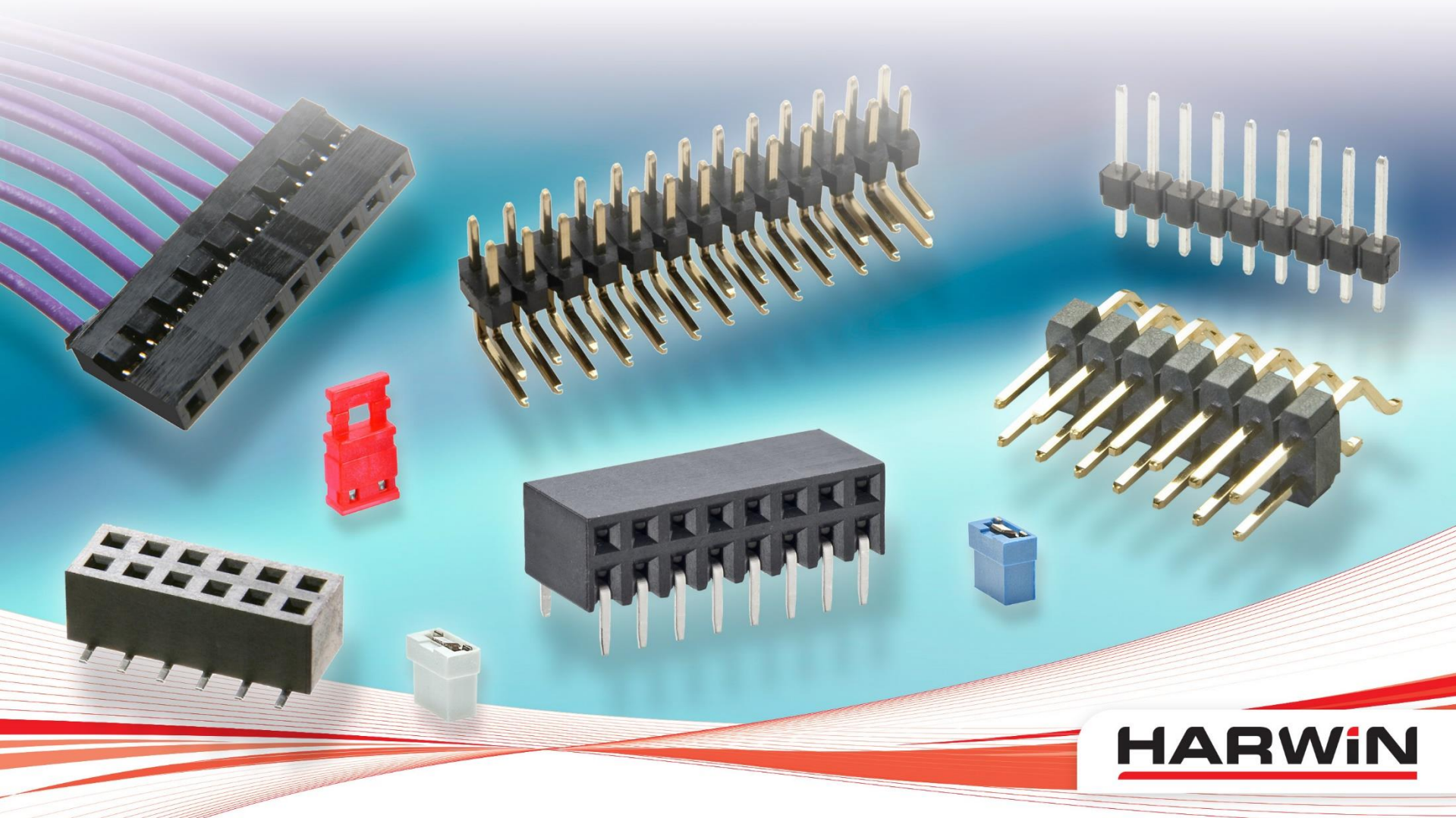


# M20 and M22

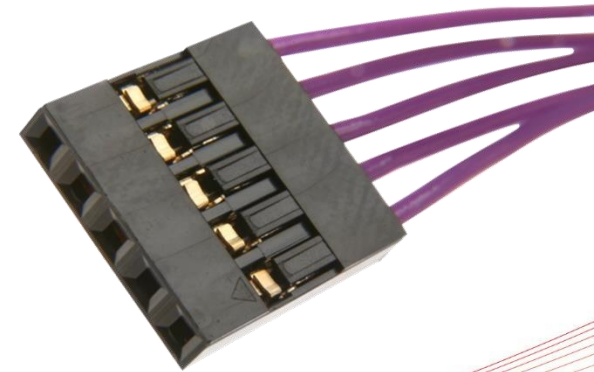
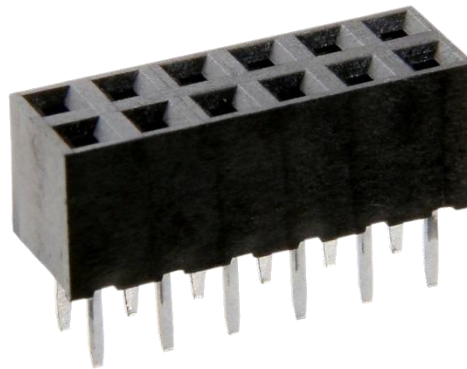
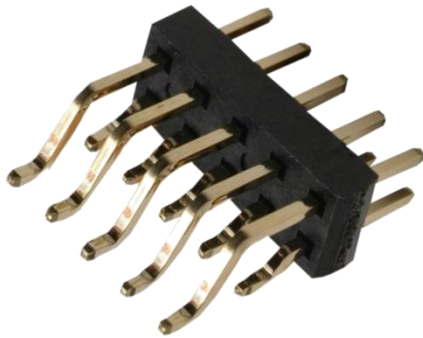
(2.54mm and 2.00mm pitch)



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# M20 and M22 Connectors

Great Design **Flexibility**



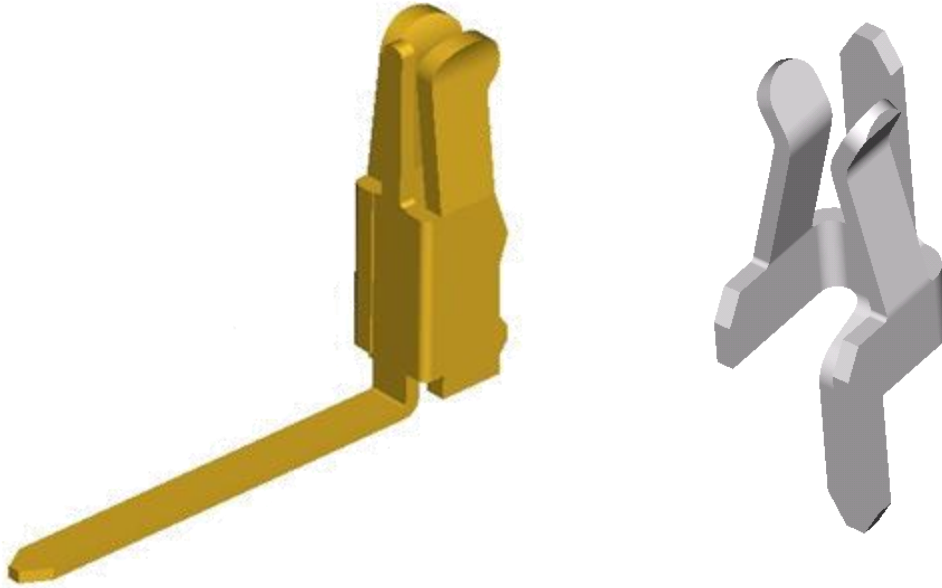
**HARWIN**

Today's electronics and PCB designers are faced with many connector challenges, including applications with increased PCB density, height restrictions and quality product – all whilst designing to a budget. The Industry Standard Pin Headers and Sockets from Harwin fulfil these requirements, and come in two common pitch sizes:

- **M20** – 2.54mm (0.1") pitch
- **M22** – 2.00mm (0.079") pitch

# M20 and M22 Connectors

The heart of the connector



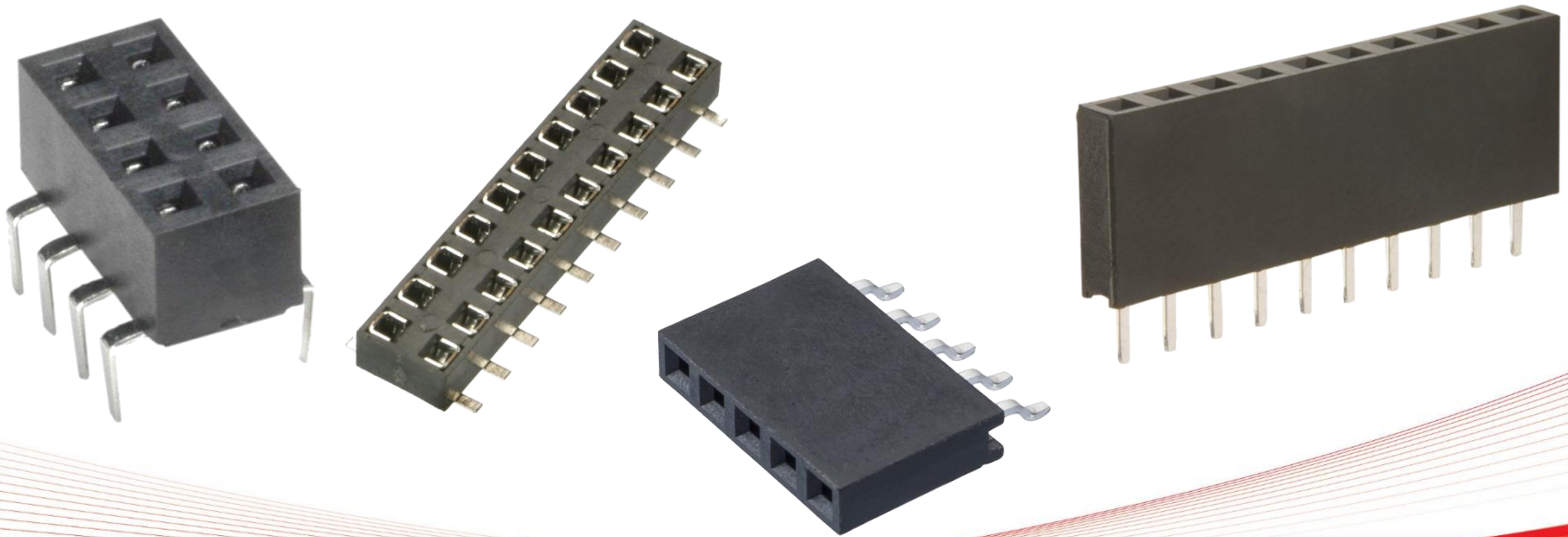
**HARWIN**

M20 and M22 sockets feature dual beam contacts, typically in phosphor bronze or other high-quality spring material. The dual beam connection gives good durability, repeatable retention and a reliable connection, offering a dependable, cost-effective connector. Design types include flat beam designs (as shown above) and tuning fork designs.



# M20 and M22 Sockets – PCB Mount

Single & Double Row, Surface Mount & PC Tail



**HARWIN**

Female (Socket) connectors are available for PCB mounting in the following variations:

## M20 (2.54mm pitch):

- Throughboard PC Tail for Vertical Top Entry, Dual Entry (Bottom Entry) and Horizontal
- Surface Mount for Vertical Top Entry, Dual Entry (Bottom Entry) and Horizontal

## M22 (2.00mm pitch):

- Throughboard PC Tail for Vertical Top Entry
- Surface Mount for Vertical Top Entry, Dual Entry (Bottom Entry) and Horizontal

# M20 and M22 **Sockets** – Cable

**Complete** cable connector solutions



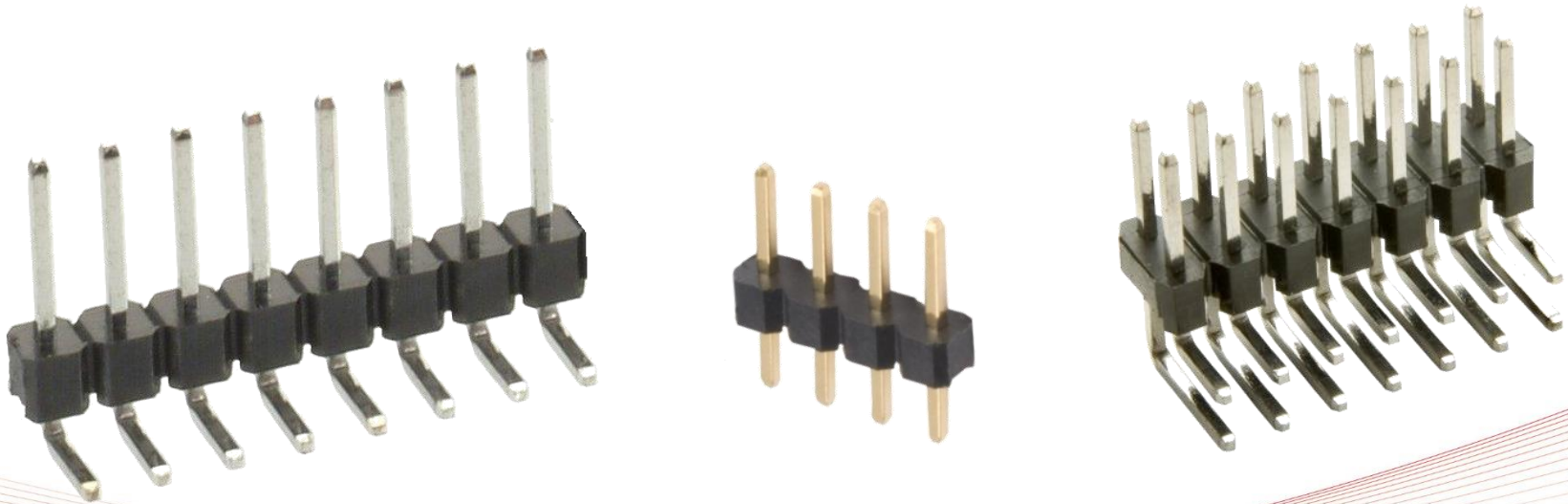
**HARWIN**

Both the M20 and M22 ranges offer a complete cable connector solution:

- Single and Double row crimp housings
- Loose and reeled crimp contacts
- Hand Crimp Tooling - [Z20-320](#) for loose M20 contacts, [Z22-020](#) for loose M22 contacts

# M20 and M22 Headers – PC Throughboard Tail

Standard connectors, **multiple** options



**HARWIN**

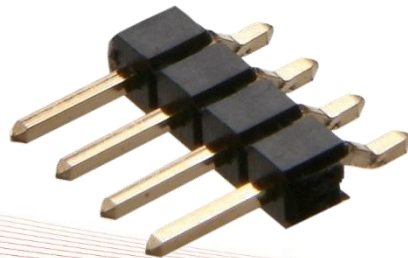
The male connectors (commonly referred to as Pin Headers) with Throughboard Tails come with standard orientations of Vertical and Horizontal in both single and double row, and a variety of mating pin lengths.

- M20 – Mating pin lengths of 5.8mm, 6.1mm and 7mm;
- M22 – Mating pin lengths of 3.5mm and 4.2mm (recommended for mating with crimp connectors).

Housings are all made from high-temperature material suitable to withstand reflow soldering.

# M20 and M22 Headers – Surface Mount

Available in Tape and Reel for auto-placement



**HARWIN**

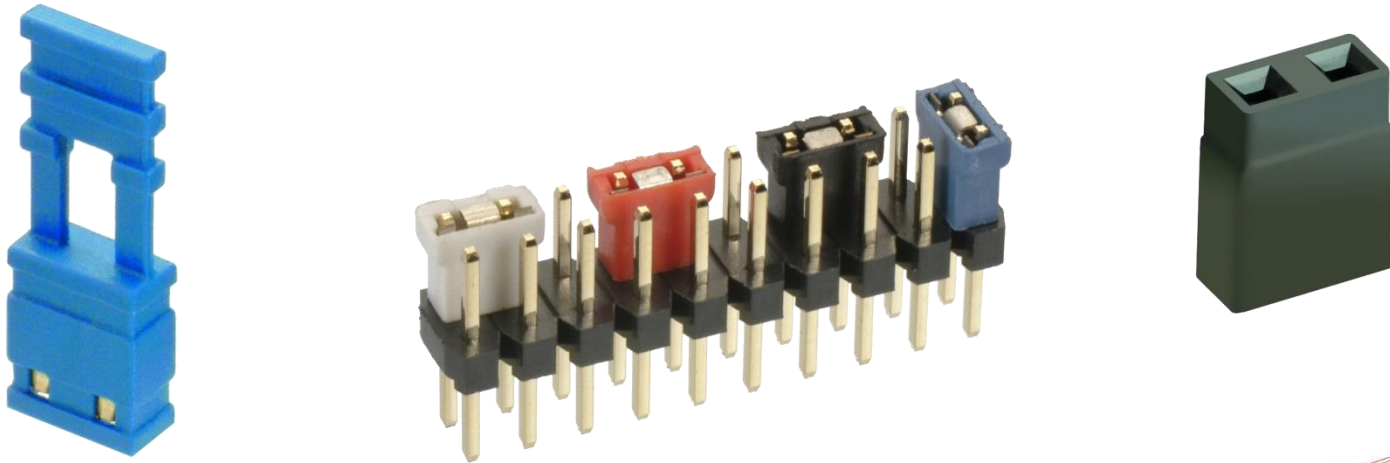
The Surface Mount Pin Headers come in both Vertical and Horizontal configurations. Each can be supplied in tape and reel packaging format to facilitate automated assembly processes to the PCB. Vertical SMT connectors in tape and reel will be fitted with disposable pick-and-place caps.

- M20 – 5.8mm mating pin length in Vertical Single/Double row, Horizontal Double row. 6mm for Horizontal Single row.
- M22 – 3.5mm or 4.2mm for Vertical Double row. 4mm for Horizontal Single row, 3.2mm or 4.2mm for Horizontal Double row.



# M20 and M22 Jumper Sockets

## Programming Connectors



**HARWIN**

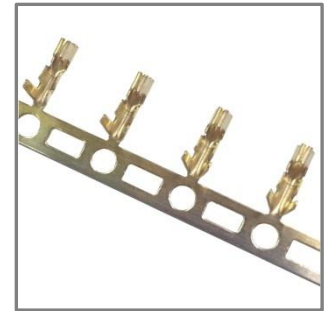
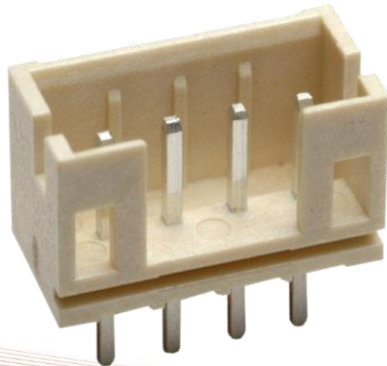
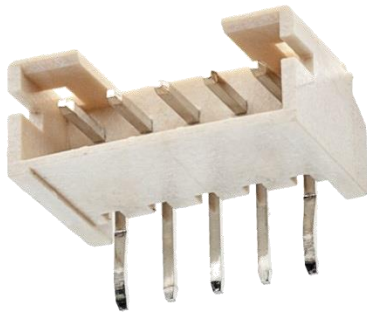
Jumper sockets (also known as shunts) provide additional programming options, changing data streams with manual placement of the sockets on a double-row pin header.

- **M20** (2.54mm) – Open top, closed top, short fixed handle, short and long flexible handle. The handles facilitate easy placement and removal of the sockets.
- **M22** (2.00mm) – Open top sockets only. The open top allows access to the internal contact for a test probe.



# M22 Polarized

## Cable-to-Board polarized system

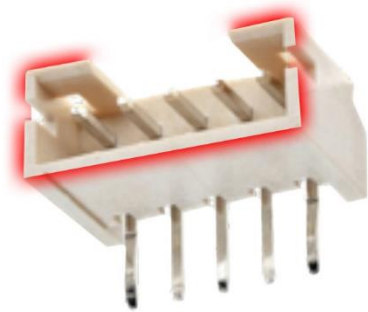


**HARWIN**

The M22 range offers an additional Single Row cable-to-board connector system. The range consists of vertical and horizontal male connectors for PCB Throughboard mounting, and female cable housings. The female crimp contacts are available loose for use with the Hand Crimp Tool Z22-020, or reeled for automated processes.

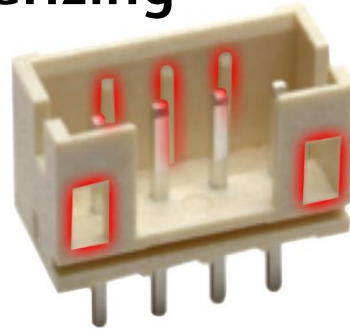
# M22 Polarized

Shrouded, polarized, latching

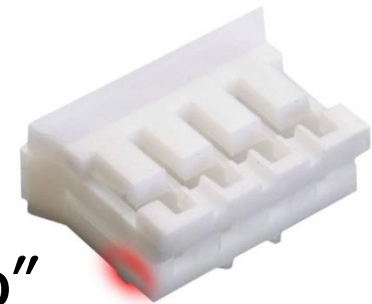


Shrouded

Polarizing



"Bump"  
Latch



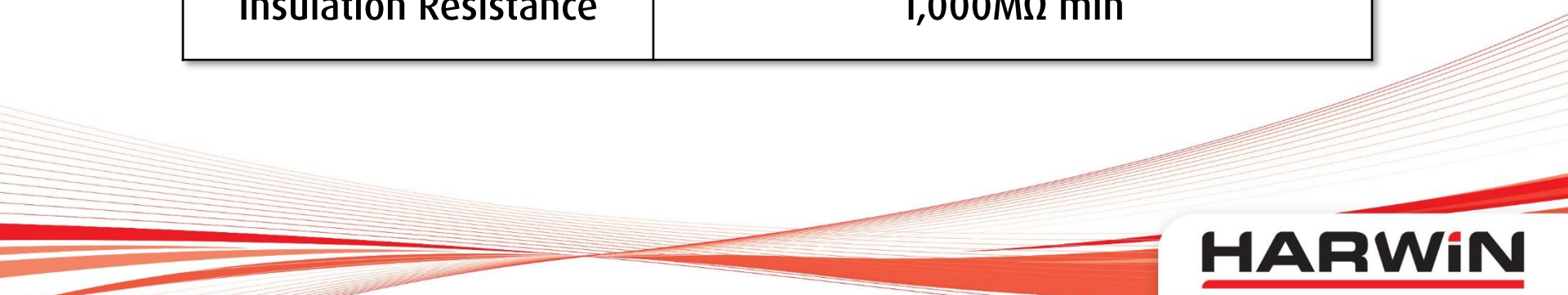
Shrouded housings are used on both male vertical and horizontal connectors. This protects the male mating pins whilst the connectors are not mated, and also allows for polarization and latching. The polarization features on both male and female connector housings to prevent mis-mating. The female crimp housing features "Bump" latches, which latch into windows in the male connector housings. The shape of the "Bump" latch gives increased retention, but the connectors are not locked together and can be un-mated without any tooling.

**HARWIN**

# M20 and M22 Connectors

## Electrical Specifications

|                       |                                                                  |
|-----------------------|------------------------------------------------------------------|
| Current Rating        | M20 = <b>3A</b> per contact<br>M22 = <b>Up to 2A</b> per contact |
| Contact Resistance    | <b>20mΩ max</b>                                                  |
| Insulation Resistance | 1,000MΩ min                                                      |

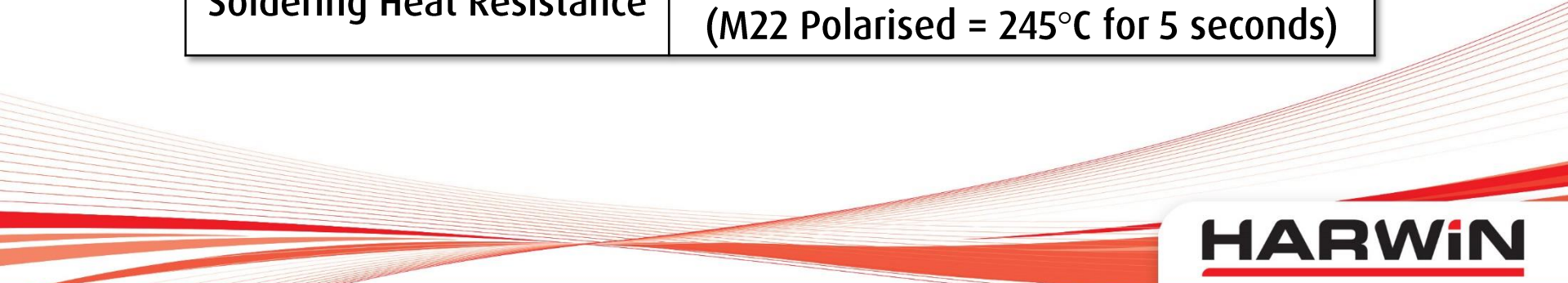
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Component Specifications are given in more detail on individual connector Technical Drawings, located on each individual product page under Downloads.

# M20 and M22 Connectors

## Mechanical & Environmental Specifications

|                           |                                                               |
|---------------------------|---------------------------------------------------------------|
| Durability                | Up to 300 mating operations                                   |
| Temperature Range         | -40°C to +105°C<br>(M22 Cable, Polarised = -25°C to +85°C)    |
| Soldering Heat Resistance | 260°C for 10 seconds<br>(M22 Polarised = 245°C for 5 seconds) |

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All Throughboard M20 and M22 connectors are manufactured using the same housing materials used on the Surface Mount connectors, and can therefore withstand the same reflow soldering processes.



# M20 and M22 Connectors

## Markets

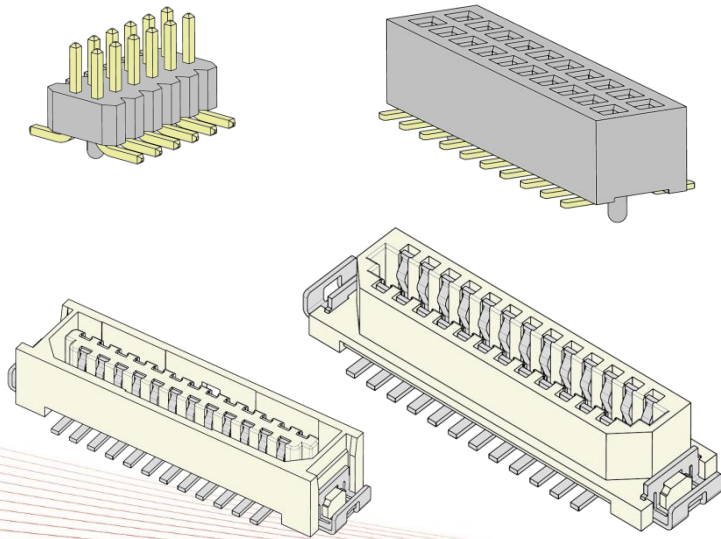


Many applications use 2.54mm and 2mm pitch connectors – these products are now very well established as standard connectors on embedded PCs, motherboards and larger electronics systems.

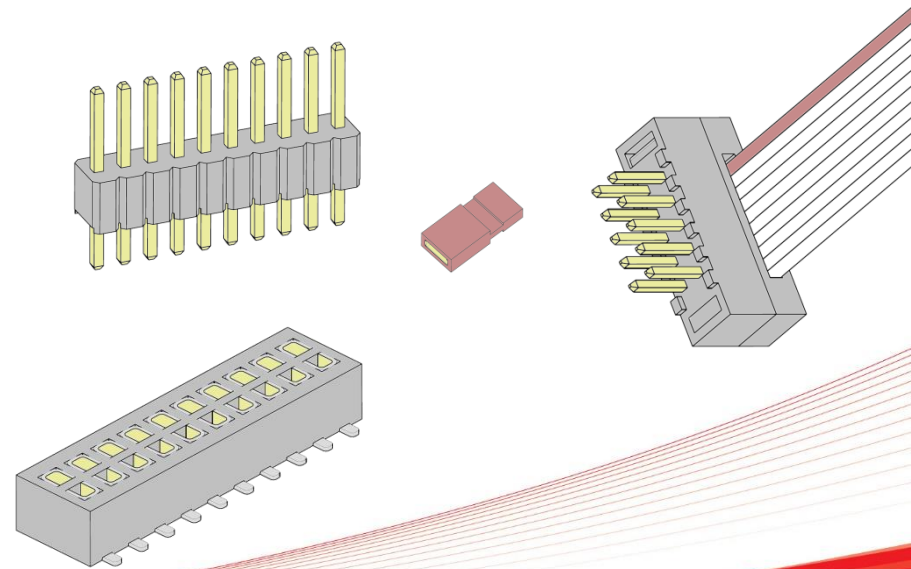
- Consumer Electronics
- Communications
- Drives and Controls
- Industrial Monitoring
- Personal Computing

# If you like this product, try...

## Fine Pitch



## ARCHER - 1.27mm Pitch



**HARWIN**

- 1mm and 1.25mm pitch Industry Standard
- Pin header and Socket or single-contact connectors
- Discrete Cable connectors, pre-cabled contacts
- Vertical SMT options with low board-to-board heights
- Tape and Reel packaging options

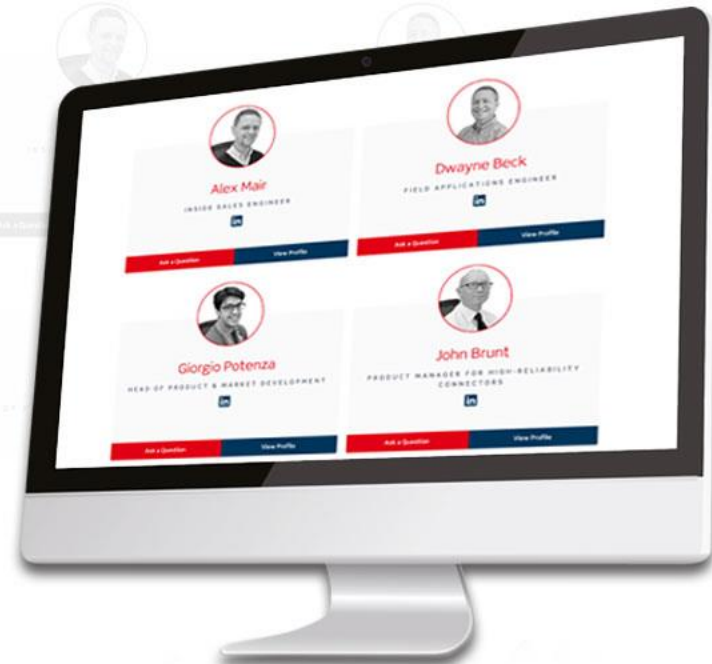
- 1.27mm pitch Industry Standard
- Pin header and Socket system, with Jumper Sockets
- IDC Ribbon Cable connectors
- Vertical and Horizontal, Throughboard and SMT options
- Variable pin length specification available

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