

Telsonic Wire Splicing Systems Gain Popularity

Specialist manufacturers and suppliers of components such as wiring harnesses and companies involved in panel build are increasingly turning to TELSONIC's Ultrasonic Wire Splicing Technology as an alternative to more traditional methods of joining wires. In this article, TELSONIC's Christian Huber explains the reasons behind this shift to ultrasonics and the benefits that can be realised by adopting the process.



Ultrasonic splicing technology delivers reliable electrical connections cost effectively

For many, the traditional methods of joining or splicing wires have been soldering or resistance welding. These well-established processes have proven to be a reliable and trusted solution to many applications. Resistance welding is still often the preferred solution in applications where stainless steel or nickel are being used, or where the wire bundle may be very small. The potential drawbacks from the resistance welding process however include the heat generated, which may have an adverse effect on the mechanical properties of the material being joined, and high electrode wear which requires regular attention from operators or maintenance personnel. Whilst soldering is a good solution for many applications, there are limitations to this process in areas where higher temperatures could pose a risk to the overall integrity of the joint.

Ultrasonic splicing technology is increasingly finding its way into new applications, especially within the automotive and other industry sectors, where reliable electrical connections are required. The many advantages of the ultrasonic splicing include lower contact resistance, high resistance to corrosion plus the fact that the process is highly cost effective. Typical applications are splicing of stranded copper wires in sub-assembly operations, final assembly for wire harnesses or compaction of single wires. In addition, aluminium and copper-aluminium combinations can be welded in the same machine using special tooling.

To meet the increasing demand for its ultrasonic splicing technology, Telsonic has produced a comprehensive range of systems and solutions. The range starts with Telso@Splice TS3, a well-proven and sophisticated wire splicing system. With a capability of splicing from 0.26 up to 40 mm² cross section wires and with a lightweight and compact design, it is ideal for use as a portable unit on wire harness assembly boards. This same weld head can also be used for sub-assembly operations and is available in various benchtop and stand configurations.

Telso@Splice TS3 is programmed and controlled through a touch screen monitor with an intuitive user interface. Individual welds and sequences can be easily defined and recalled. Various welding modes and quality windows can be configured with minimal effort. The weld quality can be ensured with multiple user levels and - just-in-time statistical analysis. Thanks to the networking capabilities, easy data exchange and integration into Management Execution Systems is possible.



Telso@Splice TS3

Telso@Splice TS3 is designed for high volume production on copper, aluminium and combinations of both materials

The system incorporates an easily maintainable horn and anvil mechanism, which uses integrated cooling, designed for high volume production on copper, aluminium or combinations of both.

The TS3's horn and anvil arrangement are designed for ease of maintenance.

The Telso@Splice TS6 is an advanced wire-welding machine designed for applications on larger cross sections. Thanks to its rugged construction it is possible to weld a wide range of cross sections, from 2.5 to 100 mm², depending upon material being processed. The weld head and the associated control system are also integrated into an ergonomic table. Typical applications for TS6 are wire connections with large cross sections, e.g. for High Voltage, Battery and Drive Cables. As for the TS3 system, aluminium and copper-to-aluminium combinations can also be welded within the same machine using special tooling. Telso@Splice TS6 also uses the common touch screen monitor and intuitive user interface, allowing easy transition between the different systems for operators and maintenance personnel.

TELSONIC offer a comprehensive range of ultrasonic modules and systems for a variety of metal and plastic welding, sealing, food cutting, textile cutting and cleaning applications.

For more information www.telsonic.com

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