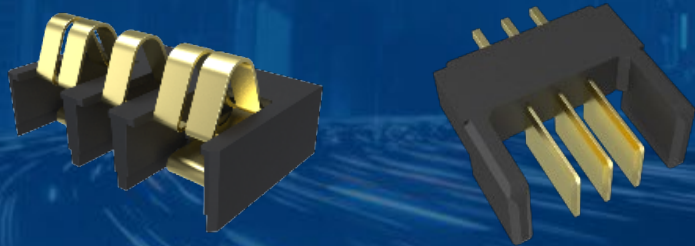


Amphenol

COMMUNICATIONS SOLUTIONS

Replaceable Battery
Connectors For Small Devices



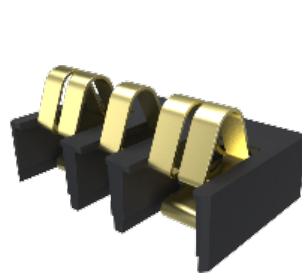
 **FCi Basics**

Replaceable Battery Connectors - Value Proposition

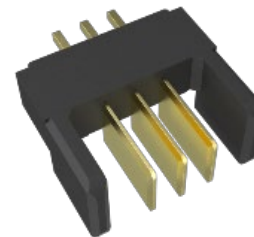
- Widely used, higher reliability, lower cost spring or blade contact solutions for replaceable batteries and removable battery packs for any small handheld device
- Single piece or two-piece connector solutions for lower power delivery with profile heights ranging from 4.0mm to 11.8mm and working heights of 0.3mm to 1.2mm (spring type)
- Stamped and formed or blade type contact systems with 3 up to 12 positions to accommodate different design practices and application needs
- Up to 10,000 mating cycles with low contact resistance and 1A up to 10A current rating, with all contacts powered
- Replaceable battery connectors meet new laws and requirements on more sustainable, circular and safe batteries. They extend the life cycle of handheld devices and reduce waste.



Batteries are used as a power source and for memory backup



Spring type

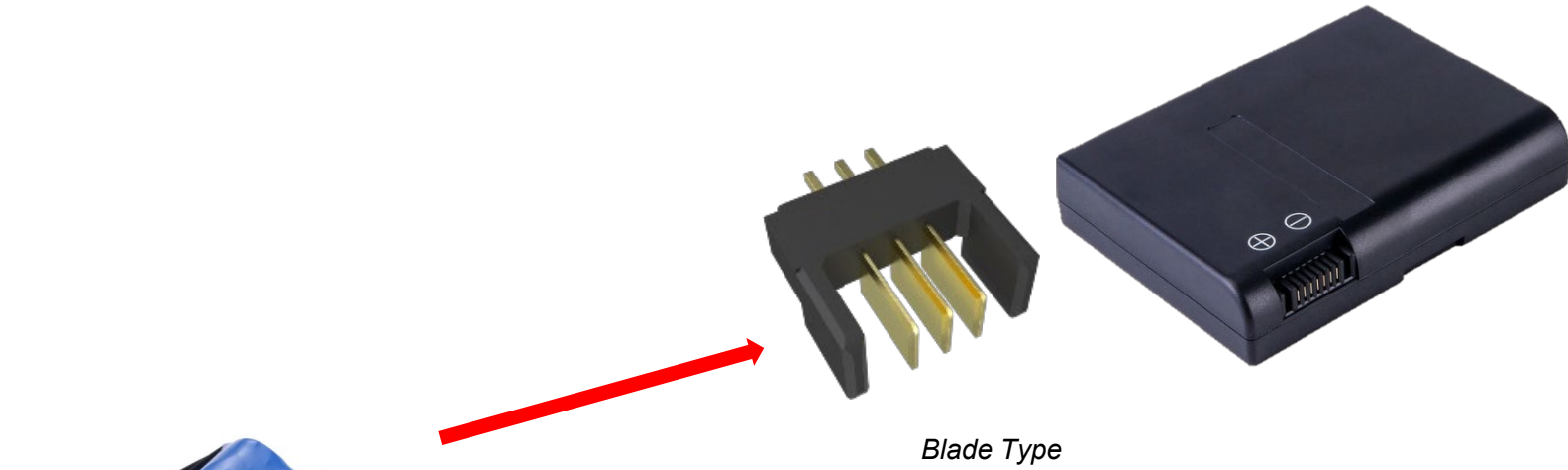


Blade type



Design engineers are moving away from cabled battery packs

Two Types of Replaceable Battery Connectors



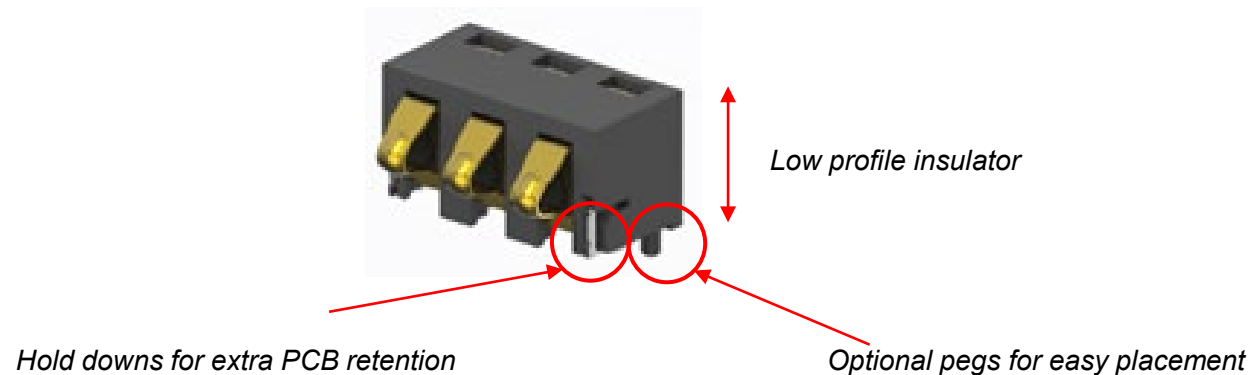
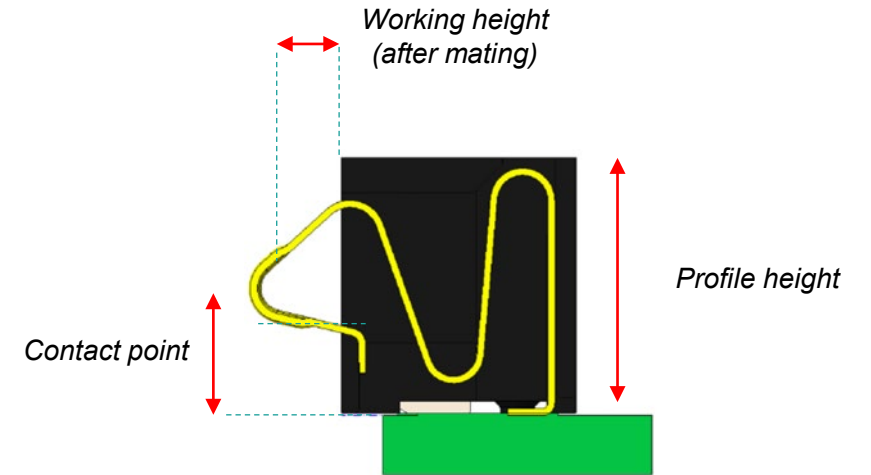
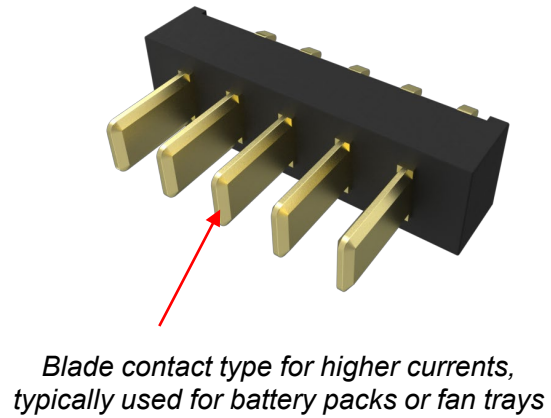
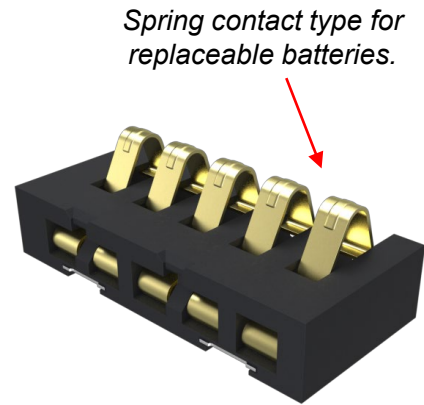
Blade Type

Space consuming battery pack assemblies are being replaced by more efficient, high reliability, compact solutions



Spring Type

Replaceable Battery Connectors – Design Considerations



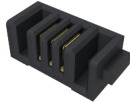
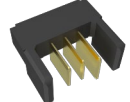



Replaceable Battery Connectors - Features and Benefits

Features	Benefits
Small connector solution for replaceable batteries	Meets new EU regulations for replaceable batteries
Single piece and two-piece solutions	Supporting multiple building practices and application requirements
Current rating of 1.5A up to 10.0A per pin	Meets the power requirement of battery applications and supports high charging speeds
Up to 10,000 mating cycles	High durability and supports long device lifetime
Various profiles; working heights; pitch sizes; mating angles and pin sizes	Offers design freedom for component engineers and ensures optimal PCB utilization
Low cost, high reliability, low profile design and high design flexibility	Successful battery connector solution for use in various markets and applications
Halogen and lead-free	Meets the latest environmental requirements

Replaceable Battery Connectors - Spring Type

Pitch	Contact Material	Pin count	Orientation	Current Rating	Working height	Durability (cycles)	Contact plating	Dimension (L*H*D)	Image	PN
2.5mm	Nickel-copper	3	Right Angle	3.3A/pin	0.3-1.0mm 0.7mm typical	3000	Gold flash	8.0*4.4*5.6		10176862-3000LF
2.5mm	Nickel-copper	3	Vertical (Wire termination)	3.3A/pin	0.3-1.0mm 0.7mm typical	3000	Gold flash	9.0*6.1*5.0		10177564-3001LF
2.5mm	Phosphor bronze	3	Vertical	1.5A/pin	0.9-1.3mm 1.1mm typical	10000	30u" Au	8.2*5.1*5.1		10008318-001LF
2.5 mm	Phosphor bronze	3/4/5	Right Angle	3A/pin	0.5-1.0mm 0.8mm typical	3000	Gold flash	3pin:9.0*3.8*5.8 4pin: 11.5*3.8*5.8 5pin: 14.0*3.8*5.8		10174632-050000LF
3.6mm	Titanium copper	4	Vertical	1A/pin	0.9-1.6mm 1.25mm typical	5000	30u" Au	16.95*6.9*9.6		10120639-001LF
3.6mm	Titanium copper	5	Vertical	1A/pin	1.05mm typical	8000	30u" Au	21.0*6.9*9.6		10116040-001LF
4.6mm	Titanium copper	3	Vertical	2A/pin	0.7-1.5mm 1.0mm typical	5000	30u" Au	15.0*7.0*9.3		10116189-001LF

Replaceable Battery Connectors - Blade Type

Pitch	Contact Material	Pin count	Orientation	Current Rating	Durability (cycles)	Contact plating	Dimension (L*H*D)	Image	PN
2.0 mm	Phosphor bronze	3~12	Right Angle	5A/pin	2000	Gold flash	(17.9-35.9)*7.0*7.0		10174479-03A100LF
2.0mm	Phosphor bronze	3~12	Vertical	5A/pin	2000	Gold flash	(11.7-30.0)*5.5*10.1		10174480-03A100LF
2.0mm	Phosphor bronze	3~12	Right Angle	5A/pin	2000	Gold flash	(11.7-30.0)*5.5*10.1		10174481-03A100LF
2.5mm	Phosphor bronze	3~10	NA	5A/pin	2000	Gold flash	(5.0-22.5)*6.5*5.5		10174522-050000LF
2.5mm	Phosphor bronze	3~10	NA	5A/pin	2000	Gold flash	17.0*6.5*5.5		10174566-050000LF
2.5mm	Phosphor bronze	3~10	Right Angle	5A/pin	2000	Gold flash	(9.6-27.1)*4.0*7.2		10174523-050000LF
2.5mm	Phosphor bronze	3~10	Vertical	5A/pin	2000	Gold flash	(9.6-27.1)*4.0*7.0		10174587-050000LF
3.0mm	Brass cooper	3~10	Right Angle	10A/pin	200	30u" GXT	(18.6-39.6)*9.5*10.0		10179681-10001LF
3.0mm	Brass cooper	3~10	Vertical	10A/pin	200	30u" GXT	(18.6-39.6)*11.8*9.8		10179680-10001LF

Electrical Performance

- LLCR: Initial < 20mΩ, after durability < 40mΩ
- Current Rating: 1~3.3A/pin for spring type
5~10A/pin for blade type
- Dielectric withstanding voltage : >250V RMS
- Insulation resistance: > 100M ohms

Mechanical Performance

- Durability: 3,000 mating cycles for spring type
2,000 mating cycles for blade type
- Mating force: refer to the product specification
- Working height: refer to the product drawing

Materials

- Housing: Thermoplastic resin
- Hold down: Stainless steel
- Terminal: Copper Alloy
- Plating:
 - Contact area: gold flash / 30" gold or GXT over Ni
 - Solder tail: gold flash over Ni

Environmental

- Operating Temperature: -40°C to +85°C
- Storage Temperature: -40°C to +85°C
- RoHS compliant
- Lead free, Halogen free

Packaging

- Tape and reel

Replaceable Battery Connectors – Target Applications

Replaceable batteries: for power source and memory backup



Insulin pump



Camera System



Walkie Talkie



Home Automation



Laser Barcode Scanner



Measurement Handheld



Industrial Scale



E-Cigarette



POS Terminal



Thermometer

Battery Connectors – More Information

- Website quick link: [Landing Page](#)
- Available on website
 - Drawings
 - 3D Models
 - Datasheet
 - Product specifications
 - Product presentation

The screenshot shows the Amphenol website product page for 'Replaceable Battery Connectors'. The page features a navigation bar with 'Amphenol COMMUNICATIONS SOLUTIONS' and a search bar. The main content area is divided into 'DOCUMENTATION' (with links for 'Overview' and 'Target Markets & Applications') and 'OVERVIEW'. The 'OVERVIEW' section includes a 'DESCRIPTION' and 'FEATURES & BENEFITS' tab. The 'DESCRIPTION' text reads: 'HIGH RELIABILITY AND DURABILITY BATTERY CONNECTORS FOR SMALL DEVICES. Amphenol FCI Basics Battery Connectors consist of spring and blade types, available in 2.0/2.5/3.0/3.6/4.6mm pitch, with 2 to 10 positions supporting up to 10A. These connectors have been widely adopted across applications like smart home devices, e-cigarettes, household appliances medical devices, rugged handhelds, and more. These replaceable battery connectors meet new laws and requirements for more sustainable, circular, and safe batteries. Consumers will be able to remove and replace the portable batteries in their...'. A 'Read More' link is provided. To the right, there is a 'Print' icon and buttons for 'QUOTE REQUEST' and 'PRODUCT ENQUIRY'. Below the text, there is a section for 'TARGET MARKETS & APPLICATIONS' with a plus sign. On the right side of the page, there are four images of the battery connectors, with the 'FCi Basics' logo above them. A 'Click Image to Enlarge' link is located below the images.

THANKS