

# IXA-3NSN60

## IXA-4NSN60

## High-Speed Type





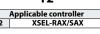


## **■** Model Specification Items

IXA	
Series	

			NSN		60			
Number of axes			Туре	P	rm length	Vertical stroke		
3	3 axes	NSN	High-speed type	60	60 600mm		180mm	
Λ	A avec					33	330mm	

| Cable length | N | Nii | 5L | 5m | 10L | 10m | L | Specified length (1m increments)













#### (1) Please refer to P51 for Notes 1 - 9.



- (2) The maximum set value for acceleration/deceleration varies depending on the weight of the object being transported, the travel distance, and the location. For continuous operation, either lower the acceleration/deceleration values or refer to the duty (guideline) and set a stop time after acceleration/deceleration.
- (3) If the motor is replaced, absolute reset must be performed. An adjustment jig will be required to perform an absolute reset on the rotational axis (4th axis). Please refer to P53 for details.
- (4) A continuous operation cannot be performed for SCARA robots at 100% of speed and acceleration. Refer to the "Acceleration/Deceleration Setting Guidelines" for executable operating conditions.

## Option

Name	Model number	Reference page
Flange	IX-FL-1	53
(Note) Please purchase separ	ately.	

#### Cable length

Type	Cable code	3-axis specification	4-axis specification
Standard type	<b>5L</b> (5m)	0	0
Standard type	<b>10L</b> (10m)	0	0
	<b>1L</b> (1m) ~ <b>4L</b> (4m)	0	0
Specified length	<b>6L</b> (6m) ~ <b>9L</b> (9m)	0	0
	<b>11L</b> (11m)	0	0
	<b>12L</b> (12m)	0	0
	<b>13L</b> (13m)	0	0
	<b>14L</b> (14m)	0	0
	<b>15L</b> (15m)	0	0

(Note) Total amount of the following cables:

[3-axis spec.] Motor cables:3, Encoder cables: 3, Brake cable: 1 [4-axis spec.] Motor cables:4, Encoder cables: 4, Brake cable: 1

Cycle time

Item	Time
Standard cycle time	0.26 seconds
Continuous cycle time	0.45 seconds

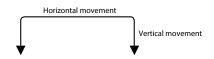
The standard/continuous cycle time represents the time required when an operation is performed with a cycle operation setting at maximum speed, under the following conditions.

2kg transport, vertical movement 25mm, horizontal movement 300mm (rough positioning arch motion)

[Standard cycle time]

The time required for maximum speed. This is a general guideline for high speed performance. Note that continuous operation is not possible under maximum speed operation. [Continuous cycle time]

The cycle time for continuous operation.



Main sp	Main specifications									
	ltem		Description							
	item		3-axis specification 4-axis specificati							
Max. payload	d (kg) (Note 1)	1	2							
	Combined max. spe-	ed (mm/s)	64	14						
Speed (Note 2)		1st arm (deg/s)	30	00						
	Max. speed of	2nd arm (deg/s)	d arm (deg/s) 75							
	individual axes	Vertical axis (mm/s)	1600							
		Rotational axis (deg/s)	_	2000						
Push force (N	J) (Noto 2)	Upper limit	1	10						
rusii ioice (i	v) (Note 3)	Lower limit	2	5						
Arm length (mm)			600							
Individual arm length (mm)		1st arm	350							
		2nd arm	2	50						
		1st arm (deg)	±137							

2nd arm (deg) Vertical axis (mm)

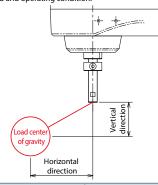
nota	tional axis (deg)			±360			
		Descr	iption				
	3-axis specifi	cation	4-a:	kis specification			
surface	±0.01mm						
	±0.01mm						
	_		±0.005 d	egrees			
	Outer diameter $\Phi$ 6	i, inner diam	neter Φ4, a	ir tube 3 pcs.			
			mp 1 pc.				
		h for prevent		al axis from dropping.			
	3.2 N·m		3.2 N⋅m				
oment	8.3 N·m						
ure and	0-40℃, 20-85% RI	d or lower (n	on-conde	nsing)			
	IP20						
e	No impact or vibra	tion should	be applie	d.			
	80 dB or lower						
	CE marking, RoHS						
	AC servo motor						
	750W						
	400W						
	200W						
	100W						
pe Battery-less absolute							
	131072 pulse/rev						
	I surface	3-axis specifications of the service	Descr  3-axis specification  I surface ±0.01mm ±0.01mm — 10-core (9-core + shield) AWG. Outer diameter Ф6, inner diam (max. usable pressure 0.6MPa) Amber color LED, small pilot lar (DC24V supply required) Brake release switch for prevent 3.2 N·m oment 8.3 N·m urre and 0-40°C, 20-85% RH or lower (n IP20 No impact or vibration should 80 dB or lower CE marking, RoHS AC servo motor 750W 400W 200W — Battery-less absolute	Description  3-axis specification  4-axis specification  10-core (9-core + shield) AWG24 (rated 5-core (9-core + shield) AWG24 (rated 5-core - shield) ANG24 (rated 5-core - shield) ANG24 (rated 5-core - shield) ANG24 (rated 5-core - shield) AWG24 (rated 5-core - shield) A			

#### Tip shaft allowable load inertia moment

Operation range of individual

Number of axes	Tip shaft allowable load inertia moment
3-axis specification	0.12 kg ⋅ m²
4-axis specification	0.12 kg * III

The 4th axis allowable inertia moment is the allowable inertial moment value for the center of rotation conversion of the 4th axis (rotational axis) of the SACRA robot. Make sure that the offset value from center of the rotation of the 4th axis to the tool center of gravity is within the guideline values listed below. If the tool center of gravity is far from the 4th axis center, it is necessary to reduced speed and acceleration/deceleration appropriately. The overhang distance is limited depending on the payload and operating condition.



Horizontal direction	Vertical direction
180mm or less	100mm or less



#### Acceleration/Deceleration Setting Guidelines

The SCARA Robot IXA cannot operate continuously at the maximum acceleration/deceleration or maximum speed specified in the catalog. To operate at the maximum acceleration/deceleration, set a stop time referring to the continuous operation duty guideline graph. If a continuous operation is required, do so within the continuous operation guideline range shown in the acceleration/deceleration setting guideline graph.

- 1) For a PTP operation, always use the WGHT command in the program to set the weight and moment of inertia. For the SCARA robot, the maximum acceleration/deceleration for each payload is set at 100%. When the payload differs, the operation time will also vary even at the same acceleration/deceleration or speed setting.

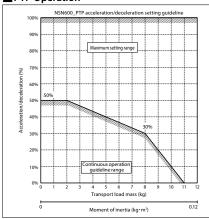
  2) Adjust the acceleration/deceleration setting value by gradually increasing it from the continuous operation reference value.

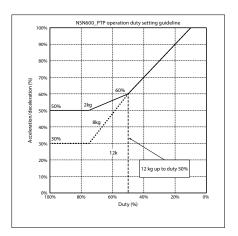
  3) If an overload error occurs, lower the acceleration/deceleration as required, or set a stop time by referring to the continuous operation duty guideline.

- 4) Duty (%) = (Operation time / (Operation time + Stop time)) x 100 5) When moving the robot horizontally at high speed, operate the vertical axis as close to the upward end as possible
- 6) Set the moment of inertia and payload to the allowable value or lower.
- 7) The load mass represents the moment of inertia and weight at the center of rotation of the 4th axis.

  8) Operate the robot at an appropriate acceleration/deceleration according to the weight and moment of inertia for the 4-axis specification. Otherwise, the drive section may become prematurely unusable or damaged, or vibration
- 9) If the load moment of inertia is high, vibration may occur in the vertical axis, depending on the position of the vertical axis. In such a case, decrease the acceleration/deceleration for operation as required.

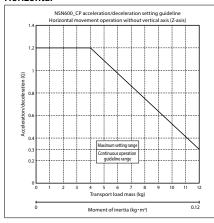
#### **■ PTP Operation**



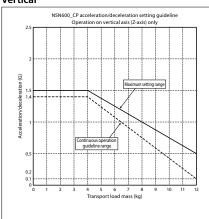


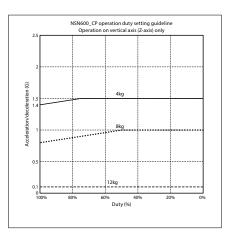
#### **■**CP Operation

#### Horizontal

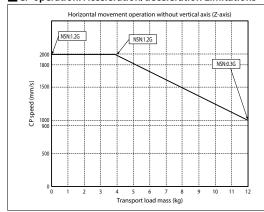


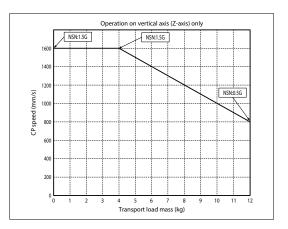
#### Vertical





### ■ CP operation: Acceleration/deceleration Limitations







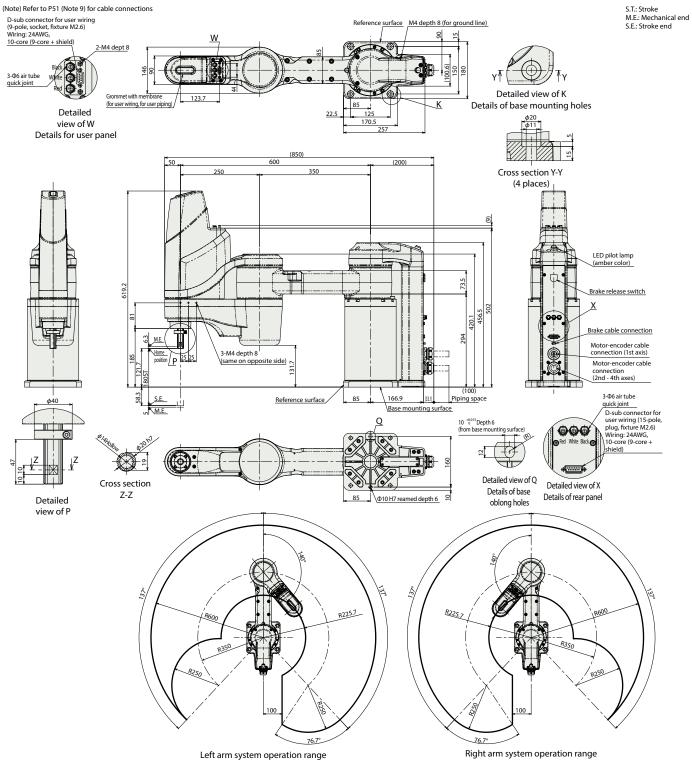
#### Dimensions

#### www.intelligentactuator.com ■IXA-3NSN6018\_4NSN6018

CAD drawings can be downloaded from our website.







#### Mass

Ite	em	Description
Mass	3-axis specification	31.5kg
Ividos	4-axis specification	33.0kg

## **■**IXA-3NSN6033\_4NSN6033 S.T.: Stroke M.E.: Mechanical end S.E.: Stroke end (Note) Refer to P51 (Note 9) for cable connections D-sub connector for user wiring (9-pole, socket, fixture M2.6) Wiring: 24AWG, Reference surface M4 depth 8 (for ground line) 10-core (9-core + shield) 2-M4 dept 8 3-06 air tube Detailed view of K Details of base Grommet with membrane (for user wiring, for user piping) mounting holes Detailed view of W Details for user panel 600 Cross section Y-Y (4 places) LED pilot lamp (amber color) Brake release switch Brake cable connection Motor-encoder cable connection (1st axis) 3-M4 depth 8 same on opposite side) Motor-encoder cable connection (2nd - 4th axes) Reference surface 3-Φ6 air tube Base mounting surface quick joint 10 +0.015 Depth 6 (from base mounting surface) D-sub connector for user wiring (15-pole, plug, fixture M2.6) Wiring: 24AWG, 10-core (9-core + shield) **666** $Detailed\ view\ of\ Q$ Details of base Detailed view of X Cross section Details of rear panel oblong holes Detailed Z-Z Φ10 H7 reamed depth 6 🔎 view of P R225.7 Mass

#### Applicable controller

Mass

3-axis specification

4-axis specification

The actuator on this page can be operated by the controllers indicated below.

Description

32.0kg

33.5kg

	External	Max. number of	Power supply	Control metho				d								Max. number of positioning				
Name	view	connectable axes	voltage	Positioner	Network* ontion				noints	Reference page										
	VIEW	Connectable axes	voltage	Positioner	ner Pulse train Program	DV	CC	CIE	PR	CN	ML	ML3	EC	EP	PRT	SSN	ECM	politis		
XSEL-RAX3/SAX3 (for IXA)	i in	3	3-phase AC200V	_	_	•	•	•	_	•	_	_	_	•	•	_	_	_	41250 (Depending on the type)	54
XSEL-RAX4/SAX4 (for IX and IXA)	lien.	4	5-priase AC200V	_	_	•	•	•	_	•	-	-	-	•	•	_	-	_	36666 (Depending on the type)	54

Left arm system operation range

Right arm system operation range