

In an industry with a plethora of choices when it comes to electrical connectors, it is easy to become confused when looking to select a reliable solution.

With this in mind; we have created a handy guide to help bring some clarity to the situation that customers often find themselves in as they scratch their heads wondering what separates one solution from the other. This fact sheet focuses on the common mechanisms that allow opposite connectors, often referred to as mating halves, to fix together providing a safe and secure connection.

Let's take a look at the various locking mechanisms typically associated with the two most common connector shapes (circular and rectangular) which are available from the brands that we represent.

Circular Connectors



Bayonet

Derived from military specification (mil-spec) connectors, bayonet coupling connectors are highly regarded for their robust design and construction. They are often used in outdoor applications on equipment that needs to withstand shock and vibration.

Possible Advantages

- Swift coupling action with 1/3 turn
- Excellent resistance to shock & vibration
- Audible click when fully engaged



Screw

Screw Locking is a term used to describe a threaded coupling mechanism. This method is commonly used across a wide range of applications, especially in automation and control markets where it has been standardised on series such as M12, M16 & M23.

Possible Advantages

- Simple and effective
- Universally recognised
- Allows tightening to a specific torque



Snap-in

A simple yet effective light weight and low-cost locking mechanism ideally suited to applications in plant engineering and electrical equipment construction.

Possible Advantages

- Light weight
- User friendly
- Low-cost



Push-pull

Known for their ease of use, miniature profile and high durability; push-pull locking connectors have found their niche in laboratory instrumentation, medical electronics & broadcasting industries.

Possible Advantages

- Space saving
- Swift coupling action
- High mating cycles



Metal Spring Latch

Developed with field-installers in mind, this locking method allows users to rapidly connect equipment together. This is especially important for applications where a large number of connections are to be made.

Possible Advantages

- Rapid coupling action
- High mating cycles
- Audible click when fully engaged

Rectangular Connectors



Lever

A robust and effective locking mechanism found mostly on heavy duty connectors. This method of locking is common in production control environments with limited space and where input/output connectors are often sat in rows.

Possible Advantages

- Rapid coupling action
- Excellent resistance to shock & vibration
- Audible click when fully engaged



Central Screw

A common and basic locking method often used on low-cost connectors. This system is simple yet secure and the integrated locking screw helps to keep a compact footprint.

Possible Advantages

- Simple and affective
- Space saving
- Low-cost



Plastic Latch

A simple mechanism found mostly on light duty connectors that require a low IP rating; within white goods and control cabinets for example.

Possible Advantages

- Simple and affective
- Low-cost
- Rapid coupling action



Jack Screws

Most commonly used in conjunction with backshells for d-subminiature connectors; this low-cost industry standard method has been a go-to solution for many years. In a typical setup the backshell would have a jack screw at either side and the panel connector would house the internal threads that these mount into.

Possible Advantages

- Simple and affective
- Universally recognised
- Low-cost



Internal Latch

A proprietary design from HARTING that has an internal latching system, thereby reducing the external profile of the connector. An external push button allows the user to disconnect using just one hand.

Possible Advantages

- Space saving
- Swift coupling action
- Excellent resistance to shock & vibration