

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



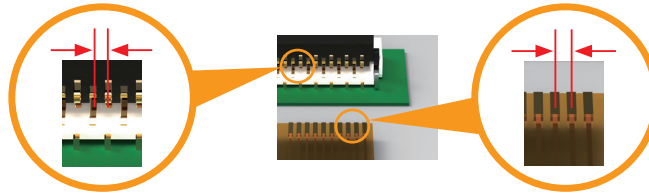
te.com/products/fpc



Basic Information

Multiple Centerlines

Measuring Centerline -
Connector Side

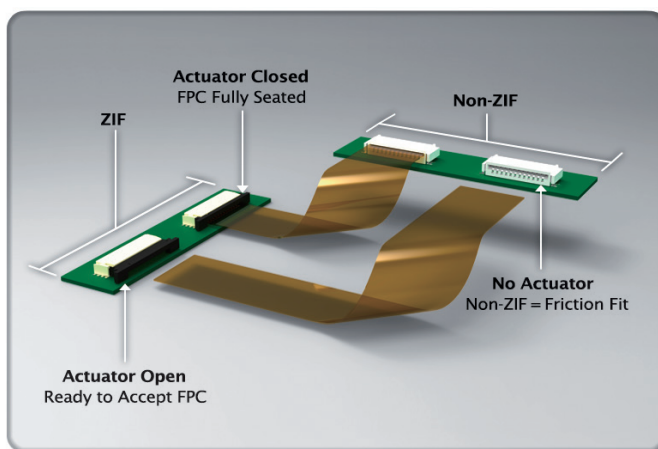


Measuring Centerline -
Cable Side

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

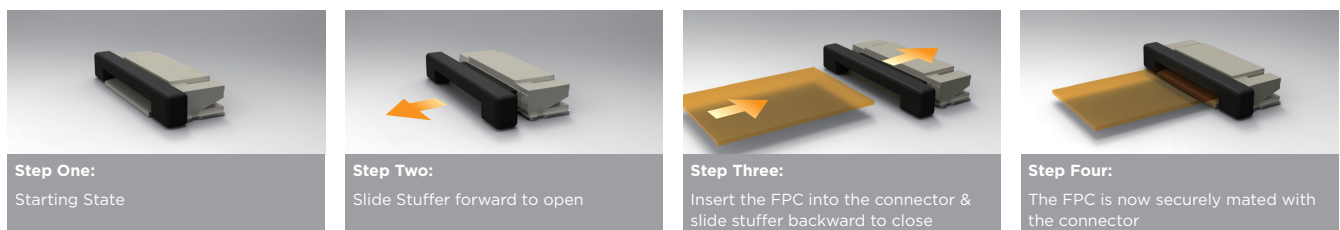
Non-ZIF Connectors

- 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].

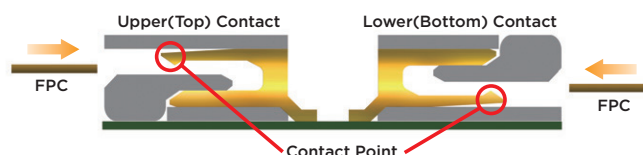
Stuffer actuators are typically used in vertical applications for ease of use; however right angle versions are also available.



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)																																						
ORIENTATION	CONTACT TYPE	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	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	
								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	
RIGHT ANGLE	TOP	SMT	STUFFER	30 GOLD			1775560	POSITION SIZE																														
				GOLD FLASH	NARROW BODY		1734839	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40	-41	-42	-43	-44	-45	-46	-47	-48	-49	-50	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	
			30 GOLD			1775635	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40	-41	-42	-43	-44	-45	-46	-47	-48	-49	-50	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30		
	BOTTOM	SMT	STUFFER		LOW HALOGEN		2041324													-12																		
					NARROW BODY		1735842														-12																	
					BLACK HOUSING		1775628	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40	-41	-42	-43	-44	-45	-46	-47	-48	-49	-50	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	
			FLIP - LOCK		90 DEGREE FLIP-LOCK		1775333	-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						
					105 DEGREE FLIP-LOCK		2041070			-4	-6	-8	-10	-12								-16	-18	-20											-26			-30
					60 POSITION		2041215																															

1.0mm pitch (PNs are ZIF and non-ZIF styles, see "FEATURES" for details)																																																																			
ORIENTATION	CONTACT TYPE	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	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																														
								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																														
VERTICAL	N/A	SMT	STUFFER	GOLD FLASH	ZIF		1734248	POSITION SIZE																																																											
										-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	ZIF		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																													
	BOTTOM	SMT	STUFFER	TIN	ZIF		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																													
			FLIP - LOCK	GOLD FLASH	ZIF		2041084																																																												
VERTICAL	N/A	SMT	N/A	TIN	non-ZIF		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																													
		T/H			non-ZIF		84984																																																												
RIGHT ANGLE	TOP	SMT	N/A	TIN	non-ZIF		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																													
		T/H			non-ZIF		84983																																																												
	BOTTOM	SMT	N/A	TIN	non-ZIF		1734798					-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																													
		T/H			non-ZIF		1734779																																																												

1.25mm pitch (All PNs are non-ZIF style)																																																						
ORIENTATION	CONTACT TYPE	PCB MOUNT	ACTUATOR STYLE	PLATING	FEATURES	IMAGE	BASE PN	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																	
								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				-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				non-ZIF		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.

FOR MORE INFORMATION

TE Technical Support Center

USA:	+1 (800) 522-6752
Canada:	+1 (905) 475-6222
Mexico	+52 (0) 55-1106-0800
Latin/S. America:	+54 (0) 11-4733-2200
Germany:	+49 (0) 6251-133-1999
UK:	+44 (0) 800-267666
France:	+33 (0) 1-3420-8686
Netherlands:	+31 (0) 73-6246-999
China:	+86 (0) 400-820-6015

Part numbers in this brochure are RoHS Compliant*, unless marked otherwise.

*as defined www.te.com/leadfree

te.com

© 2013 Tyco Electronics Corporation, a TE Connectivity Ltd. Company. All Rights Reserved.

5-1773461-0 (A4) CS 500 03/2013

TE Connectivity, TE connectivity (logo) and TE (logo) are trademarks. Other logos, product and/or company names might be trademarks of their respective owners.

While TE has made every reasonable effort to ensure the accuracy of the information in this brochure, TE does not guarantee that it is error-free, nor does TE make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. TE reserves the right to make any adjustments to the information contained herein at any time without notice. TE expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The dimensions in this catalog are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult TE for the latest dimensions and design specifications.

