

KINOVA

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Built for MedTech.

Technical Product Specifications



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PHYSICAL

Parameter	Value
Reach (J2 to J6)	750 mm
Total arm length	1212 mm
Weight	Approximately 12.7 kg
Maximum payload	3 kg ¹
Number of axes	7
Ingress Protection rating (IP)	IP54 ²
Actuator model – J1/J2	ACT090
Actuator model – J3/J4	ACT080
Actuator model – J5/J6/J7	ACT065
Installation orientation	Any

POWER

Parameter	Value
Operating voltage range	22 to 26 VDC, 24 VDC Nominal 46 to 50 VDC, 48 VDC Nominal
Safe operating voltage range	20 to 55 VDC
Maximum DC current	20 A

PERFORMANCE

Parameter	Value
Range of motion – J1/J3/J5/J7	± 360°
Range of motion – J2	± 114°
Range of motion – J4	± 139°
Range of motion – J6	± 105°
Mechanical brake	All actuators
Torque sensor	Redundant
Maximum speed	500 mm/s
Stopping distance 50 mm/s – SS2	< 1 mm
Stopping distance 50 mm/s – STO	< 3 mm
Stopping distance 500 mm/s – SS2	< 11 mm
Stopping distance 500 mm/s – STO	< 35 mm
Repeatability (ISO 9283)	≤ 0.1 mm
Motion resolution (ISO 9283)	≤ 0.1 mm
Accuracy (calibrated) (ISO 9283)	≤ 1 mm
Static compliance (ISO 9283)	< 0.1 mm/N
Sound level	< 65 dBA @ 1 m
Operating temperature range	5 to 35 °C
Operating pressure range	70 to 106 kPa (0 to 3000 meters above sea level)
Operating humidity range (non-condensing)	20 to 93% @ 35 ± 2 °C
Transportation and storage range temperature	-29 to 70 °C

COMMUNICATION

Parameter	Value
Communication frequency	1 or 4 kHz
Communication protocol	EtherCAT® / FSoE® CiA 402 Drive Profile Safety Drive Profile (ETG.6100)
Modes of operation	csp, csv, cst

INTERFACES

Parameter	Value
Control communication bus	EtherCAT® 100Mbps
Digital inputs	2 × Safe Torque Off (STO) 2 × Emergency Brake Release enable
Emergency brake release	Buttons at 6th joint — releases brakes of J1, J2, J3, J4
Passthrough lines	4 × differential pairs: 1 Gbps link or 2 × 100Mbps (EtherCAT®/Ethernet) 2 × STO 2 × general purpose digital signals (24V, 200mA)
Base mechanical interface	Diameter 108 mm 4 × M8 threaded holes 2 × dowel holes 5 mm
Base electrical interface	Power EtherCAT I/Os Passthrough lines Single connector: 8D0C23F53PN
Tool interface — mechanical	Cylindrical mating surface with radial mountings

STANDARDS & COMPLIANCE

Parameter	Value
Targeted Field	Medical (incl. operating room)
Applicable standards	RoHS REACH Proposition 65 EAR99 TSCA IEC 60601-1 / IEC 80601-2-77 IEC 62304 IEC 81001-5-1

¹ Maximum payload for worst-case conditions (maximum reach and speed).

² IP rating achieved when robot is mounted on a stand with a tool attached, per ICD.

³ Single fault safe.

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