

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	1206 mm
Weight	Approximately 12.6 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	All actuators (Redundant)
Maximum speed	500 mm/s
Stopping distance 50 mm/s – SS1/SS2	< 1 mm
Stopping distance 50 mm/s – STO	< 3 mm
Stopping distance 500 mm/s – SS1/SS2	< 11 mm
Stopping distance 500 mm/s – STO	< 35 mm
Repeatability (ISO 9283)	0.1 mm
Movement resolution	0.1 mm
Accuracy (calibrated)	1 mm
Static compliance	< 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 m asl)
Operating humidity (non-condensing)	10 to 85% @ 22 °C
Transportation and storage 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
Monitoring functions	Safe Operating Stop Safe Brake Test ³

INTERFACES

Parameter	Value
Control communication bus	EtherCAT® 100 Mbps
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 or 2 × 100 Mbps (EtherCAT®/Ethernet) 2 × STO 2 × general purpose digital signals (24 V, 200 mA)
Base mechanical interface	Diameter 108 mm 4 × M8 threaded holes 2 × dowel holes 5 mm
Base electrical interface	Power EtherCAT I/Os Passthrough — connector: 8D0C23F53PN
Tool interface — mechanical	Cylindrical mating surface with radial mountings
Tool interface — electrical	Power EtherCAT I/Os Passthrough—connector: TFM-116-02-S-D-WT

STANDARDS & COMPLIANCE

Parameter	Value
Intended use	Up to Class III medical intervention
Applicable standards	RoHS WEEE REACH Proposition 65 EAR99 TSCA IEC 60601-1 IEC 80601-2-77 IEC 62304 IEC 81001-5-1 MDR EU 2017/745

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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