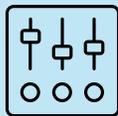# Solutions for Commercial Cleaning Robots

molex

Robots tasked with commercial cleaning must operate at peak performance despite constant motion, vibration and exposure to water and harsh chemicals. Reliable power and signal transmission depends on interconnect solutions designed to perform in high-vibration and shock-prone environments.
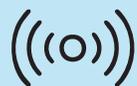
Compact connectors with robust retention features can meet these demanding mechanical and environmental requirements. Molex provides wire-to-board power and signal solutions engineered for rugged use and ease of assembly, helping manufacturers enhance reliability, simplify integration and accelerate product timelines.
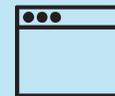

Commercial Cleaning Robot

Main Controller	Navigation Sensors	Cleaning Modules	Motor Driver	User Interface

MOLEX SOLUTIONS FOR COMMERCIAL CLEANING ROBOTS

High-Power Connectors	Signal and Low-Power Cables	Wire-to-Board Connectors	Board-to-Board Connectors
Key Features			
Hybrid power solutions	Discrete wiring options	Color-coded options	Low profile
Positive-locking feature	Durable overmold design	Positive-locking mechanism	Superior mating guidance
Self-aligning design	Pre-crimped leads	Enhanced contact protection	Dual-contact design
High-temperature resistance	Customizable cable solutions	Resin enhancements	High mating retention

Commercial Cleaning Robot

LiDAR

Board-to-board connectors (SlimStack, Quad-Row)

Cable assemblies (FFC/FPC connectors, Premo-Flex)

Wire-to-board connectors (PicoBlade)

Main Controller

Cable assemblies (Signal/low-power cables)

Wire-to-board connectors (Micro-Fit, Mini-Fit, Mini-Lock, PicoBlade)

Communication Module

I/O connectors (USB Type-A, USB Type-C, Micro USB)

Terminal Blocks

RJ45

Motor Driver

Cable assemblies (Signal/low-power cables)

Wire-to-board connectons (Mini-Fit)

Touchscreen/Display

I/O connectors (USB Type-C, Micro USB)

Cable assemblies (FFC/FPC connectors, Premo-Flex)

Wire-to-board connectors (PicoBlade)

Camera Sensors

Board-to-board connectors (SlimStack)

I/O connectors (USB Type-C, Micro USB)

Cable assemblies (Signal/low-power cables, FFC/FPC connectors)

Wire-to-board connectors (PicoBlade)

Bumper Sensors

Board-to-board connectors (SlimStack)

Cable assemblies (Signal/low-power cables)

Wire-to-board connectors (PicoBlade)

Brush/Vacuum Pump

Circular connectors (Nano-Change M8)

Cable assemblies (Signal/low-power cables)

Wire-to-board connectors (Micro-Fit, Mini-Fit, Nano-Fit)

Wire-to-wire connectors (Mizu, MX150, Squba)

Applications vary. Not an exhaustive list of product offerings.

FFC/FPC Connectors

Squba Connectors

Power and Signal Cable Assemblies

Nano Change M8 Connectors

References

Wire-to-Board Connectors

UL-approved

Signal options

Glow Wire offerings

Fit families

Board-to-Board Connectors

UL-approved

Micro product reference guide

FFC/FPC Connectors

Digital product board

Core products

Easy-On/FD19 series

Premo-Flex and Easy-On

FPC solutions

Sealed Connectors

Ingress protection ratings

Automotive and sealed connectors

Cables

Power and signal

Pre-crimped leads

Custom cable creator

I/O Connectors

Digital product board

USB

SUBASSEMBLY BREAKDOWN

LiDAR – Maps surroundings for precise navigation and obstacle avoidance

Touchscreen/Display – Enables direct user interaction and system control

Camera Sensors – Detects obstacles and identifies surrounding objects

Main Controller – Processes sensor data to coordinate robotic functions

Motor Driver – Regulates motor output to ensure precise motion control

Bumper Sensors – Senses contact to protect the robot and surrounding objects

Communication Module – Supports wireless connectivity through Wi-Fi and Bluetooth

Brush/Vacuum Pump – Generates suction and brush operation to remove debris

molex