



## Standard Specifications

TYPE	FS03N FC03N	FS06N FC06N FA06N	FS06L FC06L FA06E	FS10C FC10C	FS10E FC10E	FS10L FC10L FA10L	FS20C FC20C	FS20N FC20N FA20N
Degrees of Freedom	6 axes							
Maximum Reach*1	620 mm	1,000 mm	1,550 mm	1,000 mm	1,450 mm	1,850 mm	1,300 mm	1,650 mm
Maximum Payload	3 kg	6 kg	6 kg	10 kg	10 kg	10 kg	20 kg	20 kg
Maximum Stroke	JT1	± 160°	± 160°	± 160°	± 160°	± 160°	± 160°	± 160°
	JT2	+150°~-60°	+140°~-105°	+140°~-105°	+140°~-105°	+140°~-105°	+140°~-105°	+140°~-105°
	JT3	+120°~-150°	+120°~-155°	+120°~-155°	+120°~-155°	+120°~-155°	+120°~-155°	+120°~-155°
	JT4	± 360°	± 270°	± 270°	± 270°	± 270°	± 270°	± 270°
	JT5	± 135°	± 145°	± 145°	± 145°	± 145°	± 145°	± 145°
	JT6	± 360°	± 360°	± 360°	± 360°	± 360°	± 360°	± 360°
Maximum Speed	JT1	360°/s	240°/s	200°/s	200°/s	200°/s	160°/s	160°/s
	JT2	250°/s	200°/s	140°/s	140°/s	140°/s	140°/s	140°/s
	JT3	225°/s	250°/s	200°/s	200°/s	200°/s	160°/s	160°/s
	JT4	540°/s	430°/s	360°/s	360°/s	360°/s	330°/s	330°/s
	JT5	225°/s	430°/s	360°/s	360°/s	360°/s	330°/s	330°/s
	JT6	540°/s	720°/s	600°/s	600°/s	600°/s	500°/s	500°/s
Moment	JT4	5.8 N·m	12.0 N·m	12.0 N·m	21.5 N·m	21.5 N·m	21.5 N·m	39.3 N·m
	JT5	5.8 N·m	12.0 N·m	12.0 N·m	21.5 N·m	21.5 N·m	21.5 N·m	39.3 N·m
	JT6	2.9 N·m	6.0 N·m	6.0 N·m	9.8 N·m	9.8 N·m	9.8 N·m	19.6 N·m
Moment of Inertia	JT4	0.12 kg·m <sup>2</sup>	0.24 kg·m <sup>2</sup>	0.24 kg·m <sup>2</sup>	0.63 kg·m <sup>2</sup>	0.63 kg·m <sup>2</sup>	0.63 kg·m <sup>2</sup>	0.88 kg·m <sup>2</sup>
	JT5	0.12 kg·m <sup>2</sup>	0.24 kg·m <sup>2</sup>	0.24 kg·m <sup>2</sup>	0.63 kg·m <sup>2</sup>	0.63 kg·m <sup>2</sup>	0.63 kg·m <sup>2</sup>	0.88 kg·m <sup>2</sup>
	JT6	0.03 kg·m <sup>2</sup>	0.07 kg·m <sup>2</sup>	0.07 kg·m <sup>2</sup>	0.15 kg·m <sup>2</sup>	0.15 kg·m <sup>2</sup>	0.15 kg·m <sup>2</sup>	0.25 kg·m <sup>2</sup>
Repeatability mm	± 0.05 mm	± 0.05 mm	± 0.1 mm	± 0.05 mm	± 0.1 mm	± 0.1 mm	± 0.1 mm	± 0.1 mm
Mass	20 kg	165 kg	170 kg	165 kg	170 kg	280 kg	275 kg	280 kg
Max. linear Speed	6,000 mm/s	8,000 mm/s	9,200 mm/s	6,200 mm/s	8,800 mm/s	9,400 mm/s	6,900 mm/s	8,500 mm/s
Recommended Controller*2	D70	D71/D40	D71/D40	D71/D40	D71/D40	D40	D40	D40
Body Color	Munsell 10GY9/1 equivalent							
Installation	Floor or Ceiling installation ( Wall installation as option)							
Ambient conditions	Temperature	0 ~ 45 °C						
	Humidity	35 ~ 85 % /(No dew, nor frost allowed.)						
	Vibration	Less than 0.5G						
	Others	The robot installing place should be free from inflammable or corrosive liquid or gas, electric noise interference						
Pneumatic Circuit	Double solenoid valve: 1 Circuit*3							
Degree of Protection	IP54	IP 65 equivalent (Wrist (axes 5 and 6) IP67)*4						
Max. Payload on Upper Arm	Please contact us							

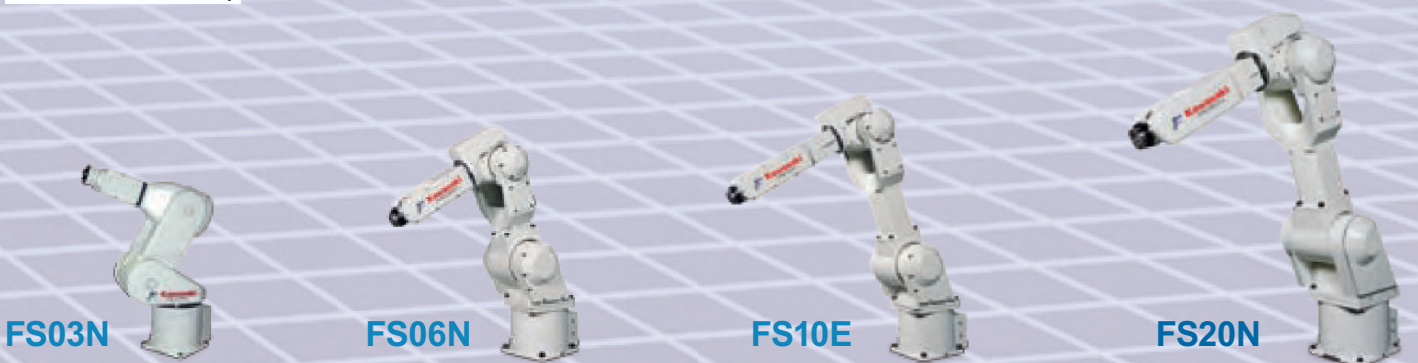
\*1: Distance between centre of axis JT1 and centre of axis JT5.

\*3: Not available for the FA Series

\*4: Not available for the FA Series.

\*2: Please contact us separately as regards the controller for the FC Series.

Technical Data conditionally



FS03N

FS06N

FS10E

FS20N

# Specifications

## Standard Specifications

FS30N FC30N	FS30L FC30L FA30L	FS45C FC45C	FS45N FC45N	FS60L FC60L	FS10X	FS20X	TYPE
6 axes							Degrees of Freedom
1,670 mm	2,100 mm	1,670 mm	1,800 mm	2,100 mm	2,950 mm	2,730 mm	Maximum Reach*1
30 kg	30 kg	45 kg	45 kg	60 kg	10 kg	20 kg	Maximum Payload
± 160°	± 160°	± 160°	± 160°	± 160°	± 160°	± 160°	JT1
+140°~-105°	+140°~-105°	+140°~-105°	+140°~-105°	+140°~-105°	+140°~-105°	+140°~-105°	JT2
+120°~-155°	+120°~-155°	+120°~-155°	+120°~-155°	+120°~-155°	+120°~-155°	+120°~-155°	JT3
± 270°	± 270°	± 270°	± 270°	± 270°	± 270°	± 270°	JT4
± 130°	± 130°	± 130°	± 130°	± 130°	± 145°	± 145°	JT5
± 360°	± 360°	± 360°	± 360°	± 360°	± 360°	± 360°	JT6
160°/s	160°/s	160°/s	160°/s	160°/s	160°/s	160°/s	JT1
140°/s	140°/s	140°/s	140°/s	140°/s	140°/s	140°/s	JT2
160°/s	160°/s	160°/s	160°/s	110°/s	200°/s	200°/s	JT3
240°/s	240°/s	240°/s	240°/s	180°/s	300°/s	300°/s	JT4
240°/s	240°/s	240°/s	240°/s	175°/s	360°/s	330°/s	JT5
340°/s	340°/s	340°/s	340°/s	260°/s	600°/s	500°/s	JT6
176.4 N·m	176.4 N·m	176.4 N·m	176.4 N·m	235.2 N·m	21.5 N·m	39.3 N·m	JT4
176.4 N·m	176.4 N·m	176.4 N·m	176.4 N·m	235.2 N·m	21.5 N·m	39.3 N·m	JT5
98.0 N·m	98.0 N·m	98.0 N·m	176.4 N·m	130.3 N·m	9.8 N·m	19.6 N·m	JT6
7.2 kg·m <sup>2</sup>	7.2 kg·m <sup>2</sup>	10.8 kg·m <sup>2</sup>	10.8 kg·m <sup>2</sup>	24.8 kg·m <sup>2</sup>	0.63 kg·m <sup>2</sup>	0.88 kg·m <sup>2</sup>	JT4
7.2 kg·m <sup>2</sup>	7.2 kg·m <sup>2</sup>	10.8 kg·m <sup>2</sup>	10.8 kg·m <sup>2</sup>	24.8 kg·m <sup>2</sup>	0.63 kg·m <sup>2</sup>	0.88 kg·m <sup>2</sup>	JT5
3.3 kg·m <sup>2</sup>	3.3 kg·m <sup>2</sup>	5.0 kg·m <sup>2</sup>	5.0 kg·m <sup>2</sup>	6.7 kg·m <sup>2</sup>	0.15 kg·m <sup>2</sup>	0.25 kg·m <sup>2</sup>	JT6
± 0.15 mm	± 0.15 mm	± 0.15 mm	± 0.15 mm	± 0.15 mm	± 0.23 mm	± 0.5 mm	Repeatability mm
575 kg	585 kg	575 kg	580 kg	585 kg	580 kg	585 kg	Mass
8,900 mm/s	11,100 mm/s	8,900 mm/s	9,700 mm/s	9,000 mm/s	15,000 mm/s	15,000 mm/s	Max. linear Speed
D42	D42	D42	D42	D42	D42	D42	Recommended Controller*2
Munsell 10GY9/1 equivalent							Body Color
Floor or Ceiling installation ( Wall installation as option)							Installation
0 ~ 45 °C							Temperature
35 ~ 85 % (No dew, nor frost allowed.)							Humidity
Less than 0.5 G							Vibration
The robot installing place should be free from inflammable or corrosive liquid or gas, electric noise interference							Others
Double solenoid valve: 1 Circuit*3							Pneumatic Circuit
IP 65 equivalent (Wrist (axes 5 and 6) IP67)*4							Degree of Protection
Please contact us							Max. Payload on Upper Arm

\*1: Distance between centre of axis JT1 and centre of axis JT5.

\*2: Please contact us separately as regards the controller for the FC Series.

\*3: Not available for the FA Series \*4: Not available for the FA Series.

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FS60L