Robotics

IRB 910SC SCARA

The IRB 910SC (SCARA) is fast, cost-effective and, because it‘s from ABB, accurate.

In designing its Selective Compliance Articulated Robot Arm (SCARA), or IRB 910SC, ABB has delivered a single arm robot capable of operating in a confined footprint. ABB’s SCARA is ideal for the Small Parts Assembly, Material Handling and parts inspection.

Variants

With a maximum payload of 6 kg, the IRB 910SC is available in three configurations (IRB 910SC –3/0.45, IRB 910SC – 3/0.55m, and IRB 910SC – 3/0.65.) All are modular by design, with different linking arm lengths and have individual reaches of 450 mm, 550 mm and 650 mm, respectively.

All members of the SCARA family are tabletop mountable. IP54 and clean room options are under development.

Applications

ABB’s SCARA family is designed for a variety of general-purpose applications such as tray kitting, component placement, machine loading/unloading and assembly.
These applications require fast, repeatable and articulate point-to-point movements such as palletizing, depalletizing, machine loading/unloading and assembly.

ABB’s SCARA family is ideal for customers requiring rapid cycle times, high precision and high reliability for their Small Part Assembly applications and for laboratory automation and prescription drug dispensing.

Features

- A Clean Room ISO-5 option is under development
- IP54 protection is under development
- Table top mountable
- Ease of integration
- Custom interfaces
- Modular design

Customer benefits

- Short cycle times which achieved by high speed
- High precision which is achieved by superior motion control
- Superb reliability due to reuse and standard proven components

Specification

Robot version	Reach	Payload	Armload
IRB 910SC-3/0.45	450 mm	Rated: 3 kg; Max: 6 kg	Included in the max payload
IRB 910SC-3/0.55	550 mm	Rated: 3 kg; Max: 6 kg	Included in the max payload
IRB 910SC-3/0.65	650 mm	Rated: 3 kg; Max: 6 kg	Included in the max payload

Features

Integrated signal supply	10 signals on wrist
Integrated air supply	4 air on wrist (5 bar)
Robot mounting	Table
Degree of protection	IP30
Controller	IRC5 Compact
Arm length	450mm; 550mm; 650mm
Shaft Diameter ø (mm)	20mm

Movement

	IRB 910SC-3/0.45		IRB 910SC-3/0.55		IRB 910SC-3/0.65	
Axis movement	Working range	Max speed	Working range	Max speed	Working range	Max speed
Axis 1 Rotation	±140 deg	415 deg/s	±140 deg	415 deg/s	±140 deg	415 deg/s
Axis 2 Rotation	±150 deg	659 deg/s	±150 deg	659 deg/s	±150 deg	659 deg/s
Axis 3 Up/Down	180mm	1.02 m/s	180 mm	1.02 m/s	180 mm	1.02 m/s
Axis 4 Rotation	±400 deg	2400 deg/s	±400 deg	2400 deg/s	±400 deg	2400 deg/s

Performance

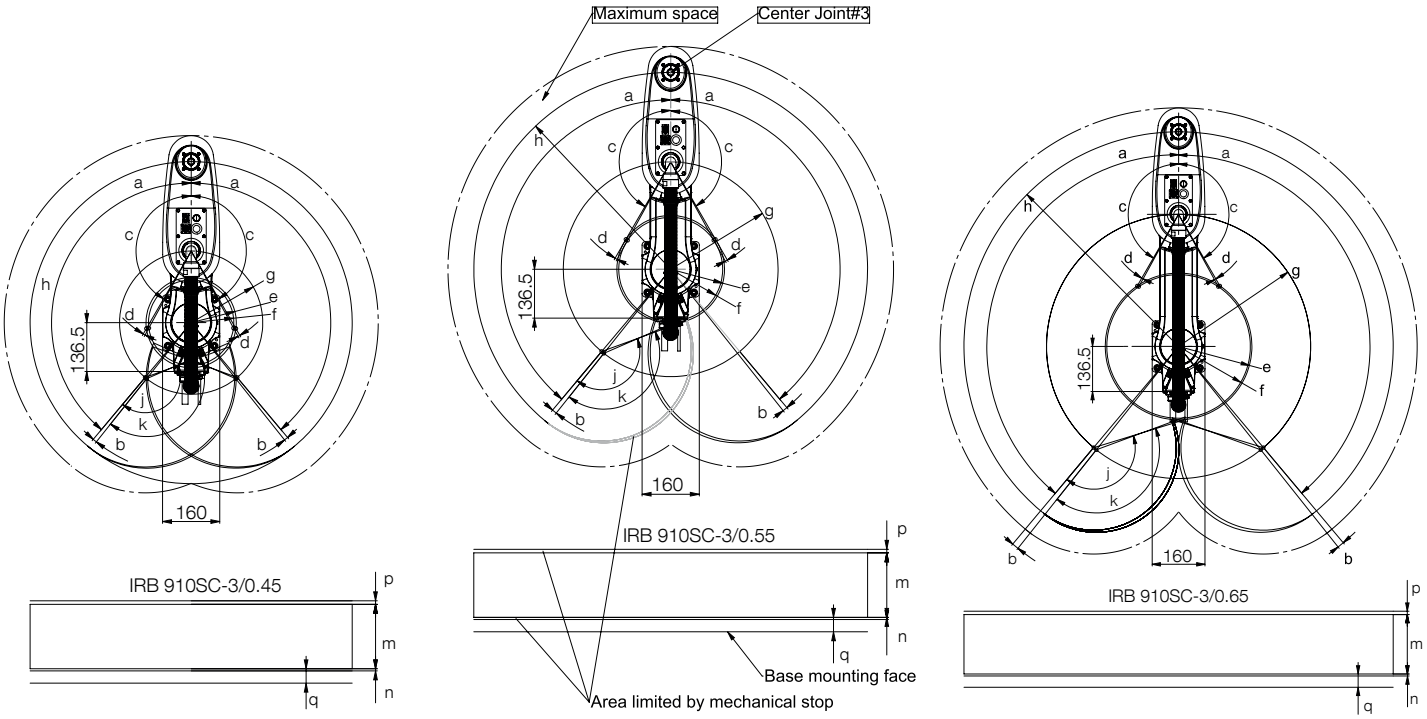
	IRB 910SC -3/0.45	IRB 910SC -3/0.55	IRB 910SC -3/0.65
1 kg picking cycle	0.380 s	0.370 s	0.385 s
Max TCP Velocity	6.2 m/s	6.9 m/s	7.6 m/s
Max TCP Acceleration	65 m/s^2	60 m/s^2	55 m/s^2
Acceleration time 0-1m/s	0.04 s	0.05 s	0.06 s
Axis 3 (Z stroke) down force	250 N	250 N	250 N
Maximum Speed			
Axis 1+ Axis 2	6.13 m/s	6.86 m/s	7.58 m/s
Axis 3	1.02 m/s	1.02 m/s	1.02 m/s
Axis 4	2400 deg/s	2400 deg/s	2400 deg/s
Position Repeatability			
Axis 1 + Axis 2	±0.015 mm	±0.015 mm	±0.015 mm
Axis 3	±0.01 mm	±0.01 mm	±0.01 mm
Axis 4	±0.005 deg	±0.005 deg	±0.005 deg

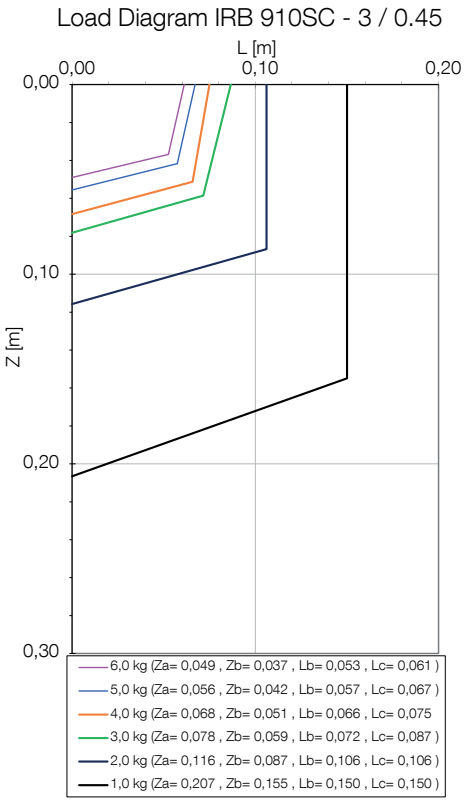
Electrical connections

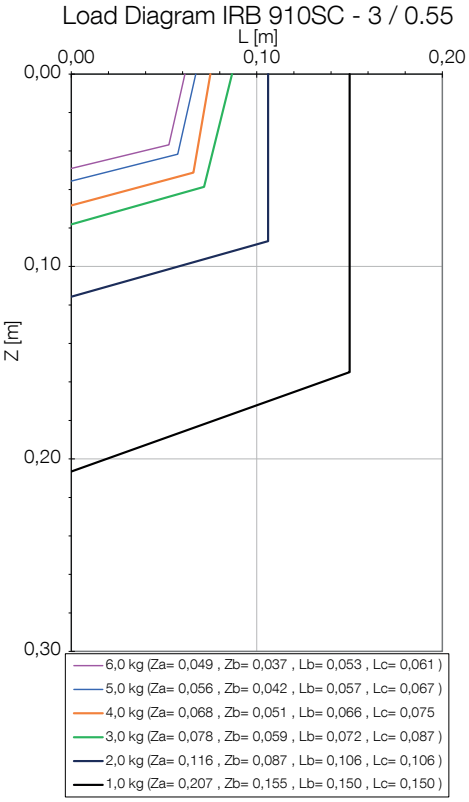
	IRB 910SC -3/0.45	IRB 910SC -3/0.55	IRB 910SC -3/0.65
Supply voltage	200-600 V, 50/60Hz	200-600 V, 50/60Hz	200-600 V, 50/60Hz
Transformer rating	3.0 kVA	3.0 kVA	3.0 kVA
Power consumption	220 W	220 W	220 W

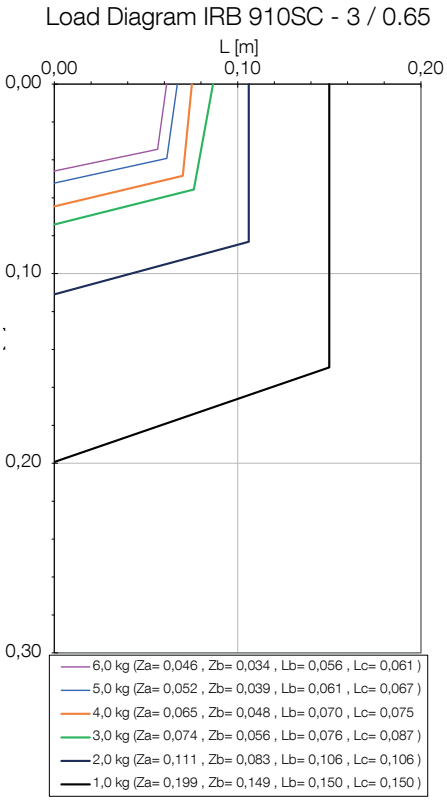
Physical

	IRB 910SC -3/0.45	IRB 910SC -3/0.55	IRB 910SC -3/0.65
Footprint	160mmx160mm	160mmx160mm	160mmx160mm
Weight	24.5 kg	25 kg	25.5 kg


Maximum space
Center Joint#3
136.5
160
IRB 910SC-3/0.45
IRB 910SC-3/0.55
IRB 910SC-3/0.65
Base mounting face
Area limited by mechanical stop


Load Diagram IRB 910SC - 3 / 0.45
L [m]
Z [m]
6,0 kg (Za= 0,049 , Zb= 0,037 , Lb= 0,053 , Lc= 0,061)
5,0 kg (Za= 0,056 , Zb= 0,042 , Lb= 0,057 , Lc= 0,067)
4,0 kg (Za= 0,068 , Zb= 0,051 , Lb= 0,066 , Lc= 0,075
3,0 kg (Za= 0,078 , Zb= 0,059 , Lb= 0,072 , Lc= 0,087)
2,0 kg (Za= 0,116 , Zb= 0,087 , Lb= 0,106 , Lc= 0,106)
1,0 kg (Za= 0,207 , Zb= 0,155 , Lb= 0,150 , Lc= 0,150)


Load Diagram IRB 910SC - 3 / 0.55
L [m]
Z [m]
6,0 kg (Za= 0,049 , Zb= 0,037 , Lb= 0,053 , Lc= 0,061)
5,0 kg (Za= 0,056 , Zb= 0,042 , Lb= 0,057 , Lc= 0,067)
4,0 kg (Za= 0,068 , Zb= 0,051 , Lb= 0,066 , Lc= 0,075
3,0 kg (Za= 0,078 , Zb= 0,059 , Lb= 0,072 , Lc= 0,087)
2,0 kg (Za= 0,116 , Zb= 0,087 , Lb= 0,106 , Lc= 0,106)
1,0 kg (Za= 0,207 , Zb= 0,155 , Lb= 0,150 , Lc= 0,150)


Load Diagram IRB 910SC - 3 / 0.65
L [m]
6,0 kg (Za= 0,046 , Zb= 0,034 , Lb= 0,056 , Lc= 0,061)
5,0 kg (Za= 0,052 , Zb= 0,039 , Lb= 0,061 , Lc= 0,067)
4,0 kg (Za= 0,065 , Zb= 0,048 , Lb= 0,070 , Lc= 0,075
3,0 kg (Za= 0,074 , Zb= 0,056 , Lb= 0,076 , Lc= 0,087)
2,0 kg (Za= 0,111 , Zb= 0,083 , Lb= 0,106 , Lc= 0,106)
1,0 kg (Za= 0,199 , Zb= 0,149 , Lb= 0,150 , Lc= 0,150)

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