



# DOOSAN ROBOTICS

SWITCH ON THE FUTURE



ROBOTICS • AUTOMATION • CONVEYORS



# The cobot of the future

## The ideal automation partner for human-robot collaboration

### Sensitive & Safe

Enhanced functional safety based on highly sensitive torque sensor

### Talented & Skillful

Precise and versatile force control for remarkable performance

### Reliable & Innovative

Leading-edge control algorithm upon a robust software platform

### Intuitive & Simple

Ultra-intuitive usability like smart devices



# Robot arm line-up



- 6-axis articulated robot with top class force sensitivity and collision detection.
- Outstanding safety and precise operation by 6 joint torque sensors.
- Most optimal solution of collaborative robots with diversified work payload capacity and reach of product lineup.

The world's most diversified line-up of robots with a load capacity of 6 to 15 kilograms and a working radius of 900 to 1700 millimeters. Customers can select the most optimal solution for their work environment.



- 6kg payload capacity, 0.9m reach radius.
- Optimized for quick and repetitive tasks in small spaces.



- Industry's largest payload capacity of 15kg, 0.9m reach radius.
- Suitable for handling heavy objects that pose risk to humans.



- 10kg payload capacity, 1.3m reach radius.
- Versatile model adequate for all work processes.



- 6kg payload capacity, industry's largest reach radius of 1.7m.
- Most efficient for handling more than two work processes or carrying out tasks to require long reach.



# Controller

- State-of-the-art control platform for perfect and reliable robot control.
- Maximise performance of torque sensor through innovative and advanced motion control algorithm and robot language.
- Providing the latest communications technology to ensure compatibility\* with other automation environment.
- Built-in app developed with skill-based programming for making complex robot motions simply
- Built-in innovative control algorithm for easy implementation in a wide range of field applications
- Robust platform with Real-time OS and 1msec. communication speed of EtherCAT, ensuring perfect performance even in tough environments.

\*Ethernet, Fieldbus, Serial, Wifi, etc.



Size: 490 x 390 X 287mm

Weight: 9 kg

Convenient connectivity:

Ethernet, RS232, Modbus

I/O: 32 Digital, 4 Analog & Flange 12 Digital

# Teach Pendant

- Monitor all information on robot operation at a glance.
- Capacitive touch and high resolution 1280 x 800 screen for friendly user experience.
- Light-weight and ergonomic design enabling inherently comfortable grip.
- Ultra-intuitive usability by simple graphic-informative communication.

## FUNCTIONS INCLUDE:

### Workcell Manager:

Easily connect with or control peripherals in the working environment.

### Skills:

Icon-based, representing each movement of a robot.

### Task Template:

A series of skills composing a certain task process.

### Task Builder:

Relevant task template and skill items considering a user environment.



Full Glass Type (Gorilla Glass)

10.1 inch Capacitive Touch Screen

8 mm Slim Cable

Size: 264 x 218 x 42mm

Weight: 0.8kg

*Simple and easy robot teaching with icon drag-and drops*



# Technical Specification

Arm	Performance			
	Tool Speed	1m/s		
	Repeatability	±0.1mm		
	Temperature	5 ~ 45 °C		
Joint Movement Range (Range: °/ Speed: °/s)				
	M0609	M1509	M1013	M0617
J1	±360/150	±360/150	±360/120	±360/100
J2	±360/150	±360/150	±360/120	±360/100
J3	±150/180	±150/180	±160/180	±360/100
J4	±360/225	±360/225	±360/225	±360/225
J5	±360/225	±360/225	±360/225	±360/225
J6	±360/225	±360/225	±360/225	±360/225
Other Features				
	Installation Position	Any (Floor/ Ceiling/Wall)		
	Protection Rating	IP54		
	Digital I/O — Flange	6 In/6 Out		
	I/O Power Supply	DC 24V / Max. 3A		

## Controller

Interfaces	Ethernet (TCP/IP) / RS232 / USB / GPIO / Wi-Fi
Fieldbus	Modbus TCP*
Dimensions	490 x 390 x 287 mm
Weight	9kg
Protection Rating	IP20
I/O Port – Digital I/O	16/16
I/O Port – Analog I/O	2/2
I/O Power supply	DC24V
Rated Supply Voltage	100~240(50~60Hz) VAC
Cable Length (Arm)	6.0m
Cable Length (TP)	4.5m

\*Network gateway can be used for wider variety of communication methods

## Teach Pendant

Protection Rating	IP20
Dimensions	264 x 218 x 42
Weight/Screen size	0.8kg / 10.1 inch



# Applications



Robots can be applied in a wide range of processes and tailored to meet customers' needs.  
Some of the manufacturing processes include



**reddot** award 2018  
winner

## KEY POINTS

### Dexterity

- 6 joint torque sensors can detect and control force with a high sensitivity which allows the robots to automatically measure parameters such as tool weight and gravity direction. This enables the robots to perform highly dexterous tasks which can be applied to a wide range of processes including screw assembly, polishing and gluing.

### Safety

- One of the key benefits of the torque sensors is that they provide the industry's highest level of collision sensitivity.
- The robots can automatically identify and work within a virtual safety space as if there were actual fences in place, protecting both the robots and nearby workers.
- Safety zones can also be established so that the robots can slow down in areas where they work with humans.

### Easy to Use

- An intuitive user interface enables easy programming.
- On the screen displays show all monitoring information in the robots' surroundings in a card view format.
- Robot skills are shown in icons, which can easily be taught to robots without complicated coding or use of robot language.

### Flexible

- Extremely flexible, they can be easily installed by automatically detected inclination angles.
- Require less space for installation and minimal changes in the existing production layout.

# Value-adding enhancers



Customers can maximize the performance and production efficiency of their robots by adding various functions.

## Direct Control Unit



- Convenient solution for direct teaching without teach pendant.
- 5 buttons for selecting various teaching modes and coordinate input.

## Mobile Base



- Mounted with robot and controller for easy movement and relocation.
- Spacious and convenient storage available.

## Smart Vision Module



- Vision system that can be mounted at the end of the robot.
- Inspects object presence and measures position, angle, diameter and length.

## Dress Pack



- Allows efficient operation by organizing various cables attached to end effectors.
- Built-in bracket inside tube holder makes it easier to reinstall.

## Stain- Resistant Model



- Enhanced anti-stain finish enabling easy maintenance against dirt and stain.

## Robot Jacket



- PU coating forms a 2-stage water barrier which protects the robots from liquids.

Enhancers are optional items, not included in the basic robot system.





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Contact us for details about Doosan Robotics



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