

Y-Lock Pullforce – Reliable Board-to-Cable System with FFC made in Germany for Automotive Applications

Munich, June 2020 – Yamaichi Electronics designs, manufactures and distributes various automotive connectors for applications like e.g. infotainment, camera systems, car computing, antennas, TV, navigation, radar and lidar as well as battery management systems, etc. The automotive connectors are produced in ISO TS16949 certified manufacturing sites.

The Y-Lock series is a board-to-cable system and available in 3 different versions. In the last years the renowned system has proven itself. It is successful in diverse automotive applications. The FFC (Flexible Flat Cables) suitable for the connector are produced in Yamaichi Electronics' own factory in Germany.

The non-ZIF-based connector system is especially outstanding for its locking system, which works without opening or closing a flap or drawer and without actuating an unlocking mechanism. In the current version 1, the interlock is provided with a ratchet hook on the housing of the connector, which engages behind the supporting tape of the FFC/FPC. Both contacting and removal of the FFC are very simple using a defined pull-out force.

Positive features of version 1 retained

The Y-Lock version 2 retains all the positive features of version 1, but also offers some interesting new features. An additional plastic stiffener has been added that is mechanically assembled

with the FFC. The stiffener then engages with the connector. This new system makes guiding the FFC and inserting the FFC into the connector more convenient. The pull-out force for the FFC has also been increased from about 10N to about 25N.

Another advantage of the Y-Lock series is the greatest possible security of the contact coverage between FFC pads and connector. The contact coverage is provided by the FFC guide rails in the connector. This facilitates even more the FFC guiding by the stiffener which positions the FFC. That makes it simply impossible for the FFC to be crooked, which is always a possibility when using ZIF connectors. That means there is no danger of a lack of contact coverage.

Version 3 with additional locking

Version 3 is equipped with additional locking mechanisms for an even better contact reliability in critical applications. The additional lockings are realised by lateral and frontal latches. Besides of the additional lockings the version 3 is identical to version 2.

The Y-Lock concept is particularly suitable for space-critical installation situations, permitting secure connections even in the absence of visual contact – whether you are using manual or automated insertion. Due to the robust design this version is particularly in demand for battery management systems.

Increased load capacity of all 3 versions

All 3 versions were specifically designed for the needs of applications subject to increased requirements, such as automotive or industrial applications. For example, increased load capacity in terms of both vibration and shock and harsh climatic requirements over a temperature range of -40 to

+105 °C were considered. Qualification was therefore based on the demanding LV 214 automobile standard.

Various pin counts

Version 2 of the Y-Lock Pullforce is available as 18 and 50-pin variant with a pitch of 0.5mm and a connector orientation of 180°. Other pin counts and design variants are available upon request. This allows the practical expansion of the already wide range of version 1. Version 1 is available in pitches of 0.5 and 1.0mm as well as with 12 to 30 contact pins in 90° and 180°. Currently version 3 is available as 20-pin version with 1.0mm pitch or as 10-pin version with 2.0mm pitch. The series are enhanced continuously by new pin-counts.

Y-FFC from own production in Germany

Yamaichi Electronics offers the matching FFC's for all 3 versions, with or without additional stiffeners. Samples of all versions including the FFC are available upon request. The FFC (Flexible Flat Cable) is manufactured in the own factory in Frankfurt (Oder) in Germany.

About Yamaichi Electronics

Yamaichi Electronics is a market leader for Test & Burn-In sockets, connectors and connection systems. Their reliability and functional dependability are absolutely essential for the success of the overall project. Yamaichi Electronics established themselves on the world market very quickly as a manufacturer of high-quality, reliable components for demanding applications in various markets and applications: semiconductor, industrial automation, automotive, data networking, measurement & testing, medical, mobile computing, embedded computing, and others.

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