

ZDFT1220

INDUSTRIAL ROBOT

Robot model		ZDFT1220
Freedom		6
Position		Ground installation and suspended ceiling installation
Maximum operating speed	J1 Axis	145° /sec
	J2 Axis	115° /sec
	J3 Axis	150° /sec
	J4 Axis	265° /sec
	J5 Axis	215° /sec
	J6 Axis	260° /sec
Maximum operating range	J1 Axis	± 180°
	J2 Axis	-125° ~+90°
	J3 Axis	-86° ~+202°
	J4 Axis	± 170°
	J5 Axis	-150° ~+116°
	J6 Axis	± 360°
Maximum activity radius		1980mm
Maximum end load		12KG
Body weight		About 198kg
Allowable torque	J4	22N · m
	J5	22N · m
	J6	9.8N · m
Allowable moment of inertia	J4	0.65kg·m ²
	J5	0.65kg·m ²
	J6	0.17kg·m ²
Repeatability		± 0.08mm
Robot base size		300x420mm
Ambient temperature		0~45℃
Relative humidity		20~80%RH
Atmospheric pressure		89KPa~106KPa(Altitude below 1000m)
Vibration, impact, collision		≤0.5G
Protection grade		IP54(Wrist IP65)

● Inertia tensor of the connecting rod relative to the center of mass

Object	Base	Rotating seat components	Boom components	Small arm fixed seat components	Small arm components	Wrist
Consult	Coordinate system 0	Coordinate system 1	Coordinate system 2	Coordinate system 3	Coordinate system 4	Coordinate system 5
$I_{xx}(\text{Kgmm}^2)$	/	2.1×10^6	9.4×10^5	1.0×10^6	2.1×10^6	2.0×10^4
$I_{yy}(\text{Kgmm}^2)$	/	2.7×10^6	1.2×10^7	5.6×10^5	2.1×10^6	1.0×10^4
$I_{zz}(\text{Kgmm}^2)$	/	1.6×10^6	1.1×10^7	1.4×10^6	4.5×10^4	1.7×10^4

● Joint coupling

Joint	J1-J2	J2-J3	J3-J4	J4-J5	J4-J6	J5-J6
Coupling relationship equation (Coupling coefficient)	/	/	/	/	/	35

● Reducer parameters

Model	100C	250BX	42D	32Harmonic	20Harmonic	FBS32
Reducer reduction ratio	36.75	111	105	50	80	30
Comprehensive reduction ratio	102.9	111	104	102	128	105
Rated output speed(r/min)	15	15	15	25	25	25
Rated torque(N · m)	980	1078	412	76	25	25
Permissible torque for starting and stopping(N · m)	2450	2695	1029	216	56	56
Instantaneous maximum torque(N · m)	4900	5390	2058	382	98	98
Moment rigidity(N · m)	2450	2940	1660	/	/	/
Instantaneous maximum torque(N · m)	4900	5880	3320	/	/	/

● Motor parameters

Joint	J1	J2	J3	J4	J5	J6
Motor model	130	180	130	60	50	50
Rated power(kW)	2	3	1.5	0.4	0.2	0.2
Rated voltage(V)	220					
Rated current(A)	10	18	7	2.6	1.5	1.5
Rated torque(N · m)	6.36	14.3	4.77	1.27	0.63	0.63
Rated speed(r/min)	3000	2000	3000	3000	3000	3000
Maximum speed(r/min)	3000	2200	3100	4500	4500	4500
Rotor inertia(*10e-4kgm ²)	16.5	51	9	0.4	0.2	0.2
Line back electromotive force coefficient(V/Krpm)	50.5	52.8	48	33	30	30
Number of pole pairs	5					
Encoder	17 bit multi turn insulation value Tamagawa agreement					