## COMPONENT SPECIFICATION – M20 SERIES CONNECTORS

NOVEMBER 2019

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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.
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. RATINGS
For all M20 Pin Headers, including Pin header variants (detailed below as “M20-PH”). Note: individual components may exceed these ratings – check individual customer information sheets.

2.1. 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

2.2. 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-PH, M20-785/786/787/789/875..............................500V AC for 1 minute
  M20-106/107/116/118..................................................800V AC for 1 minute
  Other........................................................................1,000V AC for 1 minute
Insulation Resistance:
  M20-PH...................................................................500MΩ min
  Other.......................................................................1,000MΩ min

2.3. ENVIRONMENTAL CHARACTERISTICS.
Operating Temperature Range:
  M20-106/107..................................................................-25°C to +85°C
  Other........................................................................-40°C to +105°C
Vibration:
  Other........................................................................Not tested
Shock:
  M20-PH/781/782/783/786/787/788/789/791/792/889/890/891........30G for 11ms
  Other........................................................................Not tested
2.4. **MECHANICAL CHARACTERISTICS.**

Durability........................................................................................................... 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.................................0.3N per contact
- Contact Retention force (minimum).....................................................................7.84N per contact

Contact Crimp pull-off forces:

<table>
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<tr>
<th>Wire Gauge</th>
<th>Minimum pull-off force (Newtons)</th>
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<tbody>
<tr>
<td>30 AWG</td>
<td>9N</td>
</tr>
<tr>
<td>28 AWG</td>
<td>11N</td>
</tr>
<tr>
<td>26 AWG</td>
<td>18N</td>
</tr>
<tr>
<td>24 AWG</td>
<td>29N</td>
</tr>
<tr>
<td>22 AWG</td>
<td>45N</td>
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2.5. **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
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.