



MAiRA® Multi-Sensing Intelligent Robotic Assistant

Datasheet

World's smartest, safest, fastest, and most accurate robot.

MAiRA is the world's first commercially available cognitive robot. With its integrated AI and novel touchless safe human detection sensor technology, MAiRA can perceive its surroundings and is able to easily adapt to all kinds of industrial environments. MAiRA opens a new era of robots and offers endless possibilities for interaction, for beginners and experts alike. Enabling true collaboration of human and machine.

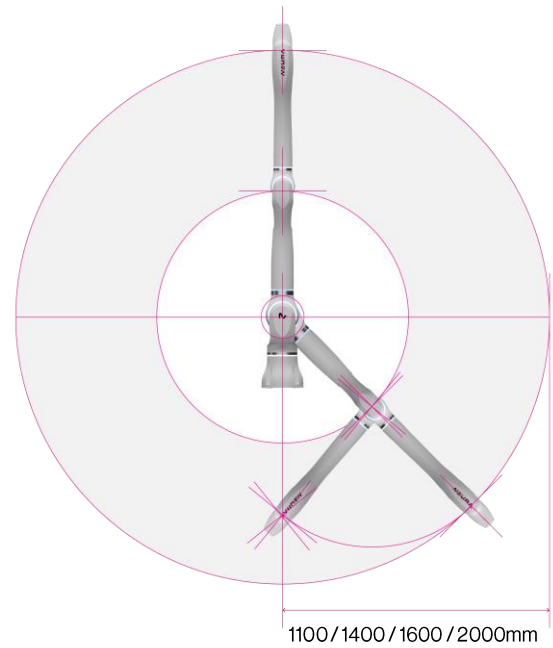
Specifications	Basic/Pro S	Basic/Pro M	Basic/Pro L	Basic/Pro XL*
Payload	15-18kg	12-14 kg	9-12 kg	25-35 kg
Reach	1100 mm	1400 mm	1600 mm	1800-2000 mm
Degrees of Freedom	6 or 7 rotary joints	6 or 7 rotary joints	6 or 7 rotary joints	6 or 7 rotary joints
Weight	51kg	53kg	56 kg	135kg
Robot mounting	Any orientation	Any orientation	Any orientation	Any orientation
Ambient working temperature	0 °C–40 °C	0 °C–40 °C	0 °C–40 °C	0 °C–40 °C
Data, power, and media	Complete inner harness & ducts	Complete inner harness & ducts	Complete inner harness & ducts	Complete inner harness & ducts
Footprint base	Ø 252 mm	Ø 252 mm	Ø 252 mm	Ø 370 mm
Tool connector	ISO 9409-1-50-7-M6	ISO 9409-1-50-7-M6	ISO 9409-1-50-7-M6	EN ISO-9409-1-80-6-M8
Status illumination	RGBLED on each axis	RGBLED on each axis	RGBLED on each axis	RGBLED on each axis
Performance level	PLdCat.3/SIL2	PLdCat.3/SIL2	PLdCat.3/SIL2	PLdCat.3/SIL2
Accuracy	± 0.01 mm	± 0.01 mm	± 0.01 mm	± 0.02 mm

*on request

Movement

Axis	Working angles		Maximum speed*	
	S/M/L/XL	S/M/L	XL	
A1	±180°	120°/s	55°/s	
A2	±120°	120°/s	55°/s	
A3	±180°	150°/s	90°/s	
A4	±150°	150°/s	90°/s	
A5	±180°	200°/s	120°/s	
A6	±145°	200°/s	120°/s	
A7	±180°	200°/s	220°/s	

* Maximum factory speed for all axes is 90°/s. Activation possible on request. Exceeding 90°/s can have a negative impact on the lifespan of the axes.



TCP connector flange

Hole pattern	S/M/L: DIN ISO 9409-1-50-7-M6 XL: EN ISO-9409-1-80-6-M8
Compressed air (optional)	3 x push-pull-plug S/M/L: 3 mm OD XL: 6 mm OD
I/O power supply	24V 600mA
Interfaces	GPIO, Modbus RTU via M8 8-pin-A-M, IEC 61076-2-104, EtherCAT (in development)

Software & Controller

Motion controller	Real-Time NR-Motion Master
Machine Learning kernel	Smart applications, performance enhancement
Open architecture	3 rd party apps, access to low level controllers and sensor data (optional)
Software interfaces	Robot and sensor data via Python NeuraPy API (SDK)
Safety architecture	Safe master & FSoE communication

Control box

Dimensions	592 mm x 567 mm x 253mm
Weight	35 kg
Power supply	90-250 VAC, 50/60 Hz, max. 16A
Interfaces	GPIO, Modbus TCP, OPC UA (in development)

Teach pendant

Dimensions	285 mm x 228 mm x 95 mm
Resolution	2560 x 1600
Cable length	5 m / 197 in
User interface	Intuitive, drag-and-drop

Sensors

Vision	3D Vision Sensor
Visual Feedback	Laser RGB Projection (available for MAiRA XL)
Force/torque sensing	6-DoF F/T-sensor in flange (optional)
Guidance	Zero gravity mode
Safety	Touchless Safe Human Detection technology (optional)
Interaction	3D voice recognition sensor and on-board speaker, visual feedback (available for MAiRA XL)

Programming features

Smart GUI	NR easy programming interface
Fast programming	Shortcut buttons, voice control, gesture control (optional), dynamic path and force recording
Human-robot-interaction	Vision, audio, force-feedback, face recognition (optional), motion tracking
Environment visualization	3D CAD data, vision sensor data

Contact us to learn more about MAV+

Mobile manipulator solution **MAV+**



Combination with MAiRA or LARA

Flexible rotating axis

Pallet-sized shelf

Configuration Matrix MAiRA Pro S / M / L / XL

	Artificial Intelligence*		Feature Options				Vision			Interaction	
	Artificial Intelligence*	Compressed air at Connector Flange	6-Dof F/T-sensor in flange*	Touchless Safe Human Detection technology**	Extended rotation Axis 7	Custom color	3D Vision Sensor (Head)*	3D Vision Sensor (Flange)*	3D Vision Sensor Gesture Control (XL only)	3D voice recogn. sensor & on-board speaker*	Visual feedback Laser RGB (XL only)
Artificial Intelligence*	■	■	■	■	■	■	■	■	■	■	■
Compressed air at Connector Flange	■	■	■	■	■	■	■	■	■	■	■
6-Dof F/T-sensor in flange*	■	■	■	■	■	■	■	■	■	■	■
Touchless Safe Human Detection technology**	■	■	■	■	■	■	■	■	■	■	■
Extended rotation Axis 7	■	■	■	■	■	■	■	■	■	■	■
Custom color	■	■	■	■	■	■	■	■	■	■	■
3D Vision Sensor (Head)*	■	■	■	■	■	■	■	■	■	■	■
3D Vision Sensor (Flange)*	■	■	■	■	■	■	■	■	■	■	■
3D Vision Sensor Gesture Control (XL only)	■	■	■	■	■	■	■	■	■	■	■
3D voice recogn. sensor & on-board speaker*	■	■	■	■	■	■	■	■	■	■	■
Visual feedback Laser RGB (XL only)	■	■	■	■	■	■	■	■	■	■	■

* Retrofittable components
** on demand

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