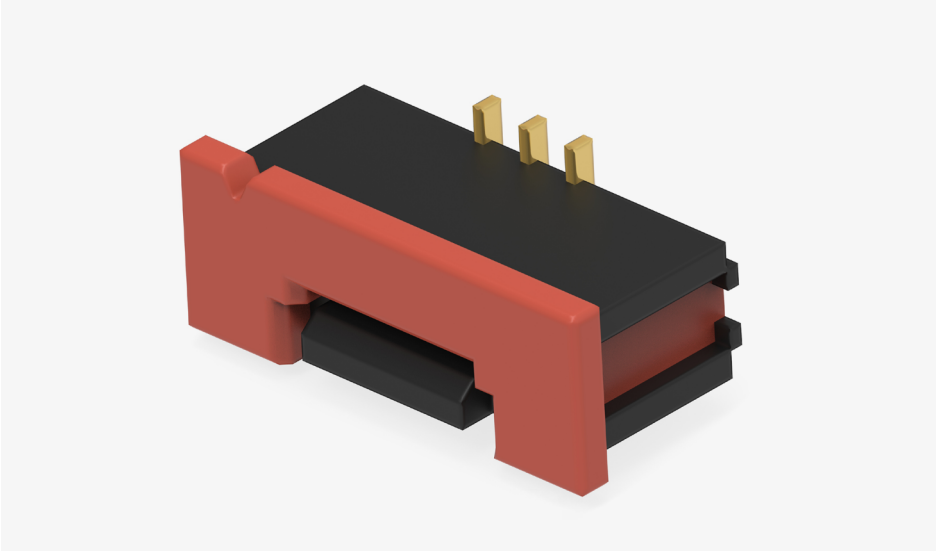
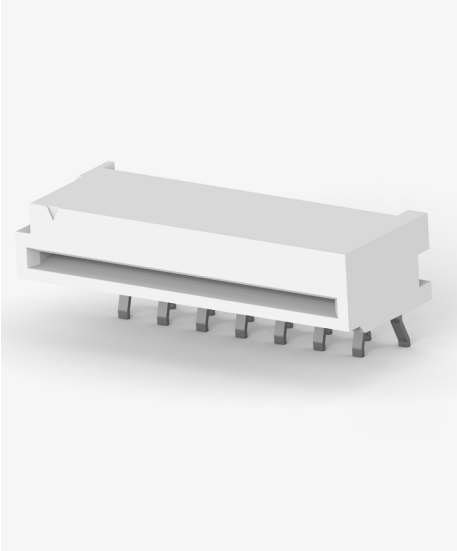
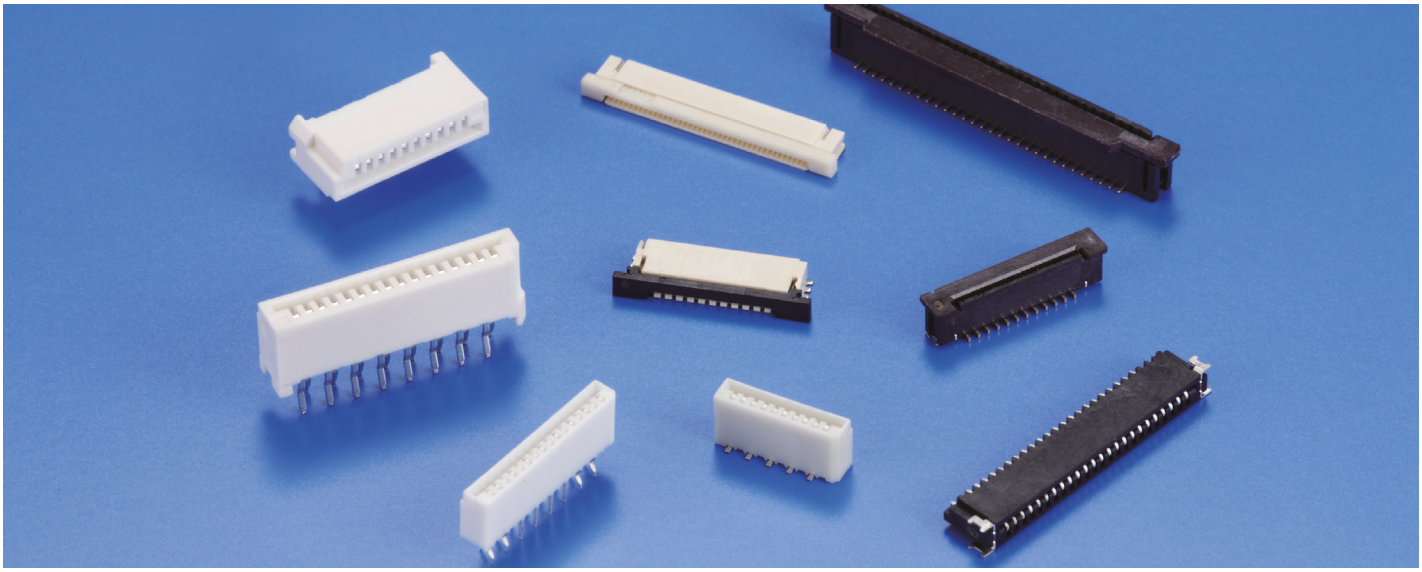






STANDARD FLEXIBLE PRINTED CIRCUIT (FPC) CONNECTORS - 0.25MM, 0.3MM, 0.5MM, 1.0MM & 1.25MM PITCH

Quick Reference Guide

As the demands for higher-density packaging of electronic equipment increase, the use of flexible printed circuits (FPC) to reduce size, weight and assembly costs has expanded.

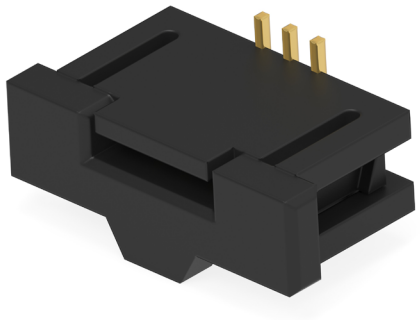
As with our fine pitch FPC product, our larger pitch FPC connectors are also an ideal solution for routing signal through your device when standard wire-to-board products are too large or impractical. Set on larger centerline pitch, these FPC products are generally found in larger mobile devices such as hand-held scanners, cameras and GPS units; as well as in larger applications such as set-top boxes, business equipment and industrial controls.

FPC interconnects of this size are also commonly found on devices that have low-definition displays, touch panels or screens. This makes it very easy to identify potential FPC interconnect opportunities.

TE Connectivity's FPC solutions are available in 0.25mm, 0.3mm, 0.5mm, 1.0mm and 1.25mm centerline spacing.

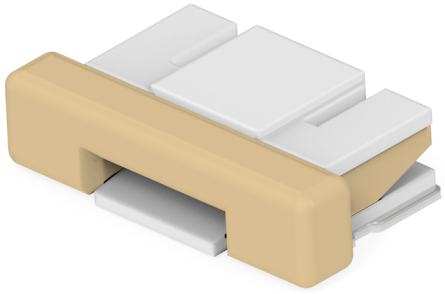
FEATURES AND BENEFITS

- Multiple Centerline Spacing Options
- ZIF and non-ZIF Versions Available
- Top and Bottom Contact Options
- Requires No Application Tooling



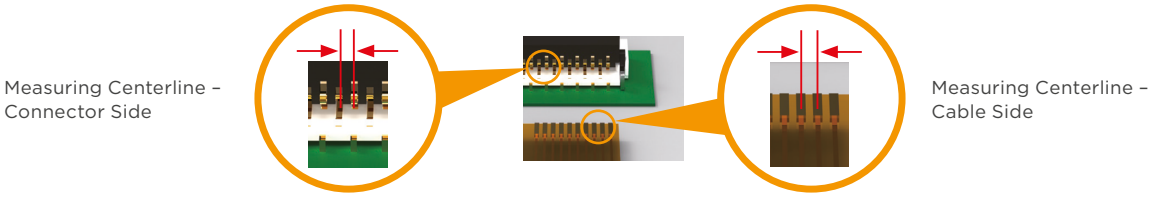
PRODUCT APPLICATIONS

- Consumer Electronics
  - Hand-Held Scanners
  - POS Devices / Payment
- Terminals
  - Set-Top Boxes
  - PCs
  - PC Peripherals
- Business Equipment
- Industrial Equipment
  - Industrial Controls
  - Gas Pumps
  - ATMs
  - Slot Machines
- Medical Equipment



BASIC INFORMATION

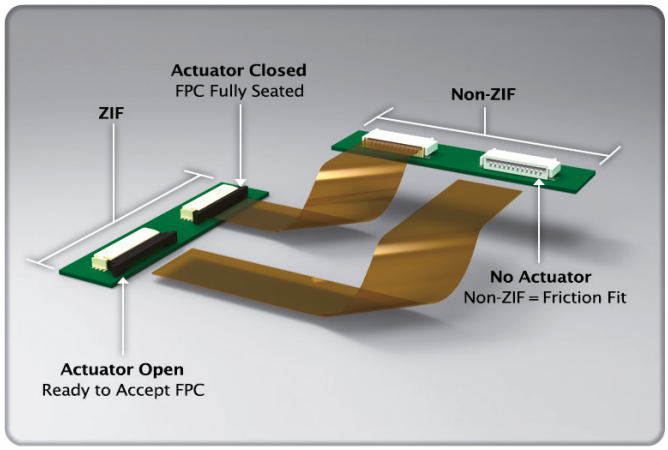
Multiple Centerlines



Centerline can be measured many different ways; however, in general, it is simply the spacing between the center of one contact and the center of its neighboring contact.

Here you can see an example of the centerline spacing on an FPC connector and the centerline spacing on a flexible printed circuit cable.

ZIF AND NON-ZIF



ZIF Connectors

- Use an actuator to secure the fl ex cable
- Less wear on contacts
- Increase mating cycle count
- Provide added retention
- Better for high vibration environments

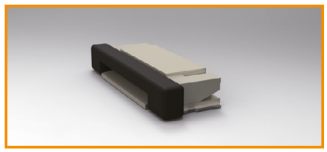
Non-ZIF Connectors

- Use friction to secure the flex cable
- Lower mating cycle count
- Better for static applications
- Smaller and lighter weight than equivalent ZIF counterpart
- Take up less board real-estate
- Typically less expensive than equivalent ZIF counterpart

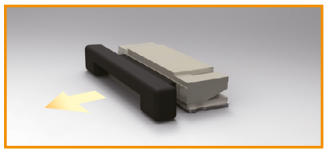
STUFFER ACTUATOR (PLUNGER STYLE)

Many of our larger pitch ZIF-style FPC connectors use a stuffer-type actuator [See Below]. Stuffer actuators use a slightly different method to secure an FPC cable into the connector than the flip-lock versions [For flip-lock versions, see Fine Pitch FPC Connector Quick Reference Guide, document number 8-1773459-2].

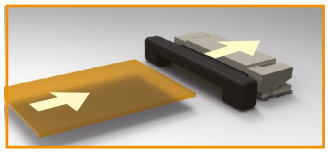
Stuffer actuators are typically used in vertical applications for ease of use: however right angle versions are also available.



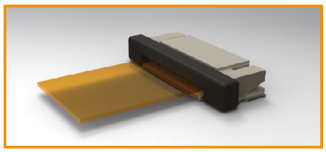
Step One:
Starting State



Step Two:
Slide Stuffer forward to open



Step Three:
Insert the FPC into the connector & slide stuffer backward to close

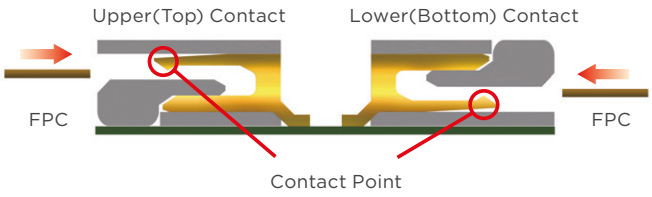


Step Four:
The FPC is now securely mated with the connector

UPPER (TOP) CONTACT VS LOWER (BOTTOM) CONTACT

Many of our fine pitch FPC products are available in both Upper (top) or Lower (bottom) contact versions. This attribute simply represents which portion of the contact the flexible printed circuit interacts with. As you can see from the image below, the FPC contacts are formed in a “U” shape. Only one prong of that “U” shaped contact interfaces with the flexible printed circuit contacts. Choosing the correct contact design is generally based on the orientation of the flexible printed circuit as described below.

If the contacts of the flexible printed circuit are facing up (away from the board) then the upper contact version is required.



If the contacts of the flexible printed circuit are facing down (towards the board) then the lower contact version is required.

0.25MM PITCH (ZIF)

ORIENTATION	CONTACT TYPE	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	POSITION SIZE
RIGHT ANGLE	BOTTOM	SMT	BACK FLIP-LOCK	GOLD FLASH	ANGLED		2040832	37, 41, 45, 51

0.3MM PITCH (ZIF)

ORIENTATION	CONTACT TYPE	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	POSITION SIZE
RIGHT ANGLE	BOTTOM	SMT	FRONT FLIP-LOCK	GOLD FLASH	N/A		2328724	13, 15, 21, 25, 31, 33, 39, 45

0.5MM PITCH (ZIF)

ORIENTATION	CONTACT TYPE	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	POSITION SIZE
RIGHT ANGLE	TOP	SMT	STUFFER	"GOLD FLASH"	"NARROW BODY"		1734839	5 6 7 8 9 10 11 12 14 15 16 17 18 19 20 21 23 24 25 27 29 30 31 36 37 40 41 43 44 46 47 48 49 50
VERTICAL	N/A	SMT	STUFFER	GOLD FLASH	TYPE A LAYOUT*		1734741	6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 31 32 33 34 35 36 37 38 39 40
VERTICAL	N/A	SMT	STUFFER	GOLD FLASH	TYPE B LAYOUT*		1734742	6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
RIGHT ANGLE	BOTTOM	SMT	STUFFER	GOLD FLASH	N/A		1734592	5 6 7 8 10 11 12 13 14 16 17 18 19 20 21 22 23 24 25 26 27 30 31 34 36 38 39 40 41 43 47 49 50
RIGHT ANGLE	DUAL CONTACT	SMT	BACK FLIP-LOCK	GOLD FLASH	LOW PROFILE 2328702		2328702	4 6 8 10 16 24

1.0MM PITCH (ZIF)

ORIENTATION	CONTACT TYPE	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	POSITION SIZE
VERTICAL	N/A	SMT	STUFFER	GOLD FLASH	N/A		1734248	3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 27 28 29 30
RIGHT ANGLE	TOP	SMT	STUFFER	TIN	N/A		84953	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
RIGHT ANGLE	BOTTOM	SMT	STUFFER	TIN	N/A		84952	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
RIGHT ANGLE	BOTTOM	SMT	STUFFER	GOLD FLASH	N/A		1735265	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

1.0MM PITCH (NON ZIF)

ORIENTATION	CONTACT TYPE	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	POSITION SIZE
VERTICAL	N/A	SMT	N/A	TIN	N/A		84982	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
VERTICAL	N/A	SMT	N/A	TIN	WITH MYLAR		1735042	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
VERTICAL	N/A	T/H	N/A	TIN	N/A		84984	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
RIGHT ANGLE	TOP	SMT	N/A	TIN	N/A		84981	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
RIGHT ANGLE	TOP	T/H	N/A	TIN	N/A		84983	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
RIGHT ANGLE	BOTTOM	SMT	N/A	TIN	N/A		1735360	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

1.25MM PITCH (NON-ZIF)

ORIENTATION	CONTACT TYPE	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	POSITION SIZE
VERTICAL	N/A	T/H	N/A	TIN	N/A		84534	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
RIGHT ANGLE	TOP	T/H	N/A	TIN	N/A		84533	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

FREQUENTLY ASKED QUESTIONS

Question 1

Is there a pitch requirement for your interconnect need?

Answer 1

TE offers FPC products from 0.25mm to 1.25mm centerline spacing.

Question 2

Is your application in a high vibration environment?

Answer 2

ZIF version FPC interconnects have a greater retention force and are suitable for high vibration applications.

Question 3

Do you have a need for a higher number of mating cycles?

Answer 3

ZIF version FPC interconnects allow for a greater number of mating cycles via the use of an actuator.

Question 4

In your application, when the flex cable meets the board-mounted connectors, will the flex cable contact pads be face up or face down?

Answer 4

If face down, use bottom contact versions. If face up, use top contact versions.

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