

**COMPONENT SPECIFICATION****M20 SERIES CONNECTORS****AUGUST 2016****CONTENTS:**

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**APPENDICES NOTES:**

1. Third angle projection is used where projected views are shown.
2. All dimensions are in millimetres.
3. For explanation of dimensions, etc. see BS8888.
4. Unless otherwise stated, all dimensions are maxima.

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**COMPONENT SPECIFICATION**  
**M20 SERIES CONNECTORS**

**1. DESCRIPTION OF CONNECTOR AND INTENDED APPLICATION.**

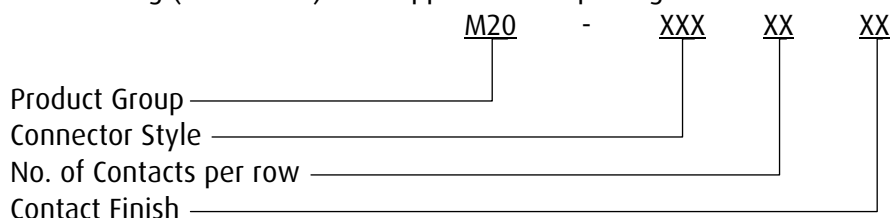
A range of 2.54mm (0.1") pitch connectors, having 0.64mm (0.025") square pins and sockets suitable for interconnecting board to board and board to wire.

The socket is a box section design with a latch to locate and hold in an insulated housing. Terminations are available for wire crimp, through board solder or surface mount in either horizontal or vertical mounting.

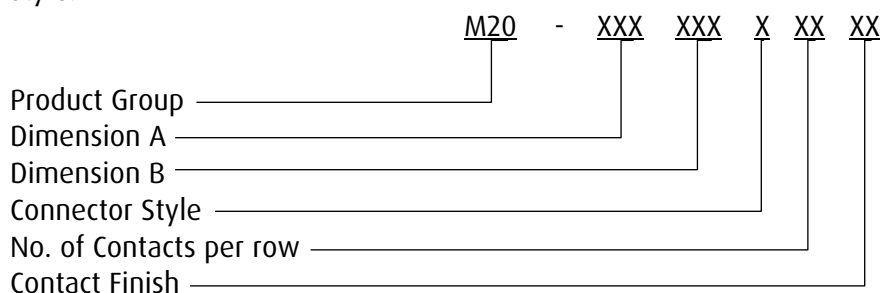
The plug pin is held in a moulding, and is available for either horizontal or vertical, surface mount or through board solder mounting. Plug mouldings are available in unlatched or latched versions. Contacts may be gold. Surface mountable pin headers are available in single and double row, vertical and horizontal variations.

**2. MARKING OF THE CONNECTOR AND/OR PACKAGE (ORDER CODE).**

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



The marking (order code) for a pin header variant shall appear on the package and shall be of the following style:



For details of Connector Style, Finish and No. Of Contacts per row, see individual drawings or Harwin catalogue.

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### 3. RATINGS.

For all M20 Pin Headers, including Pin header variants (detailed below as "M20-PH").

Note: individual components may exceed above ratings – check individual customer information sheets.

#### 3.1. MATERIAL & FINISH.

Moulding Material:

For PC Tail or SMT connectors ..... High Temperature Thermoplastic, UL94V-0

For Cable connectors..... See individual drawing

Contact Material ..... Copper alloy

Contact Finish..... See individual drawing

#### 3.2. ELECTRICAL CHARACTERISTICS.

Current Rating (per contact) ..... 3A max

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

Contact Resistance (after conditioning) ..... 30mΩ max

Dielectric Withstanding Voltage (Voltage Proof):

M20-875..... 500V AC, for 1 minute

M20-PH (SMT), M20-786/787 ..... 800V AC, for 1 minute

M20-106/107/116/118 ..... 1,500V AC for 1 minute

Other ..... 1,000V AC for 1 minute

Insulation Resistance:

M20-PH (SMT) ..... 500MΩ min

M20-106/107/116/118 ..... 5,000MΩ min

Other ..... 1,000MΩ min

#### 3.3. ENVIRONMENTAL CHARACTERISTICS.

Operating Temperature Range ..... -40°C to +105°C

Vibration:

M20-PH/781/782/783/786/787/788/789/791/792/889/890/891..... 50-2000Hz, 3.13G<sub>rms</sub>,  
Duration 15 mins in each axis

Other ..... Not tested

Shock:

M20-PH/781/782/783/786/787/788/789/791/792/889/890/891..... 30G for 11ms

Other ..... Not tested

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**3. RATINGS (continued).**

**3.4. MECHANICAL CHARACTERISTICS.**

Durability:

M20-PH/786/787/788/789/890 .....	300 operations
Other .....	300 operations for gold 50 operations for tin

Insertion force (maximum):

M20-116/118 .....	1.2N per contact
M20-782/783/786/787/788/789/889 .....	2.0N per contact

Withdrawal force (minimum):

M20-116/118/781/782/783/786/787/788/789/791/792/889.....	0.3N per contact
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Contact Retention force (minimum).....7.84N per contact

Contact Crimp pull-off forces:

<b>Wire Gauge</b>	<b>Minimum pull-off force (Newtons)</b>
30 AWG	9N
28 AWG	11N
26 AWG	18N
24 AWG	29N
22 AWG	45N

**3.5. SOLDERING DATA.**

Solderability (for PC Tail & SMT products)..... 245°C for 5 seconds

Soldering heat resistance (for PC Tail & SMT products) .....260°C for 10 seconds

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**APPENDIX 1 - GAUGES.**

**NOTES:**

1. Material = Steel to BS1407 or equivalent.
2. Gauging surfaces to be hardened/ground, 650 HV5 min.
3. These gauges to be used for testing fully assembled components only.
4. Ultimate wear limit 0.005mm is allowable on gauging dimensions.

**CONTACT PUSH-OUT GAUGE.**

