# Datamate

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### **Datamate Connectors Introduction**

Datamate is a 2mm pitch High-Reliability, high performance connector range from Harwin. The range has a proven track record for performance under extreme conditions, and complies with British Standard 9525-F0033.

Datamate provides a low-profile solution for all variations of cable-to-board, board-to-board and cable-to-cable interconnect requirements. The range has seen many developments to match customer and market demands, and now includes 1-, 2- and 3-row configurations, vertical and horizontal in both Throughboard and Surface Mount designs for PCB flexibility. To meet the demanding requirements of vibration, shock and acceleration, added security is available with the options of latches (for space-saving) or jackscrews (for maximum strain-relief).

With the addition of Datamate Mix-Tek, the 3A signal contacts can be supplied in the same connector as 20A power, 40A high power, or 6GHz coax connections, giving complete flexibility of design. Other range additions include the 101Lok fixing – designed for fast mating with a quarter-turn bayonet-style jackscrew.

- ⇒ 3A per contact (all electrically loaded; 3.3A per individual contact)
- → 4-finger contact design to maintain electrical contact through high vibration and shock
- Beryllium Copper Contact for improved temperature range: -55°C to +125°C
- > 500 Mating cycles durability
- Professional connector system at commercial prices
- Ongoing development program for High-Reliability connectors from Harwin
- Online videos and Cable assembly facility for assistance with cabling requirements

# Datamate Signal

- Strong stainless steel jackscrew fixings for maximum strain relief, or lightweight space-saving locking latches
- Lightweight metal and plastic hood options for shielding and additional cable protection
- Choices of pre-wired contacts or full cable assemblies from stock, for prototyping and full production

# **Datamate Mix-Tek**

- Multiple variations of power-only, power-and-signal, or coax only cariations of connectors, available from stock
- ► Full cable assembly options for coax and power, in 2/4/6/8 contact connectors on 4mm pitch
- Compatible with lightweight metal hoods for shielding and cable protection





# **Datamate Connectors Product Features**

#### Four Finger Beryllium Copper Contact

Proven high-reliability contact design ensures signal integrity under extremes of bump, vibration and shock. Durable to over 500 mating cycles.



#### **Polarization**

All Datamate designs feature polarization to prevent mis-mating in everyday use.



#### Rugged construction

For use in harsh environments where high vibration, shock and temperature are a consideration.



#### Innovative fast-acting bayonet fixing

101Lok utilises a 101-degree turn to quickly and simply lock mating connectors together.





#### Ready-made Cable Assemblies

Wide selection of stocked single and double-ended cable assemblies, with jackscrews or latching connectors, signal or power contacts.



#### Single piece metal Backshells for EMC Shielding

Compatible with the J-Tek and Mix-Tek connector ranges, these robust hoods provide full 360° shielding, complete with retention feature on cable exit for fixing additional braiding.



#### Low outgassing emissions

Plastic housings with outgassing emissions within NASA & ESA recommendations, ready for space and low-pressure research.



#### **Comprehensive Operating Temperature**

All connectors suitable for operational temperatures from -55°C to +125°C, due to high quality material choice.





# **Datamate Mix-Tek Specification**

#### **→** Materials

Glass-filled thermoplastic UL94V-0 Housings: Female contacts:

Brass shell, with Beryllium Copper

inner contact

Male contacts: Copper alloy

See individual pages Finish:

Individual contacts in isolation: 3.3A max (at 25°C) 2.6A max (at 85°C) All contacts simultaneously: 3.0A max (at 25°C)

2.2A max (at 85°C)

Working voltage

At sea level 1013 mbar: 800V DC or ACrms

Voltage proof

At sea level 1013 mbar: 1,200V DC or ACrms

Contact resistance

Initial: 20m0 max After conditionina: 25mΩ max

Insulation resistance

1.000MΩ min Initial: After conditioning: 100MΩ min

#### Mechanical

Durability: 500 operations

Insertion force (max): 2.8N Withdrawal force (min): 0.2N

Signal crimp accommodation: 22 AWG to 28 AWG

BS 3G 210 Type A

#### Environmental

Environmental classification: 55/125/56 days at 95% RH

-55°C to +125°C Operational temperature:

\*Vibration sensitivity: 10Hz to 2000Hz. 0.75mm.

98m/s<sup>2</sup> (10G), duration 6h

\*Bump severity: 390m/s<sup>2</sup> (40G), 4000 ±10 bumps

981m/s<sup>2</sup> (100G) for 6ms \*Shock severity:

\*Acceleration severity: 490m/s<sup>2</sup> (50G)

### **Power Contacts**

#### Materials

Latching collar: Beryllium Copper, Nickel plated Other metallic parts: Copper alloy, Gold plated

#### Electrical

Current (in isolation)

32x, 33x: 20A max

PFx, PMx: 40A nominal, up to 80A max

Contact resistance: 6mΩ max

#### Mechanical

Insertion force (max)

32x, 33x: N8 PFx, PMx: 15N Withdrawal force (min): 0.5N

Contact replacement

in connector: 5 times

Power contact accommodation

12 to 20 AWG 32x, 33x: PFx, PMx: 10 AWG

All dimensions in mm.

### Coax Contacts

#### ⇒ Materials

Latching collar: Beryllium Copper, Nickel plated Copper alloy, Gold plated Other metallic parts:

Insulator: PTFE

Frequency range: 6GHz (depending on cable)

Impedance:

1.05 + (0.04 x Frequency) GHz max VSWR:

Operating voltage (sea level): 180V AC at 500mA Maximum voltage (sea level): 1000V ACrms Contact resistance: 6mΩ max

Insulation resistance:  $10^6 M\Omega$  at 250V ACrms

#### Mechanical

Insertion force (max): N8 Withdrawal force (min): 0.5N

Contact replacement

in connector: 5 times

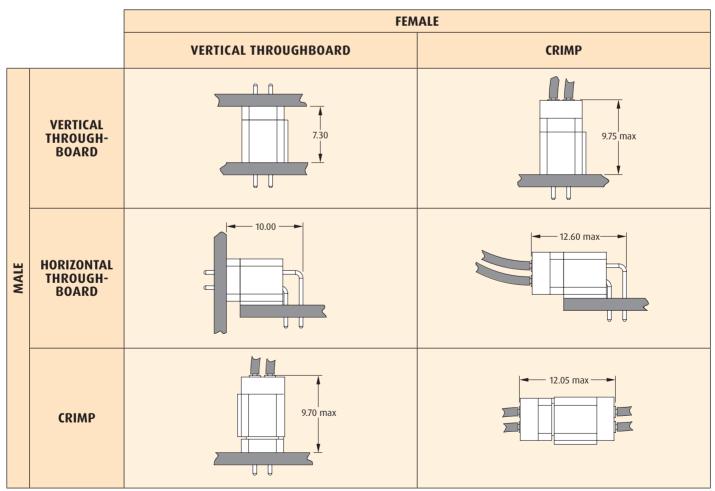


<sup>\*</sup> Tested with connectors with Jackscrews.

# Datamate Mix-Tek Pin Numbering

	FEMALE	MALE
POWER OR COAX ONLY	D C B A	A B C D
SIGNAL AND POWER	6 5 4 B A	A B 456 123

# **Mating Profiles**





Standard high-reliability connectors fitted with power contacts on 4mm pitch.

			ТҮРЕ	
		Cable Assemblies	Female Cable - Hex Slotted Jackscrews	Male Horizontal 3.5mm PC Tail - 5mm Board Mount Jackcrew
	2 Power	Female Single Ended (Female to Cut End) Hex Socket Jackscrews M80-FC325F1-02-0150L Male Single Ended (Male to Cut End) Jackscrew Fixing M80-MC335M1-02-0150L	M80-4000000F1-02-325-00-000	M80-5000000M5-02-333-00-000
	4 Power	Female Single Ended (Female to Cut End) Hex Socket Jackscrews M80-FC325F1-04-0150L Male Single Ended (Male to Cut End) Jackscrew Fixing M80-MC335M1-04-0150L	M80-4000000F1-04-325-00-000	M80-5000000M5-04-333-00-000
L NO. OF CONTACTS	6 Power	Female Single Ended (Female to Cut End) Hex Socket Jackscrews M80-FC325F1-06-0150L Male Single Ended (Male to Cut End) Jackscrew Fixing M80-MC335M1-06-0150L	M80-4000000F1-06-325-00-000	M80-5000000M5-06-333-00-000
	8 Power	Female Single Ended (Female to Cut End) Hex Socket Jackscrews M80-FC325F1-08-0150L Male Single Ended (Male to Cut End) Jackscrew Fixing M80-MC335M1-08-0150L	M80-4000000F1-08-325-00-000	M80-5000000M5-08-333-00-000
	10 Power		M80-4000000F1-10-325-00-000	M80-5000000M5-10-333-00-000
TOTA	2 High Power	Female Single Ended (Female to Cut End) Hex Socket Jackscrews M80-FCPF5F1-02-0150L Male Single Ended (Male to Cut End) Jackscrew Fixing M80-MCPM5M1-02-0150L	M80-4000000F1-02-PF5-00-000	M80-5000000M5-02-PM3-00-000
	4 High Power	Female Single Ended (Female to Cut End) Hex Socket Jackscrews M80-FCPF5F1-04-0150L Male Single Ended (Male to Cut End) Jackscrew Fixing M80-MCPM5M1-04-0150L	M80-4000000F1-04-PF5-00-000	M80-5000000M5-04-PM3-00-000
	6 High Power	Female Single Ended (Female to Cut End) Hex Socket Jackscrews M80-FCPF5F1-06-0150L Male Single Ended (Male to Cut End) Jackscrew Fixing M80-MCPM5M1-06-0150L	M80-4000000F1-06-PF5-00-000	M80-5000000M5-06-PM3-00-000
	8 High Power	Female Single Ended (Female to Cut End) Hex Socket Jackscrews M80-FCPF5F1-08-0150L Male Single Ended (Male to Cut End) Jackscrew Fixing M80-MCPM5M1-08-0150L		



Standard high-reliability connectors fitted with power contacts on 4mm pitch.

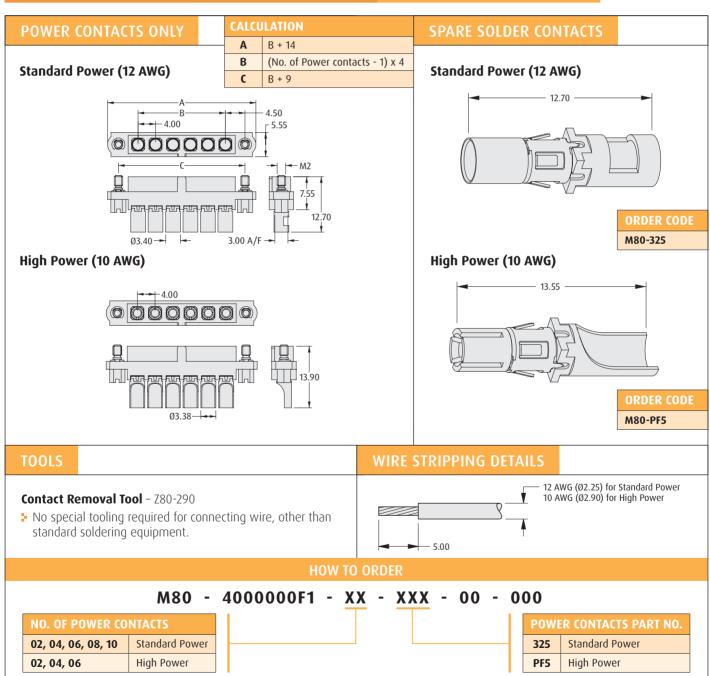
			ТҮРЕ	
		Male Vertical 3.5mm Tail - Jackscrew Fixing	Male Vertical 3.5mm Tail - 3.5mm Board Mount Jackcrew	Male Vertical 5mm Tail - 5mm Board Mount Jackcrew
	2 Power	M80-5000000M1-02-331-00-000	M80-5000000M2-02-331-00-000	M80-5000000M3-02-332-00-000
	4 Power	M80-5000000M1-04-331-00-000	M80-5000000M2-04-331-00-000	M80-5000000M3-04-332-00-000
	6 Power		M80-5000000M2-06-331-00-000	M80-5000000M3-06-332-00-000
TOTAL NO. OF CONTACTS	8 Power		M80-5000000M2-08-331-00-000	M80-5000000M3-08-332-00-000
	10 Power		M80-5000000M2-10-331-00-000	M80-5000000M3-10-332-00-000
	2 High Power	M80-5000000M1-02-PM1-00-000	M80-5000000M2-02-PM1-00-000	
	4 High Power	M80-5000000M1-04-PM1-00-000	M80-5000000M2-04-PM1-00-000	
	6 High Power		Sagaaa S	
	nensions in mm.	M80-5000000M1-06-PM1-00-000	M80-5000000M2-06-PM1-00-000	



### Female Power Cable Connector Kit

- ➤ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- Hexagonal slotted jackscrews are assembled where specified
- ▶ Polarized housings.
- Standard Power contacts rated to 20A. High Power to 40A



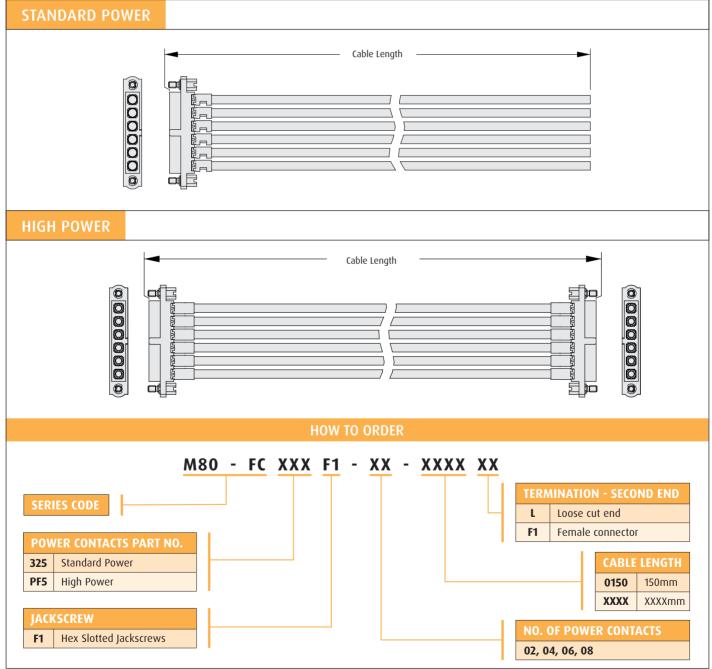




# Datamate Power Connectors Female Cable Assemblies

- ♣ Ready-made cable assemblies, fully tested and inspected
- ➤ Standard Power contacts are rated to 20A, and are fitted with 12AWG, white PTFE-insulated cables.
- ➤ High Power are rated to 40A nominal, up to 80A max. Fitted with 10AWG, white PTFE-insulated cables.
- Cable assemblies are constructed with Contact A to Contact A, Contact B to Contact B, etc.



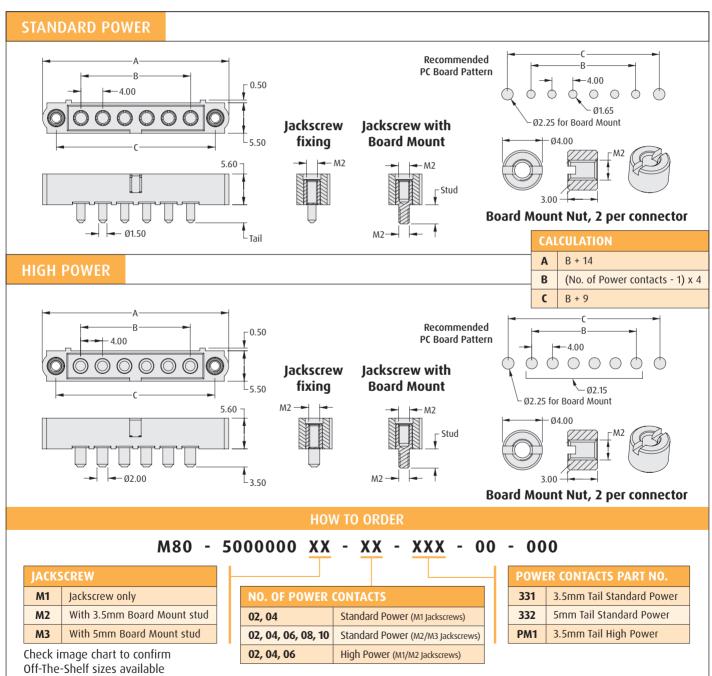




### Male Vertical Throughboard

- A selection of stocked Datamate Mix-Tek solder tail standard layouts.
- Choice to suit two PCB thicknesses and two stud lengths.
- Standard Power contacts rated to 20A.
- ▶ High Power rated to 40A nominal, up to 80A max.



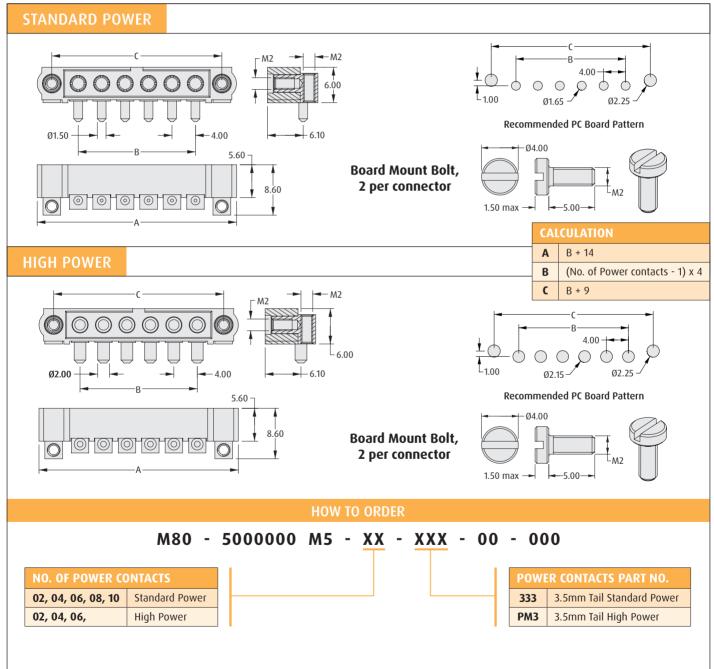




### Male Horizontal Throughboard

- Choice to suit two PCB thicknesses and two stud lengths.
- Standard Power contacts rated to 20A
- ▶ High Power rated to 40A nominal, up to 80A max.

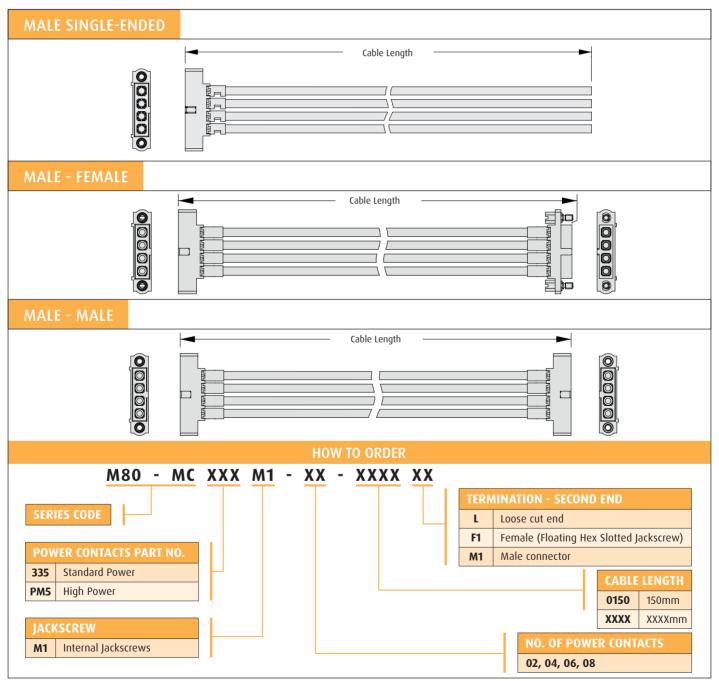






### Male Cable Assemblies

- ♣ Ready-made cable assemblies, fully tested and inspected
- ➤ Standard Power contacts are rated to 20A, and are fitted with 12AWG, white PTFE-insulated cables.
- ► High Power are rated to 40A nominal, up to 80A max. Fitted with 10AWG, white PTFE-insulated cables.
- Cable assemblies are constructed with Contact A to Contact A, Contact B to Contact B, etc.





Standard high-reliability connectors fitted with a combination of signal and 20A power contacts.

			ТҮРЕ		
			Female Cable - Hex Slotted Jackscrews	Male Horizontal 3mm Tail - 5mm Board Mount Jackcrew	
		2 Signal	M80-4C10205F1-02-325-00-000		
		4 Signal	M80-4C10405F1-02-325-00-000	M80-5L10405M5-02-333-00-000	
	2 Power	6 Signal	M80-4C10605F1-02-325-00-000		
		8 Signal	M80-4C10805F1-02-325-00-000		
OF CONTACTS		12 Signal	M80-4C11205F1-02-325-00-000		
TOTAL NO. 0		2 Signal	M80-4C10205F1-04-325-00-000		
		4 Signal	M80-4C10405F1-04-325-00-000	M80-5L10405M5-04-333-00-000	
	4 Power	6 Signal	M80-4C10605F1-04-325-00-000		
		8 Signal	M80-4C10805F1-04-325-00-000		
		12 Signal	M80-4C11205F1-04-325-00-000		



Standard high-reliability connectors fitted with a combination of signal and 20A power contacts.

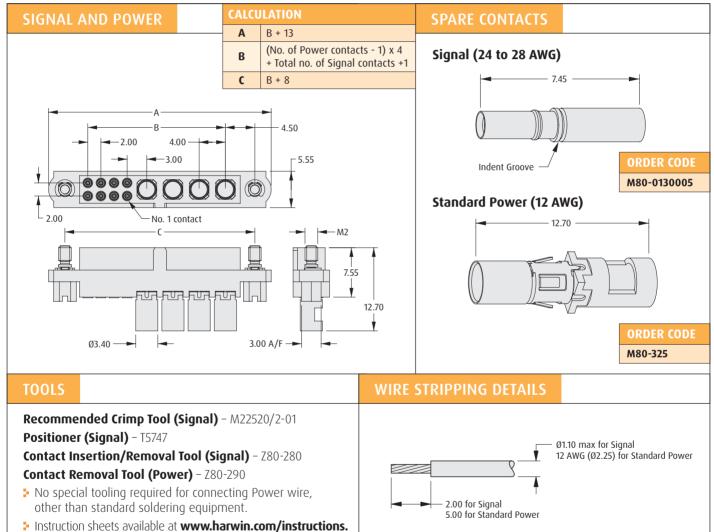
			ТҮРЕ			
			Male Vertical 3mm Tail - Jackscrew fixing	Male Vertical 3mm Tail - 3.5mm Board Mount Jackcrew		
		2 Signal	M80-5T10205M1-02-331-00-000	M80-5T10205M2-02-331-00-000		
		4 Signal	M80-5T10405M1-02-331-00-000	M80-5T10405M2-02-331-00-000		
	2 Power	6 Signal	M80-5T10605M1-02-331-00-000			
		8 Signal	M80-5T10805M1-02-331-00-000			
OF CONTACTS		12 Signal	M80-5T11205M1-02-331-00-000			
TOTAL NO. 0		2 Signal	M80-5T10205M1-04-331-00-000	M80-5T10205M2-04-331-00-000		
		4 Signal	M80-5T10405M1-04-331-00-000	M80-5T10405M2-04-331-00-000		
	4 Power	6 Signal	M80-5T10605M1-04-331-00-000	M80-5T10605M2-04-331-00-000		
		8 Signal	M80-5T10805M1-04-331-00-000	M80-5T10805M2-04-331-00-000		
		12 Signal	M80-5T11205M1-04-331-00-000			



### Female Power/Signal Cable Connector Kit

- Part numbers are for a complete kit of a housing and the applicable number of contacts.
- **▶** Hexagonal slotted jackscrews are assembled.
- ▶ Polarized housings.
- ► Standard Power contacts rated to 20A, signal to 3A.





All dimensions in mm.



NO. OF POWER CONTACTS

02, 04

**HOW TO ORDER** 

M80 - 4C1 XX 05F1 - XX - 325 - 00 - 000

**NO. OF SIGNAL CONTACTS** 

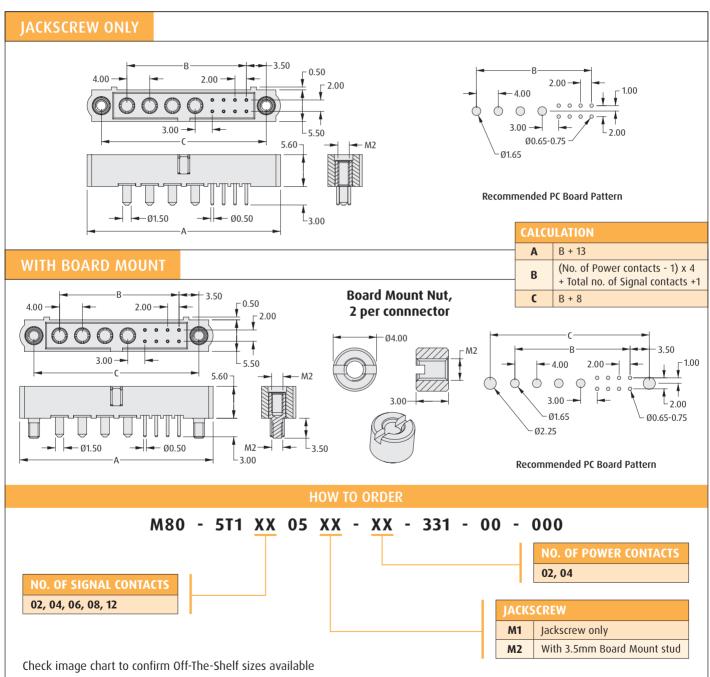
Check image chart to confirm Off-The-Shelf sizes available

02, 04, 06, 08, 12

### Male Power/Signal Vertical Throughboard

- ► A selection of stocked Datamate Mix-Tek solder tail standard layouts.
- Choice to suit two PCB thicknesses and two stud lengths
- Polarized housings.
- Standard Power contacts rated to 20A, signal to 3A.



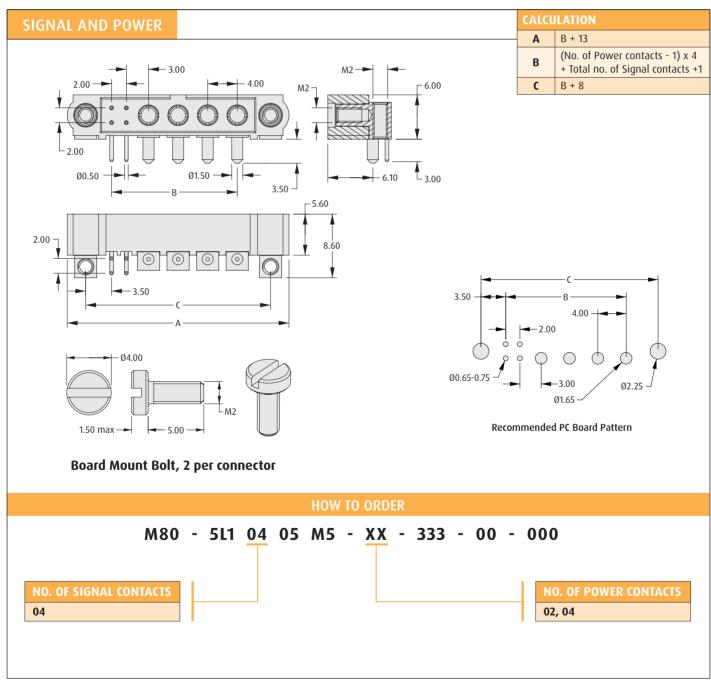




### Male Power/Signal Horizontal Throughboard

- A selection of stocked Datamate Mix-Tek solder tail standard layouts.
- Polarized housings.
- ▶ Standard Power contacts rated to 20A, signal to 3A.







> Standard high-reliability connectors fitted with coax contacts on 4mm pitch.

			ТҮРЕ				
		Female Cable Connectors - Hex Slotted Jackscrews	Male Vertical 3mm Tail - 3.5mm Board Mount Jackcrew	Male Vertical 4.5mm Tail - 5mm Board Mount Jackcrew			
	2 Coax	M80-FC305F1-02	M80-MV311M2-02	M80-MV312M3-02			
F CONTACTS	4 Coax	M80-FC305F1-04	M80-MV311M2-04	M80-MV312M3-04			
TOTAL NO. 0	6 Coax	M80-FC305F1-06	M80-MV311M2-06	M80-MV312M3-06			
	8 Coax	M80-FC305F1-08	M80-MV311M2-08	M80-MV312M3-08			

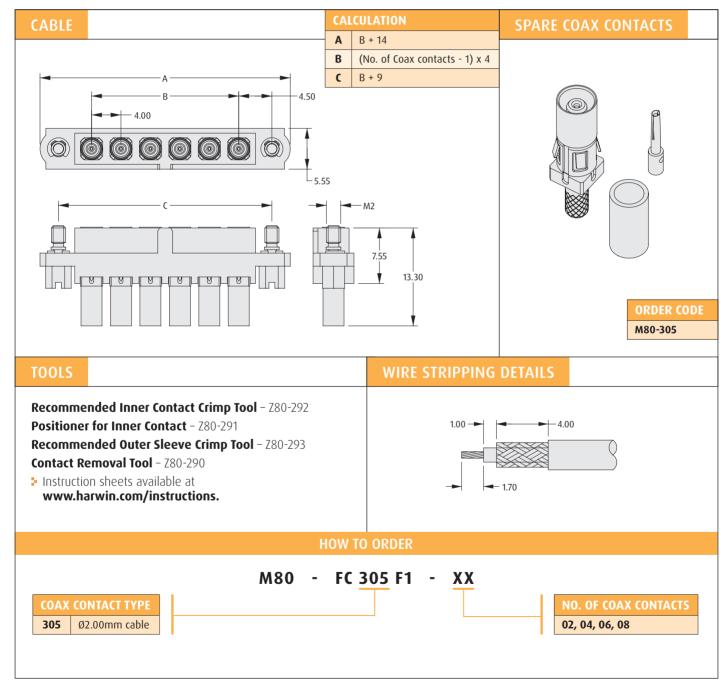
			ТҮРЕ	
		Female Cable Assemblies - Hex Slotted Jackscrews	Male Horizontal 3mm Tail - 5mm Board Mount Jackcrew	Male Horizontal 4.5mm Tail - 5mm Board Mount Jackcrew
	2 Coax	Single Ended (Female to Cut End) M80-FC305F1-02-0150L Double Ended (Female to Female) M80-FC305F1-02-0150F1	M80-MH313M5-02	M80-MH314M5-02
TOTAL NO. OF CONTACTS	4 Coax	Single Ended (Female to Cut End) M80-FC305F1-04-0150L Double Ended (Female to Female) M80-FC305F1-04-0150F1	M80-MH313M5-04	M80-MH314M5-04
	6 Coax	Single Ended (Female to Cut End) M80-FC305F1-06-1050L Double Ended (Female to Female) M80-FC305F1-06-0150F1	M80-MH313M5-06	M80-MH314M5-06
	8 Coax	Single Ended (Female to Cut End) M80-FC305F1-08-0150L Double Ended (Female to Female) M80-FC305F1-08-0150F1	M80-MH313M5-08	M80-MH314M5-08



### Jack (Female) Crimp Kit

- A selection of stocked jack cable connectors in standard layouts.
- ♣ 6GHz. 500 Coax contacts, suitable for RG178 cable.
- Product supplied as a complete kit; housing with jackscrew assembled, and the applicable number of coax contacts supplied loose, not assembled.
- Polarized housings.
- ♣ Hexagonal slotted jackscrew style.



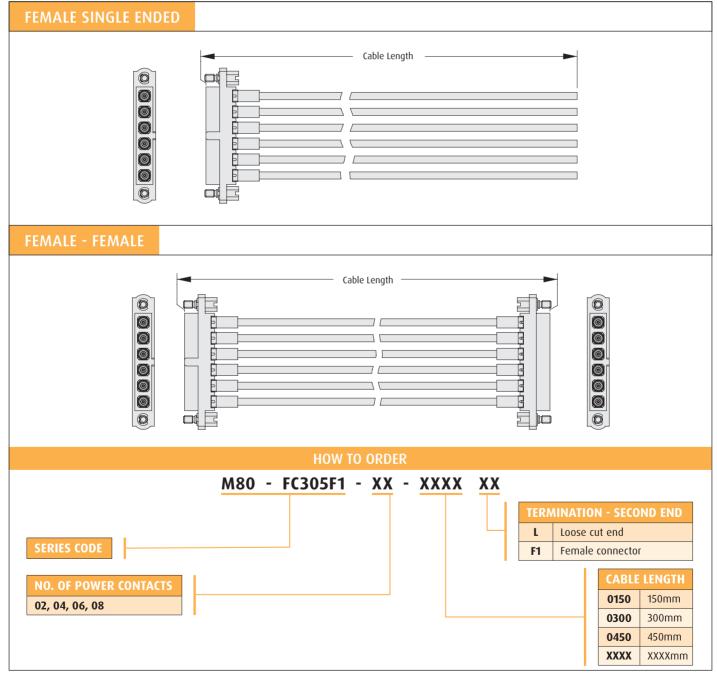




### Jack (Female) Cable Assemblies

- ♣ A selection of stocked ganged multiport coaxial cable assemblies in standard layouts (custom also available).
- 6GHz,  $50\Omega$  Coax contacts, assembled with RG178 cable.
- Hexagonal slotted jackscrew style.
- Cable assemblies are constructed with Contact A to Contact A, Contact B to Contact B, etc.



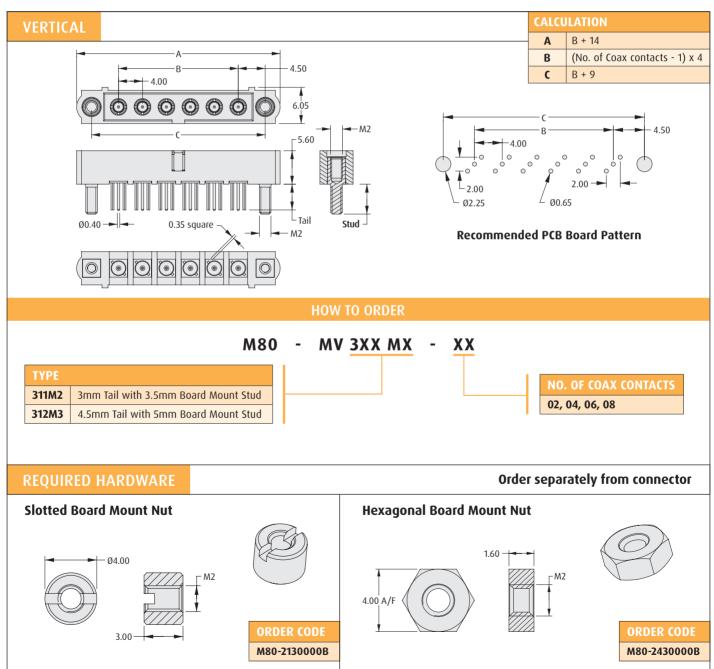




### Plug (Male) Vertical Throughboard

- Stocked coax connectors in vertical orientation, with board-mount jackscrews for added security
- 6GHz. 500 Coax contacts
- Choice to suit two PCB thicknesses.
- Order board mount nuts separately.
- Screwdriver Z80-298 available for assembling slotted iackscrew nuts.

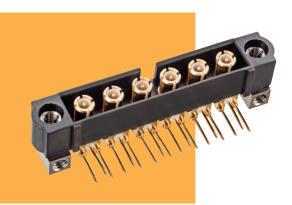


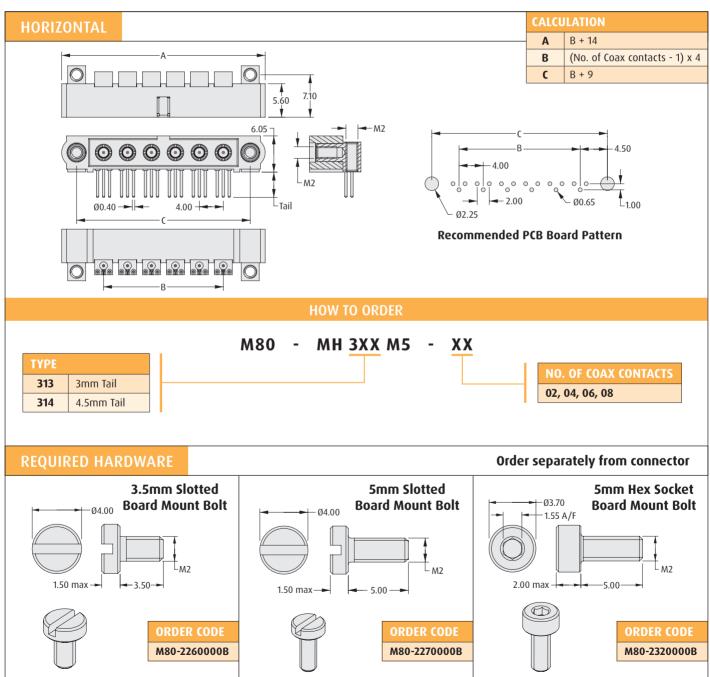




### Plug (Male) Horizontal Throughboard

- Stocked coax connectors in horizontal orientation, with board-mount jackscrews for added security.
- 6GHz, 50Ω Coax contacts
- Choice to suit two PCB thicknesses.
- Order board mount bolts separately.







Housings only for cable connections, suitable for use with all power, high power and coax contacts. Contacts to be ordered separately.

	MIXED TECHNOLOGY HOUSINGS - FEMALE, HEX SLOTTED JACKSCREWS					
	2 Power/Coax 3 Power/Coax 4 Power/Coax 6 Power/Coax					
2 Signal			M80-263F104-02-00	M80-263F106-02-00		
4 Signal			M80-263F104-04-00			
6 Signal	M80-263F102-06-00					
8 Signal	M80-263F102-08-00	M80-263F103-08-00				
12 Signal			M80-263F104-12-00			

	POWER/COAX ONLY HOUSINGS - STANDARD GENDER JACKSCREWS			
	Female Hex Slotted floating	Female Hex Socket floating	Female Guide Pin panel mount	Male Internal jackscrew
2 Contact	M80-263F102-00-00	M80-263F202-00-00	M80-263F302-00-00	M80-273M102-00-00
3 Contact	M80-263F103-00-00	M80-263F203-00-00	M80-263F303-00-00	M80-273M103-00-00
4 Contact	M80-263F104-00-00	M80-263F204-00-00	M80-263F304-00-00	M80-273M104-00-00
6 Contact	M80-263F106-00-00	M80-263F206-00-00	M80-263F306-00-00	M80-273M106-00-00
8 Contact	M80-263F108-00-00	M80-263F208-00-00	M80-263F308-00-00	M80-273M108-00-00
10 Contact	M80-263F110-00-00			

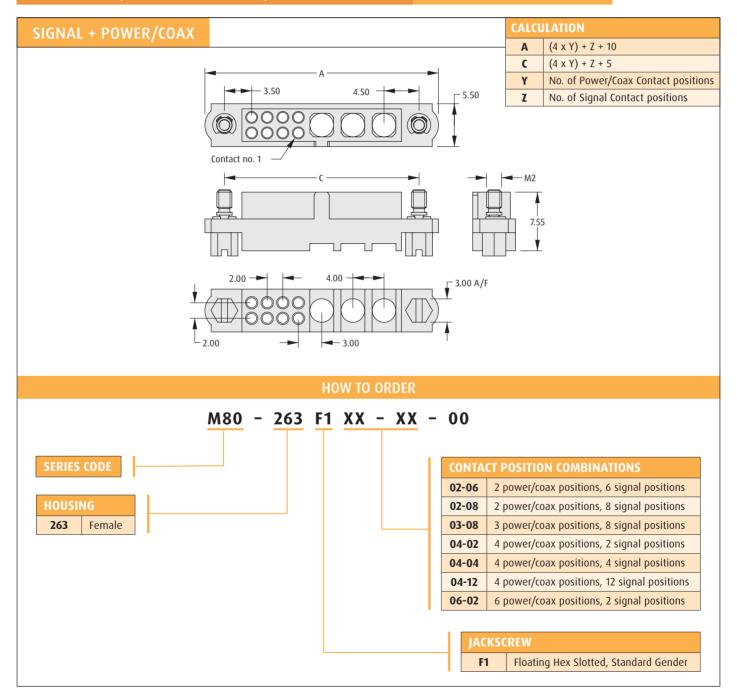
	POWER/COAX ONLY HOUSINGS			
	Female Male Slotted floating		101LOK	
			Female	Male
2 Contact	M80-263F902-00-00	M80-273MA02-00-00	M80-263FC02-00-00	M80-273MC02-00-00
3 Contact	M80-263F903-00-00	M80-273MA03-00-00	M80-263FC03-00-00	M80-273MC03-00-00
4 Contact	M80-263F904-00-00	M80-273MA04-00-00	M80-263FC04-00-00	M80-273MC04-00-00
6 Contact	M80-263F906-00-00	M80-273MA06-00-00	M80-263FC06-00-00	M80-273MC06-00-00
8 Contact	M80-263F908-00-00	M80-273MA08-00-00	M80-263FC08-00-00	M80-273MC08-00-00



### Female Mixed Technology Cable Housings

- ➤ Female cable housings fitted with floating jackscrews (standard gender), hexagonal slotted heads.
- Compatible with all signal, power and coax female cable contacts.
- ▶ Housings only compatible contacts must be purchased separately.
- ★ Mates with any male mixed-technology connectors with the same signal + power/coax layout.
- For other combinations shown on the Technical Drawing, please consult our Experts at www.harwin.com/contact.



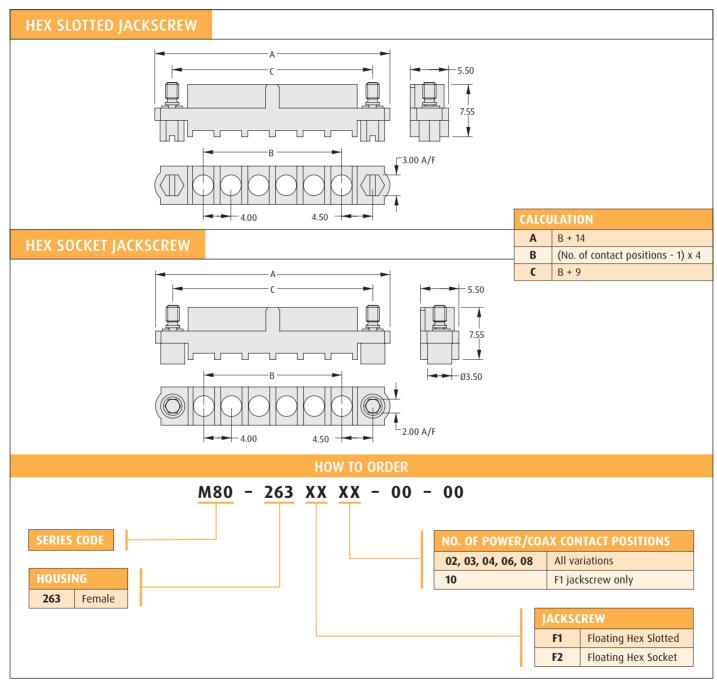




### Female Power/Coax Cable Housings

- Female cable housings fitted with floating jackscrews (standard gender).
- Choice of hexagonal slotted or hex socket for the jackscrew head.
- Compatible with all power and coax female cable contacts.
- ▶ Housings only compatible contacts must be purchased separately.
- ► Mates with any male connectors with the same power/coax layout.
- ► For other combinations shown on the Technical Drawing, please consult our Experts at www.harwin.com/contact.



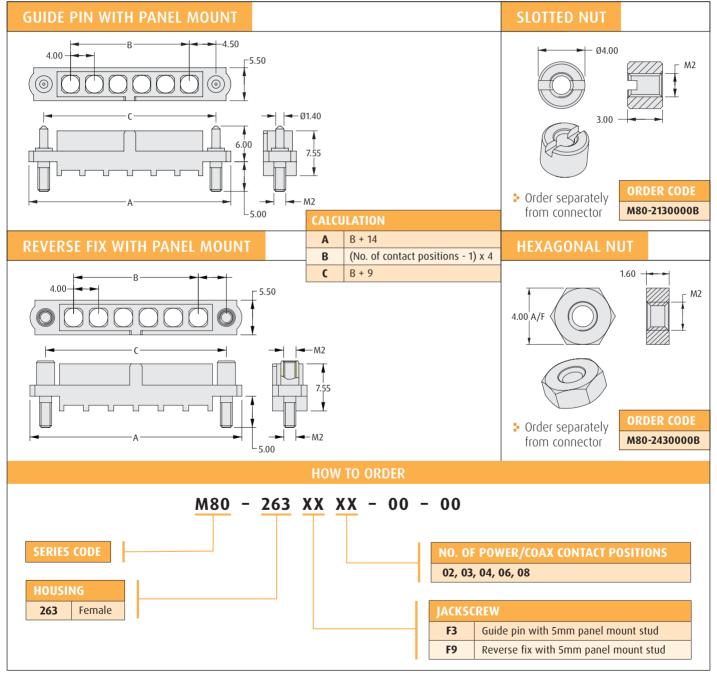




### Female Power/Coax Cable Housings - Guide Pin, Reverse Fix

- Female cable housings fitted with panel mount jackscrews.
- Guide Pins are compatible with male standard gender jackscrews.
- Reverse fix panel mount is only compatible with male connectors fitted with reverse fix.
- Compatible with all power and coax female cable contacts.
- ▶ Housings only compatible contacts must be purchased separately.
- ➤ For other combinations shown on the Technical Drawing, please consult our Experts at www.harwin.com/contact.



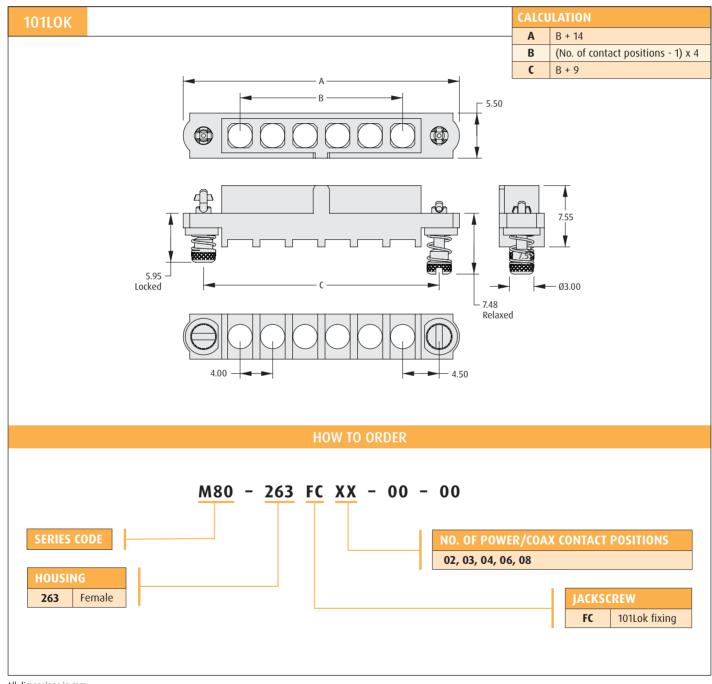




### Female Power/Coax Cable Housings - 101Lok

- ▶ Housings only compatible contacts must be purchased
- Compatible with all power and coax female cable contacts.
- consult our Experts at www.harwin.com/contact.



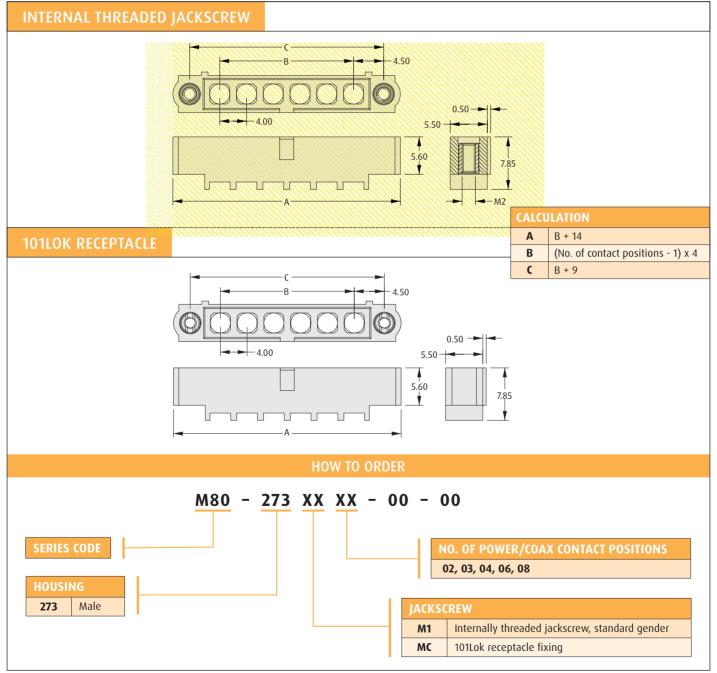




### Male Power/Coax Cable Housings

- ➤ Male cable housings fitted with either internally threaded jackscrews (standard gender) or 101Lok receptacles.
- Internal threaded jackscrews compatible with standard gender floating jackscrews or quide pins.
- 101Lok receptacle fixings compatible with 101Lok bayonet female fixings
- Housings only compatible power and coax male contacts must be purchased separately.
- For other combinations shown on the Technical Drawing, please consult our Experts at www.harwin.com/contact.



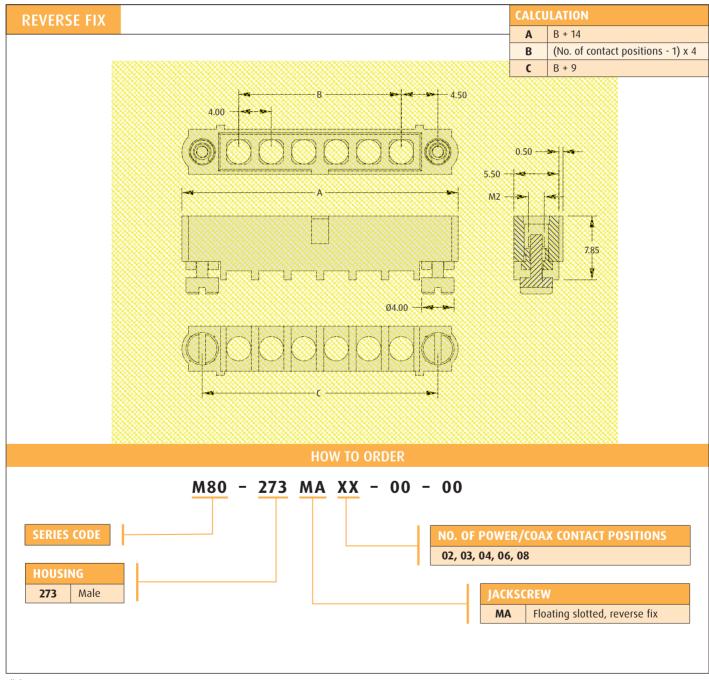




### Male Power/Coax Cable Housings - Reverse Fix

- ► Male cable housings fitted with floating slotted jackscrews, reverse fix style.
- Mates with equivalent layout female connectors fitted with reverse fix jackscrews.
- Housings only compatible power and coax male contacts must be purchased separately.
- **▶** For other combinations shown on the Technical Drawing, please consult our Experts at **www.harwin.com/contact.**





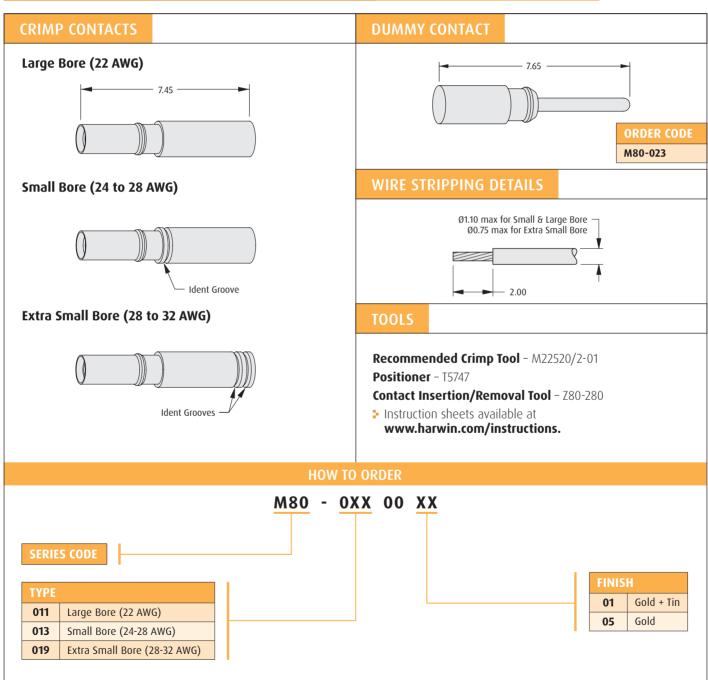


# **Datamate Mix-Tek Cable Contacts**

### **Female Signal Contacts**

Compatible with the signal + power/coax housings See following pages for power and coax contacts.







# **Datamate Mix-Tek Cable Contacts**

- Compatible contacts for use with all Mix-Tek cable housings.
- Female standard power contacts mate with male standard power, female high power with male high power. Standard power contacts do not mate with high power.

		STANDARD I	POWER		
Female	Male	Wire Size	Current Rating	Connection	Wire Strip Length
M80-325	M80-335	12 AWG	Up to 20A	Solder	5.00mm min
M80-326	M80-336	14 AWG	Up to 15A	Solder	5.00mm min
M80-327	M80-337	16 AWG	Up to 10A	Solder	5.00mm min
M80-328	M80-338	18 AWG	Up to 8A	Crimp	4.75-5.25mm
M80-329	M80-339	20 AWG	Up to 5A	Crimp	4.75-5.25mm
M80-32A		12 AWG	Up to 20A	Solder	5.00mm min
M80-32B		14 AWG	Up to 15A	Solder	5.00mm min
M80-32C		16 AWG	Up to 10A	Solder	5.00mm min
		HIGH PO	WER		
		10 AWG	Up to 40A	Solder	5.00mm min
M80-PF5	M80-PM5				

#### TOOLS

Recommended Crimp Tool - Z80-294

Positioner - Z80-295

Contact Removal Tool - Z80-290

- Crimp Tool and Positioner required only for the Crimp contacts. No special tool is required for connecting wire to the solder contacts, other than standard soldering equipment.
- Instruction sheets available at www.harwin.com/instructions.



# **Datamate Mix-Tek Cable Contacts**

- Compatible contacts for use with all Mix-Tek cable housings.
- Straight coax contacts can mate with right-angle coax contacts.

COAX					
Female	Male	Coax Size	Coax Type	Connection	Wire Strip Length
M80-305	M80-315	Ø2.00mm	RG178	Crimp	See Figure 1
M80-307	M80-317	Ø2.70mm	RG174 RG179 RG316	Crimp	See Figure 1
M80-308	M80-318	Ø2.00mm	RG178	Crimp	See Figure 2
M80-309	M80-319	Ø2.70mm	RG174 RG179 RG316	Crimp	See Figure 2

### **TOOLS**

Recommended Inner Contact Crimp Tool – Z80-292 Positioner for Inner Contact – Z80-291 Recommended Outer Sleeve Crimp Tool – Z80-293 Contact Removal Tool – Z80-290 Instruction sheets available at www.harwin.com/instructions.

### **WIRE STRIPPING DETAILS**

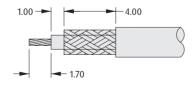


Figure 1

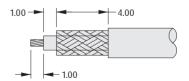


Figure 2



## **Datamate Mix-Tek Connectors**

### Metal Backshell Accessories

- Metal Backshells that can be used with any female cable connector (up to 12AWG), or male connectors with board mount jackscrews.
- Female backshells come with jackscrews any existing jackscrews can be removed by removing the e-clip.
- Suitable for new designs, or in-production addition to enhance existing designs.



### PART NUMBERING SYSTEM

M80 - 9 XX XX 02

FINISH

02 Nickel

#### **SERIES CODE**

TYPE	
06	Male
45	Female with Slotted Jackscrews
46	Female with Hex Socket Jackscrews

EQUIVALENT NO. OF SIGNAL CONTACTS	NO. OF POWER ONLY OR COAX ONLY CONTACTS	NO. OF CONTACTS IN POWER/SIGNAL COMBINATION
08	2 contacts	-
10	-	2 Power, 2 Signal
12	3 contacts	2 Power, 4 Signal
14	-	2 Power, 6 Signal
16	4 contacts	2 Power, 8 Signal
18	-	4 Power, 2 Signal
20	5 contacts	2 Power, 12 Signal or 4 Power, 4 Signal
22	-	4 Power, 6 Signal
24	6 contacts	4 Power, 8 Signal
28	7 contacts	4 Power, 12 Signal
32	8 contacts	-
36	9 contacts	-
40	10 contacts	-
44	11 contacts	-
48	12 contacts	-

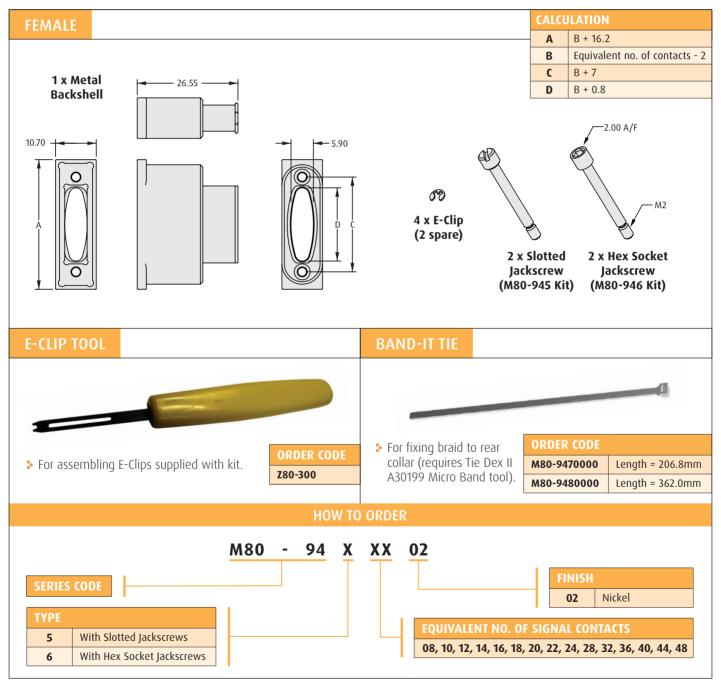


# **Datamate Mix-Tek Connectors**

### Female Metal Backshell

- ➤ Supplied as an accessory kit, including metal backshell, e-clips and the applicable jackscrews.
- To be used with the appropriate size of Female Cable connector kit without jackscrews (existing jackscrews can be removed).
- Gives 360 degree shielding when used with conductive braid and mated to a compatible male connector with metal backshel
- ► Instruction sheets available at www.harwin.com/instructions.





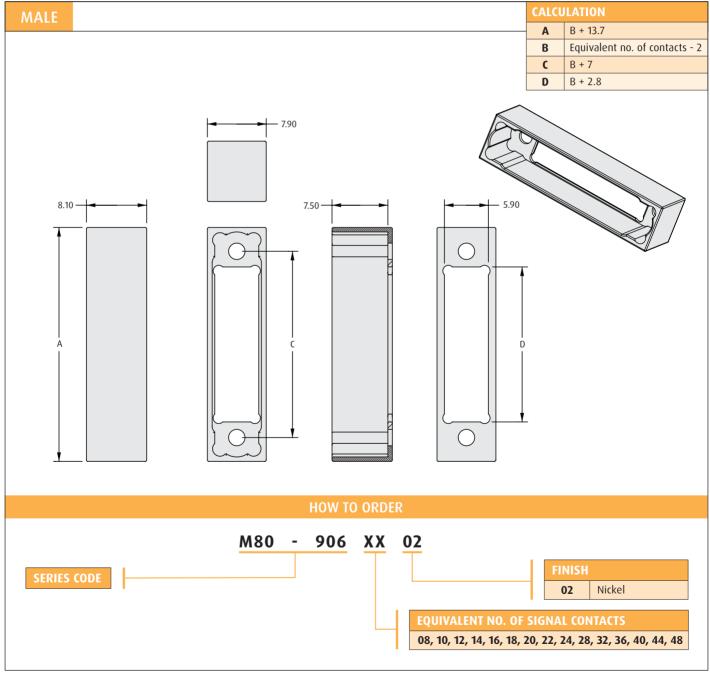


## **Datamate Mix-Tek Connectors**

### Male Metal Backshell

- Supplied as an accessory, to be used with existing male connectors.
- Can be fitted to either male vertical PCB connectors with board mount, or male cable connectors with panel mount jackscrews.
- Gives 360 degree shielding when mounted to a conductive panel and mated to a compatible female connector with metal backshell.







# **Datamate J-Tek Specification**

#### Materials

**Housings:** Glass-filled thermoplastic UL94V-0

Female contacts

Standard J-Tek: Brass shell, with Beryllium Copper

inner contact

T-Contact: Beryllium Copper Male contacts: Copper alloy

Finish: See individual pages

#### Electrica

Current - Standard J-Tek

Individual contacts in isolation: 3.3A max (at 25°C) 2.6A max (at 85°C) All contacts simultaneously: 3.0A max (at 25°C) 2.2A max (at 85°C)

Flex Circuit Assembly: 1.0A max per track (at 25°C)

Current - T-Contact

All contacts simultaneously:

Individual contacts in isolation: 8.5A max (at 25°C)

6.5A max (at 85°C) 3.5A max (at 25°C)

2.6A max (at 85°C)

Working voltage

At sea level 1013 mbar: 800V DC or AC peak

Voltage proof

At sea level 1013 mbar: 1,200V DC or AC peak

Contact resistance

Initial:  $20m\Omega$  max After conditioning:  $25m\Omega$  max

Insulation resistance

Initial:  $1,000M\Omega$  min After conditioning:  $100M\Omega$  min

#### : Mechanical

Durability

Standard J-Tek: 500 operations T-Contact: 1,000 operations

Insertion force (max)

Standard J-Tek: 2.8N T-Contact: 4.0N

Withdrawal force (min)

Standard J-Tek: 0.2N T-Contact: 0.5N

Signal crimp accommodation: 22 AWG to 32 AWG

BS 3G 210 Type A, MIL-W-16878

#### 5 Environmental

Environmental classification: 55/125/56 days at 95% RH

Operational temperature: -55°C to +125°C

\*Vibration sensitivity

Standard J-Tek: 10Hz to 2000Hz, 0.75mm,

98m/s<sup>2</sup> (10G), duration 6 hours

T-Contact: 10Hz to 2000Hz, 0.75mm,

390m/s<sup>2</sup> (40G), duration 6 hours

\*Bump severity: 390m/s² (40G), 4000 ±10 bumps

\*Shock severity: 981m/s<sup>2</sup> (100G) for 6ms

\*Acceleration severity: 490m/s<sup>2</sup> (50G)

# Pin Numbering

FEMALE	MALE
	6 10 5



<sup>\*</sup> Tested with connectors with Jackscrews.

# **Datamate J-Tek Mating Profiles**

		FEMALE		
		VERTICAL THROUGHBOARD	VERTICAL SMT	CRIMP
MALE	VERTICAL THROUGH- BOARD	7.30	7.80	9.75 max
	HORIZONTAL THROUGH- BOARD	10.00	10.50	12.60 max
	VERTICAL SMT	7.55	8.05	10.10 max
	HORIZONTAL SMT	11.60	12.10	14.20 max —
	CRIMP	9.85 max	10.35 max	12.05 max —
	CRIMP 1mm EXTENDED WALL	10.85 max	11.35 max	13.05 max—
	CRIMP 5mm EXTENDED WALL	14.85 max	15.35 max	17.05 max



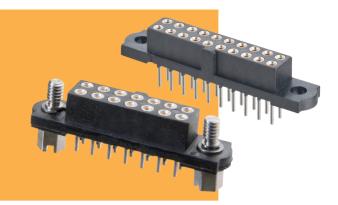
# **Datamate J-Tek Mating Profiles**

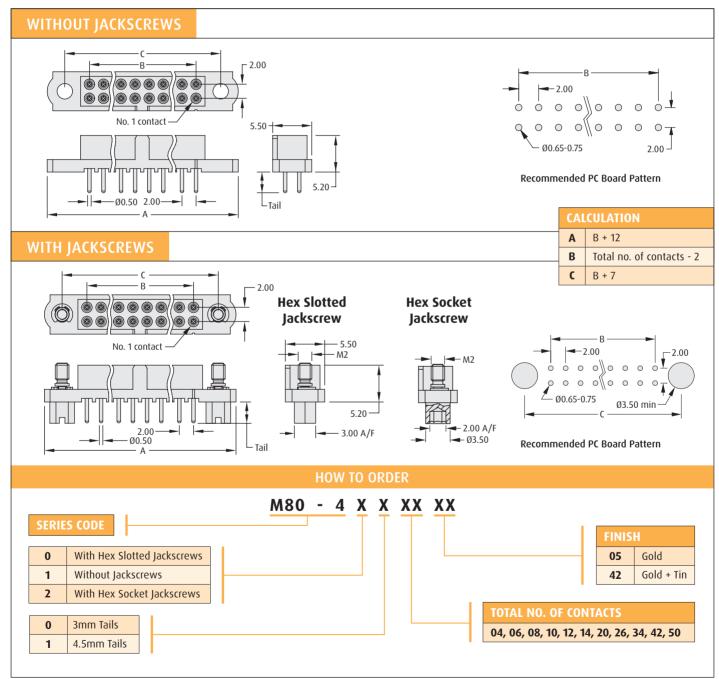
		FEMALE		
		<b>CRIMP</b> 1mm EXTENDED WALL	<b>CRIMP</b> 5mm EXTENDED WALL	
MALE	VERTICAL THROUGH- BOARD	10.75 max	14.75	
	HORIZONTAL THROUGH- BOARD	13.60 max————————————————————————————————————	16.60 max	
	VERTICAL SMT	11.10 max	15.10 max	
	HORIZONTAL SMT	15.20 max	19.20 max	
	CRIMP	13.05 max —	17.05 max —	
	CRIMP 1mm EXTENDED WALL	14.05 max —	18.05 max	
	CRIMP 5mm EXTENDED WALL	18.05 max	22.05 max ———————————————————————————————————	



#### Female Vertical Throughboard

- Fully shrouded contacts.
- Polarized housings
- Mates with all Datamate J-Tek male connectors with compatible iackscrews.

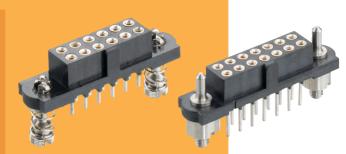


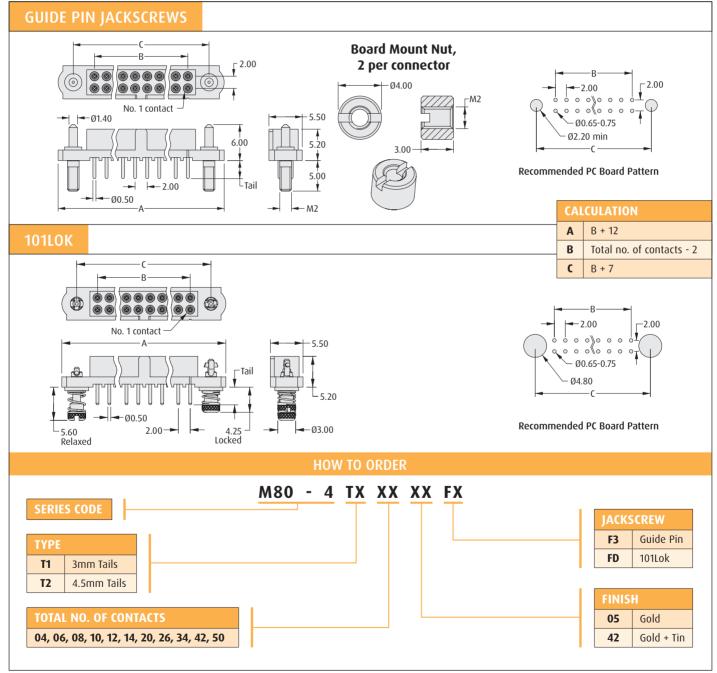




#### Female Vertical Throughboard, Guide Pin, 101Lok

- ➤ Guide pin style includes board mount fixing, and mates with Datamate J-Tek male connectors with compatible jackscrews.
- ➤ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- 101Lok style mates with Datamate J-Tek male connectors with compatible 101Lok fixings.



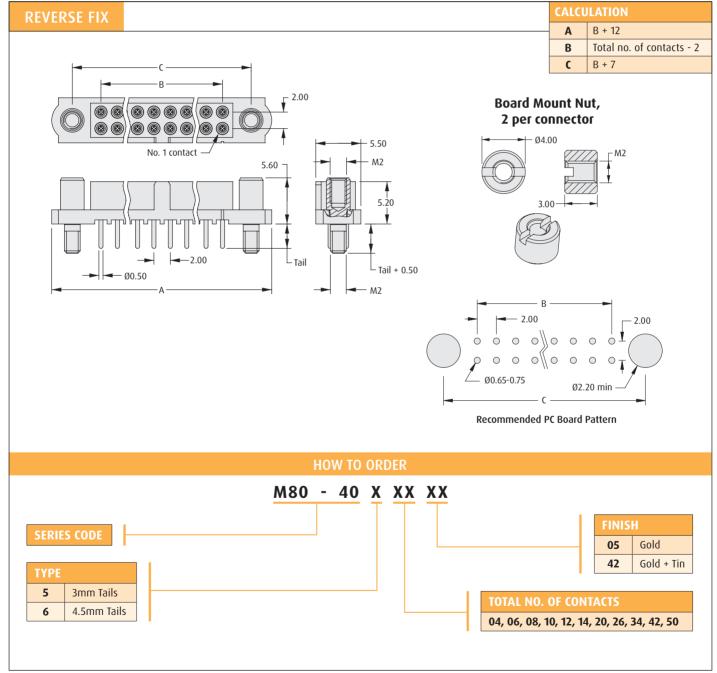




#### Female Vertical Throughboard Reverse Fix

- Fully shrouded contacts.
- Polarized housings
- Includes board mount fixing
- Mates with male Datamate J-Tek connectors with compatible Reverse Fix jackscrews.

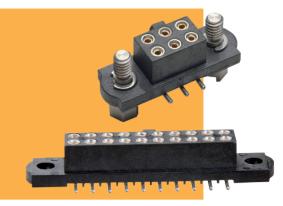


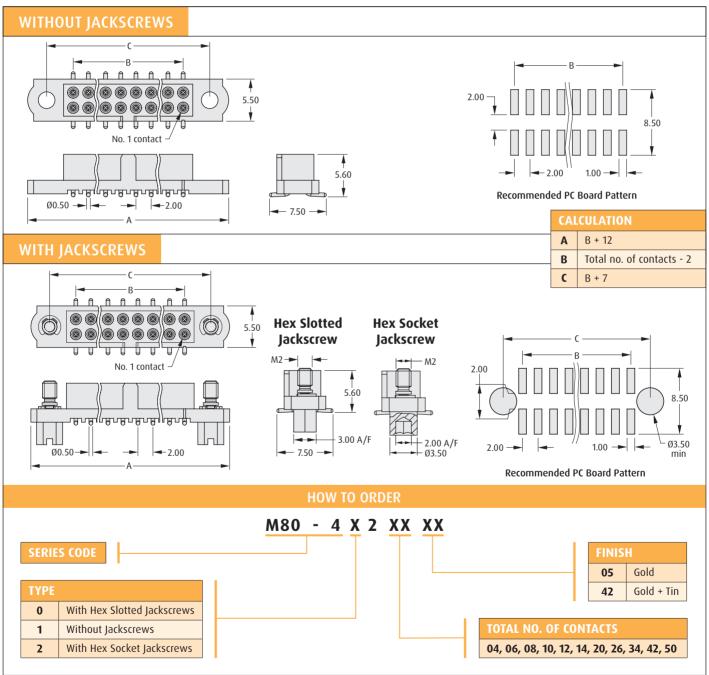




#### **Female Vertical Surface Mount**

- Mates with all Datamate J-Tek male connectors with compatible jackscrews.
- Gull wing SMT tails simplify inspection process

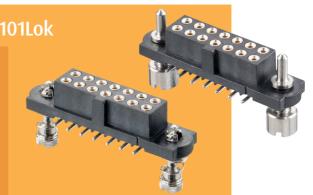


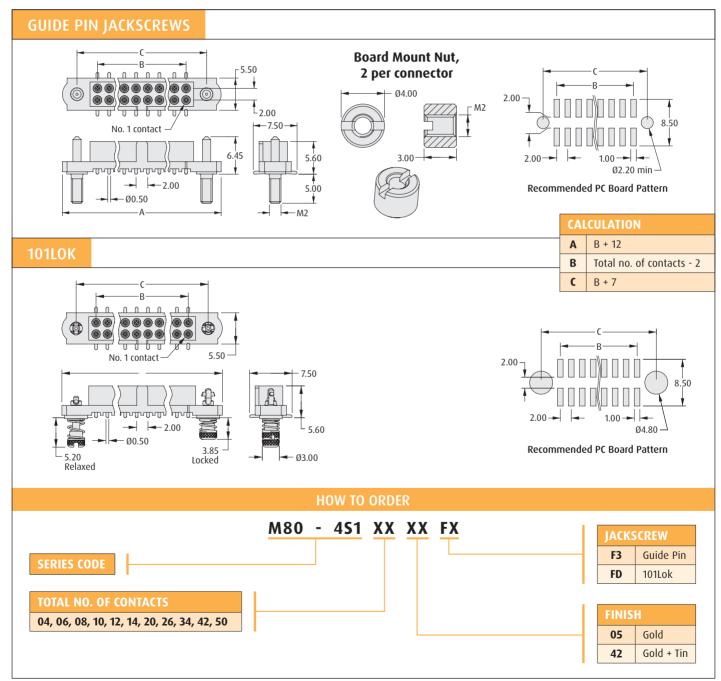




#### Female Vertical Surface Mount Guide Pin, 101Lok

- Guide pin style includes board mount fixing, and mates with Datamate J-Tek male connectors with compatible jackscrews.
- → 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- ◆ 101Lok style mates with Datamate J-Tek male connectors with compatible 101Lok fixings.



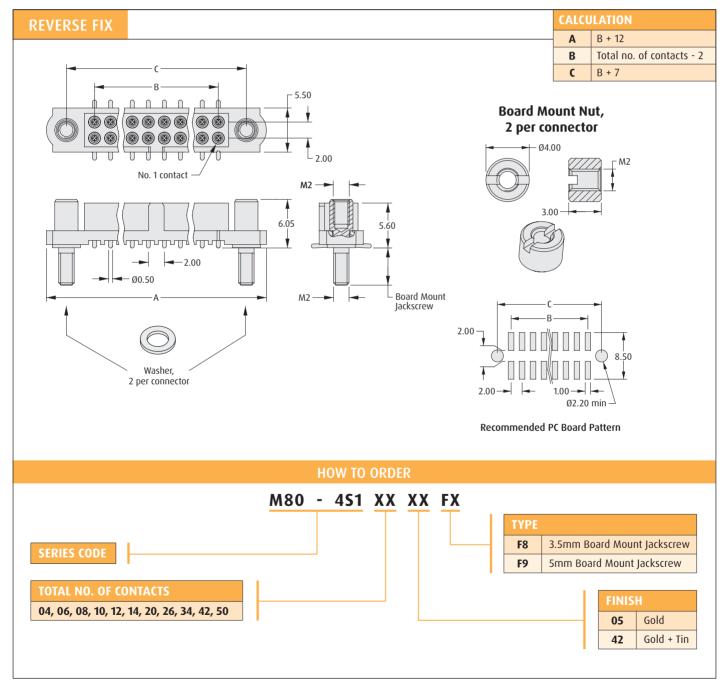




#### Female Vertical Surface Mount Reverse Fix

- Fully shrouded contacts.
- Polarized housings
- Includes Board Mount fixing
- Mates with male Datamate J-Tek connectors with compatible Reverse Fix jackscrews.
- Washers are supplied loose, and are to be fitted between the PCB and the housing, around the board mount studs.



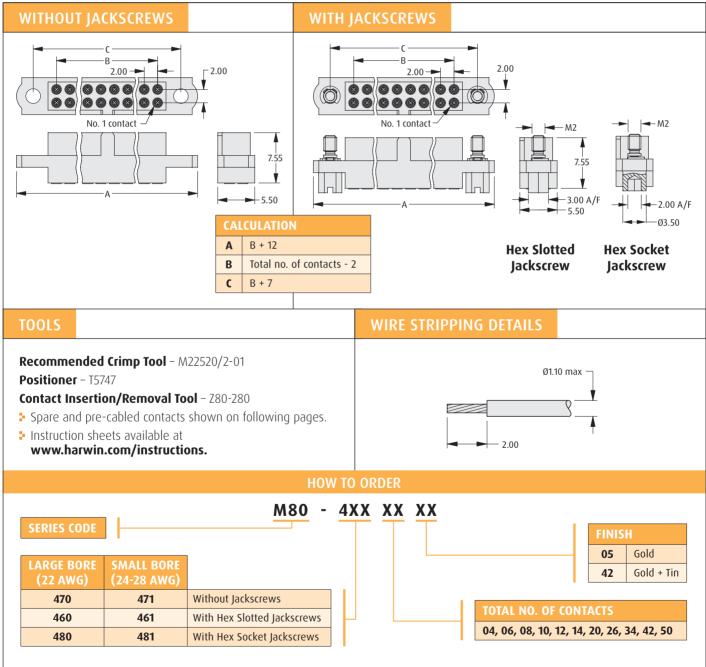




#### Female Crimp Kit

- Part numbers are for a complete kit of a housing and the applicable number of contacts.
- **▶** Jackscrews are assembled where specified.
- Crimp contacts are rear insertable
- ▶ Version also available for 28 32 AWG cable see the following page.
- Spare contacts are available.

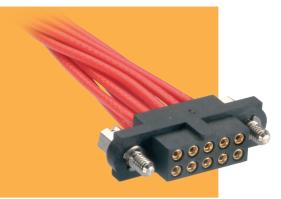


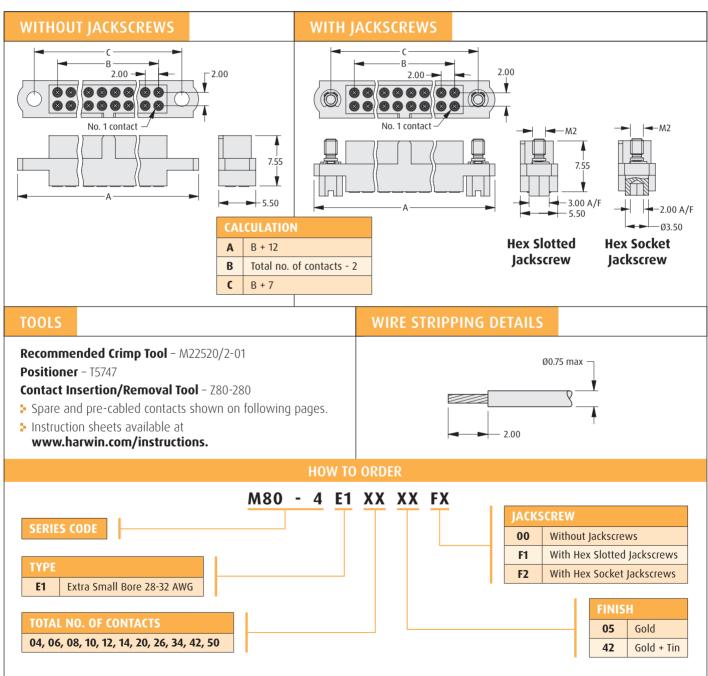




#### Female Crimp Kit - Extra Small Bore

- ➤ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- Jackscrews are assembled where specified.
- Crimp contacts are rear insertable.
- ➤ Versions also available for 22 28 AWG cable see the previous page.
- Spare contacts are available.



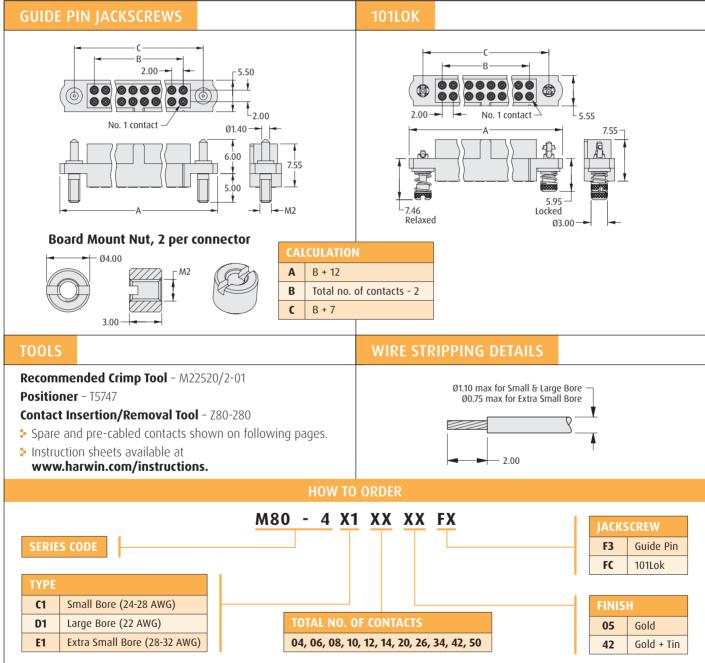




#### Female Crimp Kit - Guide Pin, 101Lok

- Guide pin style includes board mount fixing.
- ▶ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- Connectors mate with Datamate J-Tek male connectors with applicable jackscrews or 101Lok fixings.
- Part numbers are for a complete kit of a housing and the applicable number of contacts.

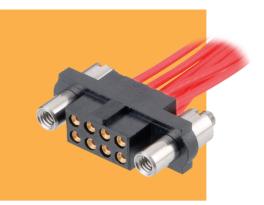


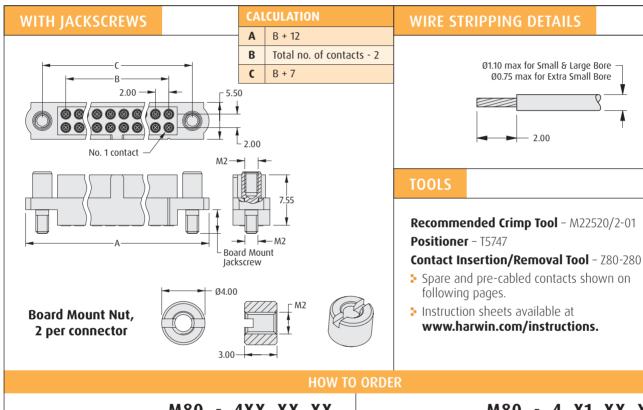




#### Female Crimp Kit - Reverse Fix

- Allows for further flexibility in system design
- **▶** Crimp contacts supplied loose and are inserted from rear.
- Part numbers are for a complete kit of a housing and the applicable number of contacts.
- Jackscrews are assembled.
- Mates with male Datamate J-Tek connectors with compatible Reverse Fix jackscrews.





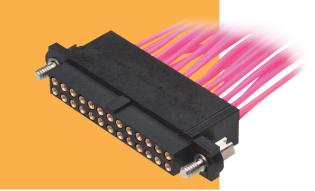
# M80 - 4XX XX SERIES CODE TYPE 462 Large Bore (22 AWG) 463 Small Bore (24-28 AWG) TOTAL NO. OF CONTACTS 04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50 FINISH 05 Gold 42 Gold + Tin 3.5mm Board Mount Jackscrews only

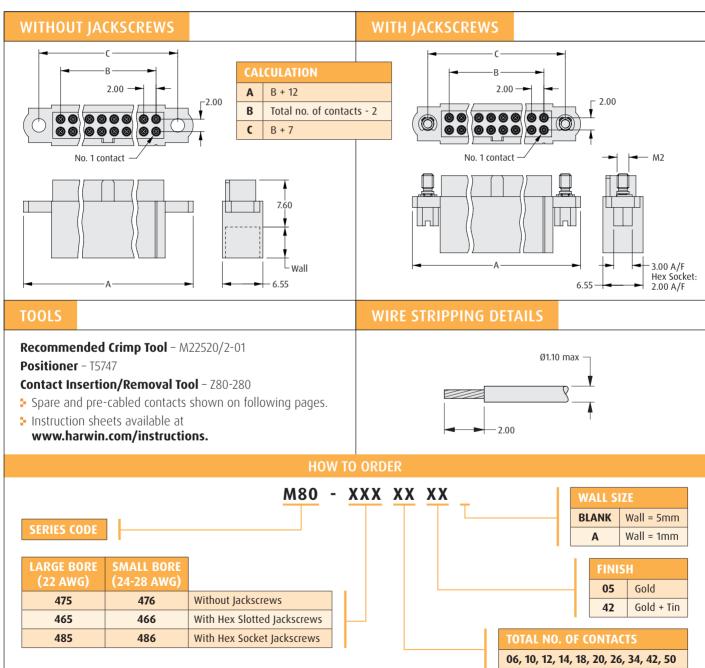
M80 - 4 X1 XX XX FX **SERIES CODE TYPE C1** Small Bore (24-28 AWG) **D1** Large Bore (22 AWG) Extra Small Bore (28-32 AWG) TOTAL NO. OF CONTACTS 04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50 **FINISH** Gold 05 Gold + Tin 3.5mm Board Mount 5mm Board Mount



#### Female Crimp Kit - Extended Wall

- **▶** Extended Wall Datamate allows back potting to be performed.
- Polarized housings
- Crimp contacts are rear insertable
- Large bore 22 AWG, small bore 24 28 AWG.
- Part numbers are for a housing and the equivalent number of contacts



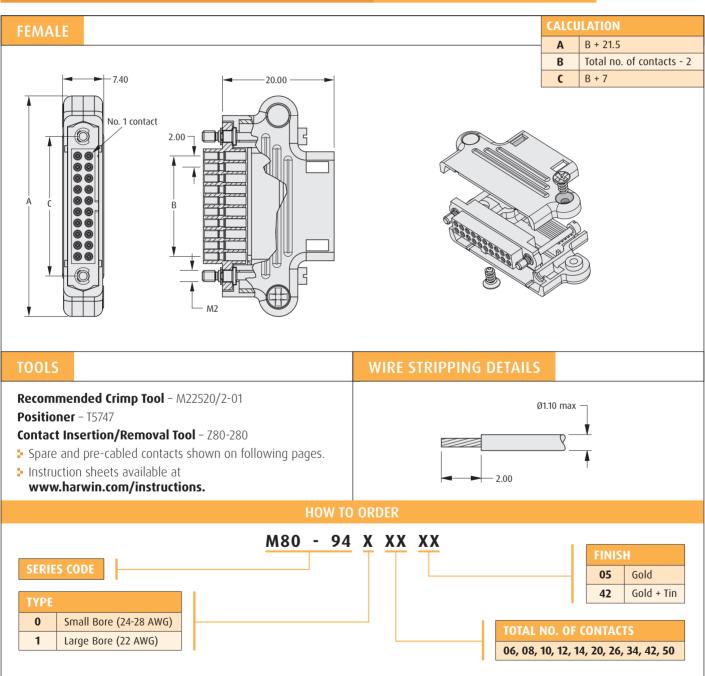




#### Female Crimp Kit with Hood

- Supplied as a complete kit: jackscrews assembled to housing hood, contacts and assembly screws supplied loose.
- Provides strain relief by preventing cable bending at the rear of the connector, and also has the option of inserting a cable tie to reduce pull strain.



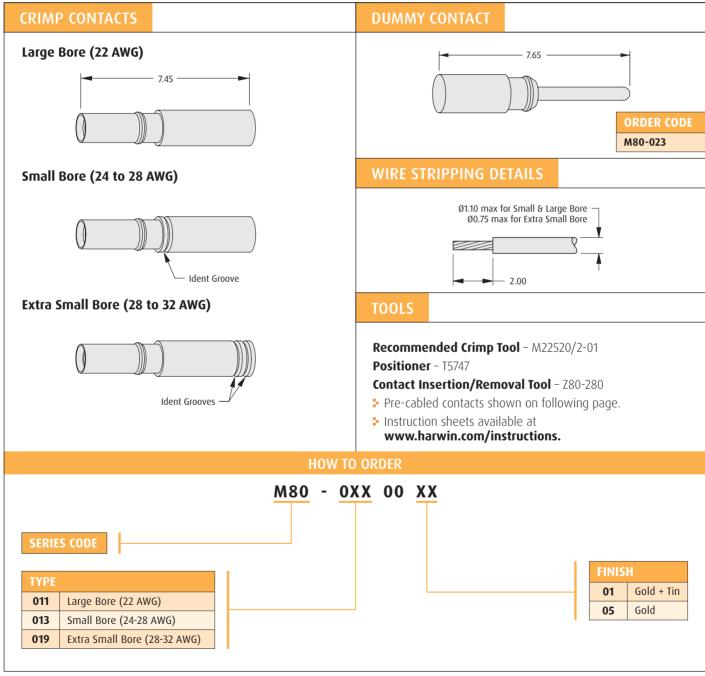




#### **Spare Female Crimp Contacts**

**▶** Barrel Crimp Contacts are supplied with the connectors - see previous page. Use the order code for extra spare crimps.

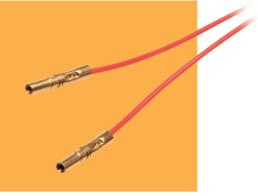


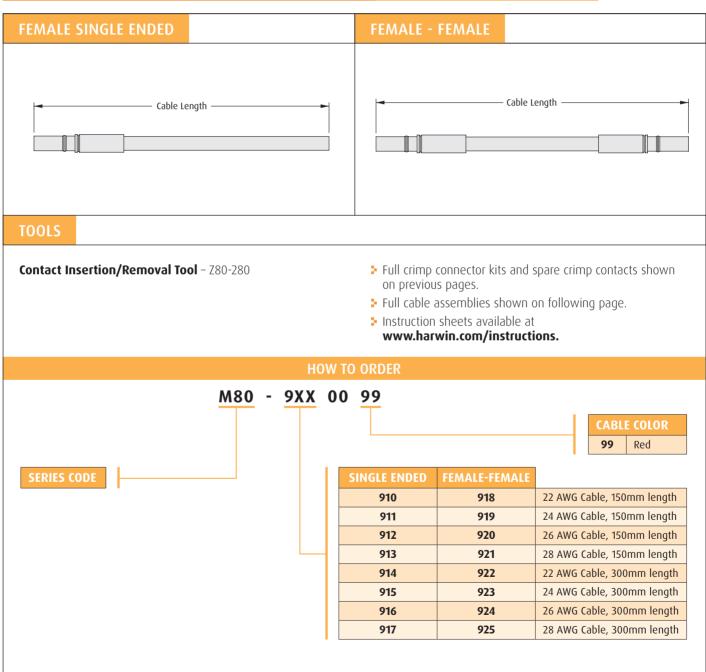




#### Female Crimp Contacts - Pre-Crimped Wires

- Female crimp contacts pre-assembled with a choice of BS 3G 210 Type A cable at selected lengths.
- PTFE-insulated, multi-strand silver-plated copper conductor equipment wire.
- Ideal for prototype and pre-production applications.



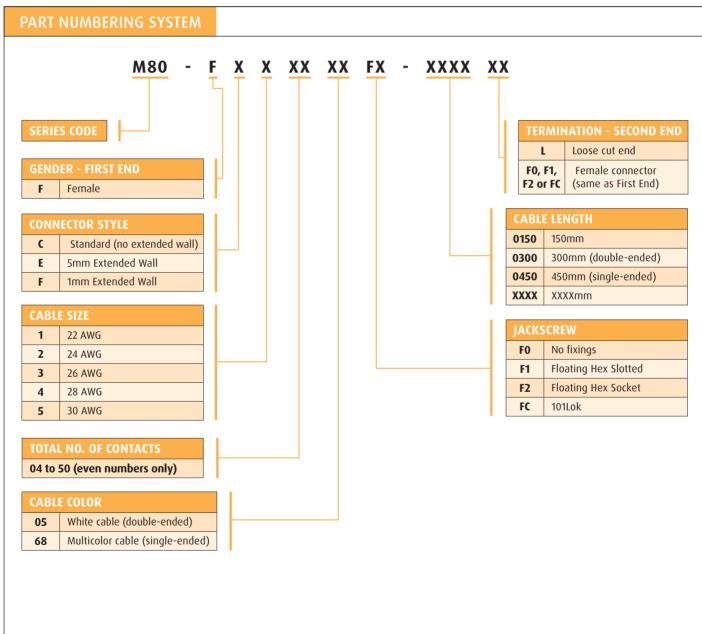




#### **Female Cable Assemblies**

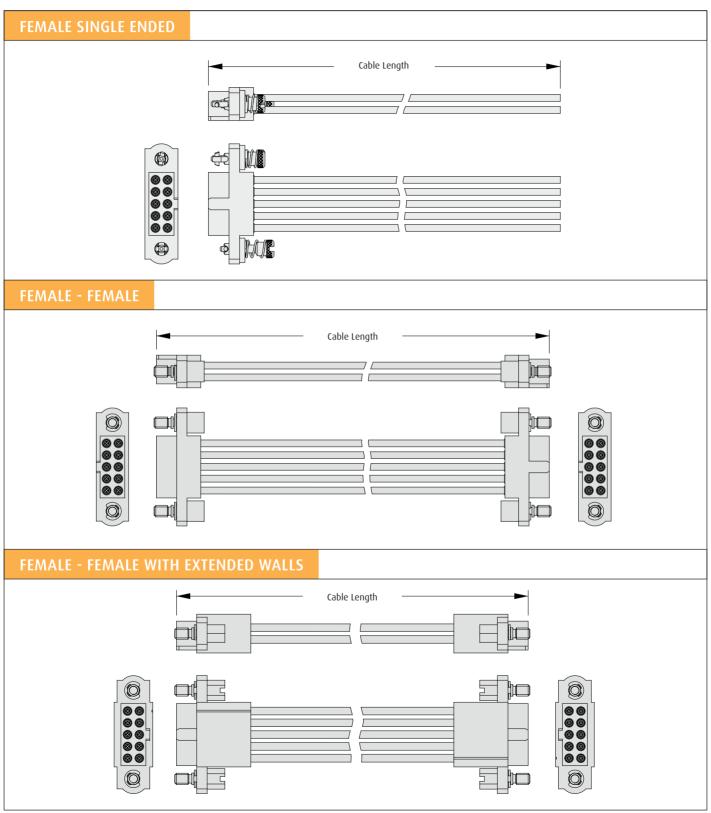
- Ready-made cable assemblies, fully tested and inspected
- Extended wall connectors are backnotted for additional strain reli
- Stainless steel jackscrews to mate with applicable male connector
- Constructed with Contact 1 to Contact 1, Contact 2 to Contact 2, etc.
- **▶** For multicolor sequence, check applicable Technical Drawing.







- Examples of available cable assembly options see previous page for part numbering.
- Cable assemblies are constructed with Contact 1 to Contact 1, Contact 2 to Contact 2, etc.





#### Female Crimp T-Contact

- ♣ Advanced single-piece contact design using Beryllium Copper
- ▶ Improved mating durability to 1,000 operations.
- **▶** Suitable for use with 22AWG cable, Ø1.1mm maximum insulation diameter.
- Compatible cable housings showing on the following pages -



# **CRIMP CONTACTS** Large Bore (22 AWG) 6.95 **WIRE STRIPPING DETAILS TOOLS Recommended Crimp Tool** - M22520/2-01 Ø1.10 max Positioner - Z80-444 Contact insertion/Removal Tool - Z80-280 > Instruction sheets available at www.harwin.com/instructions. M80 206 05 Gold

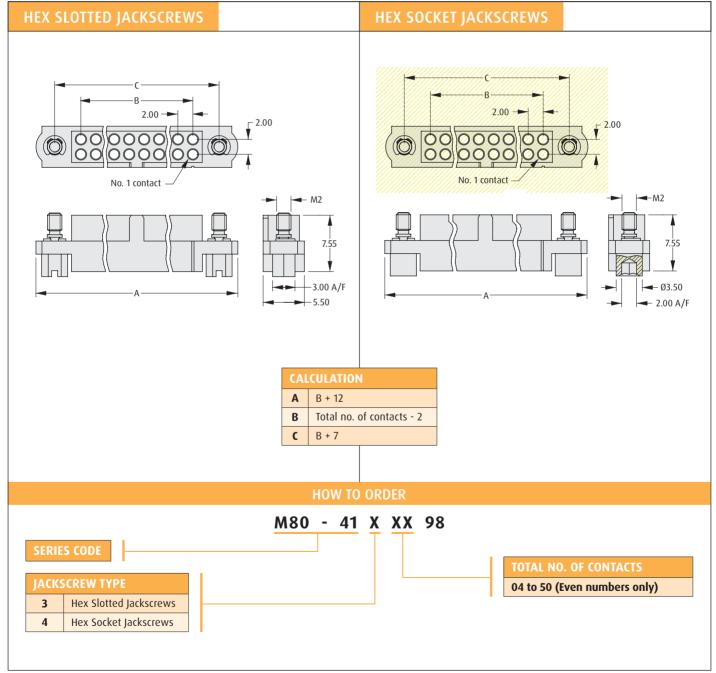
Patent Pending All dimensions in mm.



#### **Female Crimp Housing**

- ➤ Compatible with all female signal barrel crimp contacts, including T-Contact shown on previous page.
- Use insertion tool to insert crimped contacts into rear of connector housing: order code Z80-280.
- Connectors mate with Datamate J-Tek male connectors with applicable jackscrews.
- Jackscrews are supplied already assembled to housing



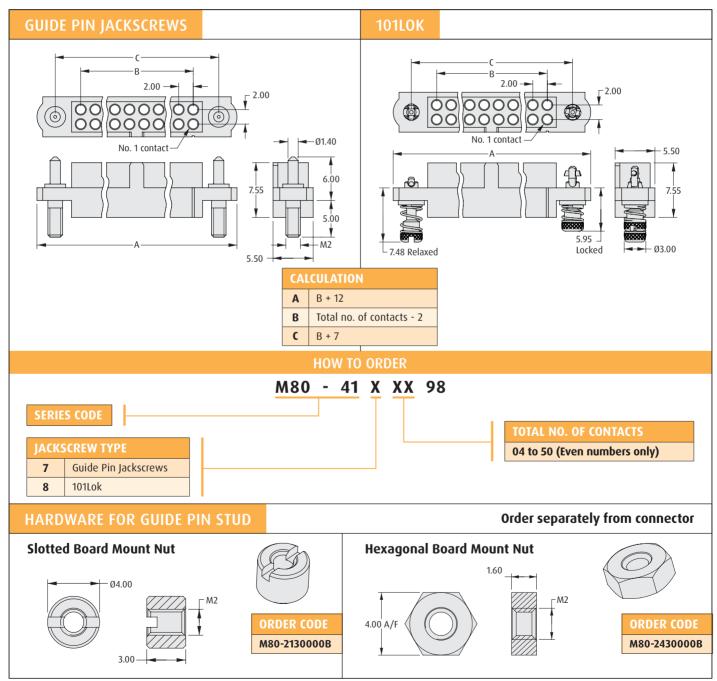




#### Female Crimp Housing - Guide Pin, 101Lok

- ➤ Compatible with all female signal barrel crimp contacts, including T-Contact shown on previous page.
- **▶** Guide pin style includes board mount fixing.
- ▶ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- Connectors mate with Datamate J-Tek male connectors with applicable jackscrews or 101Lok fxings.



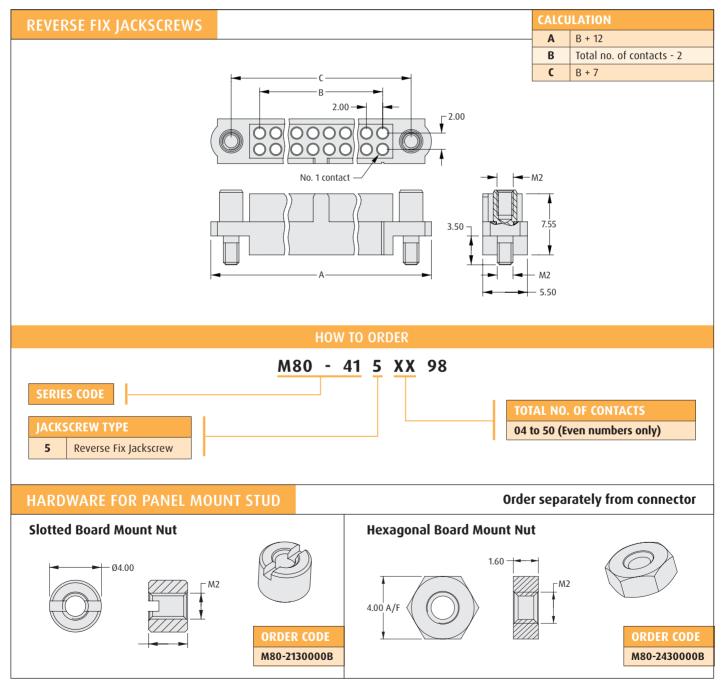




#### Female Crimp Housing - Reverse Fix

- ➤ Compatible with all female signal barrel crimp contacts, including T-Contact shown on previous page.
- Use insertion tool to insert crimped contacts into rear of connector housing: order code Z80-280.
- Jackscrews are supplied already assembled to housing
- ➤ Connectors mate with Datamate J-Tek male connectors with compatible Reverse Fix jackscrews.



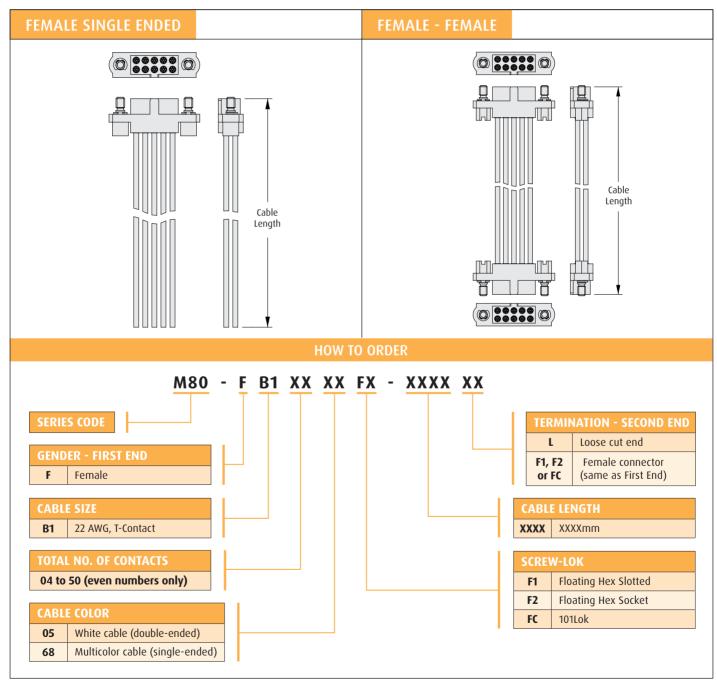




#### Female Cable Assemblies - T-Contact

- Ready-made cable assemblies, fully tested and inspected.
- 6-finger Beryllium Copper T-Contacts, up to 8.5A per contact.
- Stainless steel jackscrews to mate with applicable male connector.
- Constructed with Contact 1 to Contact 1, Contact A to Contact A, etc.
- For multicolor sequence, check applicable Technical Drawing.



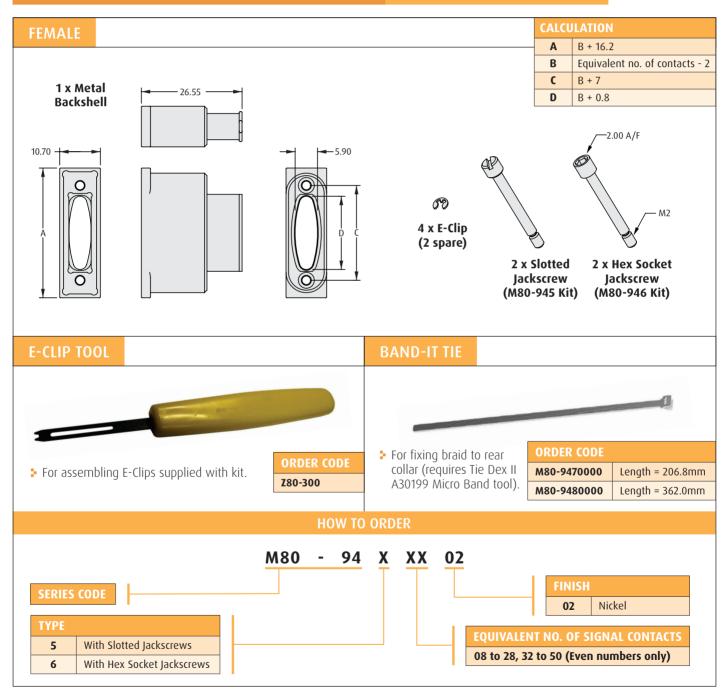




#### Female Metal Backshell

- Supplied as an accessory kit, including metal backshell, e-clips and the applicable jackscrews.
- ➤ To be used with the appropriate size of Female Crimp Kit without jackscrews.
- Gives 360 degree shielding when used with conductive braid and mated to a compatible male connector with metal backshell.
- ► Instruction sheets available at www.harwin.com/instructions.

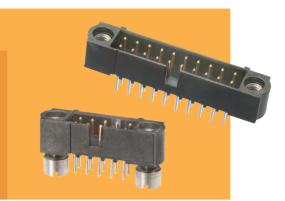


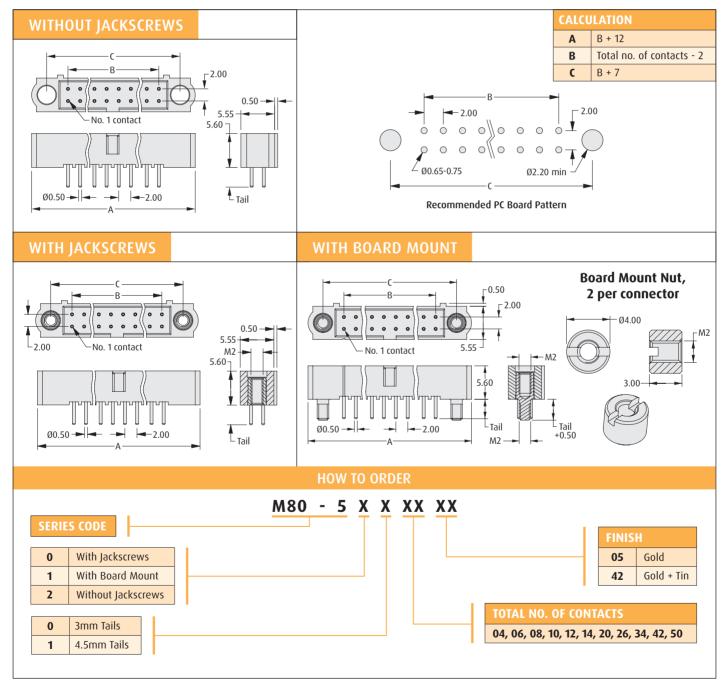




#### Male Vertical Throughboard

- Polarized housings.
- Fully shrouded contacts
- Jackscrews are assembled where specified.
- Choice of throughboard termination length.
- Board Mount provides PCB strain relief
- Mates with female Datamate J-Tek connectors with compatible jackscrews.

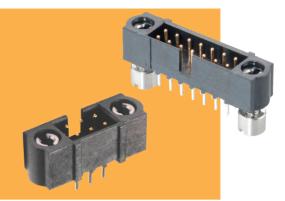


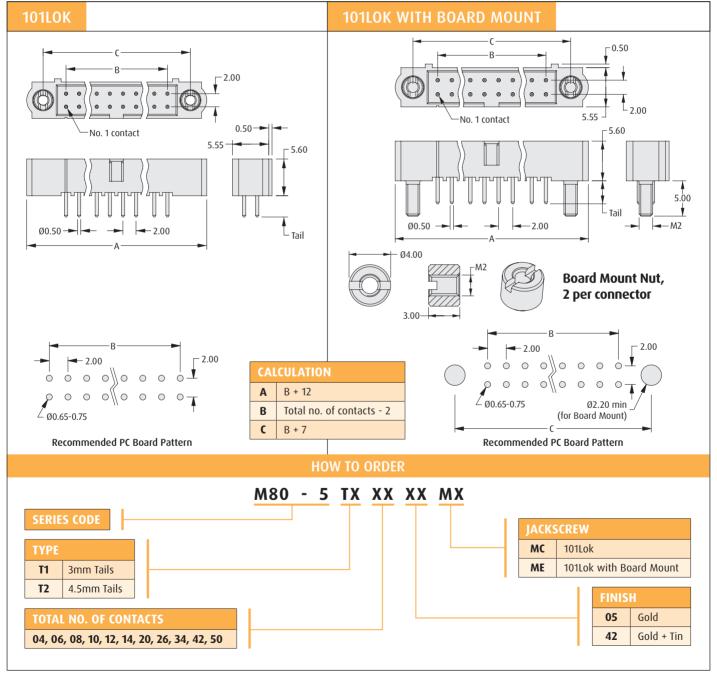




#### Male Vertical Throughboard 101Lok

- ▶ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- Connectors mate with Datamate J-Tek female connectors with applicable 101Lok fixings.
- Board Mount provides PCB strain relief
- Choice of throughboard termination length.

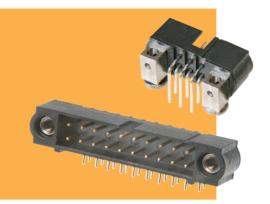


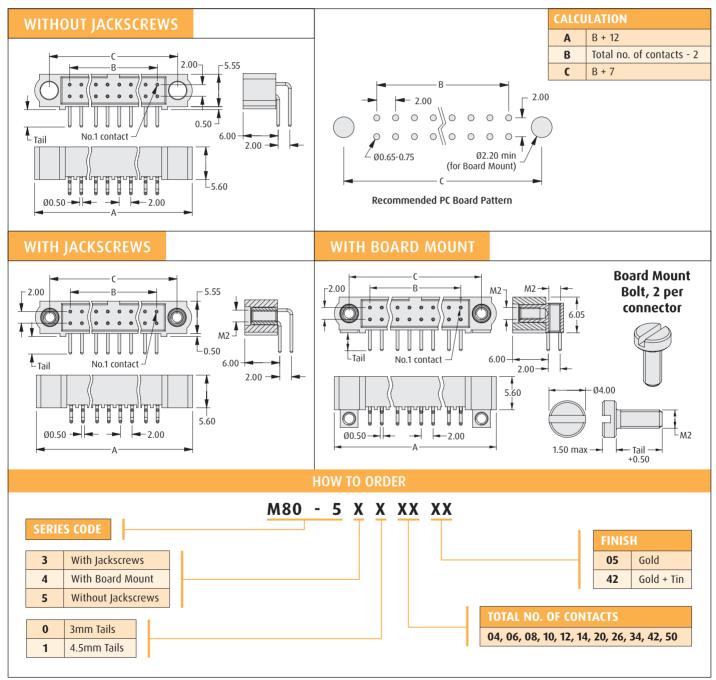




#### Male Horizontal Throughboard

- Polarized housings
- Fully shrouded contacts
- Jackscrews are assembled where specified.
- Choice of throughboard termination length.
- Board Mount provides PCB strain relief
- ★ Mates with female Datamate J-Tek connectors with compatible jackscrews.



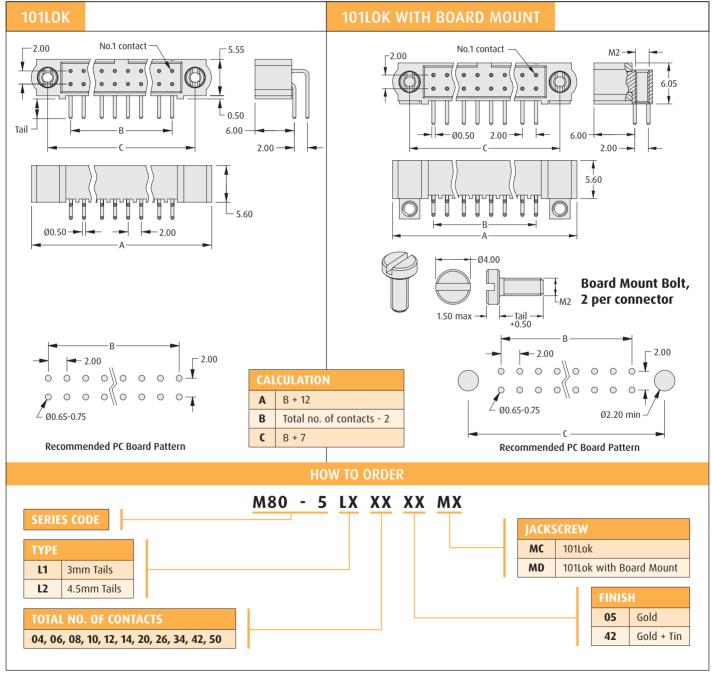




#### Male Horizontal Throughboard 101Lok

- ▶ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- Connectors mate with Datamate J-Tek female connectors with applicable 101Lok fixings.
- Board Mount provides PCB strain relief
- Choice of throughboard termination length.



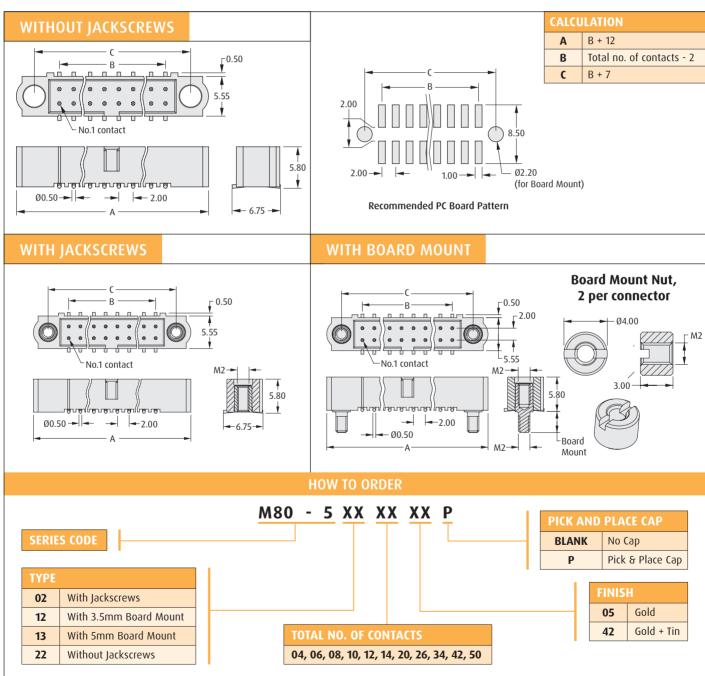




#### Male Vertical Surface Mount

- Gull wing SMT tails simplify inspection process.
- Board Mount provides PCB strain relief.
- ▶ Optional pick and place cap.
- ➤ Mates with female Datamate J-Tek connectors with compatible jackscrews.



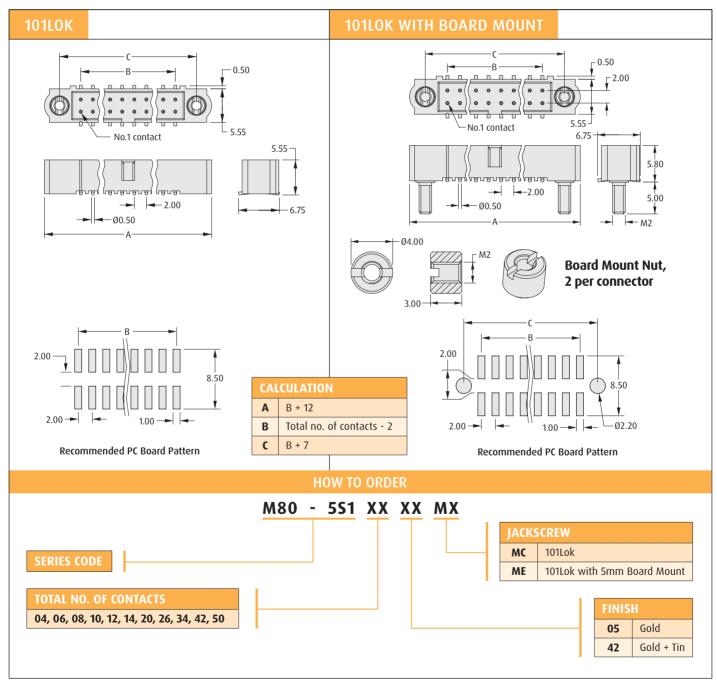




#### Male Vertical Surface Mount 101Lok

- ♣ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- Connectors mate with Datamate J-Tek female connectors with applicable 101Lok fixings.
- Board Mount provides PCB strain relief
- Gull wing SMT tails simplify inspection process.

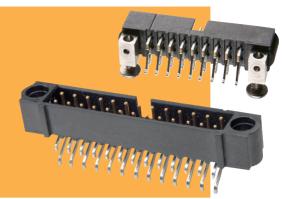


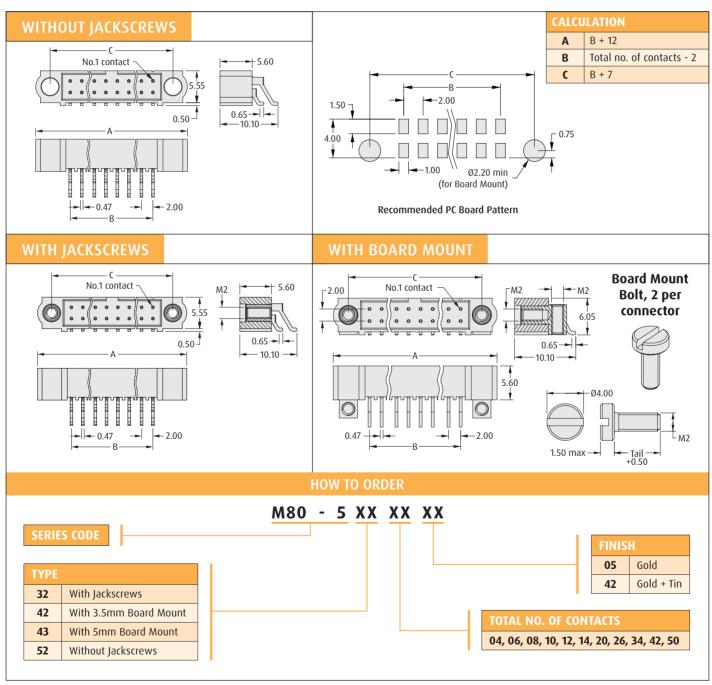




#### Male Horizontal Surface Mount

- Stamped contact ensures co-planarity.
- Board Mount provides PCB strain relief
- Mates with female Datamate J-Tek connectors with compatible jackscrews.

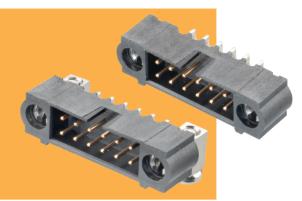


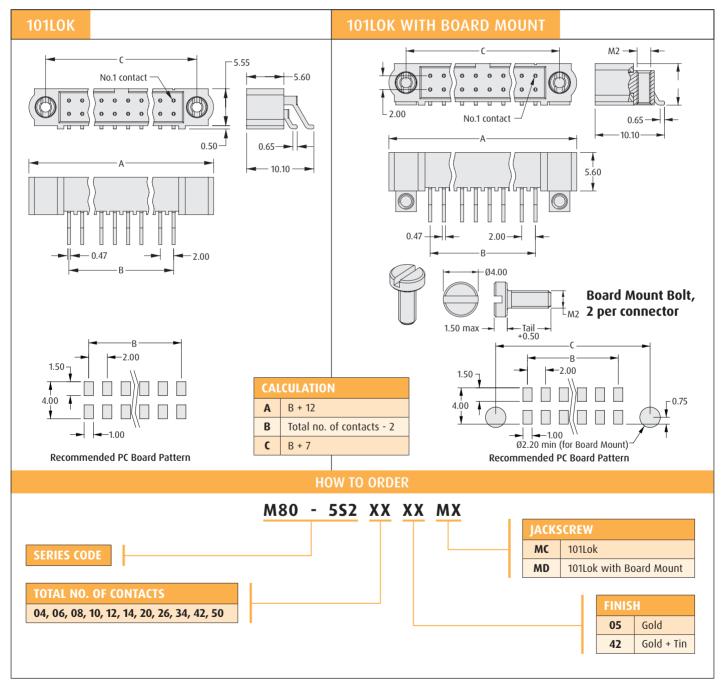




#### Male Horizontal Surface Mount 101Lok

- ♣ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- Connectors mate with Datamate J-Tek female connectors with applicable 101Lok fixings.
- Board Mount provides PCB strain relief
- Stamped contact ensures co-planarity.

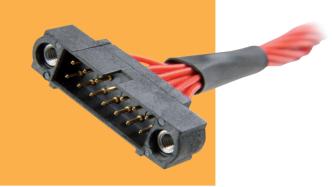


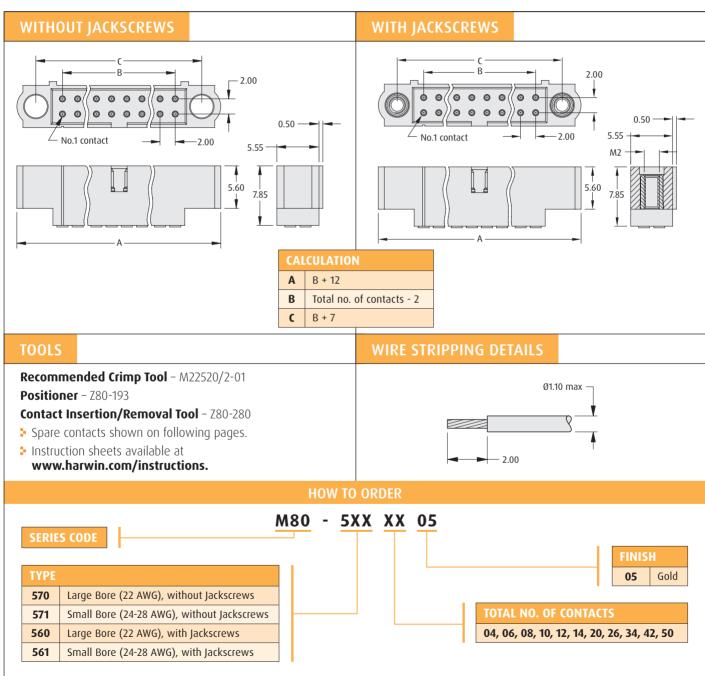




#### Male Crimp Kit

- ➤ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- **▶** Jackscrews are assembled where specified.
- Crimp contacts supplied loose.
- **▶** Crimp contacts are rear insertable and replaceable.
- Spare contacts are available.

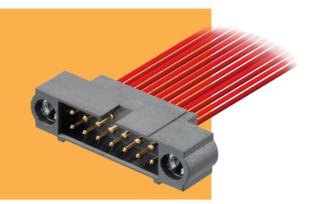


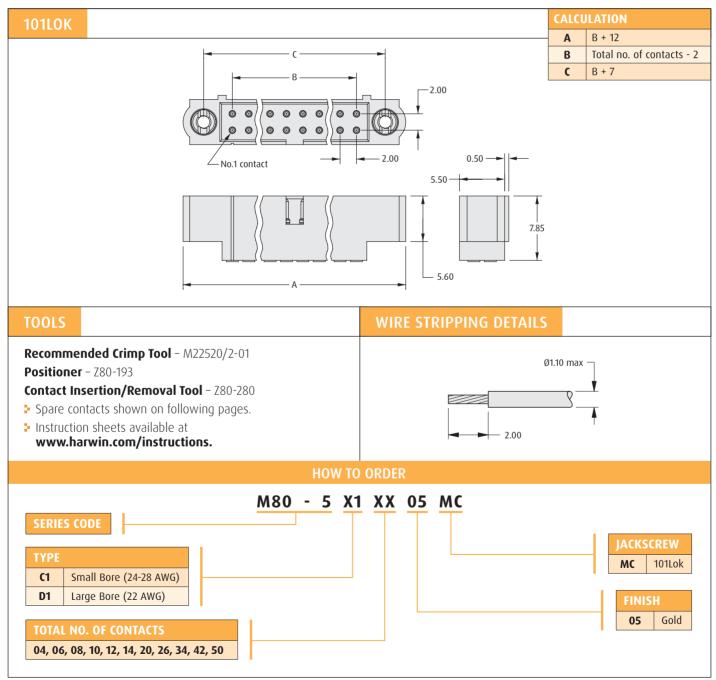




#### Male Crimp Kit 101Lok

- Part numbers are for a complete kit of a housing and the applicable number of contacts.
- 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- ➤ Connectors mate with Datamate J-Tek female connectors with applicable 101Lok fixings.
- Crimp contacts supplied loose.

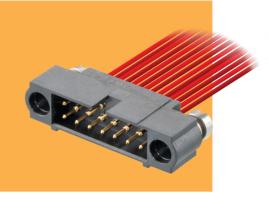


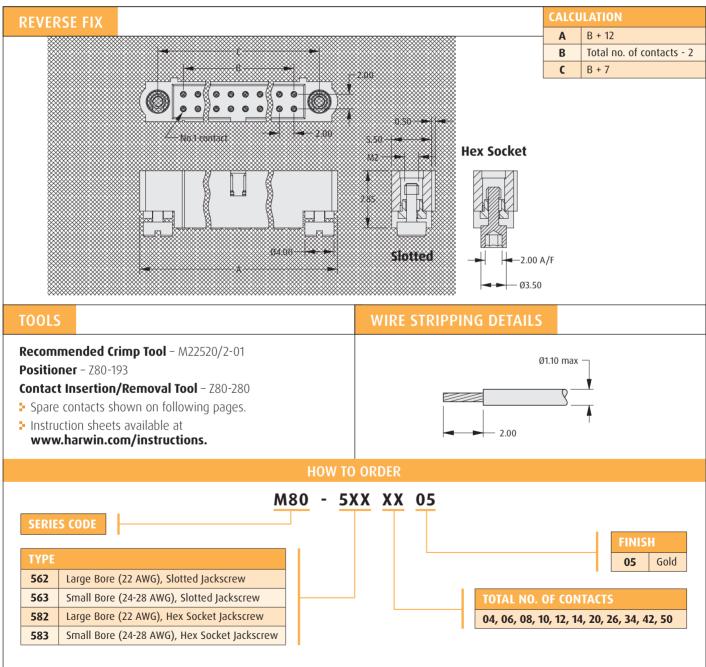




#### Male Crimp Kit Reverse Fix

- Allows for further flexibility in system design.
- Part numbers are for a complete kit of a housing and the applicable number of contacts.
- **▶** Crimp contacts are rear insertable and replaceable.
- ★ Mates with female Datamate J-Tek connectors with compatible Reverse Fix jackscrews.

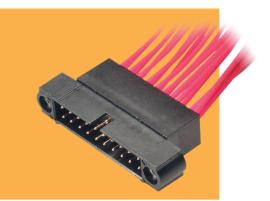


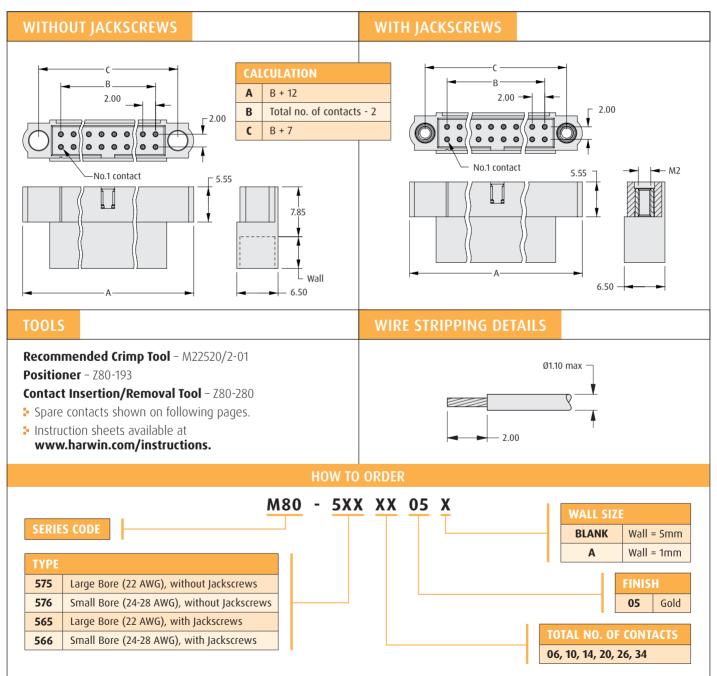




#### Male Crimp Kit Extended Wall

- Extended Wall Datamate allows back potting to be performed.
- Fully shrouded contacts.
- Large Bore 22 AWG, Small Bore 24 28 AWG.
- ➤ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- **▶** Crimp contacts are rear insertable and replaceable.
- Crimp contacts supplied loose.



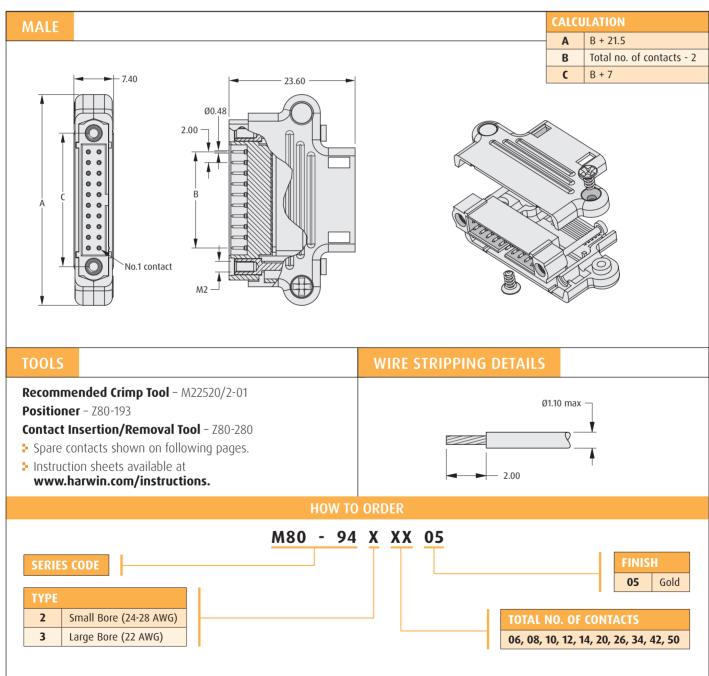




#### Male Crimp with Hood

- Supplied as a complete kit: jackscrews assembled to housing; hood, contacts and assembly screws supplied loose.
- Provides strain relief by preventing cable bending at the rear of the connector, and also the option of inserting a cable tie to reduce pull strain.



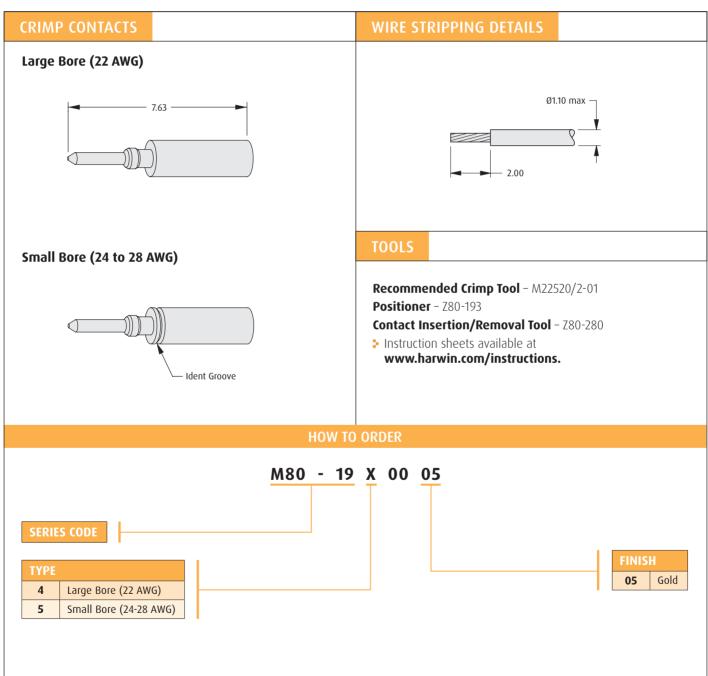




## **Spare Male Crimp Contacts**

**▶** Barrel Crimp Contacts are supplied with the connectors - see previous page. Use the order code for extra spare crimps.

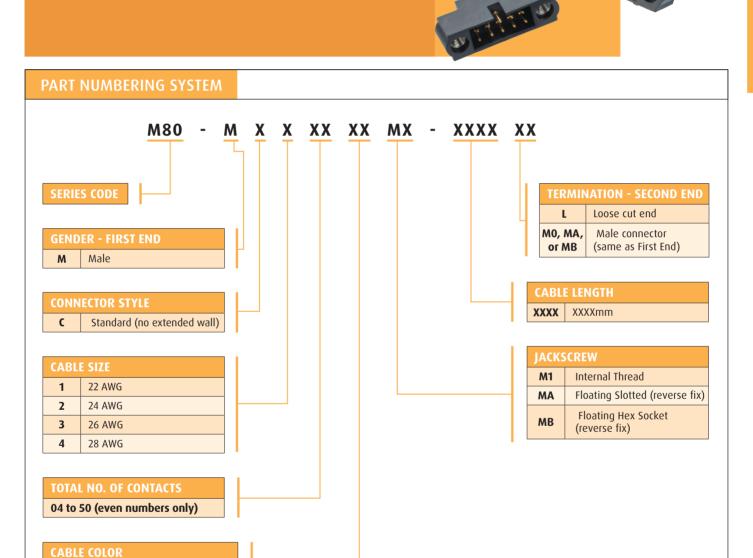






#### Male Cable Assemblies

- Ready-made cable assemblies, fully tested and inspected
- Stainless steel jackscrews to mate with applicable male connector.
- Constructed with Contact 1 to Contact 1. Contact 2 to Contact 2, etc.
- For multicolor sequence, check applicable Technical Drawing.



All dimensions in mm.

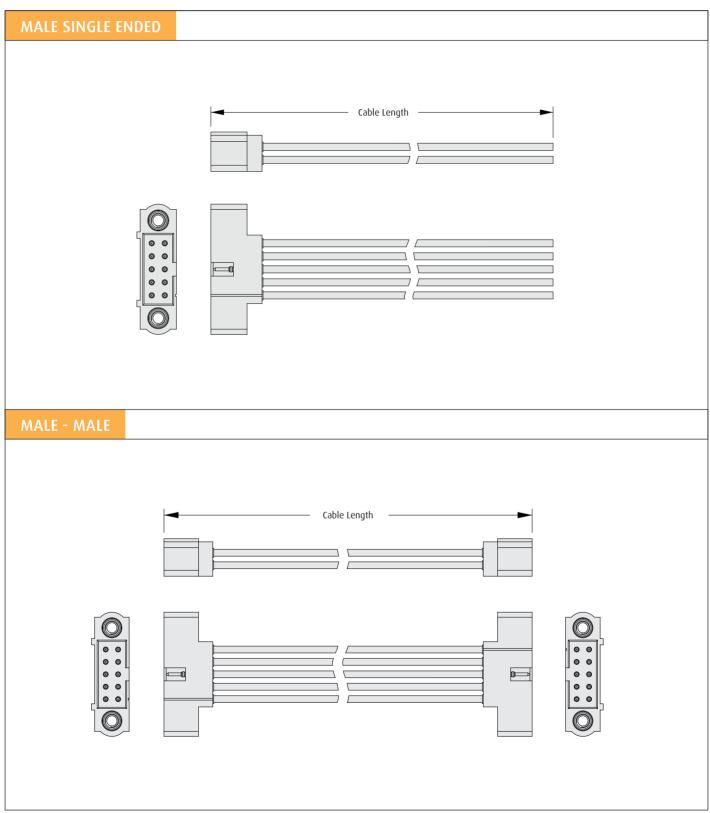
68



White cable (double-ended)

Multicolor cable (single-ended)

- Examples of available cable assembly options see previous page for part numbering.
- Cable assemblies are constructed with Cotnact 1 to Contact 1, Contact 2 to Contact 2, etc.

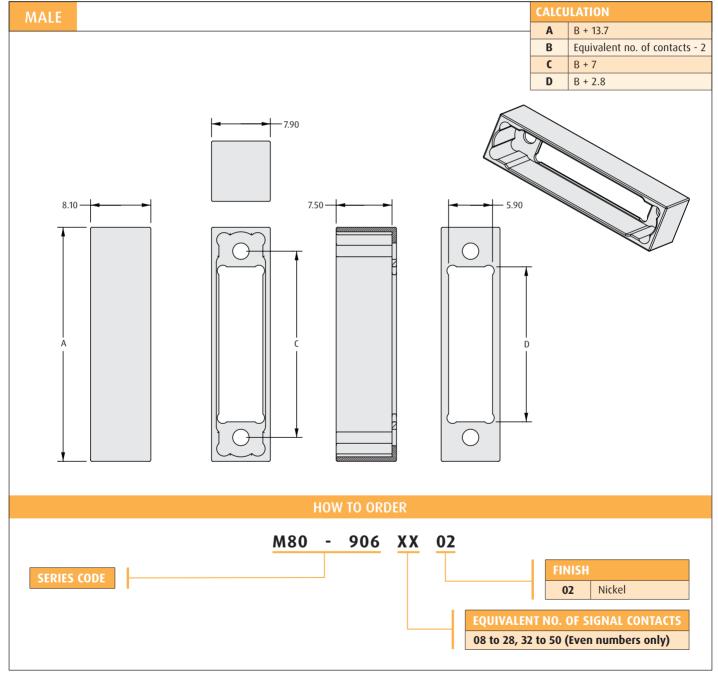




#### Male Metal Backshell

- Supplied as an accessory, to be used with existing male connectors.
- Can be fitted to either male vertical PCB connectors with board mount, or male cable connectors with panel mount iackscrews.
- Gives 360 degree shielding when mounted to a conductive panel and mated to a compatible female connector with metal backshell.



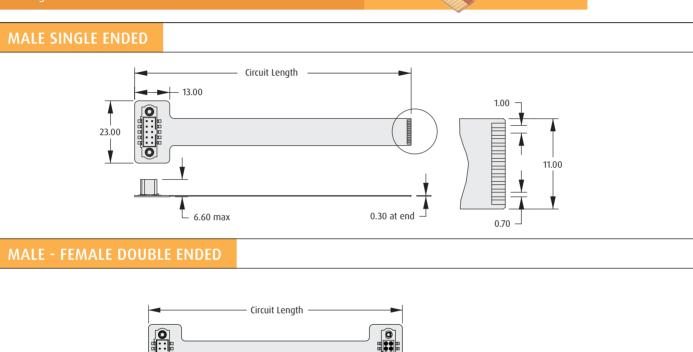


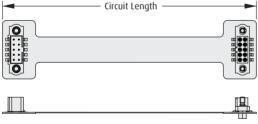


#### Flexible Circuit Assemblies

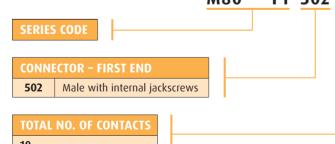
- Surface mount connectors with jackscrews, assembled to flexible printed circuit for an alternative to cable connection.
- Improved bend radius and lower mated height than equivalent cable assemblies.
- The free end of the single-ended assembly is compatible with 1mm pitch FPC connectors.
- Contact Harwin for alternative connector sizes and cable lengths.







# M80 - F1 502 10 - 100 - XXX



ļ	CONTILL	JECOND E	
ı	CONNEC	TOR - SECOND E	ND

402 Female with Hex Slotted Jackscrews

CIRCUIT LENGTH

**100** 100mm



# Datamate J-Tek 3-Row Specification

Glass-filled thermoplastic UL94V-0 Housings: Female contacts:

Brass shell, with Beryllium Copper

inner contact

Male contacts: Phosphor bronze

Finish: Gold

#### > Electrical

Individual contacts in isolation: 3.3A max (at 25°C)

2.6A max (at 85°C)

All contacts simultaneously: 3.0A max (at 25°C)

2.2A max (at 85°C)

Working voltage

At sea level 1013 mbar: 800V DC or ACrms

Voltage proof

At sea level 1013 mbar: 1,200V DC or ACrms

Contact resistance

Initial: 20mΩ max After conditioning: 25mΩ max

Insulation resistance

 $1000M\Omega$  min Initial: After conditioning: 100M0 min

#### : Mechanical

**Durability:** 500 operations

Insertion force (max): 1.0N Withdrawal force (min): 0.2N

Signal crimp accommodation: 22 AWG to 28 AWG

> BS 3G 210 Type A or MIL-DTL-16878/6 Type ET

#### **★ Environmental**

Environmental classification: 55/125/56 days at 95% RH

Operational temperature: -55°C to +125°C

\*Vibration sensitivity: 10Hz to 2000Hz, 0.75mm, 98m/s<sup>2</sup>

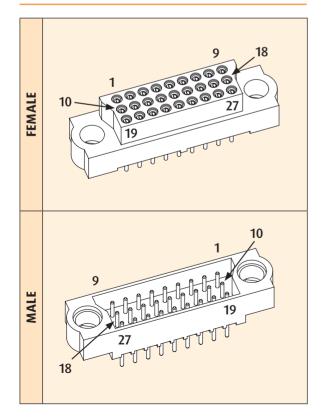
(10G), duration 6h

\*Bump severity: 390m/s<sup>2</sup> (40G), 4000 ±10 bumps

981m/s<sup>2</sup> (100G) for 6ms \*Shock severity:

\*Acceleration severity: 490m/s<sup>2</sup> (50G)

# Pin Numbering



#### All dimensions in mm.

# **Mating Profiles**

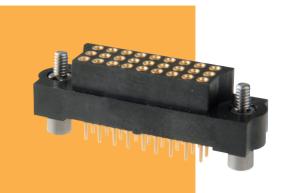
		FEMALE	
		VERTICAL THROUGHBOARD	CRIMP
MALE	VERTICAL THROUGH- BOARD	10.65	12.95 max
W	HORIZONTAL THROUGH- BOARD	15.85	18.15 max

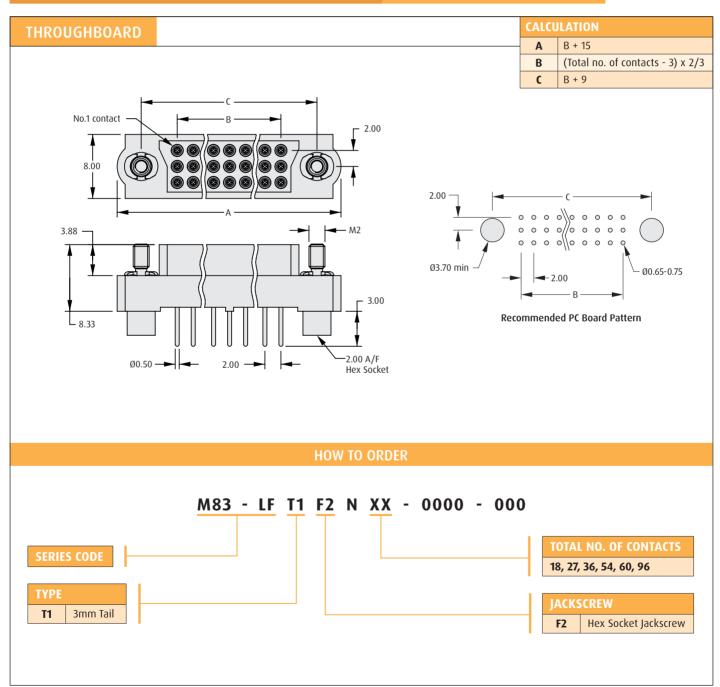


<sup>\*</sup> Tested with connectors with Jackscrews.

#### Female Vertical Throughboard

- Low-force 4-finger Beryllium Copper contact clip.
- Fully shrouded contacts
- Polarized housings.
- **▶** All contacts are gold finish for full RoHS compliance.
- Mates with all Datamate 3-Row male connectors with compatible jackscrews.

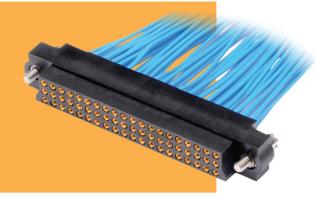


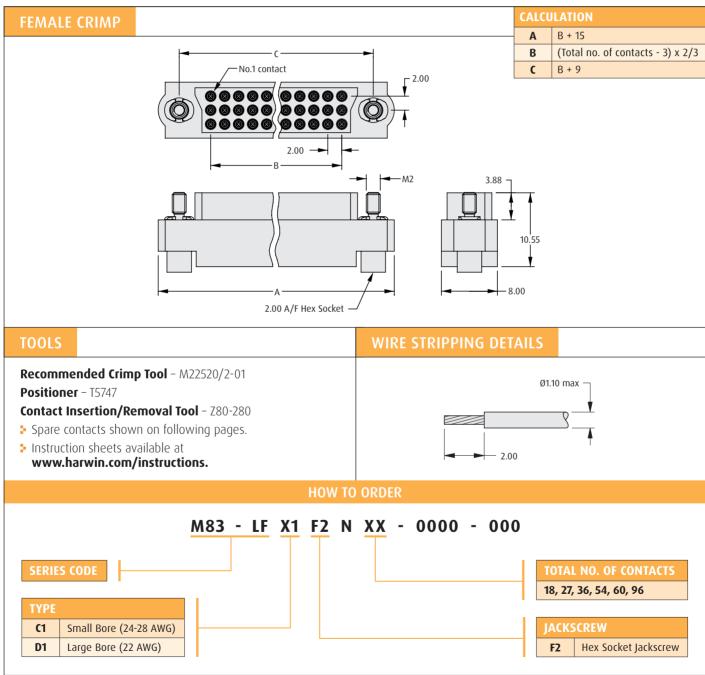




#### Female Crimp Kit

- ➤ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- Jackscrews are assembled where specified.
- **Crimp** contacts are rear insertable.
- Low-force 4-finger Beryllium Copper contact clip
- ♣ Spare contacts are available



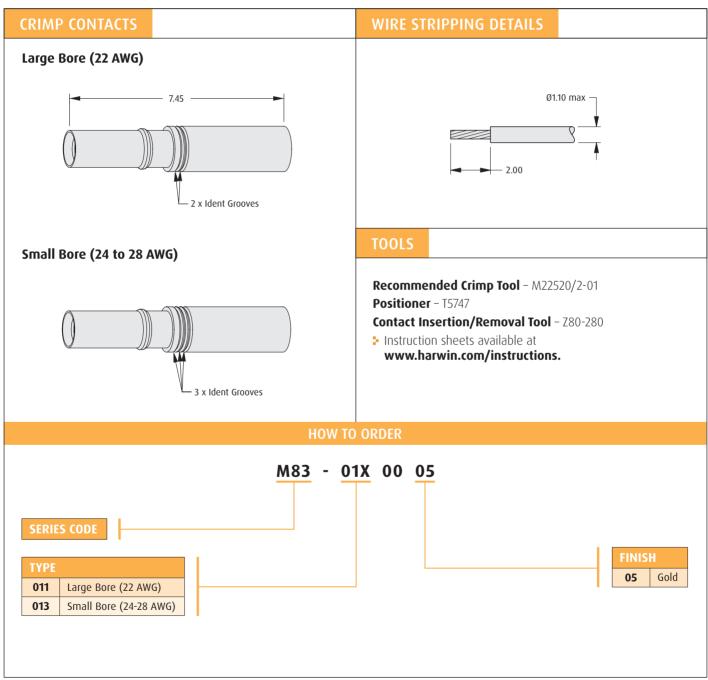




## **Spare Female Crimp Contacts**

**▶** Barrel Crimp Contacts are supplied with the connectors - see previous page. Use the order code for extra spare crimps.



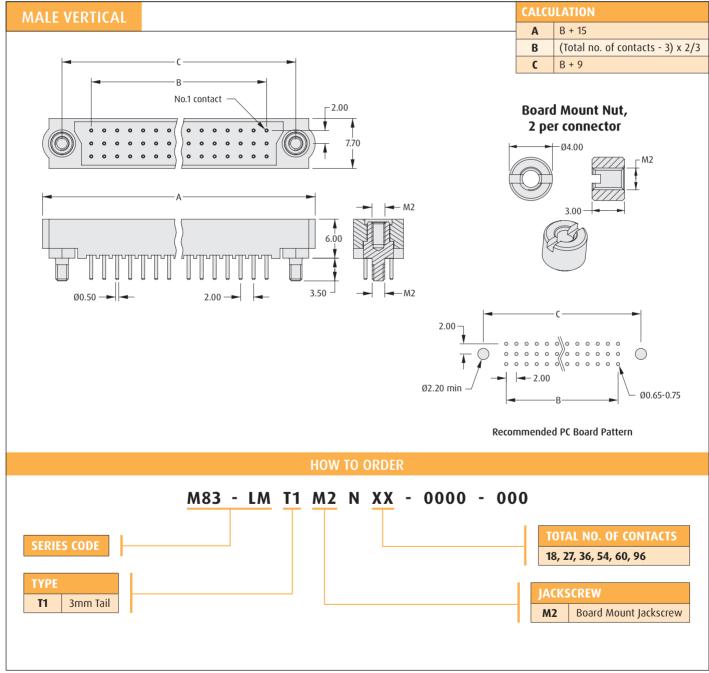




### Male Vertical Throughboard

- ➤ Board Mount nuts to be tightened to a maximum torque of 23cmN.
- Fully shrouded contacts.
- Polarized housings.
- **♣** All contacts are gold finish for full RoHS compliance.
- ➤ Mates with all Datamate 3-Row female connectors with compatible jackscrews.

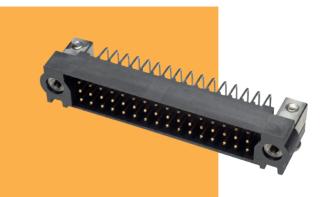


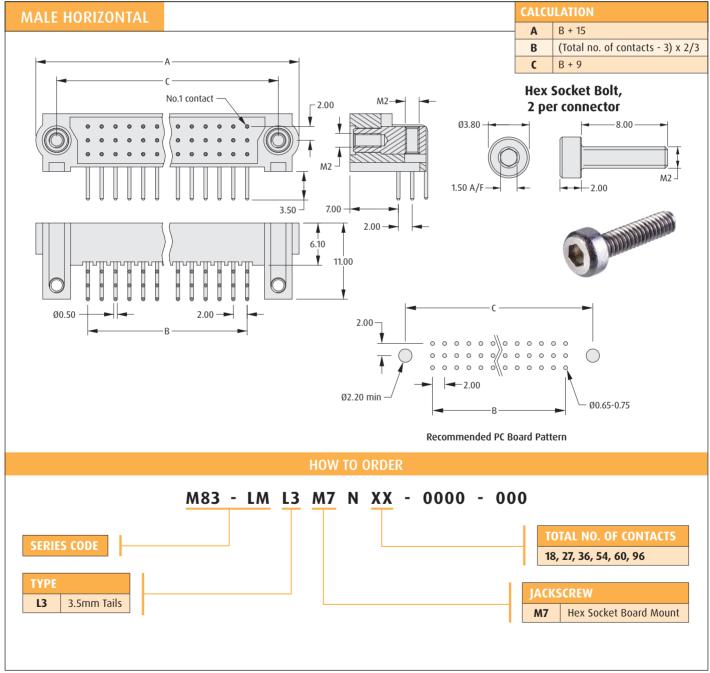




#### Male Horizontal Throughboard

- Board Mount jackscrews provide PCB strain relief. Hex socked bolts are included, and are supplied loose - tighten to a maximum torque of 23cmN.
- Suitable for motherboard/daughterboard configurations.
- Fully shrouded contacts, polarized housings
- ▶ All contacts are gold finish for full RoHS compliance.
- Mates with all Datamate 3-Row female connectors with compatible standard gender jackscrews.







# **Datamate L-Tek Specification**

Glass-filled thermoplastic UL94V-0 Housings: Female contacts:

Brass shell, with Beryllium Copper

inner contact

Male contacts: Copper alloy

Finish: See individual pages

#### > Electrical

Individual contacts in isolation: 3.3A max (at 25°C)

2.6A max (at 85°C)

All contacts simultaneously: 3.0A max (at 25°C)

2.2A max (at 85°C)

Working voltage

At sea level 1013 mbar: 800V DC or ACrms

Voltage proof

At sea level 1013 mbar: 1,200V DC or ACrms

Contact resistance

Initial: 20mΩ max After conditioning: 25mΩ max

Insulation resistance

Initial:

1,000MΩ min After conditioning: 100MΩ min

Durability: 500 operations

Insertion force (max): 2.8N Withdrawal force (min): 0.2N

Signal crimp accommodation: 22 AWG to 32 AWG

BS 3G 210 Type A, MIL-W-16878

#### Environmental

Environmental classification: 55/125/56 days at 95% RH

Operational temperature: -55°C to +125°C

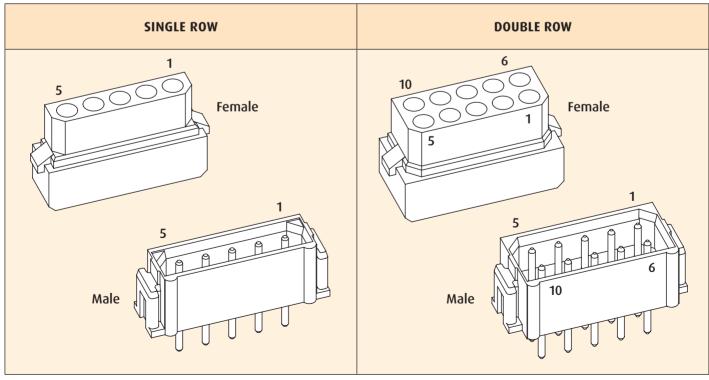
\*Vibration sensitivity: 10Hz to 2000Hz, 0.75mm, 98m/s<sup>2</sup> (10G), duration 6h

\*Bump severity: 390m/s<sup>2</sup> (40G), 4000 ±10 bumps

\*Shock severity: 981m/s<sup>2</sup> (100G) for 6ms

\*Acceleration severity: 490m/s<sup>2</sup> (50G)

# Pin Numbering





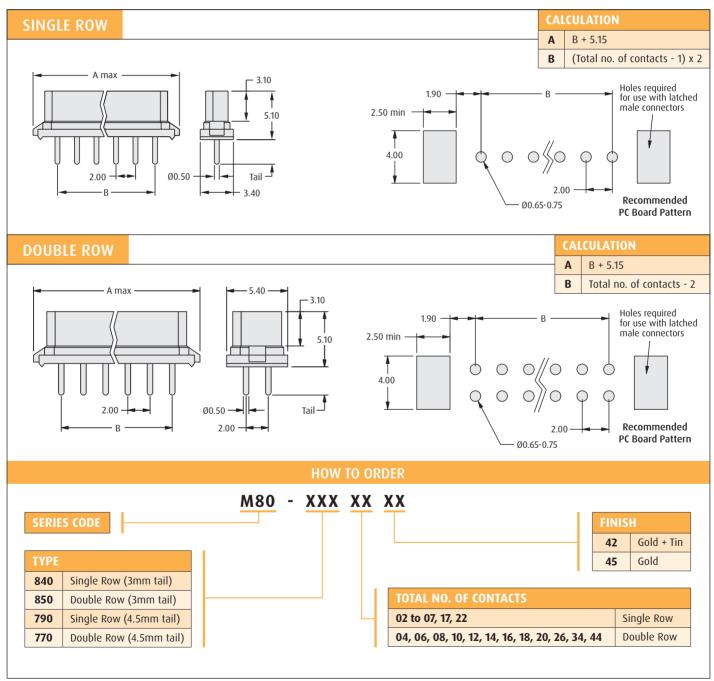
<sup>\*</sup> Tested with latched connectors.

# **Datamate L-Tek Mating Profiles**

			FEMALE			
		VERTICAL THROUGHBOARD		VERTICAL SMT	CRIMP	
		SIL	DIL	DIL	SIL	DIL
	VERTICAL THROUGHBOARDD	7.23	7.23	7.83	10.00 max	10.00 max
	HORIZONTAL THROUGHBOARD	7.98	9.98	10.58	10.85 max	12.95 max
MALE	VERTICAL SMT		7.93	8.53		10.75 max
	HORIZONTAL SMT		11.78	12.38		14.60 max
	CRIMP	10.79 max	10.79 max	11.39 max	13.30 max	13.30 max



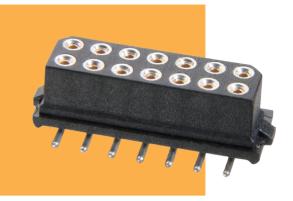
# Female Vertical Throughboard Polarized housings. Dummy contacts are available for additional polarization, use order code M80-023.

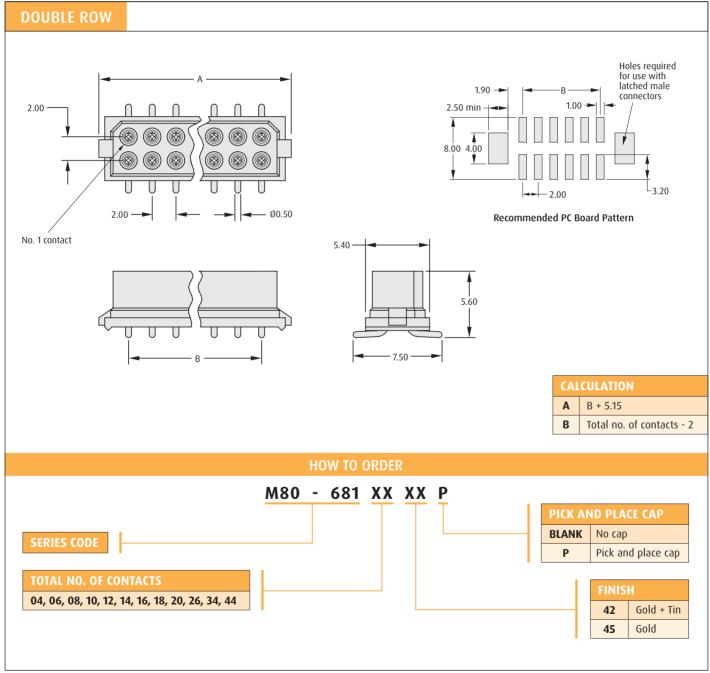




#### **Female Vertical Surface Mount**

- Optional pick and place cap.
- Gull wing SMT tails simplify inspection process



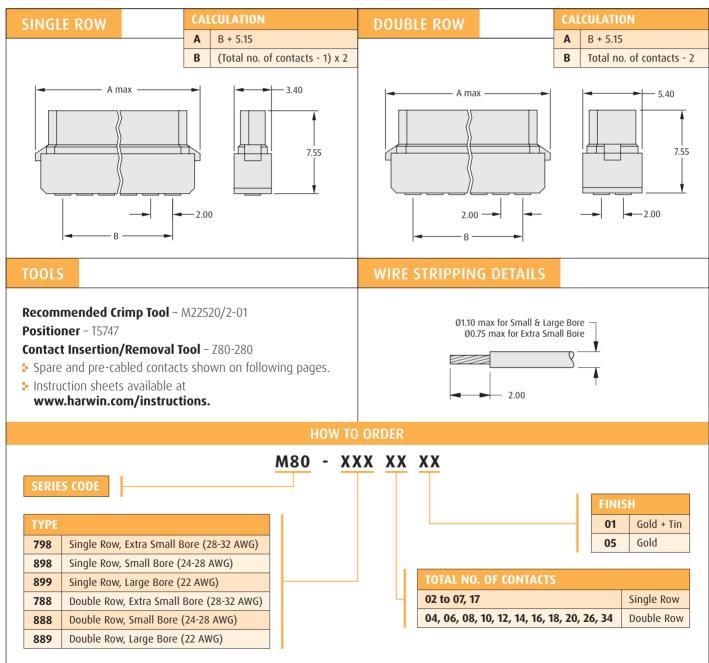




#### Female Crimp Kit

- ➤ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- Contacts are rear insertable
- Spare contacts are available see the following page.



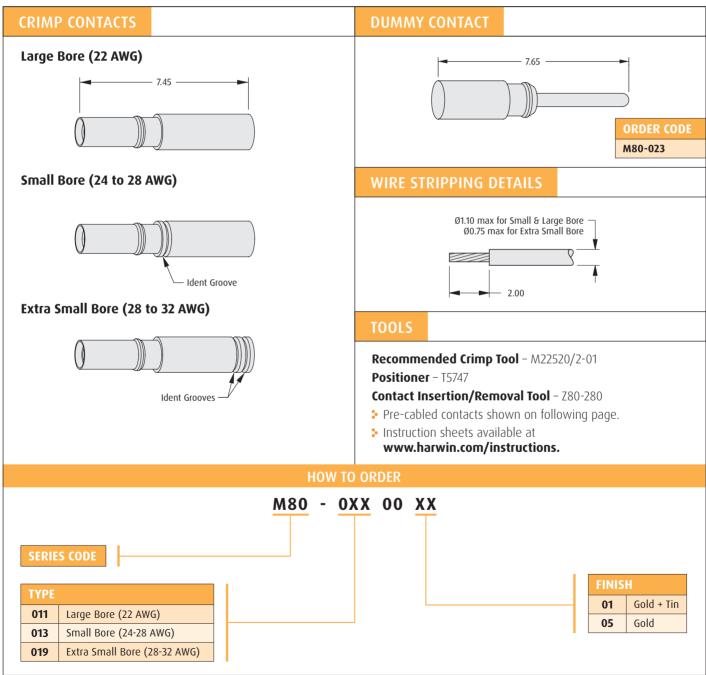




## **Spare Female Crimp Contacts**

▶ Barrel Crimp Contacts are supplied with the connectors
 - see previous page. Use the order code for extra spare crimps



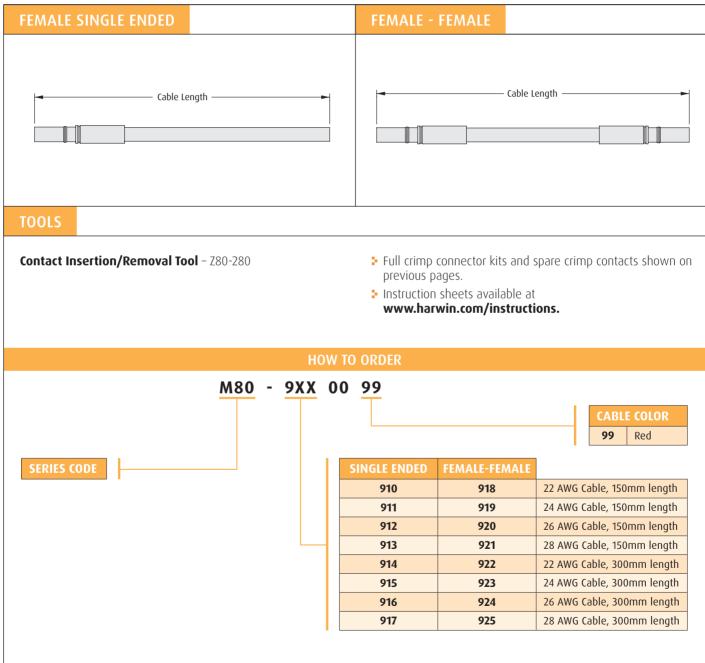




#### Female Crimp Contacts - Pre-Crimped Wires

- Female crimp contacts pre-assembled with a choice of BS 3G 210 Type A cable at selected lengths.
- PTFE-insulated, multi-strand silver-plated copper conductor equipment wire.
- ▶ Ideal for prototype and pre-production applications.



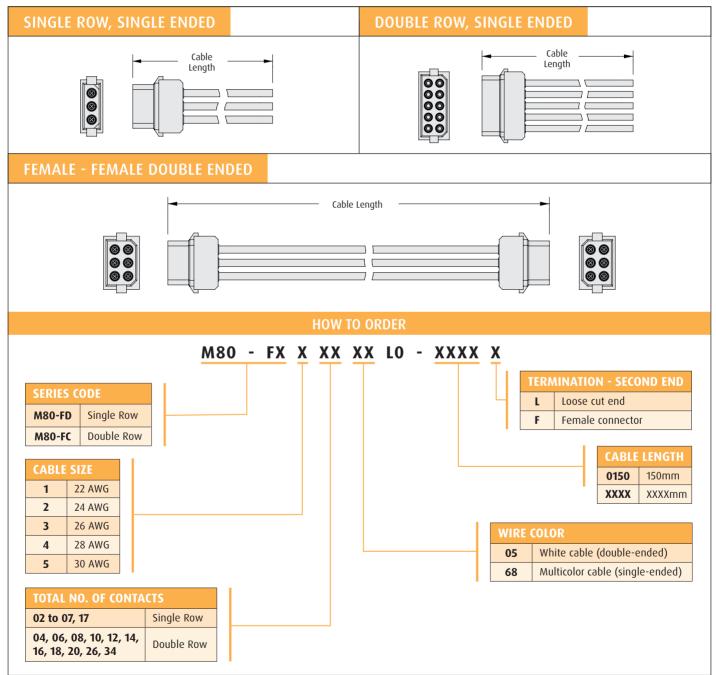




#### **Female Cable Assemblies**

- Ready-made cable assemblies, fully tested and inspected
- Constructed with Contact 1 to Contact 1, Contact 2 to Contact 2, etc.
- Double Row connectors (10 contacts and larger) compatible with plastic Hood shown on following page.
- **▶** For multicolor sequence, check applicable Technical Drawing.



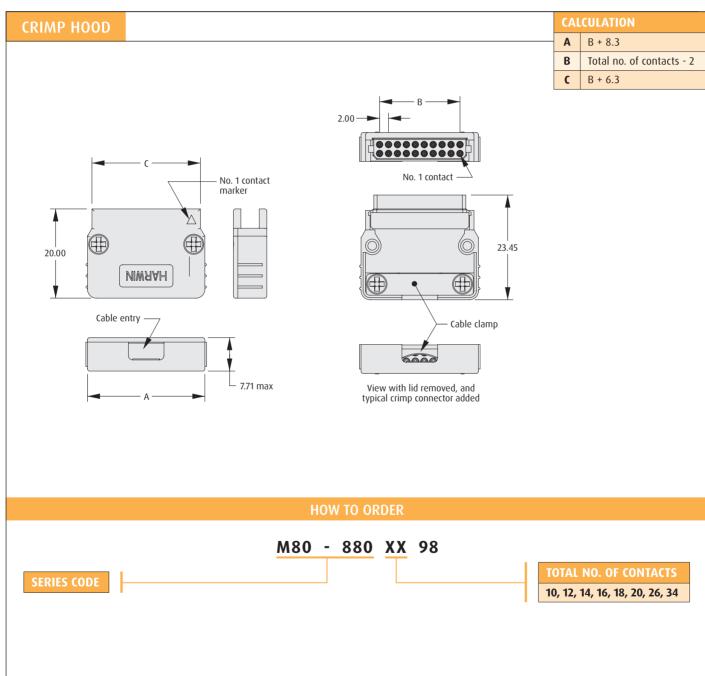




#### Female Plastic Cable Hood

- Supplied as a kit of parts, including body, lid, cable clamp and 4 screws.
- For use with double row female crimp connectors.
- Mates with unlatched male connectors

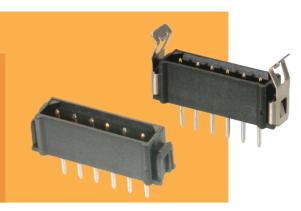


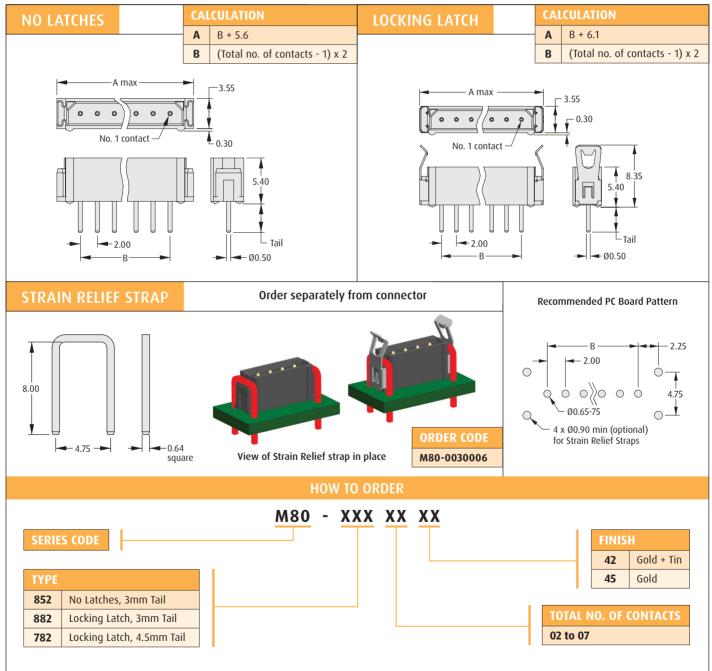




## Male Single Row Vertical Throughboard

- Polarized housings.
- Fully shrouded contacts.
- ▶ Mates with standard Datamate L-Tek female connectors.
- Can be used with optional Strain Relief straps, available to order separately: order code M80-0030006.

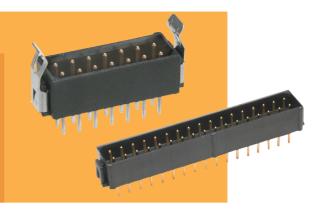


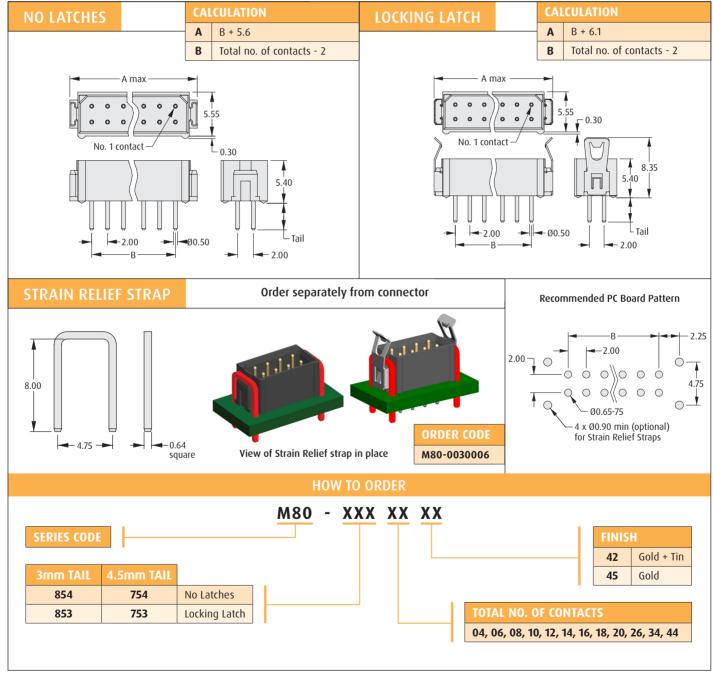




## Male Double Row Vertical Throughboard

- Polarized housings.
- ▶ Fully shrouded contacts
- ▶ Mates with standard Datamate L-Tek female connectors.
- Can be used with optional Strain Relief straps, available to order separately: order code M80-0030006.

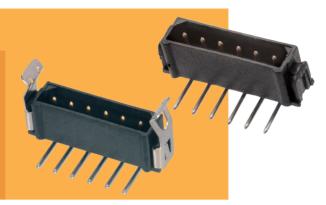


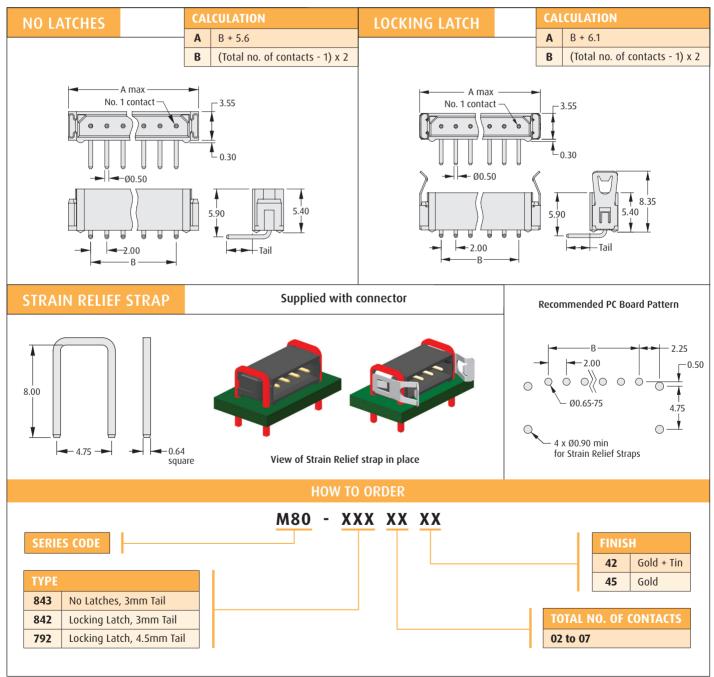




## Male Single Row Horizontal Throughboard

- Polarized housings
- Fully shrouded contacts.
- ▶ Mates with standard Datamate L-Tek female connectors.
- Supplied with two Strain Relief straps per connector; spares available under order code M80-0030006.

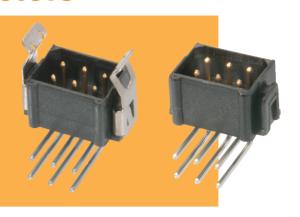


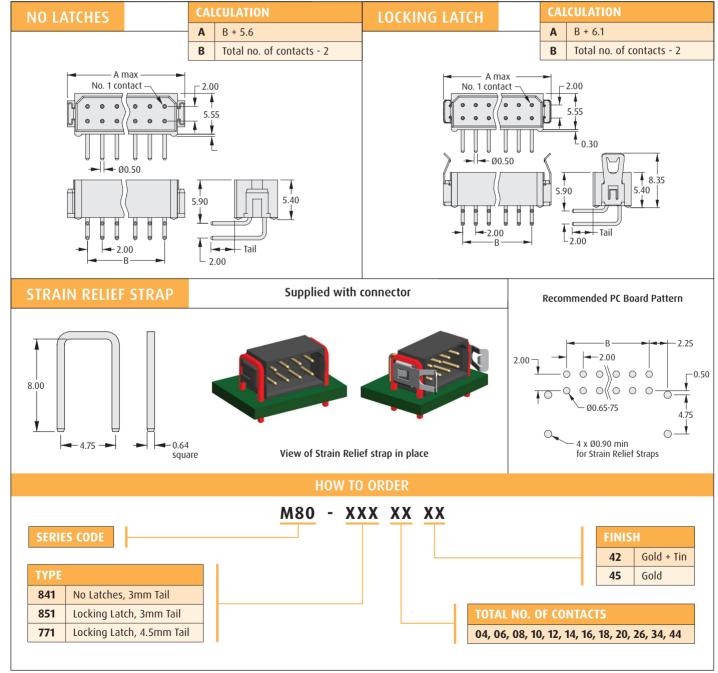




### Male Double Row Horizontal Throughboard

- Polarized housings.
- Fully shrouded contacts
- ▶ Mates with standard Datamate L-Tek female connectors.
- Supplied with two Strain Relief straps per connector; spares available under order code M80-0030006.



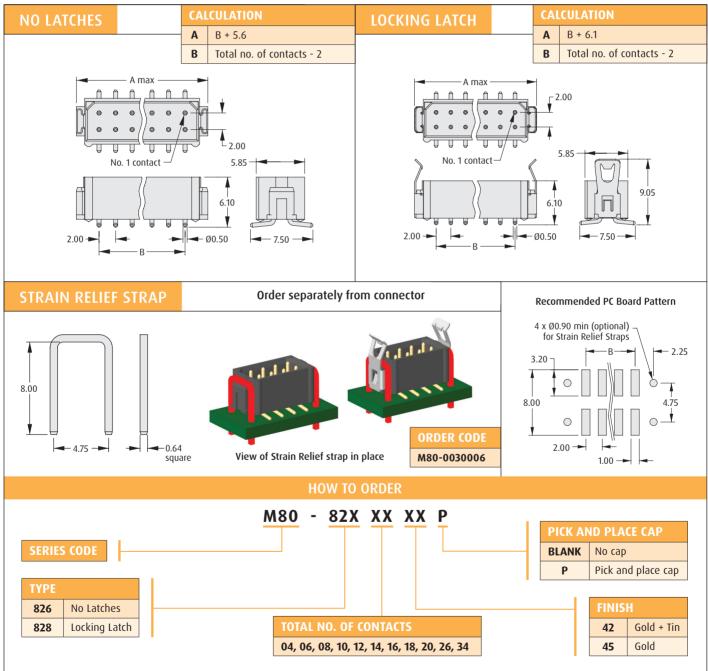




#### Male Vertical Surface Mount

- Mates with standard Datamate L-Tek female connectors
- Can be used with optional Strain Relief straps, available to order separately: order code M80-0030006.
- Optional pick and place cap
- Gull wing SMT tails simplify inspection process.

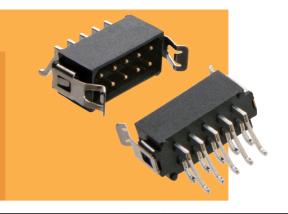


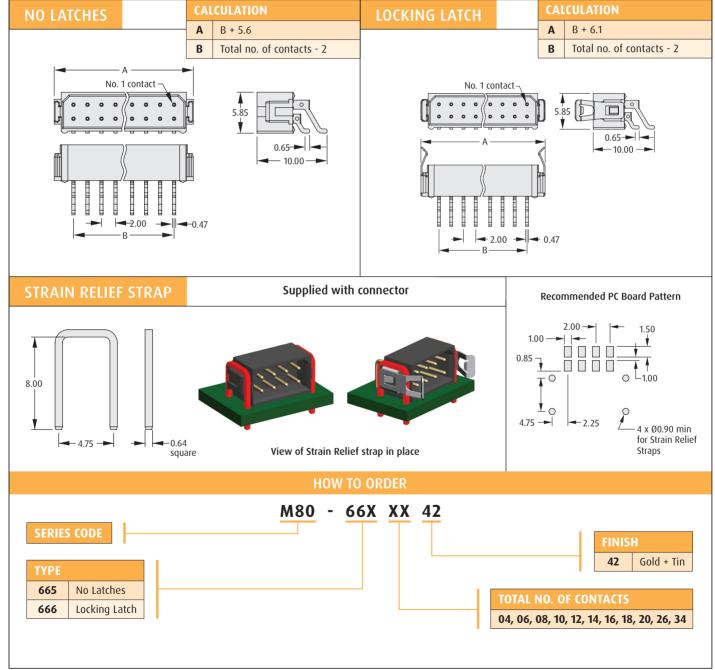




#### Male Horizontal Surface Mount

- ▶ Mates with standard Datamate L-Tek female connectors.
- Supplied with two Strain Relief straps per connector; spares available under order code M80-0030006.
- Stamped contact ensures co-planarity.



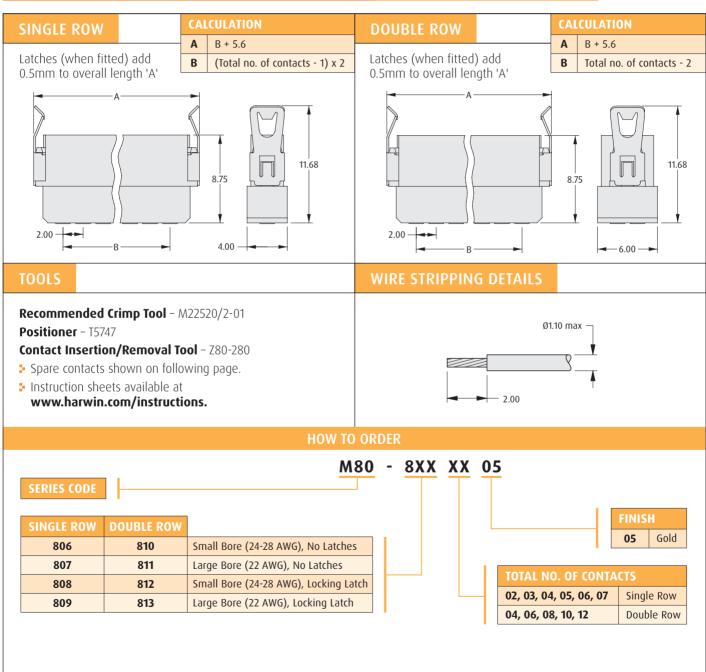




#### Male Crimp Kit

- ➤ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- Contacts are rear insertable
- Spare contacts are available see the following page.



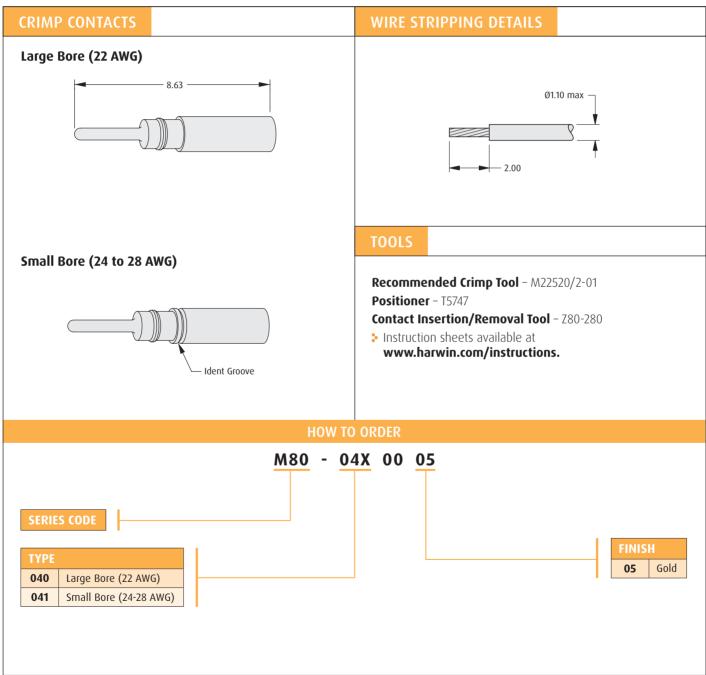




# Spare Male Crimp Contacts

▶ Barrel Crimp Contacts are supplied with the connectors
 - see previous page. Use the order code for extra Spare crimps







# **Datamate Tooling**

- Instruction sheets can be accessed at www.harwin.com/instructions.
- A Datamate Crimping Instruction video is available at www.harwin.com/harwintv.

#### HAND CRIMP TOOL

- Standard circular crimp tool BS5210-3A-300 and MIL specification M22520/2-01.
- Precision tool with ratchet mechanism and 8-indent form.
- Must be used with applicable positioner shown below.
- Instruction sheet available.



ORDER CODE	
Signal contacts	M22520/2-01

#### HAND CRIMP TOOL

- Standard circular crimp tools.
- Precision tool with ratchet mechanism and 8-indent form.
- Must be used with applicable positioner shown below.
- > Instruction sheets available.



ORDER CODE	
Inner contact of Coax contacts	Z80-292
Power crimp contacts	Z80-294

#### HAND CRIMP TOOL

- Standard coax crimp tool for crimping the outer sleeve of Mix-Tek coax contacts.
- Instruction sheet available.



ORDER CODE
Outer sleeve of Coax contacts Z80-293

#### **POSITIONER**

Used with applicable hand crimp tool.



Signal contacts: Male L-Tek, all Female	T5747
Signal contacts: Male J-Tek, Mix-Tek	Z80-193
Inner contact of Coax contacts	Z80-291
Female T-Contact	Z80-444
Power crimp contacts	Z80-295



# **Datamate Tooling**

- Instruction sheets can be accessed at www.harwin.com/instructions.
- A Datamate Crimping Instruction video is available at www.harwin.com/harwintv.

#### INSERTION/REMOVAL TOOL

- For inserting crimped contacts into the rear of housings.
- Suitable for all Datamate signal Barrel crimp contacts.



ORDER CODE
Signal contacts Z80-280

#### **REMOVAL TOOL**

To aid removal of special cable contacts from Mix-Tek connectors.



Power & Coax cable contacts	Z80-290

#### SEPARATOR TOOL

- ➤ Recommended for unplugging L-Tek latched connectors (tool releases the latches prior to disengagement).
- Can also be used with unlatched connectors.
- > Adjustable to suit all housing sizes.



ORDER CODE

L-Tek Z80-299

#### **DRIVERS**

- Mating jackscrews to be tightened to a torque of 23cmN may
- Board mount nuts and bolts to be tightened to a torque of 21 ±2cmN.



ORDER CODE

ORDER CODE	
Slotted Nut Screwdriver (board mount nuts)	<b>Z80-298</b>
1.5mm A/F Hex Drive Bit (board mount bolts)	Z9950-00
2mm A/F Hex Drive Bit (floating jackscrews)	Z9951-00
1.5mm A/F Ball Hex Driver (board mount bolts)	Z9952-00
2mm A/F Ball Hex Driver (floating jackscrews)	Z9953-00

