



19120306 A02

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.  
Suzhou Inovance Technology Co. Ltd.

Tel: 4000-300124  
Business: [info@inovance.com](mailto:info@inovance.com)  
Service: [service@inovance.com](mailto:service@inovance.com)

South Korea-Seoul  
Tel: +82 (0) 10 7428 5732 | [info@inovance.eu](mailto:info@inovance.eu)

India  
Head Office Chennai | Tel: +91 (0) 44 4380 0201  
Ahmedabad | Tel: +91 794003 4272  
Mumbai | Tel: +91 22 4971 5883  
New Delhi | Tel: +91 11 4165 4524  
Sales Network  
in Kolkata, Bengaluru, Pune, Coimbatore,  
Hyderabad, Vadodara, Jaipur  
Email: [info@inovance.ind.in](mailto:info@inovance.ind.in)

Hong Kong SAR  
International Export Office

Tel: +852 2751 6080  
Business: [info@inovance.eu](mailto:info@inovance.eu)

Germany-Stuttgart  
Tel: +49 (0) 7144 8990 | [sales.de@inovance.eu](mailto:sales.de@inovance.eu)

Italy-Milano  
Tel: +39 (0) 2268 22318 | [sales.it@inovance.eu](mailto:sales.it@inovance.eu)

France-Bordeaux  
Tel: +33 (0) 5594 01050 | [sales.fr@inovance.eu](mailto:sales.fr@inovance.eu)

Turkey-Istanbul  
Tel: +90 (216) 706 17 89 | [info@inovance.eu](mailto:info@inovance.eu)

Spain-Barcelona  
Tel: +34 93 504 94 48 | [sales.es@inovance.eu](mailto:sales.es@inovance.eu)

INOVANCE  
汇川技术

# Inovance Robot Selection Guide



FORWARD, ALWAYS PROGRESSING

# Robot Product Family

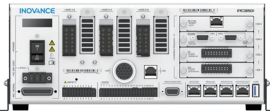
## 6-Axis Robot

|                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>IR-R4 Series</div> <div>P 3</div> <div></div> <div><div>Load</div><div>4 kg</div></div> <div><div>Arm length</div><div>560.6 mm</div></div> <div><div>Model</div><div>IR-R4-56S-INT</div></div> | <div>IR-R4H (hollow wrist) Series</div> <div>P 5</div> <div></div> <div><div>Load</div><div>4 kg</div></div> <div><div>Arm length</div><div>545.7 mm</div></div> <div><div>Model</div><div>IR-R4H-54S-INT</div></div> | <div>IRS311-7 Series</div> <div>P 7</div> <div></div> <div><div>Load</div><div>7 kg</div></div> <div><div>Arm length</div><div>717 mm / 911 mm</div></div> <div><div>Model</div><div>IRS311-7-70TS-INT<br/>IRS311-7-90TS-INT</div></div> | <div>IR-R11 Series</div> <div>P 9</div> <div></div> <div><div>Load</div><div>10 kg / 11.3 kg</div></div> <div><div>Arm length</div><div>1101.6 mm / 901.9 mm</div></div> <div><div>Model</div><div>IR-R10-110S-INT<br/>IR-R11-90S-INT</div></div> | <div>IR-R10 Series</div> <div>P 11</div> <div></div> <div><div>Load</div><div>10 kg</div></div> <div><div>Arm length</div><div>1422 mm</div></div> <div><div>Model</div><div>IR-R10-140S-INT</div></div> | <div>IR-R20 Series</div> <div>P 13</div> <div></div> <div><div>Load</div><div>20 kg / 10 kg</div></div> <div><div>Arm length</div><div>1723 mm / 2045 mm</div></div> <div><div>Model</div><div>IR-R20-170S-INT<br/>IR-R10-200S-INT</div></div> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## SCARA Robot

|                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>IR-S4 Series</div> <div>P 15</div> <div></div> <div><div>Load</div><div>4 kg</div></div> <div><div>Arm length</div><div>400 mm</div></div> <div><div>Model</div><div>IR-S4-40Z15S-INT</div></div>    | <div>IR-S7 Series</div> <div>P 17</div> <div></div> <div><div>Load</div><div>7 kg</div></div> <div><div>Arm length</div><div>500 mm / 600 mm / 700 mm</div></div> <div><div>Model</div><div>IR-S7-50Z20S-INT<br/>IR-S7-60Z20S-INT<br/>IR-S7-70Z20S-INT</div></div> | <div>IR-S10 Series</div> <div>P 19</div> <div></div> <div><div>Load</div><div>10 kg</div></div> <div><div>Arm length</div><div>600 mm / 700 mm / 800 mm</div></div> <div><div>Model</div><div>IR-S10-60Z20S-INT<br/>IR-S10-70Z20S-INT<br/>IR-S10-80Z20S-INT</div></div> | <div>IR-S20 Series</div> <div>P 21</div> <div></div> <div><div>Load</div><div>20 kg</div></div> <div><div>Arm length</div><div>800 mm / 1000 mm</div></div> <div><div>Model</div><div>IR-S20-80Z42S-INT<br/>IR-S20-100Z42S-INT</div></div> | <div>IR-GS20 Series</div> <div>P 23</div> <div></div> <div><div>Load</div><div>20 kg</div></div> <div><div>Arm length</div><div>800 mm / 1000 mm</div></div> <div><div>Model</div><div>IR-GS20-80Z42S-INT<br/>IR-GS20-100Z42S-INT</div></div> | <div>IR-S50 Series</div> <div>P 25</div> <div></div> <div><div>Load</div><div>50 kg</div></div> <div><div>Arm length</div><div>1200 mm</div></div> <div><div>Model</div><div>IR-S50-120Z40S-INT</div></div> |
| <div>IR-TS4 Series</div> <div>P 27</div> <div></div> <div><div>Load</div><div>4 kg</div></div> <div><div>Arm length</div><div>350 mm</div></div> <div><div>Model</div><div>IR-TS4-35Z15S-INT</div></div> | <div>IR-TS5 Series</div> <div>P 29</div> <div></div> <div><div>Load</div><div>5 kg</div></div> <div><div>Arm length</div><div>550 mm</div></div> <div><div>Model</div><div>IR-TS5-55Z15S-INT</div></div>                                                          |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                 |

## Robot Controller

|                                                                                                                                          |                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>IRCB501 Series</div> <div>P 31</div> <div></div> | <div>IRCB501 High protection Series</div> <div>P 33</div> <div></div> |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|

6-Axis Robot

IR-R4 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          | 4 kg     |
| Arm length    | 560.6 mm |
| Repeatability | ±0.01 mm |
| IP rating     | IP40     |

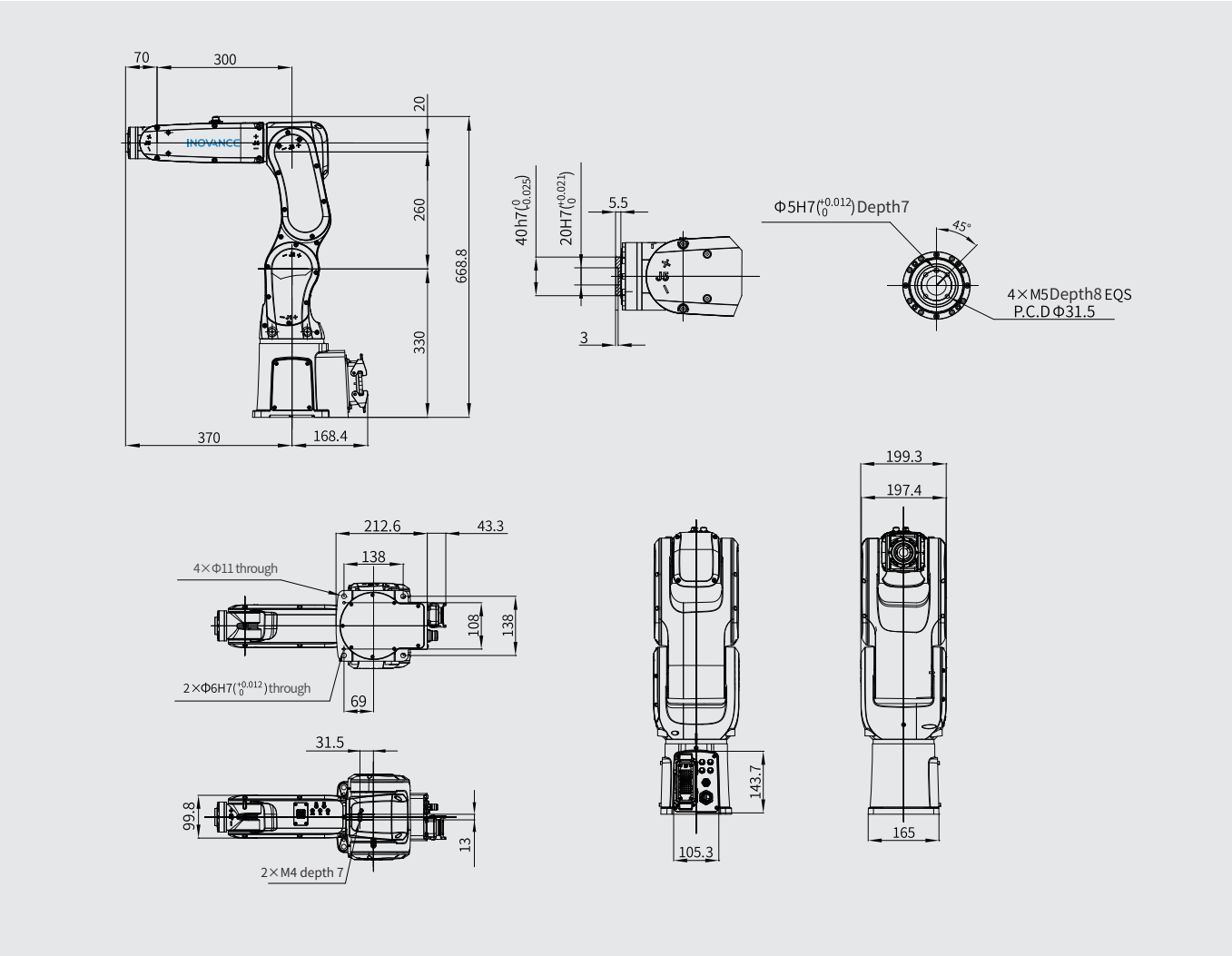


Technical Data

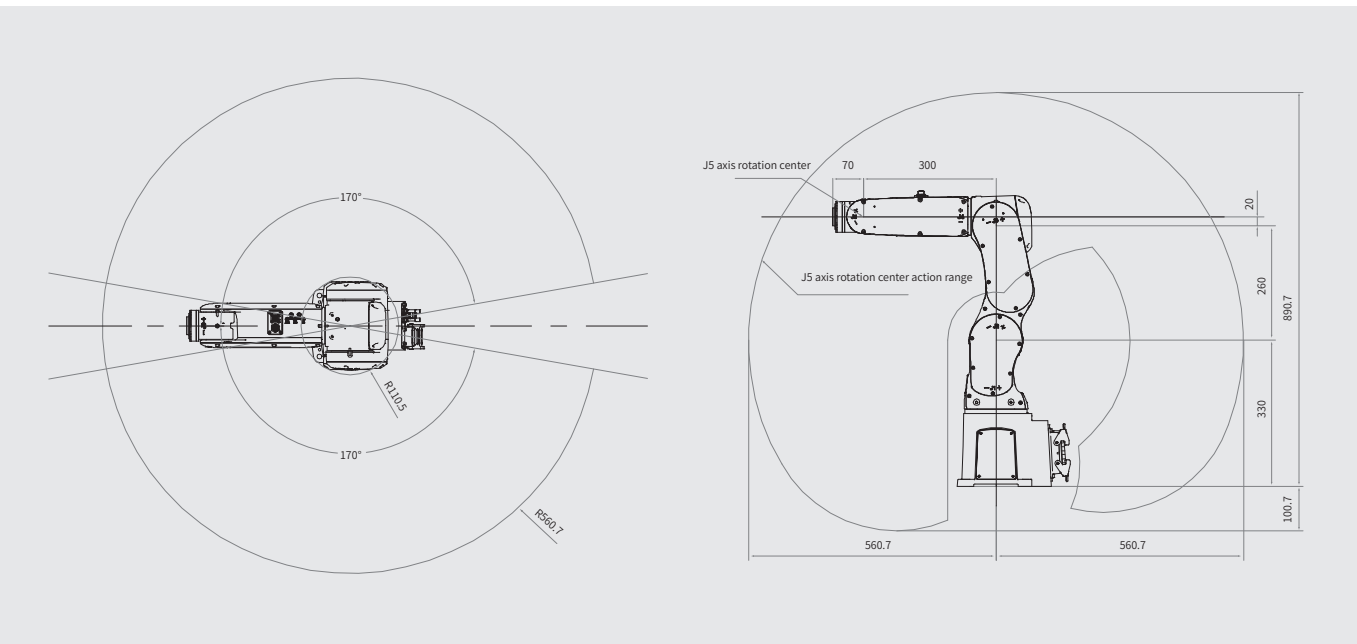
| Model                                   |                                              | IR-R4-56S-INT                                         |
|-----------------------------------------|----------------------------------------------|-------------------------------------------------------|
| Structural style                        |                                              | Vertical axis cascading structure                     |
| Number of Axes                          |                                              | 6 axes                                                |
| Maximum reach                           |                                              | 560.6 mm                                              |
| Repeatability                           |                                              | ±0.01 mm                                              |
| Maximum load                            |                                              | 4kg                                                   |
| 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                                           | -69° to +205°                                         |
|                                         | 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                                               |
| Allowed wrist inertia                   | J4                                           | 0.2 kg·m <sup>2</sup>                                 |
|                                         | J5                                           | 0.2 kg·m <sup>2</sup>                                 |
|                                         | J6                                           | 0.067 kg·m <sup>2</sup>                               |
| Customer Connections                    | Wiring                                       | 12 Signal lines 30V 0.5A                              |
|                                         | Air                                          | Φ4mm×4,0.59 MPa                                       |
| Operating Conditions                    | Operating Ambient Temperature <sup>[1]</sup> | 0°C ~45°C                                             |
|                                         | Ambient Humidity                             | 5%~95%(Non-condensing)                                |
|                                         | Maximum Temperature Gradient                 | 1.5°C /min                                            |
| Weight                                  |                                              | 24kg                                                  |
| Input power (average power consumption) |                                              | 2kVA (0.5kW)                                          |
| Noise <sup>[2]</sup>                    |                                              | ≤ 75dB                                                |
| 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-R4H (Hollow wrist)

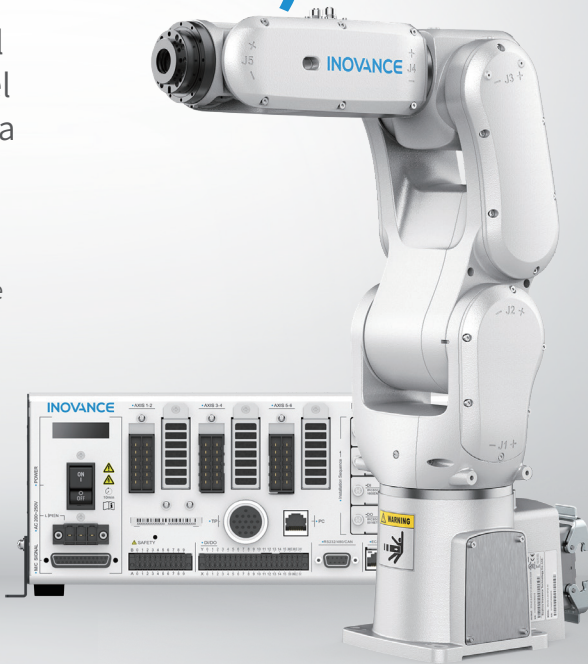
Robots featuring compact structure, with overall height and structural height reaching a new level in the industry, and short cycle time to adapt to a range of application scenarios.

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     |

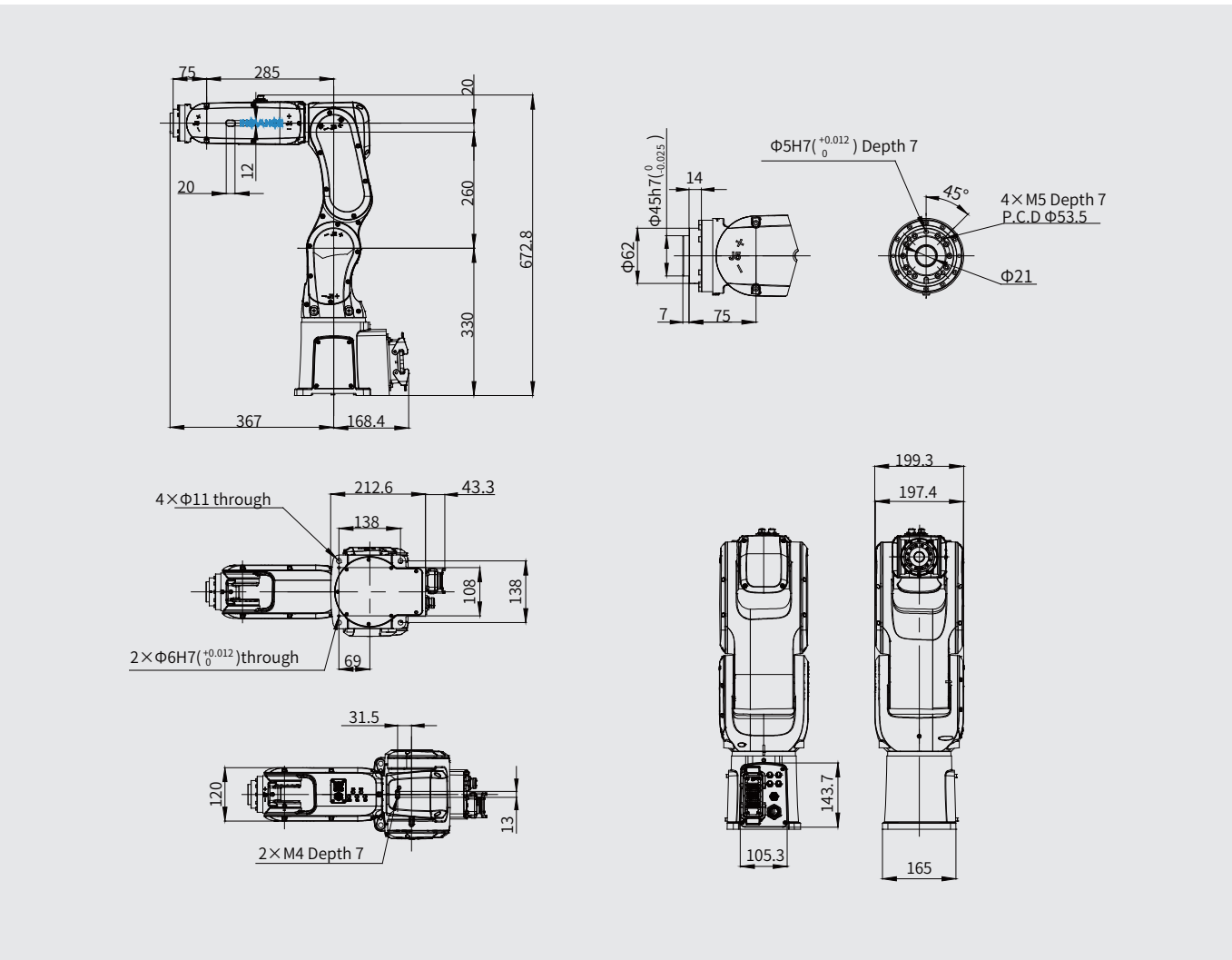


Technical Data

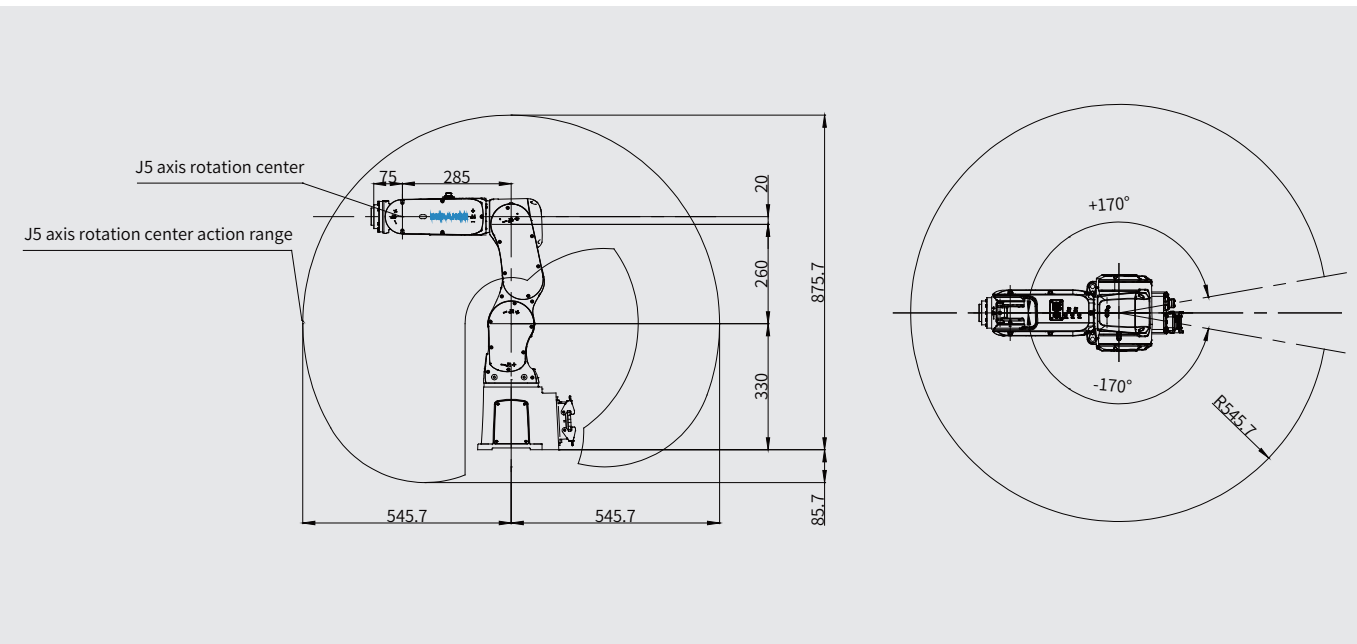
| Model                                   |                                              | IR-R4H-54S-INT                                        |
|-----------------------------------------|----------------------------------------------|-------------------------------------------------------|
| Structural 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 <sup>2</sup>                                 |
| Allowed wrist inertia                   | J5                                           | 0.2 kg·m <sup>2</sup>                                 |
|                                         | J6                                           | 0.067 kg·m <sup>2</sup>                               |
| 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 <sup>[1]</sup> | 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 <sup>[2]</sup>                    |                                              | ≤ 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                 |



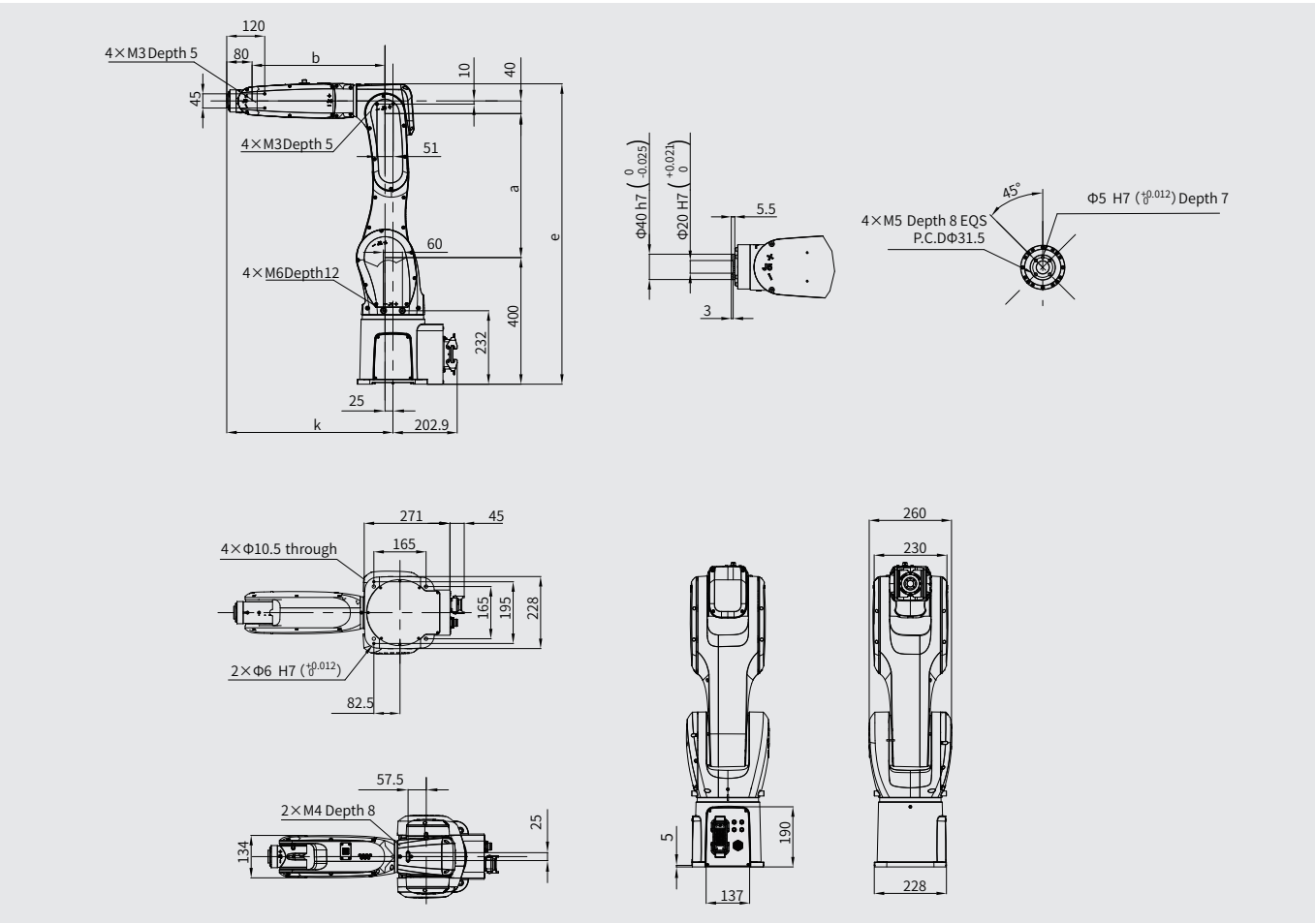
Technical Data

| 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 <sup>[1]</sup> | 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 <sup>[2]</sup>                    |                                               | ≤ 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                            |                                             |

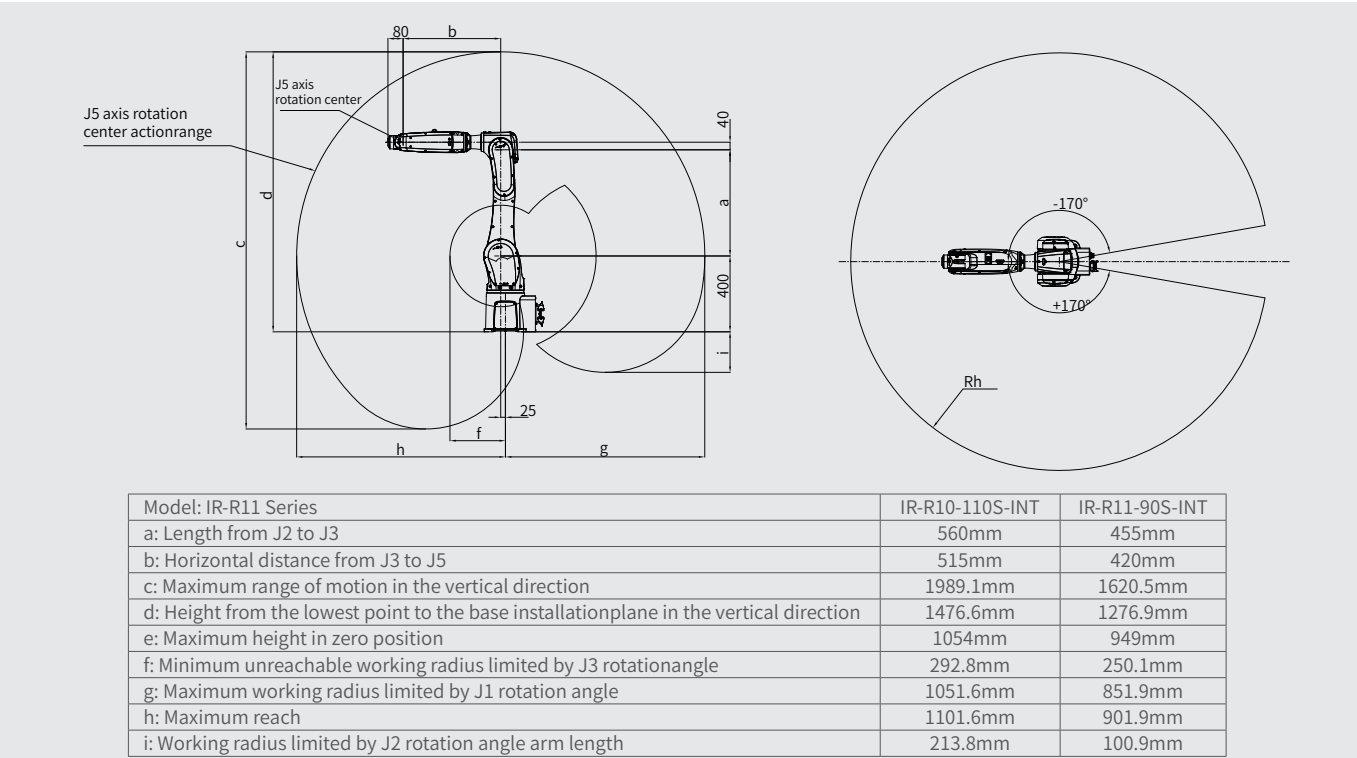
[1]: Ambient temperature: If the product is used in a low temperature environment similar to the lowest temperature of the specification, it is recommended to warm up for 10 minutes before operation.

[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) |

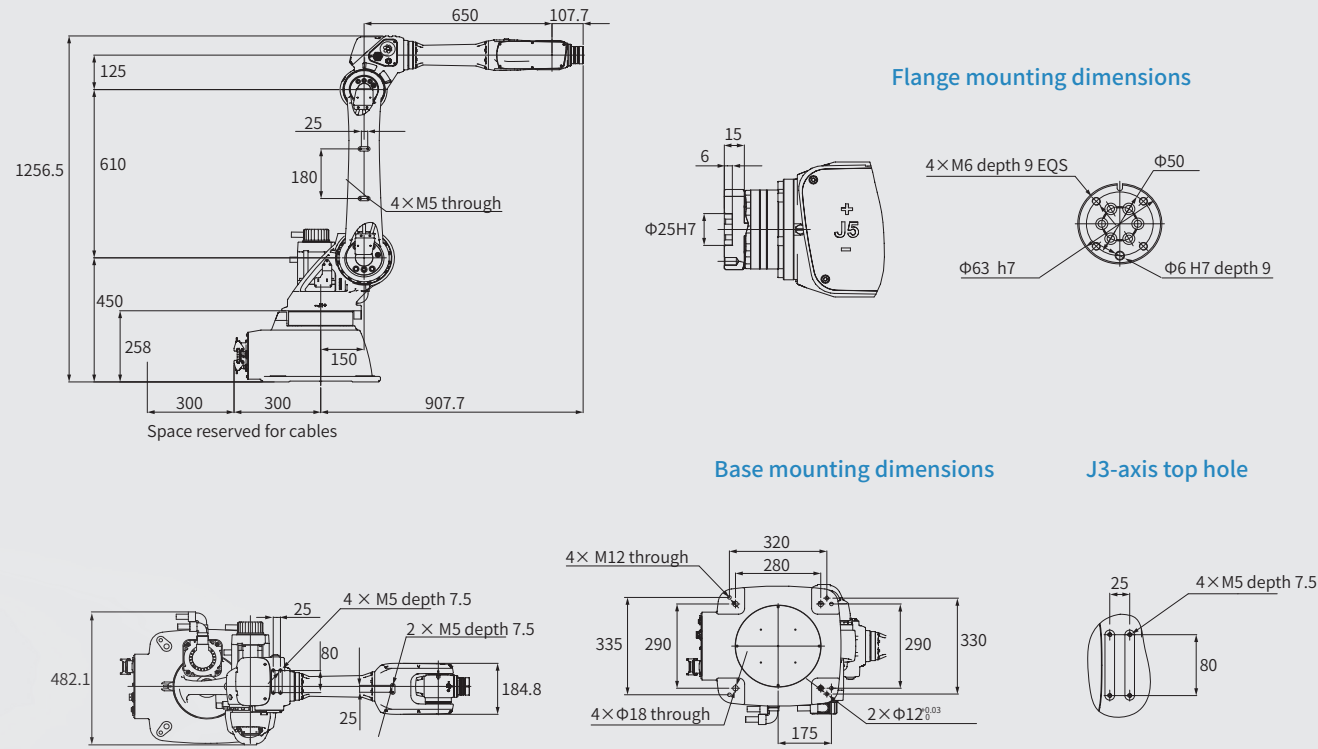


Technical Data

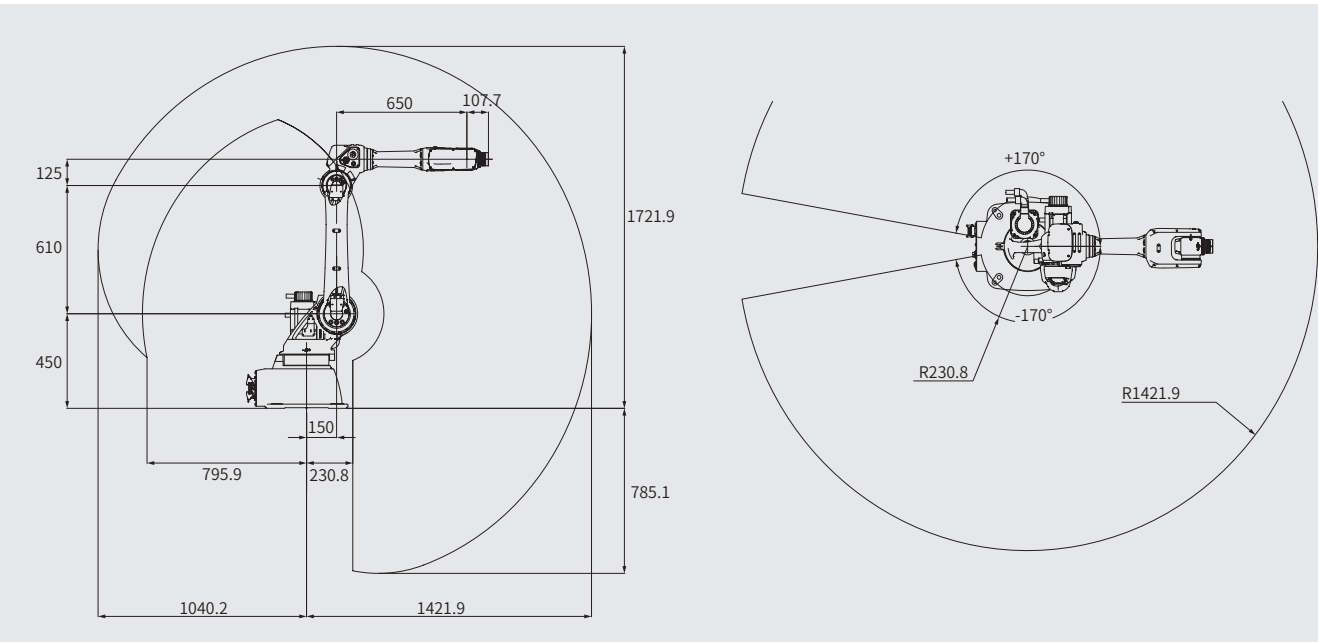
| Model                                   |                                              | IR-R10-140S-INT                                             |
|-----------------------------------------|----------------------------------------------|-------------------------------------------------------------|
| 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 <sup>2</sup>                                       |
|                                         | J5                                           | 0.63kg·m <sup>2</sup>                                       |
|                                         | J6                                           | 0.2kg·m <sup>2</sup>                                        |
| Customer connections                    | Wiring                                       | 18 signal lines 30V 0.5A                                    |
|                                         | Air                                          | Φ8 mm×1, 0.59 MPa                                           |
| Operating conditions                    | Operating ambient temperature <sup>[1]</sup> | 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 <sup>[2]</sup>                    |                                              | ≤ 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) |

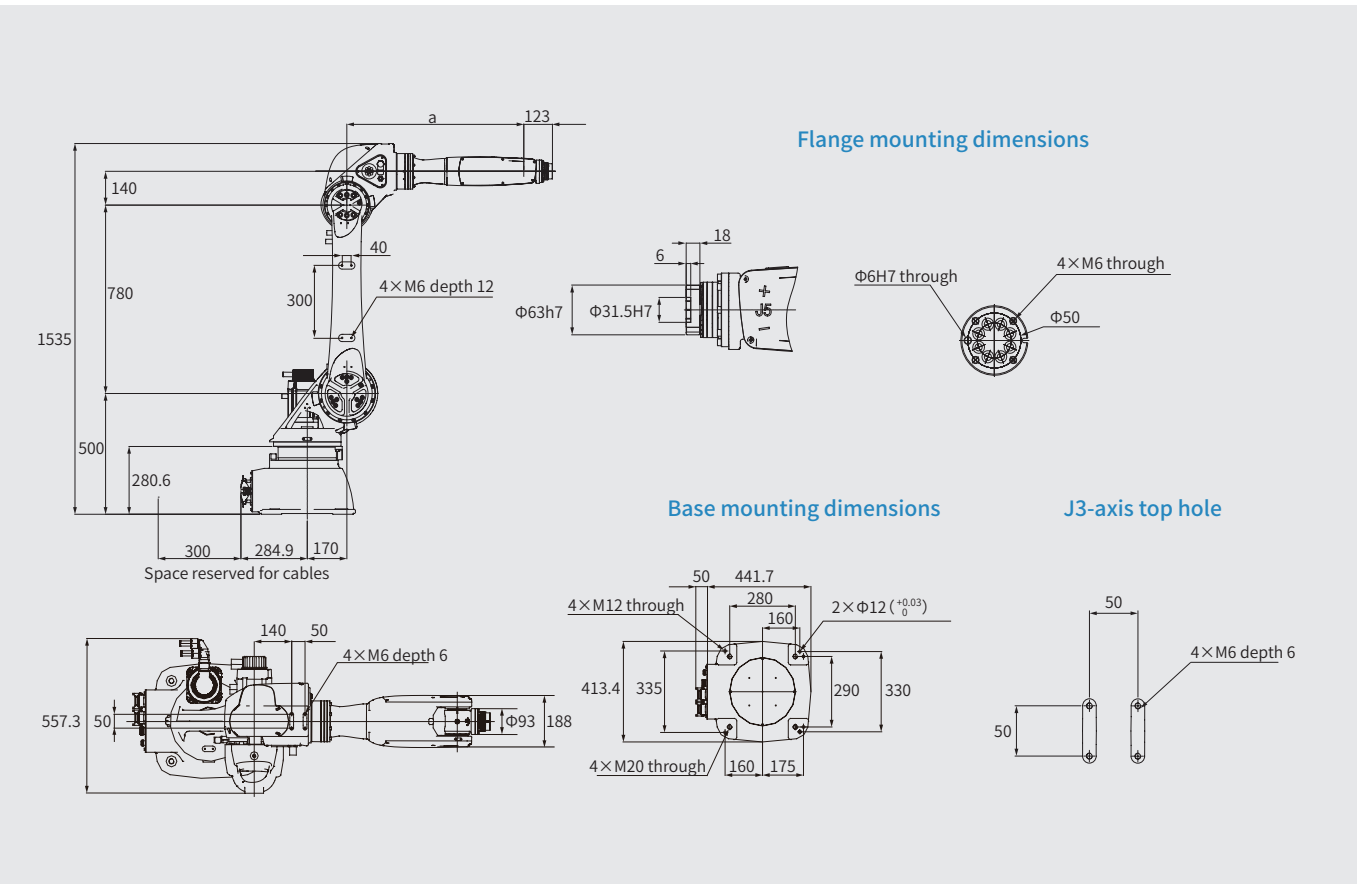


Technical Data

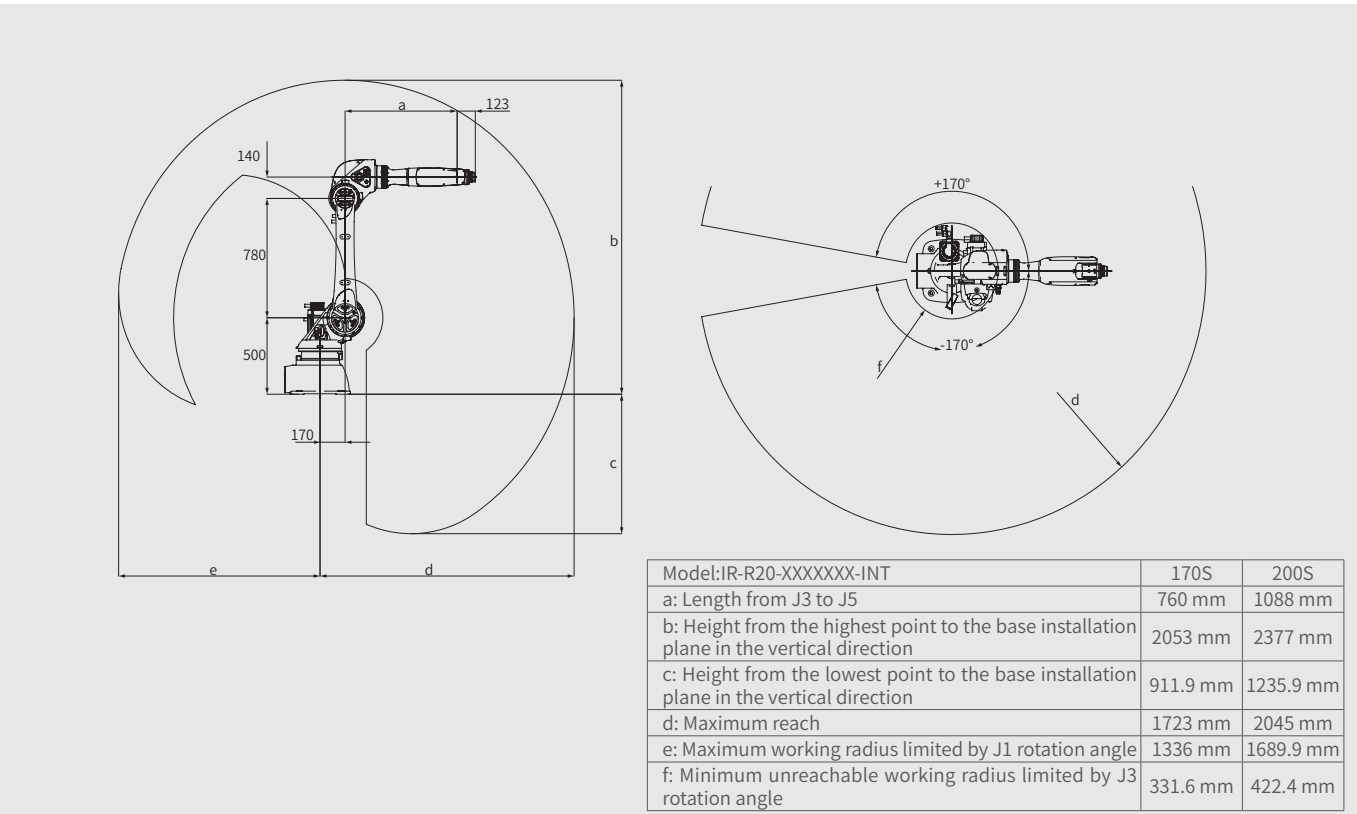
| Model                                   |                                              | IR-R20-170S-INT                                             | IR-R10-200S-INT                   |
|-----------------------------------------|----------------------------------------------|-------------------------------------------------------------|-----------------------------------|
| 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 <sup>2</sup>                                       | 1kg·m <sup>2</sup>                |
|                                         | J5                                           | 1.18kg·m <sup>2</sup>                                       | 1kg·m <sup>2</sup>                |
|                                         | J6                                           | 0.5kg·m <sup>2</sup>                                        | 0.2kg·m <sup>2</sup>              |
| 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 <sup>[1]</sup> | 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 <sup>[2]</sup>                    |                                              | ≤ 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

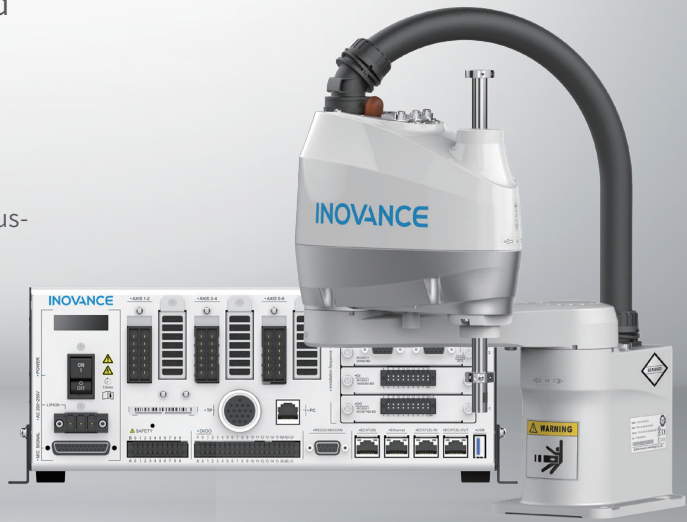
Robots with enhanced load capacity and multiple arm length options, suitable for large load applications in various industries.

### 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

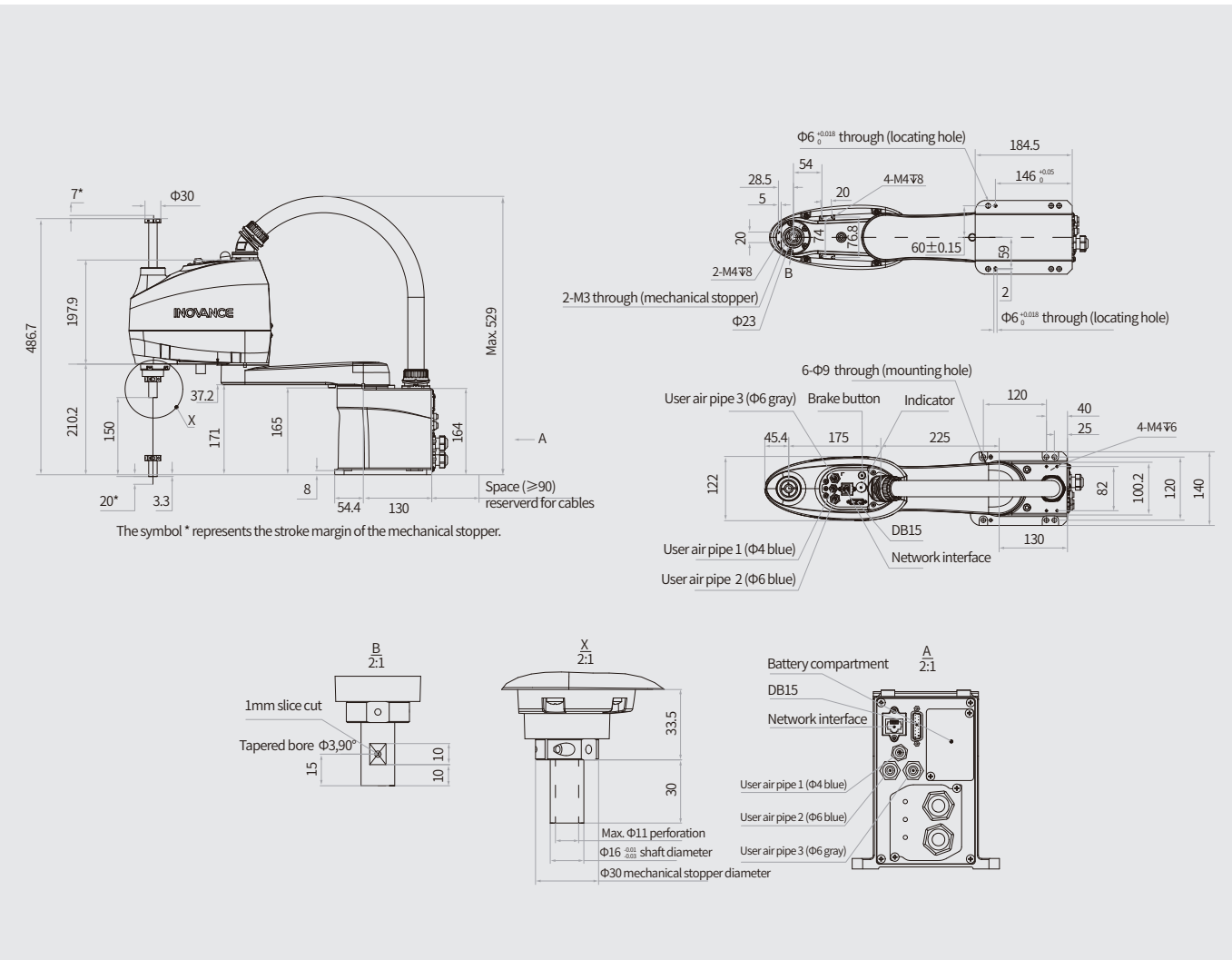
| Model                                   |                                    | IR-S4-40Z15S-INT                                      |
|-----------------------------------------|------------------------------------|-------------------------------------------------------|
| Arm length                              | 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 <sup>2</sup>                               |
|                                         | Maximum                            | 0.05 kg.m <sup>2</sup>                                |
| 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<br>Φ4 mm×1, 0.59 MPa                |
| Operating conditions                    | Ambient temperature <sup>[1]</sup> | 5°C ~40°C (no excessive temperature changes)          |
|                                         | Relative humidity                  | 10%~80%                                               |
| Noise level <sup>[2]</sup>              |                                    | L <sub>aeq</sub> =70 dB(A)                            |
| Maximum motion range                    | J1                                 | ±132°                                                 |
|                                         | J2                                 | ±141°                                                 |
|                                         | J3                                 | 150 mm                                                |
|                                         | J4                                 | ±360°                                                 |
| Cycle time <sup>[3]</sup>               |                                    | 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

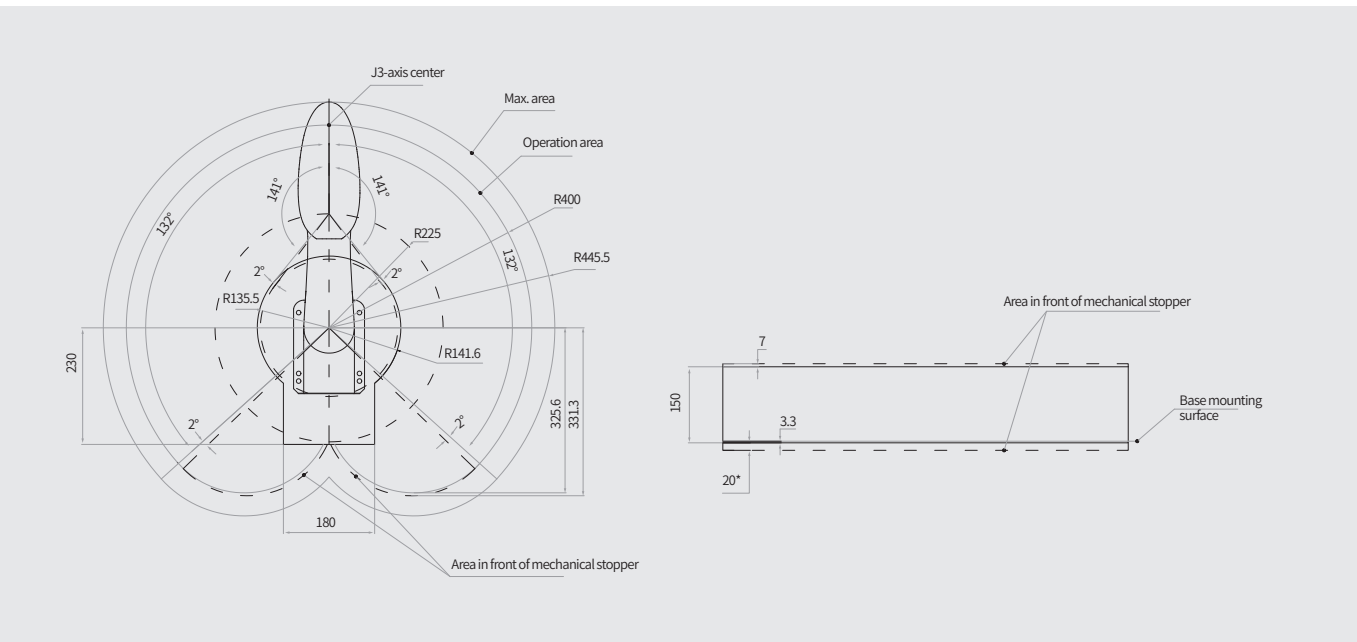
[2]Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.

[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

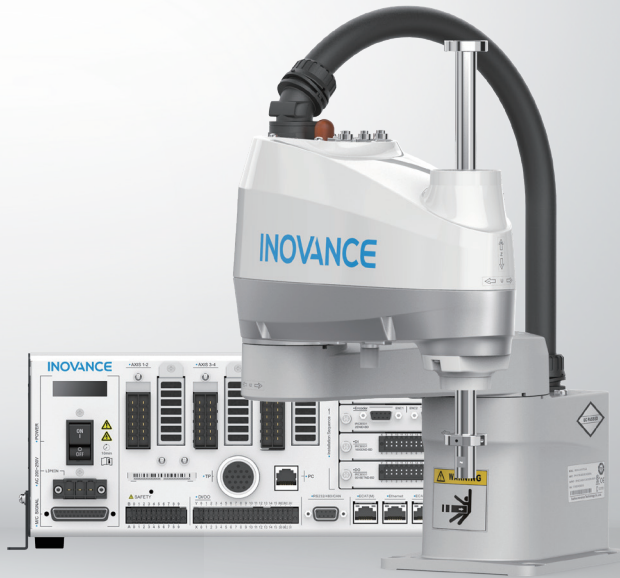
Robots with enhanced load capacity and multiple arm length options, suitable for large load applications in various industries.

### 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

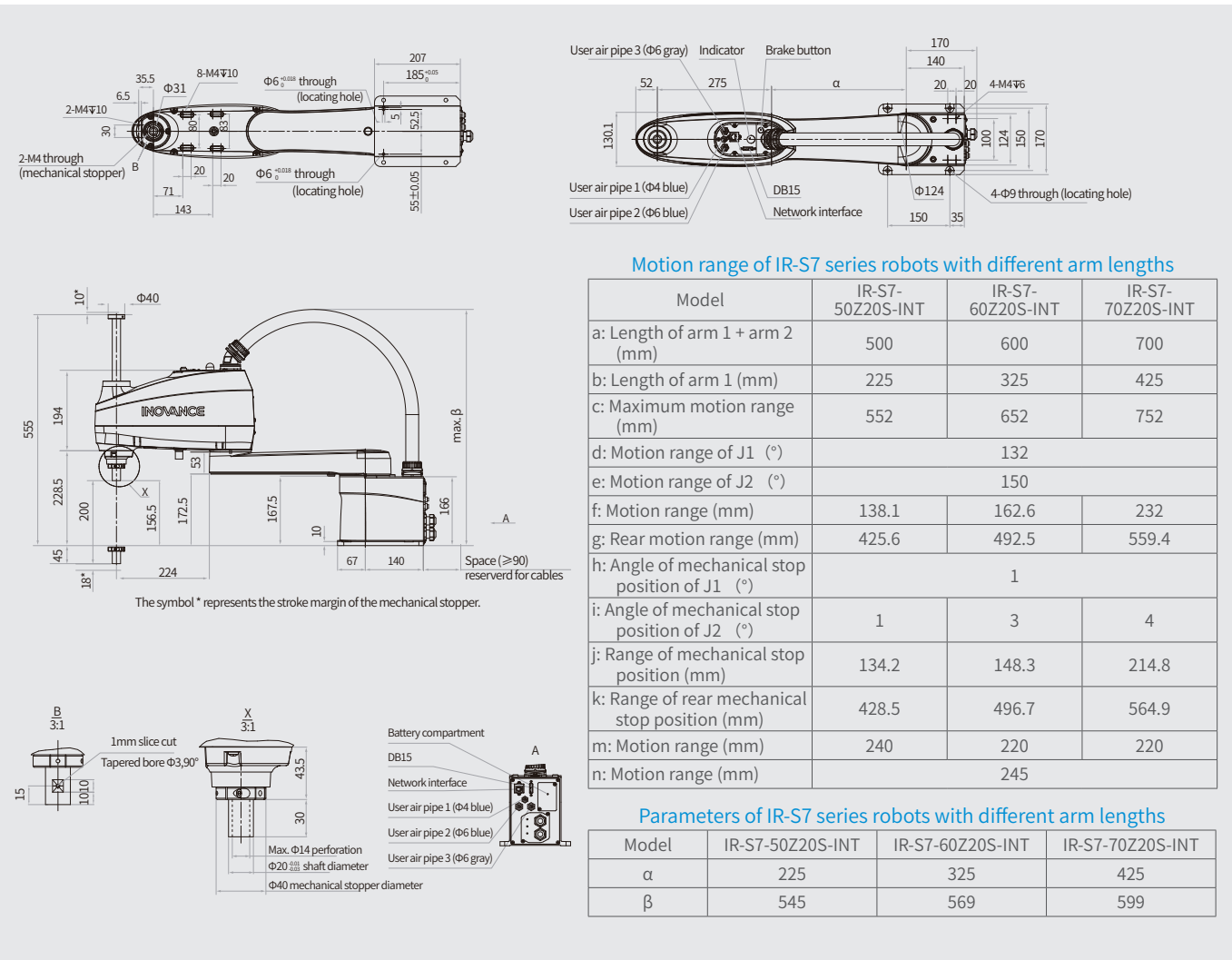
| Model                                   |                                    | IR-S7-50Z20S-INT                                      | IR-S7-60Z20S-INT       | IR-S7-70Z20S-INT       |
|-----------------------------------------|------------------------------------|-------------------------------------------------------|------------------------|------------------------|
| 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 <sup>2</sup>                                | 0.01 kg.m <sup>2</sup> | 0.01 kg.m <sup>2</sup> |
|                                         | Maximum                            | 0.12 kg.m <sup>2</sup>                                | 0.12 kg.m <sup>2</sup> | 0.12 kg.m <sup>2</sup> |
| 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<br>Φ6 mm×2, 0.59 MPa<br>Φ4 mm×1, 0.59 MPa       |                        |                        |
| Operating conditions                    | Ambient temperature <sup>[1]</sup> | 5°C ~40°C (no excessive temperature changes)          |                        |                        |
|                                         | Relative humidity                  | 10%~80%                                               |                        |                        |
| Noise level <sup>[2]</sup>              |                                    | Laeq=70 dB(A)                                         |                        |                        |
| Maximum motion range                    | J1                                 | ±132°                                                 |                        |                        |
|                                         | J2                                 | ±150°                                                 |                        |                        |
|                                         | J3                                 | 200 mm                                                |                        |                        |
|                                         | J4                                 | ±360°                                                 |                        |                        |
| Cycle time <sup>[3]</sup>               |                                    | 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.

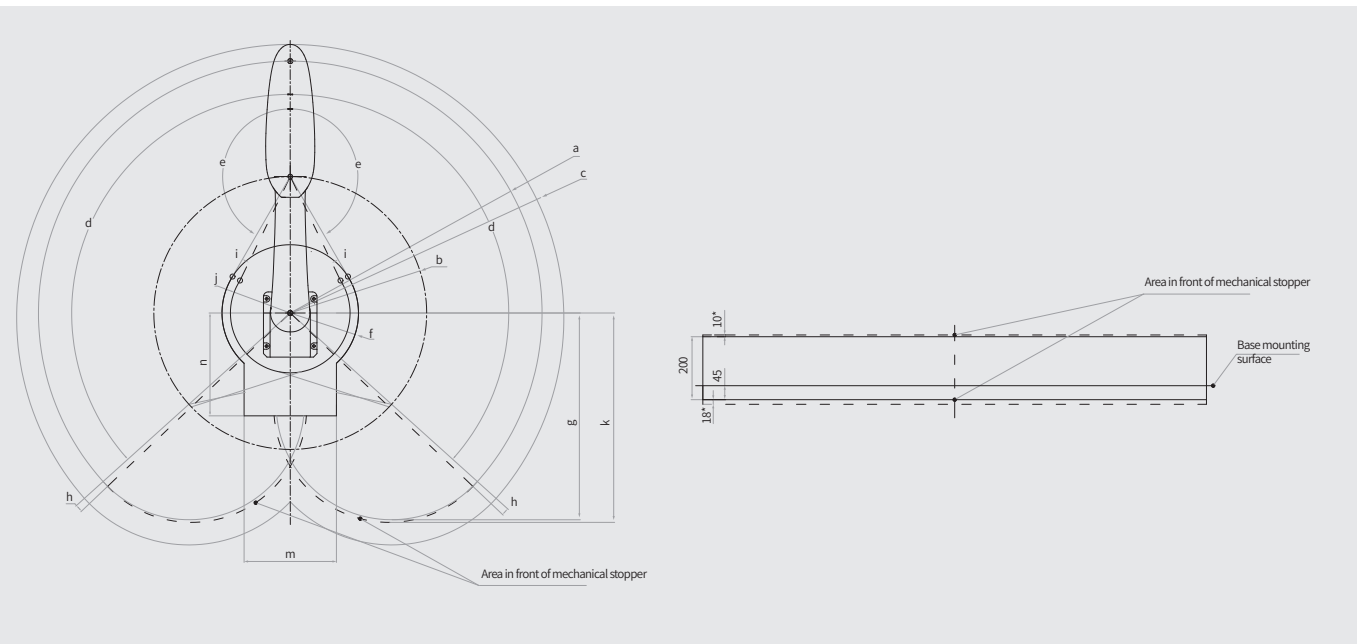
[2]Measured in front of the robot at a distance of 1000 mm from its operating area and at least 50 mm above the base mounting surface with four joints operating at 100% speed and acceleration, with a duty cycle of 50%.

[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)



# 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: $\pm 0.02$ mm to 0.025 mm<br>J3: 0.01 mm; J4: $\pm 0.01^\circ$ |



## Technical Data

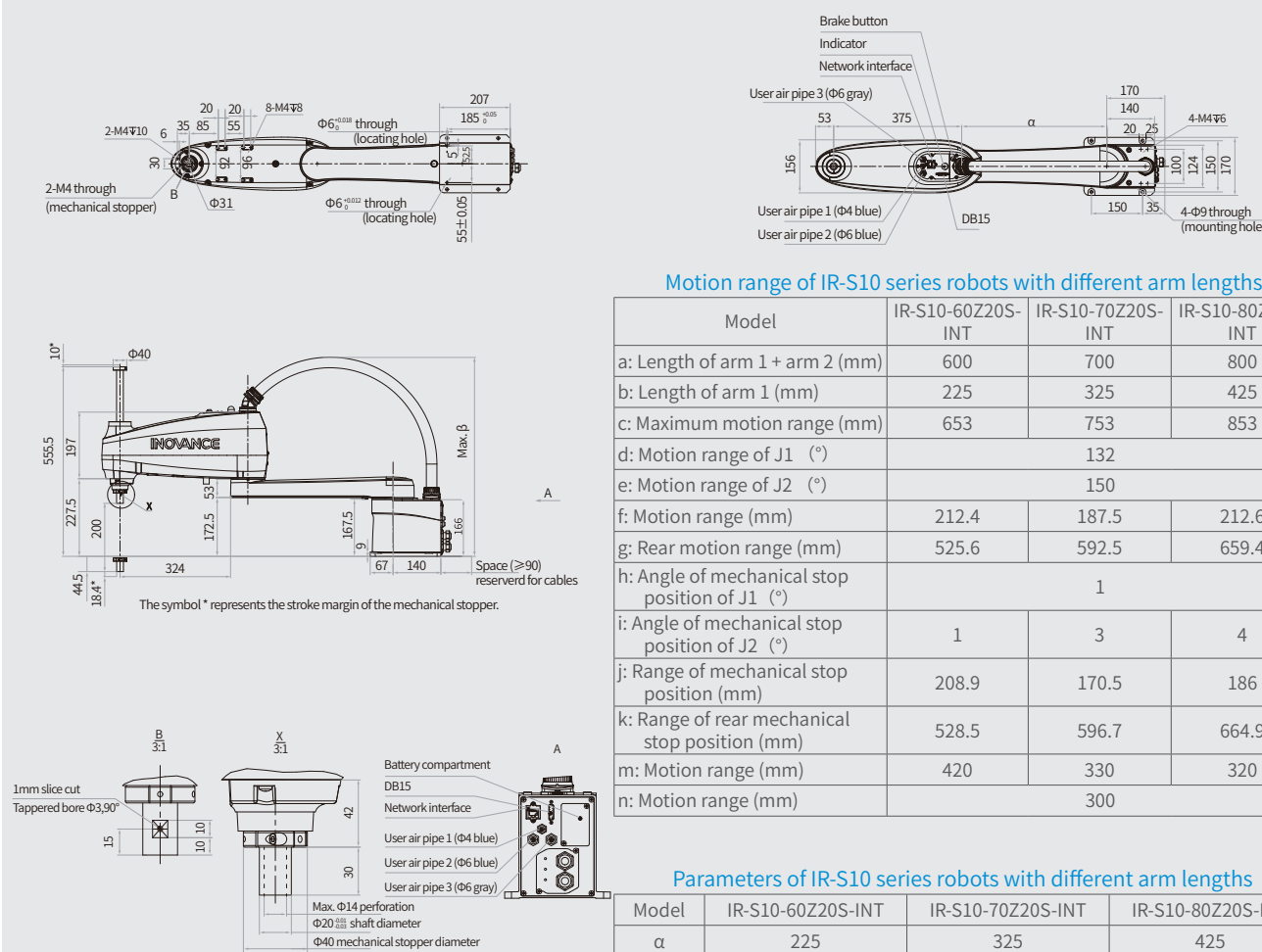
| Model                                   |                                    | IR-S10-60Z20S-INT                            | IR-S10-70Z20S-INT           | IR-S10-80Z20S-INT      |
|-----------------------------------------|------------------------------------|----------------------------------------------|-----------------------------|------------------------|
| 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               |
| Repeatability                           | J1 + J2                            | ±0.02 mm                                     | ±0.02 mm                    | ±0.025 mm              |
|                                         | 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 <sup>2</sup>                       | 0.02 kg.m <sup>2</sup>      | 0.02 kg.m <sup>2</sup> |
|                                         | Maximum                            | 0.3 kg.m <sup>2</sup>                        | 0.3 kg.m <sup>2</sup>       | 0.3 kg.m <sup>2</sup>  |
| 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)<br>CAT5E                   |                             |                        |
| Customer air piping                     |                                    | Φ6 mm×2, 0.59 MPa<br>Φ4 mm×1, 0.59 MPa       |                             |                        |
| Operating conditions                    | Ambient temperature <sup>[1]</sup> | 5°C ~40°C (no excessive temperature changes) |                             |                        |
|                                         | Relative humidity                  | 10%~80%                                      |                             |                        |
| Noise level <sup>[2]</sup>              |                                    | Laeq=70 dB(A)                                |                             |                        |
| Maximum motion range                    | J1                                 | ±132°                                        |                             |                        |
|                                         | J2                                 | ±150°                                        |                             |                        |
|                                         | J3                                 | 200 mm                                       |                             |                        |
|                                         | J4                                 | ±360°                                        |                             |                        |
| Cycle time <sup>[3]</sup>               |                                    | 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.

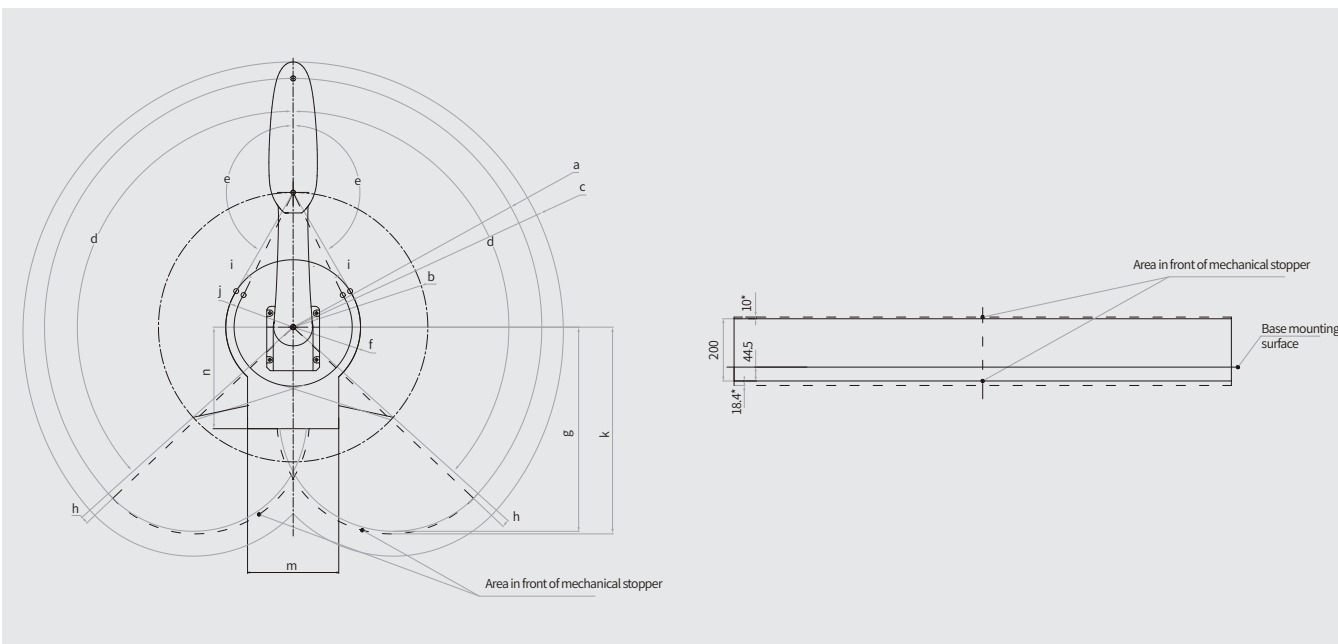
[2] Measured in front of the robot at a distance of 1000 mm from its operating area and at least 50 mm above the base mounting surface with four joints operating at 100% speed and acceleration, with a duty cycle of 50%.

[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.

## Scope of Application

Applications in lithium battery industry.



## Technical Data

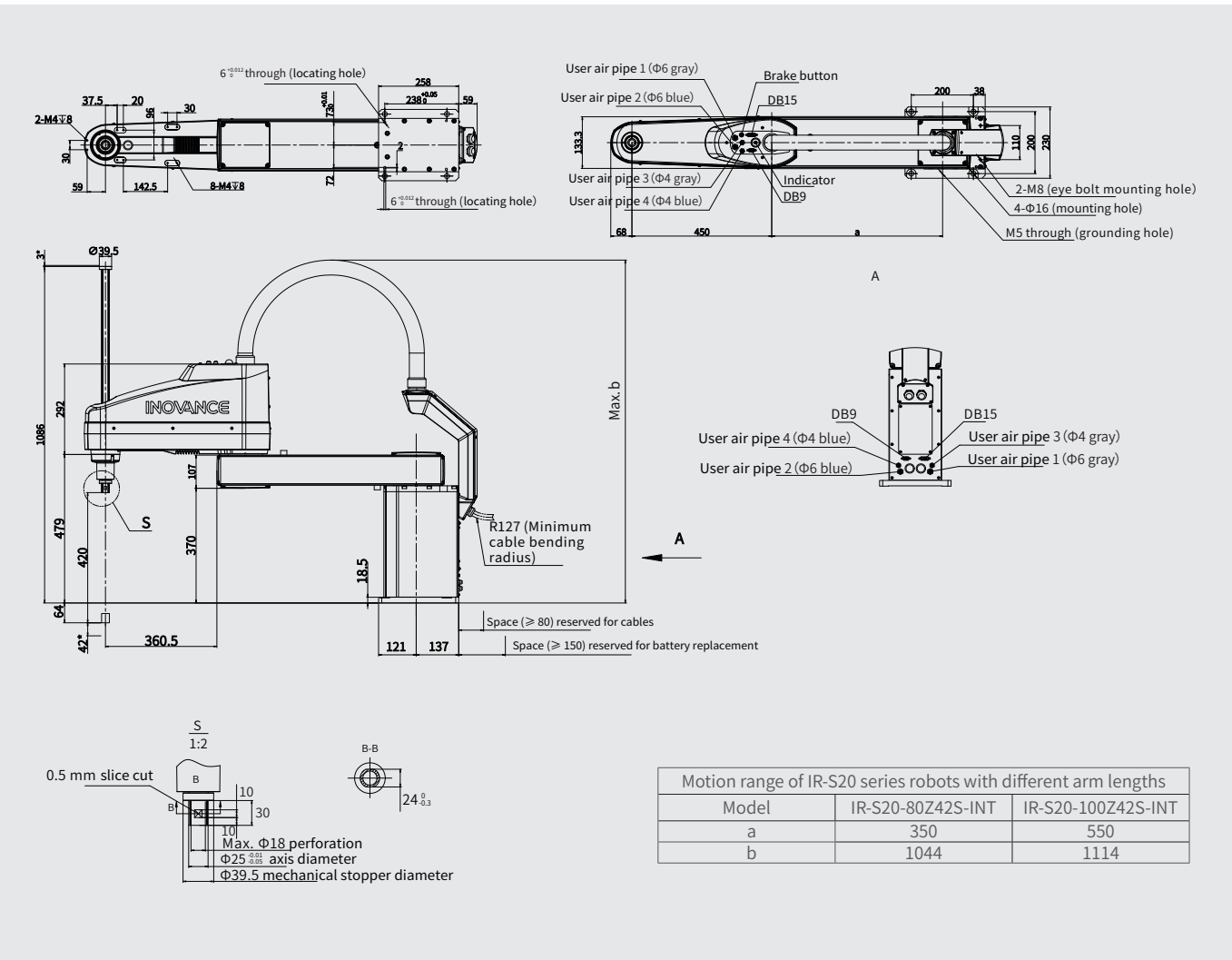
| Model                                   |                                    | IR-S20-80Z42S-INT                                     | IR-S20-100Z42S-INT   |
|-----------------------------------------|------------------------------------|-------------------------------------------------------|----------------------|
| 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 <sup>2</sup>                                  | 0.5kg.m <sup>2</sup> |
|                                         | Maximum                            | 1.0kg.m <sup>2</sup>                                  | 1.0kg.m <sup>2</sup> |
| 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 <sup>2</sup> :86 psi)     |                      |
|                                         |                                    | Φ4 mm×2, 0.59 MPa (6 kgf/cm <sup>2</sup> :86 psi)     |                      |
| Operating condition                     | Ambient temperature <sup>[1]</sup> | 5°C ~40°C (no excessive temperature changes)          |                      |
|                                         | Relative humidity                  | 10%~80%                                               |                      |
| Noise level <sup>[2]</sup>              |                                    | Laeq=75dB(A)                                          |                      |
| Maximum motion range                    | J1                                 | ±132°                                                 |                      |
|                                         | J2                                 | ±152°                                                 |                      |
|                                         | J3                                 | 420mm                                                 |                      |
|                                         | J4                                 | ±360°                                                 |                      |
| Cycle time <sup>[3]</sup>               |                                    | 0.36s                                                 | 0.38s                |
| Input power (average power consumption) |                                    | 2kVA (0.3kW)                                          | 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

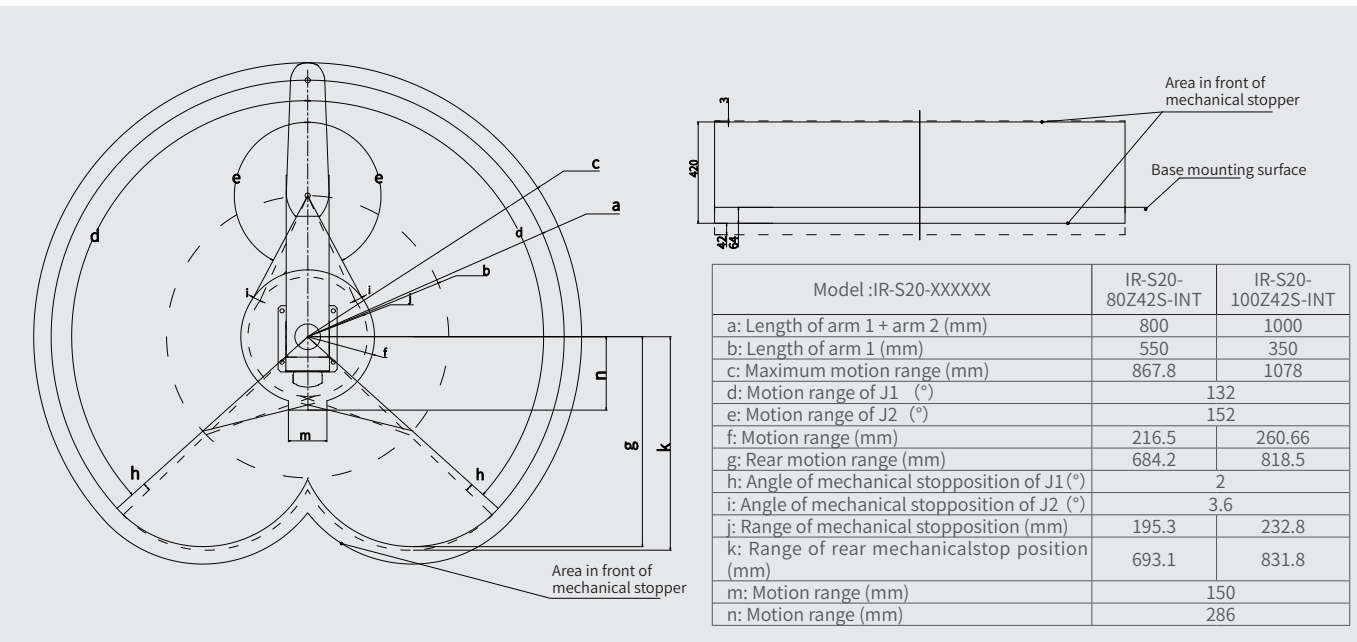
2] Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.

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)

## Mounting Dimensions<sub>(mm)</sub>



## Motion Range<sub>(mm)</sub>



# IR-GS20 Series

Applications in the lithium battery industry.

| Features      |                                                                               |
|---------------|-------------------------------------------------------------------------------|
| Load          | 20 kg                                                                         |
| Arm length    | 800 mm / 1000 mm                                                              |
| Cycle time    | 0.36s / 0.38s                                                                 |
| Repeatability | J1,J2: $\pm 0.04\text{mm}$ ,<br>J3: $\pm 0.01\text{mm}$ ,J4: $\pm 0.01^\circ$ |

| Model                                   |                                    | IR-GS20-80Z42S-INT                                    | IR-GS20-100Z42S-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 <sup>2</sup>                                  | 0.5kg.m <sup>2</sup> |
|                                         | Maximum                            | 1.0kg.m <sup>2</sup>                                  | 1.0kg.m <sup>2</sup> |
| 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 <sup>[1]</sup> | 5°C ~40°C (no excessive temperature changes)          |                      |
|                                         | Relative humidity                  | 10%~80%                                               |                      |
| Noise level <sup>[2]</sup>              |                                    | L <sub>a</sub> eq=75dB(A) <sup>[2]</sup>              |                      |
| Maximum motion range                    | J1                                 | ± 132°                                                |                      |
|                                         | J2                                 | ± 152°                                                |                      |
|                                         | J3                                 | 420mm                                                 |                      |
|                                         | J4                                 | ± 360°                                                |                      |
| Cycle time <sup>[3]</sup>               |                                    | 0.36s                                                 | 0.38s                |
| Input power (average power consumption) |                                    | 2kVA (0.3kW)                                          |                      |
| Certification                           |                                    | CE,cSGSus,KCs,Kc                                      |                      |

[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]

The technical drawing consists of two views of the robot arm. The top view is a circular diagram showing the arm's reach and joints, with dimensions labeled a through n. The side view shows the arm's profile with dimensions 3, 420, 10, and 17. The side view also includes labels for the 'Area in front of mechanical stopper' and the '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                |                     |





# 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: $\pm 0.015$ mm; J3: 0.01 mm; J4: $\pm 0.01$ mm |



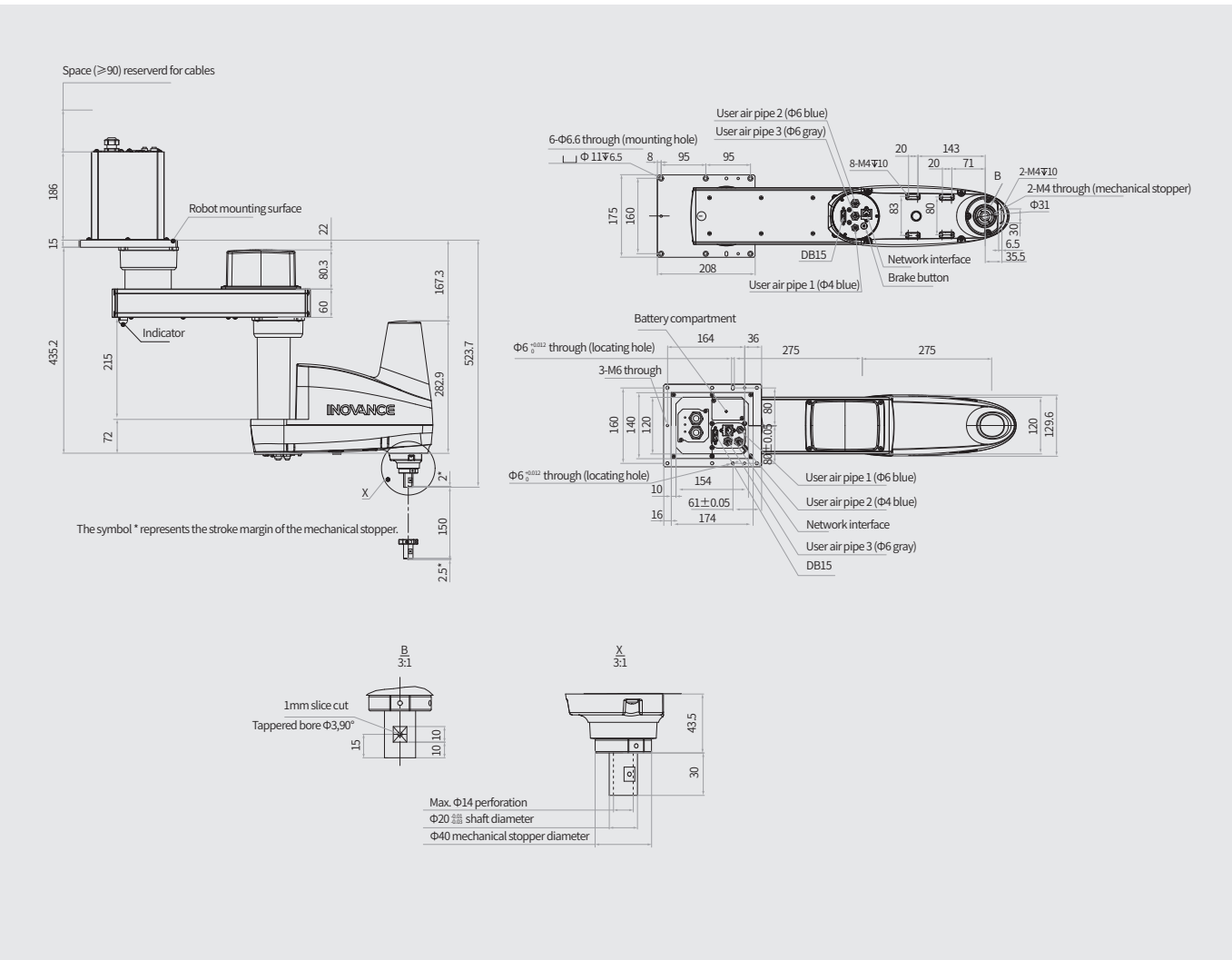
| Model                                   |                                    | IR-TS5-55Z15S-INT                                     |
|-----------------------------------------|------------------------------------|-------------------------------------------------------|
| Arm length                              | 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 <sup>2</sup>                                |
|                                         | Maximum                            | 0.12 kg.m <sup>2</sup>                                |
| 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)<br>CAT5E                            |
| Customer air piping                     |                                    | Φ6 mm×2, 0.59 MPa<br>Φ4 mm×1, 0.59 MPa                |
| Operating conditions                    | Ambient temperature <sup>[1]</sup> | 5°C to 40°C (no excessive temperature changes)        |
|                                         | Relative humidity                  | 10% to 80%                                            |
| Noise level <sup>[2]</sup>              |                                    | L <sub>aeq</sub> =70 dB(A)                            |
| Maximum motion range                    | J1                                 | ±225°                                                 |
|                                         | J2                                 | ±225°                                                 |
|                                         | J3                                 | 150 mm                                                |
|                                         | J4                                 | ±720°                                                 |
| Cycle time <sup>[3]</sup>               |                                    | 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

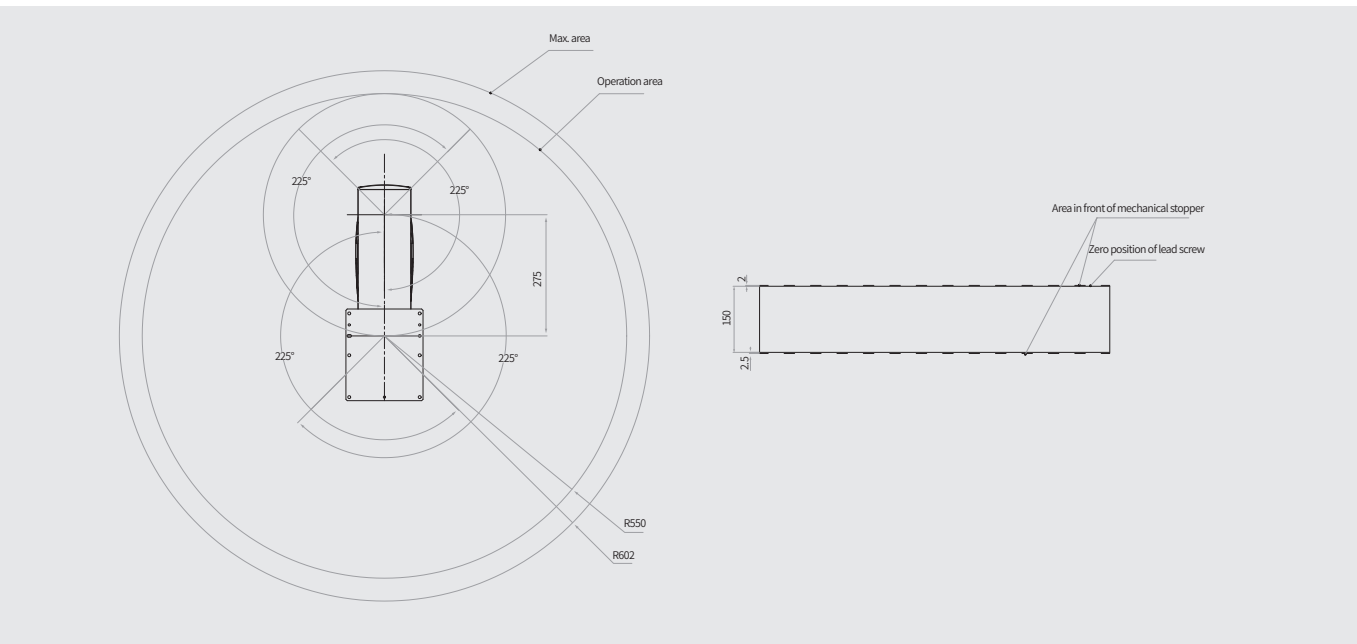
2] Noise test conditions: 4 joint linkage, 100% speed and acceleration, duty cycle 50%, measurement position: the front of the robot, 1000mm away from the action area, and more than 50mm from the base mounting surface.

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<sub>(mm)</sub>



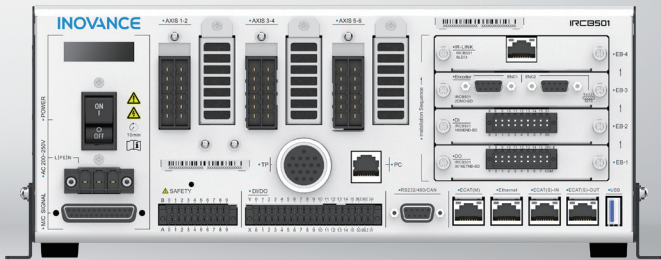
# Robot Controller

## 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

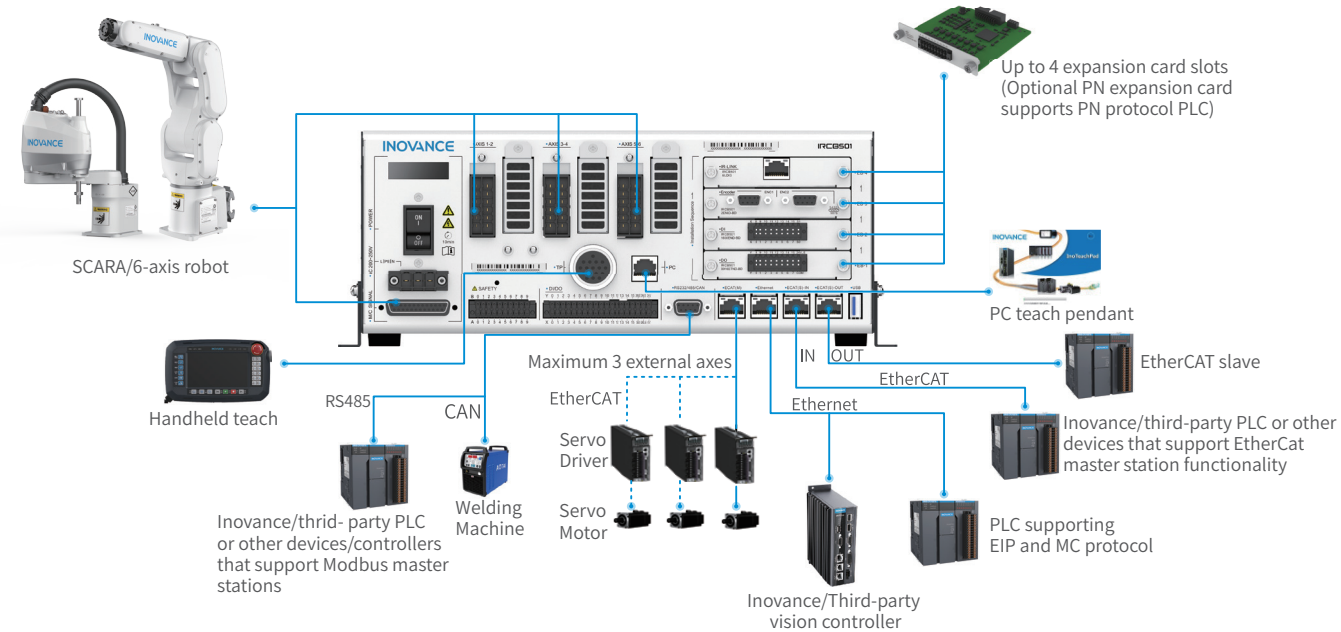
|              |                   |   |
|--------------|-------------------|---|
| SCARA Robot  | IR-S4/7/10 Series | ● |
|              | IR-TS4/5 Series   | ● |
|              | IR-S20 Series     | ● |
|              | IR-GS20 Series    | ● |
| 6-Axis Robot | IR-S50 Series     | ● |
|            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



### Technical Data

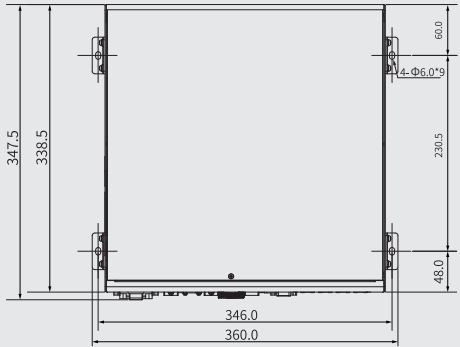
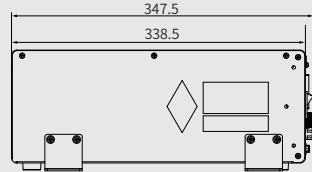
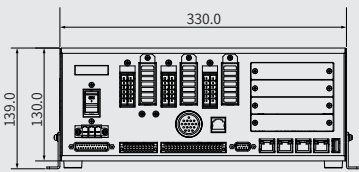
|                          |                                                                                                                    |                                                                              |
|--------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 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 |                                                                              |
| Power supply             | Input voltage: Single-phase 200V AC to 240V AC, 10A/20A, 50 Hz to 60 Hz                                            |                                                                              |
|                          | Max. power consumption: 3.1 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               | 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<br>6-Axis: IRS311-7 Series, IR-R4/R4H Series                             | SCARA: IR-S20 Series, IR-GS20 Series, IR-S50 Series<br>6-Axis: IR-R11 Series |

## System Topology

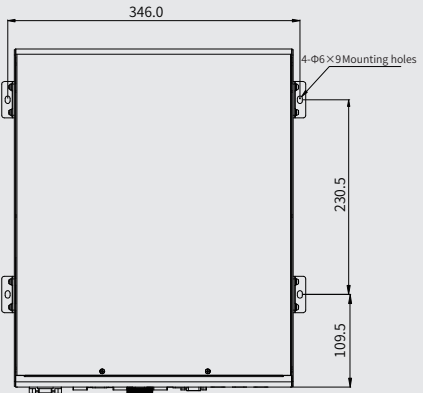
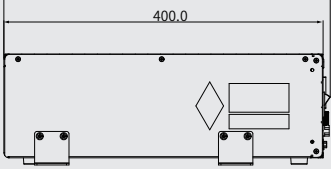
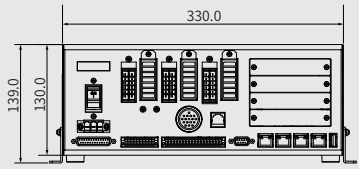


## Mounting Dimensions(mm)

### 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

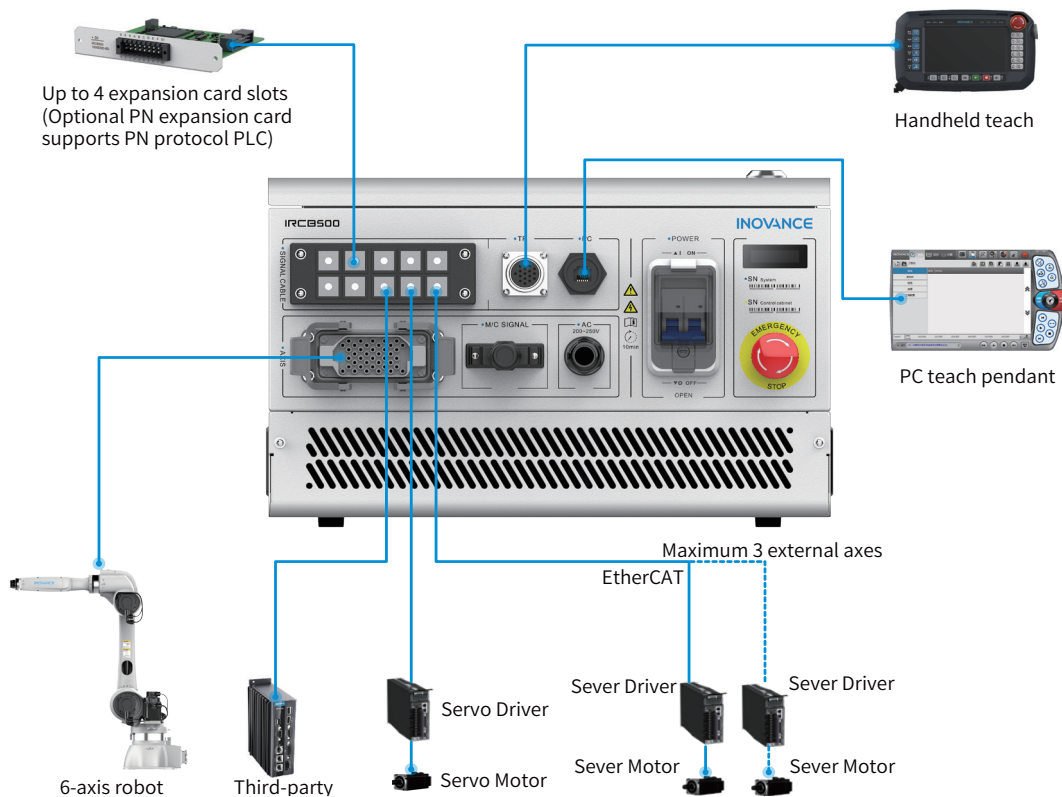
|              |                  |   |
|--------------|------------------|---|
| SCARA Robot  | IR-S4/7/10       | × |
|              | IR-TS4/5         | × |
|              | IR-S20 Series    | × |
|              | IR-GS20 Series   | × |
|              | IR-S50 Series    | ● |
| 6-Axis Robot | IRS311-7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



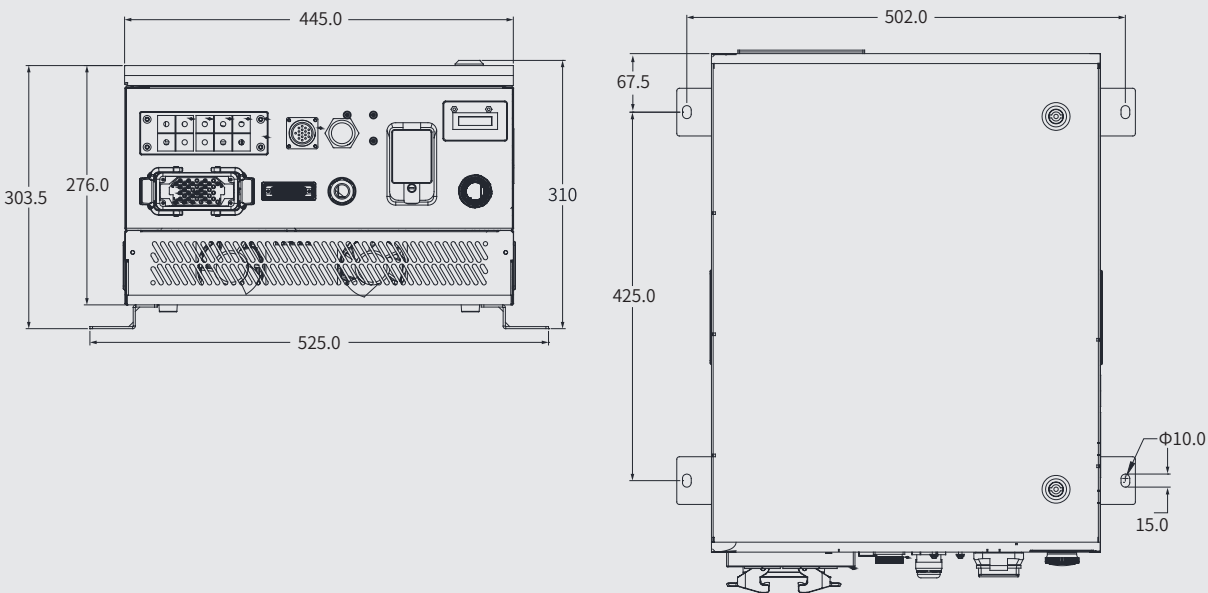
### Technical Data

|                          |                                                                                                                      |
|--------------------------|----------------------------------------------------------------------------------------------------------------------|
| 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<br>SCARA: IR-S50 Series<br>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<br>Wrist: IP67      | Body: IP65<br>Wrist: IP67                          | Body: IP65<br>Wrist: IP67      |
| Cable                 |                                       | Standard:3m/5m/10m/15m<br>High Flexible:3m/5m/10m/15m | Standard:<br>3m/5m/10m/15m     | Standard:3m/5m/10m/15m<br>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 <sup>2</sup> )      | 0.005                                                 | 0.01            | 0.01        | 0.01        | 0.02            | 0.02        | 0.02        |
|                                        | Max (kg· m <sup>2</sup> )        | 0.05                                                  | 0.12            | 0.12        | 0.12        | 0.3             | 0.3         | 0.3         |
| Standard cycle time (s) <sup>[2]</sup> |                                  | 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 <sup>2</sup> )      | 0.5                                                   | 0.5          | 0.5          | 0.5          | -            | 0.005              | 0.01               |
|                                        | Max (kg· m <sup>2</sup> )        | 1                                                     | 1            | 1            | 1            | 2.45         | 0.05               | 0.12               |
| Standard cycle time (s) <sup>[2]</sup> |                                  | 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<br>(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<br>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 <b>Product Family</b><br>IR: INOVANCE Robot                                                                                                                                 | ④ <b>Load(kg)</b><br>4: 4kg<br>50: 50kg                                                                                                                    | ⑦ <b>Environment</b><br>S: Standard<br>P: High-Protection(IP67)   |
| ② <b>Series Identification</b><br>Empty: Standard Version<br>G: High Performance Version<br>(When Choose High Performance Version, Please contact INOVANCE technical support) | ⑤ <b>Arm length(mm)</b><br>40: Arm length 400mm<br>200: Arm length 2000mm                                                                                  |                                                                   |
| ③ <b>Product Class</b><br>S: SCARA robot<br>TS: Inverted SCARA robot<br>R: 6-axis robot                                                                                       | ⑥ <b>Maximum travel of Z-axis</b><br>Empty: Without screw,6Axis Robots<br>Z15: The maximum stroke value is 150mm<br>Z42: The maximum stroke value is 420mm | ⑧ <b>Customized Content</b><br>Other letters: Other customization |

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

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

## NOTES