efika

AutoMax Series Robot
Product Datasheet

Introduction:

EFIKA delivers advanced robotic cleaning solutions for solar installations of all sizes—small, medium, and large-scale. Our systems are engineered to adapt to diverse panel configurations and operate autonomously using solar power, rechargeable batteries, or AC/DC sources. By maintaining optimal panel cleanliness even in harsh weather conditions, our robots can enhance energy output by up to 40%. Built entirely in-house, EFIKA's technology ensures consistent performance and reliability across all site types.

AutoMax Series

The AutoMax Series robots are optimum for hassle free operations, with variable product sizes that are tailored to fit the specific site requirements for safe, effortless yet optimum results.

Product Description:

Built to accommodate any tilt angle with variable array sizes. Each array will feature an autonomous dry/wet cleaning rotary brush robot that will be installed over the solar panels to cover the full width of the solar array,

Featuring push button start and automatic reverse and stop operation, guided by the aluminum frame (if needed) at the outer ends of the panels to guide the direction of motion.

2-Way Stroke: The robot performs a complete cleaning cycle (out and back) before returning to its starting point (homing position).

The Docking Station: Positioned at the end of the array to avoid shading the panels. It serves two purposes:

- Charging: Automatically recharges the robot's built-in batteries during idle time apart from the solar array.
- Transport: The docking station itself sits on two guided rails and is moved via a remote-controlled winch. This allows a single robot to be shifted laterally to clean parallel rows, optimizing the number of robots and maximizing the usage of the same robot to the maximum number of arrays/panels it can serve.

EFIKA AutoMax robots are capable of both dry and wet cleaning, depending on the level of soiling.

EFIKA AutoMax robots are equipped with safety sensors to detect the end of a stroke and obstacles.

EFIKA AutoMax robots are equipped with self-alignment system to ensure the robot moves smoothly across the panels without jamming.

Technical Details:

Brush

The robot features a single rotating brush:

Brush Length:	1.5 – 5.5 m (optional upon selection)
Brush Diameter:	0.16 m
Brush Rotation Speed:	190 RPM
Brush Motor:	AC 500W
Brush Material:	Certified polypropylene plastic bristles
Brush Design:	Helical to allow exits for dust

Control

Control Features:	Motion speed, motion direction 360*, brush on/off
Body:	Hard light weight plastic, with hanging strap
Connectivity:	RF
Range:	200m
Battery:	Basic AA battery pack, replaceable
Protection Rating:	IP65

Power

AC cabled models:

Power Source:	220V AC
Power Cable:	2x2 mm^2 for length < 50m, 2x4 mm^2 for length > 50m
Robot Rated Power:	1000-1200 Watt

Battery powered models:

Power Source:	LiFePO4 Battery
Battery Description:	12V 20-60Ah (depending on required operating hrs./charge)
Robot Rated Power:	1000-1200 Watt

Water

Water inlet:	Fixed hose inlet (optional)
Pressure:	3-6 bar
Average consumption:	10L/min.

General Features

Weight	45-70 kg (depending on size)
Robot Speed	6 – 12 m/min
Operating temperature	10°C～ 65°C



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