

## Quick Reference Guide Standard Flexible Printed Circuit (FPC) Connectors - 0.5mm, 1.0mm & 1.25mm Pitch

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, 0.4mm, 0.5mm, 1.0mm and 1.25mm centerline spacing. In this quick reference guide we introduce items with 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

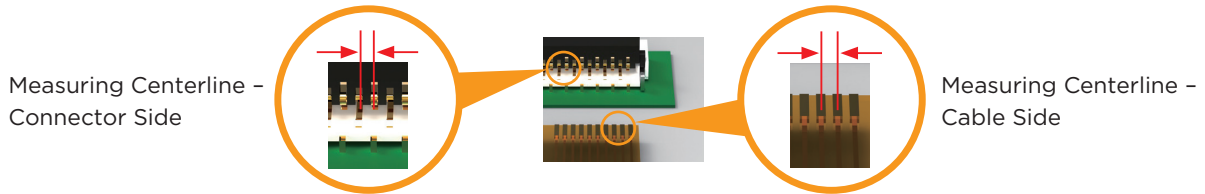


[te.com/products/fpc](https://te.com/products/fpc)



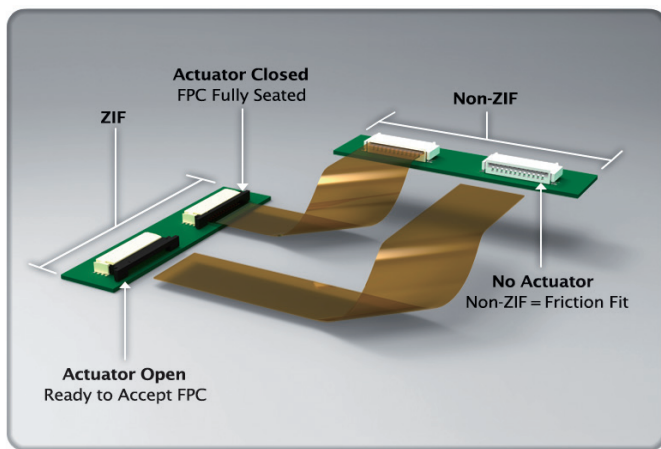
# Basic Information

## 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 flex cable
- Less wear on contacts
- Increase mating cycle count
- Provide added retention
- Better for high vibration environments

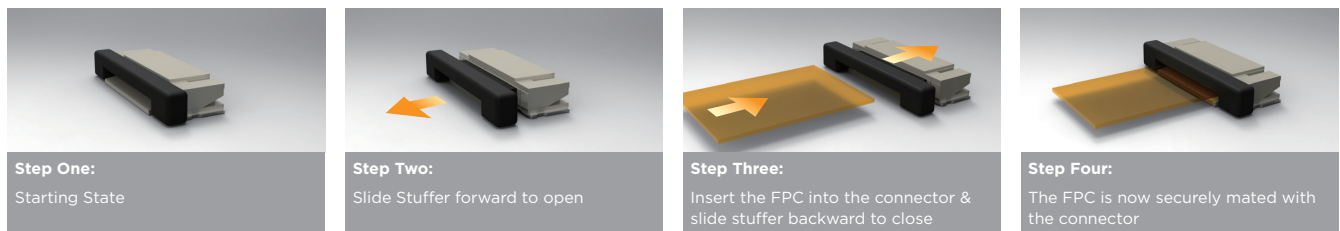
### Non-ZIF Connectors

- 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].

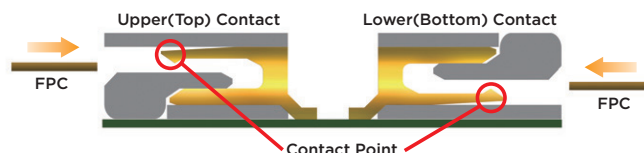
Stuffer actuators are typically used in vertical applications for ease of use; however right angle versions are also available.



## 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.

0.5mm pitch (All PNs are ZIF style)								1	2	3	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				
ORIENTATION	CONTACT TYPE	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60				
								POSITION SIZE																																	
RIGHT ANGLE	TOP	SMT	STUFFER	30 GOLD			1775560					-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				
				GOLD FLASH	NARROW BODY		1734839							-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		
	BOTTOM	SMT	STUFFER	30 GOLD			1775635																																		
				LOW HALOGEN			2041324																																		
				GOLD FLASH	NARROW BODY		1735842																																		
				BLACK HOUSING			1775628																																		
		FLIP - LOCK	SMT	STUFFER	90 DEGREE FLIP-LOCK			1775333																																	
					GOLD FLASH	105 DEGREE FLIP-LOCK		2041070																																	
						60 POSITION		2041215																																	

1.0mm pitch (PNs are ZIF and non-ZIF styles, see "FEATURES" for details)								1	2	3	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	
ORIENTATION	CONTACT TYPE	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	
								POSITION SIZE																														
VERTICAL	N/A	SMT	STUFFER	GOLD FLASH	ZIF		1734248				-3	-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	STUFFER	TIN	ZIF		84953																															
	BOTTOM	SMT	STUFFER	TIN	ZIF		84952																															
		SMT	FLIP - LOCK	GOLD FLASH	ZIF		2041084																															
VERTICAL	N/A	SMT	N/A	TIN	non-ZIF		84982																															
		T/H	N/A	TIN	non-ZIF		84984																															
RIGHT ANGLE	TOP	SMT	N/A	TIN	non-ZIF		84981																															
		T/H	N/A	TIN	non-ZIF		84983																															
	BOTTOM	SMT	N/A	TIN	non-ZIF		1734798																															
		T/H	N/A	TIN	non-ZIF		1734779																															

1.25mm pitch (All PNs are non-ZIF style)								1	2	3	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	
ORIENTATION	CONTACT TYPE	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	
								POSITION SIZE																														
VERTICAL	N/A	T/H	N/A	TIN	non-ZIF		84534																															
RIGHT ANGLE	TOP	T/H	N/A	TIN	non-ZIF		84533																															

## 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.

## FOR MORE INFORMATION

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