# Datamate

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## **Datamate Introduction**

## Performance without compromise

## Datamate is a 2mm pitch High-Reliability, high performance connector range from Harwin. Approved to British Standard 9525-F0033, the range has a proven track record for performance under extreme conditions.

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 - 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.



### Polarisation

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



### **Rugged construction**

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



British Standard Specification connections

Approved to BS9525-F0033, complies with CECC 75101-008.



### Field proven across the globe

Proven history in aerospace, industrial, defense, oil & gas, etc. Stocked in depth across a global distribution network.

### **Quality Customer Support**

Live Help, 3D CAD models and evaluation samples all available - click on **www.harwin.com/datamate**.

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## **Datamate - Product Families**



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## **Datamate Mix-Tek Specification**

Glass-filled thermoplastic UL94V-0

Brass shell, with Beryllium Copper

Mouldings: Female contacts:

Male contacts: Finish:

### Current

Individual contacts in isolation:	3.3A max (at 2
	2.6A max (at
All contacts simultaneously:	3.0A max (at 2

Working voltage

At sea level 1013 mbar: Voltage proof

At sea level 1013 mbar:

Contact resistance Initial: After conditionina:

Insulation resistance Initial: After conditioning:

25°C) 85°C) 25°C) 2.2A max (at 85°C)

See individual pages

800V DC or ACrms

inner contact

Copper alloy

1,200V DC or ACrms

20m0 max 25mΩ max

1.000MΩ min  $100M\Omega$  min

## **Power Contacts**

### Materials

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

### Electrical

Current (in isolation) 32x, 33x: PFx, PMx: Contact resistance:

20A max 40A nominal, up to 80A max 6mΩ max

Insertion force (max) 32x, 33x: PFx, PMx:	8N 15N
Withdrawal force (min):	0.5N
Contact replacement in connector:	5 times
Power contact accommodation 32x, 33x: PFx, PMx:	12 to 20 AWG 10 AWG

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: Operational temperature:** \*Vibration sensitivity:

\*Bump severity: \*Shock severity: \*Acceleration severity: 55/125/56 days at 95% RH -55°C to +125°C 10Hz to 2000Hz, 0.75mm, 98m/s<sup>2</sup> (10G), duration 6h 390m/s<sup>2</sup> (40G), 4000 ±10 bumps 981m/s<sup>2</sup> (100G) for 6ms 490m/s<sup>2</sup> (50G)

\* Tested with connectors with Jackscrews.

## **Coax Contacts**

### Materials

Latching collar: Other metallic parts: Insulator:

Beryllium Copper, Nickel plated Copper alloy, Gold plated PTFE

### Electrical

Frequency range:	6GHz (depending on cable)
Impedance:	50Ω
VSWR:	1.05 + (0.04 x Frequency) GHz max
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): Withdrawal force (min): Contact replacement in connector:

0.5N

8N

5 times



## Datamate Mix-Tek Pin Numbering

		FEMALE	MALE
POWE OR CO ONLY	AX		
SIGNA AND POWE	)		A B 456 A B 45

## **Mating Profiles**





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

		ТҮРЕ		
		Female Cable - Hex Slotted Jackscrews	Male Horizontal 3.5mm PC Tail - 5mm Board Mount Jackcrew	
	2 Power	M80-400000F1-02-325-00-000	M80-500000M5-02-333-00-000	
	4 Power	M80-400000F1-04-325-00-000	M80-500000M5-04-333-00-000	
	6 Power	M80-4000000F1-06-325-00-000	<b>ARARAAR</b> BADYDYDYDYDY M80-500000M5-06-333-00-000	
F CONTACTS	8 Power	M80-4000000F1-08-325-00-000	M80-500000M5-08-333-00-000	
TOTAL NO. OF	10 Power	M80-4000000F1-10-325-00-000	<b>ААААААААААА</b> В 1 <sup>3</sup>	
	2 High Power	M80-4000000F1-02-PF5-00-000	M80-5000000M5-02-PM3-00-000	
	4 High Power	M80-4000000F1-04-PF5-00-000	M80-500000M5-04-PM3-00-000	
	6 High Power	M80-4000000F1-06-PF5-00-000	M80-500000M5-06-PM3-00-000	

All dimensions in mm.



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

		ТҮРЕ		
		Male Vertical 3.5mm PC Tail - Jackscrew Fixing	Male Vertical 3.5mm PC Tail - 3.5mm Board Mount Jackcrew	Male Vertical 5mm PC 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	M80-500000M3-04-332-00-000
	6 Power		M80-500000M2-06-331-00-000	M80-5000000M3-06-332-00-000
OF CONTACTS	8 Power		M80-5000000M2-08-331-00-000	M80-5000000M3-08-332-00-000
TOTAL NO. 0	10 Power		M80-500000M2-10-331-00-000	M80-5000000M3-10-332-00-000
	2 High Power	M80-5000000M1-02-PM1-00-000	M80-5000000M2-02-PM1-00-000	
	4 High Power	M80-500000M1-04-PM1-00-000	M80-500000M2-04-PM1-00-000	
	6 High Power	M80-500000M1-06-PM1-00-000	M80-500000M2-06-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.
- Polarised mouldings.

DATAMATE POWER

Standard Power contacts rated to 20A, High Power to 40A.







### Male Vertical PC Tail

- 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.



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### **STANDARD POWER**



### Male Horizontal PC Tail

- 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.



### STANDARD POWER





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

			ТҮРЕ			
			Female Cable - Hex Slotted Jackscrews	Male Horizontal 3mm PC 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			
<b>OF CONTACTS</b>		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 PC Tail - Jackscrew fixing	Male Vertical 3mm PC 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		
TOTAL NO. OF CONTACTS		12 Signal	М80-5Т11205М1-02-331-00-000		
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	М80-5T10605M1-04-331-00-000	M80-5T10605M2-04-331-00-000	
		8 Signal	M80-5T10805M1-04-331-00-000	M80-5T10805M2-04-331-00-000	
		12 Signal	М80-5T11205M1-04-331-00-000		



## 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.
- Polarised mouldings.
- Standard Power contacts rated to 20A, signal to 3A.



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DATAMATE POWER/SIGNAI



### Male Power/Signal Vertical PC Tail

- A selection of stocked Datamate Mix-Tek solder tail standard layouts.
- Choice to suit two PCB thicknesses and two stud lengths
- Polarised mouldings.

DATAMATE POWER/SIGNAL

Standard Power contacts rated to 20A, signal to 3A.



### JACKSCREW ONLY



All dimensions in mm.

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### Male Power/Signal Horizontal PC Tail

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



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DATAMATE POWER/SIGNAI

### CALCULATION **SIGNAL AND POWER** B + 13 Α (No. of Power contacts - 1) x 4 В - 3.00 + Total no. of Signal contacts +1 M2 B + 8 2.00 4.00 6.00 С M2 -2 00 3.00 Ø1.50 Ø0 50 6.10 3.50 B -5 60 2.00 8 60 0 3 50 3 50 4.00 -2.00 Ø4.00 Ø0.65-0.75 3 00 Ø2.25 Ø1.65 -M2 **Recommended PC Board Pattern** 5.00 Board Mount Bolt, 2 per connector M80 - 5L1 04 05 M5 - XX - 333 - 00 - 000 **NO. OF SIGNAL CONTACTS NO. OF POWER CONTACTS** 02, 04 04

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

		ТҮРЕ		
		Female Cable Connectors - Hex Slotted Jackscrews	Male Vertical 3mm PC Tail - 3.5mm Board Mount Jackcrew	Male Vertical 4.5mm PC 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	М80-МV311M2-06	<b>Маарааа</b> СПЛПЛППППППП M80-MV312M3-06
	8 Coax	M80-FC305F1-08	Сасадассо Споловинальности м80-мизлим2-08	Мааадаааа Спицицицицицици м80-мv312м3-08

		ТҮРЕ		
		Female Cable Assemblies - Hex Slotted Jackscrews	Male Horizontal 3mm PC Tail - 5mm Board Mount Jackcrew	Male Horizontal 4.5mm PC 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
F CONTACTS	4 Coax	Single Ended (Female to Cut End) M80-FC305F1-04-0150L Double Ended (Female to Female) M80-FC305F1-04-0150F1	<b>Маакаа</b> 19797979797 м80-мн313м5-04	<b>AQQQ</b> <b>BURNING</b> M80-MH314M5-04
TOTAL NO. 0	6 Coax	Single Ended (Female to Cut End) M80-FC305F1-06-1050L Double Ended (Female to Female) M80-FC305F1-06-0150F1	<b>Падааа</b>	<b>А А А А А А А</b> Б П П П П П П П П П П П П П П П П П П П
	8 Coax	Single Ended (Female to Cut End) M80-FC305F1-08-0150L Double Ended (Female to Female) M80-FC305F1-08-0150F1	Саааааааа ИГИТИТИТИТИТИТИТ М80-МН313М5-08	Сассасасаса ПППППППППППП М80-МН314М5-08

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### Jack (Female) Crimp Kit

- A selection of stocked jack cable connectors in standard layouts.
- 6GHz, 50Ω Coax contacts, suitable for RG178 cable.
- Product supplied as a complete kit; housing with jackscrews assembled, and the applicable number of coax contacts supplied loose, not assembled.
- Polarised mouldings.
- Hexagonal slotted jackscrew style.



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## Jack (Female) Cable Assemblies

- A selection of stocked ganged multiport coaxial cable assemblies in standard layouts.
- 6GHz, 50 $\Omega$  Coax contacts, assembled with RG178 cable
- Hexagonal slotted jackscrew style.

DATAMATE COAX

 For non-standard cable lengths, please visit harwin.com/cable-assemblies and fill in your requirements.

### FEMALE SINGLE ENDED



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# **DATAMATE COAX**

## **Datamate Coax Connectors**

## Plug (Male) Vertical PC Tail

- Stocked coax connectors in vertical orientation, with board-mount jackscrews for added security.
- 6GHz, 50Ω Coax contacts
- Choice to suit two PCB thicknesses.
- Order board mount nuts separately.
- Screwdriver **Z80-298** available for assembling slotted jackscrew nuts.





All dimensions in mm.

### www.harwin.com



## Plug (Male) Horizontal PC Tail

- 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.



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All dimensions in mm.

### **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



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	-

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### Female Metal Backshell

**DATAMATE MIX-TEK** 

- Supplied as an accessory kit, including metal backshell, e-clips and the applicable jackscrews.
- To be used with the appropriate size of Female Cable connecto 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.



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### 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.



All dimensions in mm.

o BBBB®



# **Datamate J-Tek Specification**

Glass-filled thermoplastic UL94V-0 Mouldings: Female contacts Standard J-Tek: Brass shell, with Beryllium Copper inner contact Beryllium Copper T-Contact: Trio-Tek: Beryllium Copper Male contacts: Copper alloy Finish: See individual pages

Current - Standard J-Tek, Trio-Tek		
Individual contacts in isolation:		
	2.6A max (at 85°C)	
All contacts simultaneously:	3.0A max (at 25°C)	
	2.2A max (at 85°C)	
Current - T-Contact		
Individual contacts in isolation:	8.5A max (at 25°C)	
	6.5A max (at 85°C)	
All contacts simultaneously:	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:	20mΩ max	
After conditioning:	25mΩ max	
Insulation resistance		
Initial:	1,000MΩ min	
After conditioning:	100MΩ min	

### Durability

Standard J-Tek: T-Contact: Trio-Tek:	500 operations 1,000 operations 400 operations
Insertion force (max)	2.014
Standard J-Tek:	2.8N
T-Contact:	4.0N
Trio-Tek:	2.8N
Withdrawal force (min)	
Standard J-Tek:	0.2N
T-Contact:	0.5N
Trio-Tek:	0.2N
Signal crimp accommodation:	22 AWG to 32 AWG BS 3G 210 Type A, MIL-W-16878

Environmental classification:	55/125/56 days at 95% RH
Operational temperature:	-55°C to +125°C
*Vibration sensitivity	
Standard J-Tek, Trio-Tek:	10Hz to 2000Hz, 0.75mm, 98m/s² (10G), duration 6 hours
T-Contact:	10Hz to 2000Hz, 0.75mm, 390m/s² (40G), duration 6 hours
*Bump severity:	390m/s² (40G), 4000 ±10 bumps
*Shock severity:	981m/s² (100G) for 6ms
*Acceleration severity:	490m/s² (50G)

\* Tested with connectors with Jackscrews.

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## **Pin Numbering**



All dimensions in mm.

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## Datamate J-Tek Mating Profiles





## **Mating Profiles**

DATAMATE J-TEK



All dimensions in mm.

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# DATAMATE J-TEK

## **Datamate J-Tek Connectors**

### Female Vertical PC Tail

- Fully shrouded contacts.
- Polarised mouldings.
- Mates with all Datamate J-Tek male connectors with compatible jackscrews.



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### WITHOUT JACKSCREWS



### Female Vertical PC Tail 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.



### **GUIDE PIN JACKSCREWS**





### Female Vertical PC Tail Reverse Fix

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



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### Female Vertical Surface Mount

- Mates with all Datamate J-Tek male connectors with compatible jackscrews.
- Gull wing SMT tails simplify inspection process
- Optional pick and place cap.

**DATAMATE J-TEK** 

Contact datamate@harwin.com for tape and reel options.



All dimensions in mm.

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# **DATAMATE J-TEK**

## **Datamate J-Tek Connectors**

### 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.

# 1Lok

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### **GUIDE PIN JACKSCREWS**



### Female Vertical Surface Mount Reverse Fix

- Fully shrouded contacts.
- Polarised mouldings.
- Includes Board Mount fixing.
- Mates with male Datamate J-Tek connectors with compatible Reverse Fix jackscrews.



All dimensions in mm.

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# DATAMATE J-TEK

## **Datamate J-Tek Connectors**

### 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.

### WITHOUT JACKSCREWS

### WITH JACKSCREWS





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### 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.

DATAMATE J-TEK





All dimensions in mm.

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### 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.





## Female Crimp Kit - Extended Wall

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



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DATAMATE J-TEK



## 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.



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## Spare Female Crimp Contacts

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



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<u>DATAMATE J-TEK</u>



## 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.
- For non-standard cable lengths, please visit harwin.com/cable-assemblies and fill in your requirements.



FEMALE SINGLE ENDED	FEMALE -	FEMALE			
Cable Length		Cable I	Length		
TOOLS					
Contact Insertion/Removal Tool - Z80-280 Full crimp connector kits and spare crimp contacts shown on previous pages. Instruction sheets available at www.harwin.com/instructions. HOW TO ORDER M80 - 9XX 00 99					
	CABLE COLOUR 99 Red				
SERIES CODE	SINGLE ENDED	FEMALE-FEMALE			
	910	918	22 AWG Cable, 150mm length		
	911	919	24 AWG Cable, 150mm length		
	912	920	26 AWG Cable, 150mm length		
	913	921	28 AWG Cable, 150mm length		
	914 915	922 923	22 AWG Cable, 300mm length24 AWG Cable, 300mm length		
	915	923	24 AWG Cable, 300mm length		
	917	925	28 AWG Cable, 300mm length		

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# **Datamate J-Tek Connectors**

### Female Crimp T-Contact

- Advanced single-piece contact design using Beryllium Copper for a 6-finger contact with improved capabilities.
- Current carrying capacity up to 8.5 Amps per contact
- 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 order contact and housings separately.

#### **CRIMP CONTACTS**

#### Large Bore (22 AWG)





#### All dimensions in mm.

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## 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.



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# DATAMATE J-TEK

#### HEX SLOTTED JACKSCREWS

#### **HEX SOCKET JACKSCREWS**



# **Datamate J-Tek Connectors**

## 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 housin
- Connectors mate with Datamate J-Tek male connectors with compatible Reverse Fix jackscrews.

#### **REVERSE FIX JACKSCREWS**







All dimensions in mm.

#### www.harwin.com

## HARWIN

# **Datamate J-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 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.





All dimensions in mm.

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### Female Crimp Trio-Tek Housings

- Part numbers are for housings only, see following page for Trio-Tek contacts.
- Contacts are rear insertable.

**DATAMATE J-TEK** 

- Mates with all standard Datamate I-Tek male connectors.



#### WITHOUT JACKSCREWS

#### WITH JACKSCREWS





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### Female Crimp Trio-Tek - 101Lok

- Part numbers are for housings only, see following page for Trio-Tek contacts.
- Ideal for volume applications.
- 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 101Lok fixings.



All dimensions in mm.

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- Trio-Tek contacts must be ordered separately, see previous pages for applicable housings.
- Crimp contacts are available loose, or in continuous reeled format for automated crimping.







# **Datamate J-Tek Connectors**

## Male Vertical PC Tail

- Polarised mouldings.
- Fully shrouded contacts
- Jackscrews are assembled where specified.
- Choice of PC tail length.
- Board Mount provides PCB strain relief
- Mates with female Datamate J-Tek connectors with compatible jackscrews.



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## Male Vertical PC Tail 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 PC tail length.

DATAMATE J-TEK





All dimensions in mm.

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# **Datamate J-Tek Connectors**

## Male Horizontal PC Tail

- Polarised mouldings.
- Fully shrouded contacts
- Jackscrews are assembled where specified
- Choice of PC tail length
- Board Mount provides PCB strain relief
- Mates with female Datamate J-Tek connectors with compatible jackscrews.



All dimensions in mm.

IARWIN

### Male Horizontal PC Tail 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 PC tail length.

DATAMATE J-TEK





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# **Datamate J-Tek Connectors**

## 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.
- Contact datamate@harwin.com for tape and reel options.



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## 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.

DATAMATE J-TEK

- Gull wing SMT tails simplify inspection process.
- Contact datamate@harwin.com for tape and reel options.



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## 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.
- Contact datamate@harwin.com for tape and reel options.



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## 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.
- Contact datamate@harwin.com for tape and reel options.



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## 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.



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WITH JACKSCREWS

<u>DATAMATE J-TEK</u>

#### WITHOUT JACKSCREWS



### 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.

**DATAMATE J-TEK** 



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All dimensions in mm.

# **Datamate J-Tek Connectors**

## 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.





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### 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.



- 2.00

M7

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#### WITHOUT JACKSCREWS WITH JACKSCREWS CALCULATION R B + 12 Α 2.00 2.00 2.00 2.00 Total no. of contacts - 2 В 0 0 0 6 0 Ø 0 0 C B + 7 Ø 000 00 0 0 0 0 0 0 0 No.1 contact No 1 contact 5.60 5.60 ¥ 785 Wall A Δ 6 50 6 50 -TOOLS WIRE STRIPPING DETAILS Recommended Crimp Tool - M22520/2-01 Ø1.10 max Positioner - Z80-193

#### Contact Insertion/Removal Tool - Z80-280

- Spare contacts shown on following pages.
- Instruction sheets available at www.harwin.com/instructions.

#### **HOW TO ORDER**



# **Datamate J-Tek Connectors**

#### 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.



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### **Spare Male Crimp Contacts**

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





### 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.



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# **Datamate J-Tek 3-Row Specification**

#### Materials

Mouldings: Female contacts:

Male contacts: Finish:

Electrical

#### Current

Individual contacts in isolation:	3.3A max (
	2.6A max (
All contacts simultaneously-	3.0A max (

Working voltage

At sea level 1013 mbar: **Voltage proof** 

At sea level 1013 mbar: Contact resistance

Initial: After conditioning:

Insulation resistance Initial: After conditioning: 3.3A max (at 25°C) 2.6A max (at 85°C) 3.0A max (at 25°C) 2.2A max (at 85°C)

Glass-filled thermoplastic UL94V-0

Brass shell, with Beryllium Copper

800V DC of ACrms

inner contact

Gold

Phosphor bronze

1200V DC or ACrms

20mΩ max 25mΩ max

1000MΩ min 100MΩ min

#### Mechanical

Durability: Insertion force (max): Withdrawal force (min): Signal crimp accommodation:

500 operations 1.0N 0.2N 22 AWG to 28 AWG BS 3G 210 Type A or MIL-DTL-16878/6 Type ET

#### Environmental

Environmental classification: Operational temperature: \*Vibration sensitivity:

\*Bump severity: \*Shock severity: \*Acceleration severity: 55/125/56 days at 95% RH -55°C to +125°C 10Hz to 2000Hz, 0.75mm, 98m/s<sup>2</sup> (10G), duration 6h 390m/s<sup>2</sup> (40G), 4000 ±10 bumps 981m/s<sup>2</sup> (100G) for 6ms 490m/s<sup>2</sup> (50G)

\* Tested with connectors with Jackscrews.

# Pin Numbering



All dimensions in mm.

# **Mating Profiles**



## HARWIN

## Female Vertical PC Tail

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



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**DATAMATE J-TEK 3-ROW** 



## 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.

**DATAMATE J-TEK 3-ROW** 



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#### CALCULATION **FEMALE CRIMP** B + 15 Α (Total no. of contacts - 3) x 2/3 B С B + 9 2.00 -2.00 00000000 00 0000000000000 No.1 contact 3.85 6.70 ŧ - 8.00 TOOLS WIRE STRIPPING DETAILS Recommended Crimp Tool - M22520/2-01 Ø1.10 max Positioner - T5747 Contact Insertion/Removal Tool - Z80-280 Spare contacts shown on following pages. Instruction sheets available at - 2.00 www.harwin.com/instructions. **HOW TO ORDER** M83 - LF X1 F2 N XX - 0000 - 000 **SERIES CODE TOTAL NO. OF CONTACTS** 18, 27, 36, 54, 60, 96 TYPE IACKSCREW **C1** Small Bore (24-28 AWG) Large Bore (22 AWG) Hex Socket Jackscrew D1 F2

## Spare Female Crimp Contacts

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



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## Male Vertical PC Tail

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

#### MALE VERTICAL











All dimensions in mm.

## HARWIN

### Male Horizontal PC Tail

- Board Mount screws to be tightened to a maximum torque of 23cmN.
- Suitable for motherboard/daughterboard configurations
- Fully shrouded contacts, polarised mouldings
- All contacts are gold finish for full RoHS compliance.
- Mates with all Datamate 3-Row female connectors with compatible jackscrews.

#### MALE HORIZONTAL



All dimensions in mm.

CALCULATION

IARWIN

# **Datamate L-Tek Specification**

Glass-filled thermoplastic UL94V-0

Brass shell, with Beryllium Copper

#### Material

Mouldings: Female contacts:

Male contacts: Finish:

#### Electrical

#### Current

Individual contacts in isolation:	
All contacts simultaneously:	2.6A max (at 85°C) 3.0A max (at 25°C) 2.2A max (at 85°C)
Working voltage At sea level 1013 mbar:	800V DC or ACrms
<b>Voltage proof</b> At sea level 1013 mbar:	1,200V DC or ACrms
Contact resistance Initial:	20mΩ max

After conditioning: Insulation resistance Initial: After conditioning: 20mΩ max 25mΩ max

inner contact

Copper alloy

See individual pages

1,000MΩ min 100MΩ min

#### Mechanical

#### Durability

Standard L-Tek: Trio-Tek: Insertion force (max): Withdrawal force (min): Signal crimp accommodation:

500 operations 400 operations 2.8N 0.2N 22 AWG to 32 AWG BS 3G 210 Type A, MIL-W-16878

#### • Environmental

Environmental classification:55/125/56 days at 95% RHOperational temperature:-55°C to +125°C\*Vibration sensitivity:10Hz to 2000Hz, 0.75mm,<br/>98m/s² (10G), duration 6h\*Bump severity:390m/s² (40G), 4000 ±10 bumps\*Shock severity:981m/s² (100G) for 6ms\*Acceleration severity:490m/s² (50G)

\* Tested with latched connectors.

# Pin Numbering



All dimensions in mm.

## HARWIN

## **Datamate L-Tek Mating Profiles**




### Female Vertical PC Tail

- Polarised mouldings.
- Dummy contacts are available for additional polarisation, use order code M80-023.





#### All dimensions in mm.

# DATAMATE L-TEK

## **Datamate L-Tek Connectors**

### **Female Vertical Surface Mount**

- Optional pick and place cap.
- Contact datamate@harwin.com for tape & reel options.
- Gull wing SMT tails simplify inspection process.



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### **DOUBLE ROW**



### 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.



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### **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.
- For non-standard cable lengths, please visit harwin.com/cable-assemblies and fill in your requirements.



FEMALE SINGLE ENDED	FEMALE -	FEMALE		
Cable Length	Cable Length			
TOOLS	1			
Contact Insertion/Removal Tool – Z80-280 Full crimp connector kits and spare crimp contacts shown on previous pages. Instruction sheets available at www.harwin.com/instructions. HOW TO ORDER				
<u>M80</u> - <u>9XX</u> 00	99		CABLE COLOUR99Red	
SERIES CODE	SINGLE ENDED	FEMALE-FEMALE		
	910	918	22 AWG Cable, 150mm length	
	911	919	24 AWG Cable, 150mm length	
	912	920	26 AWG Cable, 150mm length	
	913 914	921	28 AWG Cable, 150mm length	
		922	22 AWG Cable, 300mm length	
		072	24 AWG Cable 300mm length	
	915 916	923 924	24 AWG Cable, 300mm length 26 AWG Cable, 300mm length	
	915		24 AWG Cable, 300mm length 26 AWG Cable, 300mm length 28 AWG Cable, 300mm length	

All dimensions in mm.

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# DATAMATE L-TEK

## **Datamate L-Tek Connectors**

### **Female Accessories**

- Crimp Hood is supplied as a kit of parts, including body,
- Mates with unlatched male connectors.
- Dummy contact can be used for additional polarisation or keying of multiple connectors.

### **CRIMP HOOD**



### Female Crimp Housings Trio-Tek

- Part numbers are for housings only, see following page for Trio-Tek contacts.
- Contacts are rear-insertable.
- Crimp inspection window in housing
- Mates with all standard Datamate L-Tek male connectors.
- Ideal for volume applications.



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### Female Crimp Contacts Trio-Tek

- Trio-Tek contacts must be ordered separately, see previous page for applicable housings.
- Crimp contacts are available loose, or in continuous reeled format for automated crimping.



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DATAMATE L-TEK



Male Single Row Vertical PC Tail

order separately: order code M80-0030006.

## 



### Male Double Row Vertical PC Tail

- Polarised mouldings.
- 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.





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### Male Single Row Horizontal PC Tail

- Polarised mouldings.
- 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.



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### Male Double Row Horizontal PC Tail

- Polarised mouldings.
- 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.



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DATAMATE L-TEK

### 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.
- Contact datamate@harwin.com for tape & reel options.
- Optional pick and place cap.

DATAMATE L-TEK

• Gull wing SMT tails simplify inspection process.



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### 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.
- Contact datamate@harwin.com for tape & reel options.





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### Male Crimp Kit

**DATAMATE L-TEK** 

- 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
- Back potting & cable assembly service available, contact cables@harwin.com.



All dimensions in mm.

### **Spare Male Crimp Contacts**

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



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## **Datamate Tooling**

DATAMAT

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



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## DATAMATE

## **Datamate Tooling**

> Instruction sheets can be accessed at www.harwin.com/instructions.

A Datamate Crimping Instruction video is available at **www.harwin.com/harwintv.** 





## **Datamate Tooling**

• Technical drawings can be accessed from the individual product pages at **www.harwin.com** - just search for the part number.

HEX DRIVE BIT	HEX DRIVE BIT
<ul> <li>1.5mm A/F Hex end for board mount Hex Socket bolts.</li> <li>For use with torque tooling or similar equipment.</li> </ul>	<ul> <li>2mm A/F Hex end for Hex Socket floating jackscrews (Female jackscrews or Male Reverse fix jackscrews).</li> <li>For use with torque tooling or similar equipment.</li> </ul>
ORDER CODE	HOT2 50 ORDER CODE
Z9950-00	<b>Z9951-00</b>
BALL HEX DRIVER	BALL HEX DRIVER
<ul> <li>1.5mm A/F Hex end for board mount Hex Socket bolts.</li> <li>Ball-shaped end can be used at a wide range of angles.</li> </ul>	<ul> <li>2mm A/F Hex end for Hex Socket floating jackscrews (Female jackscrews or Male Reverse fix jackscrews).</li> <li>Ball-shaped end can be used at a wide range of angles.</li> </ul>
PURSUUM	HARWAY
ORDER CODE Z9952-00	ORDER CODE Z9953-00

## **Datamate Tooling**

- > Tooling suitable for Datamate Trio-Tek contacts and housings.
- > Instruction sheets can be accessed at www.harwin.com/instructions.



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