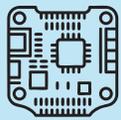# Solutions for Commercial Drone

molex

Commercial drones are evolving to carry more sensors, process more data and operate longer within severe size and weight constraints.

While the scale and purpose of drones may vary — from lightweight craft for aerial photography to heavy-lift, high-power Unmanned Aerial Vehicles (UAVs) for agriculture or delivery — designs increasingly require compact interconnects capable of handling high-speed data and power while standing up to environmental stress.

Molex addresses this need with space-saving, sealed board-to-board and power-and-signal connectors engineered for durability, precision and performance in demanding aerial applications.
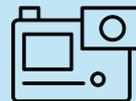

Commercial Drone

| Main Controller | Power System | Communication System | Imaging System | Controller System |

MOLEX INNOVATIVE SOLUTIONS FOR COMMERCIAL DRONES

Wire-to-Board Connectors	SlimStack Connectors	High-Power Connectors	Signal and Low-Power Cables
Key Features			
Color-coded options	Robustness and floating versions	Broad product offering	Discrete wiring options
Positive-locking mechanism	Dual-contact design	High voltage and high current combined with positive-locking mechanism	Durable overmold design
Enhanced contact protection	Microminiature		Pre-crimped leads
Resin enhancements	High-power versions		Customizable cable solutions

Commercial Drone

Power System
I/O connectors
(USB Type-C)

Board-to-board
connectors
(EXTreme Ten60,
SlimStack)

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

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

Wire-to-board connectors
(Pico-EZmate, Pico-Lock)

Thermal Management
Wire-to-board connectors
(Pico-Lock, Micro-Lock Plus)

Saftey System
Wire-to-board connectors
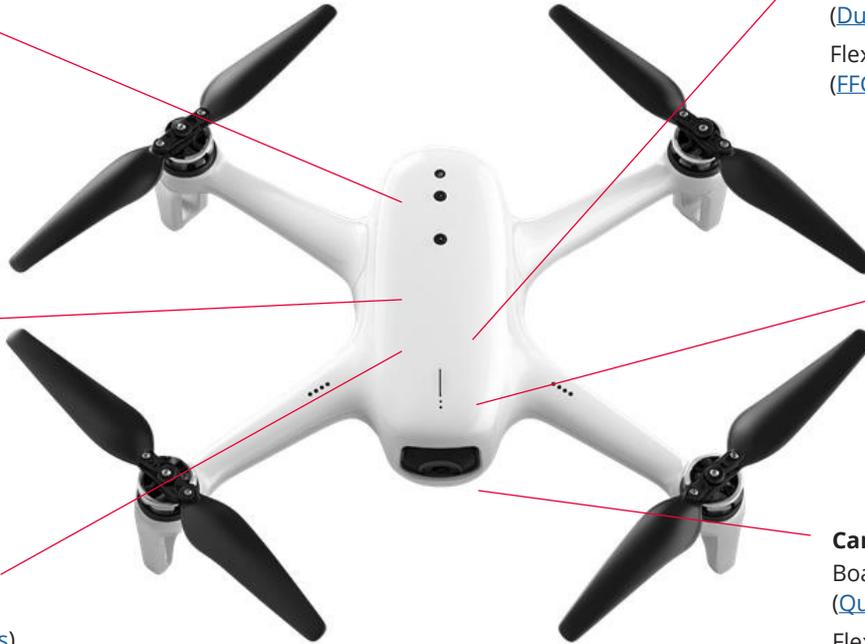(DuraClik)

Flex assemblies
(FFC/FPC connectors)

Communication System
Cable assemblies
(RF Coaxial Cables)

Antennas
(Combo Antenna)

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

Flex assemblies
(FFC/FPC connectors)

Quad-Row Connectors

FFC/FPC Connectors

Pico-Ezmate Connectors

DuraClik Connectors

References

Wire-to-Board Connectors
UL-approved
Signal options
Fit families
Shock and vibration datasheet

I/O Connectors
Digital product board
USB

Board-to-Board Connectors
UL-approved
Micro product reference guide

FFC/FPC Connectors
Digital product board
Premo-Flex and Easy-On
FPC solutions

RF Solutions
RF assembly builder
RF cable datasheet
Digital product board

Cables
Power and signal
Pre-crimped leads
Custom cable creator

SUBASSEMBLY BREAKDOWN
Main PCBA – Central command center; processes inputs and controls functions
Power System – Supplies and regulates power to all components
Thermal Management – Prevents overheating to ensure safe operation
Camera System – Captures visual data for navigation and monitoring
Communication System – Enables remote communication, navigation and data feedback
Safety System - Utilizes LiDAR, radar, camera and height sensors for real-time obstacle detection and safe flight control

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