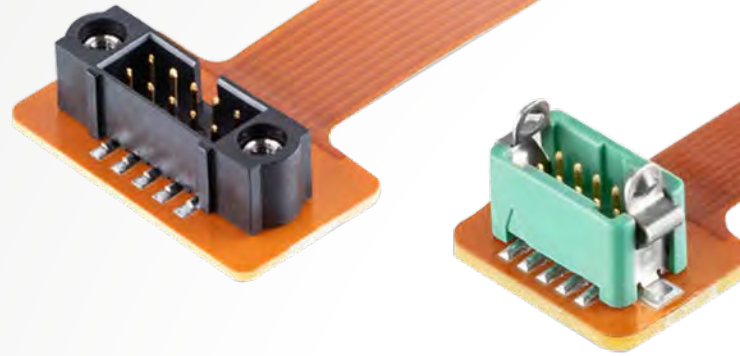


**HARWIN**

**Datamate®** **gecko®**

**Flex Circuit Assemblies**

## WHAT ARE THESE ASSEMBLIES?

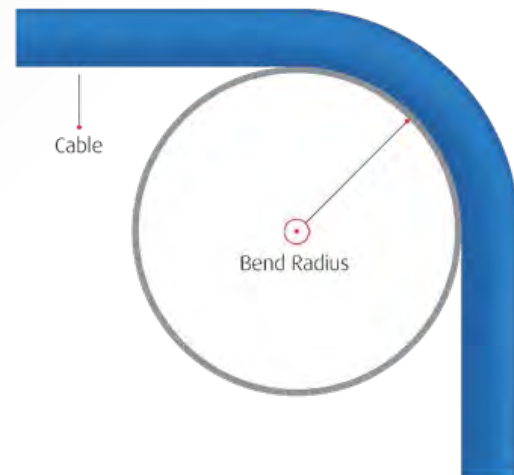


The Hi-Rel Flex Circuit assemblies are an alternative to cable-mounted connectors. The assemblies use surface mount connectors pre-soldered to specially-designed flexible printed circuits (FPC).

- Ready-made flexible connections, no additional tooling or assembly required
- Single-ended versions compatible with industry standard FPC/FFC connectors
- Double-ended versions in preset lengths – contact Harwin for alternative configurations

## WHY USE FLEX CIRCUIT?

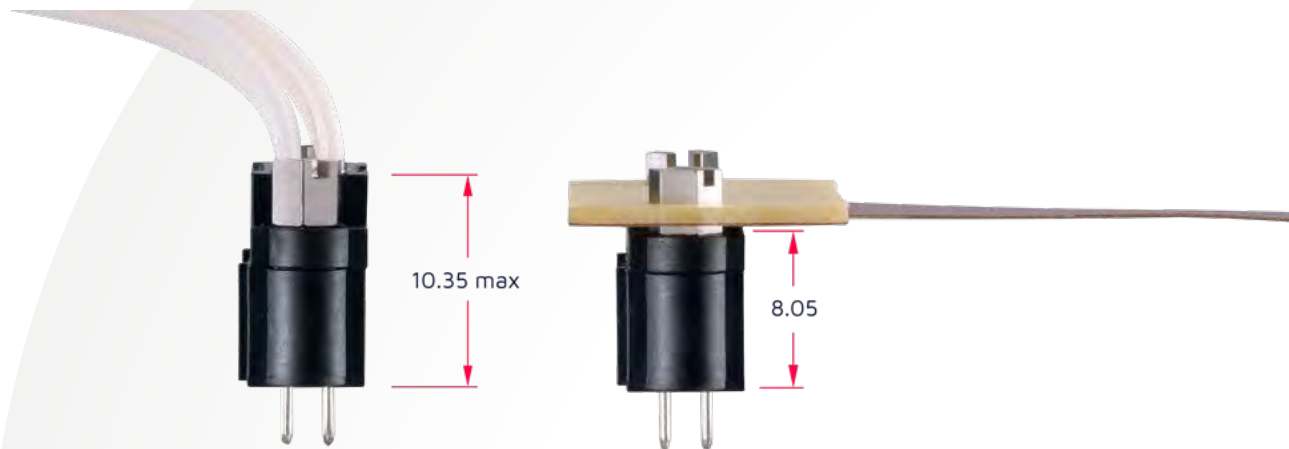
Material	Thickness	Bend Radius Factor	Calculated Bend
Flex Circuit	0.185mm	10 x thickness (static) 20 x thickness (static)	<b>1.85mm</b> <b>3.70mm</b>
28AWG Cable	Ø0.56mm to 0.71mm	6 to 10 x diameter	3.36mm to 7.10mm



Flex circuit is able to bend at a much tighter angle than cable. Where a typical static bend radius for these flex circuits is 10 times the thickness of the flex, the thickness of the flex means this is just 1.85mm. For a 28AWG cable, the static bend radius might at best be 3.36mm ( $\text{Ø}0.56\text{mm} \times 6$ ), but could be 7.10mm ( $\text{Ø}0.71\text{mm} \times 10$ ).

Dynamic bend radius for cable will be much higher, where the flex is 20 times thickness – just 3.70mm.

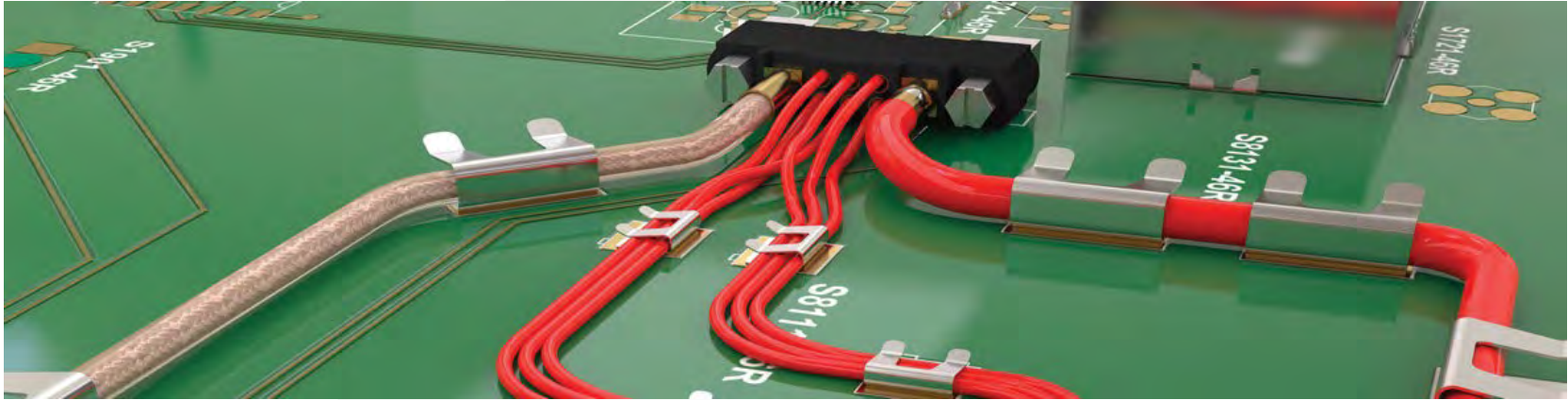
## WHY USE FLEX CIRCUIT?



There is also an advantage in mated height, and the amount of clearance required above the connection.

- The mated height of a cable connector is higher than that of a SMT connector.
- The cables are exiting vertically, and need additional space to bend sideways to avoid the next item above the connection. The FPC connection is already exiting at right angles to the connection, and no additional height is required.

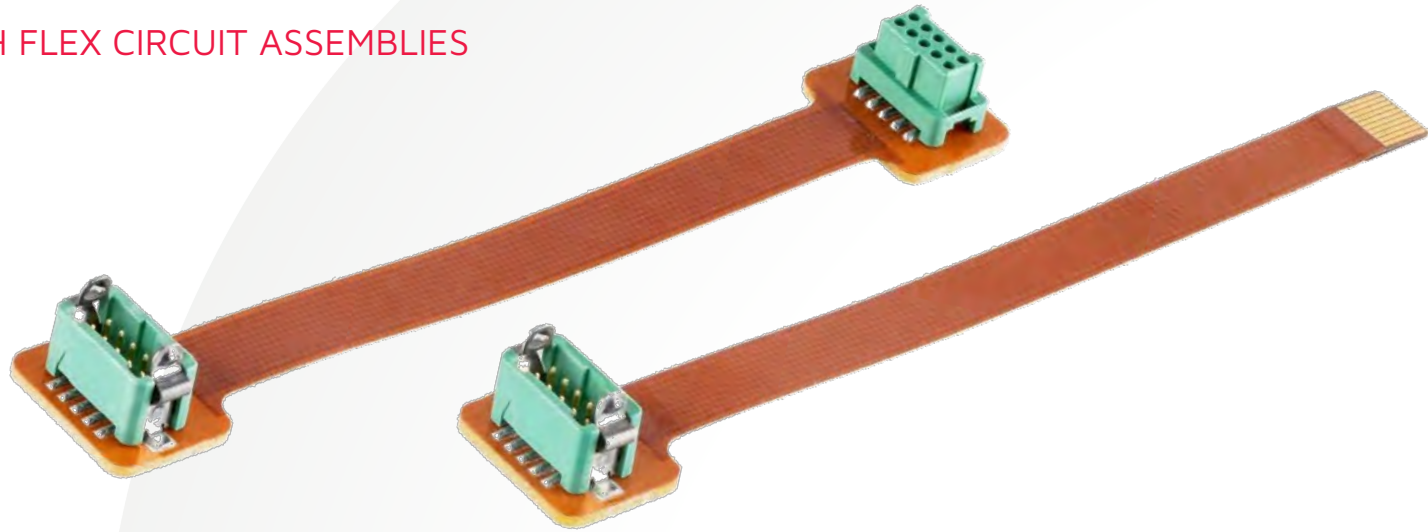
## WHEN IS FLEX CIRCUIT NOT THE BEST CHOICE?



There are two circumstances where cable is actually the better choice...

- Flex printed circuits are not capable of carrying the same level of current.
- If the flexible connection needs to bend through multiple different angles in different planes – flex only really bends easily in one direction, keeping it flat to the plane of bend.

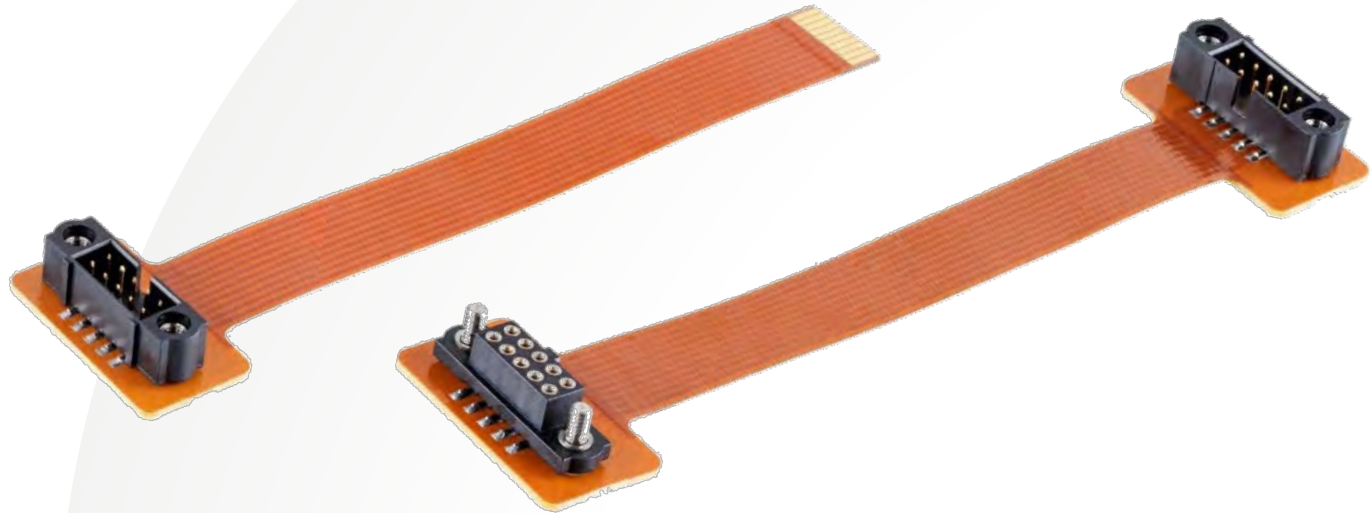
## GECKO LATCH FLEX CIRCUIT ASSEMBLIES



Two options are available as standard – both use 10-contact connectors in the latch style, 0.8mm rigid PCB under each connector.

- [G125-F1MS110-075-L](#) – Single-ended – Male connector with SMT latches, 0.5mm pitch FPC end, 0.3mm thick, suitable for industry-standard FPC/FFC connectors.
- [G125-F1MS110-075-FS1](#) – Double-ended – Male connector with SMT latches on the first end, Female connector compatible with latches on the second end.

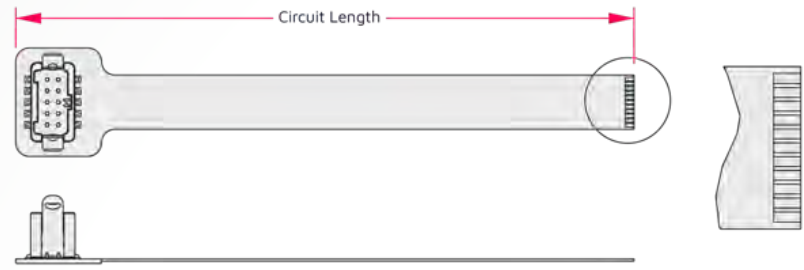
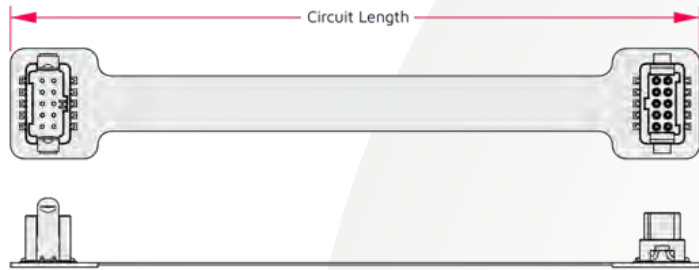
## DATAMATE J-TEK FLEX CIRCUIT ASSEMBLIES



Two options are available as standard – both use 10-contact Datamate J-Tek (jackscrew) connectors, 0.8mm rigid PCB under each connector.

- [M80-F150210-100-L](#) – Single-ended – Male connector with internal jackscrews, 1mm pitch FPC end, 0.3mm thick, suitable for industry-standard FPC/FFC connectors.
- [M80-F150210-100-402](#) – Double-ended – Male connector with internal jackscrews on the first end, Female connector with floating jackscrews on the second end.

## CIRCUIT LENGTHS



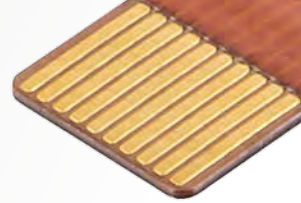
On these Flex Circuit assemblies, cable length is specified as the total length of the FPC.

- Datamate J-Tek – standard length is 100mm.
- Gecko Latch – standard length is 75mm.

Contact Harwin for the availability of other cable lengths, configurations and number of contacts.



## FREE END SPECIFICATION



For the single-ended Flex Circuit assemblies, the free end is 0.3mm thick, designed to be suitable for industry-standard FPC/FFC connectors – both ZIF and LIF styles.

- Datamate – compatible with 1.00mm pitch FPC/FFC connectors
- Gecko – compatible with 0.50mm pitch FPC/FFC connectors

## PERFORMANCE SPECIFICATIONS

Current Rating	Gecko Latch = <b>0.4A</b> max per track Datamate J-Tek = <b>1.0A</b> max per track
Temperature Range	Gecko Latch = -65°C to +150°C Datamate J-Tek = -55°C to +125°C
Vibration	Gecko Latch = 20g for 6 hours Datamate J-Tek = 10g for 6 hours
Voltage Proof (Maximum Voltage)	Gecko Latch = 600V DC or AC peak Datamate J-Tek = 1,200V DC or AC peak

All other specifications are in line with the existing connector ranges:

- Datamate J-Tek – See [Component Specification C005XX](#).
- Gecko Latch – See [Component Specification C125XX](#).

## MARKETS



Rugged, high-reliability connectors small enough to be used in handheld and portable applications. Flexible connections needing less space, allowing room for more functions in larger equipment. Datamate and Gecko mounted to FPC connections adds opportunities in challenging environments.

- Aerospace
- Medical
- Military
- Robotics
- Industrial

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