

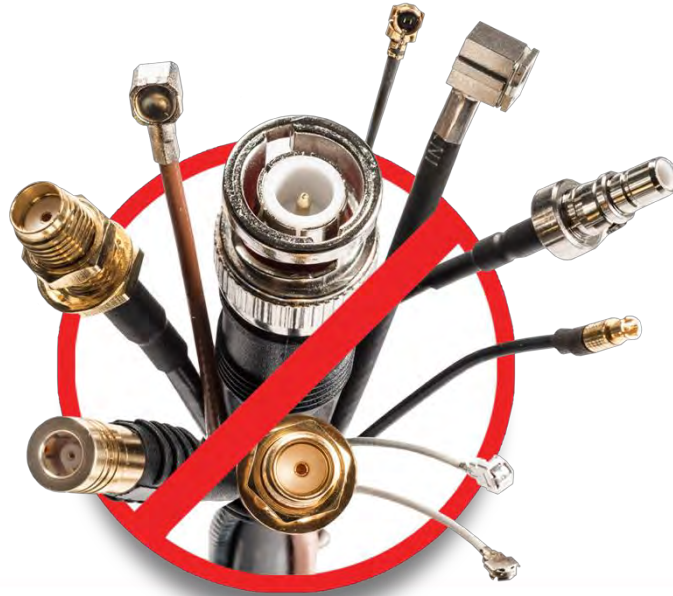
Datamate **Coax**



HARWIN

Datamate **Coax**

Traditional solution



Traditional RF contacts are typically packaged as single bayonet or screw type connections. These can be suitable for single connection requirements, but prone to misconnection or mis-mating when multiple connections are required. The more connections required, these issues and risks are multiplied. Assembly time also increases with individual screw-type connectors slowing down assembly speeds.

Datamate **Coax**

4mm pitch **ganged** connectors



Datamate Coax solutions are a 4.00mm pitch, Ganged connector system. Multiple coax connections are faster and more secure than both the traditional solutions and competitor's ganged connector products. These connectors are a high-reliability compact design, capable of increasing production assembly speeds with just one connection.



Datamate **Coax**

The **heart** of the connector

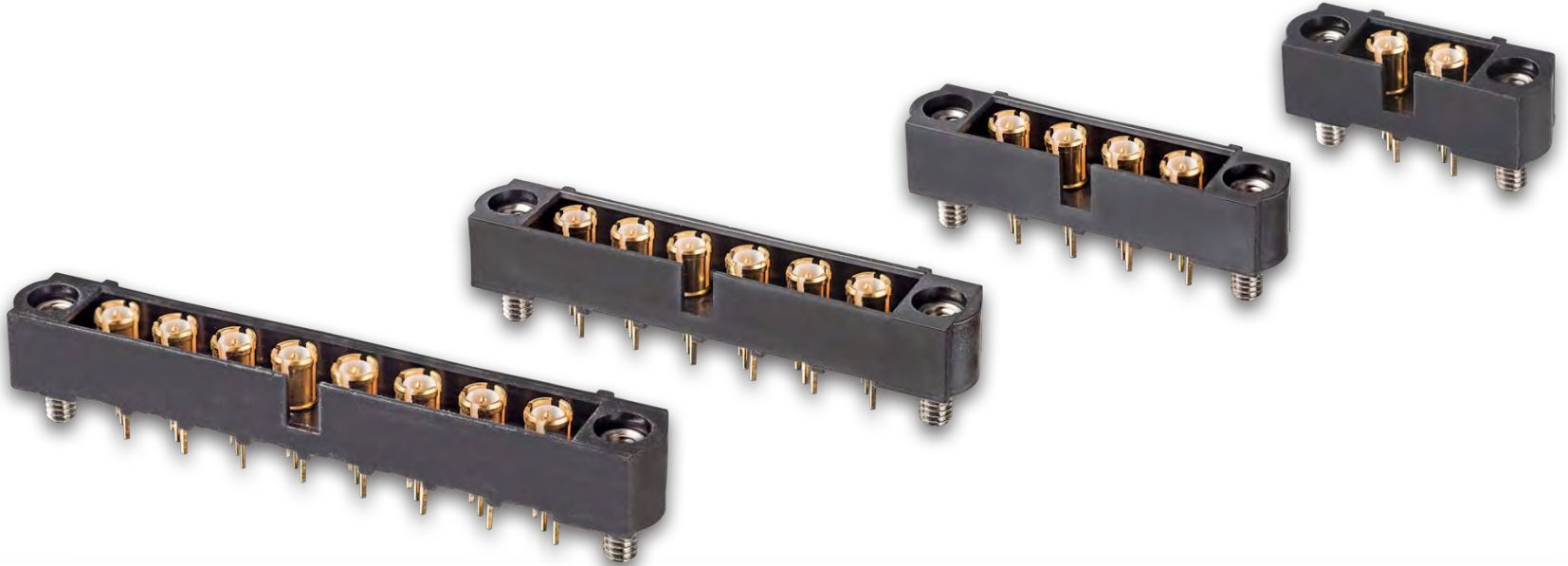


Datamate Coax uses high-quality, high-reliability 50Ω gold-plated coaxial contacts. These contacts are precision-turned Beryllium Copper parts manufactured at our UK headquarters, ideal for vibration environments and multiple insertions. The insulator material is PTFE, to withstand high temperatures.



Datamate **Coax**

Plug connectors - Male PC Tail, **Vertical** Layout



For the Vertical connectors in the Datamate Coax range, 4 contact counts in two throughboard PC Tail sizes are stocked for short lead-times:

3mm PC Tail connectors:

- [M80-MV311M2-02](#)
- [M80-MV311M2-04](#)
- [M80-MV311M2-06](#)
- [M80-MV311M2-08](#)

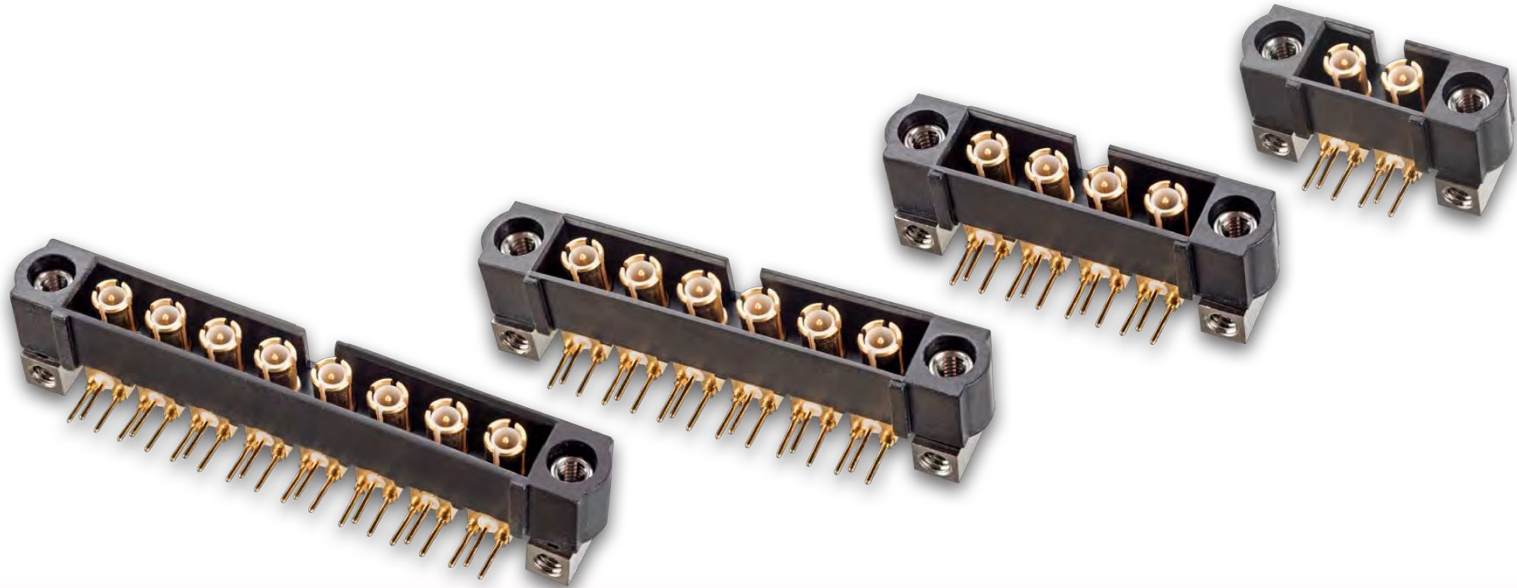
4.5mm PC Tail connectors:

- [M80-MV312M3-02](#)
- [M80-MV312M3-04](#)
- [M80-MV312M3-06](#)
- [M80-MV312M3-08](#)



Datamate **Coax**

Plug connectors - Male PC Tail, **Horizontal** Layout



Horizontal connectors are also available in 4 contact counts in two throughboard PC Tail sizes – giving flexibility in stocked product:

3mm PC Tail connectors:

- [M80-MH313M5-02](#)
- [M80-MH313M5-04](#)
- [M80-MH313M5-06](#)
- [M80-MH313M5-08](#)

4.5mm PC Tail connectors:

- [M80-MH314M5-02](#)
- [M80-MH314M5-04](#)
- [M80-MH314M5-06](#)
- [M80-MH314M5-08](#)



Datamate **Coax**

Jack connectors – Female Cable for **tailored cable assemblies**



Cable connectors are suitable for RG178 or similar Ø2mm coax cable, and are stocked in kits of contacts and housings. Available in 4 contact counts to match the previous Male connectors.

- [M80-FC305F1-02](#)
- [M80-FC305F1-04](#)
- [M80-FC305F1-06](#)
- [M80-FC305F1-08](#)



Datamate **Coax**

Ready-made Female Cable assemblies, Off-The-Shelf



Fully complete Cable Assemblies can be purchase direct from stock, in a choice of single or double end, using RG178 cable:

Single Ended Assemblies:

- [M80-FC305F1-02-0150L](#)
- [M80-FC305F1-04-0150L](#)
- [M80-FC305F1-06-0150L](#)
- [M80-FC305F1-08-0150L](#)

Double Ended Assemblies:

- [M80-FC305F1-02-0150F1](#)
- [M80-FC305F1-04-0150F1](#)
- [M80-FC305F1-06-0150F1](#)
- [M80-FC305F1-08-0150F1](#)



Datamate **Coax**

Female Cable Housings for additional cable options

Standard Gender
Hexagonal Slotted



Guide Pin with
Front Panel Mount



101Lok



Standard Gender
Hex Socket



Reverse Fix with
Front Panel Mount

To use other coax contact options, there are a range of housings available (contacts are shown on the next page). The housings are available in 2, 3, 4, 6 and 8 contact options as standard (replace XX with 02, 03, 04, 06 or 08):

- [M80-263F1-XX-00-00](#) = Std Gender Hexagonal Slotted
- [M80-263F2-XX-00-00](#) = Std Gender Hex Socket
- [M80-263F3-XX-00-00](#) = Guide Pin, Front Panel Mount
- [M80-263F9-XX-00-00](#) = Reverse Fix, front Panel Mount
- [M80-263FC-XX-00-00](#) = 101Lok



Datamate **Coax**

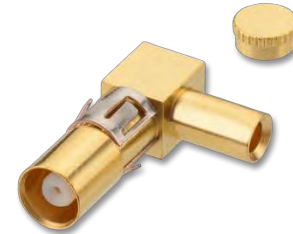
Female Cable **Contacts**



Straight Crimp
Ø2mm or Ø2.7mm cable



90° Crimp
Ø2mm or Ø2.7mm cable



90° Solder
Semi-Rigid

These are the compatible female cable contacts for use with the housings shown on the previous page:

- [M80-305](#) = Straight Crimp, Ø2mm cable (RG178)
- [M80-307](#) = Straight Crimp, Ø2.7mm cable (RG174, RG179, RG316)
- [M80-308](#) = 90° Crimp, Ø2mm cable (RG178)
- [M80-309](#) = 90° Crimp, Ø2.7mm cable (RG174, RG179, RG316)
- [M80-310](#) = 90° Solder, Semi-Rigid cable

Datamate **Coax**

Male Cable Housings for additional cable options

Standard Gender
Internal Thread



101Lok



Reverse Fix
Slotted



Standard Gender with
Rear Panel Mount

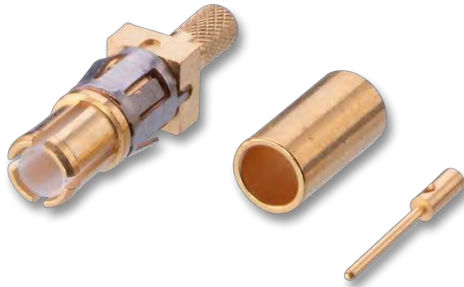
Male cable housings are available in this range, for use with male coax contacts (shown on the next page). These housings are also available in 2, 3, 4, 6 and 8 contact options as standard (replace XX with 02, 03, 04, 06 or 08):

- [M80-273M1-XX-00-00](#) = Std Gender Internal Thread
- [M80-273MA-XX-00-00](#) = Reverse Fix Slotted
- [M80-273MC-XX-00-00](#) = 101Lok receptacle
- [M80-273MU-XX-00-00](#) = Std Gender, [Rear Panel Mount](#)



Datamate **Coax**

Male Cable **Contacts**



Straight Crimp
Ø2mm or Ø2.7mm cable



90° Crimp
Ø2mm or Ø2.7mm cable

These are the compatible male cable contacts for use with the housings shown on the previous page:

- [M80-315](#) = Straight Crimp, Ø2mm cable (RG178)
- [M80-317](#) = Straight Crimp, Ø2.7mm cable (RG174, RG179, RG316)
- [M80-318](#) = 90° Crimp, Ø2mm cable (RG178)
- [M80-319](#) = 90° Crimp, Ø2.7mm cable (RG174, RG179, RG316)

Datamate **Coax**

Protected contacts – **Shrouded and Polarised**

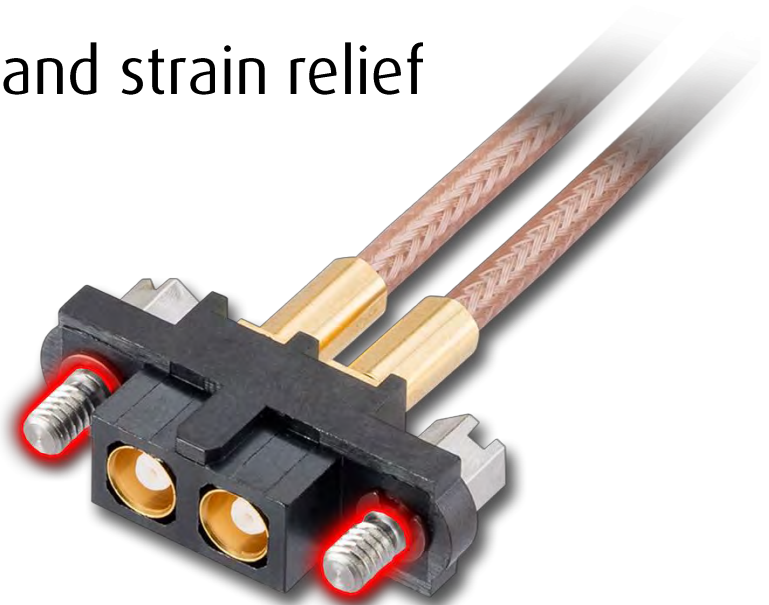
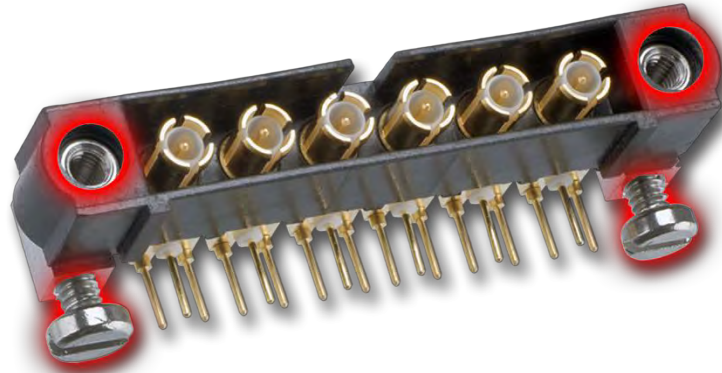


The shrouded housing design protects both male and female contacts prior to, and during, mating cycles. The central polarisation feature eliminates mis-mating due to incorrect orientation. Both features give superior functionality over other ganged coax systems currently available.



Datamate **Coax**

Robust fixings for security and strain relief



Stainless Steel jackscrew fixings are added for strong and secure mating, both to mating connectors and board-mounting to the PCB. Developed for high-reliability in applications subject to vibration and shock, these jackscrew systems provide excellent robust strain relief.



Datamate Coax

Hand Tools for manufacturing cable assemblies



Harwin also supply the full set of hand tooling required for your own cable assembly manufacture (Instruction Sheets are available on the website):

Crimp Tool – Outer Sleeve:

- [780-293](#)

Crimp Tool – Inner Contact:

- [780-292](#)

Positioner – Inner Contact:

- [780-291](#)

Contact Removal Tool:

- [780-290](#)



Datamate **Coax**

Plug **Accessories** – For board and panel fixing



For Horizontal Board Mount or Rear Panel Mount



For Vertical Board Mount or Front Panel Mount

These hardware fixings are suitable for the Male Vertical and Horizontal board-mounted connectors, and the panel mounted cable housings – they are sold separately to the connectors:

For Horizontal connectors:

- 3.5mm Slotted Bolt: [M80-2260000B](#)
- 5mm Slotted Bolt: [M80-2270000B](#)
- 5mm Hex Socket Bolt: [M80-2320000B](#)

For Vertical connectors:

- Slotted Nut: [M80-2130000B](#)
- Hexagonal Nut: [M80-2430000B](#)



Datamate **Coax**

Electrical Specifications

Frequency Range	Up to 6GHz
Impedance	50Ω
Voltage Standing Wave Ratio (VSWR)	1.05 + (0.04 x Frequency) GHz max
Operating Voltage	180V _{ac} at 500mA

The Datamate Coax design is capable of a frequency range up to 6GHz, with an impedance of 50 ohms. Maximum voltage is set at 1,000V AC, and Insulation Resistance within each coax is 10⁶MΩ. [Test report HT020](#) and [Test report HT052](#) are available from the website.



Datamate **Coax**

Mechanical & Environmental Specifications

Vibration	10G - 6 hours
Shock	100G - 0.006 seconds
Durability	500 mating cycles
Temperature Range	-55°C to +125°C

The Datamate Coax performs to the same high reliability standard consistent throughout the Datamate range. These specifications make these products the ideal choice for demanding applications.



Datamate **Coax**

Outgassing



The PPS plastic used in the construction of Datamate Coax housings has a Space heritage. Details can be found in the [Harwin Outgassing support article](#).



Datamate **Coax**

Markets



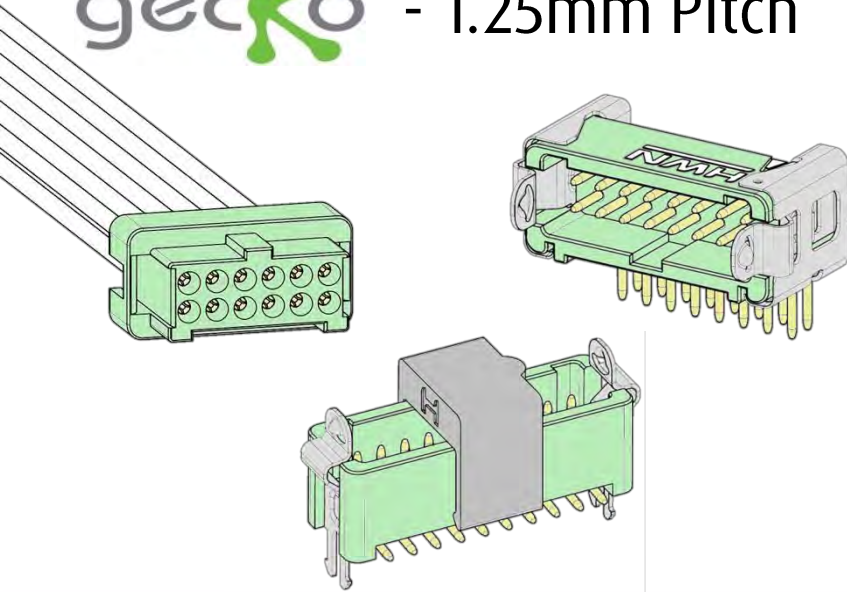
Many markets have a requirement for rugged, high-reliability coax connectors. Datamate has a proven track record in these industries, and Datamate Coax is designed and built to the same exacting standard.

- Aerospace
- Medical
- Field Comms
- Robotics
- Marine



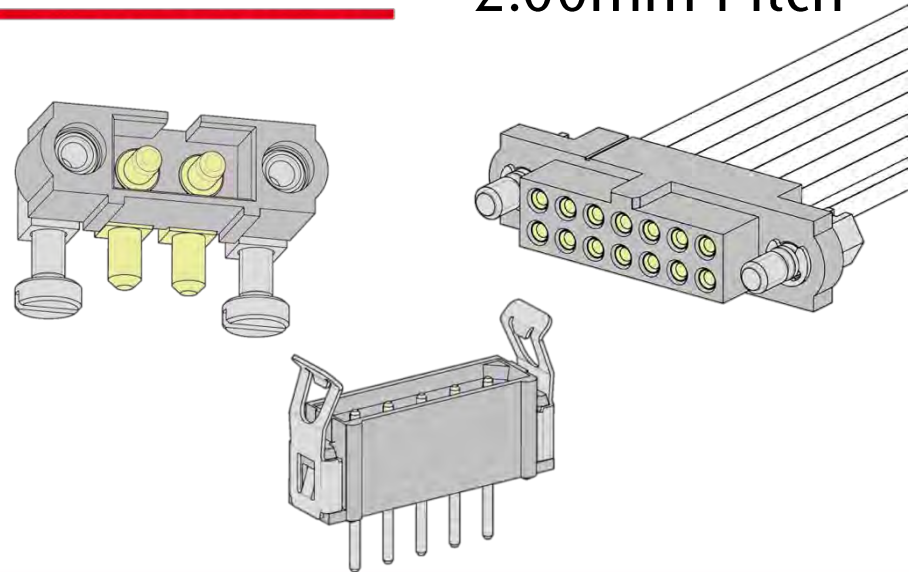
If you like this product, try...

gecko - 1.25mm Pitch



- 2A per contact
- Locking latch system for strain relief
- Resists Vibration to 20G and Shock to 50G
- Temperature range -65° C to +150° C
- Vertical, Horizontal and Cable options

Datamate - 2.00mm Pitch



- 3A per signal, up to 40A per power contact
- Jackscrew or latching system for strain relief
- Resists Vibration to 10G and Shock to 100G
- Temperature range -55° C to +125° C
- PCB connectors in Throughboard or SMT, Cable options



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