

COMPONENT SPECIFICATION**POWER CONNECTORS****MARCH 2000****CONTENTS:**

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PREPARED BY: **ISSUE**

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C/NOTE

DATE

10.03.00

APPROVED BY: AUTHORISED BY: 

COMPONENT SPECIFICATION POWER CONNECTORS

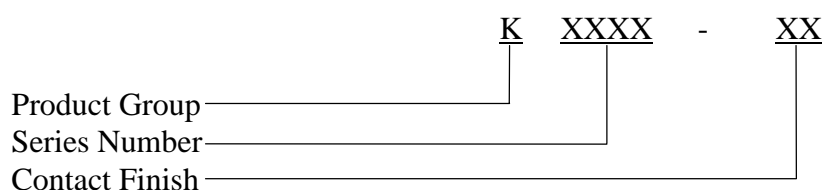
1. DESCRIPTION OF COMPONENT AND INTENDED APPLICATION.

A choice of 2-way or 3-way power connectors, utilising high reliability beryllium copper contact clips and round male pins. Designed for cable-to-cable applications, both the male and female contacts are available in solder-bucket or crimp style. Contact surfaces are tin plated, and assembled into UL94V-0 grey glass-filled polyester housings. With the addition of an 'O' ring and back-potting, the connector can be sealed to an IP67 rating.

Gold plated contacts and alternative colour housings are available to order.

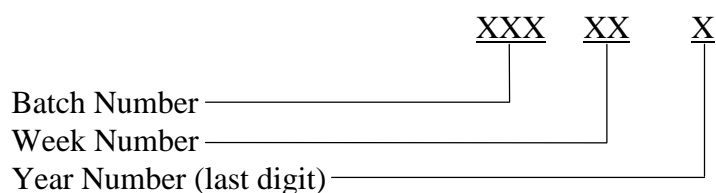
2. MARKING OF COMPONENT AND/OR PACKAGE (ORDER CODE).

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



For details of styles, numbers of ways and finishes see the appropriate drawing.

Batch Code shall appear on the package, and shall be of the following style:



The Batch Number is 001 to 999 repeated each week.

COMPONENT SPECIFICATION
POWER CONNECTORS (continued)

3. RATINGS.

3.1. ELECTRICAL CHARACTERISTICS.

Current per contact through all contacts at an ambient temperature of 25°C.....	10A max
Current per contact through all contacts at an ambient temperature of 85°C.....	7.5A max
Working Voltage	250V AC/DC
Voltage proof.....	750V AC/DC
Creepage path contact-to-contact	3mm min
Air gap contact-to-contact	0.9mm min
Contact resistance, initial.....	10mΩ max
Contact resistance, after conditioning	15mΩ max
Insulation resistance, initial (500V DC for 1 minute)	1,000MΩ min
Insulation resistance, after conditioning (500V DC for 1 minute).....	100MΩ min

3.2. ENVIRONMENTAL CHARACTERISTICS.

Environmental classification	40/105/21
Vibration severity	10 Hz to 2000 Hz at 0.75mm/10gn, duration 6 hours

3.3. MECHANICAL CHARACTERISTICS.

Durability.....	100 operations
No. of replacement contacts (before potting)	3 max
High temperature, long term (current as in 3.1.)	50 hours at 85°C
Contact shell retention in moulding, initial	20N min
Contact clip retention in shell:	
Minimum retention force of contact clip in shell from a sample of 10 contacts may be 18N, providing the average of the sample is 27N minimum.	
Insertion force of individual contact (Ø1.00mm gauge)	9N max, 3N min
Withdrawal force of individual contact (Ø1.00mm gauge).....	3N max, 1N min
Insertion force of 3-way connector.....	40N max
Withdrawal force of 3-way connector	10N min
Protection rating (to BS EN 60529) when back-potted.....	IP55 (limited ingress of dust and low-pressure water jets)
Protection rating (to BS EN 60529) when back-potted, fitted with 'O' ring K3605-00	IP67 (no ingress of dust, sealed up to 1m depth of water for 60 seconds)
Crimp pull-off forces (18 AWG) to BS 5G 178.....	142N min

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POWER CONNECTORS (continued)

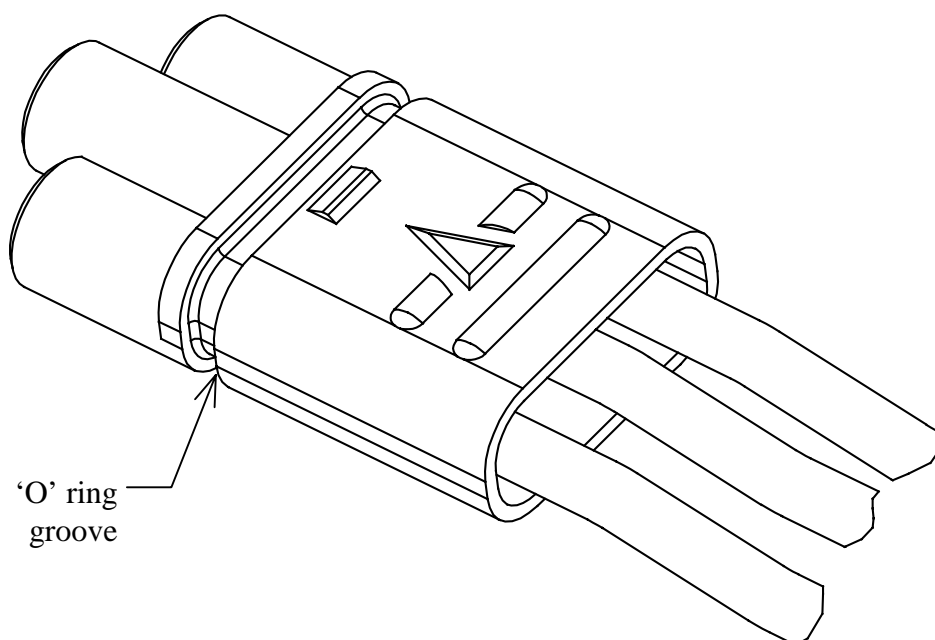
APPENDIX 1 - 'O' RING ASSEMBLY.

When an 'O' ring is assembled to the female moulding, assembly can be made easier with the use of a spray lubricant at the assembly stage. The correct lubricant will aid assembly and cause no degradation of the 'O' ring.

Harwin recommends the following lubricant:

Silicon Spray (which will also act as an additional water repellent)

Available from: Farnell or RS



PLEASE NOTE:

Silicon is an insulator. Do not get any silicon on the mating faces of the connector, otherwise electrical performance will be impaired.

COMPONENT SPECIFICATION **POWER CONNECTORS (continued)**

APPENDIX 2 - BACK-POTTING.

Back-potting the cable assemblies is not an essential operation, as the connectors will function as supplied. However, by back-potting the assemblies, the connection achieves an IP protection rating, and the potting gives strain relief on the contacts in the moulding.

Harwin recommends the following potting material:

Stycast 2651MM

Available from: Emerson & Cuming (Belgium)

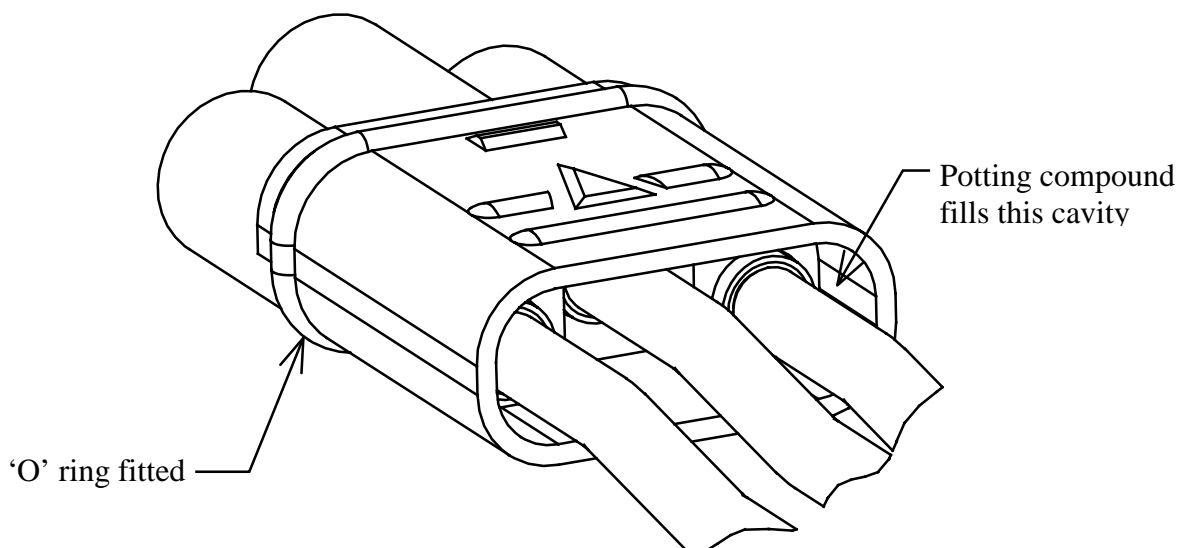
Distributed (UK) by: Hitek Electronic Materials Ltd

15 Wentworth Road

Scunthorpe

Tel: 01724 851678

Fax: 01724 280586



APPENDIX 3 - CONNECTOR ASSEMBLY.

3.1. CRIMPING CONTACTS.

These contacts are crimped using the Hand Crimp Tool M22520/2-01 on setting 8, with Positioner ZK3609-00. For full instructions on the use of this tool, please read Instruction Sheet IS-01.

3.2. INSERTING AND REMOVING CONTACTS FROM MOULDINGS.

All contacts (crimp and solder-bucket) can be inserted and removed using Assembly Tool ZK3610-00. For full instructions on the use of this tool, please read Instruction Sheet IS-22.