



19120306 A00

This brochure is subject to change without prior notice.
Copyright © Shenzhen Inovance Technology Co., Ltd.
Copyright © Shenzhen Inovance Technology Co., Ltd.

Shenzhen Inovance Technology Co., Ltd.
Shenzhen Inovance Technology Co., Ltd.

www.inovance.com

Suzhou Inovance Technology Co., Ltd.
Suzhou Inovance Technology Co., Ltd.

www.inovance.com

Add.: Inovance Headquarters Tower, High-tech Industrial Park, Guanlan Street, Longhua New District, Shenzhen

Tel.: +86-755-2979 9595

Fax: +86-755-2961 9897

Customer service: 4000-300124

Add.: No. 16 Youxiang Road, Yuexi Town, Wuzhong District, Suzhou

Tel.: +86-512-6637 6666

Fax: +86-512-6285 6720

Customer service: 4000-300124

INOVANCE
汇川技术

Inovance Robot Selection Guide



Industrial
Automation



Intelligent
Elevator



New Energy
Vehicle



Industrial
Robot



Rail
Transit

FORWARD, ALWAYS PROGRESSING

Robot Product Family

SCARA Robot

IR-S4 Series P 03



Load	4 kg
Arm length	400 mm
Model	IR-S4-40Z15S3

IR-S7 Series P 05



Load	7 kg
Arm length	500 mm / 600 mm / 700 mm
Model	IR-S7-50Z20S3
Model	IR-S7-60Z20S3
Model	IR-S7-70Z20S3

IR-S10 Series P 07



Load	10 kg
Arm length	600 mm / 700 mm / 800 mm
Model	IR-S10-60Z20S3
Model	IR-S10-70Z20S3
Model	IR-S10-80Z20S3

IR-TS4 Series P 15



Load	4 kg
Arm length	350 mm
Model	IR-TS4-35Z15S3

IR-TS5 Series P 17



Load	5 kg
Arm length	550 mm
Model	IR-TS5-55Z15S3

IR-C8 Series P 19



Load	8 kg
Arm length	620 mm
Model	IR-C8-62Z20S3-A1

IR-S20 Series

P 09



Load	20 kg
Arm length	800 mm / 1000 mm
Model	IR-S20-80Z42S3 IR-S20-100Z42S3

IR-GS20 Series

P 11



Load	20 kg
Arm length	800 mm / 1000 mm
Model	IR-GS20-80Z42S3 IR-GS20-100Z42S3

IR-S50 Series

P 13



Load	50 kg
Arm length	1200 mm
Model	IR-S50-120Z40S3-B1

IRS11 3-Axis Series

P 21



Load	8 kg
Arm length	500 mm
Model	IRS11-8-50TS5

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

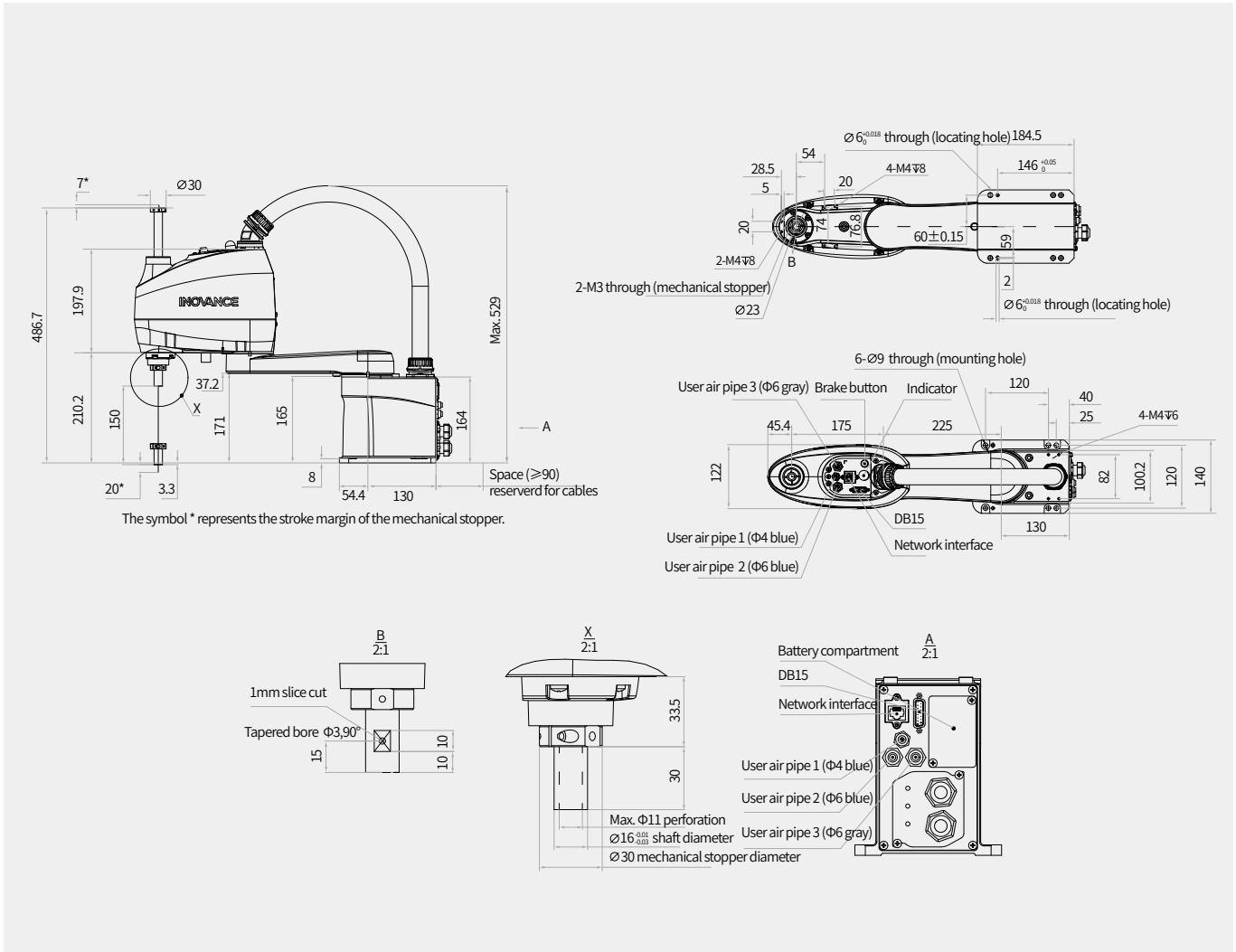
Load	4 kg
Arm length	400 mm
Efficiency	0.342s
Repeatability	±0.01 mm



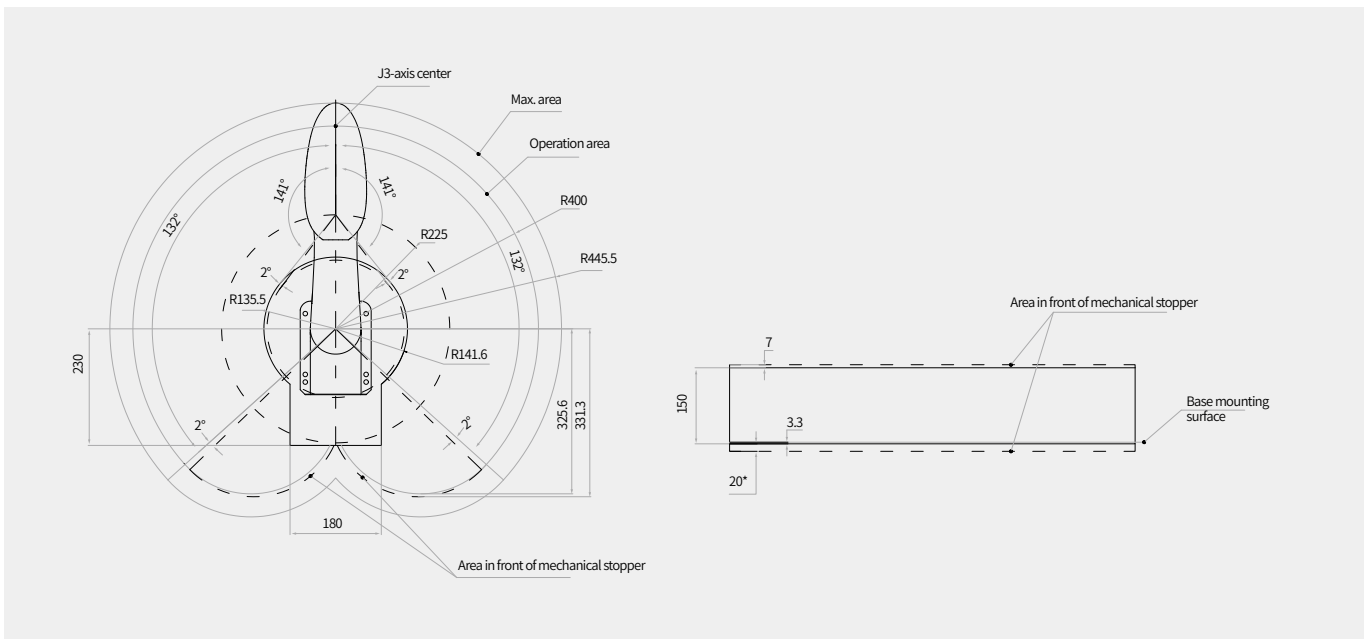
Technical Data

Item		IR-S4-40Z15S3
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
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		120x120 mm (4-Ø9 mm)
Weight (excluding cables)		11 kg
Press-in force of J3		100 N
Customer signal line		15 (15pin: D-sub)
		CAT5E
Customer air piping		Ø6 mm x 2, 0.59 Mpa
		Ø4 mm x 1, 0.59 Mpa
Operating conditions	Ambient temperature	5° C to 40° C (no excessive temperature changes)
	Relative humidity	10% to 80% RH
Noise level		Laeq=70 dB(A)
Maximum motion range	J1	±132°
	J2	±141°
	J3	150 mm
	J4	±360°
Cycle time		0.342s

Mounting Dimensions(mm)



Motion Range(mm)



SCARA Robot

IR-S7 Series

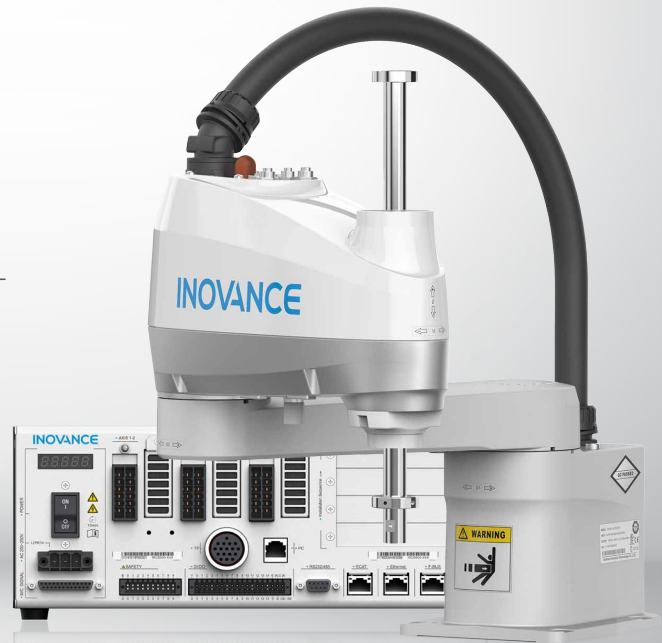
Robots with enhanced load capacity and multiple arm length options, suitable for large load applications in various industries.

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	0.325s/0.330s/0.375s
Repeatability	J1 and J2: ± 0.02 mm; J3: 0.01 mm; J4: $\pm 0.01^\circ$



Technical Data

Item		IR-S7-50Z20S3	IR-S7-60Z20S3	IR-S7-70Z20S3
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
Repeatability	J1 + J2	± 0.02 mm	± 0.02 mm	± 0.02 mm
	J3	± 0.01 mm	± 0.01 mm	± 0.01 mm
	J4	$\pm 0.01^\circ$	$\pm 0.01^\circ$	$\pm 0.01^\circ$
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		150x150 mm (4- $\varnothing 9$ mm)		
Weight (excluding cables)		15 kg	16 kg	17 kg
Press-in force of J3		150 N		
Customer signal line		15 (15pin: D-sub) CAT5E		
Customer air piping		$\varnothing 6$ mm x 2, 0.59 Mpa $\varnothing 4$ mm x 1, 0.59 Mpa		
Operating conditions	Ambient temperature	5° C to 40° C (no excessive temperature changes)		
	Relative humidity	10% to 80% RH		
Noise level		Laeq=70 dB(A)		
Maximum motion range	J1	$\pm 132^\circ$		
	J2	$\pm 150^\circ$		
	J3	200 mm		
	J4	$\pm 360^\circ$		
Cycle time		0.325s	0.330s	0.375s

Mounting Dimensions(mm)

The symbol * represents the stroke margin of the mechanical stopper.

The symbol α represents the distance between the center of the mechanical stopper and the center of the network interface.

The symbol β represents the maximum height of the robot base.

Labels for components include: User air pipe 3 ($\Phi 6$ gray), Indicator, Brake button, User air pipe 1 ($\Phi 4$ blue), DB15, Network interface, User air pipe 2 ($\Phi 6$ blue), and 4- $\Phi 9$ through (locating hole).

Motion range of IR-S7 series robots with different arm lengths

Model	IR-S7-50Z20S3	IR-S7-60Z20S3	IR-S7-70Z20S3
a: Length of arm 1 + arm 2 (mm)	500	600	700
a: Length of arm 1 (mm)	225	325	425
c: Maximum motion range (mm)	552	652	752
d: Motion range of J1 (*)	132		
e: Motion range of J2 (*)	150		
f: Motion range (mm)	138.1	162.6	232
g: Rear motion range (mm)	425.6	492.5	559.4
h: Angle of mechanical stop position of J1 (*)	1		
i: Angle of mechanical stop position of J2 (*)	1	3	4
j: Range of mechanical stop position (mm)	134.2	148.3	214.8
k: Range of rear mechanical stop position (mm)	428.5	496.7	564.9
m: Motion range (mm)	240	220	220
n: Motion range (mm)	245		

Parameters of IR-S7 series robots with different arm lengths

Model	IR-S7-50Z20S3	IR-S7-60Z20S3	IR-S7-70Z20S3
α	225	325	425
β	545	569	599

Motion Range(mm)

Labels for motion range parameters include: a, b, c, d, e, f, g, h, i, j, k, m, n.

Labels for mounting surface include: Area in front of mechanical stopper and Base mounting surface.

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: $\pm 0.01^\circ$



Technical Data

Item		IR-S10-60Z20S3	IR-S10-70Z20S3	IR-S10-80Z20S3
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
Repeatability (mm)	J1 + J2	± 0.02 mm	± 0.02 mm	± 0.025 mm
	J3	± 0.01 mm	± 0.01 mm	± 0.01 mm
	J4	$\pm 0.01^\circ$	$\pm 0.01^\circ$	$\pm 0.01^\circ$
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	150x150 mm (4- $\varnothing 9$ mm)			
Weight (excluding cables)		17 kg	18 kg	19 kg
Press-in force of J3		200 N	200 N	200 N
Customer signal line		15 (15pin: D-sub) CAT5E		
Customer air piping		$\varnothing 6$ mm x 2, 0.59 Mpa $\varnothing 4$ mm x 1, 0.59 Mpa		
Operating conditions	Ambient temperature	5° C to 40° C (no excessive temperature changes)		
	Relative humidity	10% to 80% RH		
Noise level		Laeq=70 dB(A)		
Maximum motion range	J1	$\pm 132^\circ$		
	J2	$\pm 150^\circ$		
	J3	200 mm		
	J4	$\pm 360^\circ$		
Cycle time		0.361s	0.386s	0.416s

Mounting Dimensions(mm)

Motion range of IR-S10 series robots with different arm lengths

Model	IR-S10-60Z20S3	IR-S10-70Z20S3	IR-S10-80Z20S3
a: Length of arm 1 + arm 2 (mm)	600	700	800
a: Length of arm 1 (mm)	225	325	425
c: Maximum motion range (mm)	653	753	853
d: Motion range of J1 (*)	132		
e: Motion range of J2 (*)	150		
f: Motion range (mm)	212.4	187.5	212.6
g: Rear motion range (mm)	525.6	592.5	659.4
h: Angle of mechanical stop position of J1 (*)	1		
i: Angle of mechanical stop position of J2 (*)	1	3	4
j: Range of mechanical stop position (mm)	208.9	170.5	186
k: Range of rear mechanical stop position (mm)	528.5	596.7	664.9
m: Motion range (mm)	420	330	320
n: Motion range (mm)	300		

Parameters of IR-S10 series robots with different arm lengths

Model	IR-S10-60Z20S3	IR-S10-70Z20S3	IR-S10-80Z20S3
α	225	325	425
β	545	569	599

Motion Range(mm)

SCARA Robot

IR-S20 Series

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

Scope of Application

Applications in lithium battery industry.

Features

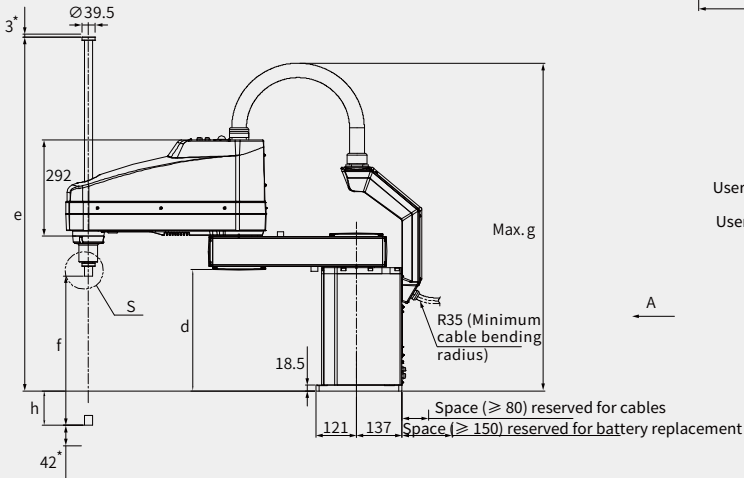
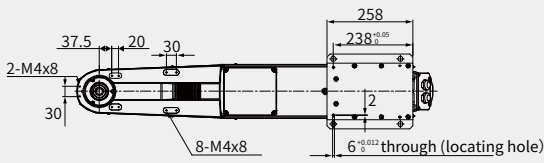
Load	20 kg
Arm length	800 mm / 1000 mm
Cycle time	0.36s to 0.38s
Repeatability	±0.025 mm



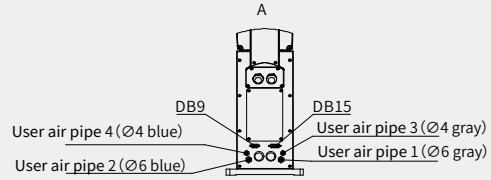
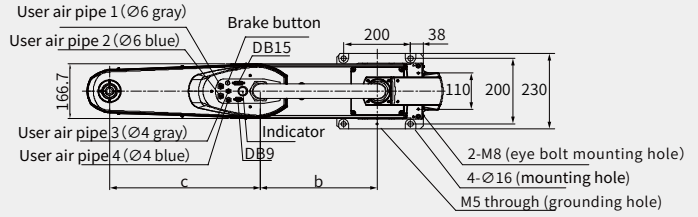
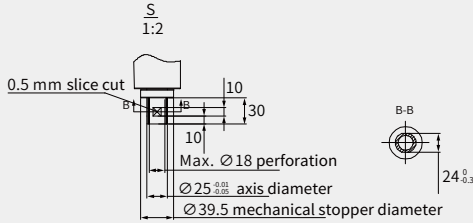
Technical Data

Item		IR-S20-80Z42S3	IR-S20-100Z42S3
Mounting mode		Tabletop	
Arm length	Arm 1 + Arm 2	800 mm	1000 mm
Maximum speed	J1 + J2	9550 mm/s	10807 mm/s
	J3	1010 mm/s	1010 mm/s
	J4	705° /s	705° /s
Weight (excluding cables)		51 kg	54 kg
Repeatability	J1 + J2	±0.025 mm	±0.025 mm
	J3	±0.01 mm	±0.01 mm
	J4	±0.01°	±0.01°
Maximum motion range	J1	±132°	±132°
	J2	±152°	±152°
	J3	420 mm	420 mm
	J4	±360°	±360°
Handling capacity (load)	Rated	10 kg	10 kg
	Maximum	20 kg	20 kg
Cycle time		0.36s	0.38s
Allowable inertia moment of J4	Rated	0.5 kg.m ²	0.5 kg.m ²
	Maximum	1.0 kg.m ²	1.0 kg.m ²
Maximum power		2.55 kW	2.55 kW
Press-in force of J3		250 N	250N
Homing		Not needed	
Customer signal line		9 (9pin: D-sub), (15pin: D-sub)	
Customer air piping		Φ6 mm x 2, 0.59 Mpa (6 kgf/cm ² :86 psi) Φ4 mm x 2, 0.59 Mpa (6 kgf/cm ² :86 psi)	
Installation environment		Standard	
Matching controller		IRCB500 drive-control integrated controller	

Mounting Dimensions(mm)

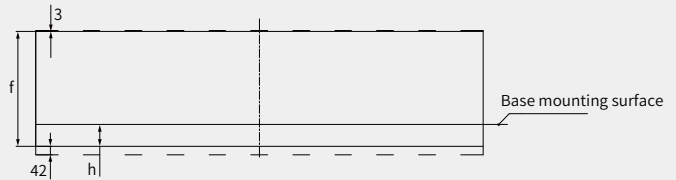
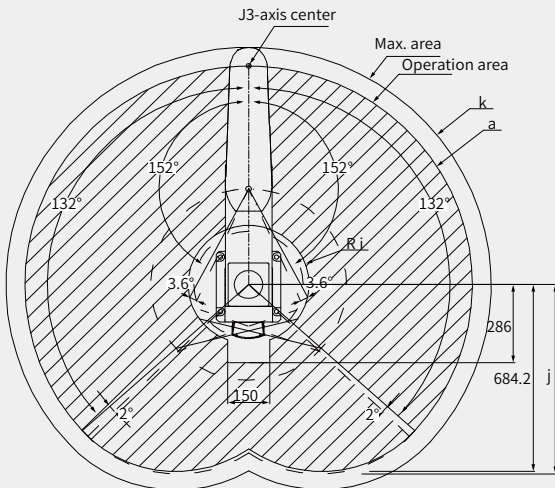


The symbol * represents the stroke margin of the lead screw limit ring.



Model: IR-S20-XXXXXX	80Z42S3	100Z42S3
a: Length of arm 1 + arm 2	800 mm	1000 mm
b: Length of arm 1	350 mm	550 mm
c: Length of arm 2	450 mm	450 mm
d: Height of base	371 mm	371 mm
e: Height from lead screw to base	1082 mm	1082 mm
f: Stroke of lead screw	420 mm	420 mm
g: Height from bellows to base	1040 mm	1110 mm
h: Distance from lower limit position of lead screw to base	68 mm	68 mm
i: Internal motion range	216.5 mm	260 mm
j: Rear motion range	684.2 mm	818.5 mm
k: Maximum area	868 mm	1068 mm

Motion Range(mm)



Model: IR-S20-XXXXXX	80Z42S3	100Z42S3
a: Length of arm 1 + arm 2	800 mm	1000 mm
f: Stroke of lead screw	420 mm	420 mm
g: Height from bellows to base	1040 mm	1110 mm
h: Distance from lower limit position of lead screw to base	68 mm	68 mm
i: Internal motion range	216.5 mm	260 mm
j: Rear motion range	684.2 mm	818.5 mm
k: Maximum area	868 mm	1068 mm

SCARA Robot

IR-GS20 Series

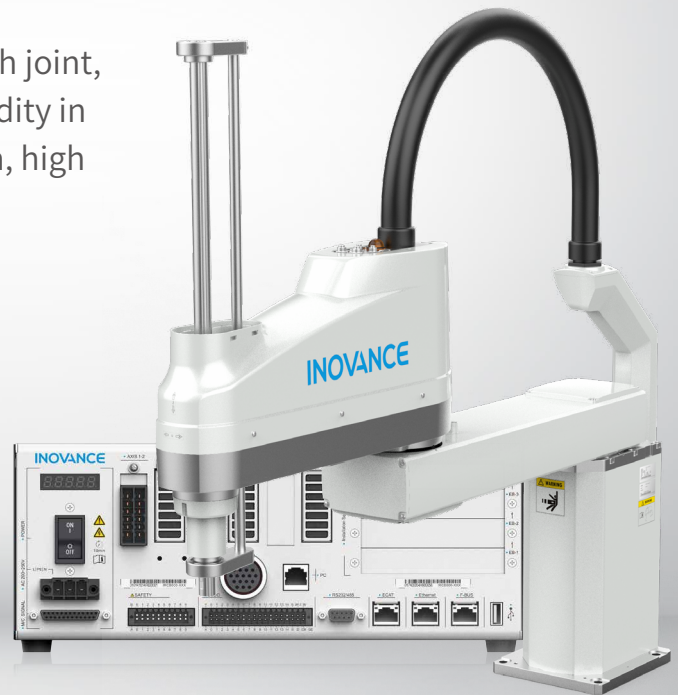
SCARA robots with harmonic drive for the fourth joint, together with an plain shaft to increase the rigidity in the overturning direction, featuring high inertia, high rigidity and high repeatability.

Scope of Application

Applications in lithium battery industry.

Features

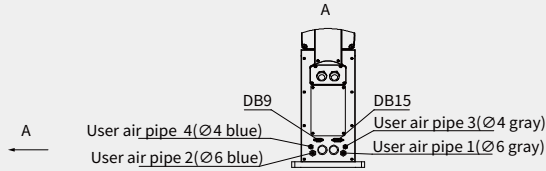
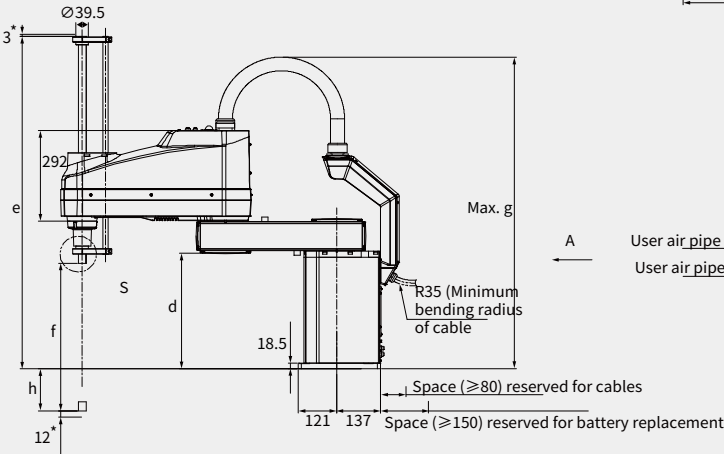
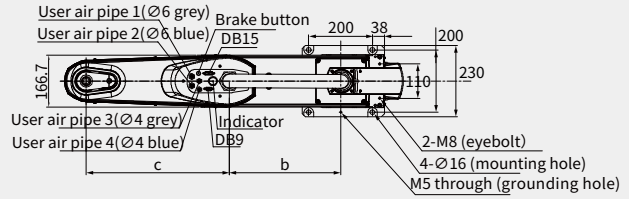
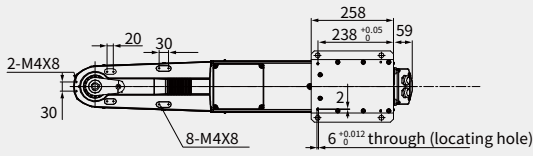
Load	20 kg
Arm length	800 mm / 1000 mm
Cycle time	0.36s to 0.38s
Repeatability	±0.025 mm



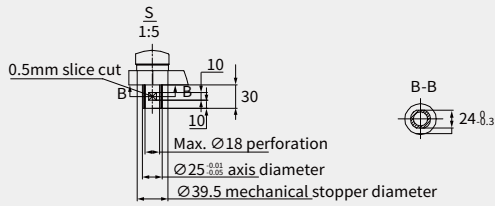
Technical Data

Item		IR-GS20-80Z42S3	IR-GS20-100Z42S3
Mounting mode		Tabletop	
Arm length	Arm 1 + Arm 2	800 mm	1000 mm
Maximum speed	J1 + J2	9550 mm/s	10807 mm/s
	J3	1010 mm/s	1010 mm/s
	J4	705° /s	705° /s
Weight (excluding cables)		53 kg	56 kg
Repeatability	J1 + J2	±0.025 mm	±0.025 mm
	J3	±0.01 mm	±0.01 mm
	J4	±0.01°	±0.01°
Maximum motion range	J1	±132°	±132°
	J2	±152°	±152°
	J3	420 mm	420 mm
	J4	±360°	±360°
Handling capacity (load)	Rated	10 kg	10 kg
	Maximum	20 kg	20 kg
Cycle time		0.36s	0.38s
Allowable inertia moment of J4	Rated	0.5 kg.m ²	0.5 kg.m ²
	Maximum	1.0 kg.m ²	1.0 kg.m ²
Maximum power		2.55 kW	2.55 kW
Press-in force of J3		250 N	250N
Homing		Not needed	
Customer signal line		9 (9pin: D-sub), (15pin: D-sub)	
Customer air piping		Φ6 mm x 2, 0.59 Mpa (6 kgf/cm ² :86 psi) Φ4 mm x 2, 0.59 Mpa (6 kgf/cm ² :86 psi)	
Installation environment		Standard	
Matching controller		IRCB500 drive-control integrated controller	

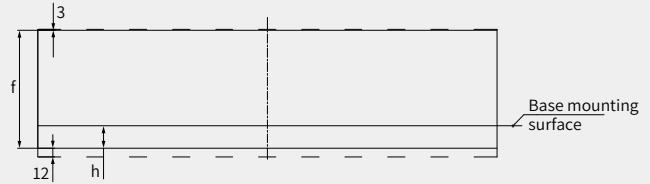
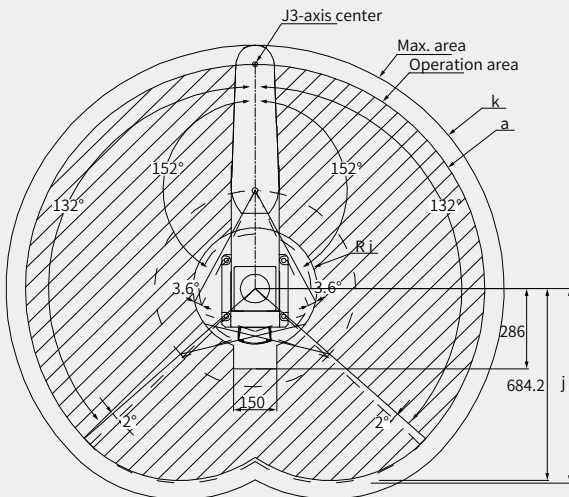
Mounting Dimensions(mm)



Model: IR-GS20-XXXXXX-A1	80Z42S3	100Z42S3
a: Length of arm 1 + arm 2	800 mm	1000 mm
b: Length of arm 1	350 mm	550 mm
c: Length of arm 2	450 mm	450 mm
d: Height of base	371 mm	371 mm
e: Height from lead screw to base	1069 mm	1069 mm
f: Stroke of lead screw	420 mm	420 mm
g: Height from bellows to base	1040 mm	1110 mm
h: Distance from lower limit position of lead screw to base	81 mm	81 mm
i: Internal motion range	216.5 mm	260 mm
j: Rear motion range	684.2 mm	818.5 mm
k: Maximum area	868 mm	1068 mm



Motion Range(mm)



Model: IR-GS20-XXXXXX-A1	80Z42S3	100Z42S3
a: Length of arm 1 + arm 2	800 mm	1000 mm
f: Stroke of lead screw	420 mm	420 mm
g: Height from bellows to base	1040 mm	1110 mm
h: Distance from lower limit position of lead screw to base	81 mm	81 mm
i: Internal motion range	216.5 mm	260 mm
j: Rear motion range	684.2 mm	818.5 mm
k: Maximum area	868 mm	1068 mm

SCARA Robot

IR-S50 Series

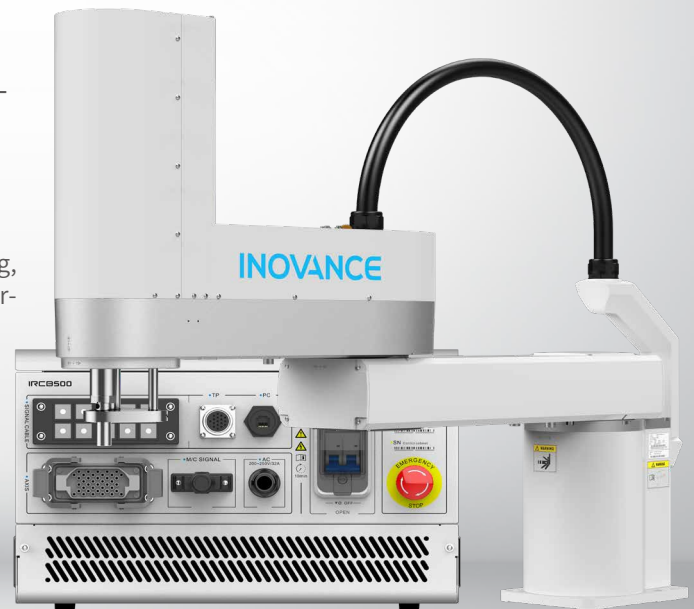
SCARA robots suitable for large load applications, featuring large load capacity, high repeatability, high rigidity and smooth motion.

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

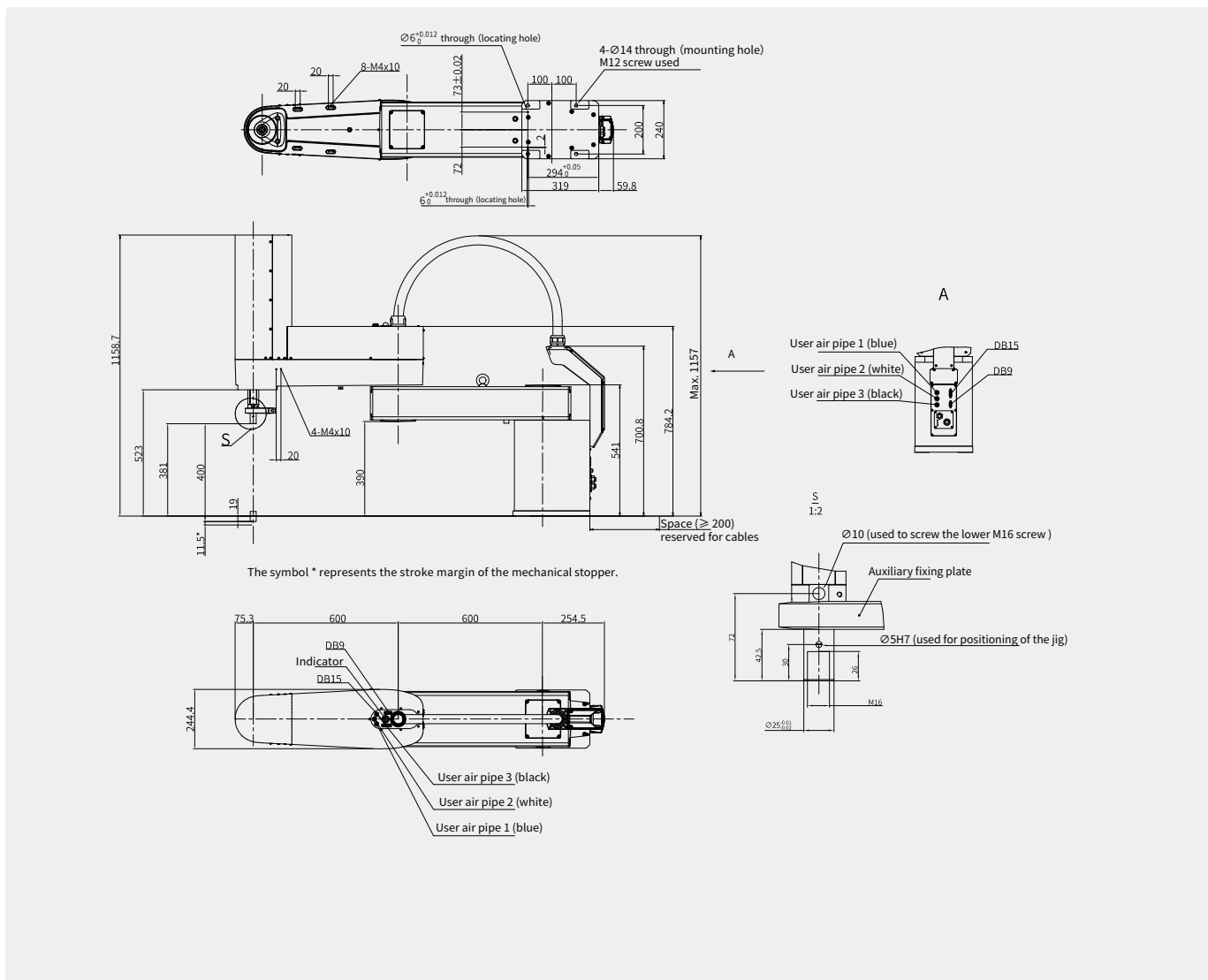
Load	50 kg
Arm length	1200 mm
Cycle time	0.84s
Repeatability	±0.05 mm



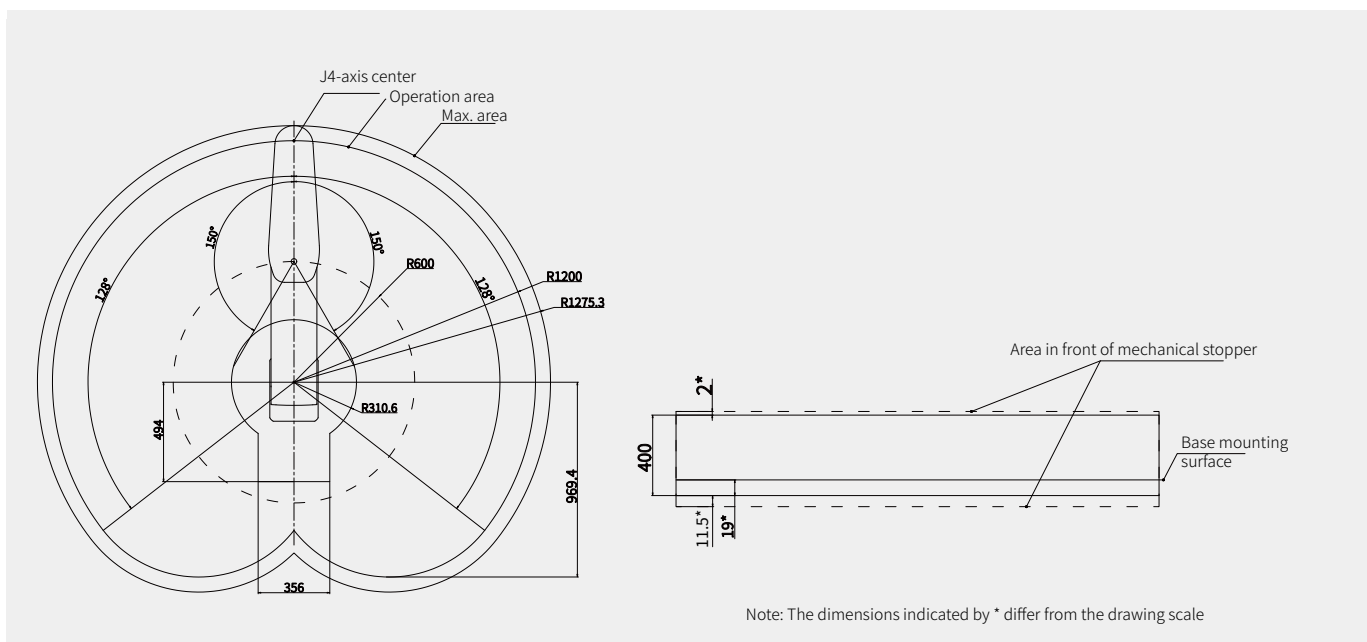
Technical Data

Item		IR-S50-120Z40S3-B1
Mounting mode		Tabletop
Arm length	Arm 1 + Arm 2	1200 mm
Maximum speed	J1 + J2	7400 mm/s
	J3	750 mm/s
	J4	600° /s
Weight (excluding cables)		124 kg
Repeatability	J1 + J2	±0.05 mm
	J3	±0.02 mm
	J4	±0.005°
Maximum motion range	J1	±128°
	J2	±150°
	J3	400 mm
	J4	±360°
Handling capacity (load)	Maximum	50 kg
Cycle time		0.84s
Allowable inertia moment of J4	Maximum	2.45 kg.m ²
Maximum power		3.1 kW
Homing		Not needed
Customer signal line		24 (15Pin: D-sub+9Pin)
Customer air piping		Φ6 mm x 3, 0.59 Mpa (6 kgf/cm ² :86 psi)
Installation environment		Standard
Matching controller		IRCB500 high-protection drive-control integrated controller

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

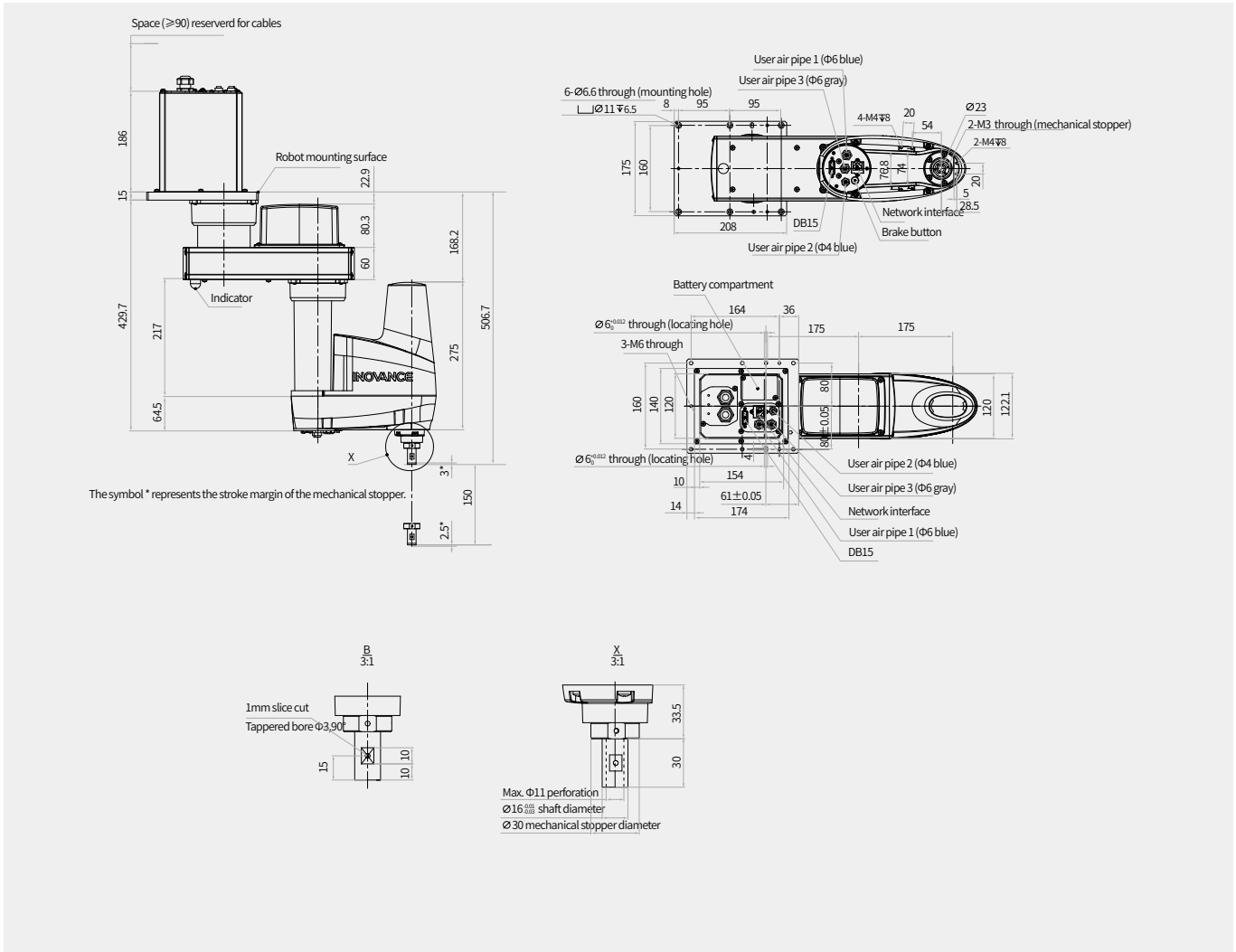
Load	4 kg
Arm length	350 mm
Cycle time	0.304s
Repeatability	J1-J3: ± 0.01 mm; J4: $\pm 0.01^\circ$



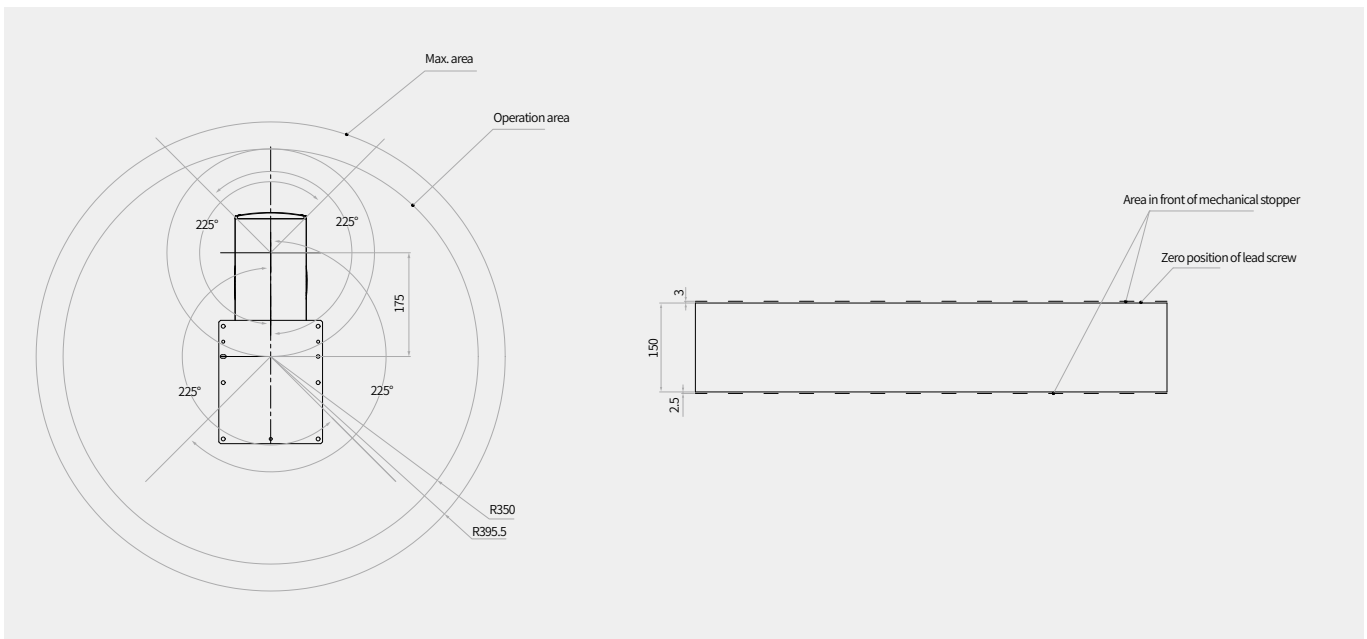
Technical Data

Item		IR-TS4-35Z15S3
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 (mm)	J1 + J2	± 0.01 mm
	J3	± 0.01 mm
	J4	$\pm 0.01^\circ$
Handling capacity (load)	Rated	2 kg
	Maximum	4 kg
Allowable inertia moment of J4	Rated	0.05 kg.m ²
	Maximum	0.05 kg.m ²
Mounting hole		95x95x160 mm (6- $\phi 6.6$ mm)
Weight (excluding cables)		18.5 kg
Press-in force of J3		100 N
Customer signal line		15 (15pin: D-sub) CAT5E
Customer air piping		$\phi 6$ mm x 2, 0.59 Mpa $\phi 4$ mm x 1, 0.59 Mpa
Operating conditions	Ambient temperature	5° C to 40° C (no excessive temperature changes)
	Relative humidity	10 to 80% RH
Noise level		L _{aeq} =70 dB(A)
Maximum motion range	J1	$\pm 225^\circ$
	J2	$\pm 225^\circ$
	J3	150 mm
	J4	$\pm 720^\circ$
Cycle time		0.304s

Mounting Dimensions(mm)



Motion Range(mm)



SCARA Robot

IR-TS5 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

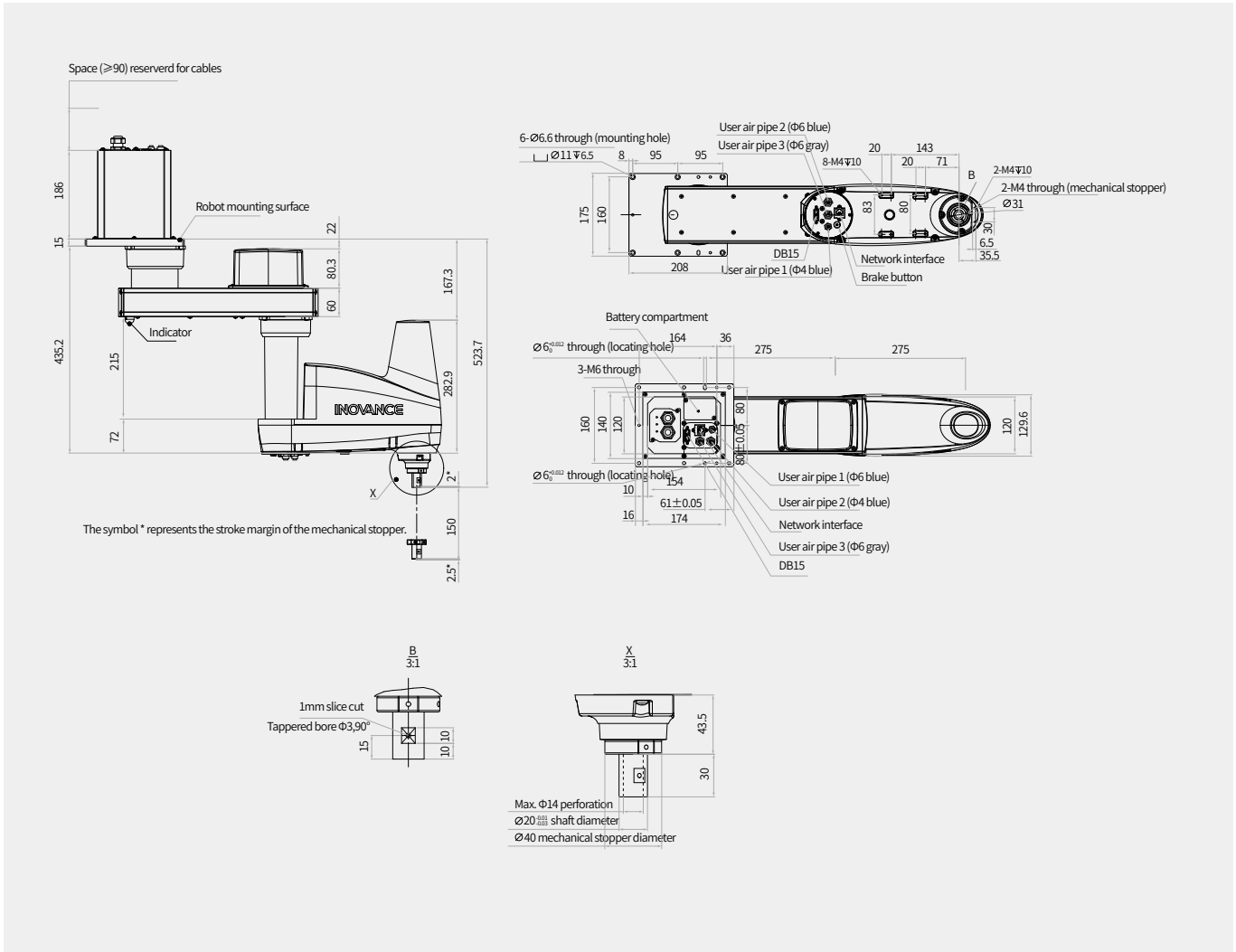
Load	5 kg
Arm length	550 mm
Cycle time	0.340s
Repeatability	J1 and J2: ± 0.015 mm; J3: 0.01 mm; J4: $\pm 0.01^\circ$



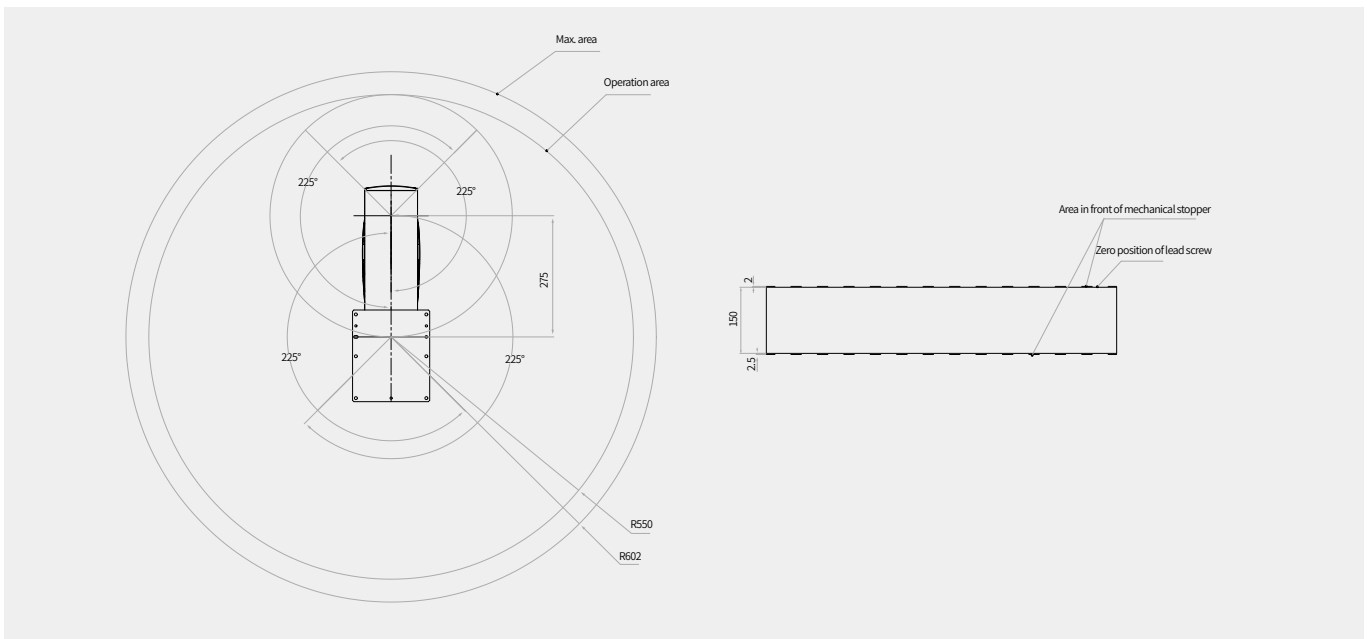
Technical Data

Item		IR-TS5-55Z15S3
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 (mm)	J1 + J2	± 0.015 mm
	J3	± 0.01 mm
	J4	$\pm 0.01^\circ$
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		95x95x160 mm (6- $\phi 6.6$ mm)
Weight (excluding cables)		20 kg
Press-in force of J3		150N
Customer signal line		15 (15pin: D-sub)
		CAT5E
Customer air piping		$\phi 6$ mm x 2, 0.59 Mpa
		$\phi 4$ mm x 1, 0.59 Mpa
Operating conditions	Ambient temperature	5° C to 40° C (no excessive temperature changes)
	Relative humidity	10% to 80% RH
Noise level		Laeq=70 dB(A)
Maximum motion range	J1	$\pm 225^\circ$
	J2	$\pm 225^\circ$
	J3	150 mm
	J4	$\pm 720^\circ$
Cycle time		0.340s

Mounting Dimensions(mm)



Motion Range(mm)



SCARA Robot

IR-C8 Series

Inovance's fastest SCARA robots with a cycle time of only 0.26s to greatly increase efficiency of the production line.

Scope of Application

Precision assembly, handling, dispensing, coating, screw tightening, labeling, material insertion, and sorting.

Features

Load	8 kg
Arm length	620 mm
Cycle time	0.26s
Repeatability	±0.02 mm



Technical Data

Item		IR-C8-62Z20S3-A1
Mounting mode		Tabletop
Arm length	Arm 1 + Arm 2	620 mm
Maximum speed	J1 + J2	6950 mm/s
	J3	2200 mm/s
	J4	2800 deg/s
Weight (excluding cables)		50 kg
Repeatability	J1 + J2	±0.02 mm
	J3	±0.01 mm
	J4	±0.01°
Maximum motion range	J1	±150°
	J2	±150°
	J3	200 mm
	J4	±360°
Handling capacity (load)	Rated	4 kg
	Maximum	8 kg
Cycle time		0.26s
Allowable inertia moment of J4	Rated	0.01 kg·m ²
	Maximum	0.12 kg·m ²
Maximum power		3.1 kW
Press-in force of J3		100 N
Homing		Not needed
Customer signal line		15 (15Pin: D-sub)
Customer air piping		Φ6 mm x 2, 0.59 Mpa (6 kgf/cm ² :86 psi)
Installation environment		Standard
Matching controller		IRCB500 drive-control integrated controller

SCARA Robot

IRS11 3-Axis Series

Robots featuring IP67 protection and acid/alkali corrosion-resistant surface, designed for long-term stable operation in environments suffering from moisture and oil mist.

Scope of Application

Especially applicable to material loading and unloading as a highly protective and cost-effective solution.

Features

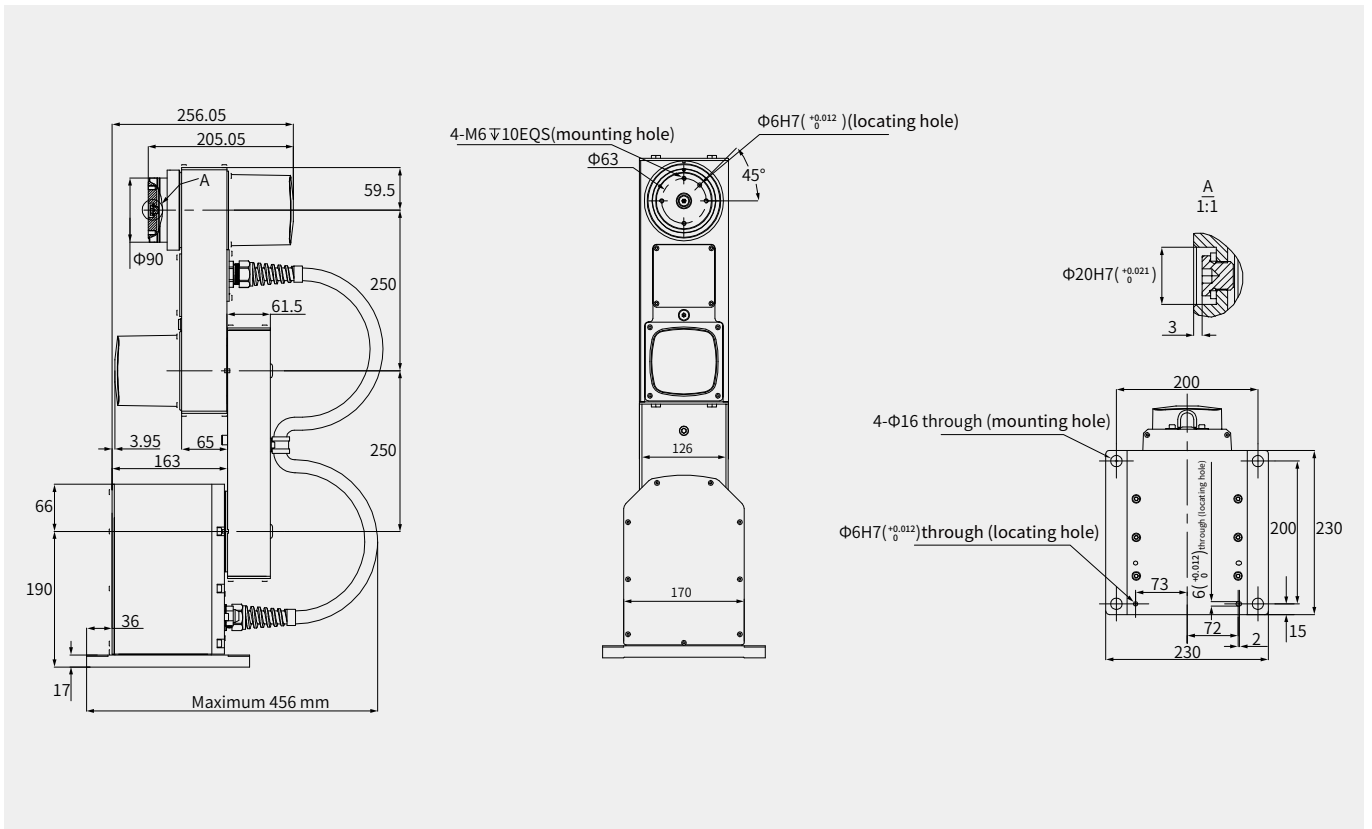
Load	8 kg
Arm length	500 mm
IP rating	IP67
Motion axis	R/R/R axis



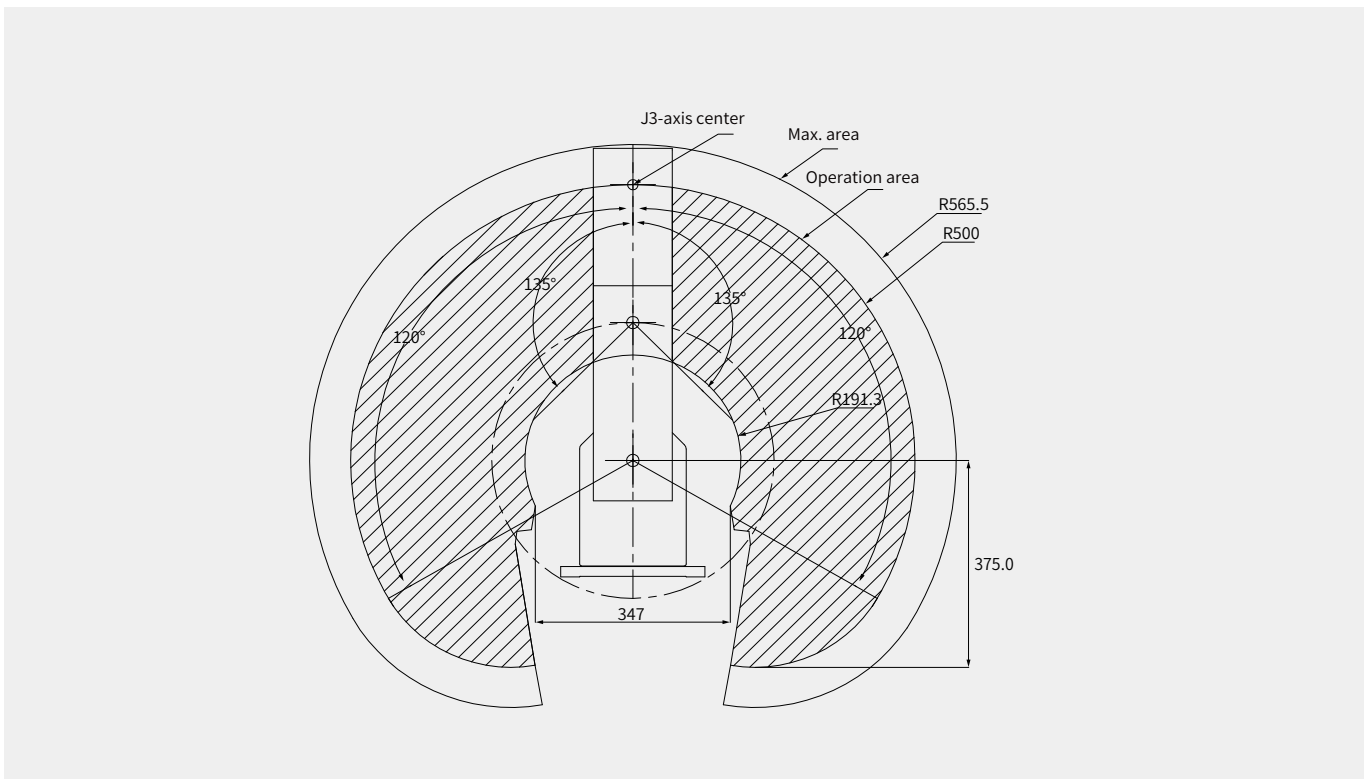
Technical Data

Item		IRS11-8-50TS5
Mounting mode		Tabletop
Number of motion axes		3
IP rating		IP67
Arm length	Arm 1 + Arm 2	500 mm
Maximum speed	J1 + J2	5890 mm/s
	J3	600° /s
Weight (excluding cables)		24 kg
Repeatability	J1 + J2	±0.02 mm
	J3	±0.01°
Maximum motion range	J1	±120°
	J2	±135°
	J3	±360°
Handling capacity (load)	Maximum	8 kg
Maximum power		1 kW
Homing		Not needed
Matching controller		IRCB500 drive-control integrated controller

Mounting Dimensions(mm)



Motion Range(mm)



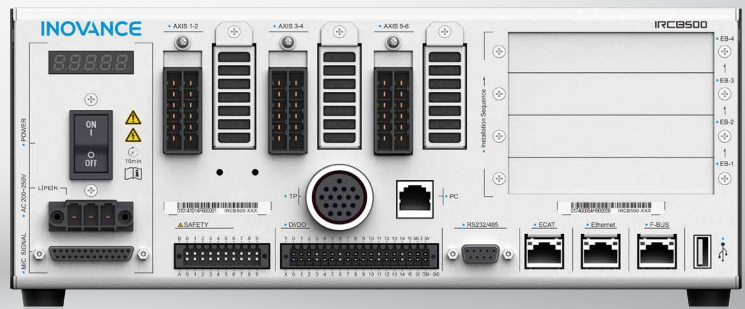
Robot Controller

IRCB500 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

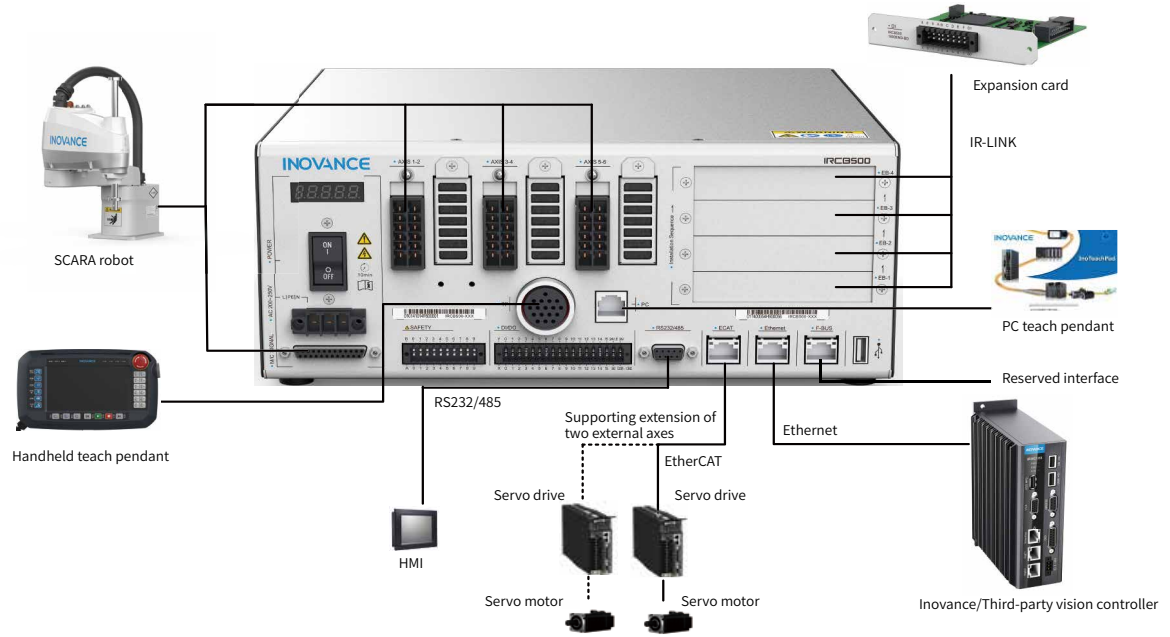
SCARA Robot	IR-S4/7/10 Series	●
	IR-TS4/5 Series	●
	IR-S20 Series	●
	IR-GS20 Series	●
Others	IR-S50 Series	●
	IRS11 Series	●
	IR-C8 Series	●



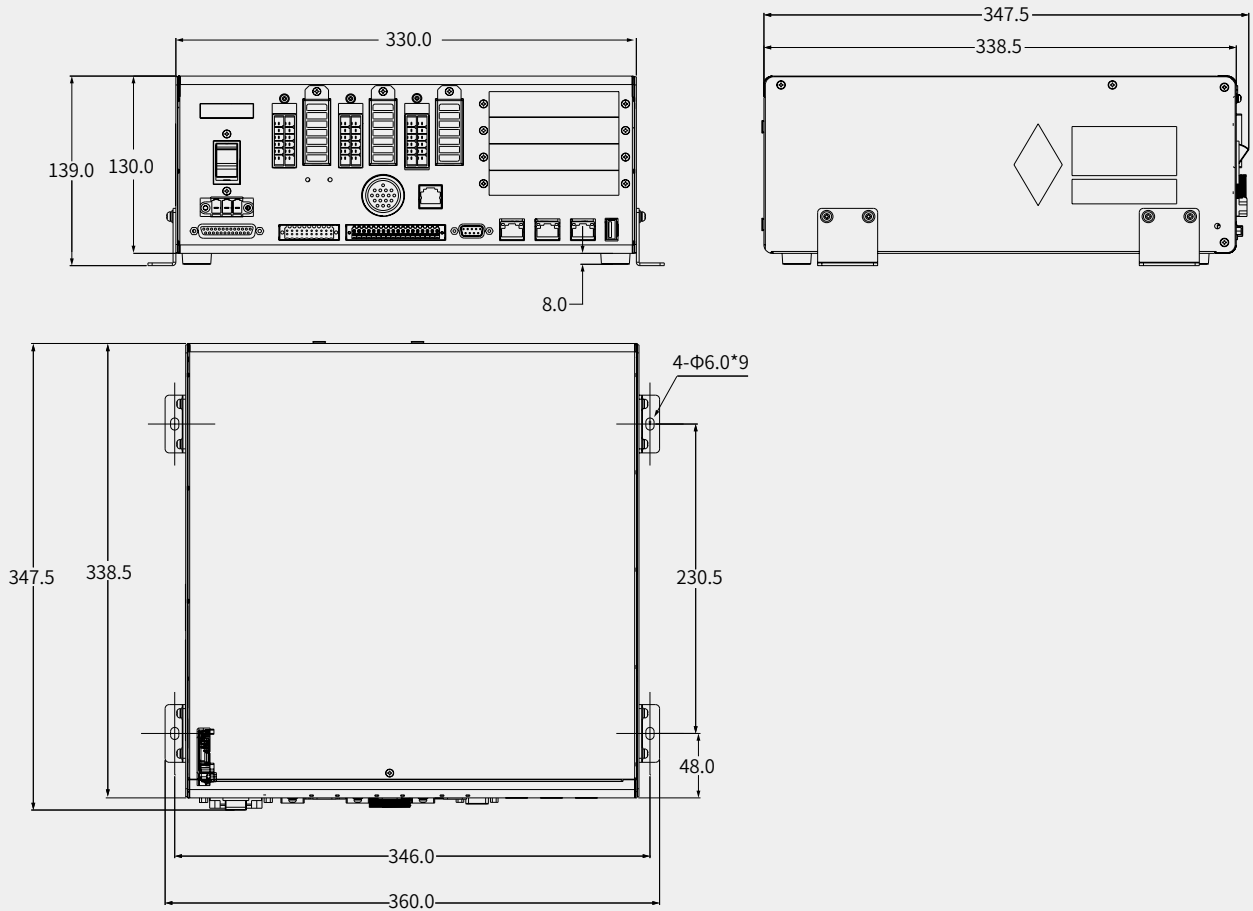
Technical Data

Controlled axes	8 (including robot motion axis)
Motion mode	Point-to-point, arching, linear interpolation, circular interpolation, free curve interpolation, and dynamic following
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
	F-Bus interface: Used for EtherCAT bus communication
	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	PC programming platform control, teach pendant control, remote I/O control, remote Modbus control, and API control
Power supply	Input voltage: Single-phase 200 VAC to 240 VAC, 10A, 50 Hz to 60 Hz
	Max. power consumption: 2.1 kW (depending on the robot model)
IP rating	IP20
Operating conditions	Temperature: 5° C to 40° C ; Relative humidity: 20% to 95% RH@30° C (non-condensing)
Dimensions	330 mm × 338.5 mm × 130 mm
Weight	8 kg

System Topology



Mounting Dimensions(mm)



Robot Controller

IRCB500 High-Protection Series

Integrating drive and control functions, the IRCB500 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

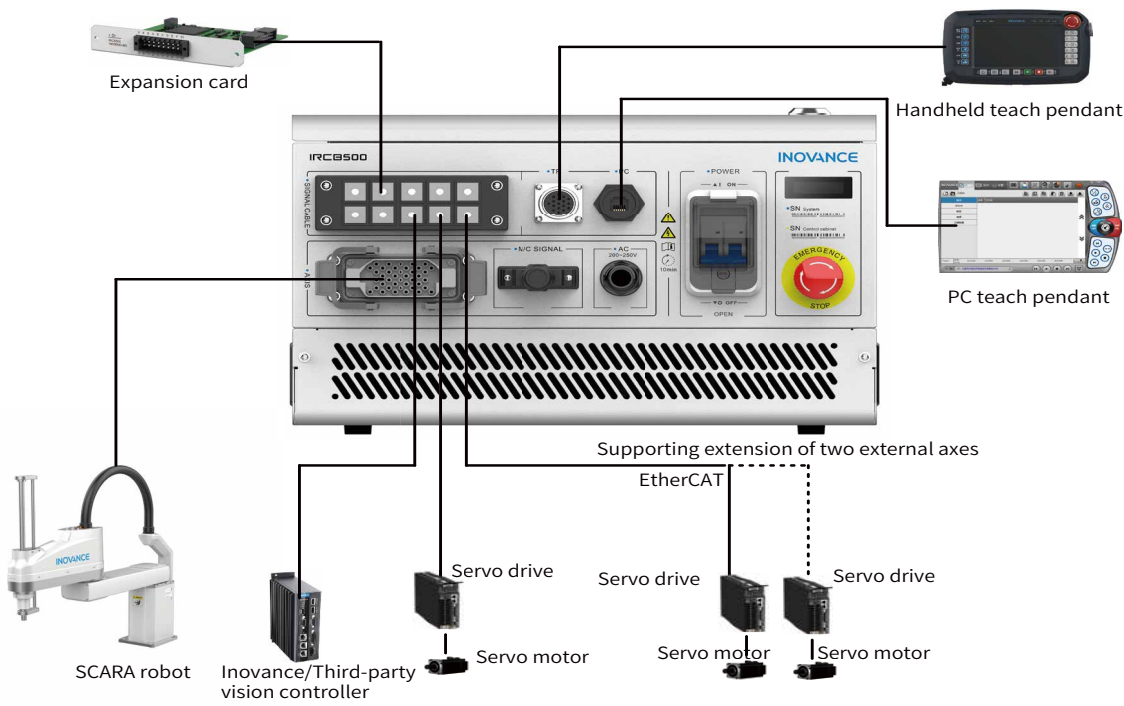
	IR-S20 Series	×
	IR-GS20 Series	×
	IR-S50 Series	●
Others	IRS11 Series	×
	IR-C8 Series	×



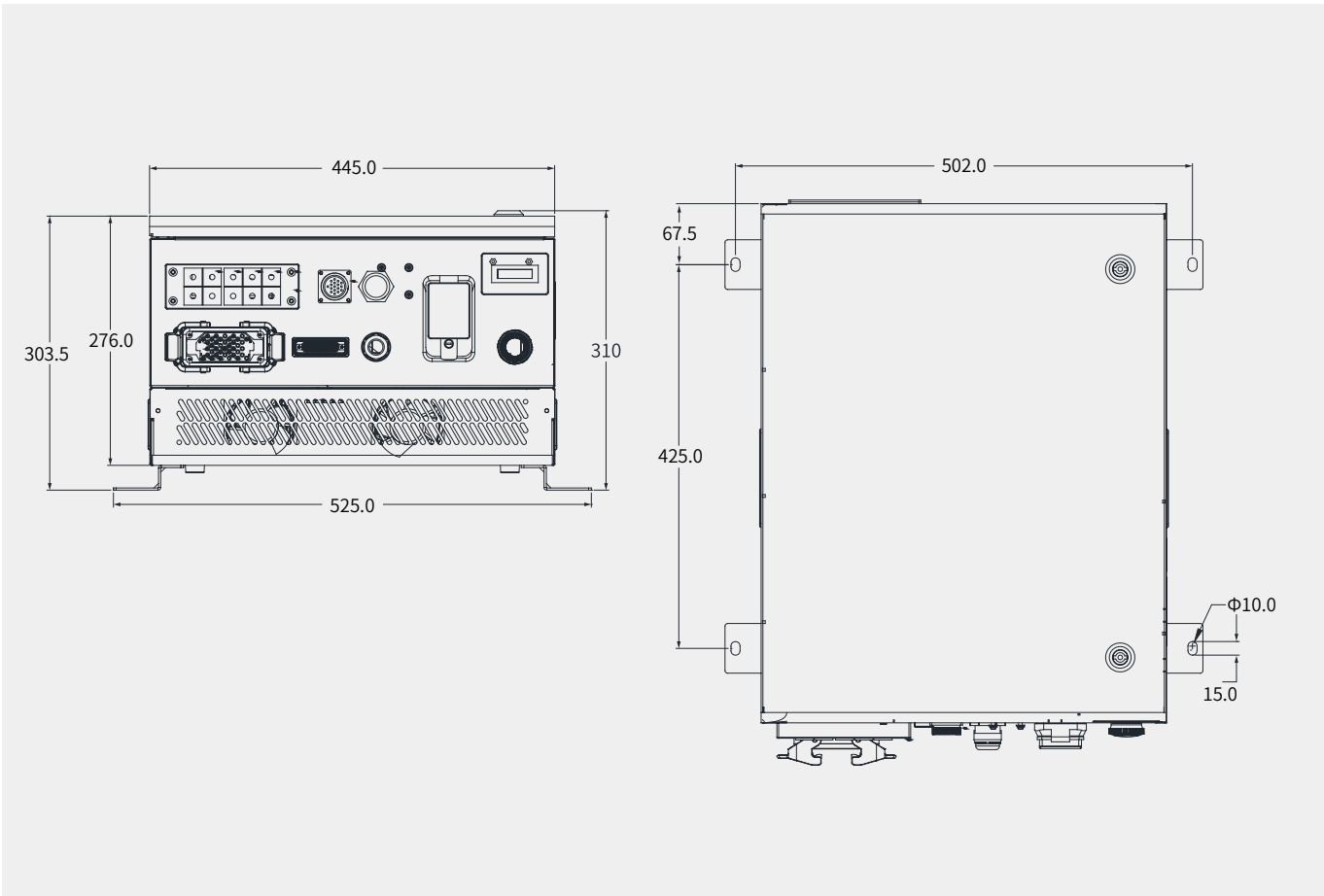
Technical Data

Controlled axes	6 robot axes + 2 external axes
Motion mode	Point-to-point, arching, linear interpolation, circular interpolation, free curve interpolation, and dynamic following
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
	F-Bus interface: Used for EtherCAT bus communication
	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	PC programming platform control, teach pendant control, remote I/O control, remote Modbus control, and API control
Power supply	Input voltage: Single-phase 200 VAC to 250 VAC, 23A, 50 Hz to 60 Hz
	Max. power consumption: 4.5 kW (depending on the robot model)
IP rating	IP54 + anti metal dust
Operating conditions	Temperature: 0° C to 45° C; Relative humidity: 20% to 95% RH@30° C (non-condensing)
Dimensions	445 mm × 575 mm × 276 mm
Weight	30 kg

System Topology



Mounting Dimensions(mm)



List of Robot Models

SCARA Robot — Floor Mounted

Series		IR-S4	IR-S7			IR-S10			IR-S50
Model		40Z15S3	50Z20S3	60Z20S3	70Z20S3	60Z20S3	70Z20S3	80Z20S3	120Z40S3
Mounting mode		Tabletop							
Arm length	J1+J2 (mm)	400	500	600	700	600	700	800	1200
	J1 (mm)	225	225	325	425	225	325	425	600
	J2 (mm)	175	275	275	275	375	375	375	600
Maximum speed	J1+J2 (mm/s)	7200	7120	7850	8590	9100	9800	10500	7400
	J3 (mm/s)	1300	1600	1600	1600	1550	1550	1550	750
	J4 (° /s)	2600	2000	2000	2000	2700	2700	2700	600
Maximum motion range	J1 (°)	±132	±132	±132	±132	±132	±132	±132	±128
	J2 (°)	±141	±150	±150	±150	±150	±150	±150	±150
	J3 (mm)	150	200	200	200	200	200	200	400
	J4 (°)	±360	±360	±360	±360	±360	±360	±360	±360
Repeat-ability	J1+J2 (mm)	±0.01	±0.02	±0.02	±0.02	±0.02	±0.02	±0.02	±0.05
	J3 (mm)	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.02
	J4 (°)	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.005
Load	Rated (kg)	2	2	2	2	5	5	5	-
	Maximum (kg)	4	7	7	7	10	10	10	50
Permissible 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	2.45
Standard cycle time (s)		0.342	0.344	0.352	0.36	0.361	0.386	0.416	0.84
Lead screw dimensions	Shaft diameter (mm)	Φ16	Φ20	Φ20	Φ20	Φ20	Φ20	Φ20	Φ24.9
	Through hole inner diameter (mm)	Φ11	Φ14	Φ14	Φ14	Φ14	Φ14	Φ14	Φ12
Mounting base dimensions (mm)		120x120 (Φ9)	150X150 (Φ9)	150X150 (Φ9)	150X150 (Φ9)	150X150 (Φ9)	150X150 (Φ9)	150X150 (Φ9)	200X200 (Φ14)
Weight (excluding cables)		11 kg	17 kg	17 kg	18 kg	19.5 kg	20 kg	21.5 kg	124
Controller		IRCB500-4AD				IRCB500-4CD			IRCB500-4MD

*Contact Inovance technical support for customized models

List of Robot Models

SCARA Robot

Type	Code	Model (Model for Orders)	Description
4 kg	01740515	IR-S4-40Z15S3	Arm length: 400 mm Z-axis travel: 150 mm Max. load: 4 kg
7 kg	01740560	IR-S7-50Z20S3	Arm length: 500 mm Z-axis travel: 200 mm Max. load: 7 kg
	01740546	IR-S7-60Z20S3	Arm length: 600 mm Z-axis travel: 200 mm Max. load: 7 kg
	01740561	IR-S7-70Z20S3	Arm length: 700 mm Z-axis travel: 200 mm Max. load: 7 kg
10 kg	01740568	IR-S10-60Z20S3	Arm length: 600 mm Z-axis travel: 200 mm Max. load: 10 kg
	01740567	IR-S10-70Z20S3	Arm length: 700 mm Z-axis travel: 200 mm Max. load: 10 kg
	01740544	IR-S10-80Z20S3	Arm length: 800 mm Z-axis travel: 200 mm Max. load: 10 kg
50 kg	01740589	IR-S50-120Z40S3-B1	Arm length: 1200 mm Z-axis travel: 400 mm Max. load: 50 kg
	01740553	IR-TS4-35Z15S3	Arm length: 350 mm Z-axis travel: 150 mm Max. load: 4 kg
	01740554	IR-TS5-55Z15S3	Arm length: 550 mm Z-axis travel: 150 mm Max. load: 5 kg

*1: The robot comes with a 3 m standard trailing cable. If needed, you can choose standard or highly-flexible 5 m/10 m/15 m trailing cable. For details, contact Inovance technical support.

Customized Robots

Type	Code	Model (Model for Orders)	Description
4-axis	/	IR-C8-62Z20S3	Arm length: 600 mm Max. load: 8 kg

Options

Type	Code	Description
Compatible bracket	20131993	Used to make IRCB500 drive-control integrated controller be compatible with the mounting holes of IRCB300 series controllers.
Sheet metal parts for vertical mounting of controller	20131974	Used in vertical mounting of IRCB500 drive-control integrated controller.
Protective cover for upper end of lead screw	20212757	Used to protect the upper end of the lead screw of IR-GS20 series SCARA robots.

Teach Pendant Model

Code	Model	Description
01640010	IRTP80-L5	Robot teach pendant (5 m)

Expansion Card

Type	Code	Model	Description
IRCB500 controller	01650019	IRCB500-0016ETND-BD	General I/O expansion card with 16 NPN outputs
	01650020	IRCB500-1600END-BD	General I/O expansion card with 16 inputs
	01650021	IRCB500-2ENID-BD	2-channel differential input incremental encoder expansion card

Robot Vision Systems

Type	Code	Description
Vision dongle	01660003	IRVC-USBK1 (Inovance algorithms)
	01660005	IRVC-USBK2 (Halcon algorithms)
Cable kit	1504AD84	10 V voltage-regulation cable on the camera-trigger end

Matching Table for Robot Selection

Controller	Robot	Model	Extension Card	Options	Vision
IRCB500	SCARA	IR-S4&7&10 Series	IRCB500-0016ETND-BD IRCB500-1600END-BD IRCB500-2ENID-BD	-	Vision dongle Cable kit
		IR-TS4&5 Series		-	
		IR-S20 Series		-	
		IR-GS20 Series		-	
		IR-C8 Series		-	
IRCB500 high-protection	SCARA	IR-S50 Series		Fork lift tool for robots	

NOTES

REMARKS

A large area of horizontal dotted lines for taking notes.