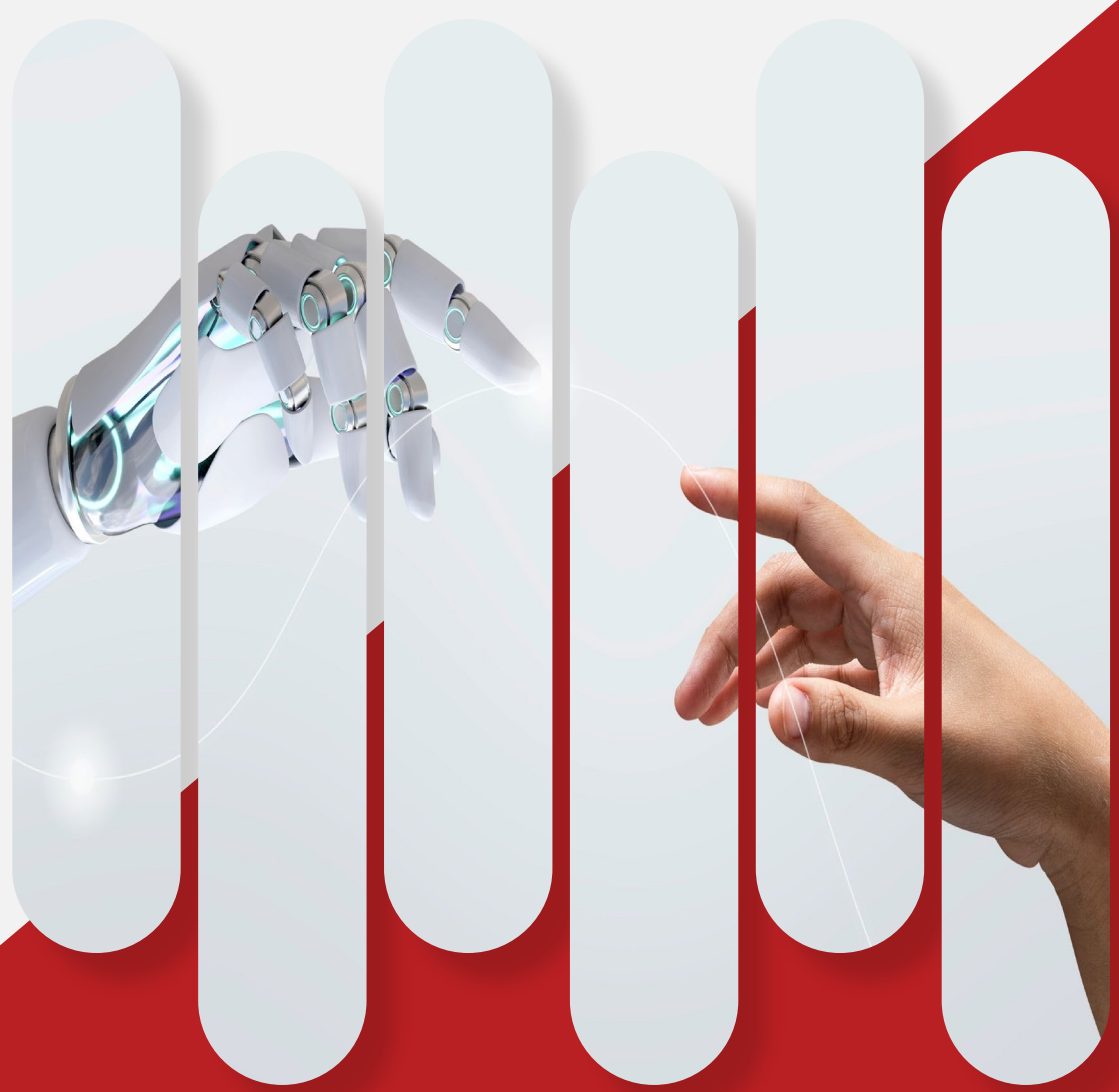
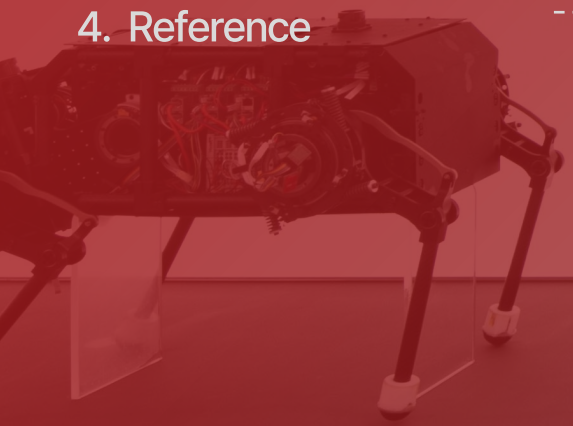
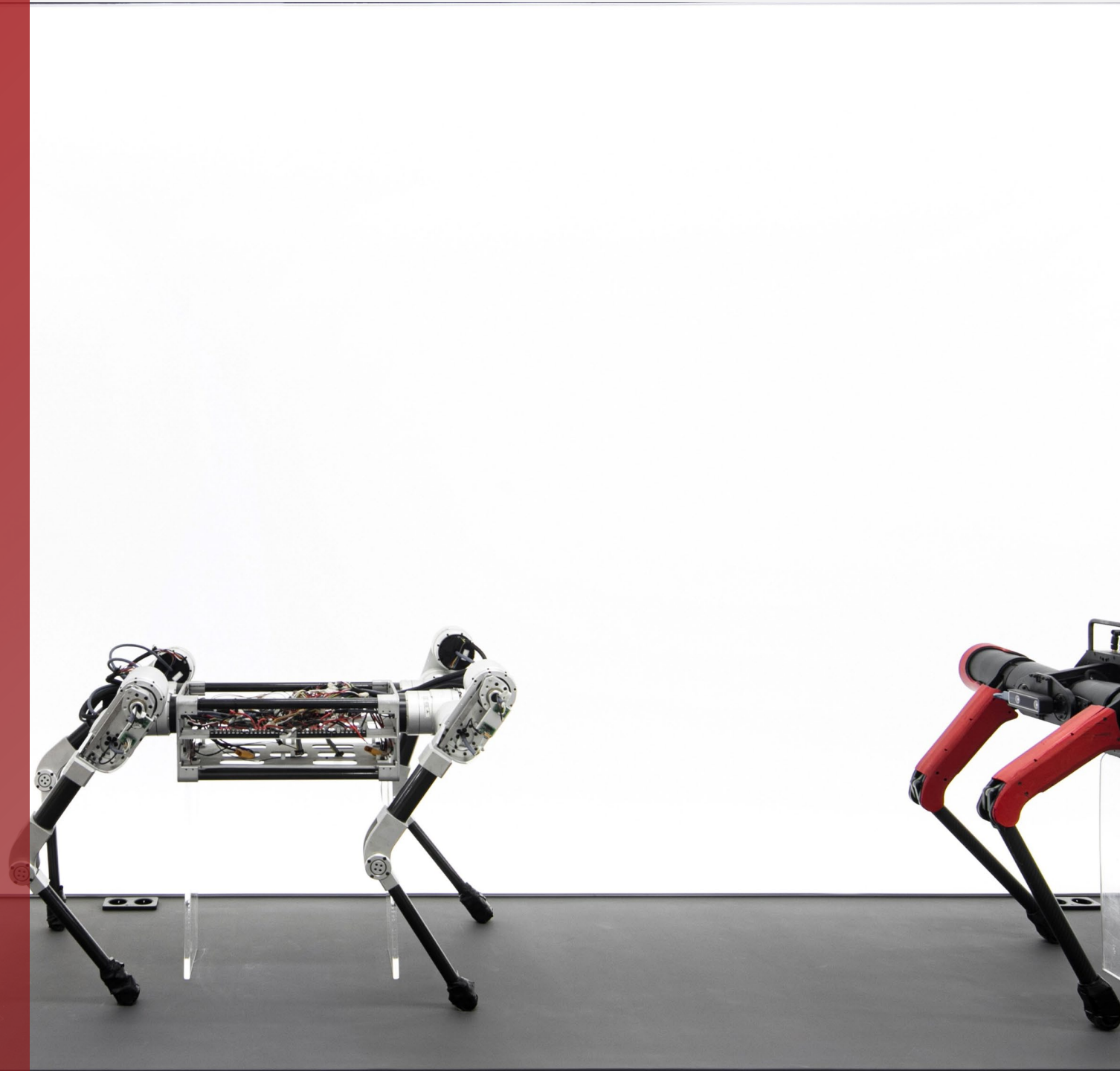
AIDIN ROBOTICS

Physical Interaction Intelligence for Humanoid and Cobot



Index





01. Company Overview

Physical Interaction Intelligence
for Humanoid and Cobot

AIDIN ROBOTICS

Company Overview

Name	AIDIN ROBOTICS Inc.
CEO	HyoukRyeol Choi, YoongHaeng Lee
Business	**Robot Components Business** (F/T Sensors, Grippers, Hands, Safety Sensors, etc.) **Robotic Application Solutions Business** (Collaborative Robots, Quadruped Robots, Humanoids)
Found Date	Nov 21, 2019
Number of Employee	54 [Ph.D 10 members]
Address	**Head** : 5F, 12-20, Simin Daero 327beon gil, Anyang, Dongan-gu, Gyeonggi-do, South Korea **Labs** :4F, 12-20, Simin Daero 327beon gil, Anyang, Dongan-gu, Gyeonggi-do, South Korea
Homepage	www.aidinrobotics.co.kr

History

2019

Established corporation

2020

✓ Selected in Gyeonggi-do Robot Startup Support Program
✓ Established a Company Research Institute
✓ Selected for Early Startup Package Project
✓ Selected for TIPS Program by the Small & Medium Business Administration

2021

✓ Selected as Core-Tech Development Business in Robotics field (Task Scale 3 billion)

2022

✓ Attraction of investment Series A (KRW 4.5 billion Scale)
✓ Selected as Managing department developing the customized torque sensor for service robot

2023

✓ Selected as Deeptech Incubator for startup 1000+
✓ Contract for developing quadruped robot with POSCO
✓ Certification of Quality Management System ISO9001:2015

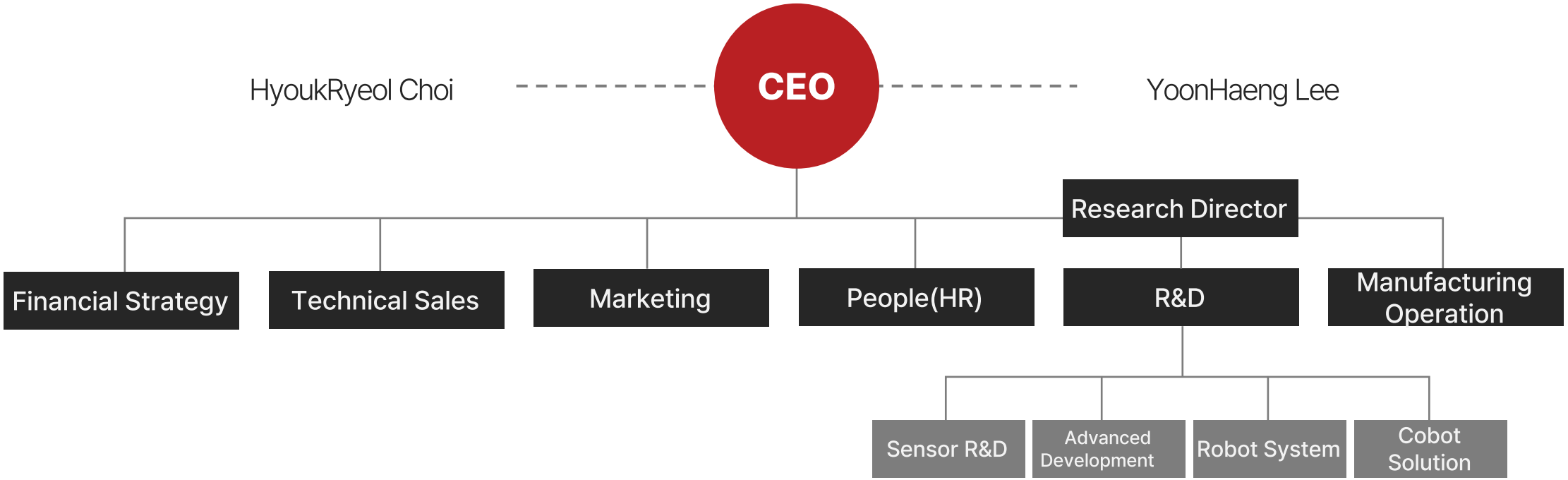
2024

✓ Secured KRW 15 billion Series B investment
✓ Focused on advanced robot operation and gripping performance
(in collaboration with KETI and NIST)
✓ Joined the AI Autonomous Manufacturing Alliance under the Ministry of Trade, Industry and Energy
✓ Signed an MOU with CJ Logistics to develop a AIRO One solution for logistics
✓ Selected as Korea's Robot Company of the Year for five consecutive years (as of 2024)
✓ Acquired ISO 45001:2018 Occupational Health & Safety Management System certification

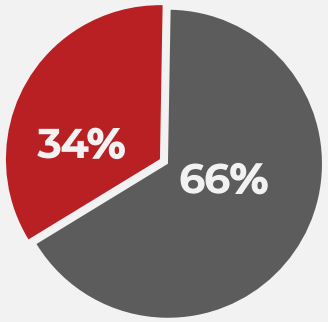
2025

✓ Selected as a C-Lab Outside company to foster ventures and startups by Samsung Electronics
✓ Joined the K-Humanoid Alliance under the Ministry of Trade, Industry and Energy
✓ Designated as a Specialized Company for the AI Factory Project by the same ministry
✓ Leading R&D partner for the Korea ARPA-H 2025 Humanoid Surgical Robot Project
✓ Official member of the Manufacturing M.AX Alliance (Ministry of Trade, Industry and Energy)
✓ Government-selected project: K-Logistics Humanoid with Robot Hand (CJ Logistics)
✓ Sensors exported to 14 countries worldwide

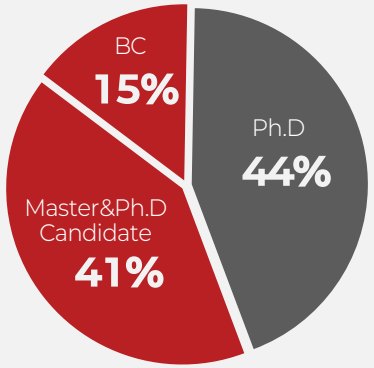
Company Map


HyoukRyeol Choi
CEO
YoonHaeng Lee
Financial Strategy
Technical Sales
Marketing
People(HR)
Research Director
R&D
Manufacturing Operation
Sensor R&D
Advanced Development
Robot System
Cobot Solution

Core Member



66% of our team consists of R&D personnel.



85% of our researchers hold master's or doctoral degrees in AI and robotics

HyoukRyeol Choi

President, CEO

- Mechanical Engineering Professor, Sungkyunkwan University
- POSTECH / KAIST / Seoul National University
- IEEE Fellow / Korean Academy of Engineering Member
- 162 Patents

YoonHaeng Lee

CEO

- Ph.D. in Mechanical Engineering, Sungkyunkwan University
- 1st Place, Ministry of Defense Drone Bot Challenge (2019)
- Quadruped Robot System Developer
- Chair, K-Humanoid **Alliance**

Core Member

Director of Sensor Core Technology

YongBum Kim, CTO

-Ritsumeikan University, Major in Robotics
-Best Award in Mechanical Engineering, 2016 (2016)
- Samsung HumanTech Paper Gold Award, 2016

HyunYong Lee

•Sungkyunkwan University, Ph.D. Program
•Samsung HumanTech Paper Bronze Award, 2012
•KSAE Technology Idea Gold Award, 2013

HoSang Jung, Ph.D

- Sungkyunkwan University, Ph.D. Program
- ICRA RGMC competition Runner-up (2024)

DaWoon Jung, Ph.D

- Korea University, Ph,D Program
- Nature Eletctoronics Research Highlight (2022)

DongYeop Seok, Ph.D

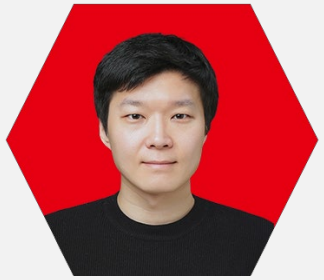
- Sungkyunkwan University, Ph.D. Program
- Samsung HumanTech Paper Gold Award(2016)

JungMin Jeon Ph.D

- Sungkyunkwan University, Ph.D. Program
- Task-Motion Planning System for Socially Viable Service Robots Based on Object Manipulation

Yisac Rhee, Ph.D

-Sungkyunkwan University, Ph.D. Program



KiHyun Kim, Ph.D

- Sungkyunkwan University, Ph.D. Program
- 14 Papers in Soft Robotics, 13 Patents

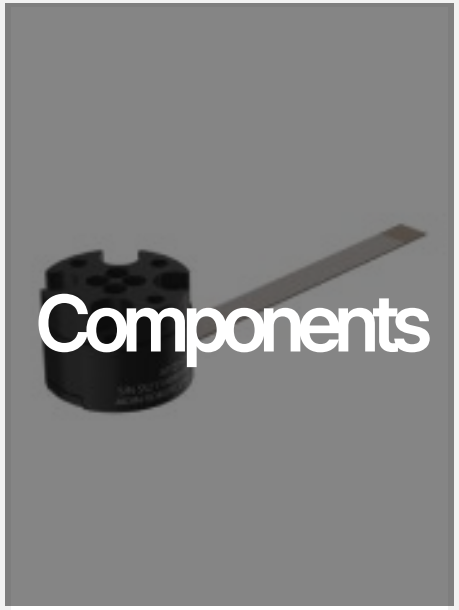
02. Core Technologies

An introduction to AIDIN ROBOTICS' business domains and core technologies.

AIDIN ROBOTICS

Business Areas

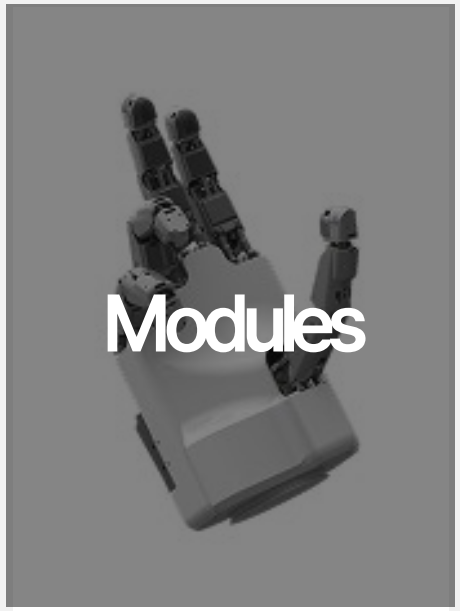
 # Physical Interaction Intelligence



✓ Sensors for Co-bot
(6-axis F/T Sensor, Joint Torque Sensor, Co-bot KIT)

✓ Sensors for Humanoid Robot
(Fingertip Force Sensor, Tactile Sensor, Wrist Sensor, Ankle Sensor)

✓ Force Sensors for Automation Equipment (Sensors/Components for Automation Equipment)



✓ Robotic Hand

✓ Smart Gripper

✓ AIRO-One Polishing Solution

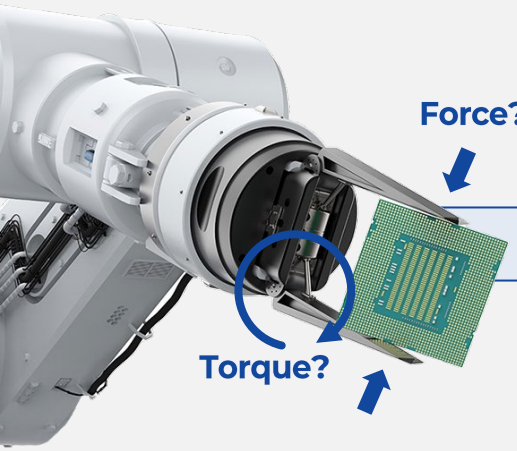
✓ AIRO-One Logistic Picking Solution (Under development)

✓ Quadruped Robot (Under Development)

Empowering Robots with a Sense of Touch

Human Hand

- Capable of detecting multi-directional forces and torques



Robot

- Sensors are essential to detect information about force and torque

3-axis force	3-axis moment
F_X, F_Y, F_Z	M_X, M_Y, M_Z

Make it possible

A sensor that allows robots to sense and understand all forces in 3D space of our everyday world.

A sensor that allows robots to sense and understand all forces in the 3D space of our everyday world.

Core Competencies of AIDIN Sensors

AIDIN ROBOTICS' independently developed
world's smallest Miniature 6-axis F/T sensor (AFT20)

High Scalability & Cost Efficiency

Suitable for mass production, offering a unit price about one-tenth of conventional strain gauge sensors, greatly improving cost competitiveness.

Compact & Lightweight

Its miniaturized design allows flexible installation and operation on a variety of robots.

Temperature Compensation

Equipped with built-in temperature compensation, the sensor maintains high accuracy even in real-world environments.

Non-Contact Design

Provides high durability and stability over time due to the absence of mechanical wear.

No Additional Devices Required

Outputs high-precision digital data without the need for separate analog amplifiers or circuits.

AIDIN ROBOTICS Sensor Lineup for Cobot

6-axis F/T Sensor

Basic Type
(AFT200)

Cobot KIT
(AFT200-KIT)

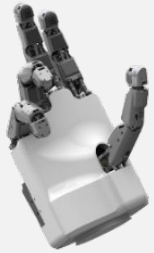
Embedded
(Custom Type)

Joint Torque Sensor

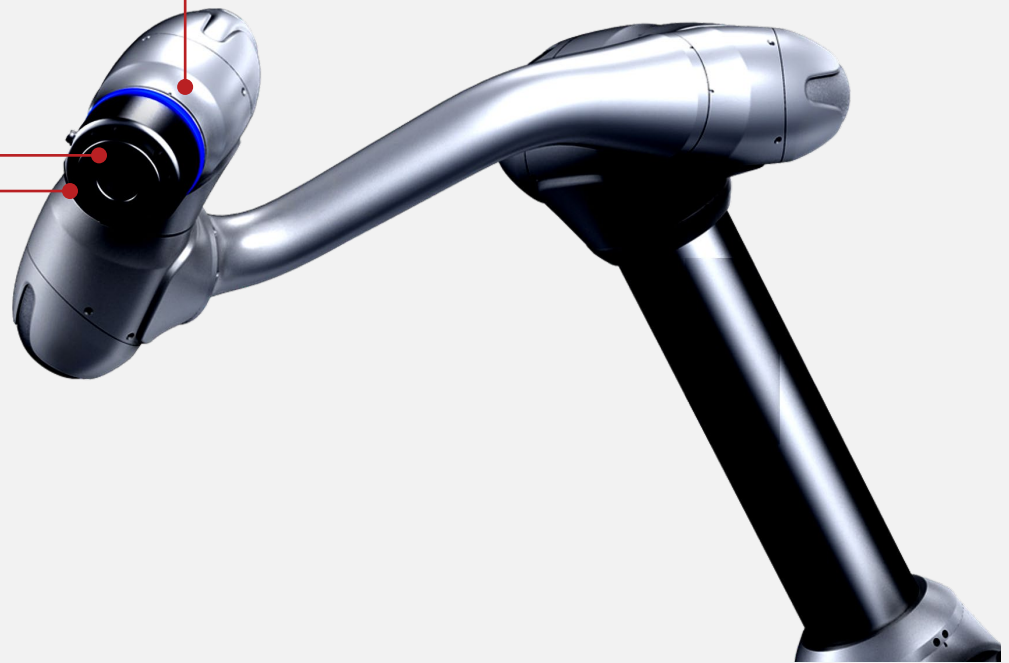
50Nm / 100Nm / 200Nm / 400Nm
(Customizable Range)

Module

Smart Gripper
(Equipped with 6-axis
F/T Sensor)



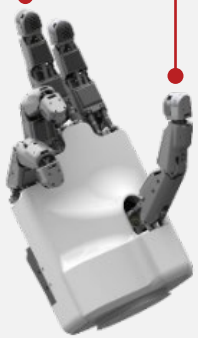
Robot Hand
(Equipped with 6-axis
F/T Sensor)



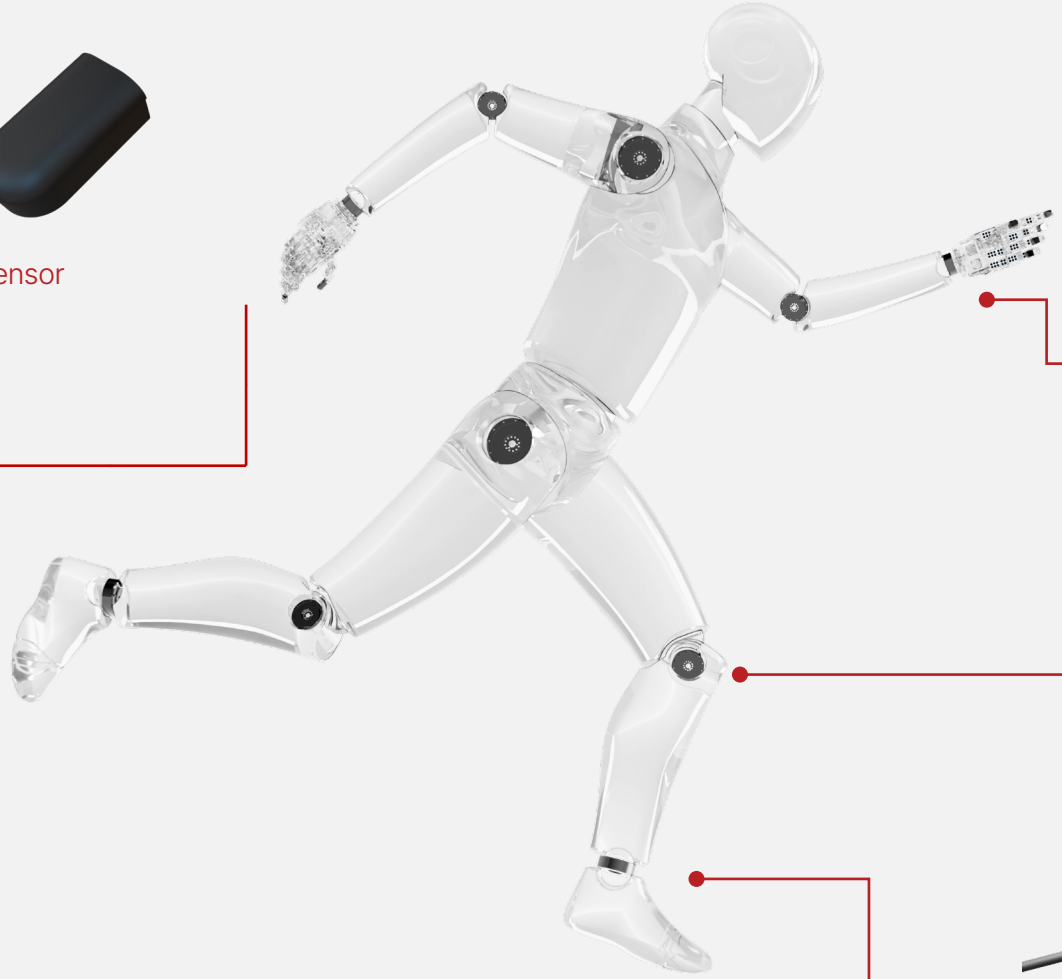
AIDIN ROBOTICS Sensor Lineup for Humanoid Robot

Miniature 6-axis F/T Sensor
Fxyz, Mxyz

Tactile Sensor

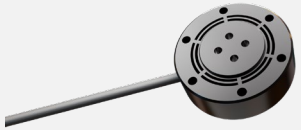


AIDIN ROBOTIC Hand
(Equipped with 6-axis F/T Sensor)



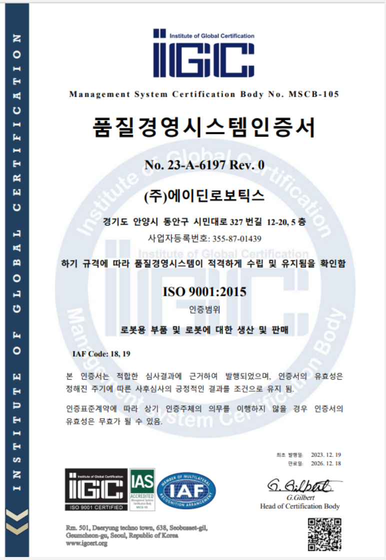
6-axis F/T Sensor (Wrist)
Fxyz, Mxyz

Joint Torque Sensor (Joint)



3-axis F/T Sensor
(ankle)

Certificate


Management System Certification Body No. MSCB-105

품질경영시스템인증서

No. 23-A-6197 Rev. 0

(주)에이딘로보틱스

경기도 안양시 동안구 시민대로 327 번길 12-20, 5 층

사업자등록번호: 355-87-01439

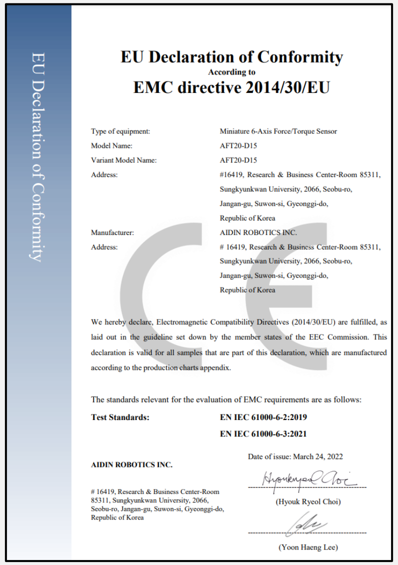
하기 규격에 따라 품질경영시스템이 적격하게 수립 및 유지됨을 확인함

ISO 9001:2015

인증범위

로봇용 부품 및 로봇에 대한 생산 및 판매

IAF Code: 18, 19


EU Declaration of Conformity

According to

EMC directive 2014/30/EU

Type of equipment: Miniature 6-Axis Force/Torque Sensor

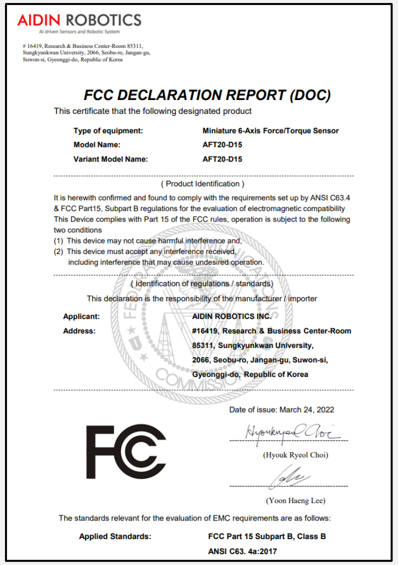
Model Name: AFT20-D15

Variant Model Name: AFT20-D15

Manufacturer: AIDIN ROBOTICS INC.

Test Standards: EN IEC 61000-6-2:2019, EN IEC 61000-6-3:2021

Date of issue: March 24, 2022


AIDIN ROBOTICS

FCC DECLARATION REPORT (DOC)

This certificate that the following designated product

Type of equipment: Miniature 6-Axis Force/Torque Sensor

Model Name: AFT20-D15

Variant Model Name: AFT20-D15

Applicant: AIDIN ROBOTICS INC.

Date of issue: March 24, 2022

Applied Standards: FCC Part 15 Subpart B, Class B, ANSI C63. 4a:2017

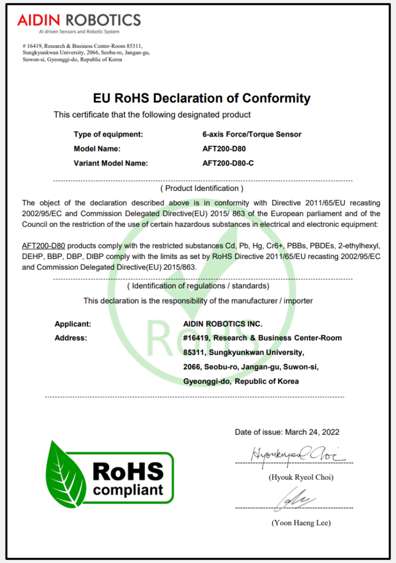

방송통신기자재등의 적합등록 필증

Registration of Broadcasting and Communication Equipments

상호 또는 성명	주식회사 에이딘로보틱스
기자재명칭(제품명칭)	Smart 6-axis Force/ Torque sensor
기기부호/추가 기기부호	IMDD
기본모델명	AFT200-D80-C
파생모델명	
등록번호	R-R-Adn-AFT200-D80-C
제조자/제조국가	주식회사 에이딘로보틱스 / 한국
등록연월일	2022-03-23
기타	

국립전파연구원장

Director General of National Radio Research Agency


AIDIN ROBOTICS

EU RoHS Declaration of Conformity

This certificate that the following designated product

Type of equipment: 6-axis Force/Torque Sensor

Model Name: AFT200-D80

Variant Model Name: AFT200-D80-C

Applicant: AIDIN ROBOTICS INC.

Date of issue: March 24, 2022

RoHS compliant

- Differentiated force-sensing technology validated through numerous domestic and international certifications and patents
- Sensor products certified with KC, CE, FCC, and RoHS
- Expanded and fully equipped in-house production facility of over 300 pyeong, certified with ISO 9001 and ISO 45001
- Capable of producing up to 10,000 sensors annually

03. Product Portfolio

Discover the AIDIN product lineup featuring
cutting-edge sensing technology.

AIDIN ROBOTICS

Joint Torque Sensor(ATSB)

Used to achieve precise torque measurement and collision detection in robot joints

Index	Unit	Value			
		ATSB 50	ATSB 100	ATSB 200	ATSB 400
Nominal Torque Range(T_N)	Nm	50	100	200	400
Resolution	Nm	0.03	0.05	0.1	0.2
Interfaces	-	CAN (2.0 A/B)			

3-axis F/T sensor (3FT-1000/2000)

Supports stable walking by measuring foot load and posture in humanoid robots

Index	Unit	3FT 1000	3FT 2000
Nominal Force Range	N	1000	2000
Nominal Torque Range	Nm	20	100
Interfaces	-	CAN	

#Humanoid

✓ Measures forces and torsion on three axes (Fz, Mx, My) when mounted on a humanoid robot's ankle

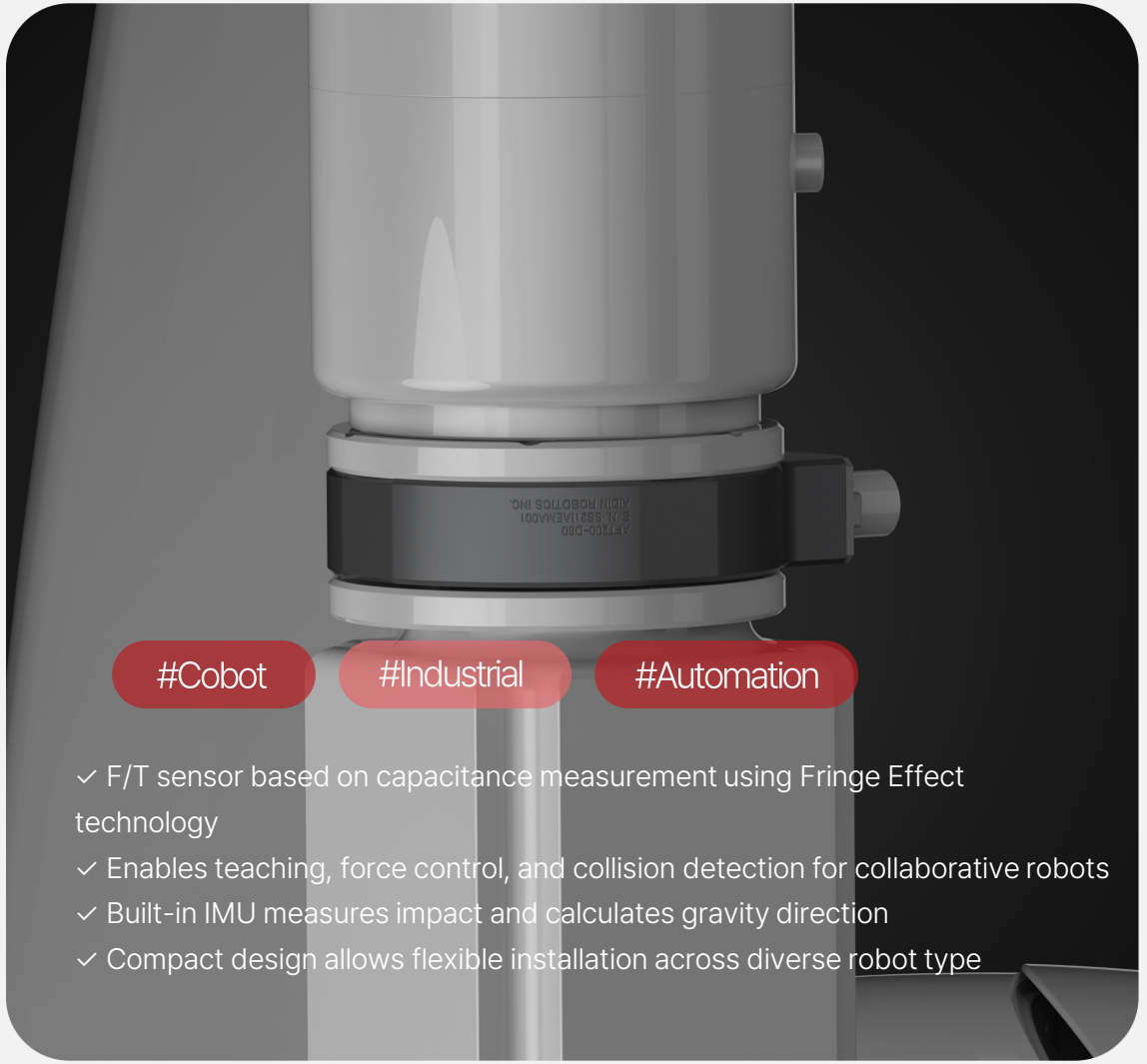
✓ Accurately measures foot load and posture to enable stable walking

✓ Compact design with up to 2000N force measurement ➔ Suitable for humanoid robot joints, ankles, and more

6-axis F/T Sensor(AFT200)

F/T sensor combining capacitance measurement
with Fringe Effect technology

Index	Unit	Value		
		C(CAN)	EN(EtherNET)	EC(EtherCAT)
Nominal Force Range	N	200		
Nominal Torque Range	Nm	15		
Operating Temperature	-	10-50℃		



Miniature 6-axis F/T Sensor (AFT20/50/100)

The World's Smallest 6-axis F/T Sensor

20N/50N

100N

Index	Unit	AFT20-D15	AFT50-D15	AFT100-D20
Force Range	N	20	50	100
Torque Range	Nm	0.1	0.25	0.75
Force Resolution	N	0.05	0.1	0.13
Torque Resolution	Nm	0.0005	0.001	0.002

6-axis F/T Sensor KIT (AFT200-KIT)

Custom Plug-and-Play Sensor Kits for Collaborative Robot Brand

RAINBOW ROBOTICS

neuromeka

Index	Unit	AFT200-KIT-RB c (CAN) AFT200-KIT-NRMK c (CAN)
Nominal Force Range	N	200
Nominal Torque Range	Nm	15
Resolution(Fxyz)	N	0.15
Resolution(Txyz)	Nm	0.015

✓ All-in-one 6-axis F/T sensor kit optimized for Rainbow Robotics and Neurometka robot models

✓ Features AIDIN's proprietary Fringe Effect capacitive F/T sensor

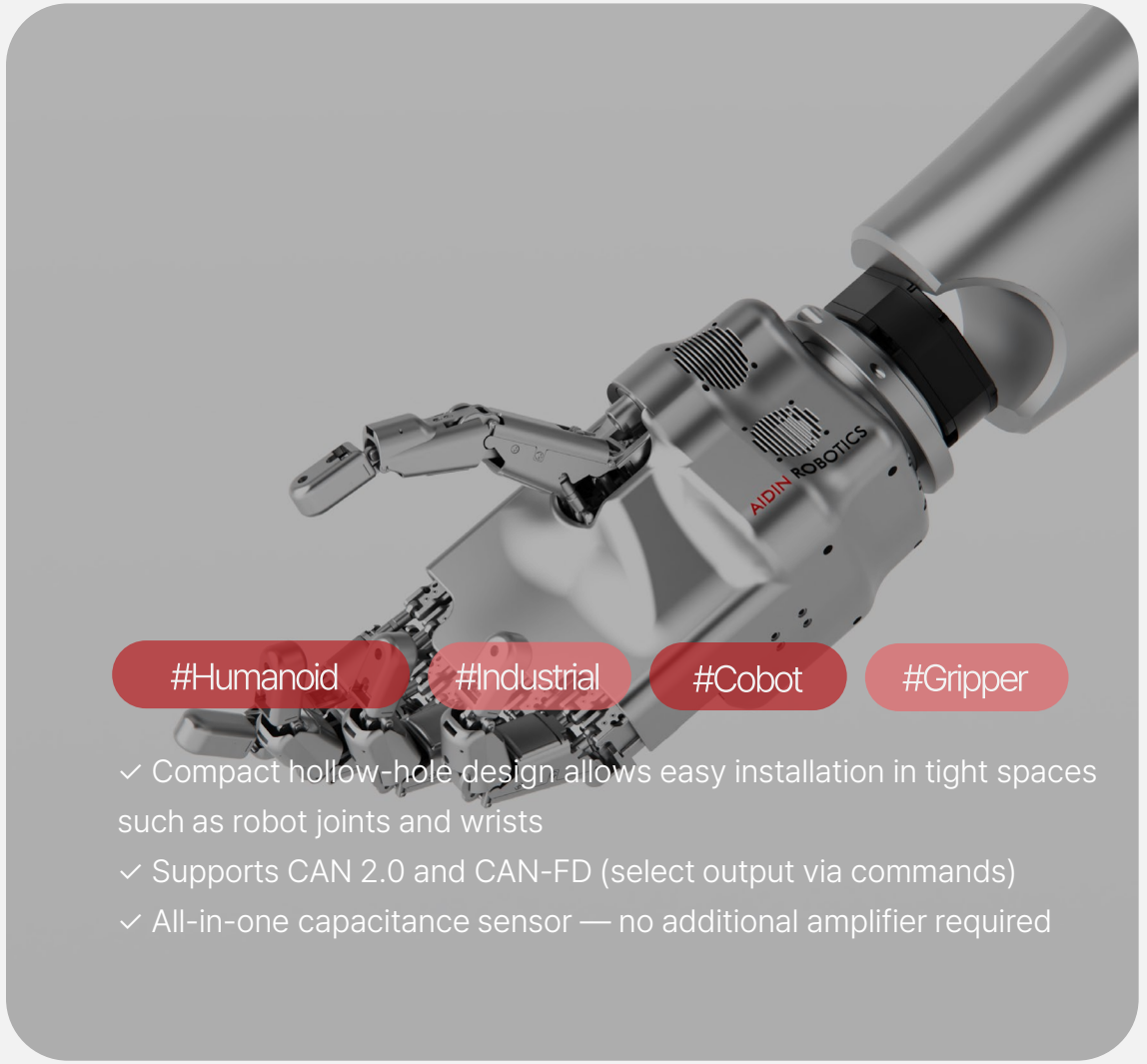
✓ Custom kits available for each collaborative robot brand

✓ Built-in force control functions operable directly from the teaching pendant → Ready for immediate use in general manufacturing, smart factories, and automation lines

6-axis F/T Sensor(AFT150-D50)

Mountable on robot wrists and joints to precisely measure multi-axis forces and torques during operations

Index	Unit	Value
Nominal Force Range(F_XYZN)	N	150
Nominal Torque Range(M_XYZN)	Nm	7.5
Interfaces	1,000Kbps	CAN, CAN-FD



#Humanoid #Industrial #Cobot #Gripper

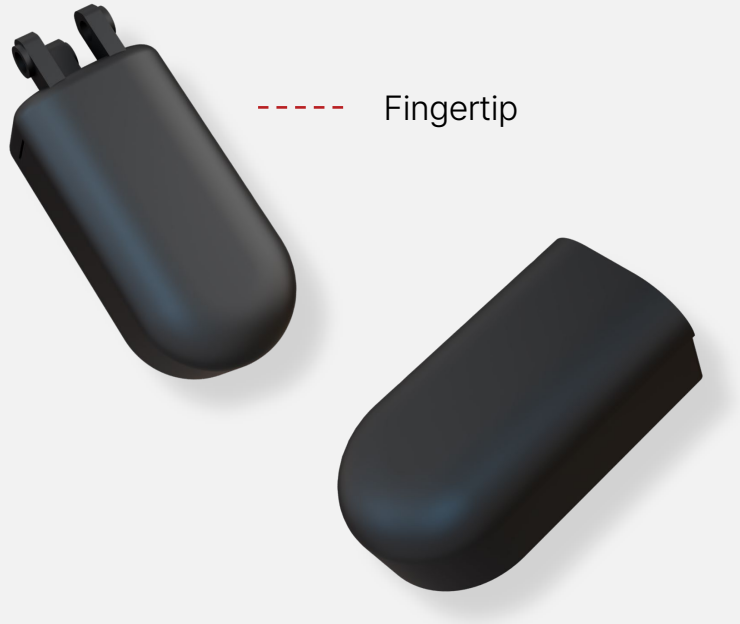
✓ Compact hollow-hole design allows easy installation in tight spaces such as robot joints and wrists

✓ Supports CAN 2.0 and CAN-FD (select output via commands)

✓ All-in-one capacitance sensor — no additional amplifier required

Tactile Sensor(ATT)

Precisely detects contact pressure and position for delicate robotic touch



Index	Unit	Value
Nominal Force Range	N	30
Force Resolution	mN	6
Interfaces	-	CAN

#Robot Hand #Humanoid

✓ Mounted on humanoid fingertips, joints, and palms to measure object contact

✓ Polymer-based and highly flexible, adaptable to various shapes

✓ Multi-array sensing cells detect contact position and force distribution

✓ Enables precise and stable handling of diverse objects

Panoradar Safety Sensor(ARS-5000)

Safety sensor enabling safe human–robot collaboration
(Under Development)

#Cobot #AGV/AMR

- ✓ Precisely detects surroundings and obstacles for safe operation
- ✓ FMCW radar sensor with ultra-wideband communication
- ✓ 360° blind-spot-free sensing with high accuracy
- ✓ Digital interface (EtherNet)

Robot Motion Controller (ARC)

Controller compatible with F/T sensors, assisting in motion and force control

Index	ARC 6	ARC 11
CPU	6th gen Intel	11th gen Intel
Interfaces	EtherNET, EtherCAT	
Operating System	1. RT-OS Ubuntu 14.04 Xenomai 2.4 2. RT-OS Ubuntu 20.04 Xenomai 3.2.4 (SOEM) (Pick 1)	RT-OS Ubuntu 20.04 Xenomai 3.2.4 (SOEM)

#Cobot #Industrial #Logistics #Manufacturing

✓ Real-time robot motion controller compatible with AIDIN Robotics sensors for motion and force control in collaborative robots

✓ Equipped with Xenomai for real-time control

✓ Supports high-speed communication via EtherCAT and ROS

Robot Motion Controller (ARC)

Controller compatible with F/T sensors, assisting in motion and force control

Index	ARC 6	ARC 11
CPU	6th gen Intel	11th gen Intel
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#Cobot #Industrial #Logistics #Manufacturing

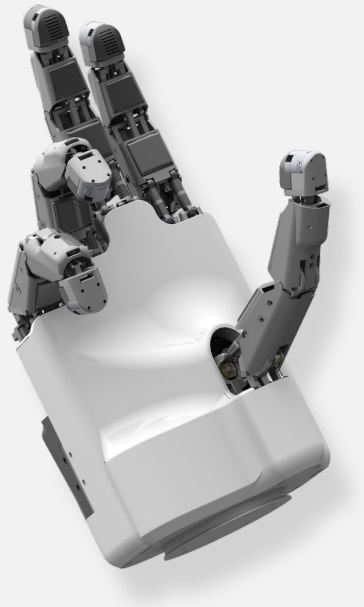
✓ Real-time robot motion controller compatible with AIDIN Robotics sensors for motion and force control in collaborative robots

✓ Equipped with Xenomai for real-time control

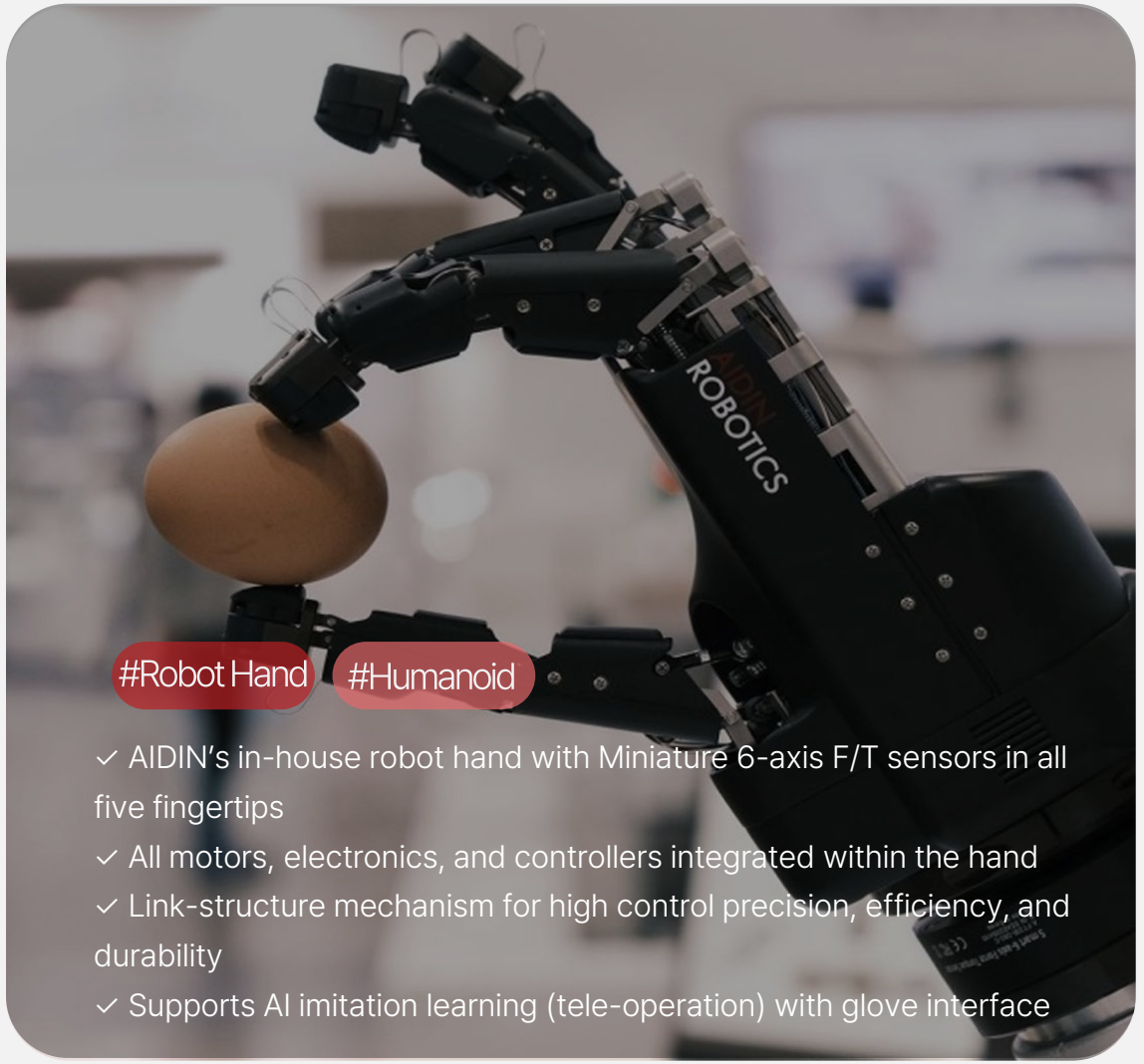
✓ Supports high-speed communication via EtherCAT and ROS

Robotic Hand (AIDIN-Hand)

High-degree-of-freedom robot hand
equipped with a 6-axis F/T sensor

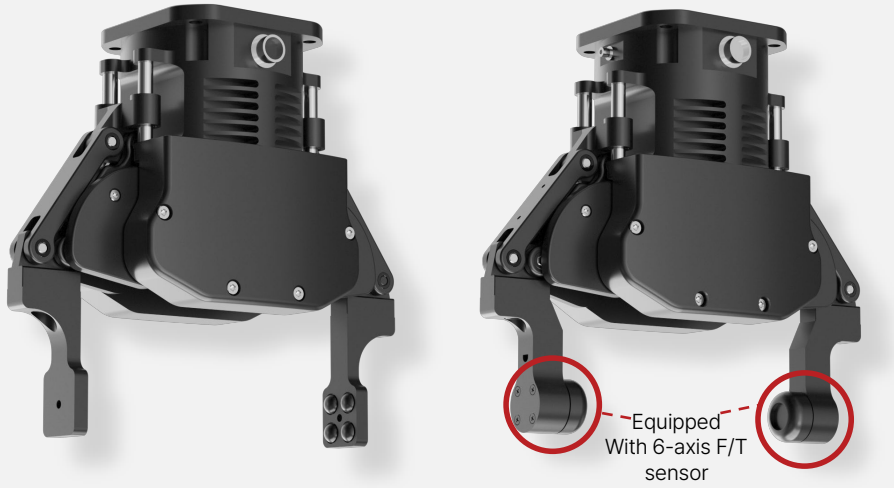


Index	Unit	Value
Degree of Freedom(Finger)	DoF	3
Degree of Freedom(Hand)	DoF	15
Finger-tip Force	N	20
Payload	Kg	15



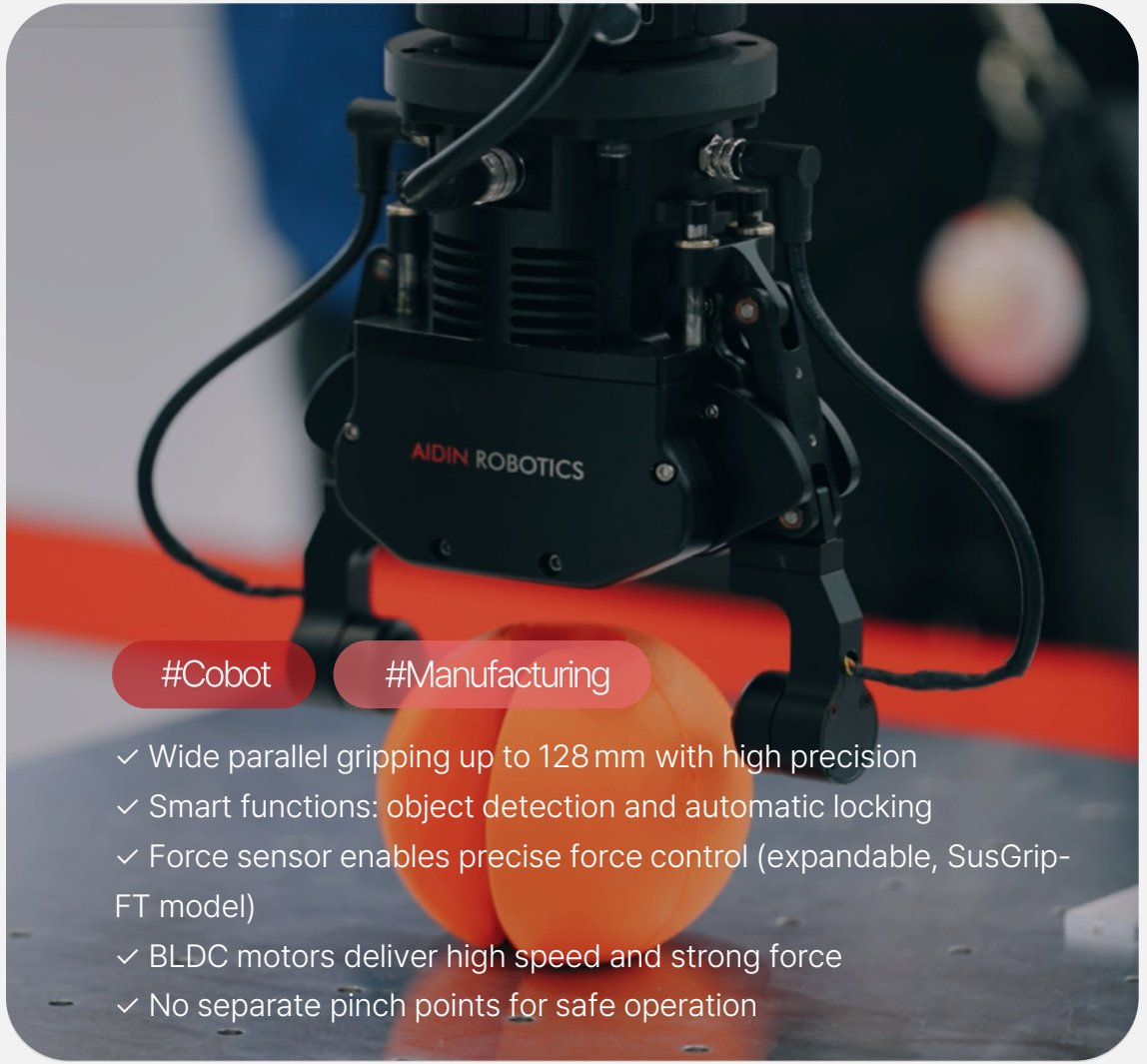
Smart Gripper(SusGrip/SusGrip-FT)

Equipped with wide parallel gripping up to 128mm and fine manipulation capability



SusGrip　　SusGrip-FT

Index	Unit	Value
Gripping Force	N	90
Stroke	mm	0-128
Form-fit Payload	Kg	5

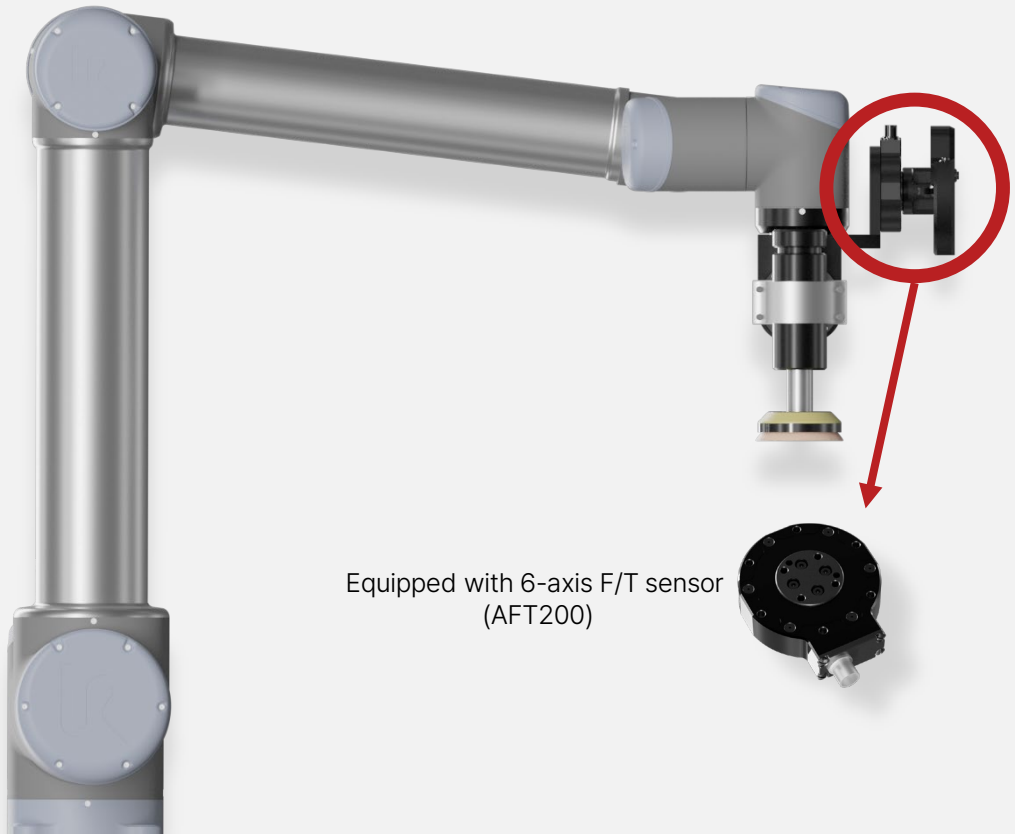


#Cobot　#Manufacturing

- ✓ Wide parallel gripping up to 128 mm with high precision
- ✓ Smart functions: object detection and automatic locking
- ✓ Force sensor enables precise force control (expandable, SusGrip-FT model)
- ✓ BLDC motors deliver high speed and strong force
- ✓ No separate pinch points for safe operation

AIRO One Solution – Surface Finishing

Force Control Solution for Manufacturing



Equipped with 6-axis F/T sensor
(AFT200)

Solution Setup

Cobot
(Universal Robot UR 10e)

6-axis F/T Sensor
(AFT200)

Robot Motion
Controller
(ARC)

Customizing Tool

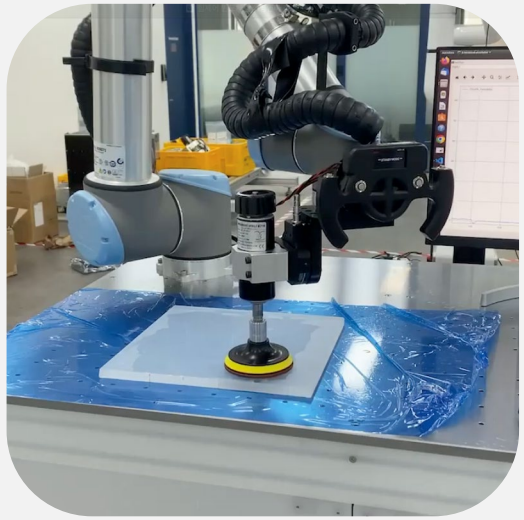
- ✓ ±0.1N precision sensing/control with 6-axis F/T sensor
- ✓ Up to 16 h continuous operation
- ✓ Independent robot control without extra equipment
- ✓ Intuitive environment for easy programming and fast deployment

AIRO One Solution – Surface Finishing

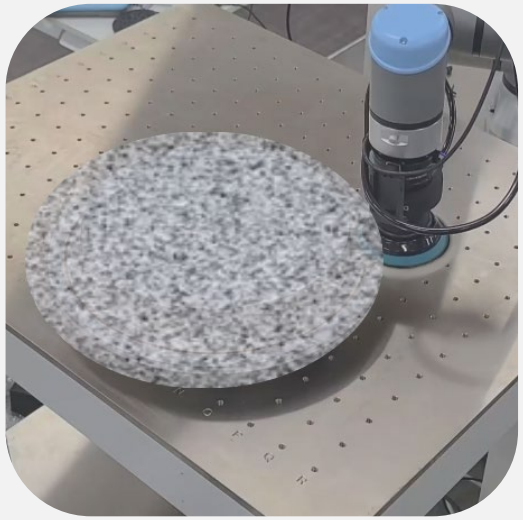
Force Control Solution for Manufacturing

Application Case

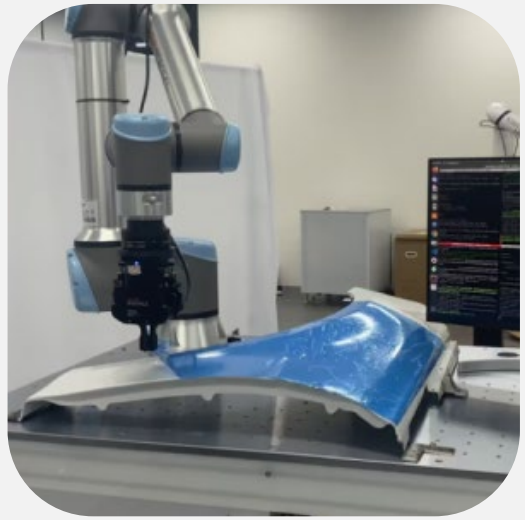
✓ Metal surface processing



✓ Quartz surface polishing



✓ Cleaning process

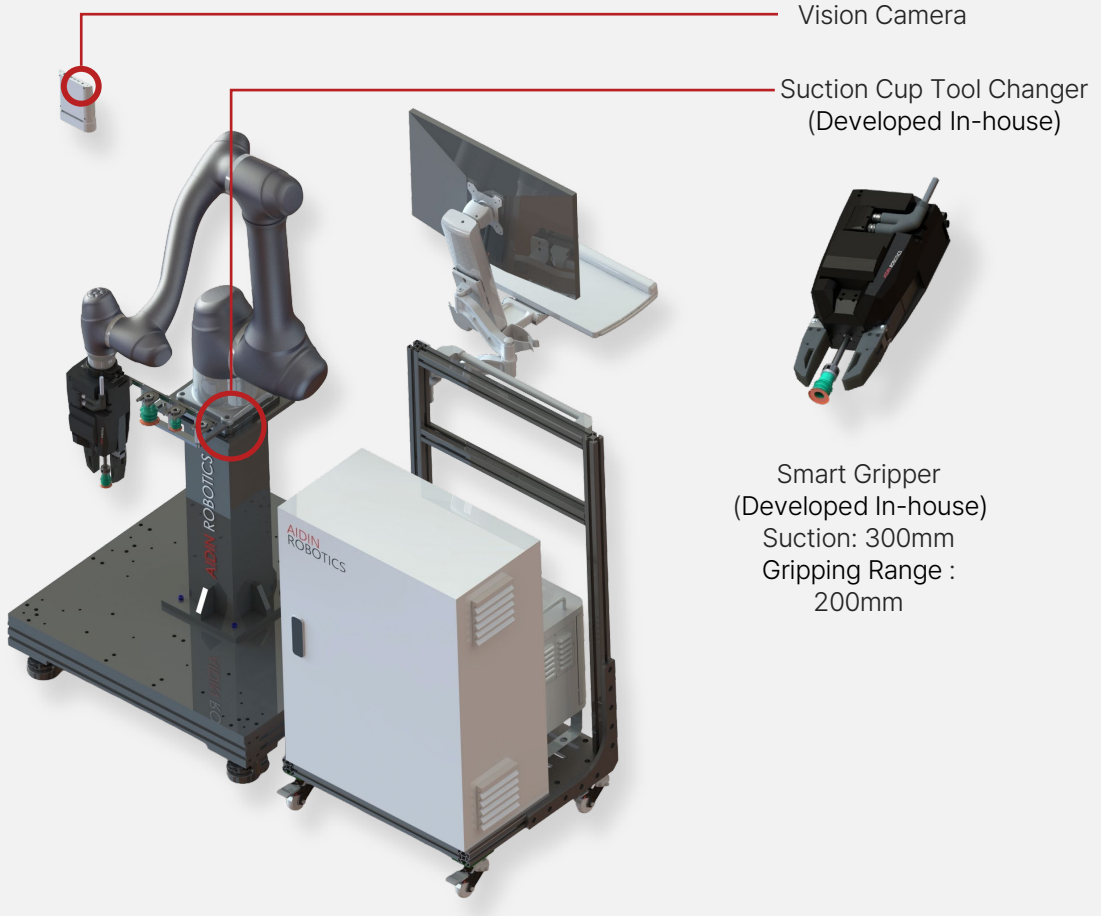


✓ Coating/film removal process

AIRO One Solution – Logistics

Robotic Picking Solution for Logistics
(Under Development)

CJ 대한통운



Smart Gripper
(Developed In-house)
Suction: 300mm
Gripping Range :
200mm

성능

✓ Productivity: 1000 pieces per hour
✓ Grippable Object Weight : 3kg
✓ Maximum Grippable Object Size : 300mm

✓ Logistics robot solution that recognizes and grips random objects without pre-registration
✓ Integrates in-house AI vision algorithms with a smart gripper capable of handling objects of various types and sizes
✓ Unified suction and gripper control for optimal gripping strategy

Quadruped Robot Solution

AIDIN (Under Development , with posco)

Quadruped robot (AIDIN) used for thermal imaging and other inspections in hazardous facilities such as power plants and chemical factories

- ✓ Human-like legged (RGB/thermal cameras, surveillance, vibration, gas sensors, etc.) mobility for navigating stairs, slopes, and uneven terrain
- ✓ Enables inspection in hazardous environments such as power plants and chemical plants
- ✓ Modular design allows performance tuning and easy maintenance
- ✓ Supports customized solutions with various attachments

04. Customer Cases

AIDIN ROBOTICS will work with partners to realize the safe coexistence of humans and robots.

AIDIN ROBOTICS

Main Customers

Company

amazon fulfillment
SAMSUNG
RAINBOW ROBOTICS
posco
CJ 대한통운
HYUNDAI
LG
DOOSAN
LG Innotek
neuromeka
OSSTEM IMPLANT
BA Robotics
CAMEX MACHINERY & ROBOTICS
ROBOTIS
Holiday Robotics
angel robotics
ROBOT

Research

KETI 한국전자기술연구원 Korea Electronics Technology Institute
KERI 한국전기연구원
KIMM
GIST
KITECH 한국생산기술연구원
KIRO KOREA INSTITUTE OF ROBOTICS & TECHNOLOGY CONVERGENCE
DGIST 대구경북과학기술원 Daegu Gyeongbuk Institute of Science & Technology
KAERI
KIST 한국과학기술연구원 Korea Institute of Science and Technology
KOTMI Korea Textile Machinery Convergence Research Institute 한국섬유기계융합연구원
UNIST ULSAN NATIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY
KAIST 1971
VERI LUX MEA
KOREA UNIVERSITY 1905
SUNG KYUN KWAN UNIVERSITY 1398 성균관대학교

University

TU WIEN TECHNISCHE UNIVERSITÄT WIEN
UNIVERSITY OF MICHIGAN
VDC VISHNU DENTAL COLLEGE
FCiências.ID ASSOCIAÇÃO PARA A INVESTIGAÇÃO E DESENVOLVIMENTO DE CIÊNCIAS
UNLV UNIVERSITY OF NEVADA LAS VEGAS
SAINT LOUIS UNIVERSITY
UNIVERSITAS Miguel Hernández
DEAKIN UNIVERSITY
FLORIDA INSTITUTE OF TECHNOLOGY 1958
VERI LUX MEA
KOREA UNIVERSITY 1905
IHS SOGANG UNIVERSITY

Reference

Manufacturing

HYUNDAI
SAMSUNG
RAINBOW ROBOTICS
neuromeka
DOOSAN
Global ZEUS

Healthcare

angel robotics
OSSTEM IMPLANT
SAINT LOUIS UNIVERSITY
부산대학교 PUSAN NATIONAL UNIVERSITY

AI&Humanoid

amazon robotics
SAMSUNG
LG
LG Innotek
RAINBOW ROBOTICS
AROBOT
ROBROS
ROBOTIS
Holiday Robotics

AIDIN ROBOTICS

Investments

AIDIN ROBOTICS began with seed investment in 2020, successfully raised KRW 4.5 billion in Series A in 2022, and KRW 15 billion in Series B in 2024, surpassing a total cumulative investment of KRW 20 billion.
The company has been continuously growing, recognized for its high potential and value in technology by leading domestic and international corporations.

한국투자 파트너스

posco 포스코기술투자

SAMSUNG NEXT

GS Ventures

CJ 대한통운

DSC investment

신한캐피탈

BNK 벤처투자

future play

(주)코오롱인베스트먼트

“Thank you

AIDIN ROBOTICS