm length options, suitable for large load applications in various industries.

Scope of Application

Assembly and dispensing in 3C industry, lithium battery industry, photovoltaic industry, and display industry.

Features

Load	10 kg
Arm length	600 mm / 700 mm / 800 mm
Cycle time	0.361s/0.386s/0.416s
Repeatability	J1 and J2: ±0.02 mm to 0.025 mm J3: 0.01 mm; J4: ±0.01°



Technical Data

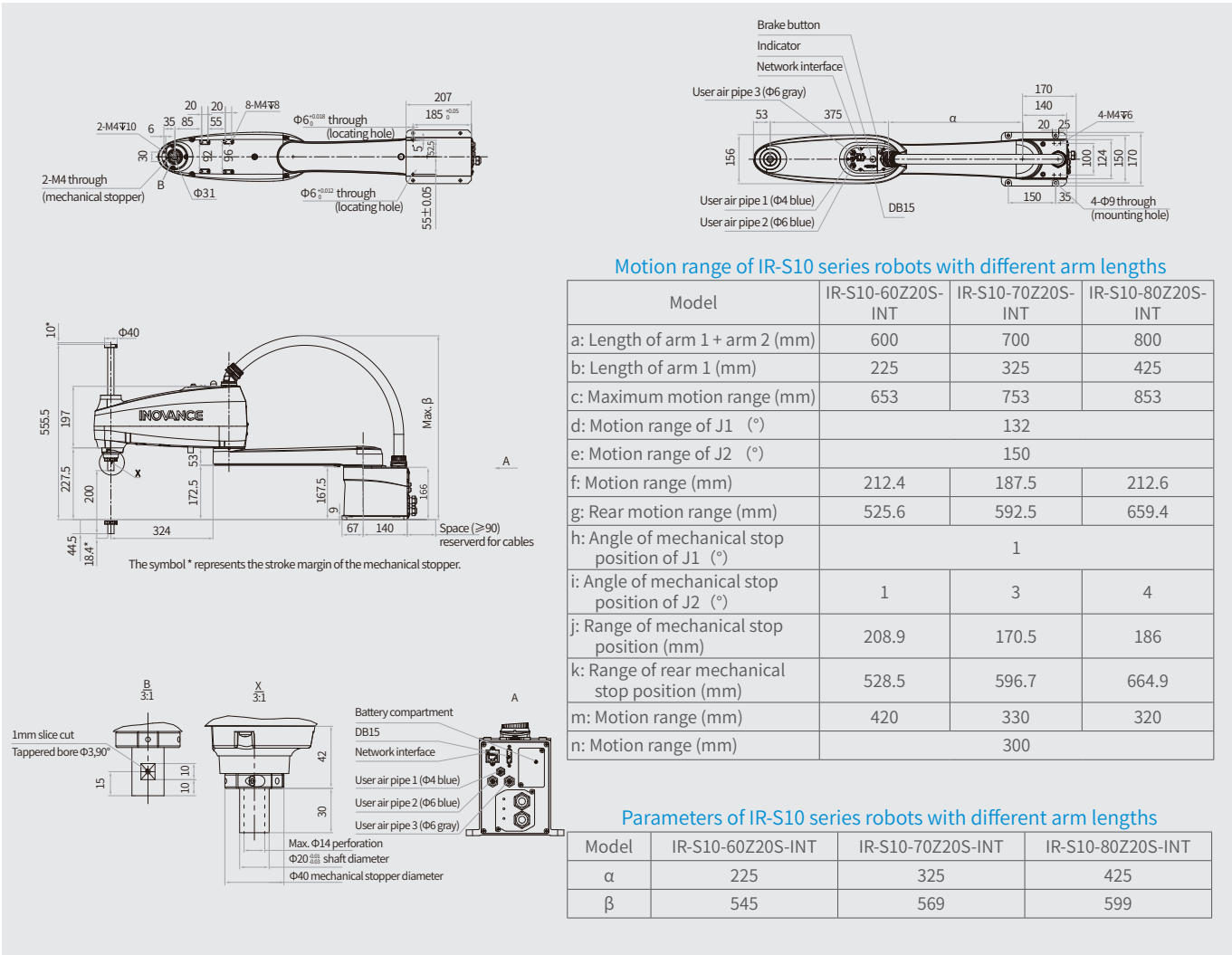
Model		IR-S10-60Z20S-INT	IR-S10-70Z20S-INT	IR-S10-80Z20S-INT
Arm length	Arm 1 + Arm 2	600 mm	700 mm	800 mm
	Arm 1	225 mm	325 mm	425 mm
	Arm 2	375 mm	375 mm	375 mm
Maximum speed	J1 + J2	9100 mm/s	9800 mm/s	10500 mm/s
	J3	1600 mm/s	1600 mm/s	1600 mm/s
	J4	2700°/s	2700°/s	2700°/s
	J1 + J2	±0.02 mm	±0.02 mm	±0.025 mm
Repeatability	J3	±0.01 mm	±0.01 mm	±0.01 mm
	J4	±0.01°	±0.01°	±0.01°
Handling capacity (load)	Rated	5 kg	5 kg	5 kg
	Maximum	10 kg	10 kg	10 kg
Allowable inertia moment of J4	Rated	0.02 kg.m ²	0.02 kg.m ²	0.02 kg.m ²
	Maximum	0.3 kg.m ²	0.3 kg.m ²	0.3 kg.m ²
Mounting hole		150×150 mm (4-Φ9 mm)		
Weight (excluding cables)		18.5 kg	19 kg	20.5 kg
Press-in force of J3		200 N	200 N	200 N
Cable		Standard:3m/5m/10m/15m High Flexible:3m/5m/10m/15m		
Customer signal line		15 (15pin: D-sub) CAT5E		
Customer air piping		Φ6 mm×2, 0.59 MPa Φ4 mm×1, 0.59 MPa		
Operating conditions	Ambient temperature ^[1]	5°C ~40°C (no excessive temperature changes)		
	Relative humidity	10%~80%		
Noise level ^[2]		Laeq=70 dB(A)		
Maximum motion range	J1	±132°		
	J2	±150°		
	J3	200 mm		
	J4	±360°		
Cycle time ^[3]		0.361s	0.386s	0.416s
Input power (average power consumption)		2kVA (0.3kW)		
Certification		CE,cSGSUs,KCs,Kc		

[1]When used in a low-temperature environment approximating the lowest allowable temperature, or when idle for a longperiod of time due to holi days and nighttime, it is recommended to warm up the product for 10 minhutes before operating it.

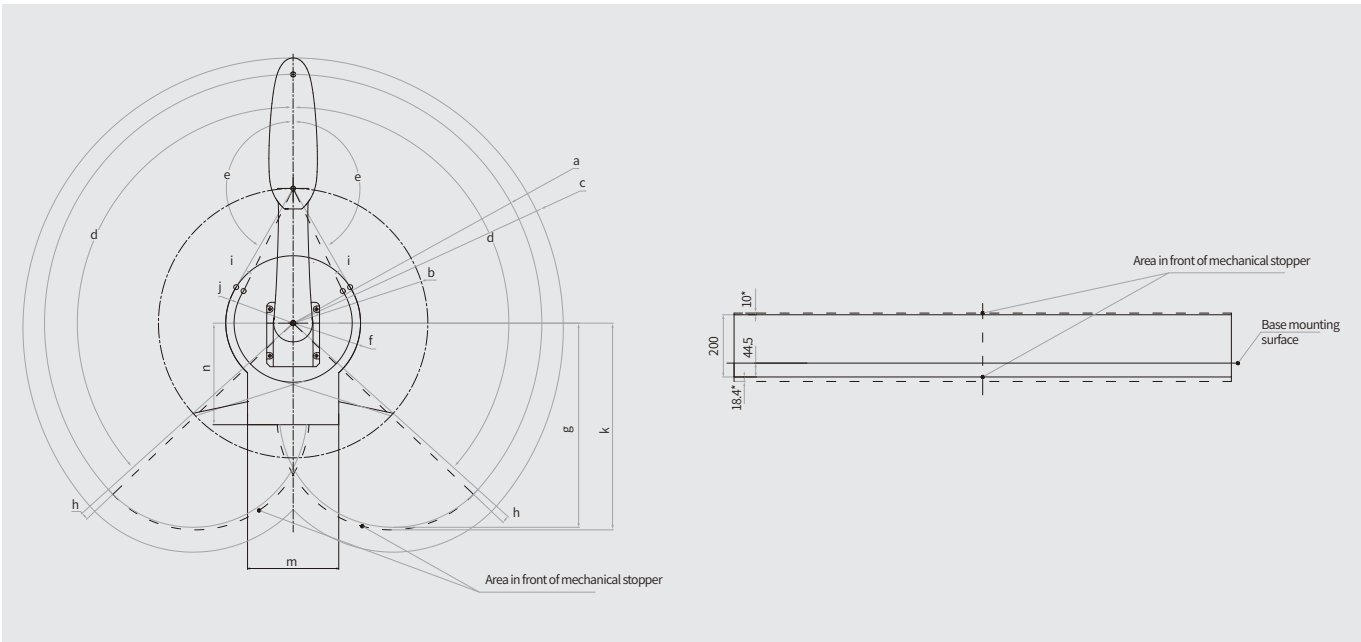
[2]Measured in front of the robot at a distance of 1000 mm from its operating area and at least 50 mm above the base mounting surface with four joints operating at 100% speed and acceleration, with a duty cycle of 50%.

[3]Time required for a 7 kg/10 kg SCARA robot to move a 2 kg payload between two points 300 mm apart at a height of 25 mm.

Mounting Dimensions(mm)



Motion Range(mm)



IR-S20 Series

SCARA robots with harmonic drive for the fourth joint, featuring high inertia, high rigidity and high repeatability.

Applications in lithium battery industry.

Load	20 kg
Arm length	800 mm / 1000 mm
Cycle time	0.36s/0.38s
Repeatability	J1,J2:±0.04mm, J3:±0.01mm,J4:±0.01°



Model		IR-S20-80Z42S-INT	IR-S20-100Z42S-INT
Arm length	Arm 1 + Arm 2	800mm	1000mm
	Arm 1	350mm	550mm
	Arm 2	450mm	450mm
Maximum speed	J1 + J2	9550mm/s	10800mm/s
	J3	1010mm/s	1010mm/s
	J4	705° /s	705° /s
Repeatability	J1 + J2	±0.04mm	±0.04mm
	J3	±0.01mm	±0.01mm
	J4	±0.01°	±0.01°
Handling capacity(load)	Rated	10kg	10kg
	Maximum	20kg	20kg
Allowable inertia moment of J4	Rated	0.5kg.m ²	0.5kg.m ²
	Maximum	1.0kg.m ²	1.0kg.m ²
Mounting hole		200mm×200mm(4-Φ16mm)	
Weight (excluding cables)		53kg	56kg
Press-in force of J3		250N	250N
Cable		Standard:3m/5m/10m/15m High Flexible:3m/5m/10m/15m	
Customer signal line		9(9 pin: D-sub),15(15 pin: D-sub)	
Customer air piping		Φ6 mm×2, 0.59 MPa (6 kgf/cm ² :86 psi)	
		Φ4 mm×2, 0.59 MPa (6 kgf/cm ² :86 psi)	
Operating condition	Ambient temperature ^[1]	5°C ~40°C (no excessive temperature changes)	
	Relative humidity	10%~80%	
Noise level ^[2]		L _{aeq} =75dB(A)	
Maximum motion range	J1	±132°	
	J2	±152°	
	J3	420mm	
	J4	±360°	
Cycle time ^[3]		0.36s	0.38s
Input power (average power consumption)		2kVA (0.3kW)	2kVA(0.3kW)
Certification		CE,cSGSUS,KCs,Kc	

- 1] If this product is used in a low temperature environment close to the lowest temperature of the product specification, or if it is suspended for a long time due to holidays and nights, it is recommended to warm up for 10 minutes before running
- 2] Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.
- 3] Standard cycle time for 20kg SCARA : 2kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 25 mm vertically)

6 ± 0.03 through (locating hole)

258

238 ± 0.05

59

6 ± 0.03 through (locating hole)

37.5

20

30

59

142.5

8-M4x8

72

2-M4x8

User air pipe 1 (Φ6 gray)

Brake button

DB15

User air pipe 2 (Φ6 blue)

User air pipe 3 (Φ4 gray)

User air pipe 4 (Φ4 blue)

Indicator DB9

2-M8 (eye bolt mounting hole)

4-Φ16 (mounting hole)

M5 through (grounding hole)

13.3

68

450

200

38

110

200

250

A

DB9

DB15

User air pipe 4 (Φ4 blue)

User air pipe 2 (Φ6 blue)

User air pipe 3 (Φ4 gray)

User air pipe 1 (Φ6 gray)

Max. b

R127 (Minimum cable bending radius)

18.5

121

137

Space (≥ 80) reserved for cables

Space (≥ 150) reserved for battery replacement

1086

292

479

420

64

42°

360.5

INOVANCE

S

0.5 mm slice cut

10

30

10

10

24 $\begin{smallmatrix} 8 \\ 0.3 \end{smallmatrix}$

B-B

Max. Φ18 perforation

Φ25 $\begin{smallmatrix} 0.03 \\ 0.05 \end{smallmatrix}$ axis diameter

Φ39.5 mechanical stopper diameter

Motion range of IR-S20 series robots with different arm lengths		
Model	IR-S20-80Z42S-INT	IR-S20-100Z42S-INT
a	350	550
b	1044	1114

Area in front of mechanical stopper

Base mounting surface

Model :IR-S20-XXXXXX	IR-S20-80Z42S-INT	IR-S20-100Z42S-INT
a: Length of arm 1 + arm 2 (mm)	800	1000
b: Length of arm 1 (mm)	550	350
c: Maximum motion range (mm)	867.8	1078
d: Motion range of J1 (°)	132	
e: Motion range of J2 (°)	152	
f: Motion range (mm)	216.5	260.66
g: Rear motion range (mm)	684.2	818.5
h: Angle of mechanical stopposition of J1 (°)	2	
i: Angle of mechanical stopposition of J2 (°)	3.6	
j: Range of mechanical stopposition (mm)	195.3	232.8
k: Range of rear mechanical stop position (mm)	693.1	831.8
m: Motion range (mm)	150	
n: Motion range (mm)	286	

IR-GS20 Series

SCARA robots with harmonic drive for the fourth joint, together with a plain shaft to increase the rigidity in the overturning direction, featuring high inertia, high rigidity and high repeatability.

Applications in the lithium battery industry.



Model		IR-GS20-80Z42S-INT	IR-GS20-100Z42S-INT
Arm length	Arm 1 + Arm 2	800mm	1000mm
	Arm 1	350mm	550mm
Maximum speed	Arm 2	450mm	450mm
	J1 + J2	9550mm/s	10800mm/s
	J3	1010mm/s	1010mm/s
	J4	705° /s	705° /s
Repeatability	J1 + J2	±0.04mm	±0.04mm
	J3	±0.01mm	±0.01mm
	J4	±0.01°	±0.01°
Handling capacity(load)	Rated	10kg	10kg
	Maximum	20kg	20kg
Allowable inertia moment of J4	Rated	0.5kg.m ²	0.5kg.m ²
	Maximum	1.0kg.m ²	1.0kg.m ²
Mounting hole		200mm×200mm(4-Φ16mm)	
Weight (excluding cables)		54kg	57kg
Press-in force of J3		250N	250N
Cable		Standard:3m/5m/10m/15m High Flexible:3m/5m/10m/15m	
Customer signal line		9 (9 pin: D-sub) 、15 (15 pin: D-sub)	
Customer air piping		Φ6 mm×2, 0.59 MPa	
		Φ4 mm×2, 0.59 MPa	
Operating condition	Ambient temperature ^[1]	5°C ~40°C (no excessive temperature changes)	
	Relative humidity	10%~80%	
Noise level ^[2]		Laeq=75dB(A) ^[2]	
Maximum motion range	J1	±132°	
	J2	±152°	
	J3	420mm	
	J4	±360°	
Cycle time ^[3]		0.36s	0.38s
Input power (average power consumption)		2kVA (0.3kW)	
Certification		CE,cSGSUs,KCs,Kc	

- 1] If this product is used in a low temperature environment close to the lowest temperature of the product specification, or if it is suspended for a long time due to holidays and nights, it is recommended to warm up for 10 minutes before running
- 2] Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.
- 3] Standard cycle time for 20kg SCARA : 2kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 25 mm vertically)

[illegible]

Technical drawing of the IR-GS20-XXXXXX robot arm showing top and side views with dimensions a through m. The top view shows a circular base with two arms extending from the center. The side view shows the profile of the arm with dimensions a through m. Labels include 'Area in front of mechanical stopper' and 'Base mounting surface'.

Model: IR-GS20-XXXXXX	IR-GS20-80Z42S-INT	IR-GS20-100Z42S-INT
a: Length of arm 1 + arm 2 (mm)	800	1000
b: Length of arm 1 (mm)	550	350
c: Maximum motion range (mm)	867.8	1078
d: Motion range of J1 (°)		132
e: Motion range of J2 (°)		152
f: Motion range (mm)	216.5	260.66
g: Rear motion range (mm)	684.2	818.5
h: Angle of mechanical stop position of J1 (°)		2
i: Angle of mechanical stop position of J2 (°)		3.6
j: Range of mechanical stop position (mm)	195.3	232.8
k: Range of rear mechanical stop position (mm)	693.1	831.8
m: Motion range (mm)		150
n: Motion range (mm)		286

SCARA Robot

IR-S50 Series

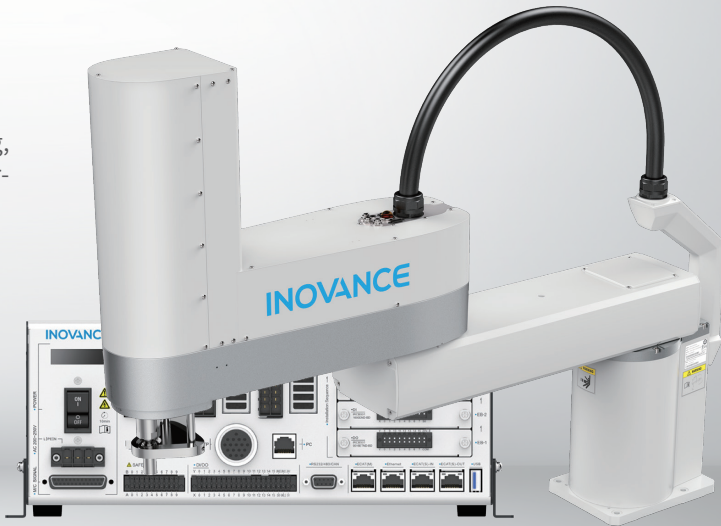
SCARA robots suitable for large load applications, featuring large load capacity, high repeatability, high rigidity and smooth motion.

Scope of Application

Material loading and unloading, precision assembly, handling, dispensing, coating, screw tightening, labeling, material insertion, sorting in new energy, 3C and food packaging industries.

Features

Load	50 kg
Arm length	1200 mm
Cycle time	0.84s
Repeatability	J1,J2:±0.05mm, J3:±0.02mm,J4:±0.005°



Technical Data

Model		IR-S50-120Z40S-INT
Arm length	Arm 1 + Arm 2	1200mm
	Arm 1	600mm
	Arm 2	600mm
Maximum speed	J1 + J2	7400mm/s
	J3	750mm/s
	J4	600° /s
	J1 + J2	±0.05mm
Repeatability	J3	±0.02mm
	J4	±0.005°
Handling capacity (load)		50kg
Allowable inertia moment of J4		2.45kg.m ²
Mounting hole		200mm×200mm(4-Φ14mm)
Weight (excluding cables)		136kg
Cable		Standard:3m/5m/10m/15m High Flexible:3m/5m/10m/15m
Customer signal line		9(9 pin: D-sub),15(15 pin: D-sub)
Customer air piping		Φ6 mm×3, 0.59 MPa
Operating condition	Ambient temperature ^[1]	5°C ~40°C (no excessive temperature changes)
	Relative humidity	10%~80%
Noise level ^[2]		Laeq=75dB(A)
Maximum motion range	J1	±128°
	J2	±150°
	J3	400mm
	J4	±360°
Cycle time ^[3]		0.84s
Input power (average power consumption)		7kVA (0.6kW)
Certification		CE,cSGSUS,KCs,Kc

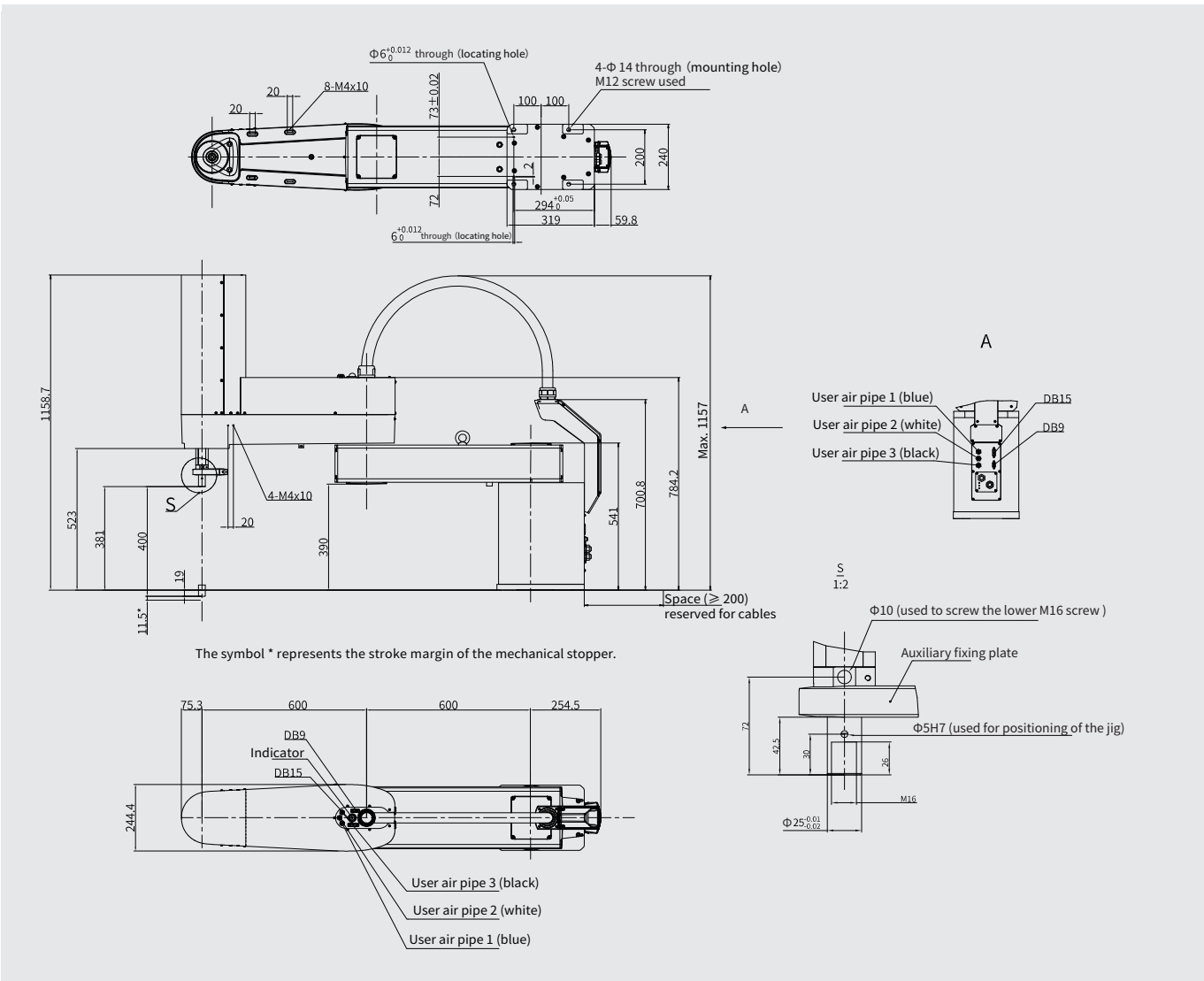
Note

[1]If this product is used in a low temperature environment close to the lowest temperature of the product specification, or if it is suspended for a long time due to holidays and nights, it is recommended to warm up for 10 minutes before running

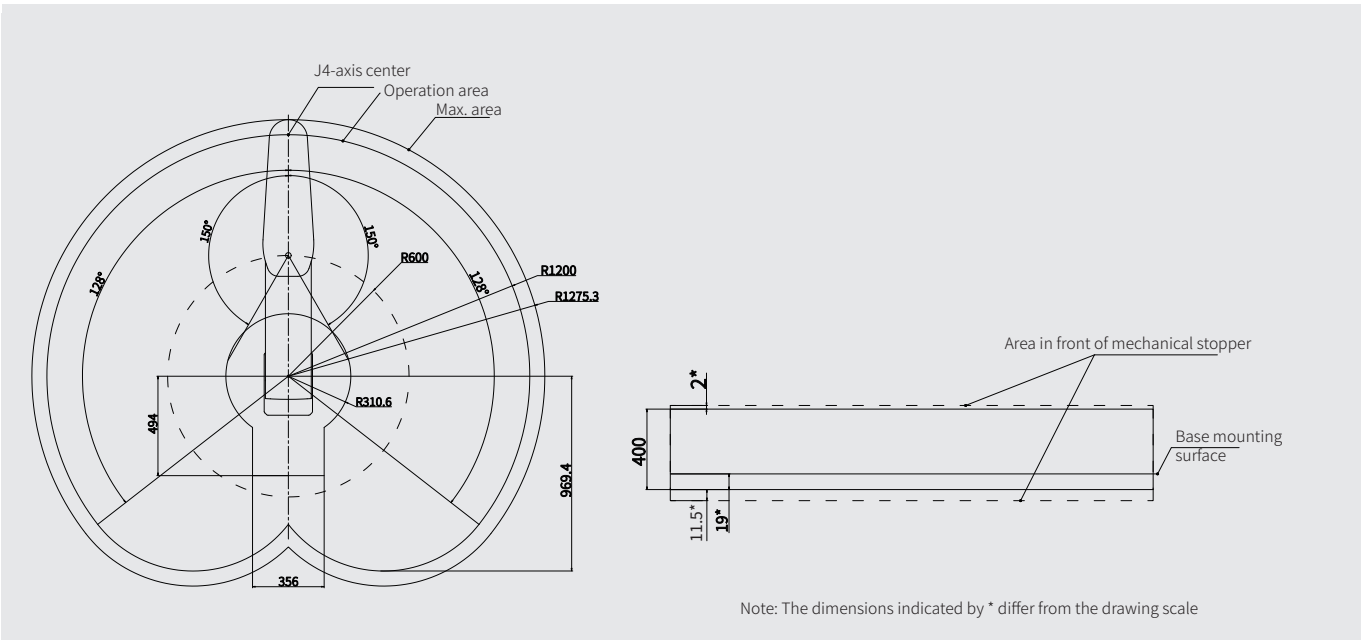
[2]Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.

[3]Standard cycle time for 50kg SCARA : 5kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 25 mm vertically)

Mounting Dimensions(mm)



Motion Range(mm)



SCARA Robot

IR-TS4 Series

Robots with enhanced load capacity and multiple arm length options, suitable for large load applications in various industries.

Scope of Application

Assembly and dispensing in 3C industry, lithium battery industry, photovoltaic industry, and display industry.

Features

Load	4 kg
Arm length	350 mm
Cycle time	0.306s
Repeatability	J1-J3: ±0.01 mm; J4: ±0.01°



Technical Data

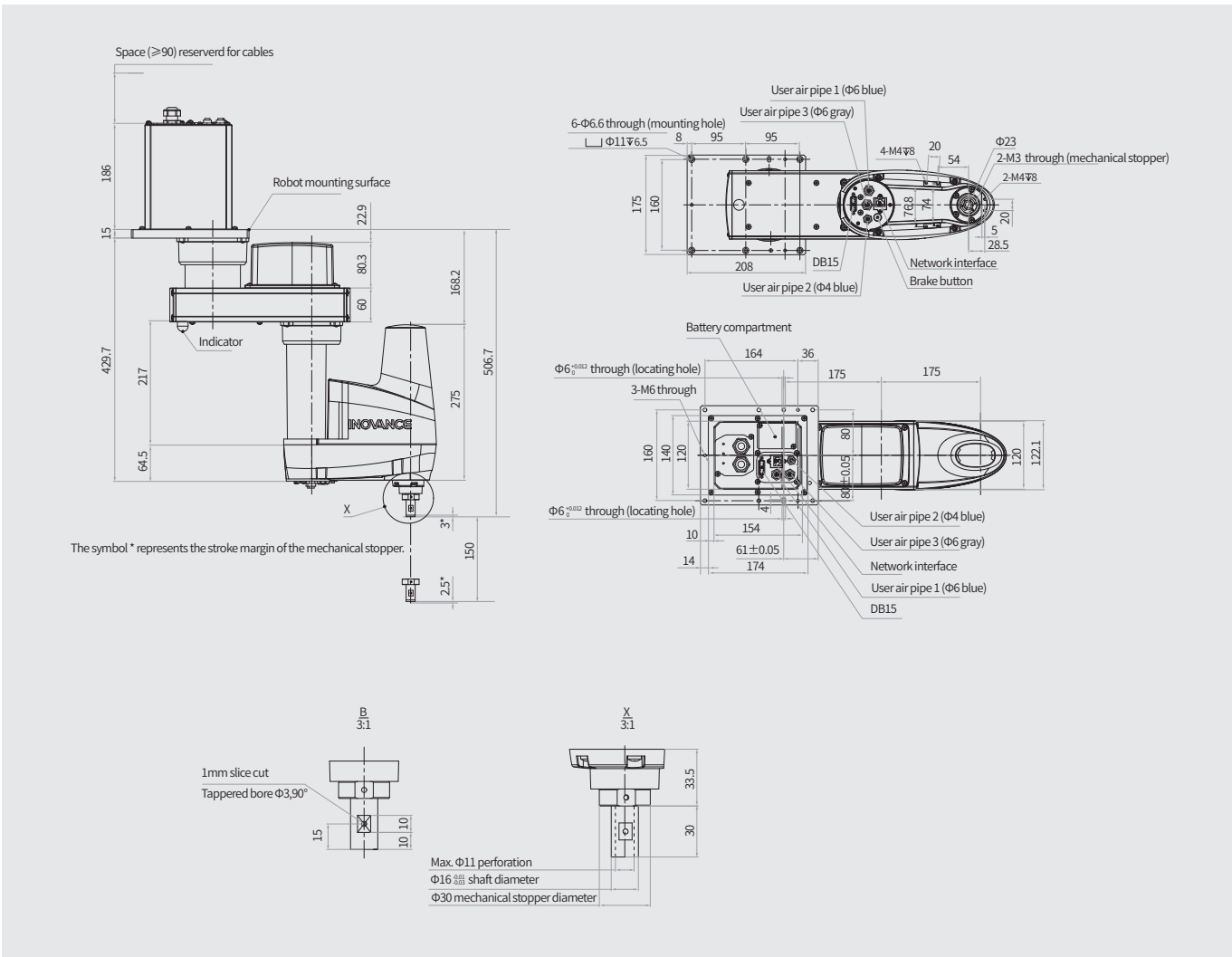
Model		IR-TS4-35Z15S-INT
Arm length	Arm 1 + Arm 2	350 mm
	Arm 1	175 mm
	Arm 2	175 mm
Maximum speed	J1 + J2	6180 mm/s
	J3	1300 mm/s
	J4	2600° /s
Repeatability	J1 + J2	±0.01 mm
	J3	±0.01 mm
	J4	±0.01°
Handling capacity (load)	Rated	2 kg
	Maximum	4 kg
Allowable inertia moment of J4	Rated	0.005 kg.m ²
	Maximum	0.05 kg.m ²
Mounting hole		95×95×160 mm (6-Φ6.6 mm)
Weight (excluding cables)		18.5 kg
Cable		Standard:3m/5m/10m/15m High Flexible:3m/5m/10m/15m
Press-in force of J3		100 N
Customer signal line		15 (15pin: D-sub) CAT5E
Customer air piping		Φ6 mm×2, 0.59 MPa Φ4 mm×1, 0.59 MPa
Operating conditions	Ambient temperature ^[1]	5°C to 40°C (no excessive temperature changes)
	Relative humidity	10% to 80%
Noise level ^[2]		L _a eq=70 dB(A)
Maximum motion range	J1	±225°
	J2	±225°
	J3	150 mm
	J4	±720°
Cycle time ^[3]		0.306s
Input power (average power consumption)		2kVA (0.3kW)
Certification		CE,cSGSUs,KCs,Kc

[1]If this product is used in a low temperature environment close to the lowest temperature of the product specification, or if it is suspended for a long time due to holidays and nights, it is recommended to warm up for 10 minutes before running

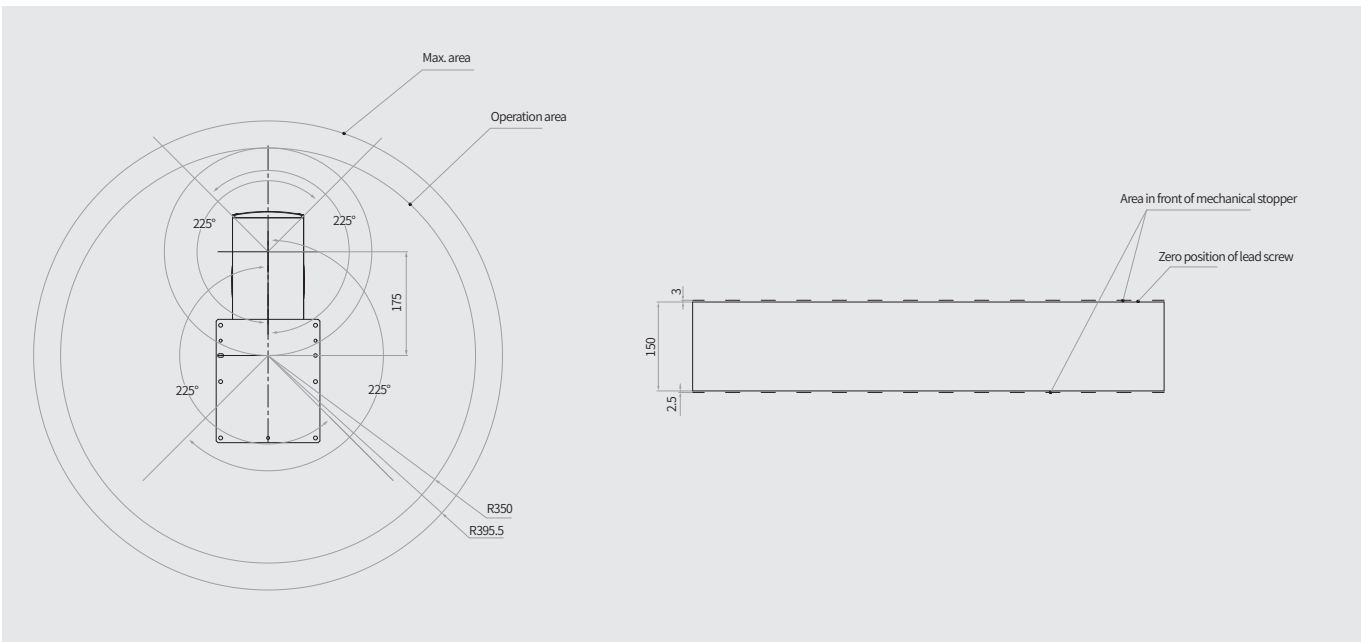
[2]Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.

[3]Standard cycle time for 4kg Inverted SCARA : 1kg load, the time required for the robot to go back and forth with a gate command (300 mm hori zontally, 25 mm vertically)

Mounting Dimensions(mm)



Motion Range(mm)



R-TS5 Series

Robots with enhanced load capacity and multiple arm length options, suitable for large load applications in various industries.

Assembly and dispensing in 3C industry, lithium battery industry, photovoltaic industry, and display industry.

Load	5 kg
Arm length	550 mm
Cycle time	0.351s
Repeatability	J1 and J2: ± 0.015 mm; J3: 0.01 mm; J4: ± 0.01 mm



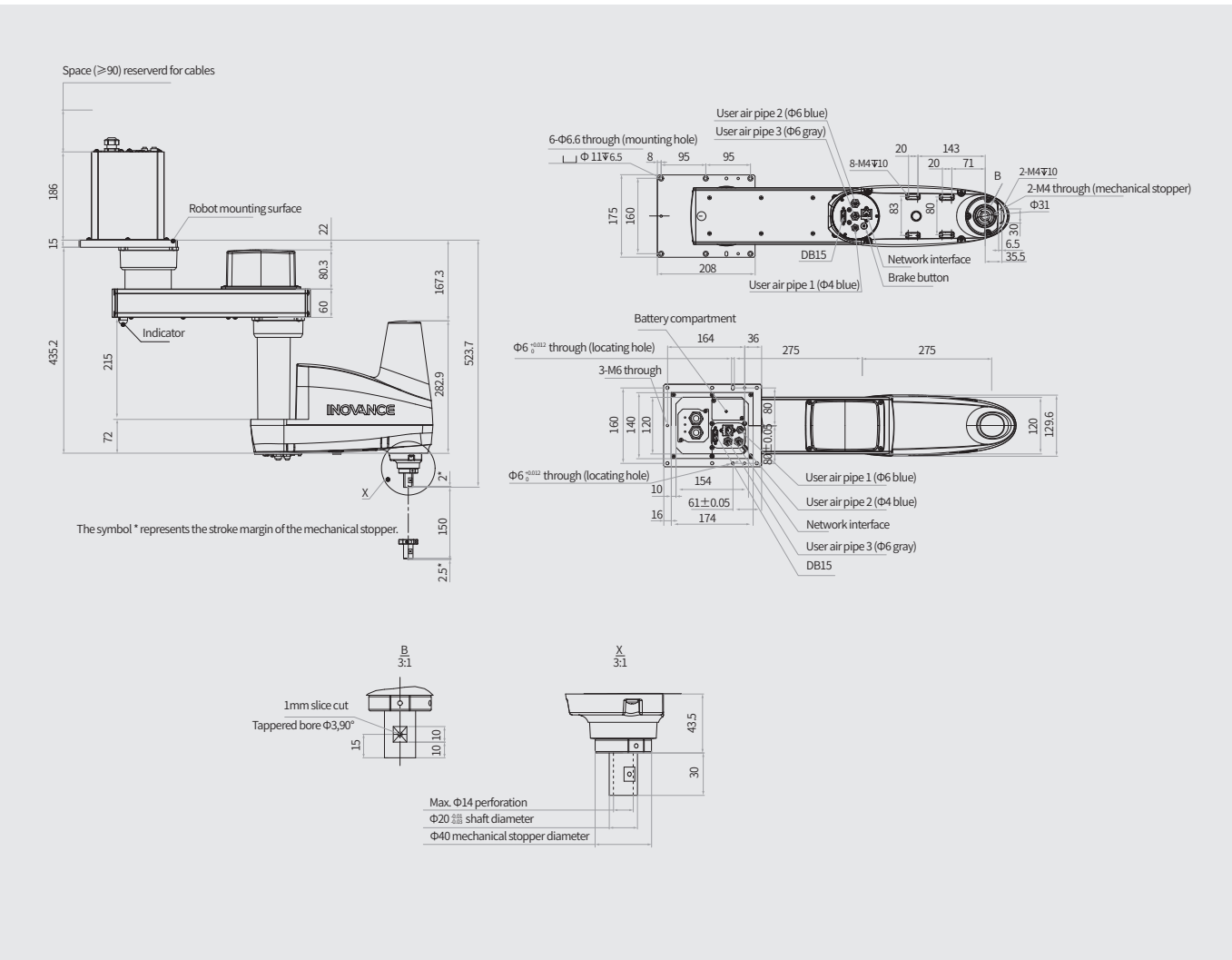
Model		IR-TS5-55Z15S-INT
Arm length	Arm 1 + Arm 2	550 mm
	Arm 1	275 mm
	Arm 2	275 mm
Maximum speed	J1 + J2	9712 mm/s
	J3	1300 mm/s
	J4	2000° /s
Repeatability	J1 + J2	±0.015 mm
	J3	±0.01 mm
	J4	±0.01°
Handling capacity (load)	Rated	2 kg
	Maximum	5 kg
Allowable inertia moment of J4	Rated	0.01 kg.m ²
	Maximum	0.12 kg.m ²
Mounting hole		95×95×160 mm (6-Φ6.6 mm)
Weight (excluding cables)		20 kg
Press-in force of J3		150N
Cable		Standard:3m/5m/10m/15m High Flexible:3m/5m/10m/15m
Customer signal line		15 (15pin: D-sub) CAT5E
Customer air piping		Φ6 mm×2, 0.59 MPa Φ4 mm×1, 0.59 MPa
Operating conditions	Ambient temperature ^[1]	5°C to 40°C (no excessive temperature changes)
	Relative humidity	10% to 80%
Noise level ^[2]		L _{aeq} =70 dB(A)
Maximum motion range	J1	±225°
	J2	±225°
	J3	150 mm
	J4	±720°
Cycle time ^[3]		0.351s
Input power (average power consumption)		2kVA (0.3kW)
Certification		CE,cSGSus,KCs,Kc

ⓘ If this product is used in a low temperature environment close to the lowest temperature of the product specification, or if it is suspended for a long time due to holidays and nights, it is recommended to warm up for 10 minutes before running

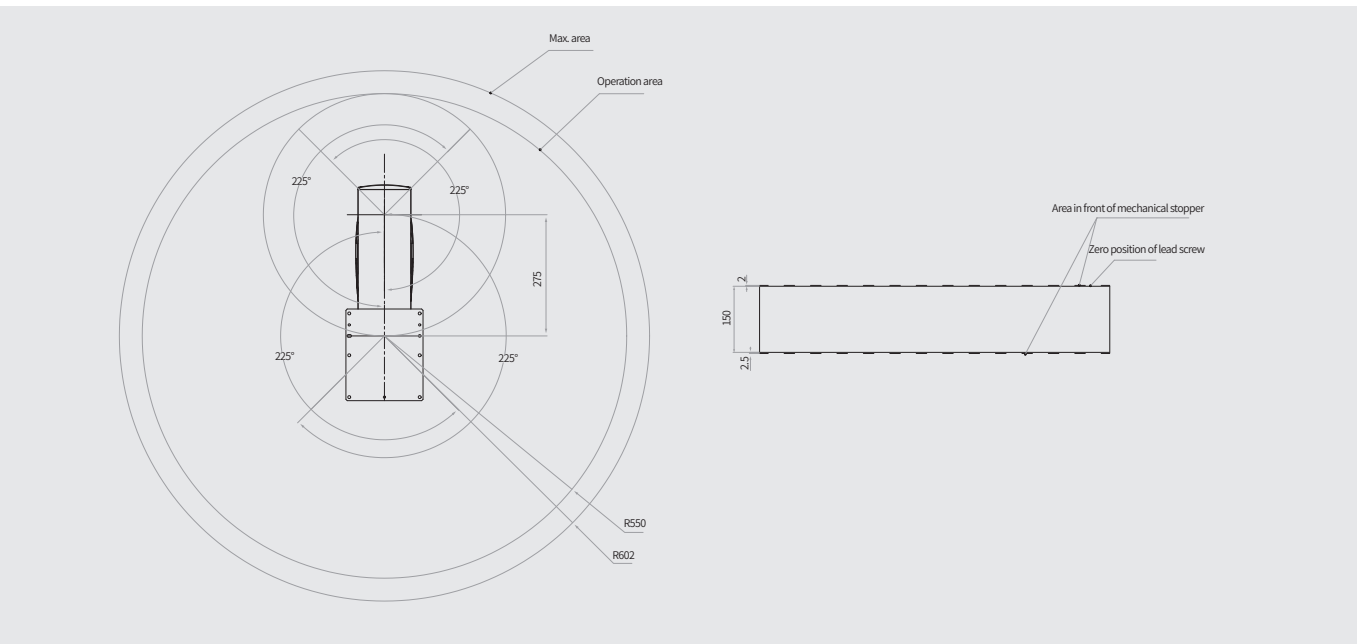
2] Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.

Standard cycle time for 5kg Inverted SCARA : 1kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 25 mm vertically)

Mounting Dimensions_(mm)



Motion Range_(mm)



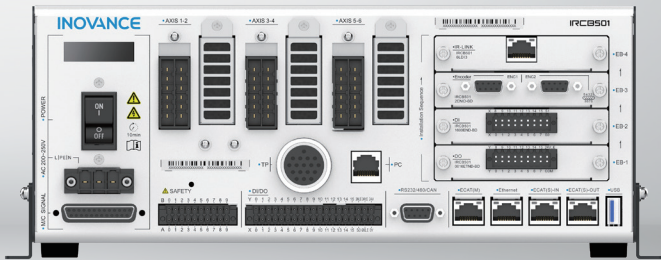
Robot Controller

IRCB501 Series

Robot controllers featuring delicate structure, abundant functions, easy installation, and easy extension to meet the market demands for compact structure, flexible production and productivity boost in 3C industry.

Applicable Robots

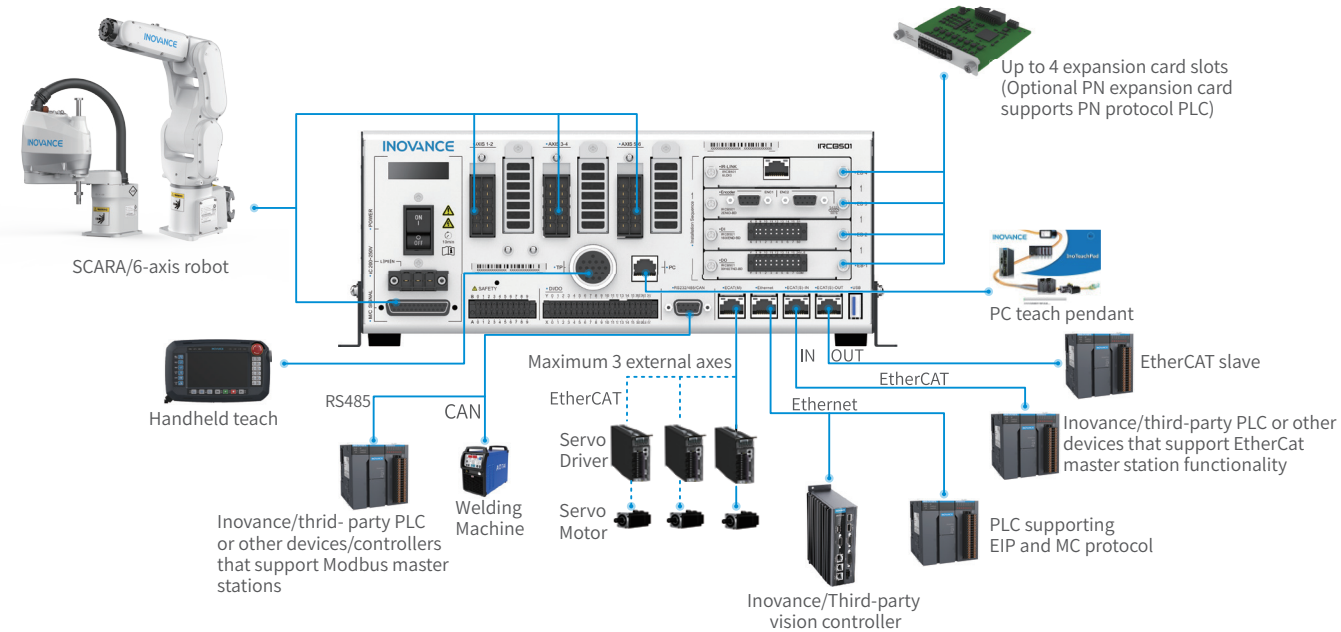
SCARA Robot	IR-S4/7/10 Series	●
	IR-TS4/5 Series	●
	IR-S20 Series	●
	IR-GS20 Series	●
6-Axis Robot	IR-S50 Series	●
	IRS311-7 Series	●
	IR-R4/11 Series	●
	IR-R10 Series	×
	IR-R20 Series	×



Technical Data

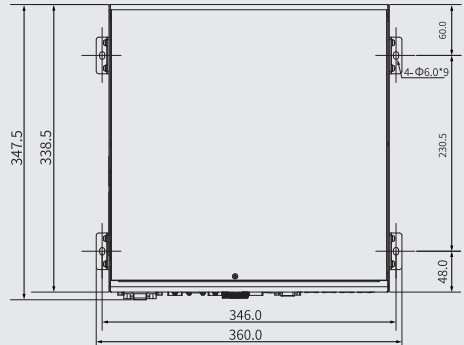
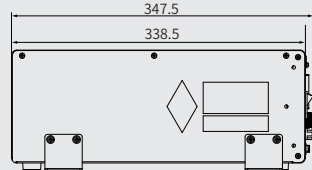
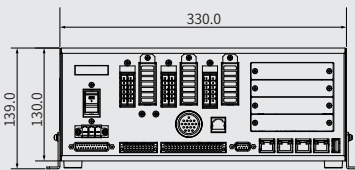
Mounting mode	Vertical mounting, horizontal mounting, 19" rack mounting	
Standard I/Os	16 inputs and 16 NPN outputs (extendable)	
Communication interfaces	Ethernet interface: Used for TCP/IP, Modbus TCP, Ethernet/IP, MC communication	
	EtherCAT-IN interface: EtherCAT slave –IN interface	
	EtherCAT-OUT interface: EtherCAT master –OUT interface	
	EtherCAT interface: Used for extension of external axes	
	RS232/RS485 interface: Used for serial and Modbus RTU communication (RS485 only)	
	USB2.0 interface: Used for backup/upload programs and export robot status information	
Control mode	Optional interface: Profinet Slave	
	PC programming platform control, teach pendant control, remote I/O control, remote Modbus control, and API control	
	Input voltage: Single-phase 200V AC to 240V AC, 10A/20A, 50 Hz to 60 Hz	
Power supply	Max. power consumption: 3.1 kW (depending on the robot model)	
	IP rating	
IP rating	IP20	
Operating conditions	Temperature: 5° C to 40° C ; Relative humidity: 20% to 95% RH@30° C (non-condensing)	
Dimensions	Standard	High- Power
	330mm×338.5mm×130mm	330mm×400mm×130mm
Weight	8kg	10kg
Applicable Robots	SCARA: IR-S4/7/10 Series, IR-TS4/5 Series 6-Axis: IRS311-7 Series, IR-R4/R4H Series	SCARA: IR-S20 Series, IR-GS20 Series, IR-S50 Series 6-Axis: IR-R11 Series

System Topology

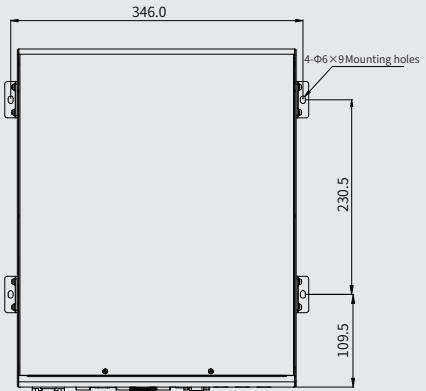
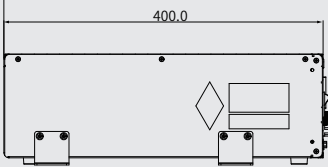
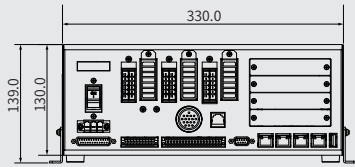


Mounting Dimensions(mm)

Standard



High- Power



Robot Controller

IRCB501 High-Protection Series

Integrating drive and control functions, the IRCB501 high-protection series features delicate structure, abundant functions, easy installation, and easy extension. It is widely used in automotive, die casting, machine tools, packaging and other industrial automation industries, as well as medical, laboratory automation and consumer product automation production industries.

Applicable Robots

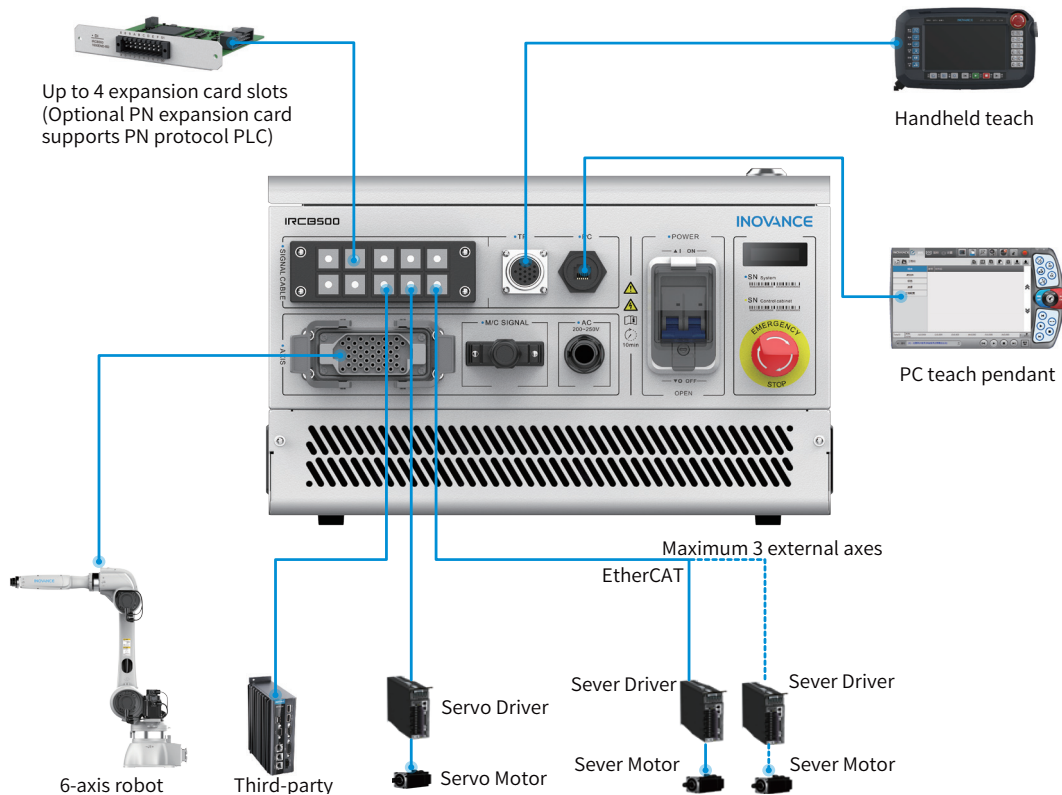
SCARA Robot	IR-S4/7/10	×
	IR-TS4/5	×
	IR-S20 Series	×
	IR-GS20 Series	×
	IR-S50 Series	●
6-Axis Robot	IRS311-7 Series	●
	IR-R4/R11 Series	●
	IR-R10 Series	●
	IR-R20 Series	●
		●



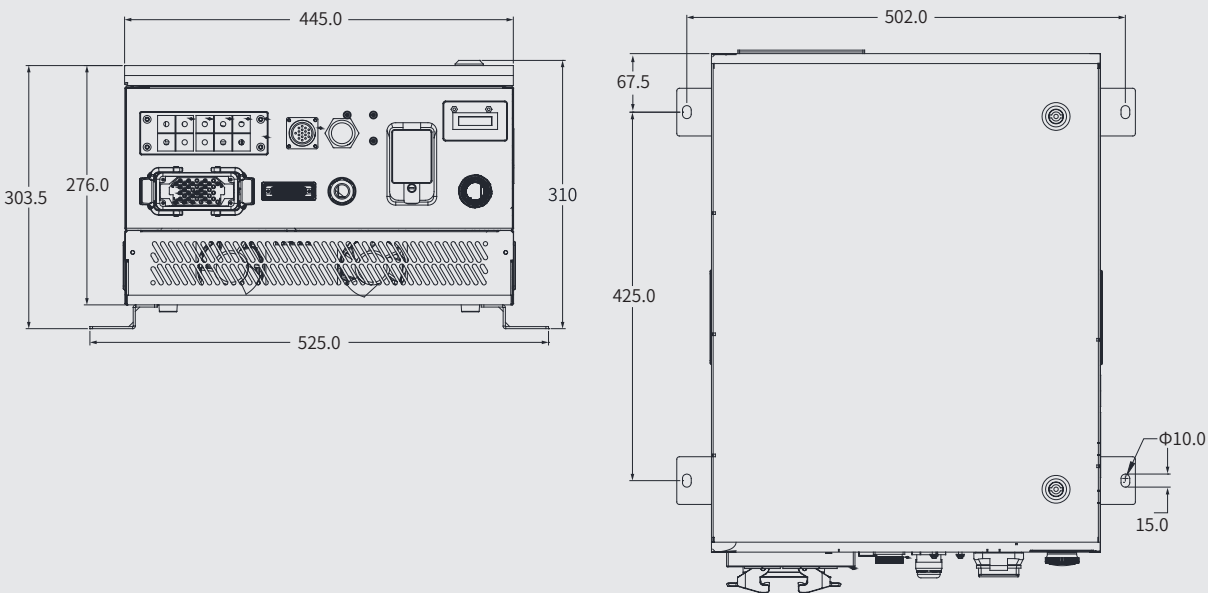
Technical Data

Mounting mode	Vertical mounting, horizontal mounting, rack mounting
Standard I/Os	16 inputs and 16 NPN outputs (extendable)
Communication interfaces	Ethernet interface: Used for TCP/IP, Modbus TCP, Ethernet/IP, MC communication
	EtherCAT-IN interface: EtherCAT slave –IN interface
	EtherCAT-OUT interface: EtherCAT master –OUT interface
	EtherCAT interface: Used for extension of external axes
	RS232/RS485 interface: Used for serial and Modbus RTU communication (RS485 only)
	USB2.0 interface: Used for backup/upload programs and export robot status information
Control mode	Optional interface: Profinet Slave
	PC programming platform control, teach pendant control, remote I/O control, remote Modbus control, and API control
Power supply	Input voltage: Single-phase 200V AC to 250V AC, 23A, 50 Hz to 60 Hz
	Max. power consumption: 4.5 kW (depending on the robot model)
Operating conditions	IP54 + anti metal dust
Dimensions	Temperature: 0° C to 45° C; Relative humidity: 20% to 95% RH@30° C (non-condensing)
Dimensions	445mm×575mm×276mm
Weight	30kg
Applicable Robots	6-Axis: IR-R10 Series, IR-R20 Series SCARA: IR-S50 Series 6-Axis: IRS311-7 Series, IR-R4 Series, IR-R11 Series

System Topology



Mounting Dimensions(mm)



List of Robot Models

6-Axis Robot

Series		IR-R4	IR-R4H	IRS311-7		IR-R11
Model		56S-INT	54S-INT	70TS-INT	90TS-INT	90S-INT
Code		-	-	-	-	-
Structural style		Vertical axis cascading structure				
Number of Axes		6 axes				
Maximum reach (mm)		560.6	545.7	717	911	901.9
Repeatability (mm)		±0.01	±0.02	±0.02	±0.03	±0.02
Wrist load	Maximum(kg)	4	4	7	7	11.3
Max.Speed	J1 (° /s)	450	450	450	300	300
	J2 (° /s)	460	460	380	280	225
	J3 (° /s)	520	520	520	360	330
	J4 (° /s)	560	560	550	550	450
	J5 (° /s)	560	560	550	550	420
	J6 (° /s)	900	900	1000	620	720
Maxi-mummotion range	J1 (°)	±170	±170	±170	±170	±170
	J2 (°)	-120~+110	-120~+110	-135~+80	-125~+80	-135~+100
	J3 (°)	-69~+205	-65~+195	-70~+190	-70~+190	-66~+210
	J4 (°)	±190	±190	±190	±190	±190
	J5 (°)	±120	±120	±120	±120	±125
	J6 (°)	±360	±360	±360	±360	±360
Allowed wrist torque	J4 (N·m)	8.86	8.86	16.6	16.6	20.45
	J5 (N·m)	8.86	8.86	16.6	16.6	20.45
	J6 (N·m)	4.9	4.9	9.4	9.4	10.8
Allowed wrist inertia	J4 (N·m)	0.2	0.2	0.47	0.47	0.6
	J5 (N·m)	0.2	0.2	0.47	0.47	0.6
	J6 (N·m)	0.067	0.067	0.15	0.15	0.2
Environment	Operating ambient temperature(° C)	0~45	0~45	0~45	0~45	0~45
	Relative humidity	5% to 95% RH (non-condensing)	5% to 95% RH (non-condensing)	5% to 95% RH (non-condensing)	5% to 95% RH (non-condensing)	5% to 95% RH (non-condensing)
	Maximum Temperature Gradient(° C/min)	1.5	1.5	1.5	1.5	1.5
Airborne noise (dB)		≤ 75	≤ 80	≤ 75	≤ 75	≤ 75
IP rating		IP40	IP40	IP65	IP65	IP40
Cable		Standard:3m/5m/10m/15m High Flexible:3m/5m/10m/15m				
Weight		24kg	24.5kg	38kg	40kg	45kg
Controller		IRCB501-6LD-INT				IRCB501-6FD-INT

*1:For customized models,please contact INOVANCE technical support.

List of Robot Models

6-Axis Robot

Series		IR-R10			IR-R20
Model		110S-INT	140S-INT	200S-INT	170S-INT
Code		-	-	-	-
Structural style		Vertical axis cascading structure			
Number of Axes		6 axes			
Maximum reach (mm)		1101.6	1422	2045	1723
Repeatability (mm)		±0.02	±0.05	±0.05	±0.05
Wrist load	Maximum(kg)	10	10	10	20
Max.Speed	J1 (° /s)	300	200	190	190
	J2 (° /s)	225	200	175	175
	J3 (° /s)	330	200	200	200
	J4 (° /s)	450	375	400	400
	J5 (° /s)	420	375	360	360
	J6 (° /s)	720	600	610	610
Maxi-mummotion range	J1 (°)	±170	±170	±170	±170
	J2 (°)	-135~+100	-160~+60	-155~+80	-155~+80
	J3 (°)	-66~+210	-80~+160	-75~+160	-75~+160
	J4 (°)	±190	±180	±180	±180
	J5 (°)	±125	±140	±140	±140
	J6 (°)	±360	±360	±360	±360
Allowed wrist torque	J4 (N·m)	18.59	22	22	42
	J5 (N·m)	18.59	22	22	42
	J6 (N·m)	9.8	9.8	10	20
Allowed wrist inertia	J4 (N·m)	0.6	0.63	1	1.18
	J5 (N·m)	0.6	0.63	1	1.18
	J6 (N·m)	0.2	0.2	0.2	0.5
Environment	Operating ambient temperature(° C)	0~45	0~45	0~45	0~45
	Relative humidity	5% to 95% RH (non-condensing)	10% to 80% RH (non-condensing)	10% to 80% RH (non-condensing)	10% to 80% RH (non-condensing)
	Maximum Temperature Gradient(° C/min)	1.5	1.5	1.5	1.5
Airborne noise (dB)		≤ 75	≤ 80	≤ 80	≤ 80
IP rating		IP40	Body: IP65 Wrist: IP67	Body: IP65 Wrist: IP67	Body: IP65 Wrist: IP67
Cable		Standard:3m/5m/10m/15m High Flexible:3m/5m/10m/15m	Standard: 3m/5m/10m/15m	Standard:3m/5m/10m/15m High Flexible:5m/10m/15m	
Weight		48kg	130kg	245kg	240kg
Controller		IRCB501-6FD-INT	IRCB501-6ND-INT	IRCB501-6ND-INT	

*1:For customized models,please contact INOVANCE technical support.

List of Robot Models

SCARA Robot

Series		IR-S4	IR-S7			IR-S10		
Model		40Z15S-INT	50Z20S-INT	60Z20S-INT	70Z20S-INT	60Z20S-INT	70Z20S-INT	80Z20S-INT
Code		-	-	-	-	-	-	-
Mounting mode		Table mounted						
Arm length	J1+J2 (mm)	400	500	600	700	600	700	800
	J1 (mm)	225	225	325	425	225	325	425
	J2 (mm)	175	275	275	275	375	375	375
Maximum speed	J1+J2 (mm/s)	7200	7120	7850	8590	9100	9800	10500
	J3 (mm/s)	1300	1600	1600	1600	1600	1600	1600
	J4 (° /s)	2600	2000	2000	2000	2700	2700	2700
Maximum motion range	J1 (°)	±132	±132	±132	±132	±132	±132	±132
	J2 (°)	±141	±150	±150	±150	±150	±150	±150
	J3 (mm)	150	200	200	200	200	200	200
	J4 (°)	±360	±360	±360	±360	±360	±360	±360
Repeat-ability	J1+J2 (mm)	±0.01	±0.02	±0.02	±0.02	±0.02	±0.02	±0.025
	J3 (mm)	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
	J4 (°)	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
Load	Rated (kg)	2	3	3	3	5	5	5
	Maximum (kg)	4	7	7	7	10	10	10
Permis-sible moment of inertia of J4	Rated (kg· m ²)	0.005	0.01	0.01	0.01	0.02	0.02	0.02
	Max (kg· m ²)	0.05	0.12	0.12	0.12	0.3	0.3	0.3
Standard cycle time (s) ^[2]		0.342	0.351	0.36	0.375	0.361	0.386	0.416
Lead screw di-mensions	Shaft diameter (mm)	Φ16	Φ20	Φ20	Φ20	Φ20	Φ20	Φ20
	Through hole inner diameter (mm)	Φ11	Φ14	Φ14	Φ14	Φ14	Φ14	Φ14
Mounting base dimen-sions (mm)		120×120(Φ9)	150×150(Φ9)	150×150(Φ9)	150×150(Φ9)	150×150(Φ9)	150×150(Φ9)	150×150(Φ9)
Cable		Standard:3m/5m/10m/15m High Flexible:3m/5m/10m/15m						
Weight (excluding cables)		12kg	17kg	17.5kg	19kg	18.5kg	19kg	20.5kg
Controller		IRCB501-4AD-INT	IRCB501-4CD-INT			IRCB501-4CD-INT		

[1]: For customized models,please contact INOVANCE technical support.

[2]: Standard cycle time for 4kg SCARA: 1kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 25 mm vertically)

Standard cycle time for 7kg/10kg SCARA : 2kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 25 mm vertically)

List of Robot Models

SCARA Robot

Series		IR-S20		IR-GS20		IR-S50	IR-TS4	IR-TS5
Model		80Z42S-INT	100Z42S-INT	80Z42S-INT	100Z42S-INT	120Z40S-INT	35Z15S-INT	55Z15S-INT
Code		-	-	-	-	-	-	-
Mounting mode		Table mounted					Inverted mounting	
Arm length	J1+J2 (mm)	800	1000	800	1000	1200	350	550
	J1 (mm)	350	550	350	550	600	175	275
	J2 (mm)	450	450	450	450	600	175	275
Maximum speed	J1+J2 (mm/s)	9550	10800	9550	10800	7400	6180	9712
	J3 (mm/s)	1010	1010	1010	1010	750	1300	1300
	J4 (° /s)	705	705	705	705	600	2600	2000
Maximum motion range	J1 (°)	±132	±132	±132	±132	±128	±225	±225
	J2 (°)	±152	±152	±152	±152	±150	±225	±225
	J3 (mm)	420	420	420	420	400	150	150
	J4 (°)	±360	±360	±360	±360	±360	±720	±720
Repeat-ability	J1+J2 (mm)	±0.04	±0.04	±0.04	±0.04	±0.05	±0.01	±0.015
	J3 (mm)	±0.01	±0.01	±0.01	±0.01	±0.02	±0.01	±0.01
	J4 (°)	±0.01	±0.01	±0.01	±0.01	±0.005	±0.01	±0.01
Load	Rated (kg)	10	10	10	10	-	2	2
	Maximum (kg)	20	20	20	20	50	4	5
Permis-sible moment of inertia of J4	Rated (kg· m ²)	0.5	0.5	0.5	0.5	-	0.005	0.01
	Max (kg· m ²)	1	1	1	1	2.45	0.05	0.12
Standard cycle time (s) ^[2]		0.36	0.38	0.36	0.38	0.84	0.306	0.351
Lead screw di-mensions	Shaft diameter (mm)	Φ25	Φ25	Φ25	Φ25	Φ24.9	Φ16	Φ20
	Through hole inner diameter (mm)	Φ18	Φ18	Φ18	Φ18	Φ12	Φ11	Φ14
Mounting base dimen-sions (mm)		200×200(Φ16)	200×200(Φ16)	200×200(Φ16)	200×200(Φ16)	200×200(Φ14)	95×95×160 (6-Φ6.6)	95×95×160 (6-Φ6.6)
Cable		Standard:3m/5m/10m/15m High Flexible:3m/5m/10m/15m						
Weight (excluding cables)		53kg	56kg	54kg	57kg	136kg	18.5kg	20kg
Controller		IRCB501-4ED-INT					IRCB501-4CD-INT	

[1]: For customized models,please contact INOVANCE technical support.

[2]: Standard cycle time for 20kg SCARA : 2kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 25 mm vertically)

Standard cycle time for 50kg SCARA : 5kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 25 mm vertically)

Standard cycle time for 4kg/5kg Inverted SCARA : 1kg load, the time required for the robot to go back and forth with a gate command (300 mm horizontally, 25 mm vertically)

List of Robot Models

Accessories

Type	Code	Description
Fork lift tool for robots	01660006	Used by the fork lift for handling IR-R10 and IR-R20 series 6-axis robots.
I/O male aviation connector (90°)	15050817	Used for wiring of the aviation connector on the upper end of the forearm inIRS311-7,IR-R4/11 series 6-axis robots.
	15050930	Used for wiring of the aviation connector on the upper end of the forearm in IR-R10 and IR-R20 series 6-axis robots.
	15051215	Used for wiring of the aviation connector on the upper end of the forearm in IR-R10 and IR-R20 series 6-axis robots(with1.5m Cable).
I/O cable (5 m)	1504B978	Used for wiring betweenIRS311-7, IR-R10、IR-R20、IR-R4/4H/11series 6-axis robots and the controller.
I/O cable (5 m) (High flexible cable)	1504RP67	Used for wiring between IRS311-7, IR-R10、IR-R20、IR-R4/4H/11 series 6-axis robots and the con-troller, High flexible cable
Handheld break release box	01660004	Used to manually release the break of the robot in emergencies, applicable to all series of 6-axis robots.
Protective cover at the upper end of the screw	20212980	Protective cover for the upper end of the IR-S4 series SCARA robot screw
	20213099	Protective cover for the upper end of the IR-S7/10 series SCARA robot screw
Homing tool - Homing column 1	32020626	Used for homing calibration of IR-S4/7/10 and IR-TS-4/5 series SCARA robots
Homing tool - Homing column 2	32020627	Used for homing calibration of IR-S4/7/10 and IR-TS-4/5 series SCARA robots
Homing tool - Positioning block	32040084	Used for homing calibration of IR-S4/7/10 and IR-TS-4/5 series SCARA robots
Screw telescopic cover (Separate purchase does not have cleanliness class requirements)	32070354	SCARA2.0 4kg upper screw telescopic cover,IR-S4
	32070355	SCARA2.0 4kg bottom screw telescopic cover,IR-S4
	32070356	SCARA2.0 7kg 10kg upper screw telescopic cover,IR-S7/S10
	32070357	SCARA2.0 7kg10kg bottom screw telescopic cover,IR-S7/S10

* If you want to buy the homing tool, homing column 1, homing column 2, positioning block are needed to buy at the same time

Teach Pendant Model

Code	Model	Description
01640049	IRTP80-L5-INT	Robot teach pendant (5 m)

Expansion Card

Type	Code	Model	Description
IRCB501 Series IRCB501 High-Protection Series	01650025	IRCB501-2ENID-BD	2-channel differential input incremental encoder expansion card
	01650026	IRCB501-1600END-BD	General I/O expansion card with 16 inputs
	01650027	IRCB501-0016ETND-BD	General I/O expansion card with 16 NPN outputs
	01650028	IRCB501-2PN-BD	PROFINET slave expansion card
	01650030	IRCB501-FS-01-BD	Safety function expansion card

List of Robot Models

IR - G S 4 - 40 Z15 S - * - INT
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Product Family IR: INOVANCE Robot	④ Load(kg) 4: 4kg 50: 50kg	⑦ Environment S: Standard P: High-Protection(IP67)
② Series Identification Empty: Standard Version G: High Performance Version (When Choose High Performance Version, Please contact INOVANCE technical support)	⑤ Arm length(mm) 40: Arm length 400mm 200: Arm length 2000mm	
③ Product Class S: SCARA robot TS: Inverted SCARA robot R: 6-axis robot	⑥ Maximum travel of Z-axis Empty: Without screw,6Axis Robots Z15: The maximum stroke value is 150mm Z42: The maximum stroke value is 420mm	⑧ Customized Content Other letters: Other customization

IR S 311 - 7 - 70 T S - * - INT
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Product Family IR: INOVANCE Robot	④ Load(kg) 7: 7kg	⑦ Environment S: Standard
② Series Identification S:System	⑤ Arm length(mm) 70: Arm length 700mm 90: Arm length 900mm	
③ Product Class 311: 6-axis robot	⑥ Mounting mode T: Standard	⑧ Customized Content Other letters: Other customization

NOTES