

Smaller and Lighter IoT Solutions >

Molex Micro Solutions: Supporting IoT's Continuing Evolution



molex

Overcoming Challenges for Sensors in IoT Applications >

New IoT applications are being developed in a variety of fields, but current sensors often don't deliver the compactness or low weight required by product designs.



Existing product size

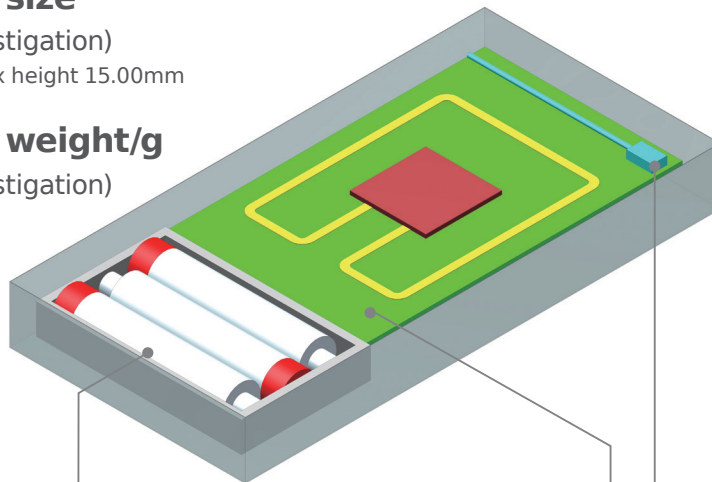
(internal company investigation)

Width 62.00 x depth 125.00 x height 15.00mm

Existing product weight/g

(internal company investigation)

Total weight 275g



Concern #1

The size and weight of many existing components restrict design specifications, making it difficult to develop a format suited to the application.

Concern #2

It is difficult to optimize the size and weight of end products with the dimensions of many of the individual parts currently in the marketplace.

Considerations for battery use



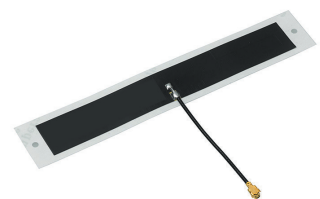
Design flexibility is limited by battery format and size, and the weight of the battery adds to the end product's weight.

Considerations for antenna circuit board use



The range of specification settings is determined by the format of the circuit board, so a certain amount of space is required.

General antenna use considerations

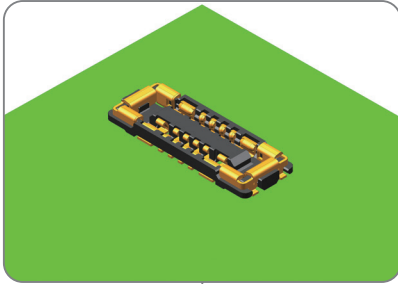


Sensor size must be restricted in order to secure space for antennas.

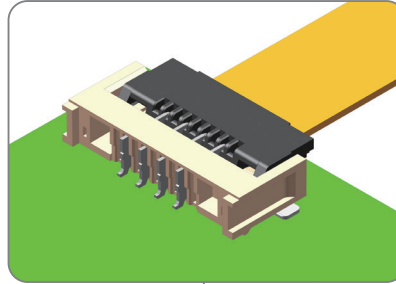
Molex Micro Solutions Portfolio Presents Application Possibilities with Compact, Thin and Lightweight Components >

Molex's Micro Solutions product line for IoT includes sensors and gateways. Because the cloud is used in a diverse range of markets and applications, we can greatly reduce sensor size and weight.

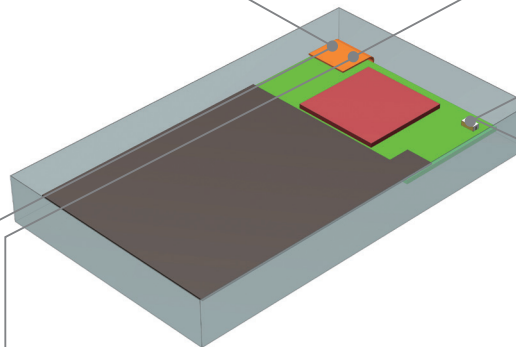
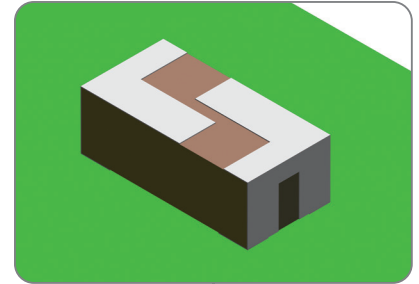
Battery connection



Connector joint



Antenna connection



Suggestion for improvement by using Molex products: #1

Molex Micro Solutions support end product size reduction and deliver design flexibility.

Suggestion for improvement using Molex products: #2

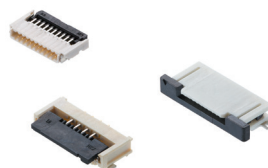
Molex's broad product portfolio delivers a wide breadth of size and weight variations, supporting designs with smaller form factors and miniaturization.

Solutions for battery connections



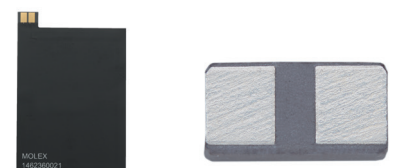
Because they are thin and fine-pitch products, Molex Battery Products can be used even in limited spaces and allow for drastic weight reduction.

Solutions for connector joints



With a Molex Micro Connector lineup that is narrow, small and fine-pitch, design flexibility is increased.

Solutions for antenna connections



Thin antennas not only save space but also allow for further reduction in size and weight.

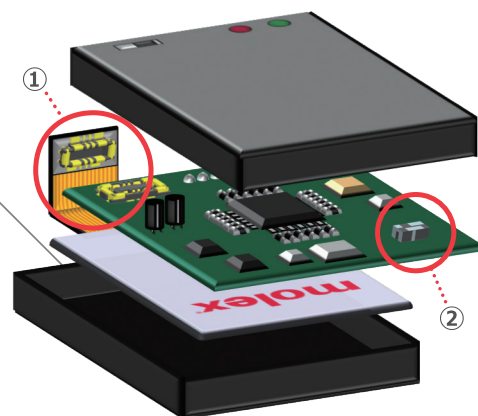
Industrial Automation and IoT

Automation and IoT applications will continue to expand in industrial facilities.

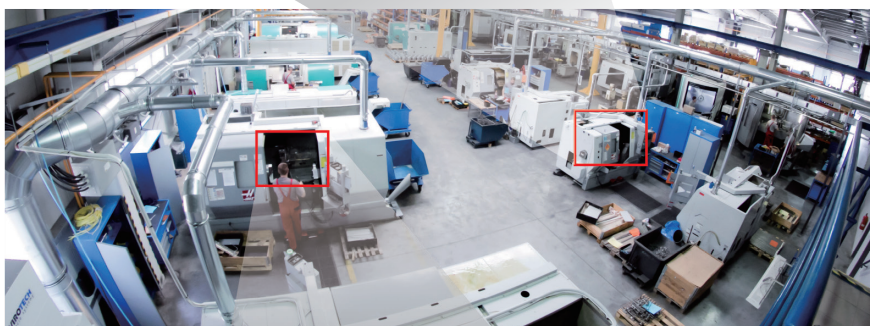
Device monitoring sensor



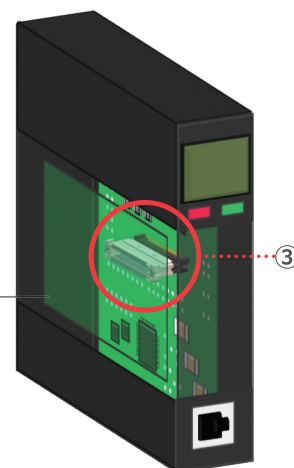
Module exploded view



Machine monitoring sensor



Module exploded view



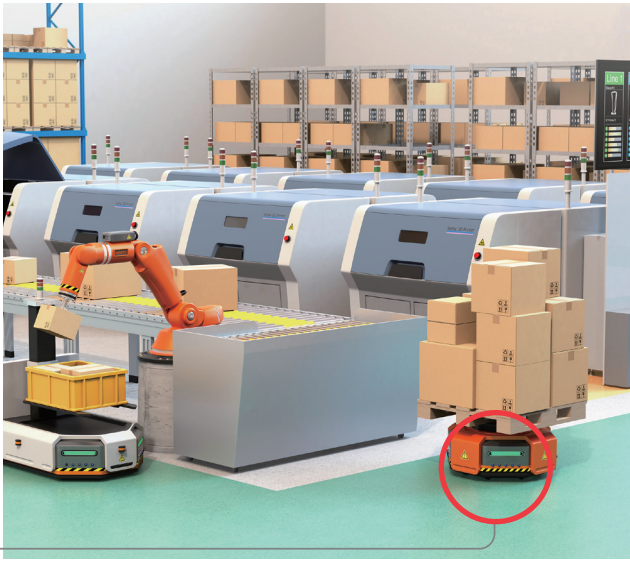
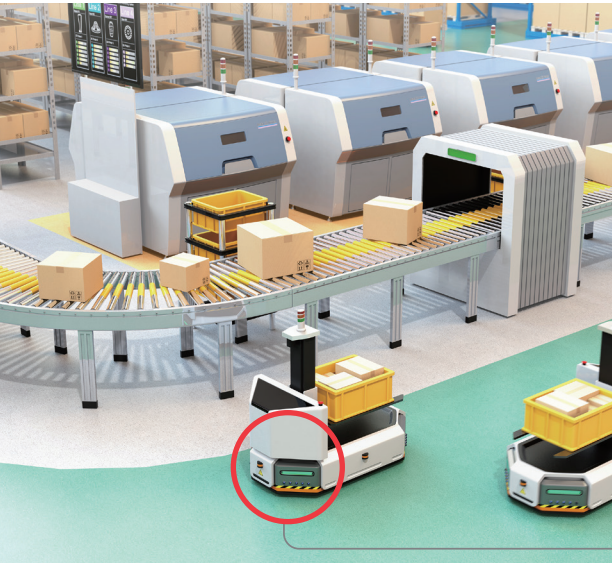
Programmable Logic Controller (PLC)

Molex Micro Miniature Product Line Application Example

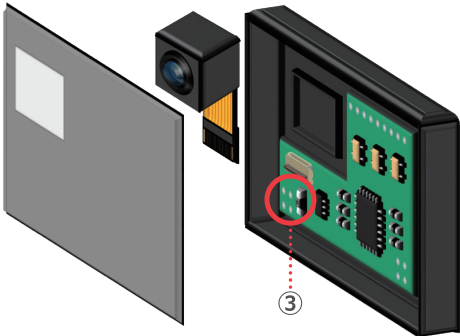
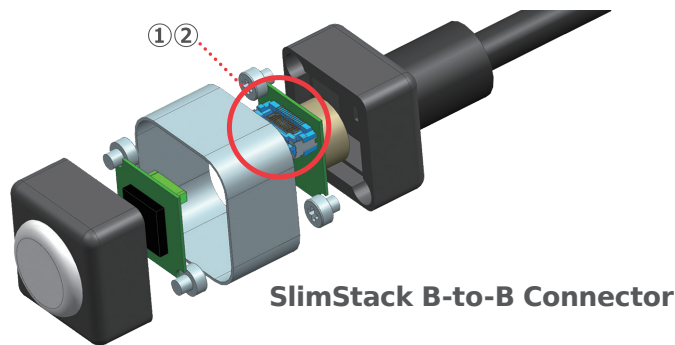
Product series	Pitch (mm)	Key point	Product features & benefits
① SlimStack Board-to-Board Connector, 0.40- and 0.80mm- Pitch Battery Series	0.40	<ul style="list-style-type: none"> • High current rating • Minimum mating height: 0.60mm • Minimum mating width: 2.00mm 	In various applications that demand further size reductions, we support a current rating up to a maximum of 10.0A with an industry-minimum class product size.
② Antenna products	-	Miniature, low-weight model	Small antenna designs support space-constrained designs
③ SlimStack Board-to-Board Connector, 0.635mm pitch series	0.635	A wide range of circuit sizes and mating heights	Supports a range of circuit sizes, from 20 to 240, delivering design flexibility.

Complete Factory Automation

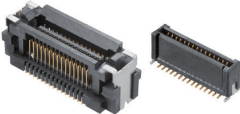
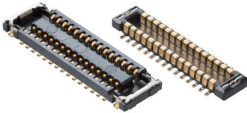

Sensors and cameras that manage and monitor operations are crucial to IoT's part in furthering factory automation.



In-camera connectivity examples



Molex Micro Miniature Product Line Application Example

Product series		Pitch (mm)	Key point	Product features & benefits
① SlimStack Board-to-Board Connector, FSB5 Series		0.40	Industry-leading compactness for floating connectors	Product width is 3.80mm, making it one of the smallest floating connectors in the market, while also establishing a floating movability range of ± 0.5 mm.
② SlimStack Board-to-Board Connector, 0.40mm-Pitch B8 Series		0.40	Molex CleanPoint contact design	Molex's unique contact profile provides superior electrical reliability and removes foreign materials such as flux.
③ Easy-On FFC/FPC Connector, 0.50mm-Pitch FBH1 Series		0.50	Low-profile connector	Dual connector that contributes to space saving as one of the smallest low-profile connectors in the market that also contributes to design freedom with a range of circuit counts.

Connected Medical and Health Care

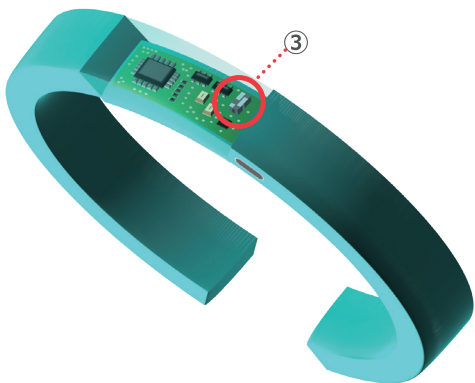
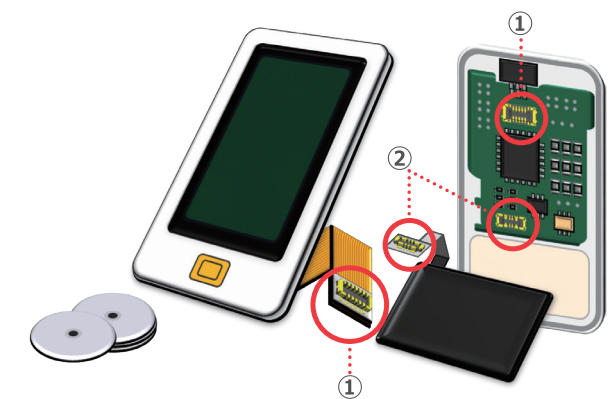
IoT progress has enabled individuals to manage their own health.



Liquid crystal connection/internal connection/high-speed charging



Wireless data processing (Wi-Fi, Bluetooth)



Molex Micro Miniature Product Line Application Example

Product series	Pitch (mm)	Key point	Product features & benefits
① SlimStack Board-to-Board Connector, 0.35mm-Pitch SSB RP Series	0.35	Maximum current rating: 3.0A	Double-contact metal power armor nail provides a reliable interface with flexible arm springs and 2-point contact and housing protection, allowing up to a 3.0A current rating. Mated heights are between 0.60 and 1.00mm, supporting designs for compact devices.
② SlimStack Board-to-Board Connector, 0.40- and 0.80mm-Pitch Battery Series	0.40	<ul style="list-style-type: none">High current ratingMinimum mating height: 0.60mmMinimum mating width: 2.00mm	Delivers up to a 10.0A current rating to meet the growing power needs of applications with tight packaging.
③ Antenna Products	-	Miniature, low-weight model	Small, lightweight antennas support space-constrained designs.

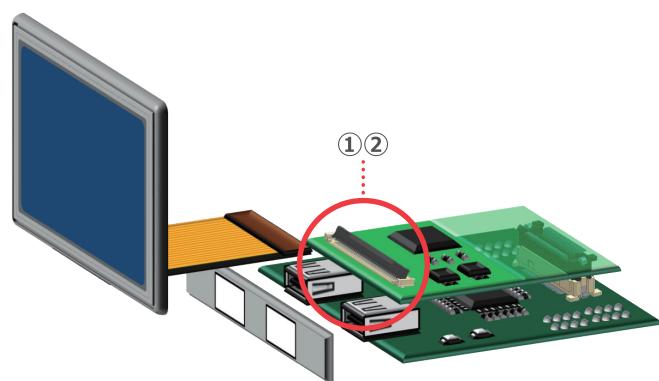
Smart Buildings

In addition to security, Molex IoT Solutions support smart technology for building maintenance and management.

Smart elevators



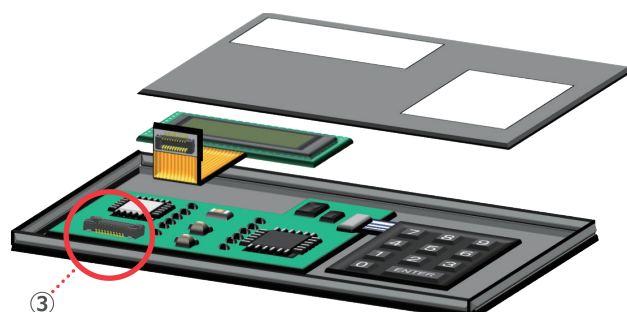
Display connection



Smart security gate



Sensor connection



Molex Micro Miniature Product Line Application Example

Product series	Pitch (mm)	Key point	Product features & benefits
① Easy-On FFC/FPC Connector, 0.50/1.00mm-Pitch FD19 Series	0.50	Dual contact and a wide range of circuits sizes	Despite the same basic structure, 0.50mm- and 1.00mm-pitch differences provide a range of circuit counts. With its dual contact format, this product is optimal for use in applications that demand resistance against vibration
② Easy-On FFC/FPC Connector, 0.50/1.00mm-Pitch Slider Series	0.50	Slider lock function, wide range of circuit sizes	With its slider lock function, this product comes with a broad range of variations, enabling options such as top contact, bottom contact and straight insertion types.
③ SlimStack Board-to-Board Connector, 0.40 mm-Pitch J-Bend Series	0.40	Contact lock terminal with 10 to 100 circuits available	With a wide range of options, from 10 to 100 circuits, this product line offers mating heights from 1.50 to 2.30mm with the same foot pattern.

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