

# AIDIN ROBOTICS

One-stop Robotic Solution for Safe Collaboration

# AIDIN ROBOTICS



## AIDIN

**ROBOTICS** Inc. is a robot company that started from Robotics Innovation Laboratory in the Department of Mechanical Engineering at Sungkyunkwan University in South Korea. Our expertise lies in developing robotic system and AI-driven sensor technologies based on our Field Sensing technology, which we have been accumulating since 1995.

**The world's  
leading  
field sensing  
technology**



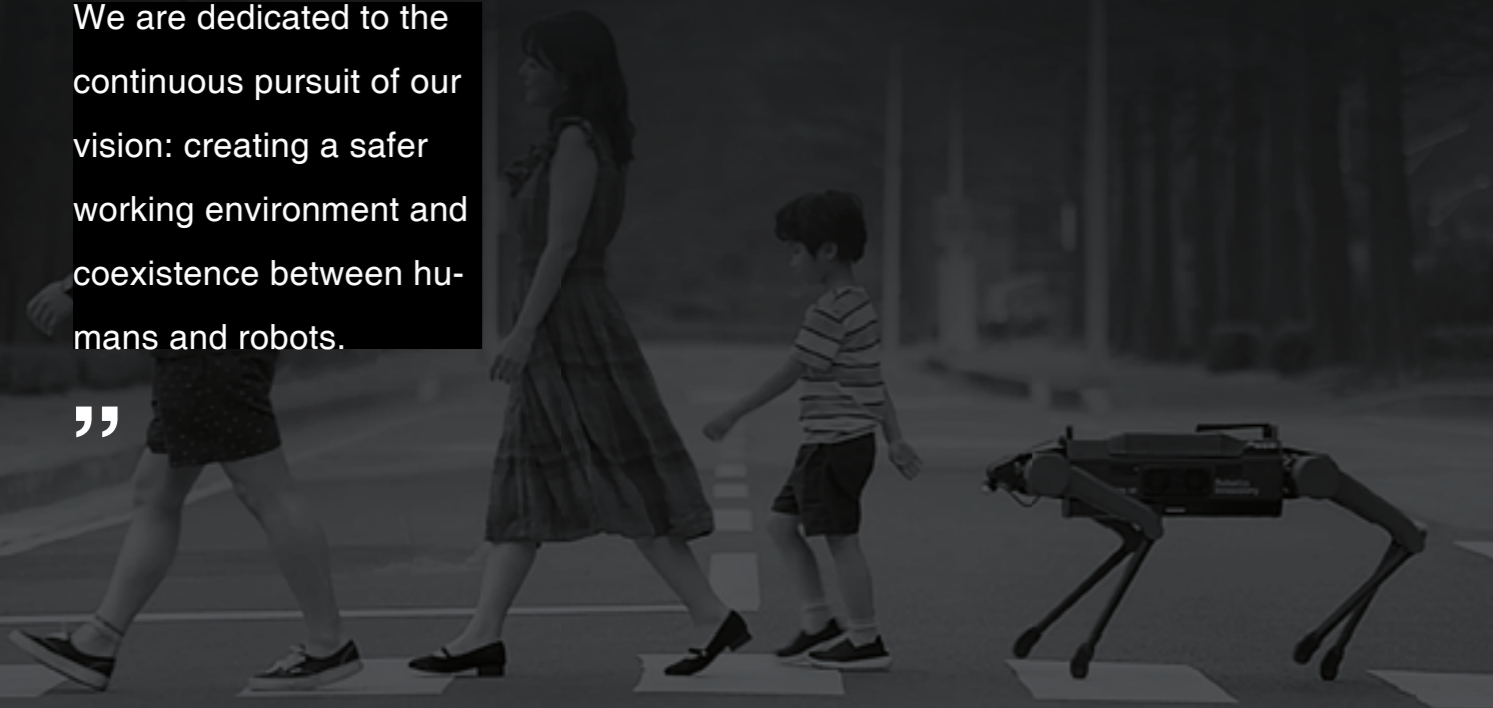
# AIDIN ROBOTICS



“

We are dedicated to the continuous pursuit of our vision: creating a safer working environment and coexistence between humans and robots.

”

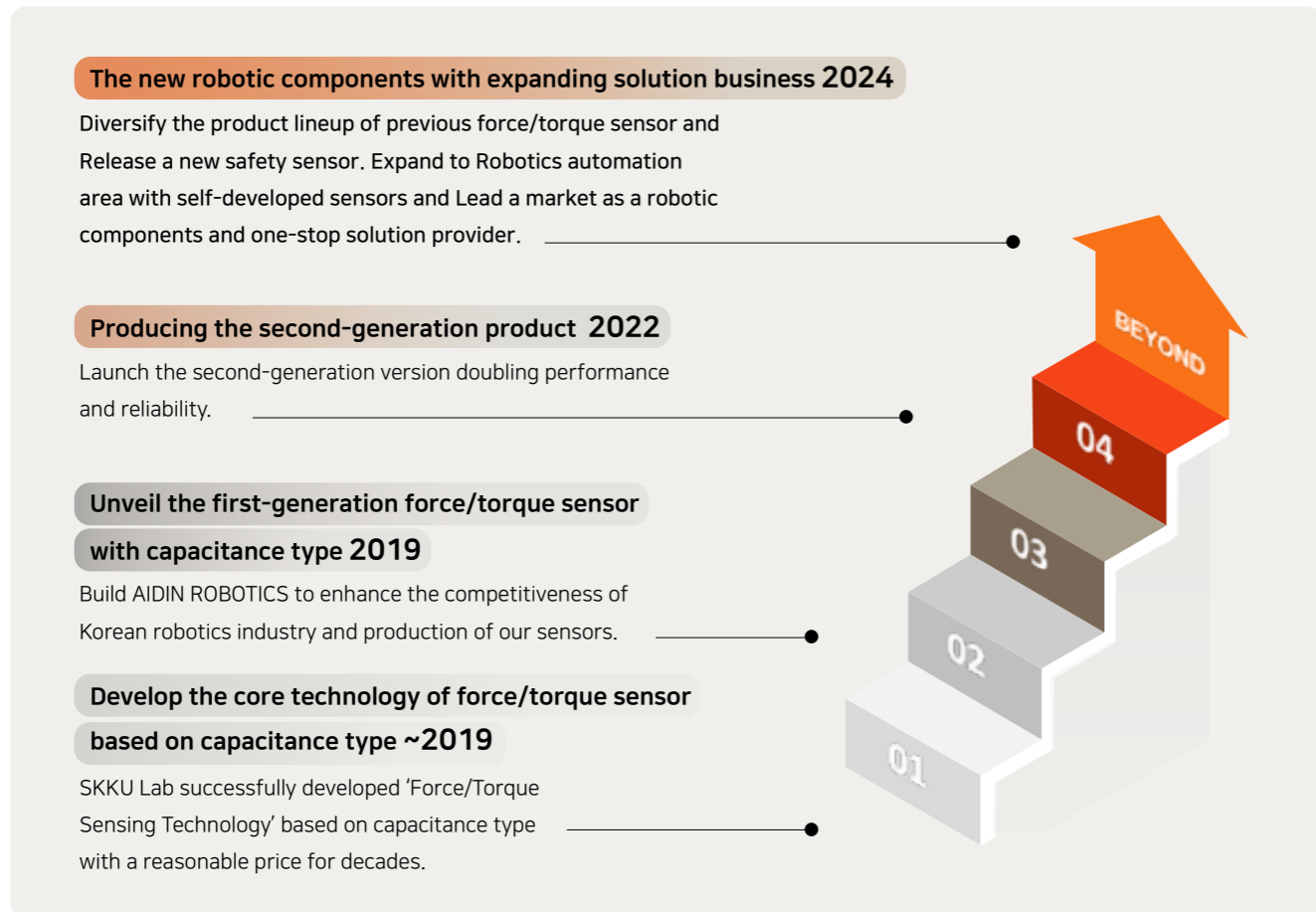


## One - stop Robotic Solution for Safe Collaboration

Our focus is on preventing accidents and improving productivity between humans and industrial/collaborative robots.

# The Competitiveness of AIDIN ROBOTICS

The newest Power Sensing Technology which successfully overcomes the limitation of existing force/torque sensing based on capacitance.



**Unique Source Technology for measuring capacitance**

**A manpower focusing on researching robot field**

**1/10 price compared to others**

**Leading a domestic market for miniature, 6-axis sensor**

# HISTORY

2019	Established corporation
2020	<ul style="list-style-type: none"> <li>Selected as the excellent company of robotics company foundation support program in Gyeong-gi do</li> <li>Established Laboratory in company</li> <li>Selected as The beginning foundation support package program</li> <li>Certification of Venture Business &amp; Technology with a limit under two billion</li> <li>Investment attraction from Future Play, Korea Development Bank Capital, Shinhan Bank capital</li> <li>Selected as Tech Incubator Program for Startup</li> <li>Award of R-biz Challenge from Korea Association of Robot Industry</li> <li>Award of Korea Robot Company of The Year 2020</li> <li>Award of Excellent Product in ROBOTWORLD 2020</li> </ul>
2021	<ul style="list-style-type: none"> <li>Selected as Core-Tech Development Business in Robotics field (Task Scale 3 billion)</li> <li>Award of Korea Robot Company of The Year 2021 (Two years in a row)</li> <li>Award of Excellent Product in ROBOTWORLD 2021 (Two years in a row)</li> </ul>
2022	<ul style="list-style-type: none"> <li>Attraction of investment Series A (4.5 billion Scale)</li> <li>Selected as Managing department developing the customized torque sensor for service robot</li> <li>MOU Contract for the extension of AI technology corporation for quadruped robot with Snuailab</li> <li>Award of Korea Robot Company of The Year 2022 (Three years in a row)</li> <li>Award of Excellent Product in ROBOTWORLD 2022 (Three years in a row)</li> </ul>
2023	<ul style="list-style-type: none"> <li>Selected as Deeptech Incubator for startup 1000+</li> <li>Participate in ICRA 2023 exhibition</li> <li>Contract for developing quadruped robot with POSCO</li> <li>Award in International Robot Contest &amp; R-biz Challenge 2023</li> <li>Award of Korea Robot Company of The Year 2023 (Four years in a row)</li> <li>Award of Excellent Product in ROBOTWORLD 2023 (Four years in a row)</li> <li>Certification of Quality Management System ISO9001:2015</li> </ul>
2024	<ul style="list-style-type: none"> <li>Selected as Cooperation Development Group of the evaluation focused on operating a skilled robot and supporting gripping performance (With Korea Electronics Technology Institute, National Institute of Standards and Technology)</li> <li>Contract for a local supply and sales with DINGS in China</li> <li>Attracted KRW 15 billion in Series B funding</li> <li>Signed an MOU with CJ Logistics for the development of robotic picking solution for logistics automation</li> </ul>

## Business Area

### Robot Sensor

Our self-developed Force/Torque sensor could be adapted at various industrial robots and grippers. It provides controlling force, measuring torque, and detecting collision. In addition, We help to gauge any distance and contact force with an innovated safety sensor.

### Smart Gripper

It could be combined and utilized following a use environment and manufacturing places with a competitive feature of parallel gripping mode, high-accuracy and high-speed.

### Robotics Automation

Our self-developed technology of gripper, AI vision Algorithm could spread Force control solution for Manufacturing automation applied for delivery process, welding, grinding etc, Robotic picking solution for logistics automation and Quadruped robot solution for inspecting industrial facilities.



## PRODUCTS

### Robot Sensor

#### Force/Torque Sensor



Smart 6 axis F/T Sensor  
**AFT200-D80**



Ultra-thin Joint Torque Sensor  
**ATSB-Series**



Miniature 6 axis F/T Sensor  
**AFT20-D15**  
**AFT50-D15**

#### F/T Sensor KIT



Smart 6-axis F/T Sensor KIT  
**AFT200-KIT-RB**



Smart 6-axis F/T Sensor KIT  
**AFT200-KIT-NRMK**

#### Safety Sensor



Panoradar Sensor  
**ARS-5000**  
\*Under Development

### Smart Gripper

#### End of Arm Tool



Smart Gripper  
**SusGrip**  
**SusGrip-FT**

#### Robot Hand



Robotic Hand  
**AIDIN hand**  
\*For Research

### Robotics Automation System

#### Robotic Solution



Force Control Solution for Manufacturing Automation  
**Co-worker**  
\*Under Development



Robotic Picking Solution for Logistics  
**PICKER**  
\*Released in 2025



Industrial Facility Inspection Solution  
**AiDIN**  
\*Under Development

#### Robot Controller



Real-time Robot Motion Controller  
**ARC6**

# Smart 6 axis F/T Sensor

Model AFT200-D80



**Dimensions**  
80mm x 20.5mm

**Applicable Robots**

- | Universal Robots
- | Doosan Robotics
- | Rainbow Robotics, Neuromeka
- | Other collaborative/industrial robots



**Features**

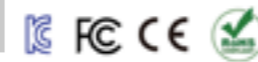
The advanced F/T sensor with high precision based on the fringe effect and capacitance

Essential sensor for robot wrists, enabling tool collision detection, tool weight compensation, force control, direct teaching tool, and object weight measurement

Excellent environmental resistance

4kV discharge test passed

IP56 obtained waterproof/dustproof rating



**Applications**

- | Industrial / Collaborative robot
- | Lead-thru device
- | Welding, sanding, grinding, assembly operations
- | Warehouse robot
- | Smart Factory / Automation

**KC Registration Number**  
 CAN R-R-And-AFT200-D8-C  
 EtherNet R-R-And-AFT200-D8-EN  
 EtherCAT R-R-Adn-AFT200-D8-EC



**Specifications**

Index	Unit	Value		
		C (CAN)	EN (EtherNET)	EC (EtherCAT)
Operating voltage	VDC	5	12	12
Max. safe excitation voltage	VDC	12	24	24
Nominal force range	N	200		
Nominal torque range	Nm	15		
Limit force (Fxyz)	N	300		
Limit torque	Nm	25		
Resolution (Fxyz)	N	0.15		
Resolution (Txyz)	Nm	0.015		
Maximum sample rate	Hz	1,000		
Dimensions	mm	D80 x H20.5		
IP rating		IP56	IP65	IP65
Operating temperature		10-60 °C		

# Smart 6 axis F/T Sensor KIT

All-in-One F/T Sensor based on the advanced field sensing technology

Model AFT200-KIT-RB  
AFT200-KIT-NRMK

### Applicable Robot

- Rainbow Robotics RB3, RB5, RB10, RB16
- Neuromeka Indy7
- Accepting our partners



### Rainbow Robotics



### Neuromeka



### Features

- F/T sensor applied with the self-developed technology with capacitance
- Support Plug&Play mode based on collaborative robot brand
- Provide Customized KIT for each collaborative robot band
- Easy Set-up mode in Teaching Pendant

### Applications

- Applicable to various processes requiring force control technology (Polishing, Sanding, Grinding etc)
- Processes for assembling cables or components
- Industrial robot / Collaborative robot
- Smart Factory / Automation

### Function

- Precise force measurement
- Force Control mode that any user could use directly in teaching pendant
- Collision detection and stop function through force measurement

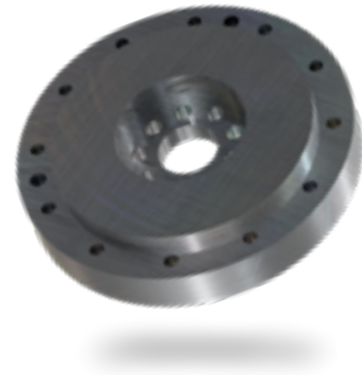
### Specifications

Index	Unit	AFT200-KIT-RB C(CAN)	AFT200-KIT-NRMK C(CAN)
Weight	g	505 (Sensor 236g, Bracket 269g)	635 (Sensor 236g, Bracket 399g)
Operating voltage	VDC		5
Max. Safe excitation voltage	VDC		12
Nominal force range	N		200
Nominal torque range	Nm		15
Resolution(Fxyz)	N		0.15
Resolution(Txyz)	Nm		0.015
Dimensions	mm	D80 * H52.3	D80 * H56.3
IP Rating			IP56
Operating temperature			10-60°C

# Ultra-thin Joint Torque Sensor



Model ATSB 50 / 100 / 200 / 400



## Dimensions

ATSB 50 : 84mm x 14mm  
 ATSB 100 : 100mm x 16mm  
 ATSB 200 : 100mm x 18mm  
 ATSB 400 : 120mm x 20mm

## Applications Example

Collaborative Robot



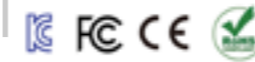
## Features

Ultra-thin joint torque sensor for collaborative and articulated robots

Ultra-thin joint torque sensor accurately and sensitively measures torque applied to robot joints, enabling precise collision detection and torque control in a compact design.

Excellent environmental resistance

4kV discharge test passed



## Applications

- | Collaborative robot
- | Wearable robot
- | Medical device
- | Rehabilitation robot

## Specifications

Index	Unit	ATSB50	ATSB100	ATSB200	ATSB400
Operating voltage	VDC	5			
Max. safe excitation voltage	VDC	10			
Nominal torque range ( $T_N$ )	Nm	50	100	200	400
Overload (related $T_N$ )	%	300			
Resolution	Nm	0.03	0.05	0.1	0.2
Weight	g	120	190	210	310
Dimensions	mm	D84 x H14	D100 x H16	D100 x H18	D120 x H20
Sample rate	Hz	1,000			
Temperature		10-60 °C			
Interfaces		CAN (2.0 A/B)			
Connector		4 PIN VCC / GND / CAN_H / CAN_L			



# Miniature 6 axis F/T Sensor

Model AFT20-D15  
AFT50-D15



**Dimensions**  
15mm x 10.5mm

**Application Examples**  
Gripper



\* Example Image

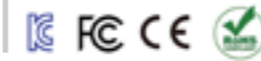
## Features

The world's smallest 6-axis force/torque sensor

Suitable for mounting on the gripper's tip end to handle irregular objects such as food, rubber, and plastic injection-molded products without causing damage

Applicable to VR, haptic devices, and medical fields as well

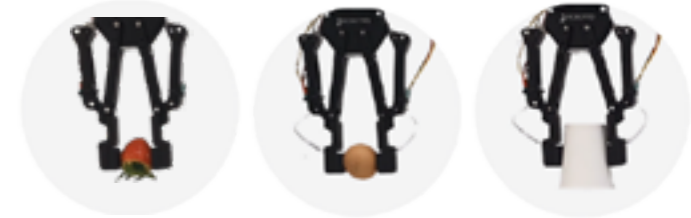
Excellent environmental resistance  
4kV discharge test passed



KC Registration Number R-R-Adn-AFT20-D15

## Applications

| Gripper



| VR / AR device



| Haptic device



| Robot hand



| Medical device



## Specifications

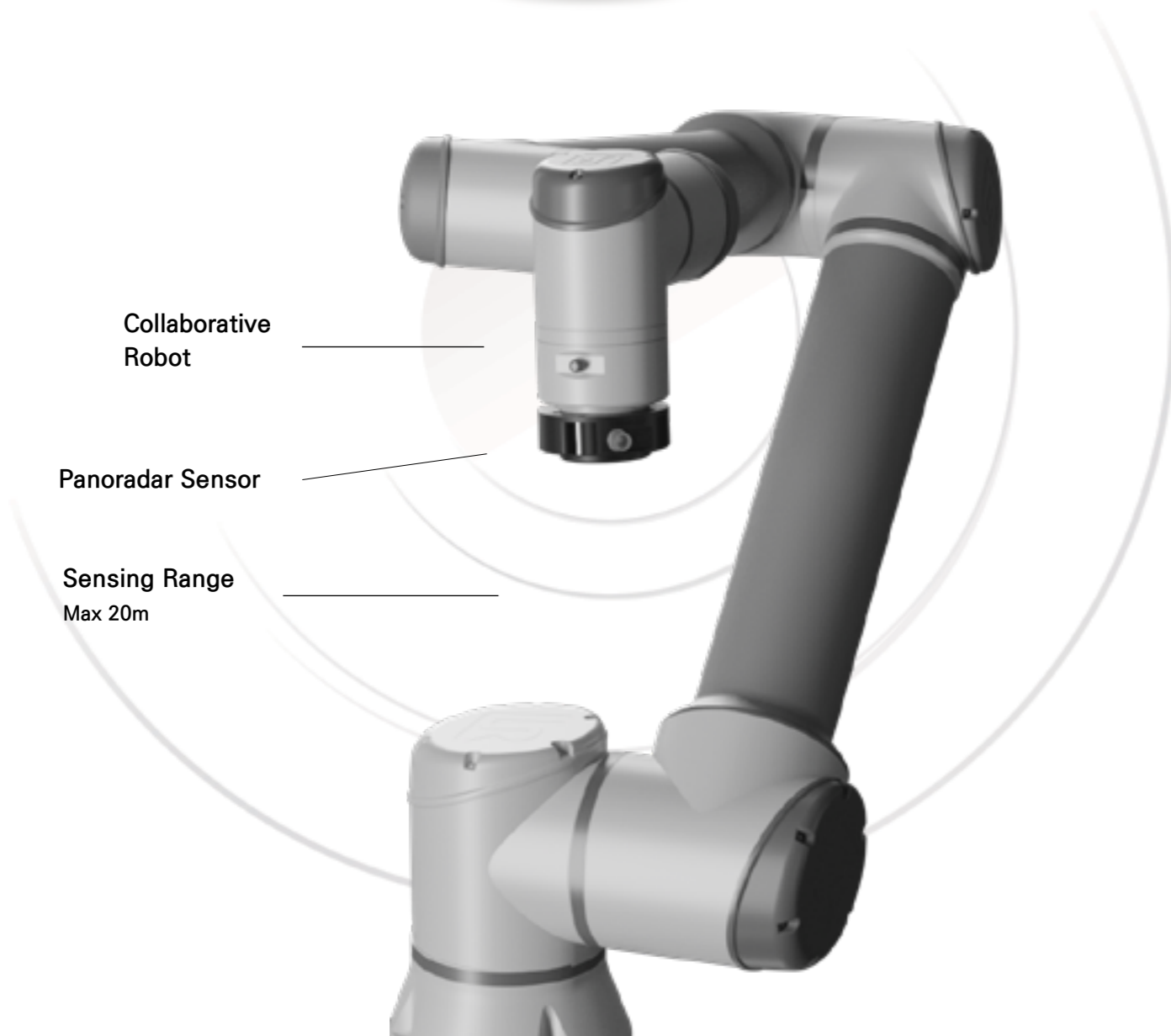
Index	Unit	AFT20-D15	AFT50-D15
Operating voltage	VDC	5	
Max. safe excitation voltage	VDC	10	
Force range	N	20	50
Torque range	Nm	0.1	0.25
Break force	N	30	75
Break torque	Nm	0.15	0.35
Force resolution	N	0.2	0.3
Torque resolution	Nm	0.0005	0.001
Sample rate	Hz	100	
Dimensions	mm	D15 x H10.5	
Weight	g	3.2	
Temperature		10-50 °C	
Interfaces		CAN	
Connector		FPC: 0.5 pitch, 8pin Length: 50, 100, 200 mm For User: CAN_H / CAN_L / VCC / GND	

# Panoradar Sensor

Model ARS-5000

Safety sensor for detecting all people and objects set on a wrist of co-bot without any blind spot

\*Under Development



## Features

- | Safety sensor detecting an surrounding environment and any obstacles to make safe working environment for all workers
- | Obstacle Detection (Max 20m)
- | Providing a widen detecting scope and accuracy without any blind spot  
(Presence detection / Segmentation / Motion / Tracking / Speed detection)
- | Range Resolution: 3cm
- | 360 degree detection FoV
- | Digital output interface (EtherNet)
- | Obtaining safety zone

## Applications

- | Industrial robot / Collaborative robot
- | AMR / AGV
- | Delivery robot
- | Industrial robot for safety
- | Quadruped robot
- | Humanoid robot

## Specifications

Index	Value	Description
Measurement principle	FMCW – 60GHz	Ultra-wide bandwidth 5.8GHz
Sensing functions	Presence Detection / Segmentation / Motion / Tracking / Speed Detection	
Measurement	Direction, Proximity and Speed	
Angles	4x (±45°) Azimuth 4x (±45°) Elevation FoV	
Working range	Min: 10cm / Max: 20m	Flexible adjustment of aperture angle and distance
Range resolution	Up to 3cm	
Response time	120Hz	Up to 1KHz
Supply voltage	6 – 28Vcc	
Number of detection zones	6 x 4	
Interfaces	EtherNet	RJ45, PoE
Operating temperature	-20 °C ... +70 °C	
Environment	Harsh environment	Rain / Dust / EMI / Fog
Objects detection	Various objects	Glass, wood, paper, human, metallic objects
Dimensions	Diameter: 80mm, thickness: 20mm	
Sensor package	All in one	Sensor body + PoE Cable

# Smart Gripper

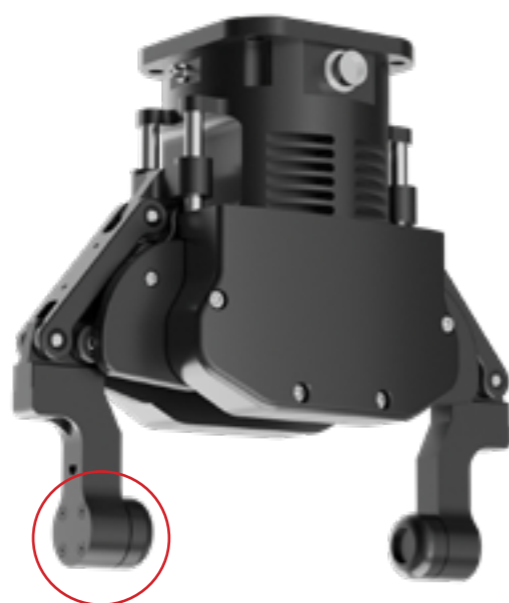
## SusGrip

Model SusGrip / SusGrip-FT

Robot gripper providing many smart functions based on parallel motion



Susgrip-FT



**AFT-Mini**  
Minature 6 axis F/T Sensor

Susgrip



### Features

- | A wide parallel motion, High-precision (**Max 128mm**)
- | Smart function (**Object Detection, Automated Lock**)
- | **Precise force control mode** with force sensor (Susgrip-FT model)
- | **High-speed** and **Strong power** with BLDC motor
- | Safe use (**No pinch point**)
- | Intuitive GUI



KC Registration Number(SUSGRIP R-R-26a-SusGrip)  
\*Only for SUSGRIP Model

### Applications

- | Various manufacturing process (Pick & Place) / Sorting / Handling / Palletizing / Assembly / Measure

### Industry

- | Semi-conductor / Service / Logistics / Healthcare / Retail

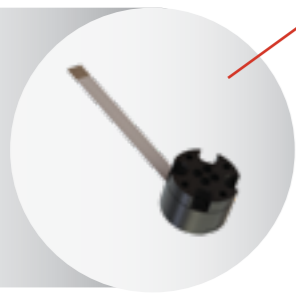


### Specifications

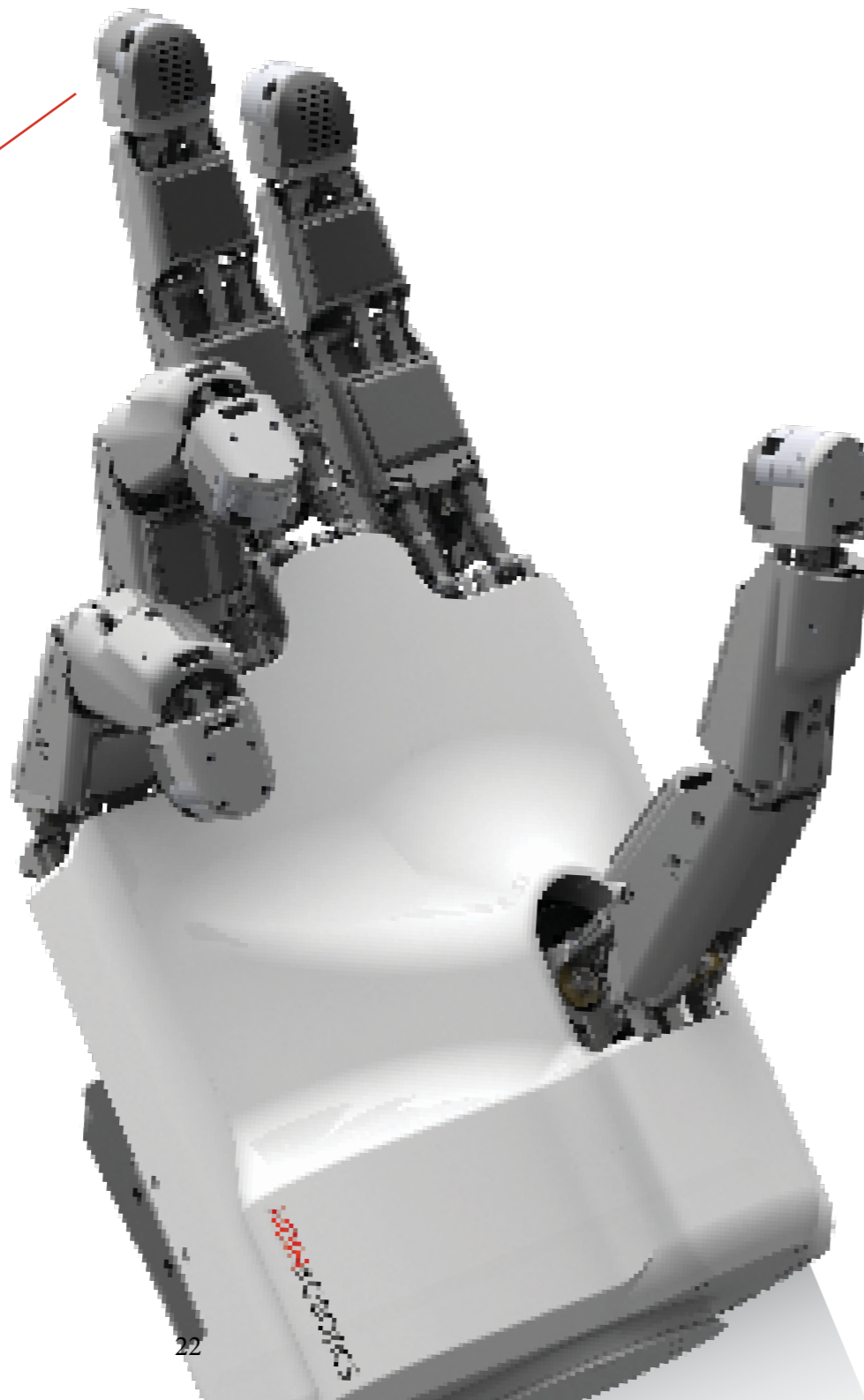
Index	Unit	Value
Gripping force	N	90
Stroke	mm	0-128
Form-fit payload	Kg	5
Voltage	V	24
Max Current	A	2
Repetition accuracy	mm	0.1
Position resolution	mm	0.2
Speed	mm/s	60
Weight	gram	1215

# AIDIN HAND

## Human-sized Robot Hand



**5 X AFT-Mini**  
Miniature 6 axis F/T Sensor



### Features

AIDIN ROBOTICS' proprietary humanoid hand featuring a 6-axis force/torque (F/T) sensor on the fingertip

Dexterous future-proof picking system: Capable of various grasping modes (power, 3-point, pinch, etc.) suitable for different types of objects, and featuring integrated 6-axis F/T sensors, it can reliably handle delicate objects without causing damage

Human-level compact size and light weight

Link-driven mechanism: Offers both high precision and high force efficiency

### Applications

- | Industrial / Collaborative robot
- | Warehouse picking robot
- | Home-service robot
- | Prosthetic hand

### Specifications

Index	Unit	Value
Grasping mode	Mode	Power Mode (cylindrical, spherical, etc.)
		Precision Mode (pinch, tripod, etc.)
Degree of Freedom (Finger)	DoF	3
Degree of Freedom (Hand)	DoF	15
Finger-tip force	N	20 or 50
Payload	kg	15
Size	mm	291 x 112 x 120
Weight	kg	1.3
Finger-tip sensor	EA	5
		(Miniature 6-axis F/T Sensor, AFT20-D15)

# Real-time Robot Motion Controller

Model ARC6



## Features

Real-time motion/force controller for collaborative robots, designed to be compatible with AIDIN ROBOTICS' sensor products

Equipped with Xenomai, EtherCAT, and ROS middleware

## Applications

- Industrial / Collaborative robot
- Sanding, grinding, welding, assembly applications
- Articulated robot control
- Warehouse picking robot control

## Specifications

Index	Value
CPU	6 <sup>th</sup> Generation Intel Core I Processor
CPU TDP	i7-6600U
Memory Type	DDR4 2133MHz
Power	9 - 36 VDC
Ethernet	Intel i210/i211, 10/100/1000Base-TX
Connection	DP X1, DVI-I X 1, USB 3.0 X 4, USB 2.0 X 2, COM ports (RS232, 422, 485)
Operating Humidity	0 - 90 %
Operating temperature	0 - 60 °C
Interfaces	EtherNET, EtherCAT
Operating System	RT-OS (Linux, Ubuntu, Xenomai)

# Solution

## Force Control Solution for Manufacturing Automation

- Smart Force/Torque Sensor-Based No-Code Automation Solution
- Immediate task automation through intuitive robot teaching
- Applicable to various tasks such as grinding, polishing, and more



2 X AFT200  
Minature 6 axis  
F/T Sensor (AFT200)

\*Under development



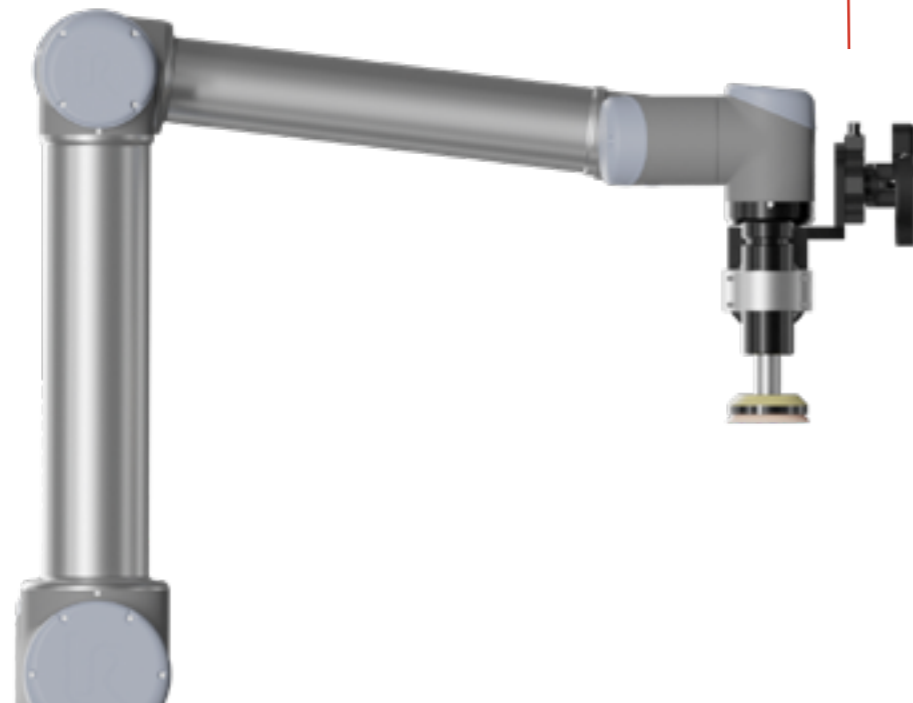
SANDING



POLISHING



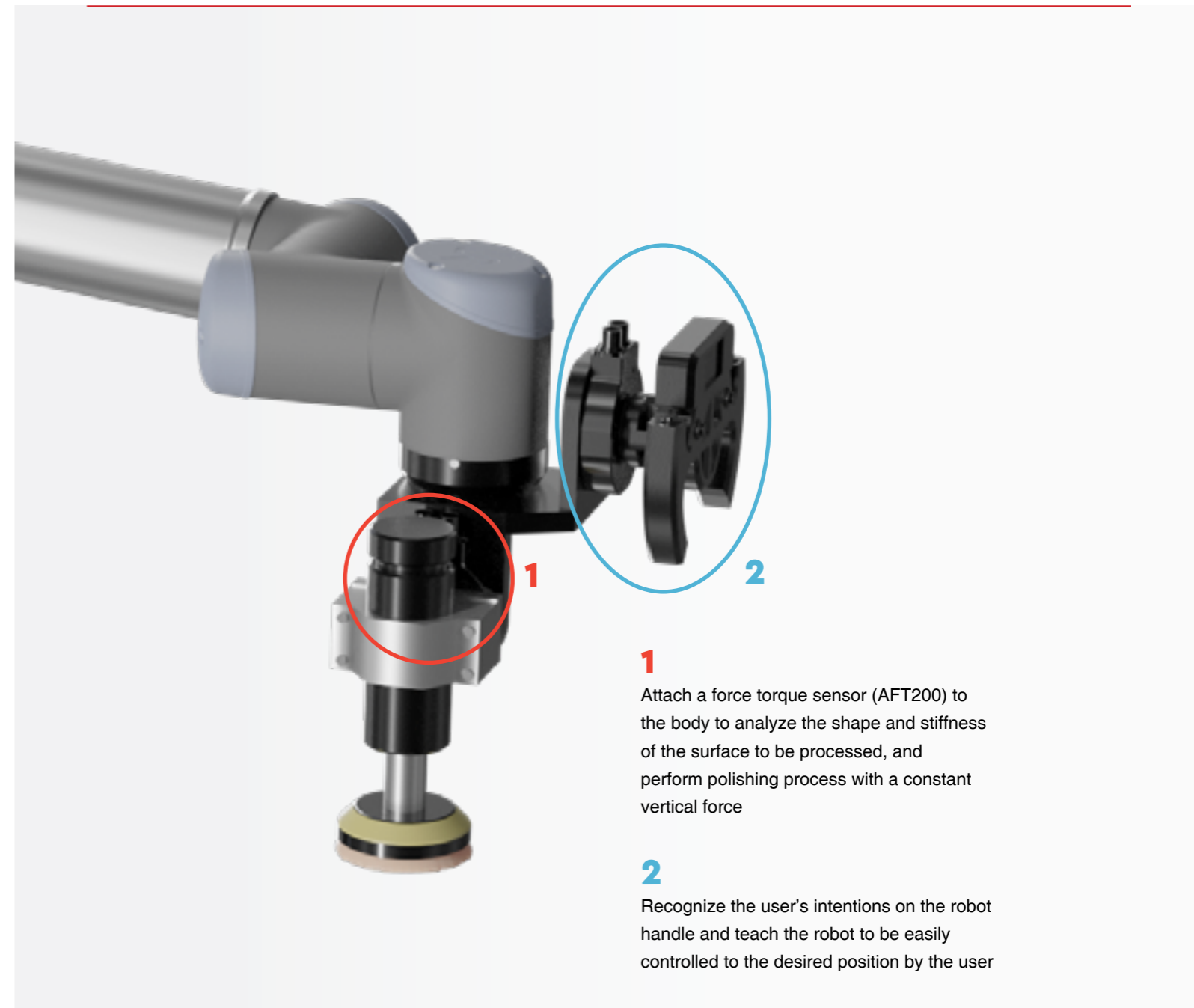
GRINDING



Easy task teaching (points, trajectories, force, etc.)

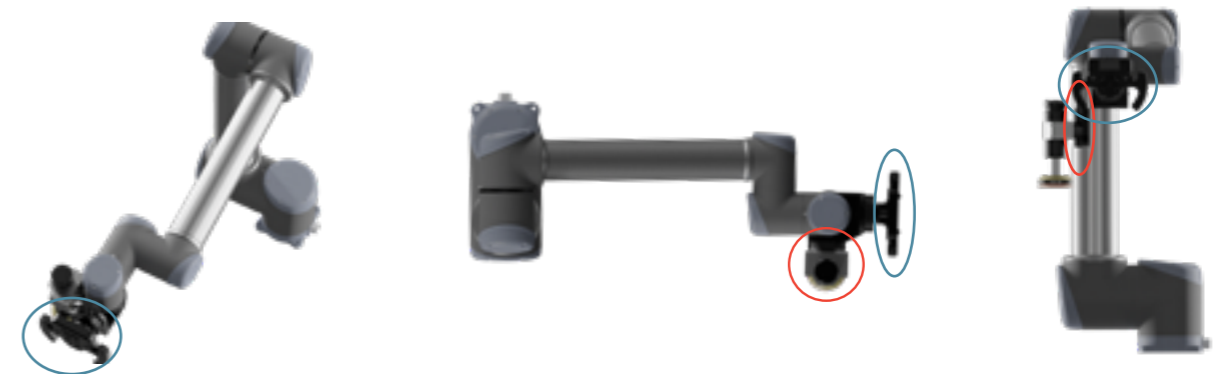
Active surface force control technology through target force setting

Adaptable to various objects, including flat/curved surfaces, narrow areas, and more



**1**  
Attach a force torque sensor (AFT200) to the body to analyze the shape and stiffness of the surface to be processed, and perform polishing process with a constant vertical force

**2**  
Recognize the user's intentions on the robot handle and teach the robot to be easily controlled to the desired position by the user



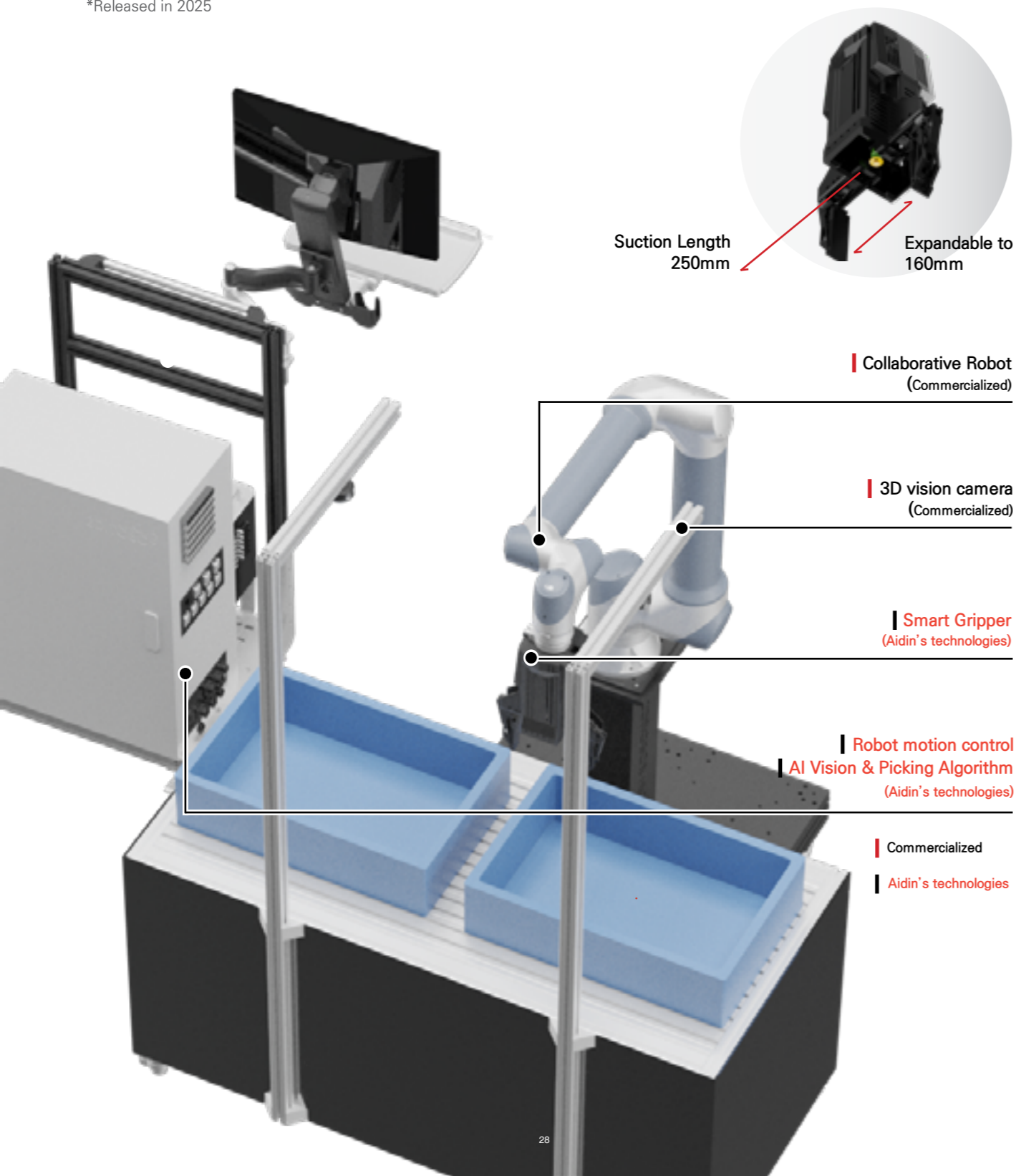
# Solution

## Robotic Picking Solution for Logistics



- Effortless Object Recognition and Grasping:** Our cutting-edge logistics robot picking system is designed to recognize and grasp random objects without the need for any pre-registration process.
- Integrated AI Vision Technology:** We've developed our own AI vision algorithm, seamlessly integrated with a smart gripper capable of handling objects of various types and sizes. This integration allows our system to adapt to all objects found in logistics environments.
- Optimized Object Handling:** Through the unified control of both suction and the gripper, our system employs suitable grasping strategies to effectively handle objects, ensuring a seamless and efficient logistics operation.

\*Released in 2025



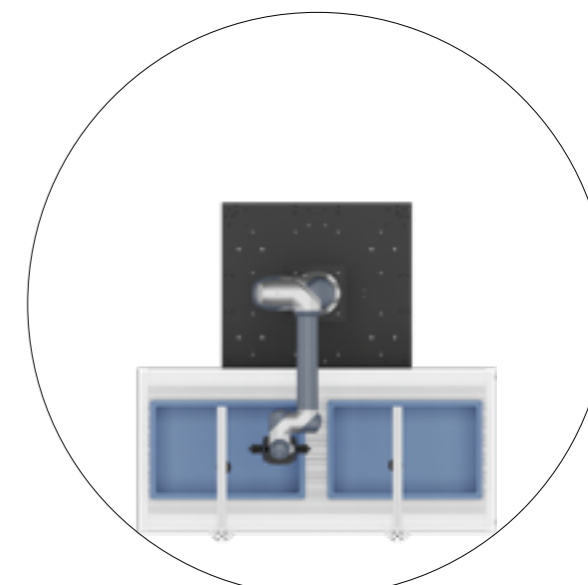
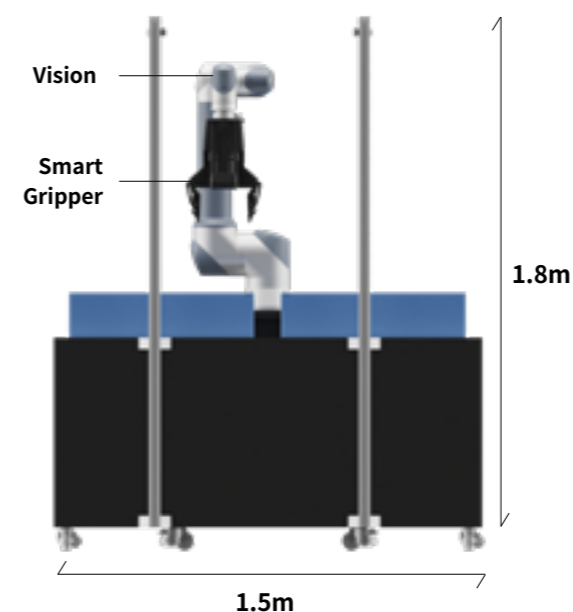
### Productivity

- Productivity : **950 pieces per hour**
- Weight of graspable objects : **5kg**
- Size of graspable objects : **160mm**

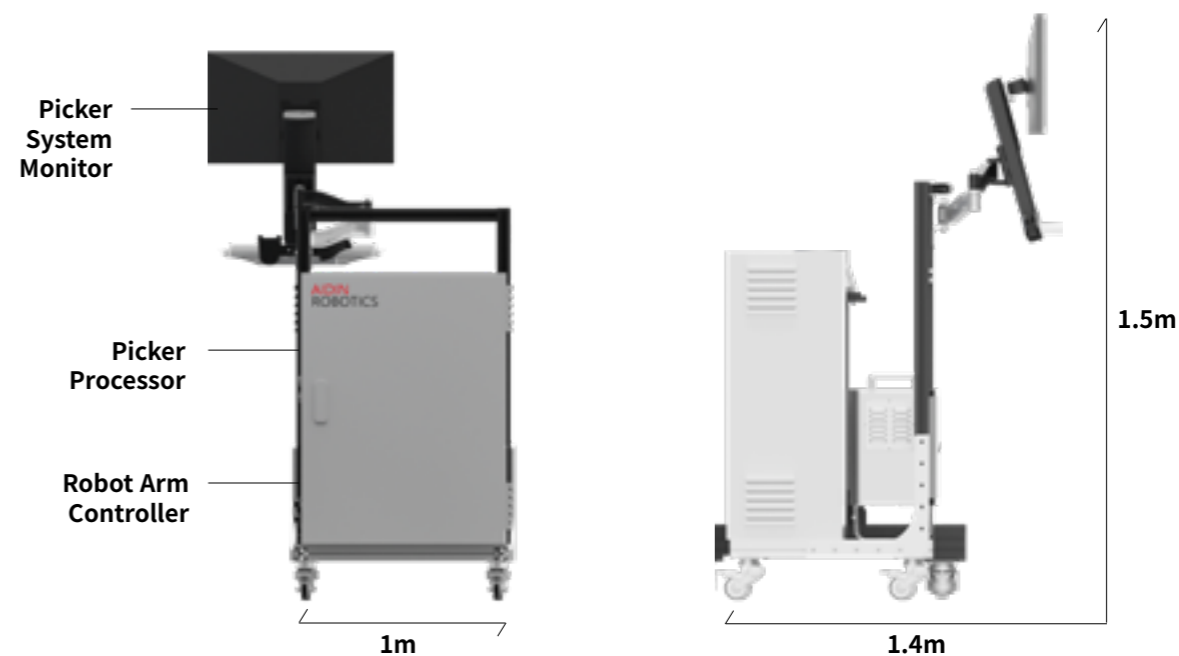
### Installation Requirements

- Power : **100-240V, 40-60Hz, 2200W**
- Compressed Air : **4hp+ compressor recommended**

### System Dimensions



### Picker Controller



# Solution

## Quadruped Robot for Industrial Facility Inspection Solution

\*Under Development



### Features

This state-of-the-art mobile robot features legs that mimic human movements, enabling it to navigate various terrains such as stairs, rugged landscapes, and curved areas with ease. With its ability to inspect and scout hazardous environments, such as those involving chemicals and radioactivity, it has the potential to prevent dangerous accidents.

Quadruped robot solution for **management and maintenance work** in all facilities, power plants, chemical plants and any harmful or inferior environment

**Customize the robot function** based on modular design following **any customer's request** and easy maintenance

Provide the customizable solution **attached with other equipment** (thermal, monitor, noise, vibration, gas)

### Applications

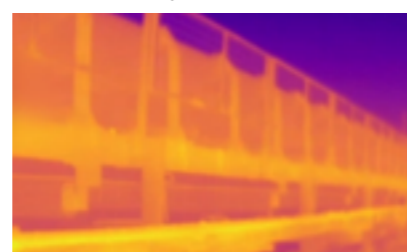
| Inspecting Hazardous Facilities



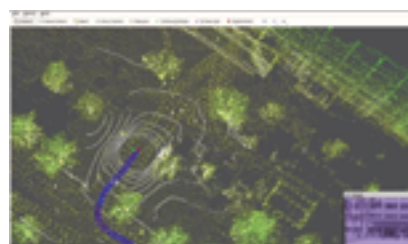
| Smart city Security



| Thermal Inspection



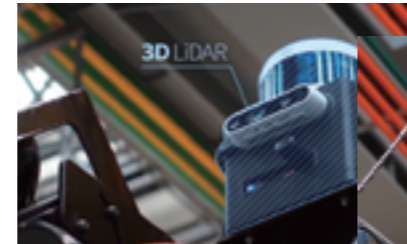
| Monitoring Construction Sites



| Military / Police / Firefighting



| Construction and BIM



### Specifications

Index	Unit	Value
Length	mm	1,300
Width	mm	650
Weight	kg	50
Max speed	m/s	1.2
Battery capacity	Wh	1,440
Operating voltage	VDC	48
Operating time (typical)	Hours	2
Operating time (standby)	Hours	6
Payload (normal)	kg	10
Payload (maximum)	kg	20
Connectivity	802.11 Dual-band WiFi, LTE	
Optional Equipment	Optical Camera, Thermal Camera, Mic	





# AIDIN ROBOTICS

**Website** [www.aidinrobotics.co.kr](http://www.aidinrobotics.co.kr)  
**Facebook** [www.facebook.com/aidinrobotics](http://www.facebook.com/aidinrobotics)  
**Youtube** [www.youtube.com/c/aidinrobotics](http://www.youtube.com/c/aidinrobotics)

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