

PowerCON SCARA **IXP** Series

Program Controllers for PowerCON SCARA **MSEL-PCX/PGX**

Series Added

Class 10

Cleanroom specification

IP65

Dust/Splash-proof specification



Cleanroom specification and Dust/Splash-proof specification Added in Cost-effective IXP Series Giving More Variations to the Lineup

All models come standard with
battery-less absolute encoders.

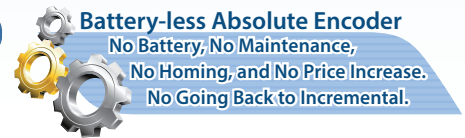


1 All models come standard with high resolution battery-less absolute encoders.

All models come standard with battery-less absolute encoders that do not require batteries. Since battery replacement is no longer necessary, maintenance labor is reduced. In addition, the encoder resolution has increased 10 times compared to the conventional IXP series.

Advantages of Battery-less Absolute Encoders

- The SCARA will not stop due to battery errors (low voltage, etc.)
- No cost of battery replacement
- No need for absolute reset or other physical tasks associated with battery replacement



2 More Affordable Due to Pulse Motors

Equipped with a pulse motor for Power-Con with IAI's own technology

...the IXP costs around 1/2 of conventional model.

* Compared against an IAI robot based on an arm length of 350mm.

SCARA robot 3-axis specification enables you to reduce the cost by up to about 15%. The IXP achieves a payload equivalent to that of a conventional model by adopting high-output drivers.

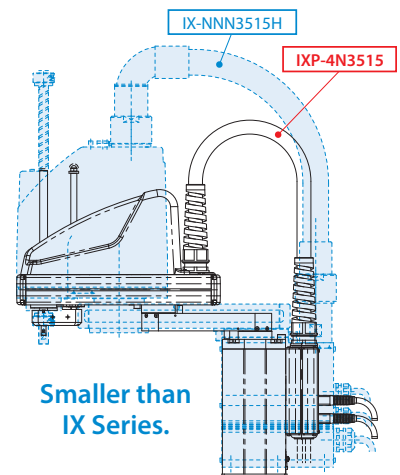
3 Lighter than IX Series

The robot weighs approx. 30% less.

(Compared to: IX-NNN3515H)

The lightweight robot can be easily assembled into your system.

	IX Series		IXP Series
Model	IX-NNN2515H		IXP-4N2508
Mass	17.1kg	-9.1kg	8kg
Model	IX-NNN3515H		IXP-4N3515
Mass	18kg	-5kg	13kg
Model	IX-NNN50□□H		IXP-4N5520
Mass	29.5kg	-8.5kg	21kg



4

Added 3-axis Specification and 4-axis* Gripper Specification

The 3-axis specification has no rotational axis for greater allowable load moment of inertia. It can be combined with a dedicated gripper to constitute a transfer robot with ease.

* The gripper type has four axes including three SCARA robot axes and one gripper axis. There is no 4-axis type equipped with gripper provided for Arm Length 180 Type.

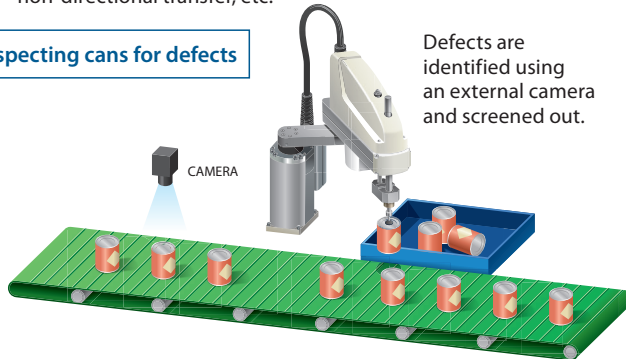


Use Examples of the 3-axis Specification

● Work processes that require only three axes

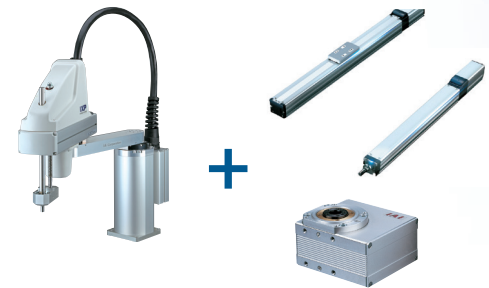
- ➔ Pickup and placement of circular parts, non-directional transfer, etc.

Inspecting cans for defects



● Connecting an actuator as the fourth axis

A ROBO Cylinder of a rotary type, rod type, slider type, etc., can be connected to a SCARA robot 3-axis specification as its fourth axis.



5

Added Cleanroom specification and Dust/Splash-proof specification

Added Cleanroom specifications and Dust/Splash-proof to arm length 350mm/450mm/550mm/650mm.

You can choose the optimal product from extensive lineups.

Cleanroom class 10

Class 10 (0.5 μm) refers to an environment with less than 10 particles of 0.5 μm or more in 1 cubic foot. (Fed. Std. 209 D)

Cleanroom class 3.5

Represented with an exponent when the number of particles of 0.1 μm or more in 1 m is represented by a power of 10. (ISO 14644-1)

Cleanroom
class 10

Cleanroom
class 3.5

IP65

IP65	Solid foreign substance	(Summary) Dust-proof type *Dust is completely blocked and does not penetrate inside the body.
	Water	(Summary) Protect against water jet. Even if it receives direct water jet from any direction, it will not be harmfully affected.

※JIS C 0920

6

Supporting MSEL Controller

① Accommodating Significantly More Programs and Positions

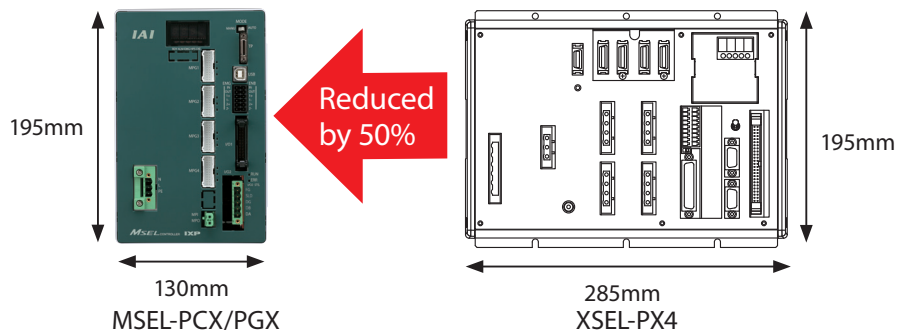
The greater storage capacity accommodates significantly more programs and positions.

	MSEL (New product)	XSEL-PX (Conventional product)
Number of programs	255	128
Number of positions	30,000	20,000

② Smaller Size

Having a size of 130mm in width x 195mm in height, the MSEL is significantly smaller than a conventional controller and saves space in your control panel.

The MSEL can be installed with screws or using a DIN rail.



Product Lineup

Standard specification

Arm length	180mm		250mm	
Number of axes	3-axis	4-axis (with rotational axis)	3-axis	4-axis (with rotational axis)
Without gripper	IXP-3N1808	IXP-4N1808	IXP-3N2508	IXP-4N2508
Payload	Rated 1kg , Maximum 3kg		Rated 1kg , Maximum 3kg	
Standard price	–	–	–	–
With medium gripper Gripper model code: RCP4-GRSML	–	–	IXP-3N2508GM	–
Payload			Maximum 0.5kg *1	
Standard price			–	

Arm length	350mm		450mm	
Number of axes	3-axis	4-axis (with rotational axis)	3-axis	4-axis (with rotational axis)
Without gripper	IXP-3N3515	IXP-4N3515	IXP-3N4515	IXP-4N4515
Payload	Rated 1kg , Maximum 3kg		Rated 1kg , Maximum 3kg	
Standard price	–	–	–	–
With medium gripper Gripper model code: RCP4-GRSML	IXP-3N3515GM	–	IXP-3N4515GM	–
Payload	Maximum 0.5kg *1		Maximum 0.5kg *1	
Standard price	–		–	
With large gripper Gripper model code: RCP4-GRSLL	IXP-3N3510GL	–	IXP-3N4510GL	–
Payload	Maximum 1.5kg *1		Maximum 1.5kg *1	
Standard price	–		–	

Arm length	550mm		650mm	
Number of axes	3-axis	4-axis (with rotational axis)	3-axis	4-axis (with rotational axis)
Without gripper	IXP-3N5520	IXP-4N5520	IXP-3N6520	IXP-4N6520
Payload	Rated 2kg , Maximum 6kg		Rated 2kg , Maximum 6kg	
Standard price	–	–	–	–
With large gripper Gripper model code: RCP4-GRSLL	IXP-3N5515GL	–	IXP-3N6515GL	–
Payload	Maximum 1.5kg *1		Maximum 1.5kg *1	
Standard price	–		–	
With extra-large gripper Gripper model code: RCP4-GRSWL	IXP-3N5515GW	–	IXP-3N6515GW	–
Payload	Maximum 2.5kg *1		Maximum 2.5kg *1	
Standard price	–		–	

*1: This is the maximum payload. The payload may differ in some conditions of use. Refer to the gripper selection guide in our ROBO Cylinder General Catalog.

Cleanroom specification

Arm length	350mm		450mm	
Number of axes	3-axis	4-axis (with rotational axis)	3-axis	4-axis (with rotational axis)
Model	IXP-3C3515	IXP-4C3515	IXP-3C4515	IXP-4C4515
Payload	Rated 1kg , Maximum 3kg		Rated 1kg , Maximum 3kg	
Clean class	Class 10 (Fed. Std. 209D)		Class 10 (Fed. Std. 209D)	
	Equivalent to Class 3.5 (ISO 14644-1)		Equivalent to Class 3.5 (ISO 14644-1)	
Standard price	–	–	–	–

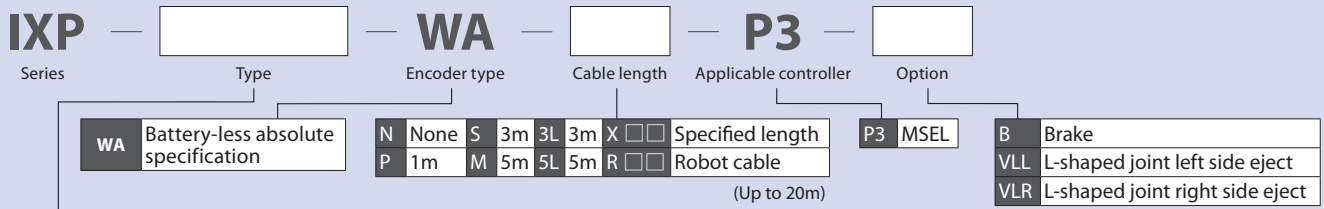
Arm length	550mm		650mm	
Number of axes	3-axis	4-axis (with rotational axis)	3-axis	4-axis (with rotational axis)
Model	IXP-3C5520	IXP-4C5520	IXP-3C6520	IXP-4C6520
Payload	Rated 2kg , Maximum 6kg		Rated 2kg , Maximum 6kg	
Clean class	Class 10 (Fed. Std. 209D)		Class 10 (Fed. Std. 209D)	
	Equivalent to Class 3.5 (ISO 14644-1)		Equivalent to Class 3.5 (ISO 14644-1)	
Standard price	–	–	–	–

Dust/Splash-proof specification

Arm length	350mm		450mm	
Number of axes	3-axis	4-axis (with rotational axis)	3-axis	4-axis (with rotational axis)
Model	IXP-3W3515	IXP-4W3515	IXP-3W4515	IXP-4W4515
Payload	Rated 1kg , Maximum 3kg		Rated 1kg , Maximum 3kg	
Protection class	IP65		IP65	
Standard price	–	–	–	–

Arm length	550mm		650mm	
Number of axes	3-axis	4-axis (with rotational axis)	3-axis	4-axis (with rotational axis)
Model	IXP-3W5520	IXP-4W5520	IXP-3W6520	IXP-4W6520
Payload	Rated 2kg , Maximum 6kg		Rated 2kg , Maximum 6kg	
Protection class	IP65		IP65	
Standard price	–	–	–	–

Explanation of the Model Items



3N1808	3-axis type / Arm length 180mm / Vertical axis 80mm
4N1808	4-axis type / Arm length 180mm / Vertical axis 80mm
3N2508	3-axis type / Arm length 250mm / Vertical axis 80mm
4N2508	4-axis type / Arm length 250mm / Vertical axis 80mm
3N2508GM	3-axis type / Arm length 250mm / Vertical axis 80mm / RCP4-GRSML installed at the tip of the vertical axis
3N3515	3-axis type / Arm length 350mm / Vertical axis 80mm
4N3515	4-axis type / Arm length 350mm / Vertical axis 150mm
3N3515GM	3-axis type / Arm length 350mm / Vertical axis 150mm / RCP4-GRSML installed at the tip of the vertical axis
3N3510GL	3-axis type / Arm length 350mm / Vertical axis 100mm / RCP4-GRSLL installed at the tip of the vertical axis
3N4515	3-axis type / Arm length 450mm / Vertical axis 150mm
4N4515	4-axis type / Arm length 450mm / Vertical axis 150mm
3N4515GM	3-axis type / Arm length 450mm / Vertical axis 150mm / RCP4-GRSML installed at the tip of the vertical axis
3N4510GL	3-axis type / Arm length 450mm / Vertical axis 100mm / RCP4-GRSLL installed at the tip of the vertical axis
3N5520	3-axis type / Arm length 550mm / Vertical axis 200mm
4N5520	4-axis type / Arm length 550mm / Vertical axis 200mm
3N5515GL	3-axis type / Arm length 550mm / Vertical axis 150mm / RCP4-GRSLL installed at the tip of the vertical axis
3N5515GW	3-axis type / Arm length 550mm / Vertical axis 150mm / RCP4-GRSWL installed at the tip of the vertical axis
3N6520	3-axis type / Arm length 650mm / Vertical axis 200mm
4N6520	4-axis type / Arm length 650mm / Vertical axis 200mm
3N6515GL	3-axis type / Arm length 650mm / Vertical axis 150mm RCP4-GRSLL installed at the tip of the vertical axis
3N6515GW	3-axis type / Arm length 650mm / Vertical axis 150mm RCP4-GRSWL installed at the tip of the vertical axis
3C3515	Cleanroom specification 3-axis type / Arm length 350mm / Vertical axis 150mm
4C3515	Cleanroom specification 4-axis type / Arm length 350mm / Vertical axis 150mm
3C4515	Cleanroom specification 3-axis type / Arm length 450mm / Vertical axis 150mm
4C4515	Cleanroom specification 4-axis type / Arm length 450mm / Vertical axis 150mm
3C5520	Cleanroom specification 4-axis type / Arm length 550mm / Vertical axis 200mm
4C5520	Cleanroom specification 4-axis type / Arm length 550mm / Vertical axis 200mm
3C6520	Cleanroom specification 3-axis type / Arm length 650mm / Vertical axis 200mm
4C6520	Cleanroom specification 4-axis type / Arm length 650mm / Vertical axis 200mm
3W3515	Dust/Splash-proof specification 3-axis type / Arm length 350mm / Vertical axis 150mm
4W3515	Dust/Splash-proof specification 4-axis type / Arm length 350mm / Vertical axis 150mm
3W4515	Dust/Splash-proof specification 3-axis type / Arm length 450mm / Vertical axis 150mm
4W4515	Dust/Splash-proof specification 4-axis type / Arm length 450mm / Vertical axis 150mm
3W5520	Dust/Splash-proof specification 3-axis type / Arm length 550mm / Vertical axis 200mm
4W5520	Dust/Splash-proof specification 4-axis type / Arm length 550mm / Vertical axis 200mm
3W6520	Dust/Splash-proof specification 3-axis type / Arm length 650mm / Vertical axis 200mm
4W6520	Dust/Splash-proof specification 4-axis type / Arm length 650mm / Vertical axis 200mm

*Only available for arm length 550/650.
 Make sure to select this when the transported object is 4kg or more.

(Example) **IXP** — **3** **N** **35** **15** **GM** — **WA** — **S** — **P3**

Number of axes: 3 Arm length: 350mm Tip of vertical axis: RCP4-GRSML Cable length: 3m Controller: MSEL

Vertical axis stroke: 150mm Encoder type: Battery-less absolute specification

Option

L-shaped joint extraction direction

Model **VLL / VLR**

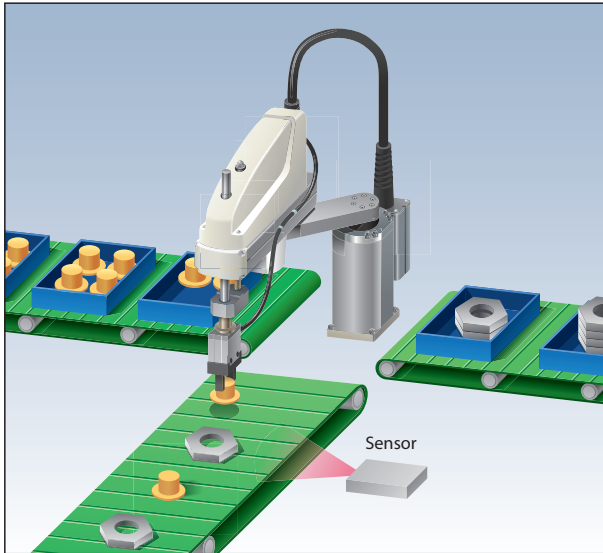
Explanation

You can select L-shaped joint for suction on the left side (model: VLL) or right side (model: VLR) for cleanroom specification.
 *Please be sure to select either one.

Applications

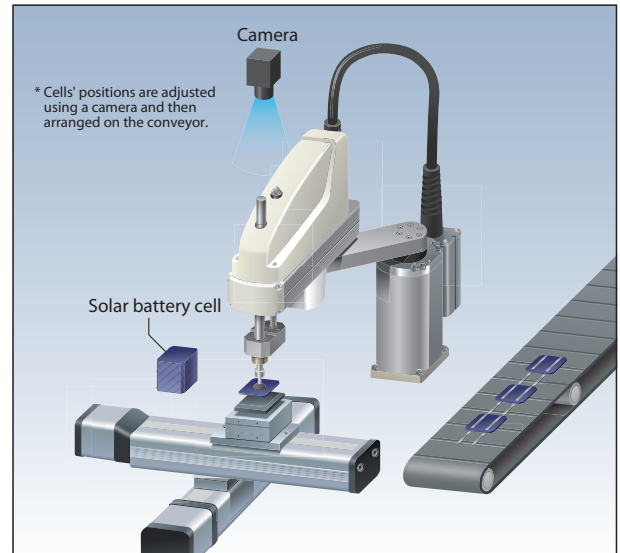
Part Screening

Parts of two different sizes are classified using a sensor and sorted into different boxes.



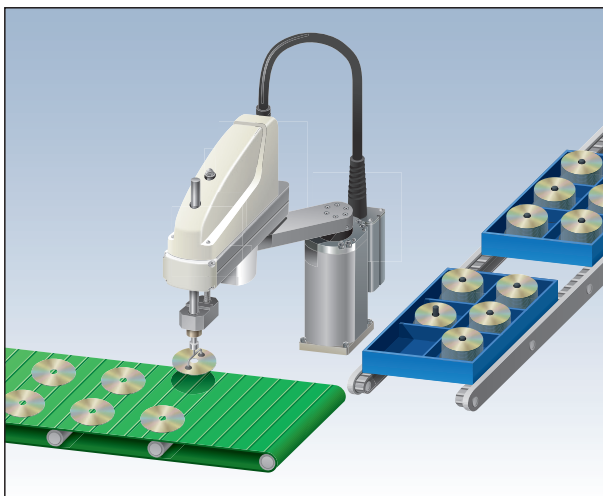
Solar Battery Module Tab Soldering

Solar battery module cells are transferred while positions are adjusted so that electrodes can be soldered onto the cells.



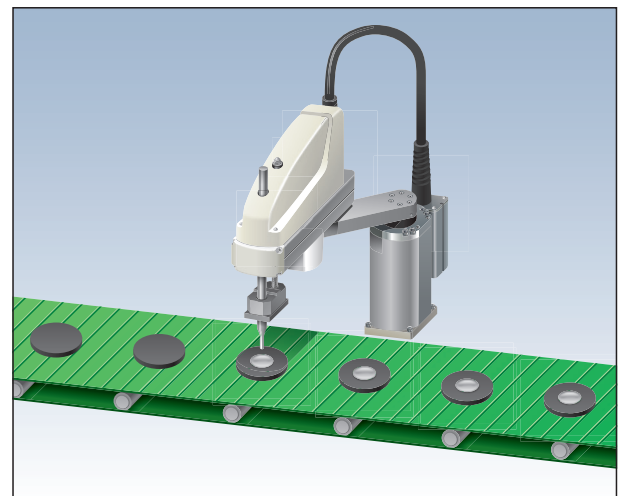
DVD-R Packing

DVD-Rs are picked up from the conveyor and placed.



Adhesive Application

Adhesive is applied onto circular parts.



Warnings

(*1) Positioning Repeatability

This refers to the degree to which the robot can accurately repeat the same target position when operated at the same speed, acceleration rate, and arm-type. (The values are measured at a constant room temperature of 20°C) Please note that this is not an absolute positioning accuracy. In addition, please be aware that the positioning accuracy may deviate in situations where the operating conditions have changed; for example switching the robot arms, changing from multiple opposing positions to one set position, or changing the operating speed and acceleration/deceleration rate.

(*2) Maximum Operating Speed for PTP Operation

The maximum operating speed in the specification table assumes PTP command operation. In the case of CP command operation (interpolation), there is a limit to the speed. For more details, please refer to the "CP Operation" section of the "Estimate of SCARA Robot Acceleration/Deceleration Settings" on p.8. In addition, please note that in order to operate the vertical axis at the lowest position, the speed and acceleration rate must be appropriately reduced as well.

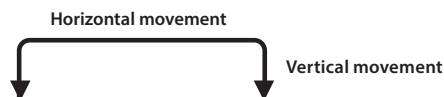
(*3) Payload

The options are rated payload and maximum payload. The rated payload refers to the maximum load that can be transferred at the maximum speed and acceleration rate. The maximum payload refers to the load that can be transferred at a reduced speed and acceleration rate. When transporting a load that is greater than the rated payload, by programming the load and moment of inertia, the appropriate speed and acceleration rate will automatically be applied.

(*4) Standard Cycle Time

The standard cycle time is the round-trip operation times under the conditions outlined below. This is a general estimate of high-speed performance.

*For gripper-equipped models, the weight of the gripper will also be included in the transported weight.



Arm length	Transferring weight(kg)	Horizontal movement distance(mm)	Vertical movement distance(mm)	Cycle time (sec)
180	1	100	25	0.57
250	1	300	25	0.79
350	1	300	25	0.69 (Standard specification) 0.76 (Clean /Dust/Splash-proof specification)
450	1	300	25	0.67 (Standard specification) 0.74(Clean /Dust/Splash-proof specification)
550	2	300	25	0.73 (Standard specification) 0.79(Clean /Dust/Splash-proof specification)
650	2	300	25	0.81 (Standard specification) 0.93(Clean /Dust/Splash-proof specification)

(*5) Allowable Inertial Moment from the Tip of the Vertical Axis

This is the allowable inertial moment calculated at the center of the rod on the v 3-axis type, and rotational axis for 4-axis type).

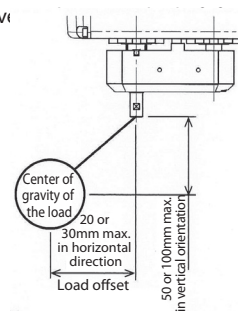
The offset value from the center of the rotational axis to the center of gravity of the load is shown below.

Arm length 180/250 ... horizontal direction 20mm or less,
vertical direction 50mm or less

Arm length 350/450 ... horizontal direction 30mm or less,
550/650 vertical direction 50mm or less

If the standard payload is exceeded, it is necessary to reduce the horizontal offset value. Please refer to the instructions manual for details.

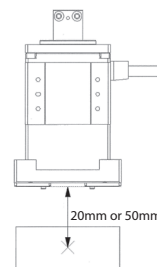
Also, if a tool's center of gravity is away from the center of the axis-tip, it is necessary to reduce the speed and acceleration rate appropriately.



(*6) Overhang Limits for the Gripper Options

The overhang limit for gripper-equipped models (GM/GL/GW) is 0mm horizontally and 20mm or 50mm vertically from the gripper finger-tip to the piece's center of gravity. Please refer to the figure on the right.

*1 Arm length 250 ... 20mm
Arm length 350/450/550/650 ... 50mm



Work Envelope

When switching arm orientation (left/right), please be careful that no peripheral objects interfere with the arm when fully extends.

(*7) Air suction inside the unit

In order to use the SCARA Cleanroom specification in clean class 10, the air in the unit must be sucked from the air suction port of the unit base. Please make piping that can flow the flow rate for each specification. Since the amount of dust are depending on the operating pattern, it is necessary to increase the amount of suction at high speed and high acceleration.

(*8) Air purge pressure

To use SCARA Dust/Splash-Proof specification with IP65, it is necessary to supply dry air (air purge) to a single air tube in the cable between controller and robot. Refer to the specification of each type for the air purge pressure. Please make piping that can flow the flow rate of each specification.

(*1) to (*8) are linked to notes in the product specifications pages (p. 9 through 36).

SCARA Robot IXP Acceleration/Deceleration Settings Guide

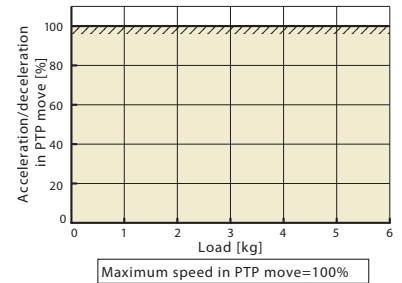
If the robot must be operated continuously, make sure its setting falls within the ranges of the reference graphs for acceleration/deceleration setting and duty cycle setting.

PTP Move

The maximum speed and acceleration/deceleration at which the robot can operate carrying the applicable load are applied as 100% (optimal speed & optimal acceleration/deceleration function). Make adjustments so that the target speed and acceleration/deceleration can be achieved.

Notes

- The optimal speed & optimal acceleration/deceleration function does not guarantee robot operation in all operation patterns.
- If significant vibration generates, reduce the speed and/or acceleration/deceleration because the robot may fail or die prematurely.



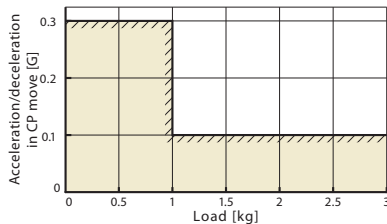
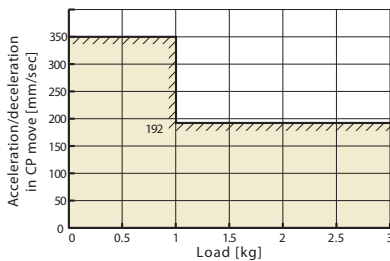
CP Move

Set the speed and acceleration/deceleration at or below the applicable values according to the graphs below.

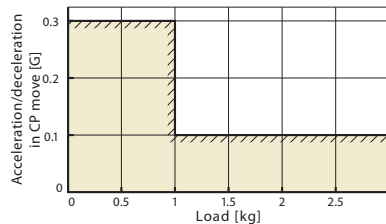
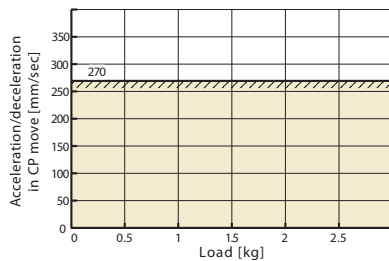
Notes

- If significant vibration generates, reduce the speed and/or acceleration/deceleration because the robot may fail or die prematurely.

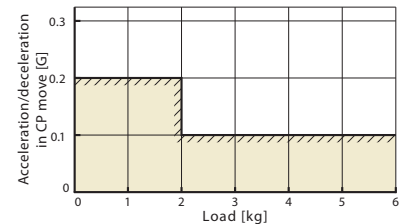
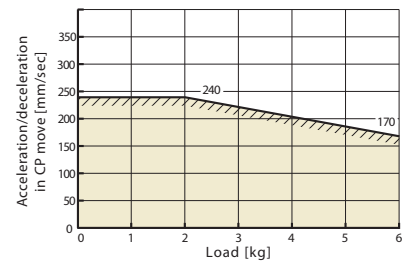
IXP-3/4N1808, 2508



IXP-3/4N3515, 4515



IXP-3/4N5520, 6520



Duty Cycle Setting

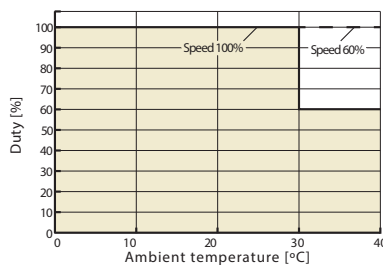
The duty cycle refers to a utilization ratio expressed by the percentage of the robot operating time per cycle.

For this robot, the duty cycle is limited according to the ambient temperature in order to suppress heat generation from the motor unit and reduction gears. In both PTP move and CP move, the maximum value according to the graphs below must not be exceeded. Also remember to complete a continuous operation within 30 minutes.

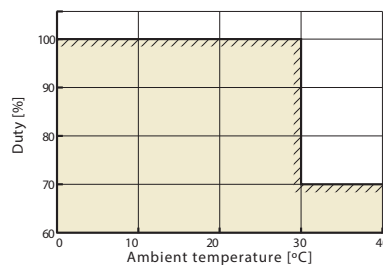
Notes

- The duty cycle must not exceed the maximum limit, as it may significantly reduce the life of the motor unit or reduction gears.

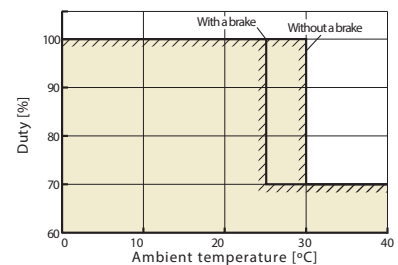
IXP-3/4N1808, 2508



IXP-3/4N3515, 4515



IXP-3/4N5520, 6520



IXP-3N1808/4N1808

Arm
length
180mm

Vertical
axis
80mm

■Model Specification Items	IXP	—	N	1808	—	WA	—		—	P3
	Series	—	Number of axes 3: 3 axes 4: 4 axes	Arm length: 180mm Vertical axis: 80mm	—	Encoder type WA: Battery-less absolute specification	—	Cable length N: None P: 1m S: 3m M: 5m	—	Applicable controller P3: MSEL

*Controller is not included.



- Refer to P. 7 for *1 through *6.
- There is a brake equipped on the vertical axis as a standard option.
- The vertical axis does not support push-motion control.
- The allowable push force should be 45N under condition of having a buffer such as a spring on a tool or the pressing side.
- Refer to P. 7 for the work envelope, and P. 8 for the notes on acceleration/deceleration setting.

Robot Specifications

Axis configuration		Arm length (mm)	Work envelope	Positioning repeatability *1	Maximum operating speed in PTP mode *2	Payload (kg) *3	
						Rated	Maximum
Axis 1	Arm 1	80	±125°	±0.01mm	2053mm/s (Composite speed)	1	3
Axis 2	Arm 2	100	±125°				
Axis 3	Vertical axis	—	80mm	±0.02mm	350mm/s		
Axis 4	Rotational axis	—	±360°	±0.01°	1200°/s		

Robot Specifications

	3-axis specification	4-axis specification
Encoder type	Battery-less absolute encoder	
User wiring	AWG26×8	
User piping	O.D. ø4, I.D. ø2.5, 2 air tubes Maximum working pressure 0.8MPa	
Standard cycle time *4 (sec)	0.57	
Allowable torque (Axis 4) (N·m)	—	0.28
Allowable moment (N·m)	0.7	
Allowable inertial moment from the tip of the vertical axis *5 (kg·m ²)	Rated 0.001 Maximum 0.01	Rated 0.001 Maximum 0.003
Ambient operating temperature/humidity	Temperature 0 ~ 40°C , Humidity 20 ~ 85%RH (Non-condensing)	
Unit weight (kg)	7	7.5

Price List

Specification	Model number	Standard price
3-axis specification	IXP-3N1808	—
4-axis specification	IXP-4N1808	—

Cable Length <Per Axis*>

Type	Cable code	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Specified length	X06 (6m) ~ X10 (10m)	—
	X11 (11m) ~ X15 (15m)	—
	X16 (16m) ~ X20 (20m)	—
Robot cable	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
	R11 (11m) ~ R15 (15m)	—
	R16 (16m) ~ R20 (20m)	—

*The 3-axis specification requires three cables, while 4-axis specification requires four cables.

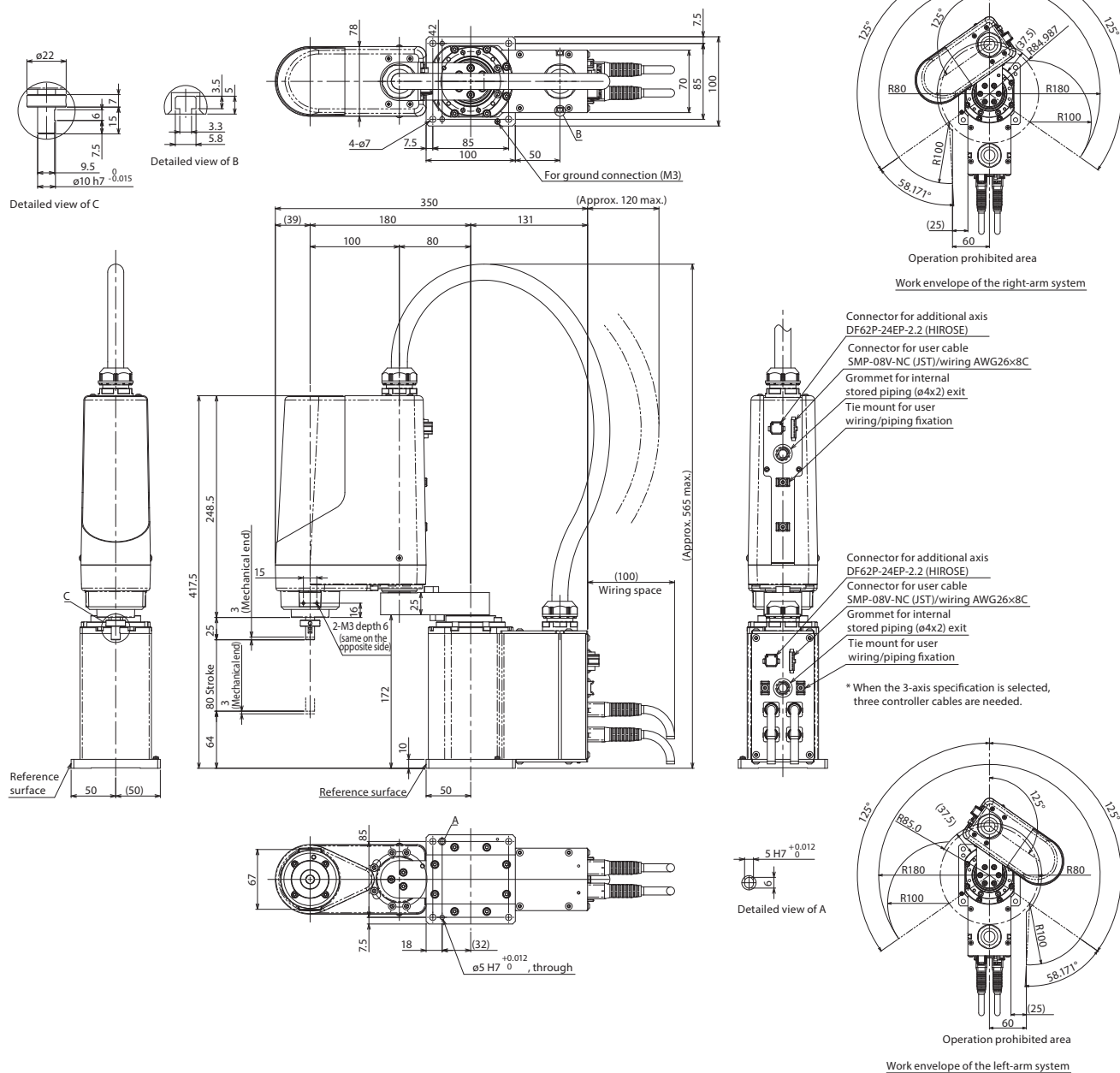
Dimensions

2D
CAD

3D
CAD


CAD drawings can be
downloaded from the website.

www.intelligentactuator.com



Applicable Controller

IXP series robots can operate with the following controllers. Make sure to select the model depending on the purpose.

Name	External view	Maximum number of controlled axes	Supply voltage	Control method				Max. pos. points	Standard price	Reference page
				Position	Pulse train	Program	Network *Option			
MSEL-PCX/PGX		4	Single-phase 100V ~ 230V	—	—	•	DeviceNet CC-Link EtherNet/IP PROFINET EtherCAT	30000	—	→P37

IXP-3N2508/4N2508

Arm
length
250mm

Vertical
axis
80mm

■Model Specification Items	IXP	—	<div></div> N	25	<div></div>	—	WA	—	<div></div>	—	P3
	Series	—	Number of axes	Arm length	Vertical axis stroke	Gripper	Encoder type	—	Cable length	—	Applicable controller
			3: 3 axes 4: 4 axes	25: 250mm	08 : 80mm 08GM : 80mm *Refer to "Attached Gripper Types" for the types of grippers installed.	Medium gripper installed	WA: Battery-less absolute specification		N: None P: 1m S: 3m M: 5m	X□□: Specified length R□□: Robot cable Cable length described below	P3: MSEL

*Controller is not included.



*The photograph shows a 4-axis specification.

POINT Note on selection	•Refer to P. 7 for *1 through *6.
	•There is a brake equipped on the vertical axis as a standard option.
	•The vertical axis does not support push-motion control.
	•The allowable push force is 45N under condition of having a buffer such as a spring on a tool or the pressing side.
	•Refer to P. 7 for the work envelope, and P. 8 for the notes on acceleration/deceleration setting.

Robot Specifications

Axis configuration		Arm length (mm)	Work envelope	Positioning repeatability*1	Maximum operating speed in PTP mode*2		Payload (kg) *3	
					No gripper	With medium gripper (GM)	Rated	Maximum
Axis 1	Arm 1	150	±135°	±0.02mm	2151mm/s (Composite speed)	2151mm/s (Composite speed)	1	3
Axis 2	Arm 2	100	±135°					
Axis 3	Vertical axis	—	80mm	±0.02mm	350mm/s	350mm/s	—	0.5 (Note 2)
Axis 4	Rotational axis	—	±360°	±0.01°	1200°/s	—		
	Medium gripper GM (Note 1)	—	14mm (Both fingers)	±0.01mm	—	94mm/s (One finger)		

(Note 1) Refer to the gripper selection guide in our ROBO Cylinder General Catalog.

(Note 2) This is the maximum payload on the gripper when it is attached to a SCARA Robot.

Robot Specifications

	3-axis specification	4-axis specification	3-axis specification with medium gripper (GM)
Encoder type	Battery-less absolute encoder *		
User wiring	AWG26×8		
User piping	O.D. ø4, I.D. ø2.5, 2 air tubes Maximum working pressure 0.8MPa		
Standard cycle time *4 (sec)	0.79		0.79 (at no load on gripper)
Allowable torque (Axis 4) (N·m)	—	0.28	—
Allowable moment (N·m)	0.7		Ma, Mb, Mc : 0.7
Allowable inertial moment from the tip of the vertical axis *5 (kg·m ²)	Rated 0.001 Maximum 0.01	Rated 0.001 Maximum 0.003	Maximum 0.001
Ambient operating temperature/humidity	Temperature 0 ~ 40°C, Humidity 20 ~ 85%RH (Non-condensing)		
Unit weight (kg)	7.5	8	8

*The gripper is incremental type

Attached Gripper Types

IXP-3N2508GM	The medium gripper RCP4-GRSML is installed at the tip of the vertical axis.
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Price List

Specification	Model number	Standard price
3-axis specification	IXP-3N2508	—
3-axis specification with medium gripper	IXP-3N2508GM	—
4-axis specification	IXP-4N2508	—

Cable Length <Per Axis*>

Type	Cable code	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Specified length	X06 (6m) ~ X10 (10m)	—
	X11 (11m) ~ X15 (15m)	—
	X16 (16m) ~ X20 (20m)	—
Robot cable	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
	R11 (11m) ~ R15 (15m)	—
	R16 (16m) ~ R20 (20m)	—

*The 3-axis specification requires three cables, while the gripper specification and 4-axis specification require four cables.

IXP-3N3515/4N3515 3N3510

**Arm
length**
350mm

**Vertical
axis**
100mm

**Vertical
axis**
150mm

■Model Specification Items	IXP	—	<div></div> N	35	<div></div>	—	WA	—	<div></div>	—	P3
Series	—	Number of axes	Arm length	Vertical axis stroke	Gripper	—	Encoder type	—	Cable length	—	Applicable controller
		3: 3 axes 4: 4 axes	35: 350mm	15 :150mm 15GM :150mm 10GL :100mm	No gripper Medium gripper installed Large gripper installed		WA: Battery-less absolute specification		N: None P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable Cable length described below		P3: MSEL
*Controller is not included.											

*Controller is not included.



POINT Note on selection	•Refer to P. 7 for *1 through *6. •The vertical axis has no brake. The unique structure holds the load in place even when the servo is turned off. •The vertical axis does not support push-motion control. •The allowable push force is 60N under condition of having a buffer such as a spring on a tool or the pressing side. •Refer to P. 7 for the work envelope, and P. 8 for the notes on acceleration/deceleration setting.

*The photograph shows a 4-axis specification.

Robot Specifications

Axis configuration		Arm length (mm)	Work envelope	Positioning repeatability *1	Maximum operating speed in PTP mode *2			Payload (kg) *3	
					No gripper	With medium gripper (GM)	With large gripper (GL)	Rated	Maximum
Axis 1	Arm 1	160	±127°	±0.03mm	2726mm/s (Composite speed)	2726mm/s (Composite speed)	1908mm/s (Composite speed)	1	3
Axis 2	Arm 2	190	±127°						
Axis 3	Vertical axis	—	150mm (Note 1)	±0.02mm	270mm/s	270mm/s	189mm/s	—	0.5 (Note 3)
Axis 4	Rotational axis	—	±360°	±0.02°	1000°/s	—	—		
	Medium gripper GM (Note 2)	—	14mm (Both fingers)	±0.01mm	—	94mm/s (One finger)	—	—	1.5 (Note 3)
	Large gripper GL (Note 2)	—	22mm (Both fingers)	±0.01mm	—	—	125mm/s (One finger)	—	1.5 (Note 3)

(Note 1) When the large gripper is installed, the work envelope of the vertical axis becomes 100mm. (Note 2) Refer to the gripper selection guide in our ROBO Cylinder General Catalog.

(Note 3) This is the maximum payload on the gripper when it is attached to a SCARA Robot.

Robot Specifications

		3-axis specification	4-axis specification	3-axis specification	
		No gripper		With medium gripper (GM)	With large gripper (GL)
Encoder type		Battery-less absolute encoder *			
User wiring		AWG24×6, AWG26×5P (shielded) *User cables are sold separately. Refer to the operation manual for detail.		User wiring is not supported because the gripper wiring is used.	
User piping		O.D. ø4, I.D. ø2.5, 3 air tubes (Maximum working pressure 0.8MPa)			
Standard cycle time *4 (sec)	SCARA	0.69		0.69	1.08
	Gripper (full stroke)	—		0.51	0.56
Allowable torque (Axis 4) (N·m)		—	1.4	—	
Allowable moment (N·m)		2.9		Ma: 1.9 Mb: 2.7 Mc: 2.9	Ma: 2.9 Mb: 2.9 Mc: 2.9
Allowable inertial moment from the tip of the vertical axis *5 (kg·m ²)		Rated 0.003 Maximum 0.01	Rated 0.003 Maximum 0.003	Maximum 0.002	Maximum 0.009
Ambient operating temperature/humidity		Temperature 0 ~ 40°C Humidity 20 ~ 85%RH (Non-condensing)			
Unit weight (kg)		12	13	12.5	13

*The gripper is incremental type

Attached Gripper Types

IXP-3N3515GM	The medium gripper RCP4-GRSML is installed at the tip of the vertical axis.
IXP-3N3510GL	The large gripper RCP4-GRSLL is installed at the tip of the vertical axis.

Price List

Gripper	SCARA 3-axis specification	Standard price
None	IXP-3N3515	—
Medium gripper	IXP-3N3515GM	—
Large gripper	IXP-3N3510GL	—
Gripper	SCARA 4-axis specification	Standard price
None	IXP-4N3515	—

Cable Length <Per Axis>

Type	Cable code	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Specified length	X06 (6m) ~ X10 (10m)	—
	X11 (11m) ~ X15 (15m)	—
	X16 (16m) ~ X20 (20m)	—
Robot cable	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
	R11 (11m) ~ R15 (15m)	—
	R16 (16m) ~ R20 (20m)	—

*The 3-axis specification requires three cables, while the gripper specification and 4-axis specification require four cables.

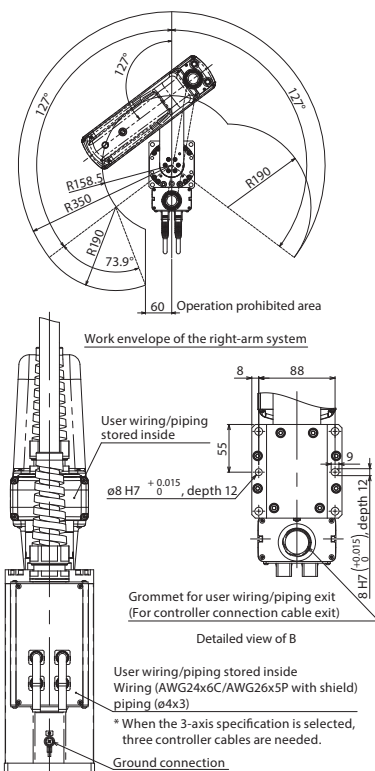
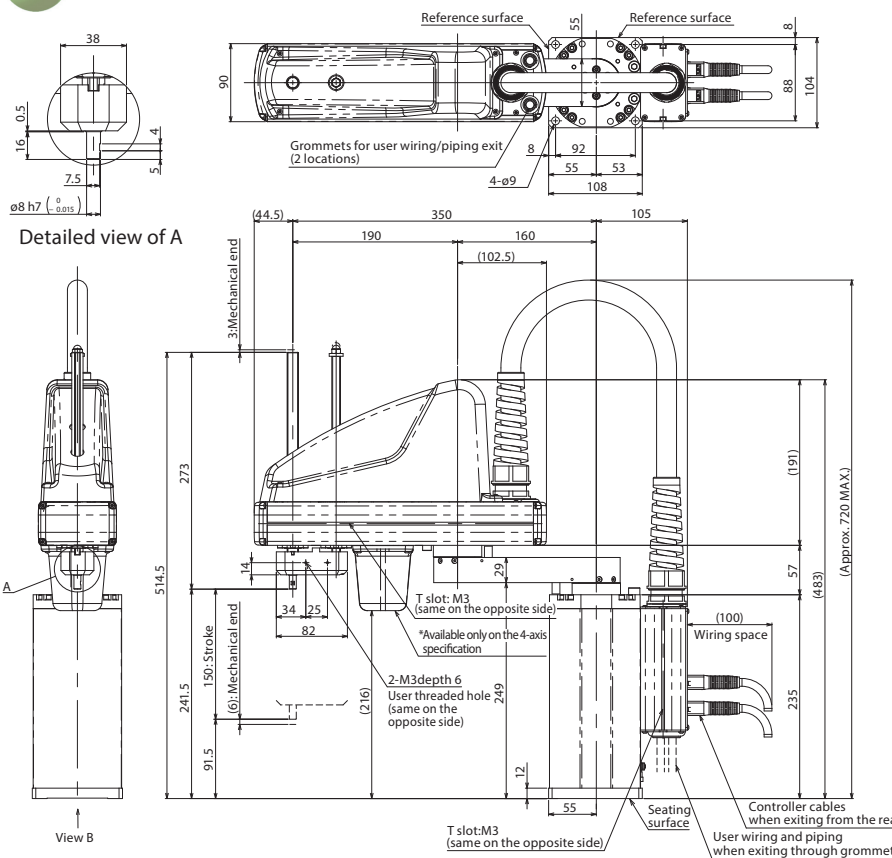
Dimensions

2D CAD

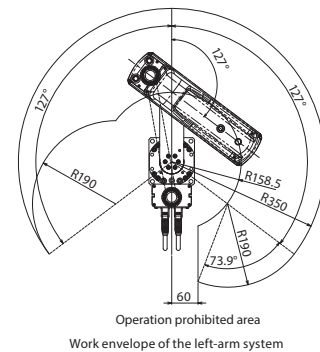
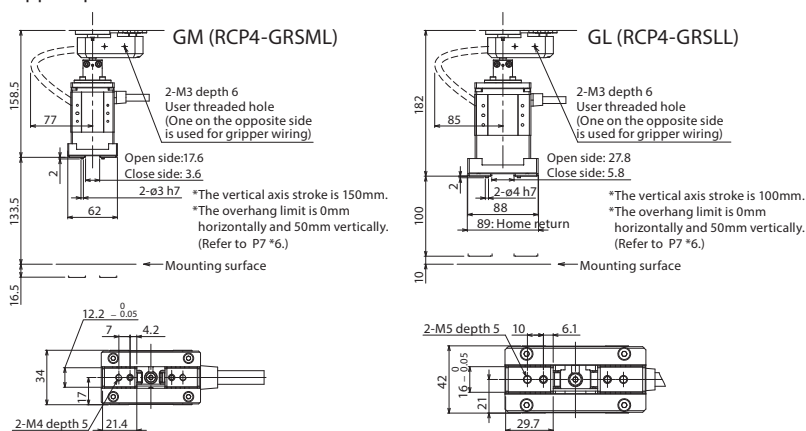
3D CAD

CAD drawings can be downloaded from the website.

www.intelligentactuator.com



<Gripper Specification>



Applicable Controller

IXP series robots can operate with the following controllers. Make sure to select the model depending on the purpose.

Name	External view	Maximum number of controlled axes	Supply voltage	Control method				Max. pos. points	Standard price	Reference page
				Position	Pulse train	Program	Network *Option			
MSEL-PCX/PGX		4	Single-phase 100V ~ 230V	-	-	•	DeviceNet CC-Link EtherNet/IP PROFINET EtherCAT	30000	-	→P37

IXP-3N4515/4N4515 3N4510

Arm
length
450mm

Vertical
axis
100mm

Vertical
axis
150mm

■Model Specification Items	IXP	—	<div></div> N	45	<div></div>	—	WA	—	<div></div>	—	P3
	Series	—	Number of axes	Arm length	Vertical axis stroke	Gripper	—	Encoder type	—	Cable length	Applicable controller
		—	3: 3 axes 4: 4 axes	45: 450mm	15 :150mm 15GM :150mm 10GL :100mm	No gripper Medium gripper installed Large gripper installed	—	WA: Battery-less absolute specification	—	N: None P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable Cable length described below	P3: MSEL

*Controller is not included.

*Controller is not included.



*The photograph shows a 4-axis specification.

POINT Note on selection	<ul style="list-style-type: none"> Refer to P. 7 for *1 through *5. The vertical axis has no brake. The unique structure holds the load in place even when the servo is turned off. The vertical axis does not support push-motion control. The allowable push force is 60N under condition of having a buffer such as a spring on a tool or the pressing side. Refer to P. 7 for the work envelope, and P. 8 for the notes on acceleration/deceleration setting.

Robot Specifications									
Axis configuration		Arm length (mm)	Work envelope	Positioning repeatability *1	Maximum operating speed in PTP mode *2			Payload (kg) *3	
					No gripper	With medium gripper (GM)	With large gripper (GL)	Rated	Maximum
Axis 1	Arm 1	260	±127°	±0.03mm	2438mm/s (Composite speed)	2438mm/s (Composite speed)	2060mm/s (Composite speed)	1	3
Axis 2	Arm 2	190	±127°						
Axis 3	Vertical axis	—	150mm (Note 1)	±0.02mm	270mm/s	270mm/s	189mm/s	—	0.5 (Note 3)
Axis 4	Rotational axis	—	±360°	±0.02°	1000°/s	—	—		
	Medium gripper GM (Note 2)	—	14mm (Both fingers)	±0.01mm	—	94mm/s (One finger)	—	—	0.5 (Note 3)
	Large gripper GL (Note 2)	—	22mm (Both fingers)	±0.01mm	—	—	125mm/s (One finger)	—	1.5 (Note 3)

(Note 1) When the large gripper is installed, the work envelope of the vertical axis becomes 100mm. (Note 2) Refer to the gripper selection guide in our ROBO Cylinder General Catalog.

(Note 3) This is the maximum payload on the gripper when it is attached to a SCARA Robot.

Robot Specifications					
		3-axis specification	4-axis specification	3-axis specification	
		No gripper		With medium gripper (GM)	With large gripper (GL)
Encoder type		Battery-less absolute encoder *			
User wiring		AWG24×6, AWG26×5P (shielded) *User cables are sold separately. Refer to the operation manual for detail.		User wiring is not supported because the gripper wiring is used.	
User piping		O.D. ø4, I.D. ø2.5, 3 air tubes (Maximum working pressure 0.8MPa)			
Standard cycle time *4 (sec)	SCARA	0.67		0.67	0.95
	Gripper (full stroke)	—		0.51	0.56
Allowable torque (Axis 4) (N·m)		—	1.4	—	
Allowable moment (N·m)		2.9		Ma: 1.9 Mb: 2.7 Mc: 2.9	Ma: 2.9 Mb: 2.9 Mc: 2.9
Allowable inertial moment from the tip of the vertical axis *5 (kg·m ²)		Rated 0.003 Maximum 0.01	Rated 0.003 Maximum 0.003	Maximum 0.002	Maximum 0.009
Ambient operating temperature/humidity		Temperature 0 ~ 40°C Humidity 20 ~ 85%RH (Non-condensing)			
Unit weight (kg)		13	14	13.5	14

Price List		
Gripper	SCARA 3-axis specification	Standard price
None	IXP-3N4515	—
Medium gripper	IXP-3N4515GM	—
Large gripper	IXP-3N4510GL	—
Gripper	SCARA 4-axis specification	Standard price
None	IXP-4N4515	—
Cable Length <Per Axis*>		
Type	Cable code	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Specified length	X06 (6m) ~ X10 (10m)	—
	X11 (11m) ~ X15 (15m)	—
	X16 (16m) ~ X20 (20m)	—
	R01 (1m) ~ R03 (3m)	—

*The gripper is incremental type

Attached Gripper Types	
IXP-3N4515GM	The medium gripper RCP4-GRSML is installed at the tip of the vertical axis.
IXP-3N4510GL	The large gripper RCP4-GRSLL is installed at the tip of the vertical axis.

Cable Length <Per Axis>		
Type	Cable code	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Specified length	X06 (6m) ~ X10 (10m)	—
	X11 (11m) ~ X15 (15m)	—
	X16 (16m) ~ X20 (20m)	—
Robot cable	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
	R11 (11m) ~ R15 (15m)	—
	R16 (16m) ~ R20 (20m)	—

*The 3-axis specification requires three cables, while the gripper specification and 4-axis specification require four cables.

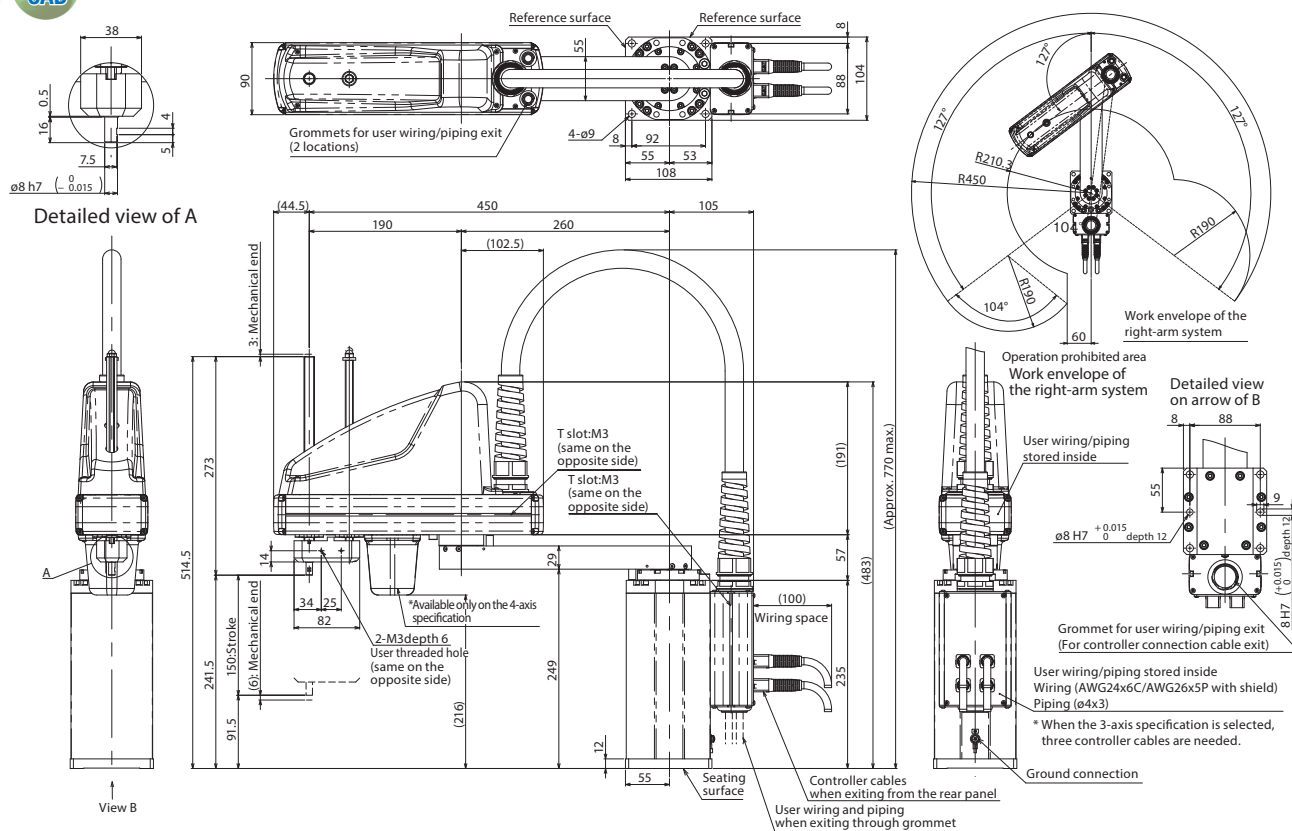
Dimensions

2D
CAD

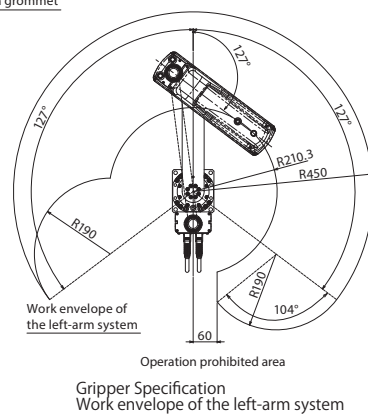
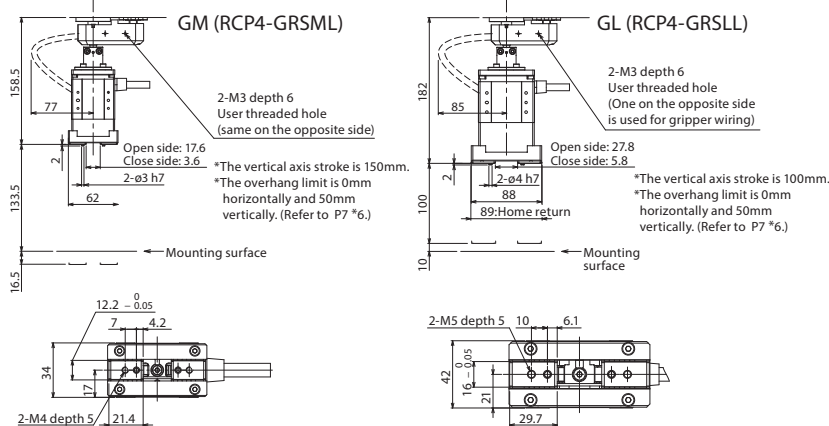
3D
CAD

CAD drawings can be
downloaded from the website.

www.intelligentactuator.com




<Gripper Specification>



Applicable Controller

IXP series robots can operate with the following controllers. Make sure to select the model depending on the purpose.

Name	External view	Maximum number of controlled axes	Supply voltage	Control method				Max. pos. points	Standard price	Reference page
				Position	Pulse train	Program	Network *Option			
MSEL-PCX/PGX		4	Single-phase 100V ~ 230V	-	-	•	DeviceNet CC-Link EtherNet/IP PROFINET EtherCAT	30000	-	→P37

IXP-3N5520/4N5520 3N5515

Arm
length
550mm

Vertical
axis
200mm

Vertical
axis
150mm

■Model Specification Items	IXP	—	<div></div>	N	55		—	WA	—	<div></div>	—	P3	—	<div></div>	
	Series	—	Number of axes	—	Arm length	Vertical axis stroke	—	Gripper	—	Encoder type	—	Cable length	—	Applicable controller	Option
			3: 3 axes 4: 4 axes		55: 550mm	20 :200mm 15GL :150mm 15GW :150mm		No gripper Large gripper installed Extra-large gripper installed		WA: Battery-less absolute specification		N: None P: 1m S: 3m M: 5m	X□□: Specified length R□□: Robot cable Cable length described below	P3: MSEL	B: Brake

*Controller is not included.

*Controller is not included.

*Refer to "Attached Gripper Types" for the types of grippers installed.



POINT Note on selection	•Refer to P. 7 for *1 through *6.
	•Make sure to select the brake option when the payload is 4kg or more.
	•The vertical axis does not support push-motion control.
	•The allowable push force should be 90N under condition of having a buffer such as a spring on a tool or the pressing side.
	•Refer to P. 7 for the work envelope, and P. 8 for the notes on acceleration/deceleration setting.

*The photograph shows a 4-axis specification.

Robot Specifications

Axis configuration		Arm length (mm)	Work envelope	Positioning repeatability *1	Maximum operating speed in PTP mode *2			Payload (kg) *3	
					No gripper	With large gripper (GL)	With extra-large gripper (GW)	Rated	Maximum
Axis 1	Arm 1	260	±127°	±0.04mm	2943mm/s (Composite speed)	2943mm/s (Composite speed)	2943mm/s (Composite speed)	2	6
Axis 2	Arm 2	290	±127°						
Axis 3	Vertical axis	—	200mm (Note 1)	±0.02mm	240mm/s	240mm/s	240mm/s	—	1.5 (Note 3)
Axis 4	Rotational axis	—	±360°	±0.02°	700°/s	—	—		
	Large gripper GL (Note 2)	—	22mm (Both fingers)	±0.01mm	—	125mm/s (One finger)	—	—	2.5 (Note 3)
	Extra-large gripper GW (Note 2)	—	30mm (Both fingers)	±0.01mm	—	—	157mm/s (One finger)	—	2.5 (Note 3)

(Note 1) When the extra-large gripper is installed, the work envelope of the vertical axis becomes 150mm. (Note 2) Refer to the gripper selection guide in our ROBO Cylinder General Catalog.

(Note 3) This is the maximum payload on the gripper when it is attached to a SCARA Robot.

Robot Specifications

		3-axis specification	4-axis	3-axis specification	
		No gripper	specification	With large gripper (GL)	With extra-large gripper (GW)
Encoder type		Battery-less absolute encoder *			
User wiring		AWG24×6, AWG26×5P (shielded) *User cables are sold separately. Refer to the operation manual for detail.		User wiring is not supported because the gripper wiring is used.	
User piping		O.D. ø4, I.D. ø2.5, 3 air tubes Maximum working pressure 0.8MPa			
Standard cycle time *4 (sec)		0.73		0.73 (When transporting 2kg including a gripper)	
Allowable torque (Axis 4) (N·m)		—	3.06	—	
Allowable moment (N·m)		9.4		Ma: 3.8 Mb: 5.5 Mc: 9.4	Ma: 9.4 Mb: 9.4 Mc: 9.4
Allowable inertial moment from the tip of the vertical axis *5 (kg·m ²)		Rated 0.01 Maximum 0.03	Rated 0.01 Maximum 0.01	Maximum 0.026	Maximum 0.024
Ambient operating temperature/humidity		Temperature 0 ~ 40°C Humidity 20 ~ 85%RH (Non-condensing)			
Unit weight (kg)		20	21	21.3	21.9

*The gripper is incremental type

Attached Gripper Types

IXP-3N5515GL	The large gripper RCP4-GRSLL is installed at the tip of the vertical axis.
IXP-3N5515GW	The extra-large gripper RCP4-GRSWL is installed at the tip of the vertical axis.

Option

Name	Option code	Reference page	Standard price
Brake	B	Refer to our ROBO Cylinder General Catalog	—

*Make sure to select the brake option when the payload is 4kg or more.

Price List

Specification	Model number	Standard price
3-axis specification	IXP-3N5520	—
3-axis specification with large gripper	IXP-3N5515GL	—
3-axis specification with extra-large gripper	IXP-3N5515GW	—
4-axis specification	IXP-4N5520	—

Cable Length <Per Axis>

Type	Cable code	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Specified length	X06 (6m) ~ X10 (10m)	—
	X11 (11m) ~ X15 (15m)	—
	X16 (16m) ~ X20 (20m)	—
Robot cable	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
	R11 (11m) ~ R15 (15m)	—
	R16 (16m) ~ R20 (20m)	—

*The 3-axis specification requires three cables, while the gripper specification and 4-axis specification require four cables.

IXP-3N6520/4N6520 3N6515

Arm
length
650mm

Vertical
axis
200mm

Vertical
axis
150mm

■Model Specification Items	IXP	—	<div></div>	N 65		—	WA	—	<div></div>	—	P3	—	<div></div>
	Series	Number of axes	Arm length	Vertical axis stroke	Gripper	Encoder type	Cable length	Applicable controller	Option				
		3: 3 axes 4: 4 axes	65: 650mm	20 :200mm 15GL :150mm 15GW :150mm	No gripper Large gripper installed Extra-large gripper installed	WA: Battery-less absolute specification	N: None P: 1m S: 3m M: 5m	X□□: Specified length R□□: Robot cable Cable length described below	P3: MSEL	Option below See price list			

*Controller is not included.

*Refer to "Attached Gripper Types" for the types of grippers installed.

*Controller is not included.

*Refer to "Attached Gripper Types" for the types of grippers installed.



*The photograph shows a 4-axis specification.



- Refer to P. 7 for *1 through *6.
- Make sure to select the brake option when the payload is 4kg or more.
- The vertical axis does not support push-motion control.
- The allowable push force should be 90N under condition of having a buffer such as a spring on a tool or the pressing side.
- Refer to P. 7 for the work envelope, and P. 8 for the notes on acceleration/deceleration setting.

Robot Specifications

Axis configuration		Arm length (mm)	Work envelope	Positioning repeatability *1	Maximum operating speed in PT mode *2			Payload (kg) *3	
					No gripper	With large gripper (GL)	With extra-large gripper (GW)	Rated	Maximum
Axis 1	Arm 1	360	±127°	±0.04mm	2916mm/s (Composite speed)	2916mm/s (Composite speed)	2916mm/s (Composite speed)	2	6
Axis 2	Arm 2	290	±127°						
Axis 3	Vertical axis	—	200mm (Note 1)	±0.02mm	240mm/s	240mm/s	240mm/s	—	1.5 (Note 3)
Axis 4	Rotational axis	—	±360°	±0.02°	700°/s	—	—		
	Large gripper GL (Note 2)	—	22mm (Both fingers)	±0.01mm	—	125mm/s (One finger)	—		
	Extra-large gripper GW (Note 2)	—	30mm (Both fingers)	±0.01mm	—	—	157mm/s (One finger)	—	2.5 (Note 3)

(Note 1) When the extra-large gripper is installed, the work envelope of the vertical axis becomes 150mm. (Note 2) Refer to the gripper selection guide in our ROBO Cylinder General Catalog.

(Note 3) This is the maximum payload on the gripper when it is attached to a SCARA Robot.

Robot Specifications

		3-axis specification	4-axis	3-axis specification	
		No gripper	specification	With large gripper (GL)	With extra-large gripper (GW)
Encoder type		Battery-less absolute encoder *			
User wiring		AWG24×6, AWG26×5P (shielded) *User cables are sold separately. Refer to the operation manual for detail.		User wiring is not supported because the gripper wiring is used.	
User piping		O.D. ø4, I.D. ø2.5, 3 air tubes Maximum working pressure 0.8MPa			
Standard cycle time *4 (sec)		0.81		0.81 (When transporting 2kg including a gripper)	
Allowable torque (Axis 4) (N·m)		—	3.06	—	
Allowable moment (N·m)		9.4		Ma: 3.8 Mb: 5.5 Mc: 9.4	Ma: 9.4 Mb: 9.4 Mc: 9.4
Allowable inertial moment from the tip of the vertical axis *5 (kg·m ²)		Rated 0.01 Maximum 0.03	Rated 0.01 Maximum 0.01	Maximum 0.026	Maximum 0.024
Ambient operating temperature/humidity		Temperature 0 ~ 40°C Humidity 20 ~ 85%RH (Non-condensing)			
Unit weight (ka)		21	22	22.3	22.9

*The gripper is incremental type

Attached Gripper Types

IXP-3N6515GL	The large gripper RCP4-GRSLL is installed at the tip of the vertical axis.
IXP-3N6515GW	The extra-large gripper RCP4-GRSWL is installed at the tip of the vertical axis.

Option

* Please check the Options reference pages to confirm each option.

Name	Option code	Reference page	Standard price
Brake	B	Refer to our ROBO Cylinder General Catalog	—

*Make sure to select this when the transported object is 4kg or more.

Price List

Specification	Model number	Standard price
3-axis specification	IXP-3N6520	—
3-axis specification with large gripper	IXP-3N6515GL	—
3-axis specification with extra-large gripper	IXP-3N6515GW	—
4-axis specification	IXP-4N6520	—




Cable Length <Per Axis>

Type	Cable code	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Specified length	X06 (6m) ~ X10 (10m)	—
	X11 (11m) ~ X15 (15m)	—
	X16 (16m) ~ X20 (20m)	—
Robot cable	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
	R11 (11m) ~ R15 (15m)	—
	R16 (16m) ~ R20 (20m)	—

*The 3-axis specification requires three cables, while the gripper specification and 4-axis specification require four cables.

IXP- 3C3515/4C3515

**Clean
room
specification**
**Arm
length
350mm**
**Vertical
axis
150mm**
**Model
Specification
Items**

IXP		C	35	15	WA		P3	
Series	Number of axes 3: 3 axes 4: 4 axes	Type C: Cleanroom specification	Arm length 35: 350mm	Vertical axis stroke 15: 150mm	Encoder type WA: Battery-less absolute specification	Cable length N: None P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable Cable length described below Refer to the price list.	Applicable controller P3: MSEL	Option Option below Refer to the price list

uded.

* Please select VLL or VLR for section of the L-shaped joint.

*Controller is not included.

* Please select VLL or VLR for suction of the L-shaped joint.



*The photograph shows a 4-axis specification.



- Refer to P. 7 for *1 through *7.
- The vertical axis has no brake. The unique structure holds the load in place even when the servo is turned off.
- The vertical axis does not support push-motion control.
- The allowable push force is 60N under condition of having a buffer such as a spring on a tool or the pressing side.
- Refer to P. 7 for the work envelope, and P. 8 for the notes on acceleration/deceleration setting.

Robot Specifications

Axis configuration		Arm length (mm)	Work envelope	Positioning repeatability *1	Maximum operating speed in PTP mode *2	Payload (kg) *3	
						Rated	Maximum
Axis 1	Arm 1	160	±127°	±0.03mm	2399mm/s (Composite speed)	1	3
Axis 2	Arm 2	190	±127°				
Axis 3	Vertical axis	—	150mm	±0.02mm	270mm/s		
Axis 4	Rotational axis	—	±360°	±0.02°	1000°/s		

Robot Specifications

	3-axis specification	4-axis specification
Encoder type	Battery-less absolute encoder	
User piping joint	One touch piping joint 1 Applicable tube O.D. ø6	
Standard cycle time *4 (sec)	0.76	
Allowable torque (Axis 4) (N·m)	—	1.4
Allowable moment (N·m)	2.9	
Allowable inertial moment from the tip of the vertical axis *5 (kg·m ²)	Rated 0.003 Maximum 0.01	Rated 0.003 Maximum 0.003
Ambient operating temperature/humidity	Temperature 0 ~ 40°C Humidity 20 ~ 85%RH (Non-condensing)	
Unit weight (kg)	13	14
Piping joint for suction	One touch piping joint 3 Applicable tubes O.D. ø6	
Suction pressure	-3 ~ -5kPa	
Suction power *7	12Nℓ/min	
cleanliness class	Class10 (Fed. Std. 209D)	
	Equivalent to Class 3.5 (ISO 14644-1)	

Price List (Standard price)

Specification	Model number	Standard price
3-axis specification	IXP-3C3515	—
4-axis specification	IXP-4C3515	—

Cable Length (Standard price) <Per Axis*>

Type	Cable code	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Specified length	X06 (6m) ~ X10 (10m)	—
	X11 (11m) ~ X15 (15m)	—
	X16 (16m) ~ X20 (20m)	—
Robot cable	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
	R11 (11m) ~ R15 (15m)	—
	R16 (16m) ~ R20 (20m)	—

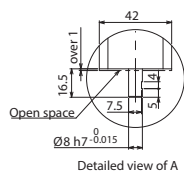
* The 3-axis specification requires three cables, while the gripper specification and 4-axis specification require four cables.

Dimensions

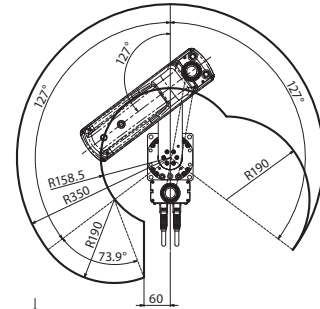
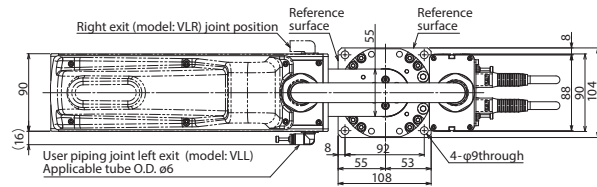


CAD drawings can be downloaded from the website.

www.intelligentactuator.com

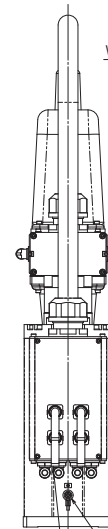
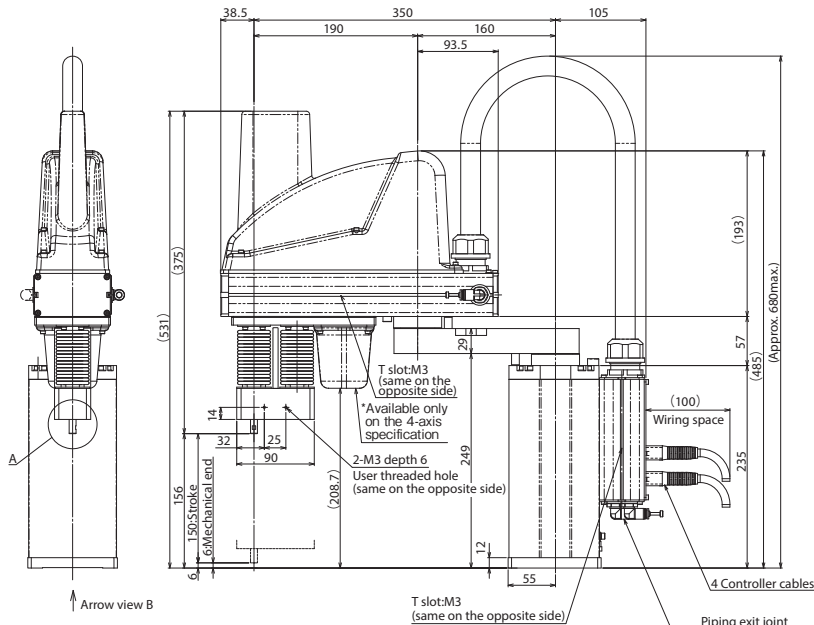


Detailed view of A



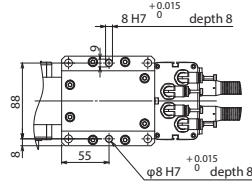
Operation prohibited area

Work envelope of the right-arm system

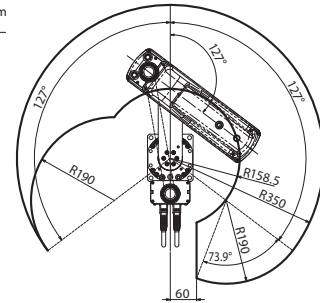


Ground connection

When the 3-axis specification is selected, three controller cables are needed.



Detailed view on arrow of B










Operation prohibited area

Work envelope of the left-arm system

Applicable Controller

IXP series robots can operate with the following controllers. Make sure to select the model depending on the purpose.

Name	External view	Maximum number of controlled axes	Supply voltage	Control method				Max. pos. points	Standard price	Reference page
				Position	Pulse train	Program	Network *Option			
MSEL-PCX/PGX		4	Single-phase 100V ~ 230V	—	—	●	<div>   </div> <div>   </div> <div>   </div>	30000	—	→P37

IXP- 3C4515/4C4515

**Clean
room
specification**
**Arm
length
450mm**
**Vertical
axis
150mm**

■Model Specification Items	IXP	<input type="checkbox"/>	C	45	15	WA	<input type="checkbox"/>	P3	<input type="checkbox"/>
	Series	Number of axes 3: 3 axes 4: 4 axes	Type C: Cleanroom specification	Arm length 45: 450mm	Vertical axis stroke 15: 150mm	Encoder type WA: Battery-less absolute specification	Cable length N: None P: 1m S: 3m M: 5m	Applicable controller P3: MSEL	Option Option below Refer to the price list

*Controller is not included.

* Please select VLL or VLR for suction of the L-shaped joint.



*The photograph shows a 4-axis specification.

POINT Note on selection	<ul style="list-style-type: none"> Refer to P. 7 for *1 through *7. The vertical axis has no brake. The unique structure holds the load in place even when the servo is turned off. The vertical axis does not support push-motion control. The allowable push force is 60N under condition of having a buffer such as a spring on a tool or the pressing side. Refer to P. 7 for the work envelope, and P. 8 for the notes on acceleration/deceleration setting.

Robot Specifications

Axis configuration		Arm length (mm)	Work envelope	Positioning repeatability *1	Maximum operating speed in PTP mode *2	Payload (kg) *3	
						Rated	Maximum
Axis 1	Arm 1	260	±127°	±0.03mm	2194mm/s (Composite speed)	1	3
Axis 2	Arm 2	190	±127°				
Axis 3	Vertical axis	—	150mm	±0.02mm	270mm/s		
Axis 4	Rotational axis	—	±360°	±0.02°	1000°/s		

Robot Specifications

	3-axis specification	4-axis specification
Encoder type	Battery-less absolute encoder	
User piping joint	One touch piping joint 1 Applicable tube O.D. ø6	
Standard cycle time *4 (sec)	0.74	
Allowable torque (Axis 4) (N·m)	—	1.4
Allowable moment (N·m)	2.9	
Allowable inertial moment from the tip of the vertical axis *5 (kg·m ²)	Rated 0.003 Maximum 0.01	Rated 0.003 Maximum 0.003
Ambient operating temperature/humidity	Temperature 0 ~ 40°C Humidity 20 ~ 85%RH (Non-condensing)	
Unit weight (kg)	14	15
Piping joint for suction	One touch piping joint 3 Applicable tubes O.D. ø6	
Suction pressure	-3 ~ -5kPa	
Suction power *7	12Nℓ/min	
cleanliness class	Class10 (Fed. Std. 209D)	
	Equivalent to Class 3.5 (ISO 14644-1)	

Price List (Standard price)

Specification	Model number	Standard price
3-axis specification	IXP-3C4515	—
4-axis specification	IXP-4C4515	—

Cable Length (Standard price) <Per Axis*>

Type	Cable code	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Specified length	X06 (6m) ~ X10 (10m)	—
	X11 (11m) ~ X15 (15m)	—
	X16 (16m) ~ X20 (20m)	—
Robot cable	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
	R11 (11m) ~ R15 (15m)	—
	R16 (16m) ~ R20 (20m)	—

* The 3-axis specification requires three cables, while the gripper specification and 4-axis specification require four cables.

Option price (Standard price)

* Please check the Options reference pages to confirm each option.

Name	Option code	Reference page	Standard price
L-shaped joint left side exit	VLL	→P5	—
L-shaped joint right side exit	VLR	→P5	—

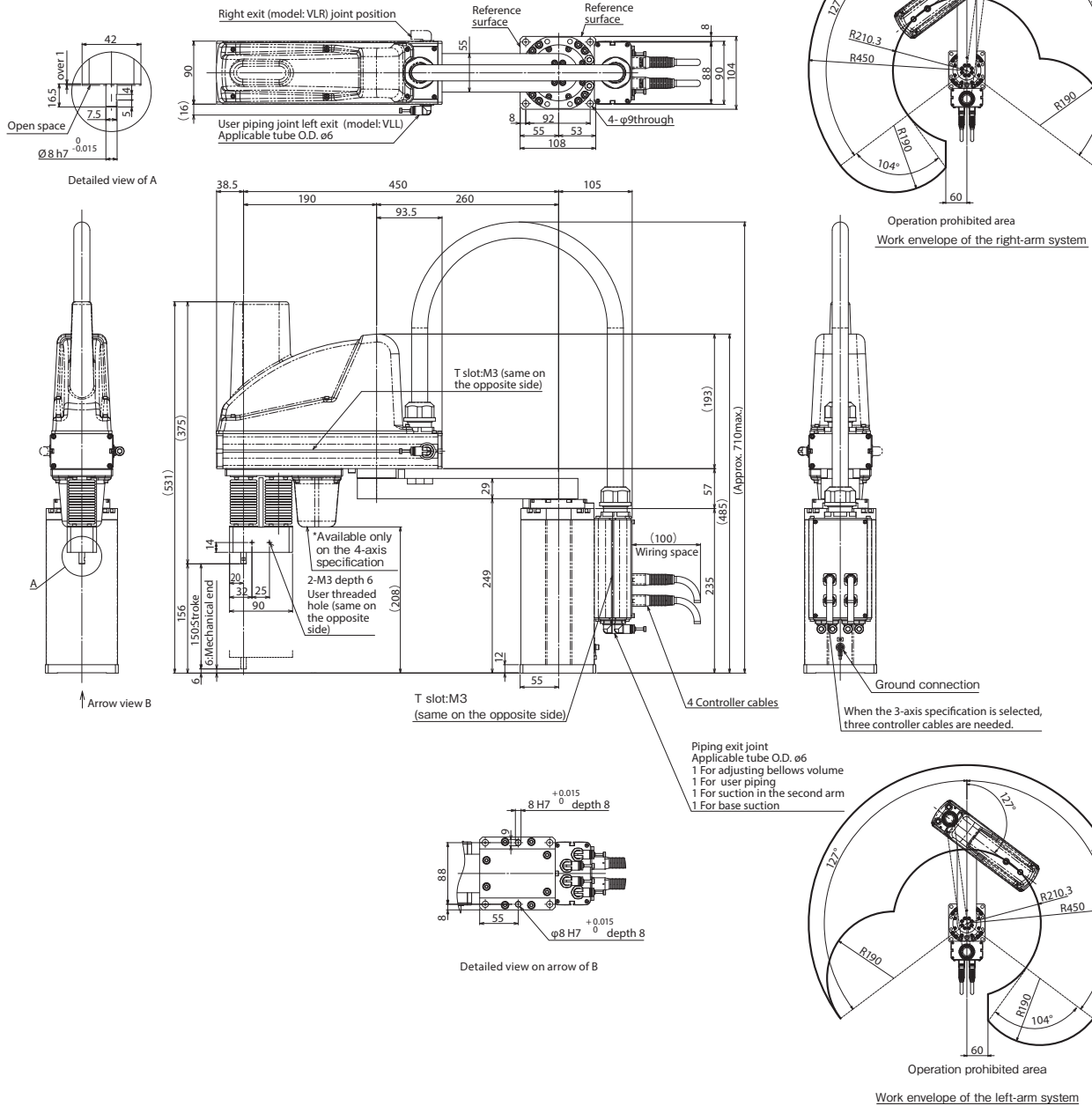
Dimensions

2D CAD

3D CAD


CAD drawings can be downloaded from the website.

www.intelligentactuator.com



Applicable Controller

IXP series robots can operate with the following controllers. Make sure to select the model depending on the purpose.

Name	External view	Maximum number of controlled axes	Supply voltage	Control method				Max. pos. points	Standard price	Reference page
				Position	Pulse train	Program	Network *Option			
MSEL-PCX/PGX		4	Single-phase 100V ~ 230V	-	-	•	DeviceNet CC-Link EtherNet/IP PROFINET EtherCAT	30000	-	→P37

IXP- 3C5520/4C5520

**Clean
room
specification**
**Arm
length
550mm**
**Vertical
axis
200mm**

Model Specification Items	IXP	C	55	20	WA		P3	
Series	Number of axes	Type	Arm length	Vertical axis stroke	Encoder type	Cable length	Applicable controller	Option
	3: 3 axes 4: 4 axes	C: Cleanroom specification	55: 550mm	20: 200mm	WA: Battery-less absolute specification	N: None P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable Cable length described below Refer to the price list.	P3: MSEL	Option below Refer to the price list

*Controller is not included.

* Please select VLL or VLR for suction of the L-shaped joint.



*The photograph shows a 4-axis specification.



- Refer to P. 7 for *1 through *7.
- Make sure to select the brake option when the payload is 4kg or more.
- The vertical axis does not support push-motion control.
- The allowable push force should be 90N under condition of having a buffer such as a spring on a tool or the pressing side.
- Refer to P. 7 for the work envelope, and P. 8 for the notes on acceleration/deceleration setting.

Robot Specifications

Axis configuration		Arm length (mm)	Work envelope	Positioning repeatability *1	Maximum operating speed in PTP mode *2	Payload (kg) *3	
						Rated	Maximum
Axis 1	Arm 1	260	±127°	±0.04mm	2501mm/s (Composite speed)	2	6
Axis 2	Arm 2	290	±127°				
Axis 3	Vertical axis	—	200mm	±0.02mm	240mm/s		
Axis 4	Rotational axis	—	±360°	±0.02°	700°/s		

Robot Specifications

	3-axis specification	4-axis specification
Encoder type	Battery-less absolute encoder	
User piping joint	One touch piping joint 1 Applicable tube O.D. ø6	
Standard cycle time *4 (sec)	0.79	
Allowable torque (Axis 4) (N-m)	—	3.06
Allowable moment (N-m)	9.4	
Allowable inertial moment from the tip of the vertical axis *5 (kg-m ²)	Rated 0.01 Maximum 0.03	Rated 0.01 Maximum 0.01
Ambient operating temperature/humidity	Temperature 0 ~ 40°C Humidity 20 ~ 85%RH (Non-condensing)	
Unit weight (kg)	21	23
Piping joint for suction	One touch piping joint 3 Applicable tubes O.D. ø6	
Suction pressure	-3 ~ -5kPa	
Suction power *7	12Nℓ/min	
cleanliness class	Class10 (Fed. Std. 209D)	
	Equivalent to Class 3.5 (ISO 14644-1)	

Option price (Standard price)

* Please check the Options reference pages to confirm each option.

Name	Option code	Reference page	Standard price
Brake	B	Refer to our ROBO Cylinder General Catalog	—
L-shaped joint left side exit	VLL	→P5	—
L-shaped joint right side exit	VLR	→P5	—

* Make sure to select this when the transported object is 4kg or more.

Price List (Standard price)

Specification	Model number	Standard price
3-axis specification	IXP-3C5520	—
4-axis specification	IXP-4C5520	—

Cable Length (Standard price) <Per Axis*>

Type	Cable code	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Specified length	X06 (6m) ~ X10 (10m)	—
	X11 (11m) ~ X15 (15m)	—
	X16 (16m) ~ X20 (20m)	—
Robot cable	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
	R11 (11m) ~ R15 (15m)	—
	R16 (16m) ~ R20 (20m)	—

* The 3-axis specification requires three cables, while the gripper specification and 4-axis specification require four cables.

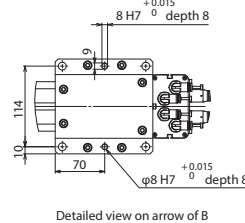
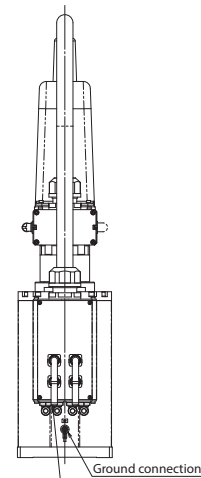
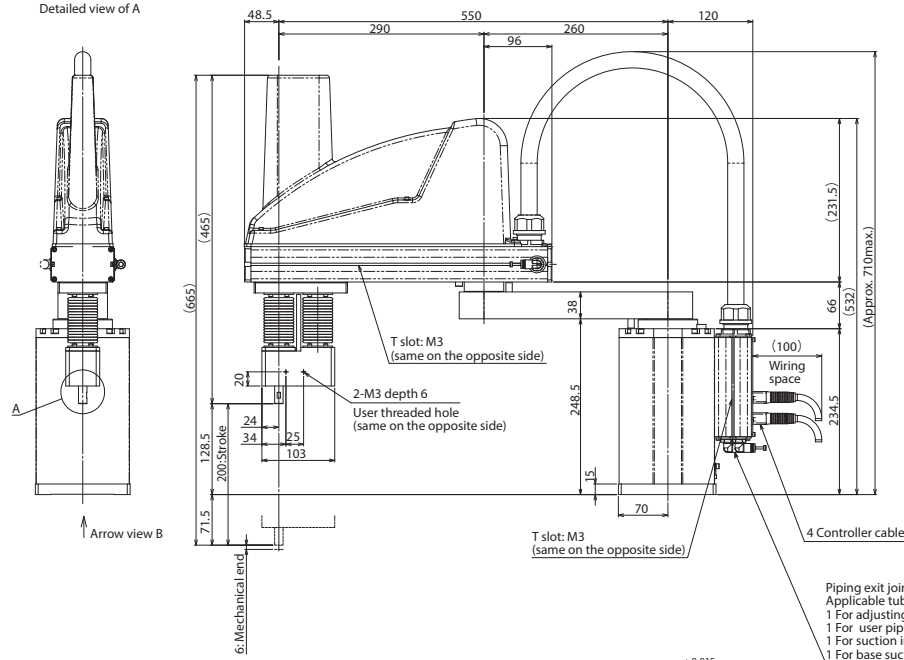
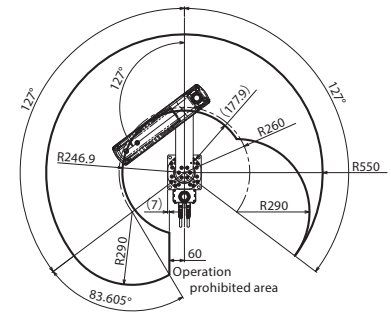
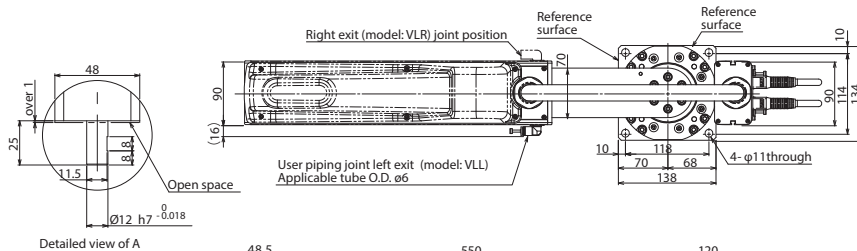
Dimensions

2D CAD

3D CAD

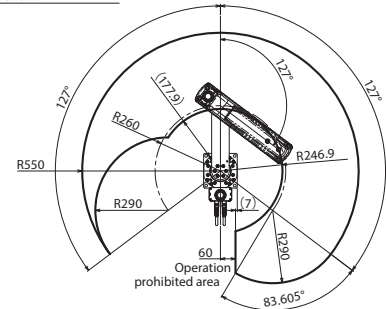
CAD drawings can be downloaded from the website.

www.intelligentactuator.com




Detailed view on arrow of B

Operation prohibited area
Work envelope of the left-arm system



Applicable Controller

IXP series robots can operate with the following controllers. Make sure to select the model depending on the purpose.

Name	External view	Maximum number of controlled axes	Supply voltage	Control method				Max. pos. points	Standard price	Reference page
				Position	Pulse train	Program	Network *Option			
MSEL-PCX/PGX		4	Single-phase 100V ~ 230V	-	-	•	DeviceNet CC-Link EtherNet/IP PROFINET EtherCAT	30000	-	→P37

IXP- 3C6520/4C6520

Clean
room
specification

Arm
length
650mm

Vertical
axis
200mm

■Model Specification Items	IXP	<div></div>	C	65	20	—	WA	—	<div></div>	—	P3	—	<div></div>
	Series	Number of axes	Type	Arm length	Vertical axis stroke	—	Encoder type	—	Cable length	—	Applicable controller	—	Option
	3: 3 axes 4: 4 axes	C: Cleanroom specification	65: 650mm 20: 200mm	—	WA: Battery-less absolute specification	—	N: None P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable Cable length described below Refer to the price list.	—	P3: MSEL	—	Option below Refer to the price list		
*Controller is not included.													
* Please select VLL or VLR for section of the L-shaped joint.													

*Controller is not included.



*The photograph shows a 4-axis specification.



- Refer to P. 7 for *1 through *7.
- Make sure to select the brake option when the payload is 4kg or more.
- The vertical axis does not support push-motion control.
- The allowable push force should be 90N under condition of having a buffer such as a spring on a tool or the pressing side.
- Refer to P. 7 for the work envelope, and P. 8 for the notes on acceleration/deceleration setting.

Robot Specifications

Axis configuration		Arm length (mm)	Work envelope	Positioning repeatability *1	Maximum operating speed in PTP mode *2	Payload (kg) *3	
						Rated	Maximum
Axis 1	Arm 1	360	±127°	±0.04mm	2314mm/s (Composite speed)	2	6
Axis 2	Arm 2	290	±127°				
Axis 3	Vertical axis	—	200mm	±0.02mm	240mm/s		
Axis 4	Rotational axis	—	±360°	±0.02°	700°/s		

Robot Specifications

	3-axis specification	4-axis specification
Encoder type	Battery-less absolute encoder	
User piping joint	One touch piping joint 1 Applicable tube O.D. ø6	
Standard cycle time *4 (sec)	0.93	
Allowable torque (Axis 4) (N-m)	—	3.06
Allowable moment (N-m)	9.4	
Allowable inertial moment from the tip of the vertical axis *5 (kg-m ²)	Rated 0.01 Maximum 0.03	Rated 0.01 Maximum 0.01
Ambient operating temperature/humidity	Temperature 0 ~ 40°C Humidity 20 ~ 85%RH (Non-condensing)	
Unit weight (kg)	24	25
Piping joint for suction	One touch piping joint 3 Applicable tubes O.D. ø6	
Suction pressure	-3 ~ -5kPa	
Suction power *7	12Nℓ/min	
cleanliness class	Class10 (Fed. Std. 209D)	
	Equivalent to Class 3.5 (ISO 14644-1)	

Option price (Standard price)

* Please check the Options reference pages to confirm each option.

Name	Option code	Reference page	Standard price
Brake	B	Refer to our ROBO Cylinder General Catalog	—
L-shaped joint left side exit	VLL	→P5	—
L-shaped joint right side exit	VLR	→P5	—

* Make sure to select this when the transported object is 4kg or more.

Price List (Standard price)

Specification	Model number	Standard price
3-axis specification	IXP-3C6520	—
4-axis specification	IXP-4C6520	—

Cable Length (Standard price) <Per Axis*>

Type	Cable code	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Specified length	X06 (6m) ~ X10 (10m)	—
	X11 (11m) ~ X15 (15m)	—
	X16 (16m) ~ X20 (20m)	—
Robot cable	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
	R11 (11m) ~ R15 (15m)	—
	R16 (16m) ~ R20 (20m)	—
		—

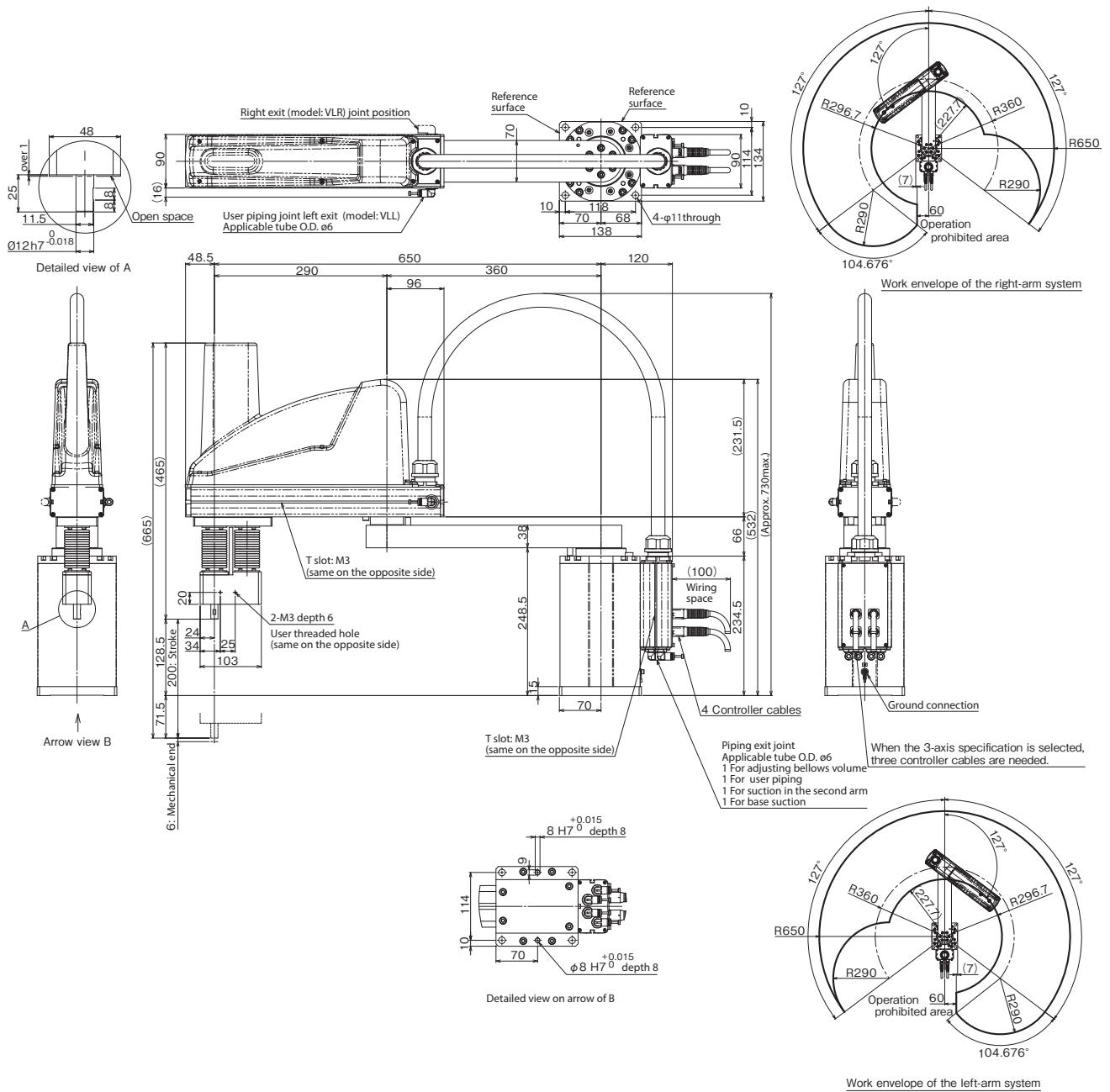
* The 3-axis specification requires three cables, while the gripper specification and 4-axis specification require four cables.

Dimensions










CAD drawings can be downloaded from the website.

www.intelligentactuator.com



Applicable Controller

IXP series robots can operate with the following controllers. Make sure to select the model depending on the purpose.

Name	External view	Maximum number of controlled axes	Supply voltage	Control method				Max. pos. points	Standard price	Reference page
				Position	Pulse train	Program	Network *Option			
MSEL-PCX/PGX		4	Single-phase 100V ~ 230V	—	—	●	     	30000	—	→P37

IXP- 3W3515/4W3515

Dust/
Splash-
proof
specification

Arm
length
350mm

Vertical
axis
150mm

■Model Specification Items	IXP	<div></div>	W	35	15	—	WA	—	<div></div>	—	P3
	Series	Number of axes	Type	Arm length	Vertical axis stroke	—	Encoder type	—	Cable length	—	Applicable controller
		3: 3 axes 4: 4 axes	W: Dust/ Splash-proof specification	35: 350mm	15: 150mm		WA: Battery-less absolute specification		3L: 3m 5L: 5m Cable length described below Refer to the price list.		P3: MSEL

*Controller is not included.



*The photograph shows a 4-axis specification.



- Refer to P. 7 for *1 through *8.
- The vertical axis has no brake. The unique structure holds the load in place even when the servo is turned off.
- The vertical axis does not support push-motion control.
- The allowable push force is 60N under condition of having a buffer such as a spring on a tool or the pressing side.
- Refer to P. 7 for the work envelope, and P. 8 for the notes on acceleration/deceleration setting.

Robot Specifications

Axis configuration		Arm length (mm)	Work envelope	Positioning repeatability *1	Maximum operating speed in PTP mode *2	Payload (kg) *3	
						Rated	Maximum
Axis 1	Arm 1	160	±127°	±0.03mm	2399mm/s (Composite speed)	1	3
Axis 2	Arm 2	190	±127°				
Axis 3	Vertical axis	—	150mm	±0.02mm	270mm/s		
Axis 4	Rotational axis	—	±360°	±0.02°	1000°/s		

Robot Specifications

	3-axis specification	4-axis specification
Encoder type	Battery-less absolute encoder	
Standard cycle time *4 (sec)	0.76	
Allowable torque (Axis 4) (N·m)	—	1.4
Allowable moment (N·m)	2.9	
Allowable inertial moment from the tip of the vertical axis *5 (kg·m ²)	Rated 0.003 Maximum 0.01	Rated 0.003 Maximum 0.003
Ambient operating temperature/humidity	Temperature 0 ~ 40°C Humidity 20 ~ 85%RH (Non-condensing)	
Unit weight (kg)	17	18
Protection class	IP65	
Piping joint for purge	One touch piping joint Applicable tube O.D. ø6	
Air purge pressure *8	1kPa (Clean dry air)	
Purge flow rate	12Nℓ/min	

Price List (Standard price)

Specification	Model number	Standard price
3-axis specification	IXP-3W3515	—
4-axis specification	IXP-4W3515	—

Cable Length (Standard price) <Per Unit>

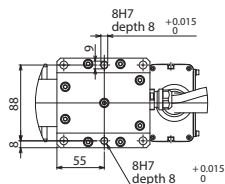
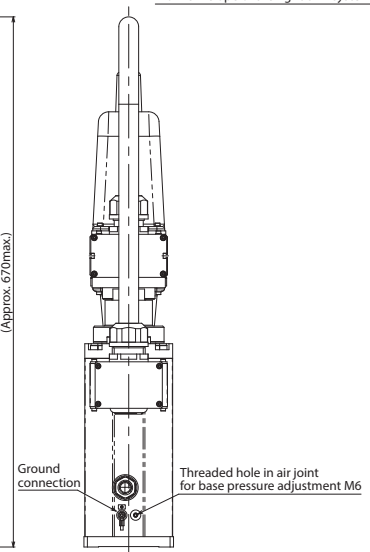
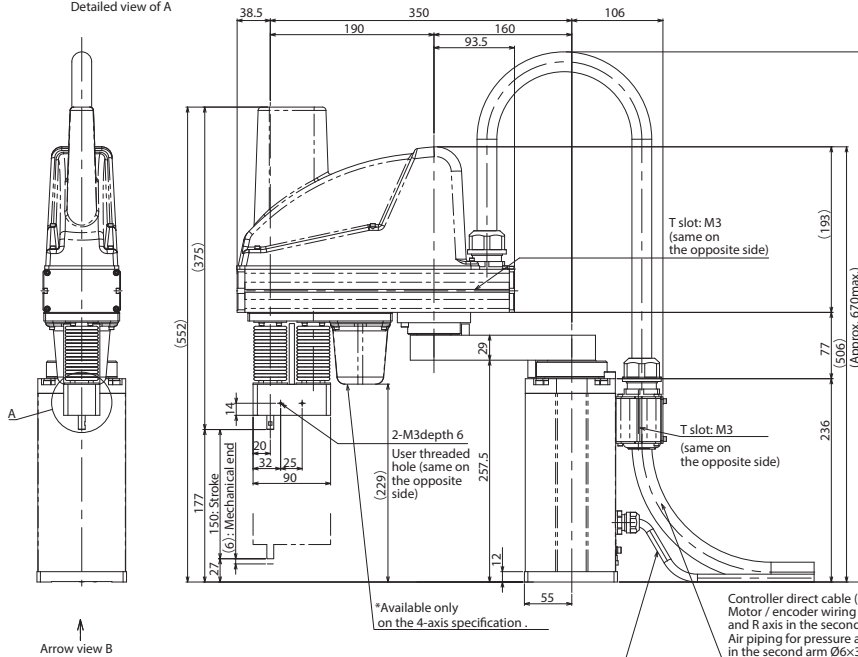
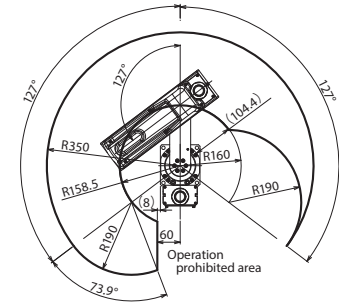
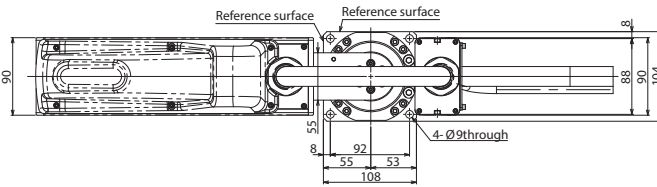
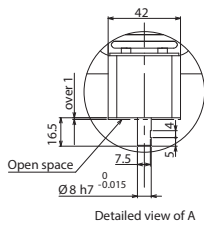
Cable code	Standard price
3L (3m)	—
5L (5m)	—

Dimensions



CAD drawings can be downloaded from the website.

www.intelligentactuator.com



Applicable Controller

IXP series robots can operate with the following controllers. Make sure to select the model depending on the purpose.

Name	External view	Maximum number of controlled axes	Supply voltage	Control method				Max. pos. points	Standard price	Reference page
				Position	Pulse train	Program	Network *Option			
MSEL-PCX/PGX		4	Single-phase 100V ~ 230V	—	—	•	DeviceNet CC-Link EtherNet/IP PROFINET EtherCAT	30000	—	→P37

IXP- 3W4515/4W4515

Dust/
Splash-
proof
specification

Arm
length
450mm

Vertical
axis
150mm

■Model Specification Items	IXP	<div></div>	W	45	15	—	WA	—	<div></div>	—	P3
	Series	Number of axes	Type	Arm length	Vertical axis stroke	—	Encoder type	—	Cable length	—	Applicable controller
		3: 3 axes 4: 4 axes	W: Dust/ Splash-proof specification	45: 450mm	15: 150mm		WA: Battery-less absolute specification		3L: 3m 5L: 5m Cable length described below Refer to the price list.		P3: MSEL

*Controller is not included.



*The photograph shows a 4-axis specification.



- Refer to P. 7 for *1 through *8.
- The vertical axis has no brake. The unique structure holds the load in place even when the servo is turned off.
- The vertical axis does not support push-motion control.
- The allowable push force is 60N under condition of having a buffer such as a spring on a tool or the pressing side.
- Refer to P. 7 for the work envelope, and P. 8 for the notes on acceleration/deceleration setting.

Robot Specifications

Axis configuration		Arm length (mm)	Work envelope	Positioning repeatability *1	Maximum operating speed in PTP mode *2	Payload (kg) *3	
						Rated	Maximum
Axis 1	Arm 1	260	±127°	±0.03mm	2194mm/s (Composite speed)	1	3
Axis 2	Arm 2	190	±127°				
Axis 3	Vertical axis	—	150mm	±0.02mm	270mm/s		
Axis 4	Rotational axis	—	±360°	±0.02°	1000°/s		

Robot Specifications

	3-axis specification	4-axis specification
Encoder type	Battery-less absolute encoder	
Standard cycle time *4 (sec)	0.74	
Allowable torque (Axis 4) (N·m)	—	1.4
Allowable moment (N·m)	2.9	
Allowable inertial moment from the tip of the vertical axis *5 (kg·m ²)	Rated 0.003 Maximum 0.01	Rated 0.003 Maximum 0.003
Ambient operating temperature/humidity	Temperature 0 ~ 40°C Humidity 20 ~ 85%RH (Non-condensing)	
Unit weight (kg)	18	19
Protection class	IP65	
Piping joint for purge	One touch piping joint Applicable tube O.D. ø6	
Air purge pressure *8	1kPa (Clean dry air)	
Purge flow rate	12Nℓ/min	

Price List (Standard price)

Specification	Model number	Standard price
3-axis specification	IXP-3W4515	—
4-axis specification	IXP-4W4515	—

Cable Length (Standard price) <Per Unit>

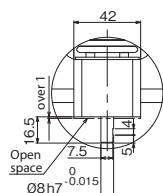
Cable code	Standard price
3L (3m)	—
5L (5m)	—

Dimensions

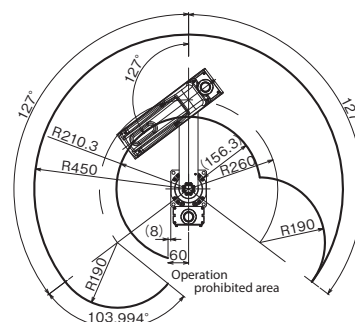
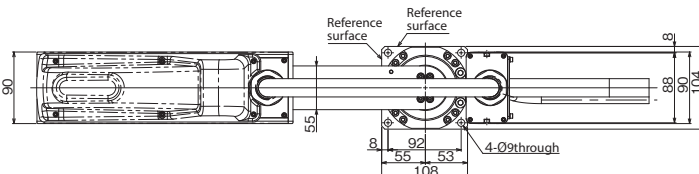


CAD drawings can be downloaded from the website.

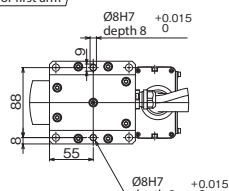
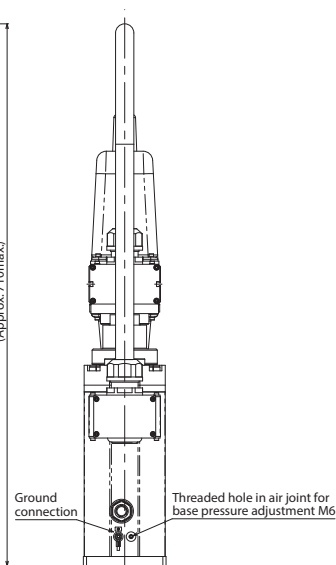
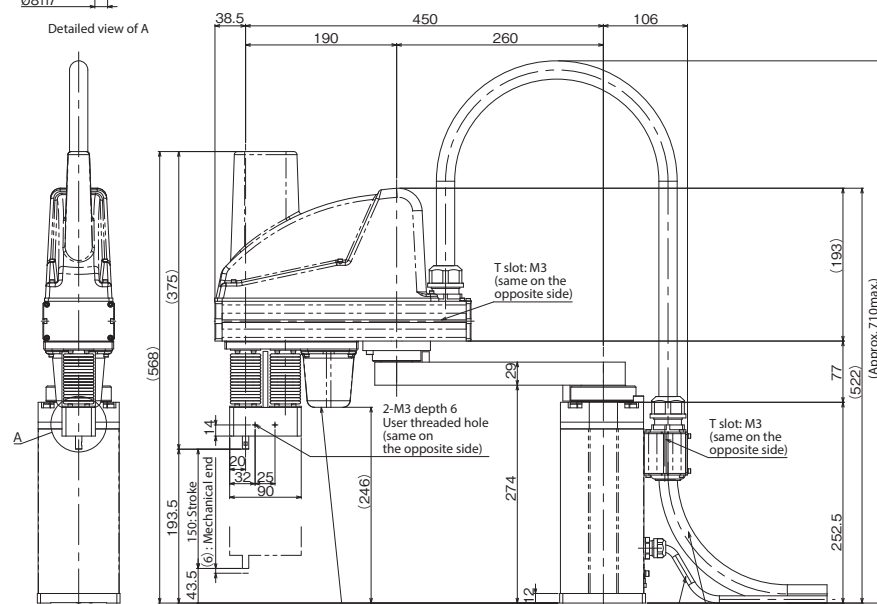
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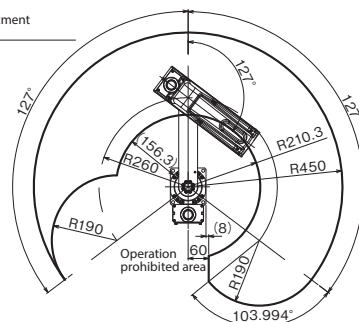
Detailed view of A



Work envelope of the right-arm system










Detailed view on arrow of B



Work envelope of the left-arm system

Applicable Controller

IXP series robots can operate with the following controllers. Make sure to select the model depending on the purpose.

Name	External view	Maximum number of controlled axes	Supply voltage	Control method				Max. pos. points	Standard price	Reference page
				Position	Pulse train	Program	Network *Option			
MSEL-PCX/PGX		4	Single-phase 100V ~ 230V	—	—	●	<div>   </div> <div>   </div> <div>   </div>	30000	—	→P37

IXP- 3W5520/4W5520

Dust/
Splash-
proof
specification

Arm
length
550mm

Vertical
axis
200mm

■Model Specification Items	IXP	<input type="checkbox"/>	W	55	20	WA	<input type="checkbox"/>	P3	<input type="checkbox"/>
	Series	Number of axes 3: 3 axes 4: 4 axes	Type W: Dust/ Splash-proof specification	Arm length 55: 550mm	Vertical axis stroke 20: 200mm	Encoder type WA: Battery-less absolute specification	Cable length 3L: 3m 5L: 5m	Applicable controller P3: MSEL	Option Option below Refer to the price list

*Controller is not included.

* Please select VLL or VLR for suction of the L-shaped joint.



*The photograph shows a 4-axis specification.

POINT Note on selection	•Refer to P. 7 for *1 through *8.
	•Make sure to select the brake option when the payload is 4kg or more.
	•The vertical axis does not support push-motion control.
	•The allowable push force should be 90N under condition of having a buffer such as a spring on a tool or the pressing side.
	•Refer to P. 7 for the work envelope, and P. 8 for the notes on acceleration/deceleration setting.

Robot Specifications

Axis configuration		Arm length (mm)	Work envelope	Positioning repeatability *1	Maximum operating speed in PTP mode *2	Payload (kg) *3	
						Rated	Maximum
Axis 1	Arm 1	260	±127°	±0.04mm	2501mm/s (Composite speed)	2	6
Axis 2	Arm 2	290	±127°				
Axis 3	Vertical axis	—	200mm	±0.02mm	240mm/s		
Axis 4	Rotational axis	—	±360°	±0.02°	700°/s		

Robot Specifications

	3-axis specification	4-axis specification
Encoder type	Battery-less absolute encoder	
Standard cycle time *4 (sec)	0.79	
Allowable torque (Axis 4) (N-m)	—	3.06
Allowable moment (N-m)	9.4	
Allowable inertial moment from the tip of the vertical axis *5 (kg-m ²)	Rated 0.01 Maximum 0.03	Rated 0.01 Maximum 0.01
Ambient operating temperature/humidity	Temperature 0 ~ 40°C Humidity 20 ~ 85%RH (Non-condensing)	
Unit weight (kg)	25	27
Protection class	IP65	
Piping joint for purge	One touch piping joint Applicable tube O.D. ø6	
Air purge pressure *8	1kPa (Clean dry air)	
Purge flow rate	12NL/min	

Price List (Standard price)

Specification	Model number	Standard price
3-axis specification	IXP-3W5520	—
4-axis specification	IXP-4W5520	—

Cable Length (Standard price) <Per Unit>

Cable code	Standard price
3L (3m)	—
5L (5m)	—

Option price (Standard price)

* Please check the Options reference pages to confirm each option.

Name	Option code	Reference page	Standard price
Brake	B	Refer to our ROBO Cylinder General Catalog	—

* Make sure to select this when the transported object is 4kg or more.

IXP- 3W6520/4W6520

Dust/
Splash-
proof
specification

Arm
length
650mm

Vertical
axis
200mm

■Model Specification Items	IXP	W	65	20	WA		P3		
	Series	Number of axes	Type	Arm length	Vertical axis stroke	Encoder type	Cable length	Applicable controller	Option
	3: 3 axes 4: 4 axes	W: Dust/ Splash-proof specification	65: 650mm 20: 200mm	WA: Battery-less absolute specification	3L: 3m 5L: 5m	Cable length described below Refer to the price list.	P3: MSEL	Option below Refer to the price list	

*Controller is not included.



*The photograph shows a 4-axis specification.



- Refer to P. 7 for *1 through *8.
- Make sure to select the brake option when the payload is 4kg or more.
- The vertical axis does not support push-motion control.
- The allowable push force should be 90N under condition of having a buffer such as a spring on a tool or the pressing side.
- Refer to P. 7 for the work envelope, and P. 8 for the notes on acceleration/deceleration setting.

Robot Specifications

Axis configuration		Arm length (mm)	Work envelope	Positioning repeatability *1	Maximum operating speed in PTP mode *2	Payload (kg) *3	
						Rated	Maximum
Axis 1	Arm 1	360	±127°	±0.04mm	2314mm/s (Composite speed)	2	6
Axis 2	Arm 2	290	±127°				
Axis 3	Vertical axis	—	200mm	±0.02mm	240mm/s		
Axis 4	Rotational axis	—	±360°	±0.02°	700°/s		

Robot Specifications

	3-axis specification	4-axis specification
Encoder type	Battery-less absolute encoder	
Standard cycle time *4 (sec)	0.93	
Allowable torque (Axis 4) (N·m)	—	3.06
Allowable moment (N·m)	9.4	
Allowable inertial moment from the tip of the vertical axis *5 (kg·m ²)	Rated 0.01 Maximum 0.03	Rated 0.01 Maximum 0.01
Ambient operating temperature/humidity	Temperature 0 ~ 40°C Humidity 20 ~ 85%RH (Non-condensing)	
Unit weight (kg)	27	29
Protection class	IP65	
Piping joint for purge	One touch piping joint Applicable tube O.D. ø6	
Air purge pressure *8	1kPa (Clean dry air)	
Purge flow rate	12NL/min	

Price List (Standard price)

Specification	Model number	Standard price
3-axis specification	IXP-3W6520	—
4-axis specification	IXP-4W6520	—

Cable Length (Standard price) <Per Unit>

Cable code	Standard price
3L (3m)	—
5L (5m)	—

Option price (Standard price)

* Please check the Options reference pages to confirm each option.

Name	Option code	Reference page	Standard price
Brake	B	Refer to our ROBO Cylinder General Catalog	—


* Make sure to select this when the transported object is 4kg or more.

MSEL

MSEL-PCX/PGX Program Controllers for PowerCON SCARA



Model List

Name	Controllers for PowerCON SCARA			
External view				
Type name	PCX3	PGX3	PCX4	PGX4
Type	3-axis standard specification	3-axis safety category compliant specification	4-axis standard specification	4-axis safety category compliant specification
Standard price	—	—	—	—
Connected actuator	IXP 3-axis specification		IXP 3-axis specification + additional axis (including gripper specification) IXP 4-axis specification	
Standard I/O	NPN, PNP (16IN/16OUT)			
Expansion I/O	NPN, CC-Link, DeviceNet, PROFIBUS-DP, EtherNet/IP, EtherCAT, PROFINET, RS232C, RS485C, IA network			
Number of positions	30,000			
Power-supply voltage	Single-phase AC100 ~ 230V			

Model

MSEL — **WAI** — **WAI** — **4**

Controller type SCARA type Encoder type Options Motor type Encoder type Options Standard I/O type Expansion I/O type PIO cable type Power-supply voltage Actuator mounting specification

PCX3 3-axis standard specification
PGX3 3-axis safety category compliant specification
PCX4 4-axis standard specification
PGX4 4-axis safety category compliant specification

B Brake
 *Only available for arm length 550/650. Make sure to select this when the transported object is 4kg or more.

3N1808 For IXP-3N1808
4N1808 For IXP-4N1808
3N2508 For IXP-3N2508
4N2508 For IXP-4N2508
3N2508GM For IXP-3N2508GM
3□3515 For IXP-3□3515
4□3515 For IXP-4□3515
3N3515GM For IXP-3N3515GM
3N3510GL For IXP-3N3510GL
3□4515 For IXP-3□4515
4□4515 For IXP-4□4515
3N4515GM For IXP-3N4515GM
3N4510GL For IXP-3N4510GL
3□5520 For IXP-3□5520
4□5520 For IXP-4□5520
3N5515GL For IXP-3N5515GL
3N5515GW For IXP-3N5515GW
3□6520 For IXP-3□6520
4□6520 For IXP-4□6520
3N6515GL For IXP-3N6515GL
3N6515GW For IXP-3N6515GW

20P 20 □ stepper motor
20SP 20 □ stepper motor (for RA2C, RA2BC)
28P 28 □ stepper motor
28SP 28 □ stepper motor (for RA3C)
35P 35 □ stepper motor
42P 42 □ stepper motor
42SP 42 □ stepper motor (RCP4W-RA5C and RCP4W-RA6C for high thrust specification)
56P 56 □ stepper motor

(For 20P:20 □ stepper motor)
 (Note)
 Basically the motor type has the same symbol as the motor type of the actuator to be connected, but there are models that do not match the motor type of some controllers and actuators. Please note that the appropriate models are listed below.
 <For 28AP actuator>
 •Controller Motor type "28SP" RCP2-RA3C
 *Simple absolute specification cannot be connected.

NP NPN specification
PN PNP specification

E Not used
NP Expansion PIO board (NPN specification)
DV DeviceNet board
DV2 DeviceNet board (*) (with 2-way connector)
CC CC-Link board
CC2 CC-Link board (with 2-way connector)
PR PROFIBUS-DP board
EP EtherNet/IP board
EC EtherCAT Connection specification
PRT PROFINET IO Connection specification
SE1 RS232C connection board
SE2 RS485C connection board
IA IA network connection board (**)

(None) No option
B Brake
HS Home check sensor (*)

4 AC100 ~ 230V

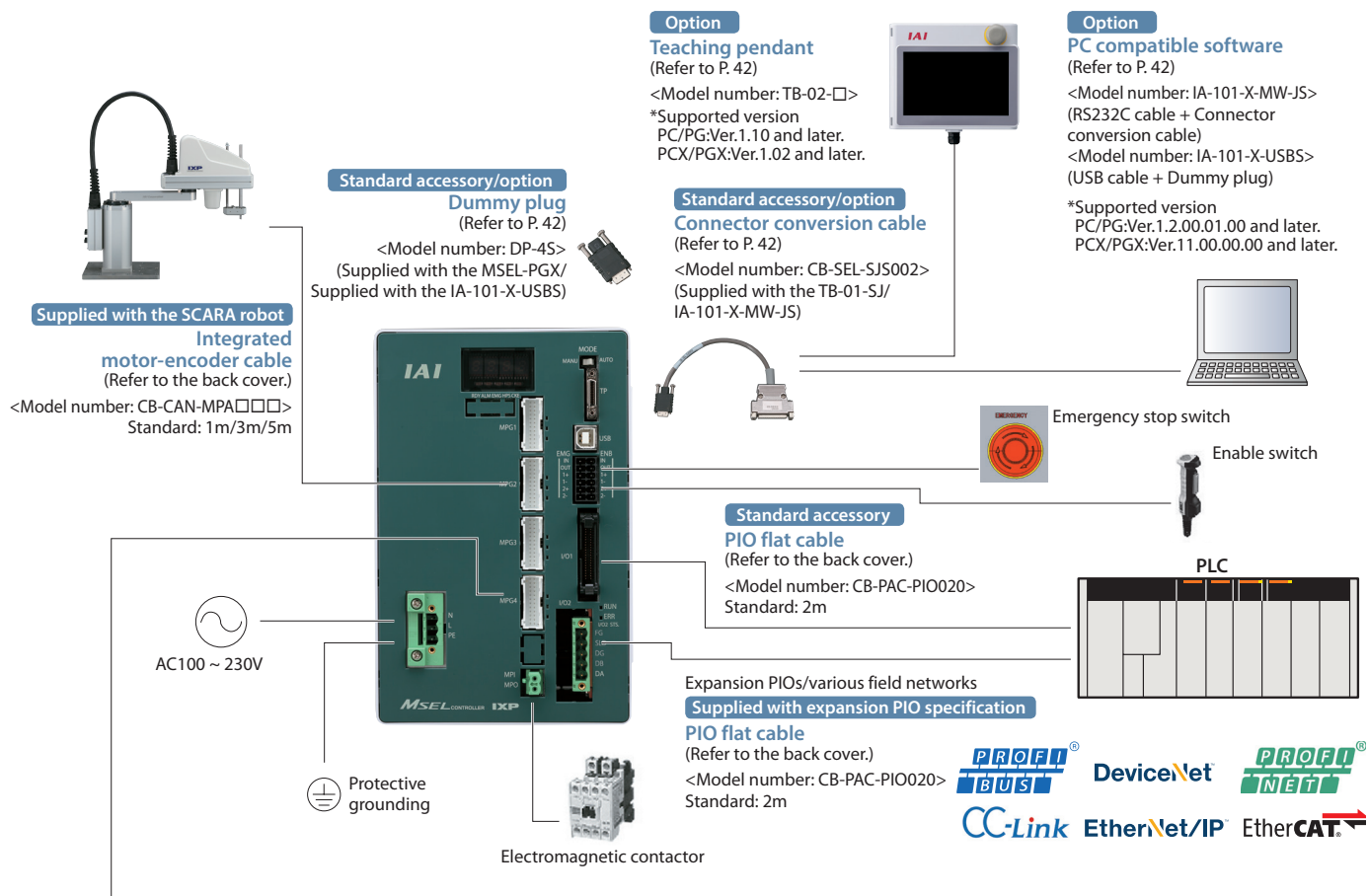
(None) Screw fixing specification
DN DIN rail mounting specification

0 No cable
2 2m (standard)
3 3m
5 5m

*The following codes are entered in □.
 N: Standard specification
 C: Cleanroom specification
 W: Dust/Splash-proof specification

*An additional axis can be selected only when the controller is of the 4-axis type and SCARA robot is of the 3-axis type (without gripper).
 * If CC2 or DV2 is selected, a 2-way connector is supplied for branch wiring.
 ** It is required to connect to EIOU (contact to IAI for more detail).

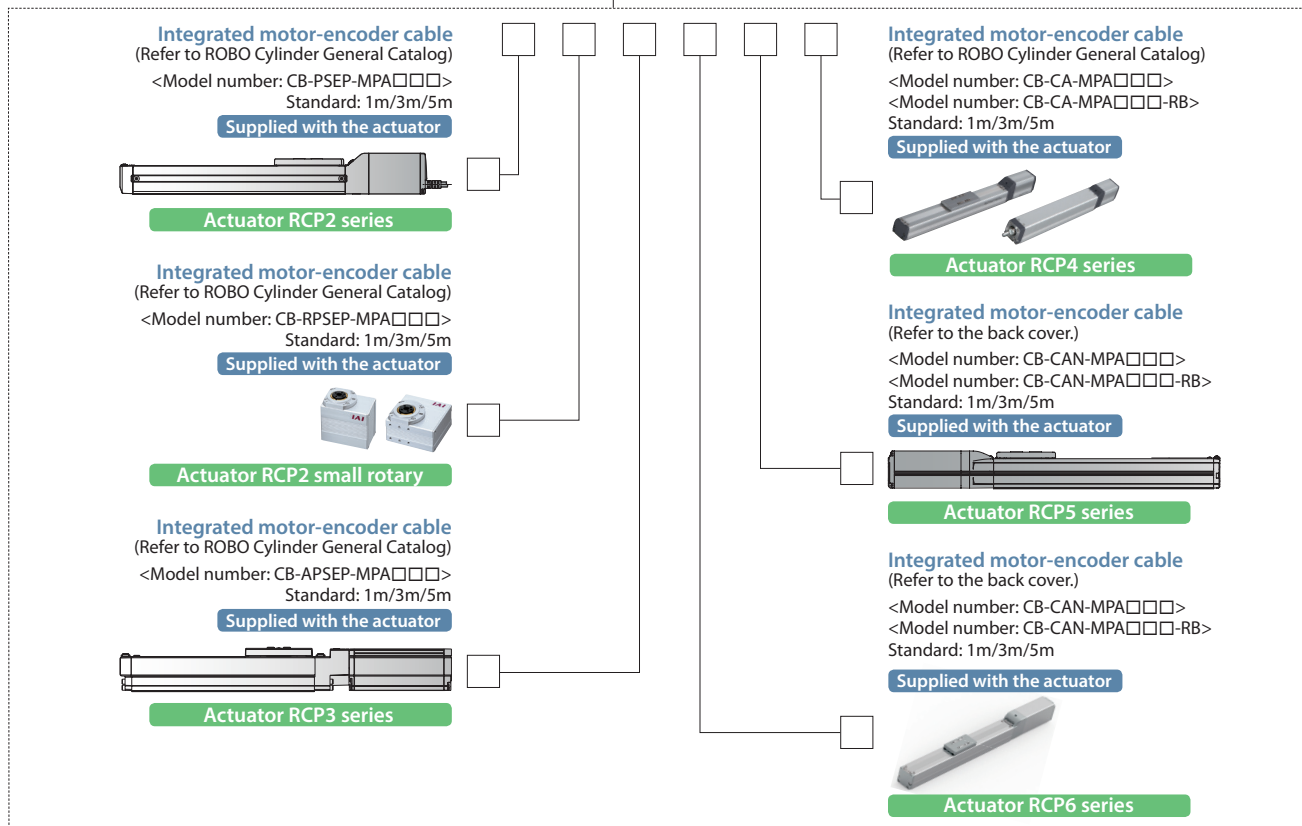
System Configuration



<Actuator for Additional Axis>

(Can be connected to a SCARA robot of 3-axis specification)

*Wire the emergency stop switch, enable switch, electromagnetic contactor, etc., as necessary. The same applies to the factory settings (shorting).



Basic Controller Specific tions

Specification item			Contents
Power-supply input voltage			Single-phase AC100 ~ 230 V ±10%
Power-supply current			2.9A typ. (AC100V), 1.4A typ. (AC200V), 1.2A typ. (AC230V)
Power-supply frequency range			50/60Hz±5%
Motor type			Stepper motor (servo control)
Supported encoder			Incremental encoder / Battery-less absolute encoder
Data storage device			FlashROM/FRAM
Number of program steps			9,999
Number of positions			30,000
Number of programs			255
Number of multi-tasks			16
Operation mode	Serial communications		○
	Program		○
SIO interface	Communication method		RS232 (asynchronous communications)
	Baud rate		9.6 , 19.2 , 38.4 , 57.6 , 76.8 , 115.2kbps
	Live wire connection	TP port	×
		USB	○
Standard PIO interface	Input Specification	Number of input points	16 points
		Input voltage	DC24V±10%
		Input current	7mA/circuit
		ON voltage	DC16V Min.
		OFF voltage	DC5V Max.
		Leak current	Allowable leak current: 1mA max.
		Insulation method	Photocoupler insulation
	Output specification	Number of output points	16 points
		Load voltage	DC24V±10%
		Maximum current	100mA per point, 400mA per 8 points (Note 1)
		Saturated voltage	3V Max.
		Leak current	0.1mA Max.
Insulation method		Photocoupler insulation	
Compliant expansion I/O interface			Expanded PIO NPN specification (16IN/16OUT)
			Expanded PIO PNP specification (16IN/16OUT)
			CC-Link (Remote device station) Device Net, PROFIBUS-DP, PROFINET IO, EtherCAT, EtherNet/IP, IA Net, RS232C, RS485
Calendar/clock function	Retention time		Approx. 10 days
	Charge time		Approx. 100 hours (fully charged) * Data can be retained even when the batteries are not fully charged.
Protective functions			Overcurrent, abnormal temperature, low fan speed monitoring, encoder disconnection, etc.
Operating temperature range			0 ~ 40°C
Operating humidity range			85% RH max. (non-condensing, non-freezing)
Installation	Installation direction		Installed vertically (exhaust side up)
	Installation method		Mounted with screws or using a DIN rail
Rush current			15A typ. (AC100 V), 30A typ. (AC200 V): 5ms max. (Ambient temperature 25°C/No cycling of the power)
Air cooling method			Forced air cooling
External dimensions			Width 130mm x Height 195mm x Depth 125mm
Mass			Approx. 1,400g

(Note 1) The total load current shall be 400mA for every eight points from standard I/O No. 316. (The maximum current per point shall be 100mA.)

PIO Signal Chart

Pin layouts for standard PIO connector/expansion PIO connector

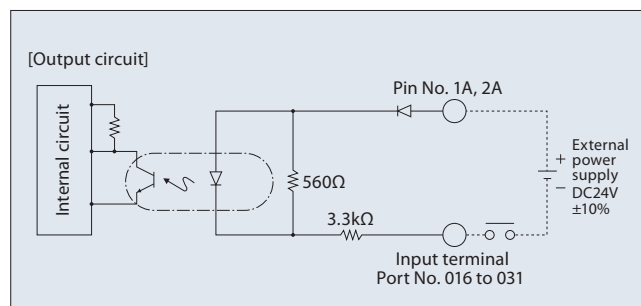
Pin No.	Category	Assignment	Pin No.	Category	Assignment
1A	24V	P24	1B	Output	OUT0
2A	24V	P24	2B		OUT1
3A	—	—	3B		OUT2
4A	—	—	4B		OUT3
5A	Input	IN0	5B		OUT4
6A		IN1	6B		OUT5
7A		IN2	7B		OUT6
8A		IN3	8B		OUT7
9A		IN4	9B		OUT8
10A		IN5	10B		OUT9
11A		IN6	11B		OUT10
12A		IN7	12B		OUT11
13A		IN8	13B		OUT12
14A		IN9	14B		OUT13
15A		IN10	15B		OUT14
16A		IN11	16B		OUT15
17A		IN12	17B	—	—
18A		IN13	18B	—	—
19A		IN14	19B	0V	N
20A		IN15	20B	0V	N

Internal Circuits for Standard I/Os (NPN Specifications)

[Input section] External input specifications (NPN specifications)

Item	Specifications
Input voltage	DC24V $\pm 10\%$
Input current	7mA/circuit
On/Off voltage	On voltage: DC16.0V min. Off voltage: DC5.0V max.
Insulation method	Photocoupler insulation

* The port numbers in the circuit diagram below represent the factory-set port numbers.
 * When the input is off, the allowable leak current is 1 mA max.

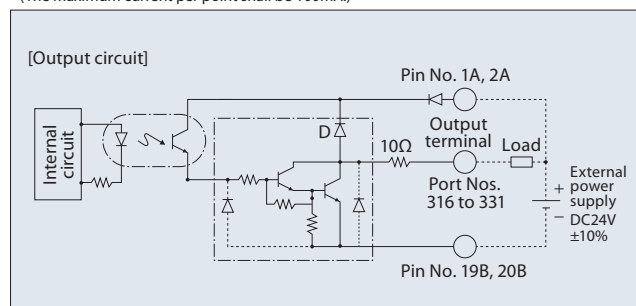


* For the standard I/Os (PNP specifications), refer to the operation manual.

[Output section] External output specifications (NPN specifications)

Item	Specifications	Uses
Load voltage	DC24V $\pm 10\%$	TD62084 (or equivalent).
Maximum load current	100mA/point, 400mA/8 points Note)	
Leak current	0.1mA/point max.	
Insulation method	Photocoupler insulation	

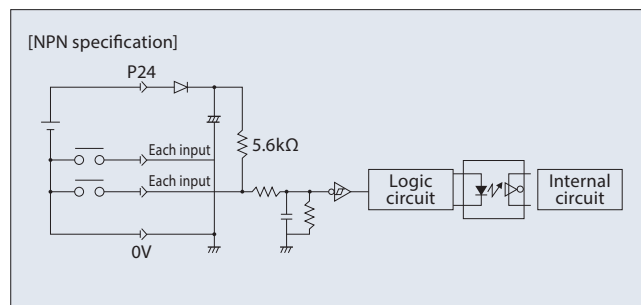
* The port numbers in the circuit diagram below represent the factory-set port numbers.
 Note: The total load current shall be 400 mA for every eight points from standard I/O No. 316. (The maximum current per point shall be 100mA.)



Internal Circuits for Expansion I/Os (NPN Specifications)

[Input section] External input specifications

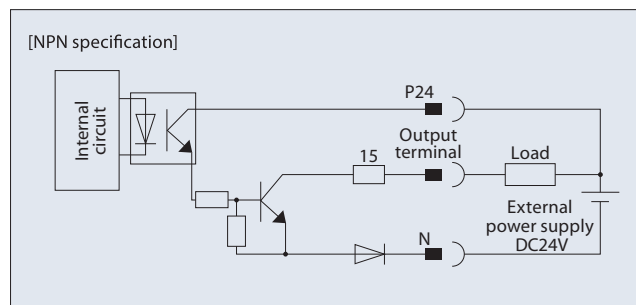
Item	Specifications
Number of input points	16 points
Input voltage	DC24V $\pm 10\%$
Input current	4mA/circuit
On/Off voltage	On voltage: DC18V (3.5mA) min. Off voltage: DC6V (1mA) max.
Insulation method	Photocoupler insulation

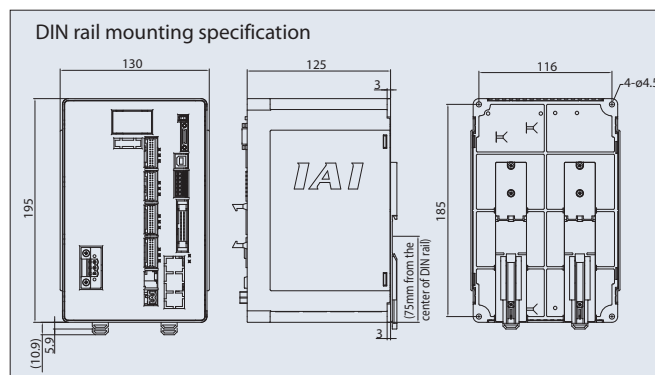


* For the standard I/Os (PNP specifications), refer to the operation manual.

[Output section] External output specifications

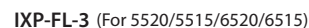
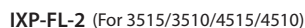
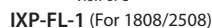
Item	Specifications
Number of output points	16 points
Rated load current	DC24V $\pm 10\%$
Maximum current	50mA/circuit
Insulation method	Photocoupler insulation





Flange

Features: It is a tool used to attach an object on the arm tip on the Z-axis.



Model number	Standard price	Weight
IXP-FL-3	—	290g

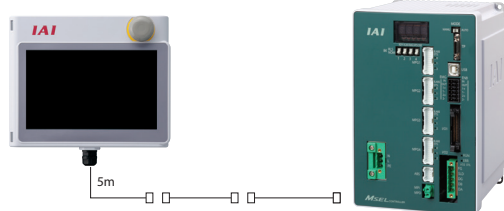
Options

Touch panel teaching pendant

Features: Teaching device for positioning input, test operation, and monitoring.

Model number: TB-02-□

Configuration:



Specifications

Rated voltage	24V DC
Power consumption	3.6W or less (150mA or less)
Ambient operating temperature	0~40°C
Ambient operating humidity	20~85%RH (Non-condensing)
Environmental resistance	IP20
Weight	470g (only TB-02 unit)

Dummy Plug

Features:

This plug is required for the safety category specification (MSEL-PGX) and when the MSEL is operated using a USB cable.
(The MSEL-PGX type and PC compatible software IA-101-X-USBS comes with this dummy plug.)

Model number: DP-4S

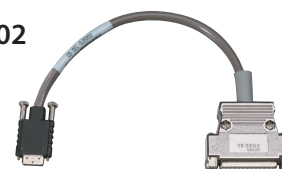


Connector Conversion Cable

Features:

This cable is used to convert the D-sub 25-pin connector of the teaching pendant or RS232C cable to the MSEL teaching connector.
(The TB-01-SJ and IA-101-X-MW-JS comes with this connector conversion cable.)

Model number: CB-SEL-SJS002



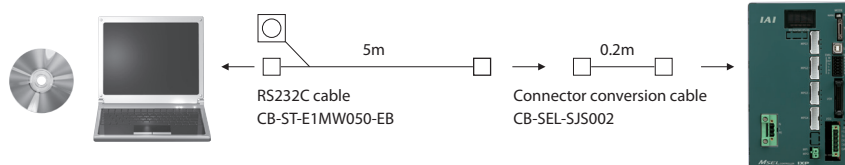
PC Compatible Software (Windows Only)

Features:

The startup support software provides program/position input, test operation and monitoring functions, among others. With its enhanced functions required for debugging, this software helps shorten the startup time.

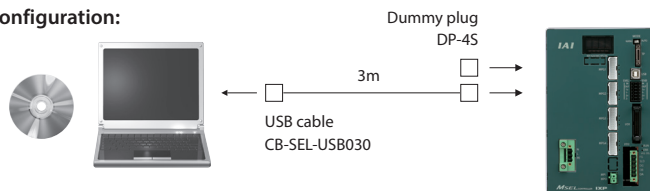
Model number: IA-101-X-MW-JS (RS232C cable + Connector conversion cable)

Configuration:

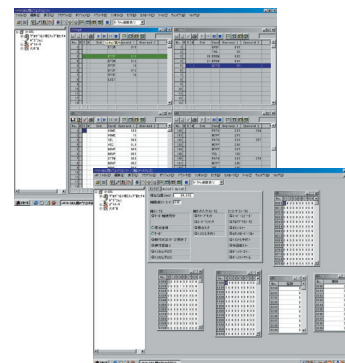


Model number: IA-101-X-USBS (USB cable + Dummy plug)

Configuration:



Windows :
XP SP2/Vista/7/8 /10 or later



The MSEL-PCX/PGX are supported by
Ver. 11.00.00.00 or later.

The CB-ST-E1MW050-EB cannot be used when "Building an enable system that uses a system I/O connector and external power supply" or "Building a redundant safety circuit." (The CB-ST-A1MW050-EB must be used instead.)

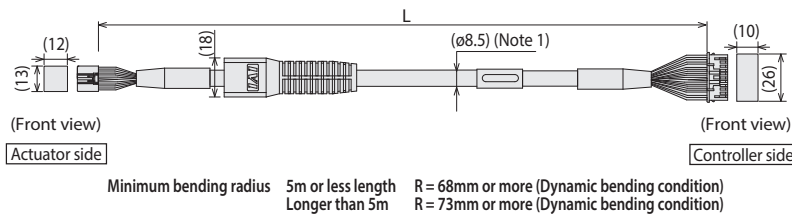
Service Parts

Please refer to the models listed below when arrangements such as cable replacement are needed after purchasing the product.

(Check in the general catalog for the cable for added axis.)

Model Number	CB-CAN-MPA□□□	Integrated Motor-Encoder Cable	for
Model Number	CB-CAN-MPA□□□-RB	Integrated Motor-Encoder Robot Cable	IXP/RCP4-SA3/RA3/RCP5

* Please indicate cable length (L) in □□□, (e.g. 080 = 8m) maximum 20m.



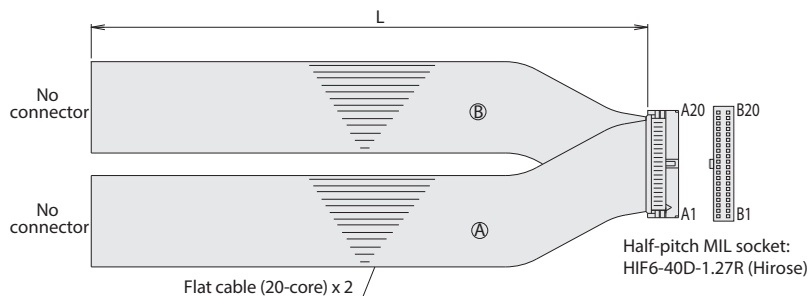
* The robot cable is designed for flex-resistance: Please use the robot cable if the cable has to be installed through a cable track.

(Note 1) If the cable is 5m or longer, ø9.1 cable diameter applies for a non-robot cable and ø10 for a robot cable.

Pin No.	Signal name	Pin No.	Signal name
3	øA/U	1	øA
5	VMM/V	2	VMM
10	ø A/W	3	øB
9	øB/-	4	VMM
4	VMM/-	5	ø A
15	ø B/-	6	ø B
8	LS+/BK+	7	LS+
14	LS-/BK-	5	LS-
12	-/A+	11	SA (mABS)
17	-/A-	12	SB (mABS)
1	A+/B+	13	A+
6	A-/B-	14	A-
11	B+/Z+	15	B+
16	B-/Z-	16	B-
20	BK+/LS+	9	BK+
2	BK-/LS-	10	BK-
21	LS_GND	17	VCC
7	VPS	19	GND
15	VCC	15	VPS
13	GND	20	LS_GND
19	—	22	—
22	BAT+	21	— (CFVcc)
23	—	23	—
24	FG	24	FG

Model Number	CB-PAC-PIO□□□	PIO Flat Cable	for
Model Number	CB-PAC-PIO□□□	PIO Flat Cable	MSEL/PCON-CA/MSEP-LC

* Please indicate cable length (L) in □□□, (e.g. 080 = 8m) maximum 10m.



HIF6-40D-1.27R

No.	Signal name	Cable color	Wiring	No.	Signal name	Cable color	Wiring
A1	24V	Brown-1	Flat cable (A) (crimped) AWG28	B1	OUT0	Brown-3	Flat cable (B) (crimped) AWG28
A2	24V	Red-1		B2	OUT1	Red-3	
A3	—	Orange-1		B3	OUT2	Orange-3	
A4	—	Yellow-1		B4	OUT3	Yellow-3	
A5	IN0	Green-1		B5	OUT4	Green-3	
A6	IN1	Blue-1		B6	OUT5	Blue-3	
A7	IN2	Purple-1		B7	OUT6	Purple-3	
A8	IN3	Gray-1		B8	OUT7	Gray-3	
A9	IN4	White-1		B9	OUT8	White-3	
A10	IN5	Black-1		B10	OUT9	Black-3	
A11	IN6	Brown-2		B11	OUT10	Brown-4	
A12	IN7	Red-2		B12	OUT11	Red-4	
A13	IN8	Orange-2		B13	OUT12	Orange-4	
A14	IN9	Yellow-2		B14	OUT13	Yellow-4	
A15	IN10	Green-2		B15	OUT14	Green-4	
A16	IN11	Blue-2		B16	OUT15	Blue-4	
A17	IN12	Purple-2		B17	—	Purple-4	
A18	IN13	Gray-2		B18	—	Gray-4	
A19	IN14	White-2		B19	0V	White-4	
A20	IN15	Black-2		B20	0V	Black-4	

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The information contained in this product brochure may change without prior notice due to product improvements.

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