IAI
Quality and Innovation

HORIZONTAL ARTICULATED ROBOT IX

www.linearachsensysteme.de

Ihr Ansprechpartner für IAI-Produkte:

AS Schlüter
Automation und Sensorik GmbH

IX VISUAL INDEX

[SCARA Series]

Standard Type NNN

The standard type combines the best performance and user-friendliness in its class. The selectable arm length (250 mm to 800 mm) provides the flexibility to accommodate a wide range of applications.

High-Speed Type NSN New!

The high-speed type offers enhanced performance in high-speed operation by combining a high-output motor with the standard body. It helps reduce cycle times.

Dustproof/ Splash-proof Type NNW

The dustproof/splash-proof type adopts a protective structure conforming to IP65. This robot can be used in environments subject to powder dust or water splashes.

Wall-Mount Type TNN

This robot is mounted on a wall for operation. The space below the robot can be utilized effectively, so you will have more freedom in designing your equipment.

Wall-Mount Inverse Type UNN

This robot is the same as the wall-mounting type (TNN), but it is installed upside down. UNN is ideal for applications where the robot must handle loads located above it.

Ceiling Mount Type HNN

This robot is mounted on a ceiling for operation. The space below the robot can be utilized effectively, so you will have more freedom in designing your equipment.

Ceiling Mount Inverse Type (Tabletop Mount) INN

This robot is the same as the ceiling mount type (HNN), but it is installed upside down. INN is ideal for applications where the robot must handle loads located above it.

Clean Room Type NNC

This robot generates minimal particles and is ideal for operation in a clean room environment. The air inside the robot can be vacuumed if conformance to cleanliness class 10 is required.

New Horizontal Articulated Robot IX Series Achieves Class Top Performance and High Cost Performance

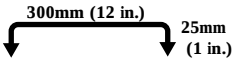
The IX Series achieved the best-in-class specification in every aspect—from high-speed performance and load capacity to positioning repeatability—after reviewing and redesigning all the components of the conventional IH Series robots. The IX Series also outdistances its rivals in user-friendliness, lineup and cost performance.

High-Performance

1. Highest Speed, Load Capacity and Accuracy in Its Class

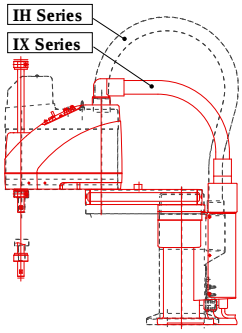
Standard cycle time: 0.44 sec (*1)
Positioning repeatability: ±0.01 mm/±0.005° (*2)
Maximum load capacity: 20 kg (*3)

*1 The standard cycle time refers to the time required to cycle back and forth over a vertical distance of 25 mm and horizontal distance of 300 mm (rough positioning).
*2 If the arm length is 700/800, the repeatability becomes ±0.015 mm/±0.005°.
*3 Based on an arm length of 700/800.



2. Compact and Rigid

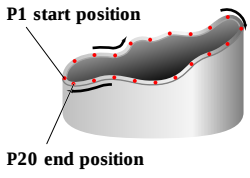
The IX Series is significantly smaller compared with the conventional IH Series robots.



The IX Series achieved enhanced rigidity in a lightweight body by using aluminum extruded material for arm 1. This helped reduce the inertial load.

3. Markedly Improved Tracing Accuracy and Interpolation Function

The IX Series offers a markedly improved tracing accuracy as a result of higher controller processing speed and rigid robot construction.
The robot can also perform three-dimensional arc/pass motions to allow for easy, accurate dispensing operation.



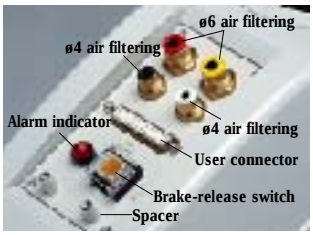
Command	Operand 1	Operand 2
PATH	P1	P20

Path movement that consists of many points can be implemented with a single program line.

Easy

4. Greater Ease of Use

An easy-to-use D-sub/25-pin connector is provided on top of the robot for user wiring. The user can also connect two ø4 tubes and two ø6 tubes to meet various tubing needs.
The brake-release switch on the robot lets you release the brake even when the controller power is off (*1).
The alarm indicator alerts you on each error generated in the robot (*2).



*1 24 VDC power must be supplied regardless of whether or not the brake-release switch is used.
*2 The alarm indicator must be wired by the user.

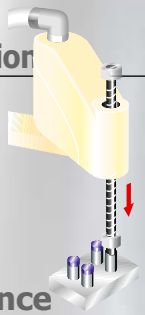
5. Easy Programming

The IX Series adopts Super SEL Language, a well-known command language used by IAI Cartesian robots.
With Super SEL, complex operations can be programmed easily. You can create desired programs right away without much knowledge of robot language.

Plus α

6. Z-Axis Push Motion Function

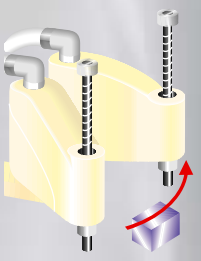
The Z-axis (vertical axis) can be pressed against the load, so you can use the robot to press-fit loads or control push force.



7. Simple Interference Check Zone Function

A maximum of 10 interference check zones can be set inside the robot's work envelope. When the load enters a check zone, the robot will inform you with a signal output. Use this function to conduct test operation at low speed.

* The load must remain inside a zone for at least 5 msec to ensure accurate detection.



8. Complete Absolute Operation

All models adopt a 17-bit serial absolute encoder, so accurate positioning can be performed without homing each time.
If a need arises, an absolute reset can be performed easily and accurately using a dedicated jig (refer to "Robot Options" on P. 8).

Variation

9. Widest Variations in the Industry

The IX Series provides the following six variations to choose from:
- Standard type
- High-speed type **New!**
- Clean room type
- Dustproof/splash-proof type
- Wall mount/inverse type
- Ceiling mount/inverse type

Select one that best suits your intended application.

Specifications

Type		Arm length (mm), maximum composite speed (mm/s)						Standard cycle time	Load capacity (*1)		Vertical axis stroke		Model	Page
		250 mm	350 mm	500 mm	600 mm	700 mm	800 mm	(sec)	Rated (kg)	Maximum (kg)	Standard (mm)	Optional (mm)		
Standard type NNN		3142 mm/s						0.46	1	3	150	-	IX-NNN2515	P11
			3979 mm/s					0.53	1	3	150	-	IX-NNN3515	P12
				6283 mm/s				0.44	2	10	200	300	IX-NNN5020 (5030)	P13
					7121 mm/s			0.52	2	10	200	300	IX-NNN6020 (6030)	P14
						6597 mm/s		0.50	5	20	200	400	IX-NNN7020 (7040)	P15
							7121 mm/s	0.52	5	20	200	400	IX-NNN8020 (8040)	P16
High-speed type NSN	 New!			4712 mm/s				0.29 to 0.30	1	3	160	-	IX-NSN5016	P17
					5236 mm/s			0.38 to 0.39	1	3	160	-	IX-NSN6016	P18
Dustproof/ splash-proof type NNW		3142 mm/s						0.51	1	3	150	-	IX-NNW2515	P19
			3979 mm/s					0.59	1	3	150	-	IX-NNW3515	P20
				6283 mm/s				0.49	2	10	200	300	IX-NNW5020 (5030)	P21
					7121 mm/s			0.55	2	10	200	300	IX-NNW6020 (6030)	P22
Wall-mount type TNN			3560 mm/s					0.49	1	3	150	-	IX-TNN3015	P23
				3979 mm/s				0.53	1	3	150	-	IX-TNN3515	P24
Wall-mount inverse type UNN			3560 mm/s					0.49	1	3	150	-	IX-UNN3015	P23
				3979 mm/s				0.53	1	3	150	-	IX-UNN3515	P24
Ceiling-mount type HNN				6283 mm/s				0.44	2	10	200	-	IX-HNN5020	P25
					7121 mm/s			0.52	2	10	200	-	IX-HNN6020	P26
Ceiling-mount inverse type INN				6283 mm/s				0.44	2	10	200	-	IX-INN5020	P25
					7121 mm/s			0.52	2	10	200	-	IX-INN6020	P26
Clean room type NNC		3142 mm/s						0.49	1	3	150	-	IX-NNC2515	P27
			3979 mm/s					0.58	1	3	150	-	IX-NNC3515	P28
				6283 mm/s				0.47	2	10	200	300	IX-NNC5020 (5030)	P29
					7121 mm/s			0.54	2	10	200	300	IX-NNC6020 (6030)	P30
						6597 mm/s		0.52	5	20	200	400	IX-NNC7020 (7040)	P31
							7121 mm/s	0.52	5	20	200	400	IX-NNC8020 (8040)	P32

(*1) The rated load capacity indicates the maximum load that can be carried at the maximum operating speed. The maximum load capacity indicates the maximum load that can be carried at a reduced acceleration rate.

IX Series Points to Note

<SCARA Type IX-NNN/NSN/NNW/TNN/UNN/HNN/INN/NNC>

(Note 1) Positioning repeatability

"Positioning repeatability" refers to the positioning accuracy of repeated movements to a pre-stored position. This is not the same as "absolute positioning accuracy."
The specified positioning repeatability is measured in an ambient temperature of 20°C constant.

(Note 2) Maximum operating speed

The specified maximum operating speed represents the speed of PTP command operation.
High-speed movement will be limited in CP command operation (interpolation operation).

(Note 3) Standard cycle time

"Standard cycle time" refers to the time required to cycle back and forth over a vertical distance of 25 mm and horizontal distance of 300 mm (rough positioning).

<Caution>
The specified cycle time is based on a 2-kg load (5-kg load if the arm length is 700/800) and the maximum operating speed.
The robot cannot operate continuously at the maximum speed.

(Note 4) Axis 3 push force

"Axis 3 push force" represents the push force applied by the tip of the vertical axis. The value under "Push action" indicates the maximum push force to be applied when a programmed push command is executed. The value under "Maximum thrust" indicates the maximum thrust in a normal positioning operation. When a push action is performed during a normal positioning operation, a force corresponding to three times the maximum thrust may apply momentarily. When performing a push action, be sure to use a programmed push command.

(Note 5) Axis 4 allowable inertial moment

"Axis 4 allowable inertial moment" indicates the allowable inertial moment of axis 4 (rotating axis) of the SCARA robot as calculated at the center of rotation.
The offset from the center of rotation of axis 4 to the tool gravity center must be within 40 mm. If the tool gravity center is further away from the center of axis 4, the speed and/or acceleration rate must be reduced as necessary.

(Note 6) Alarm indicator

The alarm indicator is located on top of arm 2 of the SCARA robot.
The alarm indicator can be wired in such a way that it will illuminate in a certain condition such as when the controller generates an error. To use the alarm indicator, the user must provide a circuit that responds to the controller's I/O output signal to supply 24 VDC to the applicable LED terminal in the user wiring.

(Note 7) Brake-release switch

The brake-release switch is also located on top of the robot's arm 2 near the alarm indicator.
To release the brake, 24 VDC power must be supplied regardless of whether or not the brake-release switch is used. (Supply 24 VDC from a dedicated power supply separate from the 24 VDC power used for driving the I/Os.)

(Note 8) Cable length

The motor and encoder cables of the SCARA robot are directly connected to the robot.
The IX Series doesn't use a cable joint, so changing the cable length on the delivered robot will be difficult.
Select either 5 m (code 5L) or 10 m (10L) as the desired cable length when ordering.

(Note 9) Protection grade (protective structure)

This grade indicates the level of actuator protection against water and solid foreign matters.

IP65
- 6: The actuator is protected against solid foreign matters to a degree where dust will not enter the actuator.
- 5: The actuator is protected against water intrusion to a degree where the actuator will not be negatively affected by water injected at a given angle.

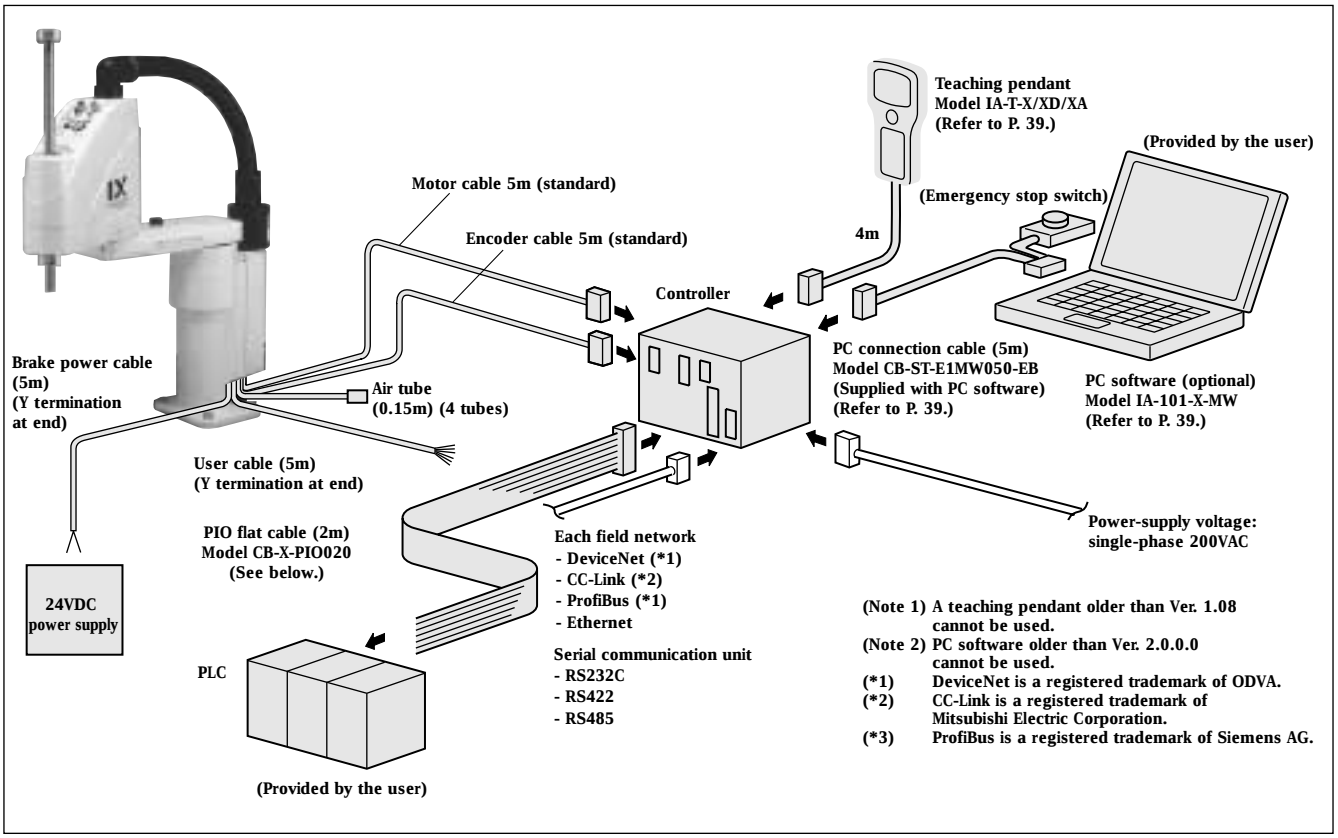
(Note 10) Air purge pressure

To use the dustproof/splash-proof type in an IP65 environment, air must be supplied from the air inlet located at side (or back) of the robot base (to perform air purge). The air purge pressure must conform to the common specification applicable to all robot types. (Supplied air must be clean, dry air of atmospheric pressure with a dew-point temperature of -20°C or below.)

(Note 11) Internal vacuuming

To use the clean room type in an environment of cleanliness class 10, the air inside the robot must be vacuumed from the air suction outlet located at side (or back) of the robot base.
The suction rate must conform to the common specification applicable to all robot types.

IX Series System Configuration Drawing



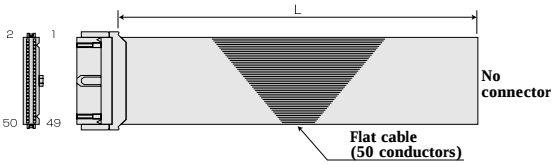
■ Robot Accessories

- Caution labels
- Positioning seals
- Eyebolts
- Service connectors

■ Controller Accessory

- PIO flat cable
  Model CB-X-PIO □□□

※□□□ Enter the desired cable length (L) of up to 10 m. Example) 080 = 8m



No.	Color	Wire	No.	Color	Wire	No.	Color	Wire
1	Brown 1	Flat cable	18	Gray 2	Flat cable	35	Green 4	Flat cable
2	Red 1		19	White 2		36	Blue 4	
3	Orange 1		20	Black 2		37	Purple 4	
4	Yellow 1		21	Brown 3		38	Gray 4	
5	Green 1		22	Red 3		39	White 4	
6	Blue 1		23	Orange 3		40	Black 4	
7	Purple 1		24	Yellow 3		41	Brown 5	
8	Gray 1		25	Green 3		42	Red 5	
9	White 1		26	Blue 3		43	Orange 5	
10	Black 1		27	Purple 3		44	Yellow 5	
11	Brown 2		28	Gray 3		45	Green 5	
12	Red 2		29	White 3		46	Blue 5	
13	Orange 2		30	Black 3		47	Purple 5	
14	Yellow 2		31	Brown 4		48	Gray 5	
15	Green 2		32	Red 4		49	White 5	
16	Blue 2		33	Orange 4		50	Black 5	
17	Purple 2		34	Yellow 4				

Robot Options

Name	Model	Description	Page
Absolute Data Storage Battery	AB- 3	Battery for storing the encoder's absolute data	P8
Absolute Reset Adjustment Jig	JG-1～3	Jig needed to execute an absolute reset	
Flange	IX-FL-1～3	Flange used to install to the tip of the Z-axis	

Controller Options

Name	Model	Description	Page
Teaching Pendant	IA-T-X	Allows for input and editing of position data, programs, parameters, etc., as well as manual operations.	P39
Teaching Pendant (With Deadman Switch)	IA-T-XD	IA-T-X equipped with a deadman switch	
Teaching Pendant (ANSI)	IA-T-XA	CE/ANSI-compliant type	
PC Software (DOS/V)	IA-101-X-MW	Allows for input and editing of position data, programs, parameters, etc., as well as manual operations.	
PC Software (PC98)	IA-101-X-CW		

Robot Options

Absolute Data Backup Battery

This battery is used to store the encoder's absolute data.
(Install the battery inside the rear cover of the SCARA robot.)

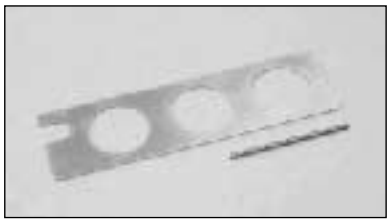
Model	Remarks
AB-3	Common to all models

AB-3

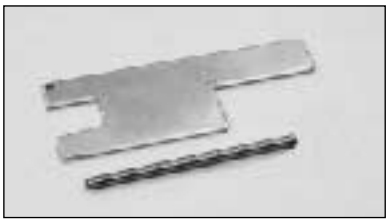
Absolute Reset Adjustment Jig

An appropriate adjustment jig is used to execute an absolute reset when the encoder's absolute data was lost.

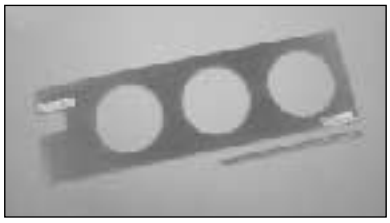
Model	Remarks
JG-1	Arm length 500/600
JG-2	Arm length 250/350
JG-3	Arm length 700/800



JG-1



JG-2

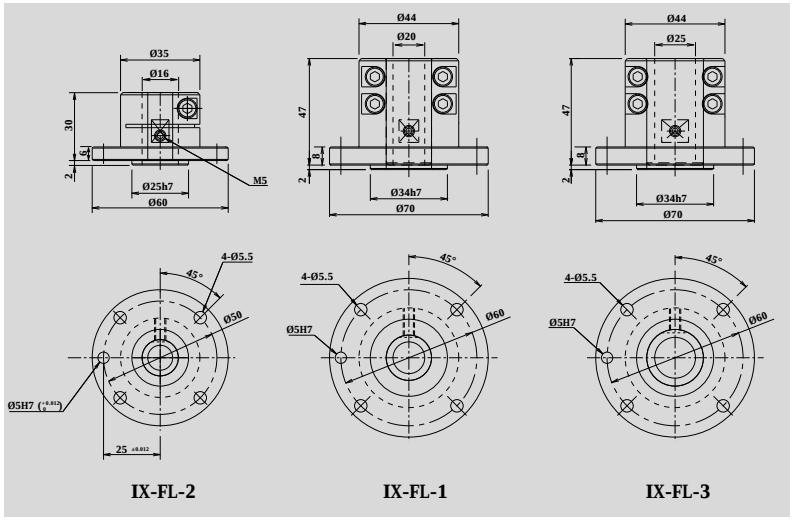


JG-3

Flange

Use an appropriate flange when mounting to the tip of the Z-axis arm.

Model	Remarks
IX-FL-1	Arm length 500/600
IX-FL-2	Arm length 250/350
IX-FL-3	Arm length 700/800



IX-FL-2 IX-FL-1 IX-FL-3

Unit Series Explanation of SCARA Robot Model Items

Refer to the opposite page for details on each model item (① through ⑧). The selection range for each item will vary depending on the robot type. For details, refer to the page corresponding to each model type.

		①		②		③		④		⑤		⑥		⑦		⑧
		Series		Model		Cable length		Controller type		Standard PIO		Expansion I/O		I/O flat cable length		Power-supply voltage
1	SCARA robot, standard type	IX	—	NNN2515 NNN3515 NNN5020 NNN5030 NNN6020 NNN6030 NNN7020 NNN7040 NNN8020 NNN8040	—	5L 10L	—	KX JX	—	N1 N3 P1 P3 DV CC PR ET	—	EEE, etc.	—	2 3 5 0	—	2
2	SCARA robot, high-speed type		—	NSN5016 NSN6016	—		—		—		—		—		—	
3	SCARA robot, dustproof/ splash-proof type		—	NNW2515 NNW3515 NNW5020 NNW5030 NNW6020 NNW6030 NNW7020 NNW7040 NNW8020 NNW8040	—		—		—		—		—		—	
4	SCARA robot, wall-mount type (inverse type)		—	TNN3015 (UNN3015) TNN3515 (UNN3515)	—		—		—		—		—		—	
5	SCARA robot, ceiling-mount type (inverse type)		—	HNN5020 (INN5020) HNN6020 (INN6020) HNN7020 (INN7020) HNN8020 (INN8020)	—		—		—		—		—		—	
6	SCARA robot, clean room type		—	NNC2515 NNC3515 NNC5020 NNC5030 NNC6020 NNC6030 NNC7020 NNC7040 NNC8020 NNC8040	—		—		—		—		—		—	

Unlike other models, the SCARA robot is ordered as a combination of robot and controller.
Items ① through ③ specify the SCARA robot.
Items ④ through ⑧ specify the controller.

① Series

Indicate the name of each series.

② Model

Indicate the model type (standard, high-speed, dustproof/splash-proof, wall-mount or ceiling-mount), arm length and Z-axis length.

NNN	Standard type	UNN	Wall-mount type (inverse type)
NSN	High-speed type	HNN	Ceiling-mount type
NNW	Dustproof/splash-proof type	INN	Ceiling-mount type (inverse type)
TNN	Wall-mount type		

③ Cable length

Indicate the length of the cable connecting the robot and the controller.
Select either 5L (5 m) or 10L (10 m).
Unlike a single-axis robot, the IX Series doesn't adopt a joint cable. The cable comes out directly from the robot.

④ Controller type

Select a dedicated controller (KX or JX type) for the SCARA robot.
*** Only the KX type may be specified if the arm length is 500 or longer.**

⑤ Standard PIO specification

Indicate the specification of the controller's standard I/O slot.
*** N3 and P3 are dedicated options for the JX controller and cannot be specified for the KX controller.**

N1 : [NPN standard PIO] An NPN PIO board with 32 input points and 16 output points is installed (standard).
N3 : [NPN multipoint PIO] An NPN multipoint PIO board with 48 input points and 48 output points is installed (dedicated option for the JX controller).
P1 : [PNP standard PIO] A PNP PIO board with 32 input points and 16 output points is installed.
P3 : [PNP multipoint PIO] A PNP multipoint PIO board with 48 input points and 48 output points is installed (dedicated option for the JX controller).
DV : [DeviceNet connection specification] A DeviceNet connection board with a maximum of 256 input points and 256 output points is installed.
CC : [CC-Link connection specification] A CC-Link connection board with a maximum of 256 input points and 256 output points is installed.
PR : [ProfiBus connection specification] A ProfiBus connection board with a maximum of 256 input points and 256 output points is installed.
ET : [Ethernet connection specification] An Ethernet connection board offering data communication capability is installed.

⑥ Expansion I/O specification

Indicate the specification of the controller's expansion slot.
An expansion board can be installed in slot 1, 2 or 3 of the KX controller, or in slot 1 of the JX controller.
Use a three-digit code (EEE) to specify the slot type. In the case of the JX controller having only one expansion slot, specify the slot using the first digit and leave "E" in the remaining two digits (□EE).
*** C, N3, P3, SA, SB and SC are dedicated options for the KX controller and cannot be specified for the JX controller.**

E : [Unused] Expansion board is not used.
C : [CC-Link connection specification] A CC-Link connection board with 16 input points and 16 output points is installed (dedicated option for the KX controller).
N1 : [NPN expansion PIO] An NPN PIO board with 32 input points and 16 output points is installed.
N2 : [NPN expansion PIO] An NPN PIO board with 16 input points and 32 output points is installed.
N3 : [NPN multipoint PIO] An NPN multipoint PIO board with 48 input points and 48 output points is installed (dedicated option for the KX controller).
P1 : [PNP expansion PIO] A PNP PIO board with 32 input points and 16 output points is installed.
P2 : [PNP expansion PIO] A PNP PIO board with 16 input points and 32 output points is installed.
P3 : [PNP expansion PIO] A PNP PIO board with 48 input points and 48 output points is installed (dedicated option for the KX controller).
SA : [Expansion SIO type A] An RS232C communication board is installed (dedicated option for the KX controller).
SB : [Expansion SIO type B] An RS422 communication board is installed (dedicated option for the KX controller).
SC : [Expansion SIO type C] An RS485 communication board is installed (dedicated option for the KX controller).

⑦ I/O flat cable length

Indicate the length of the cable used for transmitting signals between the controller and the PLC.
One cable is supplied with one I/O board installed in the standard slot or each expansion slot.
2: 2m
3: 3m
5: 5m
0: None (Specify this number if you have installed a network board instead of a standard I/O board.)

⑧ Power-supply voltage

Indicate the main power-supply voltage for the controller. The power-supply voltage is fixed to single-phase 200 VAC for a SCARA controller.

IX-NNN2515

Small SCARA Robot Standard Type: Arm Length 250mm, Vertical (Z) Axis 150mm

Type	Arm length	Load capacity
Standard type	250mm	1kg rated/3kg maximum

■ Model items

Series	Model	Cable length	Controller type	Standard I/O	Expansion I/O	I/O cable length	Power-supply voltage
(Example) IX	NNN2515	5L	KX	N1	EEE	2	2

* Refer to P. 10 for details on the model items.

* The above model code represents a combination of robot and controller.

Model/Specifications

Model	Axis configuration		Arm length (mm)	Motor capacity (W)	Work envelope	Positioning repeatability (mm) (Note 1)	Maximum operating speed (Note 2)	Standard cycle time (sec) (Note 3)	Load capacity (kg)		Axis 3 push force (N)		Axis 4 allowable load	
									Rated	Maximum	Push action (Note 4)	Maximum thrust (Note 4)	Allowable inertial moment (kg·m²) (Note 5)	Allowable torque (N·m)
IX-NNN2515-5L-□-□-□-□-2	Axis 1	Arm 1	125	200	±120°	±0.010	3142mm/s (Composite speed)	0.46	1	3	65.3	90.9	0.015	1.9
	Axis 2	Arm 2	125	100	±130°									
	Axis 3	Vertical axis	—	100	150mm	±0.010	1106mm/s							
	Axis 4	Rotating axis	—	50	±360°	±0.005	1600°/s							

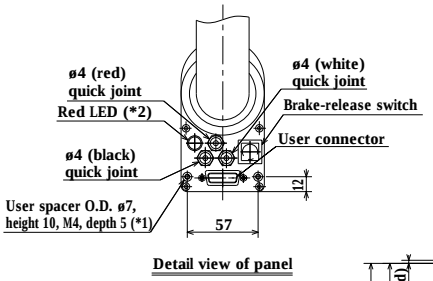
* In the above model code, specify the desired controller in □. For details, refer to "Explanation of SCARA Robot Model Items" (P. 10).

Common Specifications

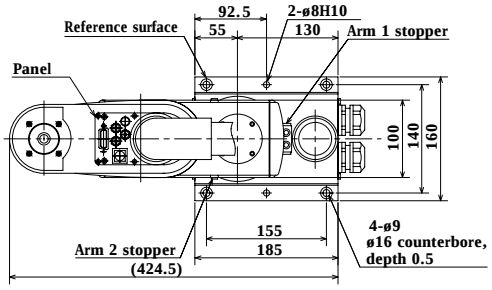
Encoder type	Absolute
User wiring	15-conductor AWG26 D-sub/15-pin connector with shield (socket)
User tubing	Air tube (O.D. ø4, I.D. ø2.5) x 3 (Normal working pressure 0.8MPa)
Alarm indicator (Note 6)	Red, small LED indicator x 1 (24 VDC must be supplied.)
Brake-release switch (Note 7)	Brake-release switch to prevent the vertical axis from dropping (24 VDC must be supplied.)

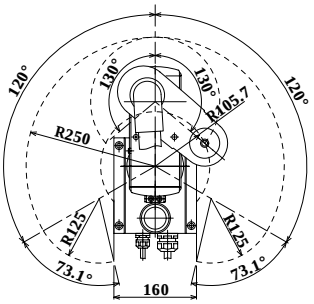
Ambient temperature/humidity	Temperature: 0~40°C, humidity: 20~85%RH or below (non-condensing)
Robot weight	17.1kg
Cable length (Note 8)	5L: 5m (standard), 10L: 10m (optional)

Dimensions



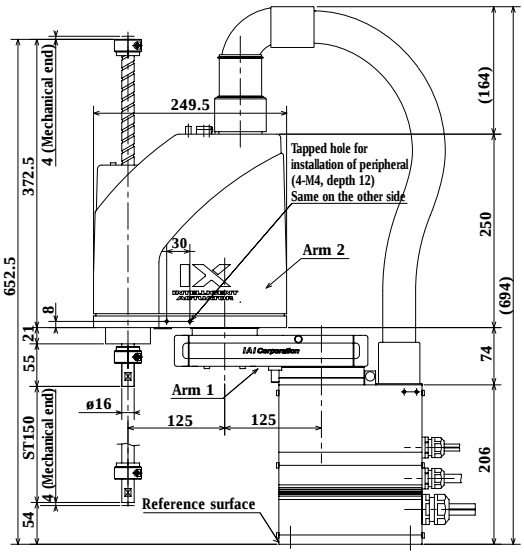
Detail view of panel

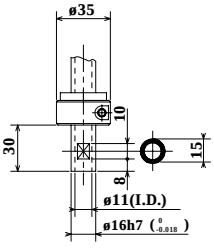




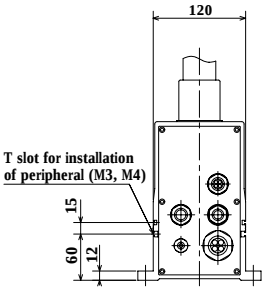
Operation prohibited area

Work envelope





Detail view of tip



*1: The external force applied to each spacer must not exceed 30 N in the axial direction or 2 N·m in the rotating direction.
*2: To use the LED, the user must provide a circuit that takes signals from the controller's I/O output and supplies 24 VDC to the applicable LED terminal in the user connector.

Cables/tubes
- Motor/encoder cable 5m/10m
- Brake power cable 5m/10m
- User cable 5m/10m
- Air tube (3 pcs) 0.15m

Applicable Controller Specifications

Applicable controller	Features	Maximum I/O points (inputs/outputs)	Serial communication unit	Power-supply voltage	Page
XSEL-KX	General-purpose type offering excellent expandability	176/160 points	Can be installed.	AC200V	P33
XSEL-JX	Compact, space-saving type	80/64 points	Cannot be installed.		P33

Caution

Refer to P. 6 for the explanations of (Note 1) to (Note 8).

IX-NNN3515

Small SCARA Robot Standard Type: Arm Length 350mm, Vertical (Z) Axis 150mm

Type	Arm length	Load capacity
Standard type	350mm	1kg rated/3kg maximum

■Model items

Series	Model	Cable length	Controller type	Standard I/O	Expansion I/O	I/O cable length	Power-supply voltage
(Example) IX	NNN3515	5L	KX	N1	EEE	2	2

* Refer to P. 10 for details on the model items.

* The above model code represents a combination of robot and controller.

Model/Specifications

Model	Axis configuration		Arm length (mm)	Motor capacity (W)	Work envelope	Positioning repeatability (mm) (Note 1)	Maximum operating speed (Note 2)	Standard cycle time (sec) (Note 3)	Load capacity (kg)		Axis 3 push force (N)		Axis 4 allowable load	
									Rated	Maximum	Push action (Note 4)	Maximum thrust (Note 4)	Allowable inertial moment ($kg \cdot m^2$) (Note 5)	Allowable torque (N·m)
IX-NNN3515-5L-□-□-□-□-2	Axis 1	Arm 1	225	200	±120°	±0.010	3979mm/s (Composite speed)	0.53	1	3	65.3	90.9	0.015	1.9
	Axis 2	Arm 2	125	100	±135°									
	Axis 3	Vertical axis	—	100	150mm	±0.010	1106mm/s							
	Axis 4	Rotating axis	—	50	±360°	±0.005	1600°/s							

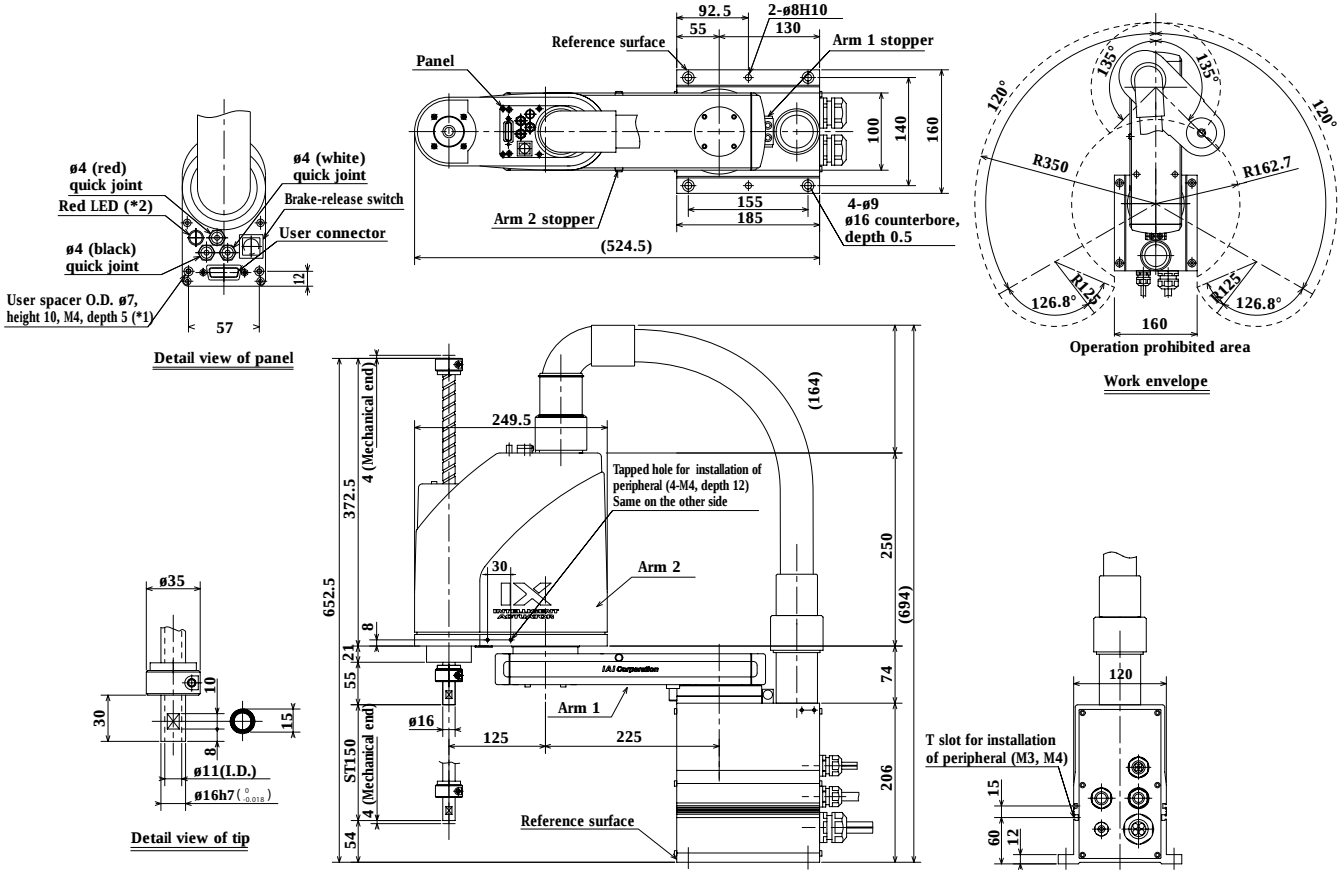
* In the above model code, specify the desired controller in □. For details, refer to "Explanation of SCARA Robot Model Items" (P. 10).

Common Specifications

Encode type	Absolute
User wiring	15-conductor AWG26 D-sub/15-pin connector with shield (socket)
User tubing	Air tube (O.D. ø4, I.D. ø2.5) x 3 (Normal working pressure 0.8MPa)
Alarm indicator (Note 6)	Red, small LED indicator x 1 (24 VDC must be supplied.)
Brake-release switch (Note 7)	Brake-release switch to prevent the vertical axis from dropping (24 VDC must be supplied.)

Ambient temperature/humidity	Temperature: 0~40°C, humidity: 20~85%RH or below (non-condensing)
Robot weight	18.2kg
Cable length (Note 8)	5L: 5m (standard), 10L: 10m (optional)

Dimensions



*1: The external force applied to each spacer must not exceed 30 N in the axial direction or 2 N·m in the rotating direction.

*2: To use the LED, the user must provide a circuit that takes signals from the controller's I/O output and supplies 24 VDC to the applicable LED terminal in the user connector.

Cables/tubes

- Motor/encoder cable 5m/10m
- Brake power cable 5m/10m
- User cable 5m/10m
- Air tube (3 pcs) 0.15m

Applicable Controller Specifications

Applicable controller	Features	Maximum I/O points (inputs/outputs)	Serial communication unit	Power-supply voltage	Page
XSEL-KX	General-purpose type offering excellent expandability	176/160 points	Can be installed.	AC200V	P33
XSEL-JX	Compact, space-saving type	80/64 points	Cannot be installed.		P33

Caution Refer to P. 6 for the explanations of (Note 1) to (Note 8).

IX-NNN50□□

IX Medium SCARA Robot Standard Type:
Arm Length 500mm, Vertical (Z) Axis 200mm (300mm)

Type	Arm length	Load capacity
Standard type	500mm	2kg rated/10kg maximum

■Model items

Series	Model	Cable length	Controller type	Standard I/O	Expansion I/O	I/O cable length	Power-supply voltage
(Example) IX	NNN5020	5L	KX	N1	EEE	2	2

* Refer to P. 10 for details on the model items.

* The above model code represents a combination of robot and controller.

Model/Specifications

Model	Axis configuration		Arm length (mm)	Motor capacity (W)	Work envelope	Positioning repeatability (mm) (Note 1)	Maximum operating speed (Note 2)	Standard cycle time (sec) (Note 3)	Load capacity (kg)		Axis 3 push force (N)		Axis 4 allowable load	
									Rated	Maximum	Push action (Note 4)	Maximum thrust (Note 4)	Allowable inertial moment (kg·m²) (Note 5)	Allowable torque (N·m)
IX-NNN5020-5L-KX-□-□-□-2 [IX-NNN5030-5L-KX-□-□-□-2]	Axis 1	Arm 1	250	400	±120°	±0.010	6283mm/s (Composite speed)	0.44	2	10	108	152	0.06	3.3
	Axis 2	Arm 2	250	200	±145°									
	Axis 3	Vertical axis	—	200	200mm [300mm]	±0.010	1393mm/s							
	Axis 4	Rotating axis	—	100	±360°	±0.005	1200°/s							

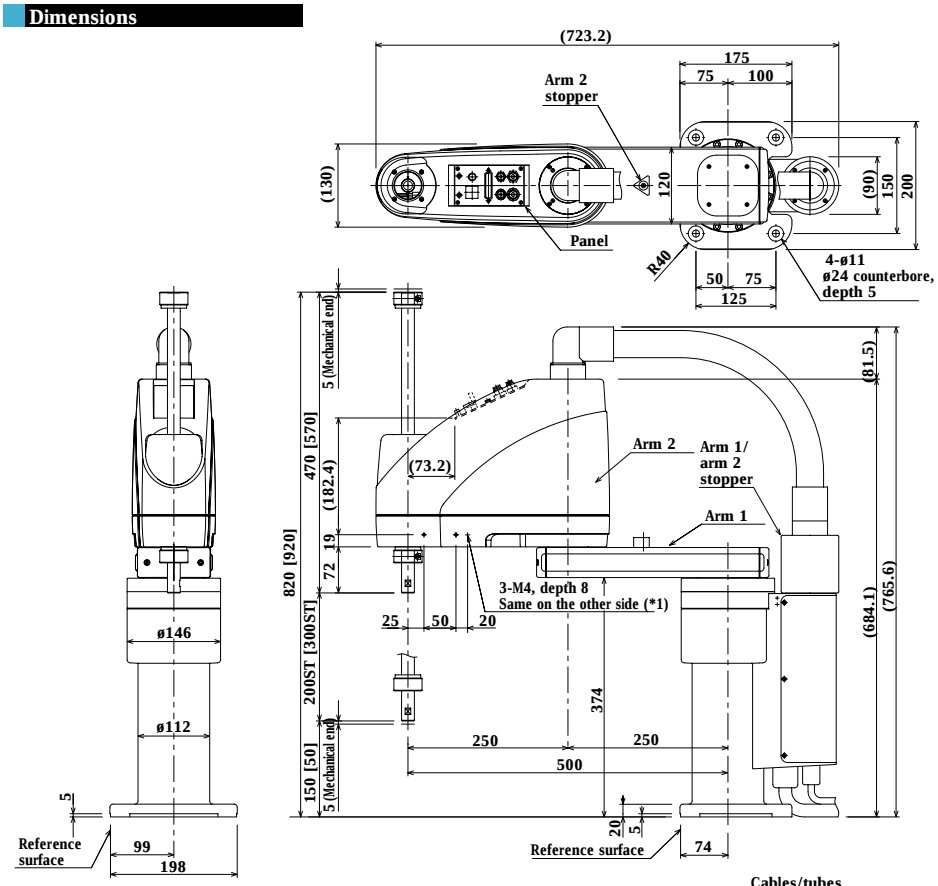
* In the above model code, specify the desired controller in □. For details, refer to "Explanation of SCARA Robot Model Items" (P. 10).

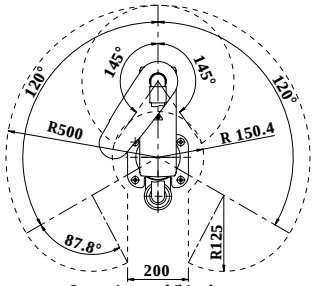
Common Specifications

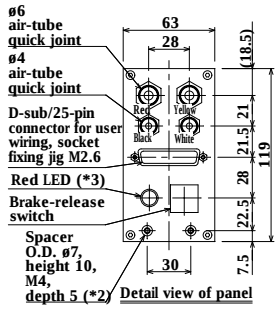
Encoder type	Absolute
User wiring	25-conductor AWG26 D-sub/25-pin connector with shield (socket)
User tubing	Air tube (O.D. ø6, I.D. ø4) x 2 (Normal working pressure 0.8MPa) Air tube (O.D. ø4, I.D. ø2.5) x 2 (Normal working pressure 0.8MPa)
Alarm indicator (Note 6)	Red, small LED indicator x 1 (24 VDC must be supplied.)
Brake-release switch (Note 7)	Brake-release switch to prevent the vertical axis from dropping (24 VDC must be supplied.)

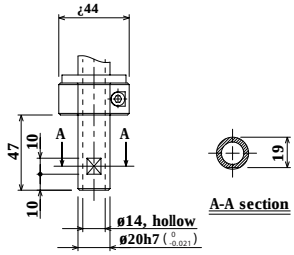
Ambient temperature/humidity	Temperature: 0~40°C, humidity: 20~85%RH or below (non-condensing)
Robot weight	29.5kg
Cable length (Note 8)	5L: 5m (standard), 10L: 10m (optional)

Dimensions









*1: The prepared hole 3-M4, depth 8 passes through the side panel of the arm. A long mounting screw will contact the mechanical parts inside the arm, so exercise caution.
*2: The external force applied to each spacer must not exceed 30 N in the axial direction or 2 N·m in the rotating direction.
*3: To use the LED, the user must provide a circuit that takes signals from the controller's I/O output and supplies 24 VDC to the applicable LED terminal in the user connector.

Cables/tubes
- Motor/encoder cable 5m/10m
- Brake power cable 5m/10m
- User cable 5m/10m
- Air tube (3 pcs) 0.15m

Applicable Controller Specifications

Applicable controller	Features	Maximum I/O points (inputs/outputs)	Serial communication unit	Power-supply voltage	Page
XSEL-KX	General-purpose type offering excellent expandability	176/160 points	Can be installed.	AC200V	P33

Caution

Refer to P. 6 for the explanations of (Note 1) to (Note 8).

IX-NNN60□□

IX Medium SCARA Robot Standard Type:
Arm Length 600mm, Vertical (Z) Axis 200mm (300mm)

Type	Arm length	Load capacity
Standard type	600mm	2kg rated/10kg maximum

■ Model items: Series – Model – Cable length – Controller type – Standard I/O – Expansion I/O – I/O cable length – Power-supply voltage

(Example) IX – NNN6020 – 5L – KX – N1 – EEE – 2 – 2

* Refer to P. 10 for details on the model items.

* The above model code represents a combination of robot and controller.

Model/Specifications

Model	Axis configuration		Arm length (mm)	Motor capacity (W)	Work envelope	Positioning repeatability (mm) (Note 1)	Maximum operating speed (Note 2)	Standard cycle time (sec) (Note 3)	Load capacity (kg)		Axis 3 push force (N)		Axis 4 allowable load	
									Rated	Maximum	Push action (Note 4)	Maximum thrust (Note 4)	Allowable inertial moment (kg·m²) (Note 5)	Allowable torque (N·m)
IX-NNN6020-5L-KX-□-□-□-2 [IX-NNN6030-5L-KX-□-□-□-2]	Axis 1	Arm 1	350	400	±120°	±0.010	7121mm/s (Composite speed)	0.52	2	10	108	152	0.06	3.3
	Axis 2	Arm 2	250	200	±145°									
	Axis 3	Vertical axis	—	200	200mm [300mm]	±0.010	1393mm/s							
	Axis 4	Rotating axis	—	100	±360°	±0.005	1200°/s							

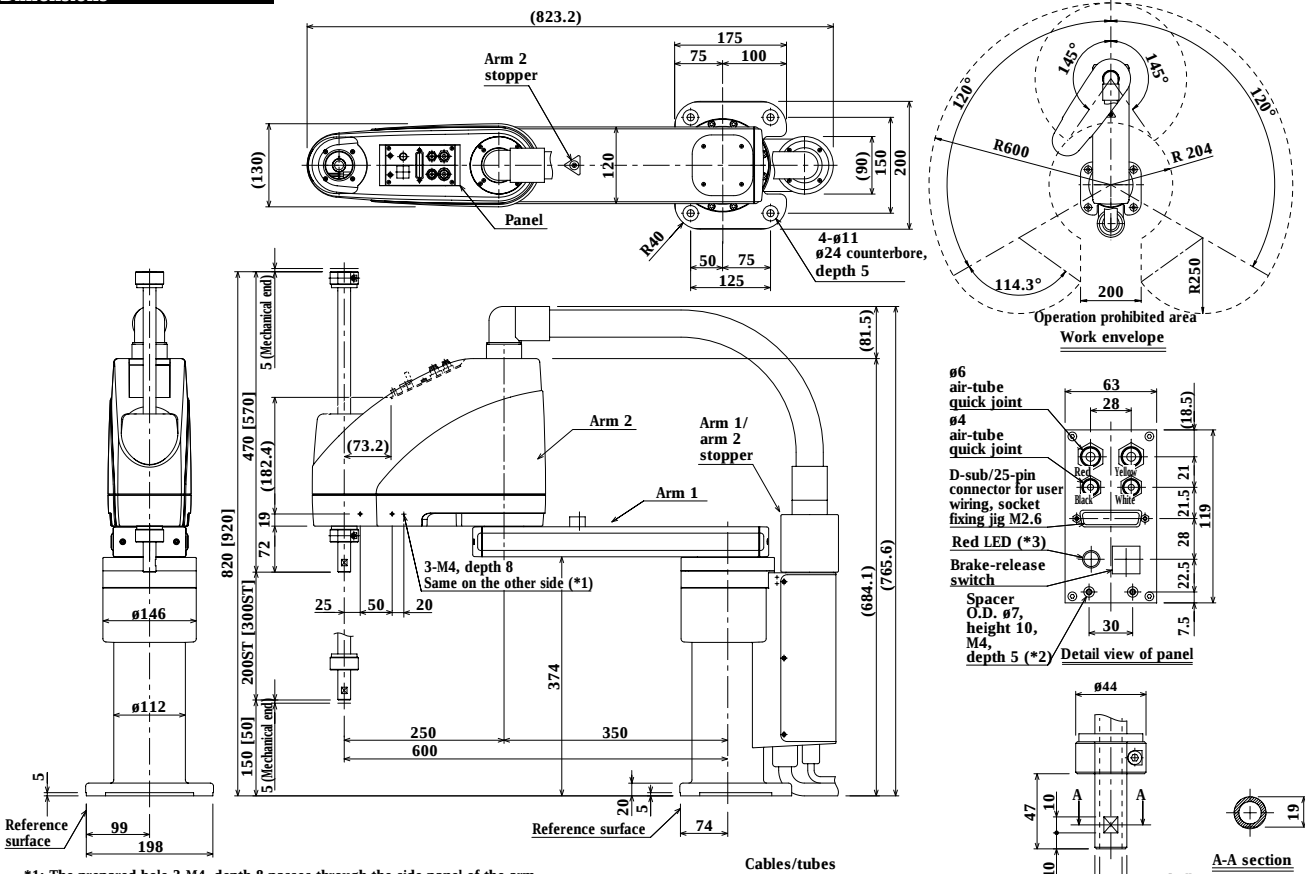
* In the above model code, specify the desired controller in □. For details, refer to "Explanation of SCARA Robot Model Items" (P. 10).

Common Specifications

Encoder type	Absolute
User wiring	25-conductor AWG26 D-sub/25-pin connector with shield (socket)
User tubing	Air tube (O.D. ø6, I.D. ø4) x 2 (Normal working pressure 0.8MPa) Air tube (O.D. ø4, I.D. ø2.5) x 2 (Normal working pressure 0.8MPa)
Alarm indicator (Note 6)	Red, small LED indicator x 1 (24 VDC must be supplied.)
Brake-release switch (Note 7)	Brake-release switch to prevent the vertical axis from dropping (24 VDC must be supplied.)

Ambient temperature/humidity	Temperature: 0~40°C, humidity: 20~85%RH or below (non-condensing)
Robot weight	30.5kg
Cable length (Note 8)	5L: 5m (standard), 10L: 10m (optional)

Dimensions



*1: The prepared hole 3-M4, depth 8 passes through the side panel of the arm. A long mounting screw will contact the mechanical parts inside the arm, so exercise caution.
*2: The external force applied to each spacer must not exceed 30 N in the axial direction or 2 N·m in the rotating direction.
*3: To use the LED, the user must provide a circuit that takes signals from the controller's I/O output and supplies 24 VDC to the applicable LED terminal in the user connector.

Cables/tubes
- Motor/encoder cable 5m/10m
- Brake power cable 5m/10m
- User cable 5m/10m
- Air tube (3 pcs) 0.15m

Applicable Controller Specifications

Applicable controller	Features	Maximum I/O points (inputs/outputs)	Serial communication unit	Power-supply voltage	Page
XSEL-KX	General-purpose type offering excellent expandability	176/160 points	Can be installed.	AC200V	P33

Caution: Refer to P. 6 for the explanations of (Note 1) to (Note 8).

IX-NNN70□□

IX Large SCARA Robot Standard Type:
Arm Length 700mm, Vertical (Z) Axis 200mm (400mm)

Type	Arm length	Load capacity
Standard type	700mm	5kg rated/20kg maximum

■Model items: Series – Model – Cable length – Controller type – Standard I/O – Expansion I/O – I/O cable length – Power-supply voltage

(Example) IX – NNN7020 – 5L – KX – N1 – EEE – 2 – 2

* Refer to P. 10 for details on the model items.

* The above model code represents a combination of robot and controller.

Model/Specifications

Model	Axis configuration		Arm length (mm)	Motor capacity (W)	Work envelope	Positioning repeatability (mm) (Note 1)	Maximum operating speed (Note 2)	Standard cycle time (sec) (Note 3)	Load capacity (kg)		Axis 3 push force (N)		Axis 4 allowable load	
									Rated	Maximum	Push action (Note 4)	Maximum thrust (Note 4)	Allowable inertial moment (kg·m²) (Note 5)	Allowable torque (N·m)
IX-NNN7020-5L-KX-□-□-□-2 [IX-NNN7040-5L-KX-□-□-□-2]	Axis 1	Arm 1	350	750	±125°	±0.015	6597mm/s (Composite speed)	0.50	5	20	188	265	0.1	6.7
	Axis 2	Arm 2	350	400	±145°									
	Axis 3	Vertical axis	—	400	200mm [400mm]	±0.010	1583mm/s							
	Axis 4	Rotating axis	—	200	±360°	±0.005	1200°/s							

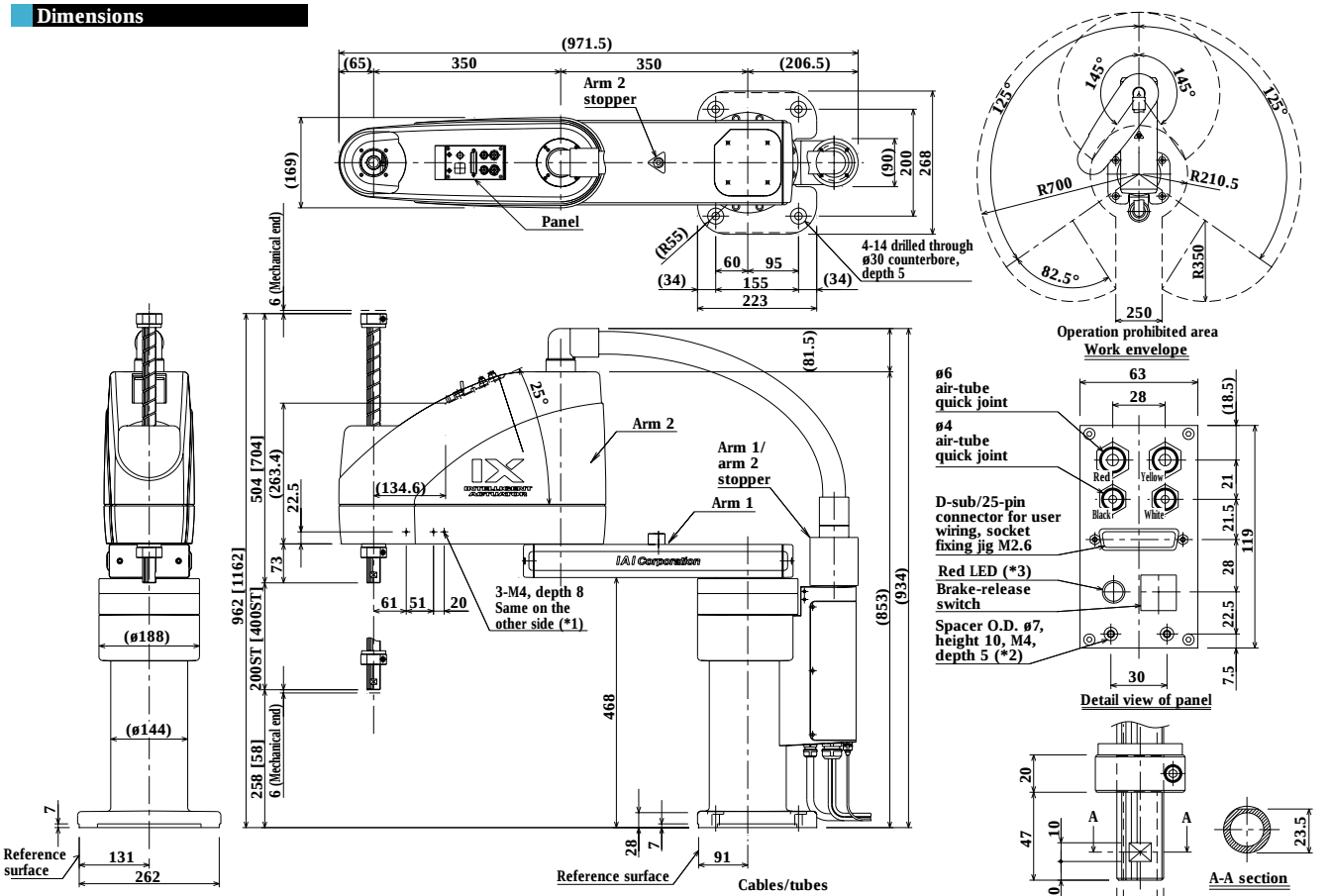
* In the above model code, specify the desired controller in □. For details, refer to "Explanation of SCARA Robot Model Items" (P. 10).

Common Specifications

Encoder type	Absolute
User wiring	25-conductor AWG26 D-sub/25-pin connector with shield (socket)
User tubing	Air tube (O.D. ø6, I.D. ø4) x 2 (Normal working pressure 0.8MPa) Air tube (O.D. ø4, I.D. ø2.5) x 2 (Normal working pressure 0.8MPa)
Alarm indicator (Note 6)	Red, small LED indicator x 1 (24 VDC must be supplied.)
Brake-release switch (Note 7)	Brake-release switch to prevent the vertical axis from dropping (24 VDC must be supplied.)

Ambient temperature/humidity	Temperature: 0~40°C, humidity: 20~85%RH or below (non-condensing)
Robot weight	58kg
Cable length (Note 8)	5L: 5m (standard), 10L: 10m (optional)

Dimensions



*1: The prepared hole 3-M4, depth 8 passes through the side panel of the arm.
*2: The external force applied to each spacer must not exceed 30 N in the axial direction or 2 N·m in the rotating direction.
*3: To use the LED, the user must provide a circuit that takes signals from the controller's I/O output and supplies 24 VDC to the applicable LED terminal in the user connector.

Cables/tubes
- Motor/encoder cable 5m/10m
- Brake power cable 5m/10m
- User cable 5m/10m
- Air tube (4 pcs) 0.15m

Applicable Controller Specifications

Applicable controller	Features	Maximum I/O points (inputs/outputs)	Serial communication unit	Power-supply voltage	Page
XSEL-KX	General-purpose type offering excellent expandability	176/160 points	Can be installed.	AC200V	P33

Caution: Refer to P. 6 for the explanations of (Note 1) to (Note 8).

IX-NNN80□□

IX Medium SCARA Robot Standard Type:
Arm Length 800mm, Vertical (Z) Axis 200mm (400mm)

Type	Arm length	Load capacity
Standard type	800mm	5kg rated/20kg maximum

■Model items: Series — Model — Cable length — Controller type — Standard I/O — Expansion I/O — I/O cable length — Power-supply voltage

(Example) IX − NNN8020 − 5L − KX − N1 − EEE − 2 − 2

* Refer to P. 10 for details on the model items.

* The above model code represents a combination of robot and controller.

Model/Specifications

Model	Axis configuration		Arm length (mm)	Motor capacity (W)	Work envelope	Positioning repeatability (mm) (Note 1)	Maximum operating speed (Note 2)	Standard cycle time (sec) (Note 3)	Load capacity (kg)		Axis 3 push force (N)		Axis 4 allowable load	
									Rated	Maximum	Push action (Note 4)	Maximum thrust (Note 4)	Allowable inertial moment (kg·m²) (Note 5)	Allowable torque (N·m)
IX-NNN8020-5L-KX-□-□-2 [IX-NNN8040-5L-KX-□-□-2]	Axis 1	Arm 1	450	750	±125°	±0.015	7121mm/s (Composite speed)	0.52	5	20	188	265	0.1	6.7
	Axis 2	Arm 2	350	400	±145°									
	Axis 3	Vertical axis	—	400	200mm [400mm]	±0.010	1583mm/s							
	Axis 4	Rotating axis	—	200	±360°	±0.005	1200°/s							

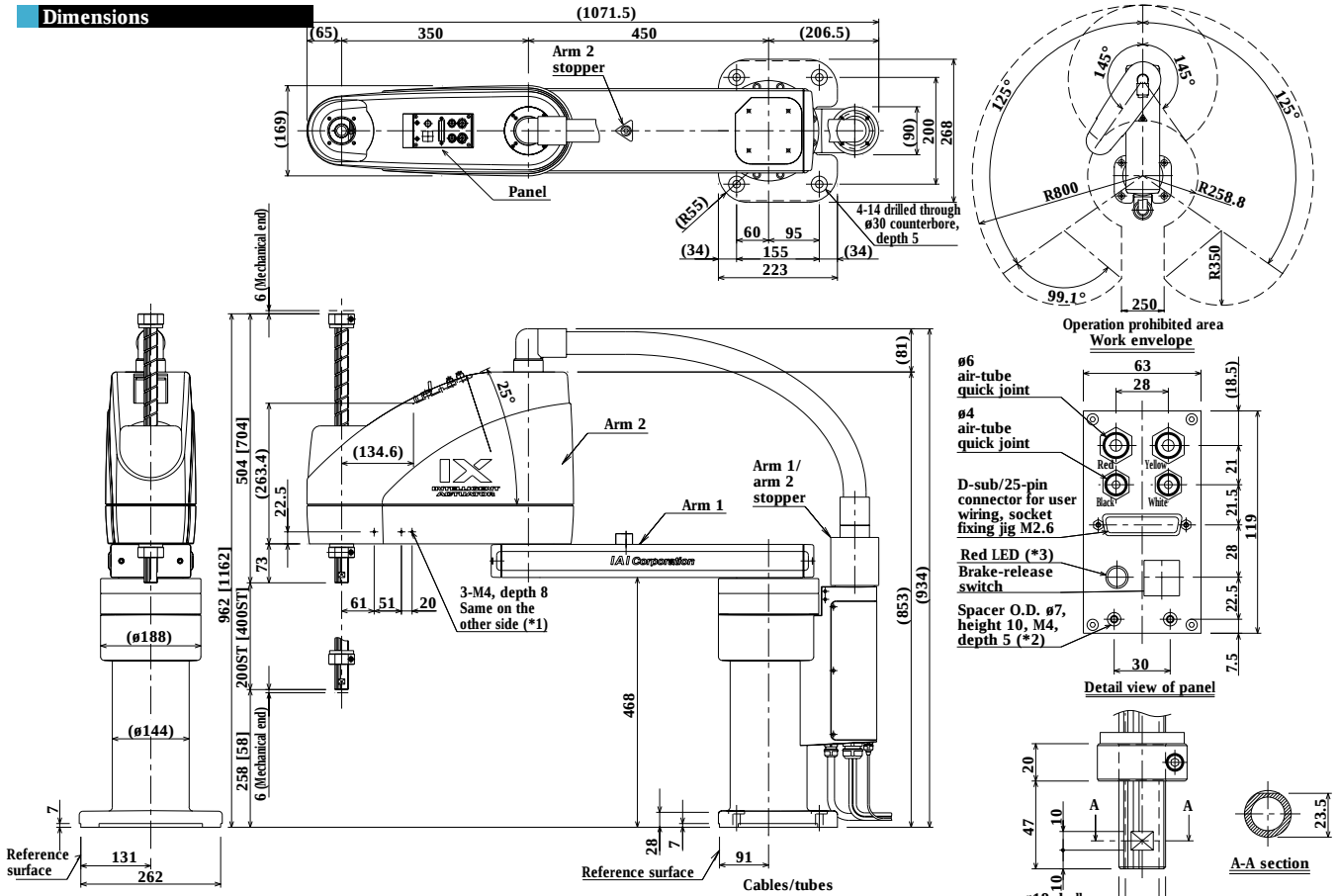
* In the above model code, specify the desired controller in □. For details, refer to "Explanation of SCARA Robot Model Items" (P. 10).

Common Specifications

Encoder type	Absolute
User wiring	25-conductor AWG26 D-sub/25-pin connector with shield (socket)
User tubing	Air tube (O.D. ø6, I.D. ø4) x 2 (Normal working pressure 0.8MPa) Air tube (O.D. ø4, I.D. ø2.5) x 2 (Normal working pressure 0.8MPa)
Alarm indicator (Note 6)	Red, small LED indicator x 1 (24 VDC must be supplied.)
Brake-release switch (Note 7)	Brake-release switch to prevent the vertical axis from dropping (24 VDC must be supplied.)

Ambient temperature/humidity	Temperature: 0~40°C, humidity: 20~85%RH or below (non-condensing)
Robot weight	60kg
Cable length (Note 8)	5L: 5m (standard), 10L: 10m (optional)

Dimensions



*1: The prepared hole 3-M4, depth 8 passes through the side panel of the arm.
*2: The external force applied to each spacer must not exceed 30 N in the axial direction or 2 N·m in the rotating direction.
*3: To use the LED, the user must provide a circuit that takes signals from the controller's I/O output and supplies 24 VDC to the applicable LED terminal in the user connector.

Cables/tubes

- Motor/encoder cable	5m/10m
- Brake power cable	5m/10m
- User cable	5m/10m
- Air tube (4 pcs)	0.15m

Applicable Controller Specifications

Applicable controller	Features	Maximum I/O points (inputs/outputs)	Serial communication unit	Power-supply voltage	Page
XSEL-KX	General-purpose type offering excellent expandability	176/160 points	Can be installed.	AC200V	P33

Caution: Refer to P. 6 for the explanations of (Note 1) to (Note 8).

IX-NSN5016

IX Medium SCARA Robot High-speed Type:
Arm Length 500mm, Vertical (Z) Axis 160mm

New!

Type	Arm length	Load capacity
High-speed type	500mm	1kg rated/3kg maximum

■Model items

Series	Model	Cable length	Controller type	Standard I/O	Expansion I/O	I/O cable length	Power-supply voltage
(Example) IX	NSN5016	5L	KX	N1	EEE	2	2

* Refer to P. 10 for details on the model items.

* The above model code represents a combination of robot and controller.

Model/Specifications

Model	Axis configuration		Arm length (mm)	Motor capacity (W)	Work envelope	Positioning repeatability (mm) (Note 1)	Maximum operating speed (Note 2)	Standard cycle time (sec) (Note 3)	Load capacity (kg)		Axis 3 push force (N)		Axis 4 allowable load	
									Rated	Maximum	Push action (Note 4)	Maximum thrust (Note 4)	Allowable inertial moment (kg·m²) (Note 5)	Allowable torque (N·m)
IX-NSN5016-5L-KX-□-□-□-2	Axis 1	Arm 1	250	750	±120°	±0.010	4712mm/s (Composite speed)	0.29 to 0.30	1	3	135	190	0.015	2.2
	Axis 2	Arm 2	250	600	±145°									
	Axis 3	Vertical axis	—	200	160mm	±0.010	1085mm/s							
	Axis 4	Rotating axis	—	100	±360°	±0.010	1800°/s							

* In the above model code, specify the desired controller in □. For details, refer to "Explanation of SCARA Robot Model Items" (P. 10).

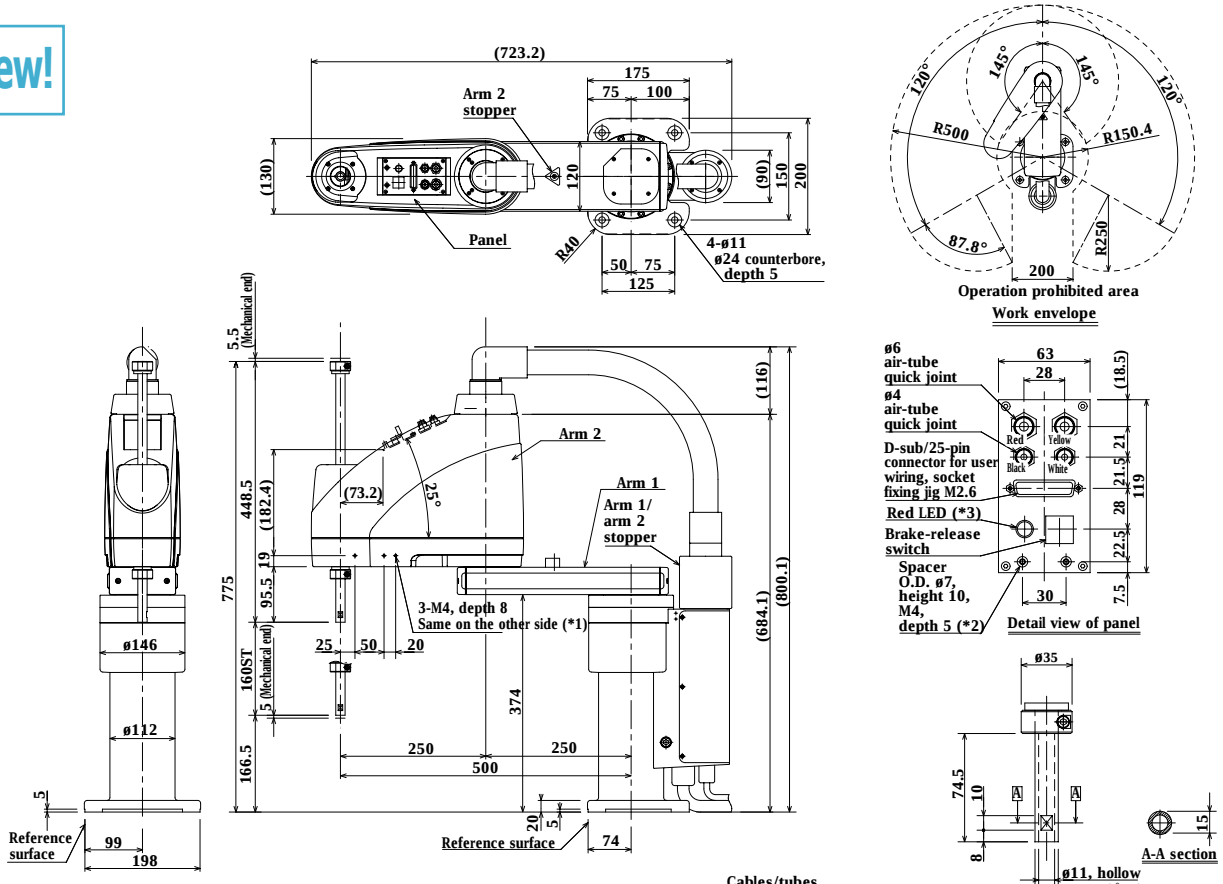
Common Specifications

Encoder type	Absolute
User wiring	25-conductor AWG26 D-sub/25-pin connector with shield (socket)
User tubing	Air tube (O.D. ø6, I.D. ø4) x 2 (Normal working pressure 0.8MPa) Air tube (O.D. ø4, I.D. ø2.5) x 2 (Normal working pressure 0.8MPa)
Alarm indicator (Note 6)	Red, small LED indicator x 1 (24 VDC must be supplied.)
Brake-release switch (Note 7)	Brake-release switch to prevent the vertical axis from dropping (24 VDC must be supplied.)

Ambient temperature/humidity	Temperature: 0~40°C, humidity: 20~85%RH or below (non-condensing)
Robot weight	32kg
Cable length (Note 8)	5L: 5m (standard), 10L: 10m (optional)

Dimensions

New!



*1: The prepared hole 3-M4, depth 8 passes through the side panel of the arm.
A long mounting screw will contact the mechanical parts inside the arm, so exercise caution.
*2: The external force applied to each spacer must not exceed 30 N in the axial direction or 2 N·m in the rotating direction.
*3: To use the LED, the user must provide a circuit that takes signals from the controller's I/O output and supplies 24 VDC to the applicable LED terminal in the user connector.

Cables/tubes
- Motor/encoder cable 5m/10m
- Brake power cable 5m/10m
- User cable 5m/10m
- Air tube (4 pcs) 0.15m

Applicable Controller Specifications

Applicable controller	Features	Maximum I/O points (inputs/outputs)	Serial communication unit	Power-supply voltage	Page
XSEL-KX	General-purpose type offering excellent expandability	176/160 points	Can be installed.	AC200V	P33

Caution

Refer to P. 6 for the explanations of (Note 1) to (Note 8).

IX-NSN6016

IX Medium SCARA Robot High-speed Type:
Arm Length 600mm, Vertical (Z) Axis 160mm

New!

Type	Arm length	Load capacity
High-speed type	600mm	1kg rated/3kg maximum

■ Model items: Series – Model – Cable length – Controller type – Standard I/O – Expansion I/O – I/O cable length – Power-supply voltage

(Example) IX – NSN6016 – 5L – KX – N1 – EEE – 2 – 2

* Refer to P. 10 for details on the model items.

* The above model code represents a combination of robot and controller.

Model/Specifications

Model	Axis configuration		Arm length (mm)	Motor capacity (W)	Work envelope	Positioning repeatability (mm) (Note 1)	Maximum operating speed (Note 2)	Standard cycle time (sec) (Note 3)	Load capacity (kg)		Axis 3 push force (N)		Axis 4 allowable load	
									Rated	Maximum	Push action (Note 4)	Maximum thrust (Note 4)	Allowable inertial moment (kg·m²) (Note 5)	Allowable torque (N·m)
IX-NSN6016-5L-KX-□-□-□-2	Axis 1	Arm 1	350	750	±120°	±0.010	5236mm/s (Composite speed)	0.38 to 0.39	1	3	135	190	0.015	2.2
	Axis 2	Arm 2	250	600	±145°									
	Axis 3	Vertical axis	—	200	160mm	±0.010	1085mm/s							
	Axis 4	Rotating axis	—	100	±360°	±0.010	1800°/s							

* In the above model code, specify the desired controller in □. For details, refer to "Explanation of SCARA Robot Model Items" (P. 10).

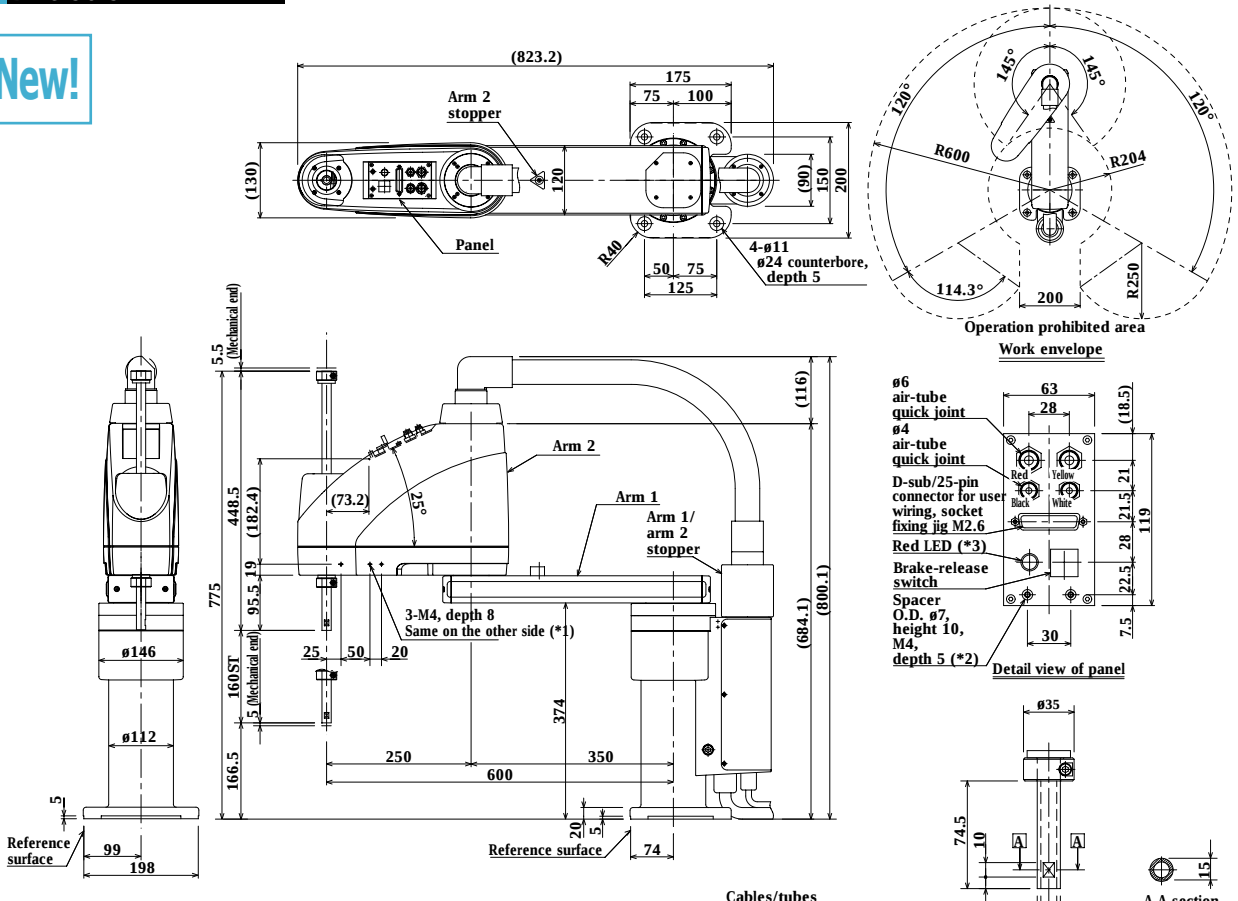
Common Specifications

Encoder type	Absolute
User wiring	25-conductor AWG26 D-sub/25-pin connector with shield (socket)
User tubing	Air tube (O.D. ø6, I.D. ø4) x 2 (Normal working pressure 0.8MPa) Air tube (O.D. ø4, I.D. ø2.5) x 2 (Normal working pressure 0.8MPa)
Alarm indicator (Note 6)	Red, small LED indicator x 1 (24 VDC must be supplied.)
Brake-release switch (Note 7)	Brake-release switch to prevent the vertical axis from dropping (24 VDC must be supplied.)

Ambient temperature/humidity	Temperature: 0~40°C, humidity: 20~85%RH or below (non-condensing)
Robot weight	33kg
Cable length (Note 8)	5L: 5m (standard), 10L: 10m (optional)

Dimensions

New!



*1: The prepared hole 3-M4, depth 8 passes through the side panel of the arm. A long mounting screw will contact the mechanical parts inside the arm, so exercise caution.
*2: The external force applied to each spacer must not exceed 30 N in the axial direction or 2 N•m in the rotating direction.
*3: To use the LED, the user must provide a circuit that takes signals from the controller's I/O output and supplies 24 VDC to the applicable LED terminal in the user connector.

Cables/tubes
- Motor/encoder cable 5m/10m
- Brake power cable 5m/10m
- User cable 5m/10m
- Air tube (4 pcs) 0.15m

Applicable Controller Specifications

Applicable controller	Features	Maximum I/O points (inputs/outputs)	Serial communication unit	Power-supply voltage	Page
XSEL-KX	General-purpose type offering excellent expandability	176/160 points	Can be installed.	AC200V	P33

Caution: Refer to P. 6 for the explanations of (Note 1) to (Note 8).

IX-NNW2515

Small SCARA Robot Dustproof/splash-proof type:
Arm Length 250mm, Vertical (Z) Axis 150mm

Type	Arm length	Load capacity
Dustproof/splash-proof type	250mm	1kg rated/3kg maximum

■Model items

Series	Model	Cable length	Controller type	Standard I/O	Expansion I/O	I/O cable length	Power-supply voltage
(Example) IX	NNW2515	5L	KX	N1	EEE	2	2

* Refer to P. 10 for details on the model items.

* The above model code represents a combination of robot and controller.

Model/Specifications

Model	Axis configuration		Arm length (mm)	Motor capacity (W)	Work envelope	Positioning repeatability (mm) (Note 1)	Maximum operating speed (Note 2)	Standard cycle time (sec) (Note 3)	Load capacity (kg)		Axis 3 push force (N)		Axis 4 allowable load	
									Rated	Maximum	Push action (Note 4)	Maximum thrust (Note 4)	Allowable inertial moment (kg·m²) (Note 5)	Allowable torque (N·m)
IX-NNW2515-5L-□-□-□-□-2	Axis 1	Arm 1	125	200	±120°	±0.010	3142mm/s (Composite speed)	0.51	1	3	65.3	90.9	0.015	1.9
	Axis 2	Arm 2	125	100	±120°									
	Axis 3	Vertical axis	—	100	150mm	±0.010	1106mm/s							
	Axis 4	Rotating axis	—	50	±360°	±0.005	1600°/s							

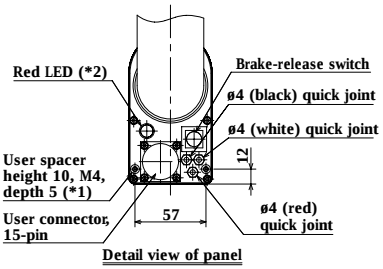
* In the above model code, specify the desired controller in □. For details, refer to "Explanation of SCARA Robot Model Items" (P. 10).

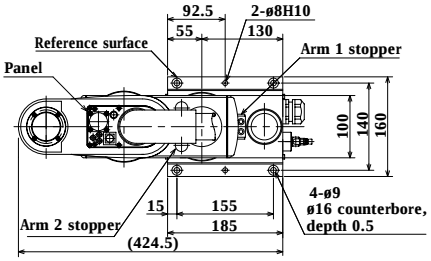
Common Specifications

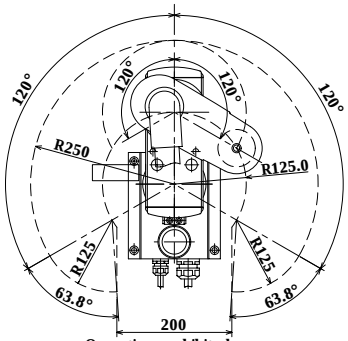
Encoder type	Absolute
User wiring	15-conductor AWG26 waterproof connector with shield
User tubing	Air tube (O.D. ø4, I.D. ø2.5) x 3 (Normal working pressure 0.8MPa)
Alarm indicator (Note 6)	Red, small LED indicator x 1 (24 VDC must be supplied.)
Brake-release switch (Note 7)	Brake-release switch to prevent the vertical axis from dropping (24 VDC must be supplied.)

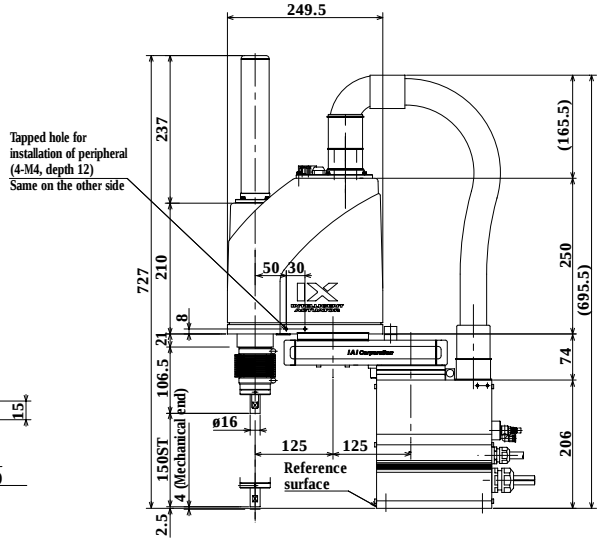
Ambient temperature/humidity	Temperature: 0~40°C, humidity: 20~85%RH or below (non-condensing)
Robot weight	21kg
Cable length (Note 8)	5L: 5m (standard), 10L: 10m (optional)
Protection grade (Note 9)	IP65 or equivalent
Air purge pressure (Note 10)	0.3MPa or above (0.6MPa maximum) (Clean, dry air)

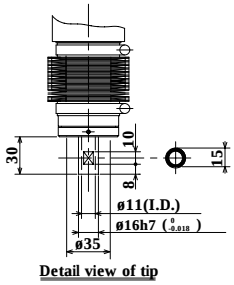
Dimensions

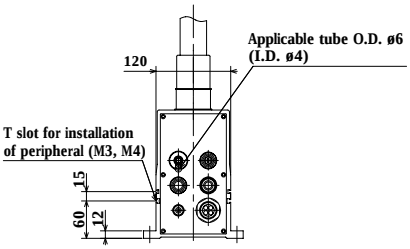












Cables/tubes
- Motor/encoder cable 5m/10m
- Brake power cable 5m/10m
- User cable 5m/10m
- Air tube (4 pcs) 0.15m

*1: The external force applied to each spacer must not exceed 30 N in the axial direction or 2 N·m in the rotating direction.
*2: To use the LED, the user must provide a circuit that takes signals from the controller's I/O output and supplies 24 VDC to the applicable LED terminal in the user connector.

Applicable Controller Specifications

Applicable controller	Features	Maximum I/O points (inputs/outputs)	Serial communication unit	Power-supply voltage	Page
XSEL-KX	General-purpose type offering excellent expandability	176/160 points	Can be installed.	AC200V	P33
XSEL-JX	Compact, space-saving type	80/64 points	Cannot be installed.		P33

Caution

Refer to P. 6 for the explanations of (Note 1) to (Note 8).

IX-NNW3515

Small SCARA Robot Dustproof/splash-proof type:
Arm Length 350mm, Vertical (Z) Axis 150mm

Type Dustproof/splash-proof type | **Arm length** 350mm | **Load capacity** 1kg rated/3kg maximum

■ Model items: Series — Model — Cable length — Controller type — Standard I/O — Expansion I/O — I/O cable length — Power-supply voltage

(Example) IX — NNW3515 — 5L — KX — N1 — EEE — 2 — 2

* Refer to P. 10 for details on the model items.

* The above model code represents a combination of robot and controller.

Model/Specifications

Model	Axis configuration		Arm length (mm)	Motor capacity (W)	Work envelope	Positioning repeatability (mm) (Note 1)	Maximum operating speed (Note 2)	Standard cycle time (sec) (Note 3)	Load capacity (kg)		Axis 3 push force (N)		Axis 4 allowable load	
									Rated	Maximum	Push action (Note 4)	Maximum thrust (Note 4)	Allowable inertial moment ($kg \cdot m^2$) (Note 5)	Allowable torque (N·m)
IX-NNW3515-5L-□-□-□-□-2	Axis 1	Arm 1	225	200	±120°	±0.010	3979mm/s (Composite speed)	0.59	1	3	65.3	90.9	0.015	1.9
	Axis 2	Arm 2	125	100	±135°									
	Axis 3	Vertical axis	—	100	150mm	±0.010	1106mm/s							
	Axis 4	Rotating axis	—	50	±360°	±0.005	1600°/s							

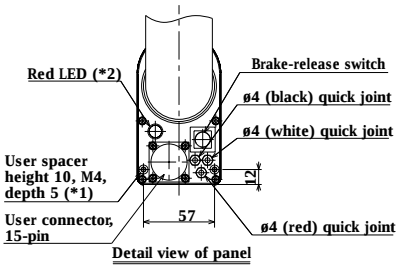
* In the above model code, specify the desired controller in □. For details, refer to "Explanation of SCARA Robot Model Items" (P. 10).

Common Specifications

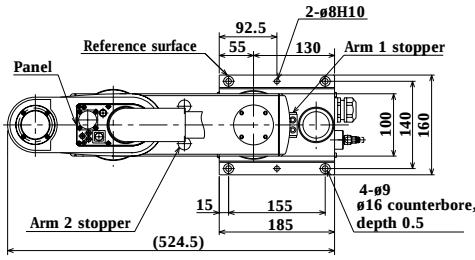
Encoder type	Absolute
User wiring	15-conductor AWG26 waterproof connector with shield
User tubing	Air tube (O.D. ø4, I.D. ø2.5) x 3 (Normal working pressure 0.8MPa)
Alarm indicator (Note 6)	Red, small LED indicator x 1 (24 VDC must be supplied.)
Brake-release switch (Note 7)	Brake-release switch to prevent the vertical axis from dropping (24 VDC must be supplied.)

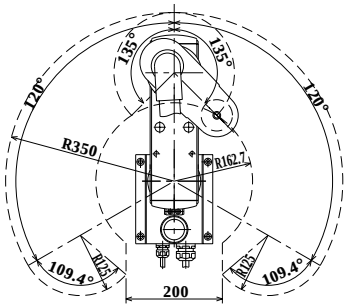
Ambient temperature/humidity	Temperature: 0~40°C, humidity: 20~85%RH or below (non-condensing)
Robot weight	22kg
Cable length (Note 8)	5L: 5m (standard), 10L: 10m (optional)
Protection grade (Note 9)	IP65 or equivalent
Air purge pressure (Note 10)	0.3MPa or above (0.6MPa maximum) (Clean, dry air)

Dimensions



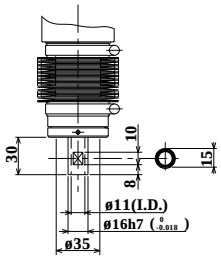
Detail view of panel



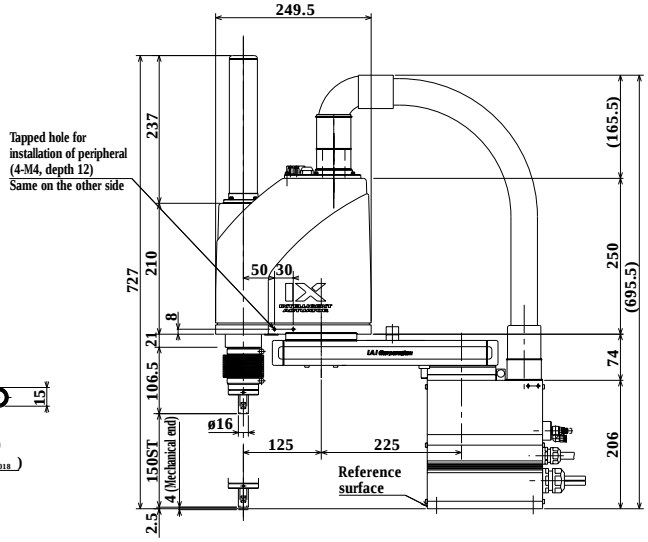


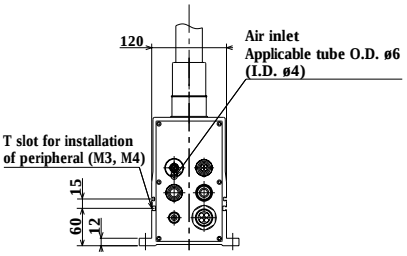
Operation prohibited area

Work envelope



Detail view of tip





Cables/tubes
- Motor/encoder cable 5m/10m
- Brake power cable 5m/10m
- User cable 5m/10m
- Air tube (3 pcs) 0.15m

*1: The external force applied to each spacer must not exceed 30 N in the axial direction or 2 N·m in the rotating direction.
*2: To use the LED, the user must provide a circuit that takes signals from the controller's I/O output and supplies 24 VDC to the applicable LED terminal in the user connector.

Applicable Controller Specifications

Applicable controller	Features	Maximum I/O points (inputs/outputs)	Serial communication unit	Power-supply voltage	Page
XSEL-KX	General-purpose type offering excellent expandability	176/160 points	Can be installed.	AC200V	P33
XSEL-JX	Compact, space-saving type	80/64 points	Cannot be installed.		P33

Caution Refer to P. 6 for the explanations of (Note 1) to (Note 8).

IX-NNW50□□

IX Medium SCARA Robot Dustproof/splash-proof type:
Arm Length 500mm, Vertical (Z) Axis 200mm (300mm)

Type	Arm length	Load capacity
Dustproof/splash-proof type	500mm	2kg rated/10kg maximum

■Model items

Series	Model	Cable length	Controller type	Standard I/O	Expansion I/O	I/O cable length	Power-supply voltage
(Example) IX	NNW5020	5L	KX	N1	EEE	2	2

* Refer to P. 10 for details on the model items.

* The above model code represents a combination of robot and controller.

Model/Specifications

Model	Axis configuration		Arm length (mm)	Motor capacity (W)	Work envelope	Positioning repeatability (mm) (Note 1)	Maximum operating speed (Note 2)	Standard cycle time (sec) (Note 3)	Load capacity (kg)		Axis 3 push force (N)		Axis 4 allowable load	
									Rated	Maximum	Push action (Note 4)	Maximum thrust (Note 4)	Allowable inertial moment (kg·m²) (Note 5)	Allowable torque (N·m)
IX-NNW5020-5L-KX-□-□-□-2 [IX-NNW5030-5L-KX-□-□-□-2]	Axis 1	Arm 1	250	400	±120°	±0.010	6283mm/s (Composite speed)	0.49	2	10	108	152	0.06	3.3
	Axis 2	Arm 2	250	200	±145°									
	Axis 3	Vertical axis	—	200	200mm [300mm]	±0.010	1393mm/s							
	Axis 4	Rotating axis	—	100	±360°	±0.005	1200°/s							

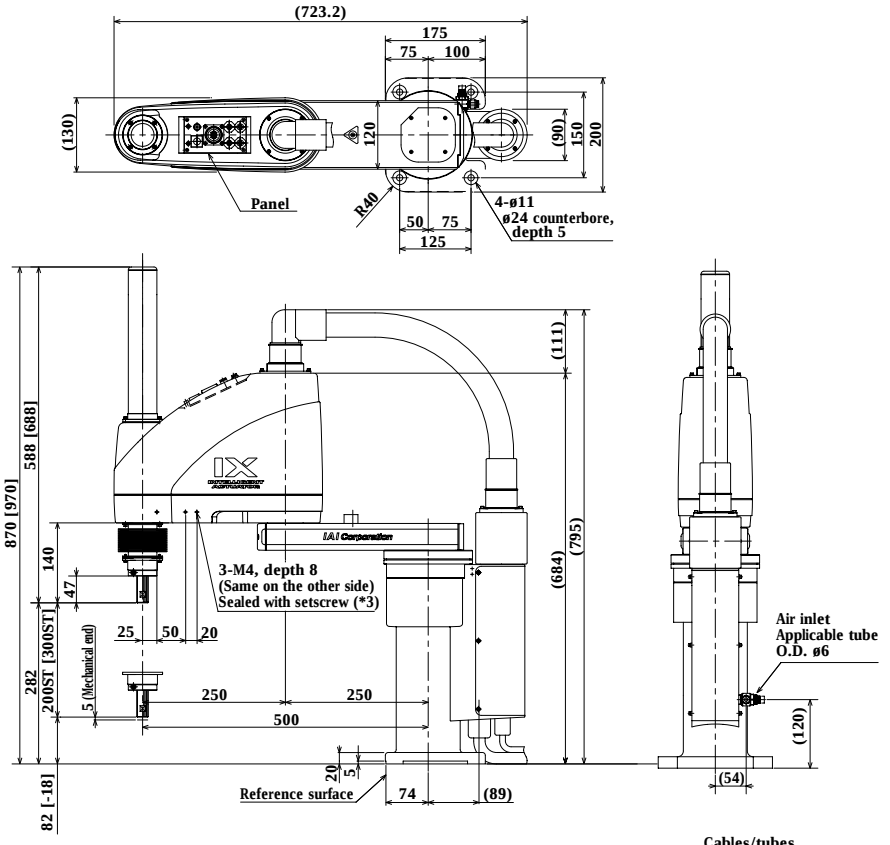
* In the above model code, specify the desired controller in □. For details, refer to "Explanation of SCARA Robot Model Items" (P. 10).

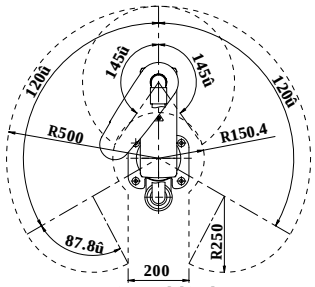
Common Specifications

Encoder type	Absolute
User wiring	23-conductor AWG26 waterproof connector with shield
User tubing	Air tube (O.D. ø6, I.D. ø4) x 2 (Normal working pressure 0.8MPa) Air tube (O.D. ø4, I.D. ø2.5) x 2 (Normal working pressure 0.8MPa)
Alarm indicator (Note 6)	Red, small LED indicator x 1 (24 VDC must be supplied.)
Brake-release switch (Note 7)	Brake-release switch to prevent the vertical axis from dropping (24 VDC must be supplied.)

Ambient temperature/humidity	Temperature: 0~40°C, humidity: 20~85%RH or below (non-condensing)
Robot weight	32.5kg
Cable length (Note 8)	5L: 5m (standard), 10L: 10m (optional)
Protection grade (Note 9)	IP65 or equivalent
Air purge pressure (Note 10)	0.3MPa or above (0.6MPa maximum) (Clean, dry air)

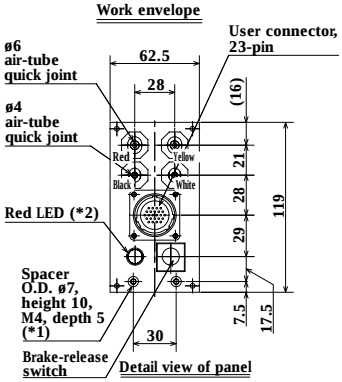
Dimensions



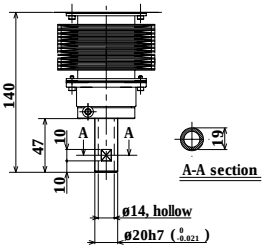


Operation prohibited area

Work envelope



Detail view of panel



A-A section

Detail view of tip

*1: The external force applied to each spacer must not exceed 30 N in the axial direction or 2 N·m in the rotating direction.
*2: To use the LED, the user must provide a circuit that takes signals from the controller's I/O output and supplies 24 VDC to the applicable LED terminal in the user connector.
*3: The prepared hole 3-M4, depth 8 passes through the side panel of the arm. A long mounting screw will contact the mechanical parts inside the arm, so exercise caution. Be sure to seal the screw by attaching sealing tape, etc.

Cables/tubes

- Motor/encoder cable	5m/10m
- Brake power cable	5m/10m
- User cable	5m/10m
- Air tube (4 pcs)	0.15m

Applicable Controller Specifications

Applicable controller	Features	Maximum I/O points (inputs/outputs)	Serial communication unit	Power-supply voltage	Page
XSEL-KX	General-purpose type offering excellent expandability	176/160 points	Can be installed.	AC200V	P33

Caution

Refer to P. 6 for the explanations of (Note 1) to (Note 10).

IAI
Quality and Innovation

Ihr Partner für IAI-Produkte,
Planung und Beratung:

Schlüter
Automation und Sensorik GmbH

Schlüter
Automation und Sensorik GmbH
Postfach 20
D-79675 Schönau
Friedrichstrasse 21
D-79677 Schönau

Tel.: 0 76 73 - 9 18 28 - 0

Fax: 0 76 73 - 9 18 28 - 50

Hotline: **0180-2-LINEAR (6 ct./Anruf)**

Email: info@schlueter-automation.de

Internet: http://www.schlueter-automation.de
http://www.linearachsensysteme.de

Dieser Prospekt wurde Ihnen überreicht durch:

Schlüter: Nur einen Telefonanruf von Ihnen entfernt!