COMPONENT SPECIFICATION

HARWiN

Datamate Trio-Tek

M80 Series Female Open Barrel crimp contact and associated Rectangular Crimp Housings

October 2012

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1.0 DESCRIPTION OF CONNECTOR AND INTENDED APPLICATION.

The M80 series stamped female Trio-Tek open barrel crimp contact and rectangular Trio-Tek crimp housing form part of the Datamate J-Tek and L-Tek ranges of 2mm pitch male and female connectors. These fully shrouded, unsealed connectors with replaceable contacts are designed for interconnecting cable-to-cable & cable-to-board.

Datamate Trio-Tek contacts are gold or gold/tin plated. The contact zone of a gold plated contact is hard acid gold of 98% purity.

The J-Tek range covers 4 to 50 ways, suitable for various cable-to-cable & cable-to-board applications.

The L-Tek range covers common sizes in DIL and SIL housing styles, suitable for various cable-to-cable & cable-to-board applications.

Both J-Tek and L-Tek female crimp connectors utilising the Trio-Tek contacts are fully intermateable with the males in these ranges.

These connectors are intended for use as low voltage connectors in high packing density electronic equipment. Connector housings are polarised to prevent mis-matching and can be produced with jackscrews, with or without board mounting. Datamate Trio-Tek reeled contacts permit fully automated crimping in medium and high volume applications, whereas loose contacts can be used for low volume applications using appropriate hand crimp tooling.

2.0 MARKING OF CONNECTOR AND/OR PACKAGE

2.1 MARKING OF THE FEMALE CRIMP CONTACT AND/OR PACKAGE (ORDER CODE).

The marking (order code) shall appear on the package and shall be of the following style:

M80 - XXX 00 XX

Product Range
M80 = Datamate

Style
253 = Female Trio-Tek 22-24 AWG Reeled
254 = Female Trio-Tek 26-28 AWG Reeled
283 = Female Trio-Tek 22-24 AWG Loose
284 = Female Trio-Tek 26-28 AWG Loose

Finish
45 = 0.3µ Min Gold, All Over
42 = 3µ Min 100% Tin over nickel on Crimp Section and 0.3µ Min Gold on Contact Fingers (Contact Zone)

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2.2 MARKING OF THE J-TEK FEMALE CRIMP HOUSINGS AND/OR PACKAGE (ORDER CODE).

The marking (order code) shall appear on the package and shall be of the following style:

Datamate J-Tek M80 - XXX XX 98

Product Range
M80 = Datamate

style
454 = Female Trio-Tek Housing Only, No Jackscrew
455 = Female Trio-Tek Housing with Slotted Hexagon Head Jackscrews
456 = Female Trio-Tek Housing with Hexagon Socket Jackscrew
457 = Female Trio-Tek Housing with Reverse Fix Jackscrew
458 = Female Trio-Tek Housing with Guide and Board Mount Fixing
459 = Female Trio-Tek Housing with Datamate 101 Lok

Number of Ways
04-50 (Even Numbers Only)
Please contact datamate@harwin.com for current availability

Colour
98 = Black

2.3 MARKING OF THE L-TEK FEMALE CRIMP HOUSINGS AND/OR PACKAGE (ORDER CODE).

The marking (order code) shall appear on the package and shall be of the following style:

Datamate L-Tek M80 - XXX XX 98

Product Range
M80 = Datamate

Style
690 = Single Row (SIL) Female Trio-Tek Housing
691 = Double Row (DIL) Female Trio-Tek Housing

Number of Ways
02, 03, 04, 05, 06, 07 & 17 (SIL Only)
04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34 & 44 (DIL Only)
Please contact datamate@harwin.com for current availability

Colour
98 = Black

3.0 RATINGS.

All materials are listed on individual drawings.

3.1 ELECTRICAL CHARACTERISTICS

Current – per individual contact at an ambient temperature of 25°C ..... 3.3A max
(When only one contact per connector is electrically loaded)

Current – per individual contact at an ambient temperature of 85°C ..... 2.6A max
(When only one contact per connector is electrically loaded)

Current – per contact through all contacts at an ambient temperature of 25°C ..... 3.0A max

Current – per contact through all contacts at an ambient temperature of 85°C ..... 2.2A max

Working Voltage (at 3.3A max, 1013mbar, sea level) ..... 120V DC or AC peak

Working Voltage (at 2.0A max, 1013mbar, sea level) ..... 240V DC or AC peak

Voltage Proof (at 1013mbar, sea level) ..... 360V DC or AC peak

Contact Resistance (initial) ..... 20mΩ max

Contact Resistance (after conditioning) ..... 25mΩ max

Insulation Resistance (initial) ..... 1,000MΩ min

Insulation Resistance (hot after conditioning) ..... 100MΩ min

Creepage Distance (contact-to-contact) ..... 0.35mm min

Clearance Distance (contact-to-contact) ..... 0.35mm min

3.2 ENVIRONMENTAL CHARACTERISTICS

Environmental Classification ..... 55/125/56 at 95% RH

Low Air Pressure Severity when only one contact is electrically loaded ..... 300 mbar**

Vibration Severity * ..... 10Hz to 2000Hz
at 98m/s^2 (10g) duration 6 hours over 0.75mm

Bump Severity * ..... 390m/s^2 (40g)
4000 ±10 bumps

Shock Severity * ..... 981m/s^2 (100g) for 6ms

Acceleration Severity * ..... 490m/s^2 (50g)

** Jackscrew fixings fully utilized*

**The connector will function correctly using a simultaneous combination of high temperature and low air pressure down to 300mbar.

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3.3 MECHANICAL CHARACTERISTICS

Durability ..... 400 operations

High Temperature, Long Term (current as in 3.1) ..... 1000 hours at 85°C

High Temperature, Short Term (no electrical load) ..... 250 hours at 125°C

Contact Retention in Housing (crimp products only) ..... 10N min

Contact Replacement in Housing (crimp products only) ..... 5 times

Contact Holding Force ..... 0.2N min

Insertion Force (per contact, using mating contact) ..... 2.8N max, 0.5N min

Withdrawal Force (per contact, using mating contact) ..... 1.8N max, 0.2N min

3.4 MATERIALS

Contact, Trio-Tek ..... Beryllium Copper

Housing ..... Glass Filled Thermoplastic

Housing Flame Retardant rating ..... UL 94 V-0

Jackscrew Hardware ..... Stainless Steel

3.5 WIRE TERMINATION RANGE - TRIO-TEK CRIMP PRODUCTS ONLY

Wire Type (recommended) ..... BS 3G 210 Type A
Maximum Insulation Diameter Ø1.1mm
Insulation Strip Length 2.7-3.0mm

All dimensions are nominal unless otherwise stated

Size	Conductor				Maximum Insulation Diameter	Hand Crimp Tool Z80-255 Nest I/D	Conductor Barrel		Minimum Pull-Off Force
	Stranding	Diameter	Area	Circular MIL Area			Crimp Height	Crimp Width	
AWG	No. x Ømm	Ømm	mm^2	CMA	Ømm	No.	mm	mm	N
28	7 x 0.12	0.36	0.0792	156	0.71	26-28	0.50—0.56	1.02	9.8
26	7 x 0.15	0.45	0.1237	244	0.80				18
24	7 x 0.20	0.60	0.2199	434	0.95	22-24	0.76—0.82	1.21	29
22	19 x 0.15	0.75	0.3358	663	1.10				45

Appendix A & B

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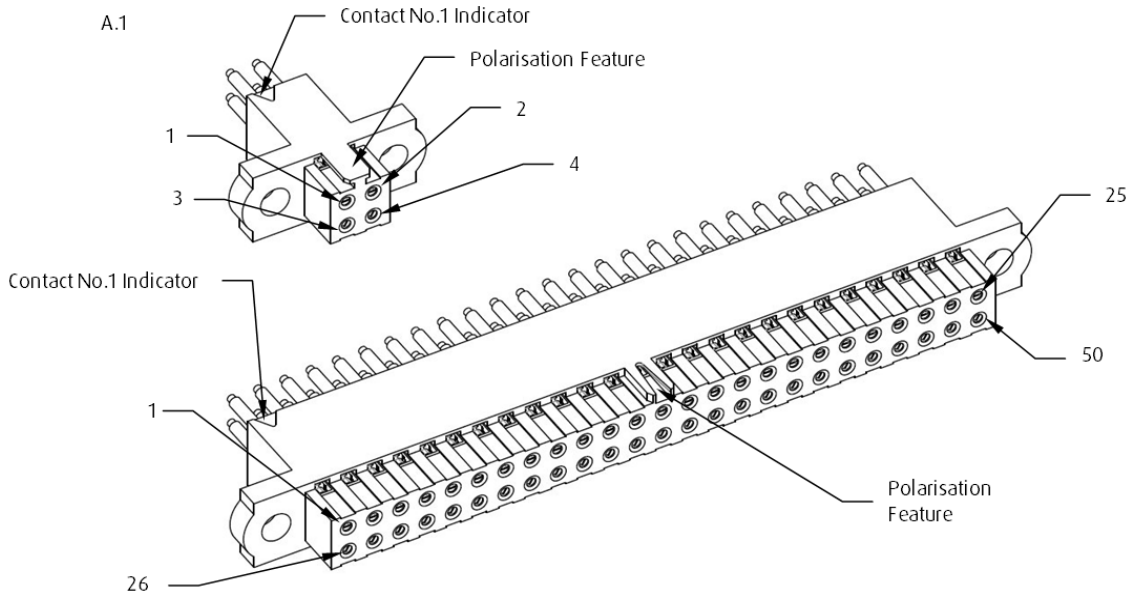
APPENDIX A - Contact Orientations

These diagrams show examples of contact numbering with reference to the polarisation feature. They represent female connectors, without jackscrews.



APPENDIX B - Instructions For The Use of J-Tek Housings Fitted With Jackscrews

Connectors are fitted with jackscrews where it is considered necessary to provide mechanical assistance in ensuring a satisfactory engagement and separation of the connector. This may apply in cases where engagement and separation forces are so high as to prevent satisfactory hand engagement, or where access to the connector is restricted. Jackscrews also provide a locking feature, preventing the connector from disengaging under adverse conditions.

In order to obtain maximum effectiveness from the jackscrew system, the following rules for their use should be observed:

1. The connector with the fixed jackscrew should be fixed to the mounting board by means of the male thread on the jackscrew, and the supplied M2 nut. The nut should be tightened to a torque of 21±2cmN.

2. On engaging the two halves of the connector after ensuring correct polarity, lightly push home the floating half until the jackscrews touch. Then, maintaining the pressure, turn one of the floating jackscrews clockwise, until it engages with the fixed screw. Repeat with the other screw.

   Then screw in each jackscrew, ensuring even loading by applying a maximum of one turn to each screw in sequence until the connector is bottomed. This will be evident by a sudden increase in the torque required on the screw. This torque should not exceed 23Ncm.

   NB: Care should be taken when aligning male and female threads, to avoid cross-threading and possible failure of parts.

3. On disengaging the two halves of the connector turn each of the floating jackscrews anti-clockwise. Again ensure even loading by turning each screw in sequence for a maximum of one turn until the jackscrews disengage. The connector can then be easily pulled apart.

Appendix C & D

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APPENDIX C - Instructions For Separating L-tek Housings from Latched Males

The recommended separator tool for this product is Z80-299. Consult Tooling Instruction Sheet IS-30 for full details on tools use. IS-30 is available from http://www.harwin.com/downloads/instructions/ (select Z80-299 Datamate Separator Tool).

APPENDIX D - Contact Extraction from Housing Instructions

Z80-258 tool is required to remove contacts from housings (J-Tek or L-Tek style) . Consult Tooling Instruction Sheet IS-28 for full details on tools use. IS-28 is available from http://www.harwin.com/downloads/instructions/ (select Z80-258 Extraction Tool).