



# THE DATASHEET OF M20-003





# HARWIN

## Component Specification

**C00120**

M20 Series Connectors  
November 2022

SECTION	TITLE	PAGE
1	Description of Connector and Intended Application	2
2	Ratings	2
Appendix 1	Gauges	4

## 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

Note:

- Individual components may exceed below ratings – check individual customer information sheets.
- Ratings for all M20 Throughboard Pin Headers, including Pin header variants, are detailed below as "M20-PH".

### 2.1. Material & Finish

Housing Material:

For PC Tail or SMT connector .....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, M20-785/6/7/9, M20-875 .....500V AC for 1 minute

M20-106/7, M20-116/8 .....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:

M20-106/7 .....-25°C to +85°C

Other .....-40°C to +105°C

Vibration:

M20-PH, M20-781/2/3/6/7/8/9, M20-791/2,

M20-889/90/91 .....50-2,000Hz, 3.13G<sub>rms</sub>, Duration 15 mins in each axis

Other .....Not tested

Shock:

M20-PH, M20-781/2/3/6/7/8/9, M20-791/2,

M20-889/90/91 .....30G for 11ms

Other .....Not tested



## 2.4. Mechanical Characteristics

### Durability:

Gold finish on contact area ..... 300 operations

Tin finish on contact area ..... 50 operations

### Insertion Force (maximum):

M20-116/8..... 1.2N per contact

M20-781/2/3/6/7/8/9, M20-791/2..... 2.0N per contact

### Withdrawal Force (minimum):

M20-116/8..... 0.8N per contact

M20-781/2/3/6/7/8/9 ..... 0.3N per contact

M20-791/2 ..... 0.2N per contact

Contact Retention Force (minimum) ..... 7.84N per contact

### Contact Crimp Pull-off Force:

30AWG ..... 9N minimum

28AWG ..... 11N minimum

26AWG ..... 18N minimum

24AWG ..... 29N minimum

22AWG ..... 45N minimum

## 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



**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.


**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**




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