# THE DATASHEET OF

# M20-9990646

HRi RANGE EZi RANGE BBi RANGE

HARWiN

# Component Specification

## C00120

M20 Series Connectors
November 2022

## 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, 3.13$G_{rms}$, 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:

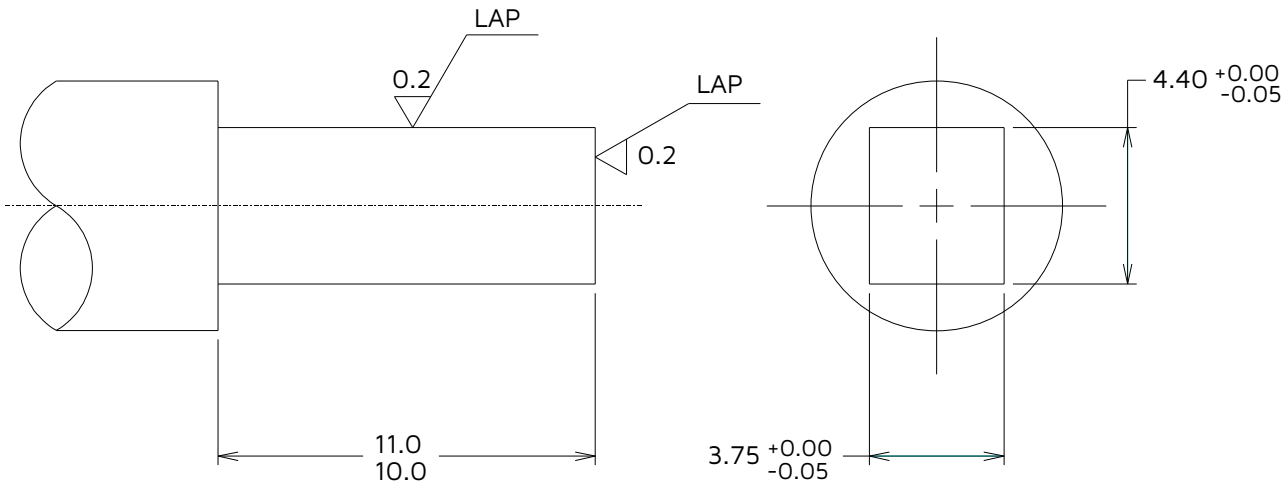
1. Third angle projection is used where projected views are shown.
2. All dimensions are in millimetres.
3. For explanation of dimensions, etc. see BS8888.

## 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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