Neckarsulm (Germany), 22 September 2022

Easy Locking Connector for healthcare and homecare applications  
**Reliable interface in medical devices  
  
Easy to use, intuitively pluggable, and safe: The Easy Locking Connector from binder is recommended for sensitive homecare applications. Designed to be robust and biocompatible, it meets the requirements for electromechanical connectivity in medical devices.**binder, a leading supplier of industrial circular connectors, presents the 570 series – the Easy Locking Connector (ELC) for use in medical applications. The cable connector which features snap-in locking and an asymmetric hexagon shape in the mating area stands for high safety in operation as well as for a long service life. Biocompatible, non-irritant to skin, and resistant to disinfectants, it is suitable for use in the patient environment. The shock-proof and vibration-resistant ELC is available in 4-, 8-, and 12-pole versions for rated currents of 2 A and voltages of 250 V and 150 V, respectively.  
  
**Special requirements in medical environment**  
The quality and safety of electromechanical connectivity is of vital importance in healthcare. Technical malfunctions, unstable parameters, product failures, or a general lack of reliability directly affect the success of therapies as well as the health or even the life of patients. For connectors, this results in the demand for properties such as contact reliability and signal integrity, but also for ergonomic design, simple and intuitive operation – in the homecare segment by the patient himself – as well as a resilient connection. In addition, suitability for hygienically sensitive environments, protection against dust, splash water, and accidental electrical contact are as important as a color scheme that complies with the design specifications of medical device manufacturers.

binder has many years of experience as well as comprehensive expertise in connectors for medical technology. This relates in particular to manufacturing processes such as plastic injection molding, soldering and crimping, and the overmolding of cables. All this knowledge and skills have been applied to the development of the Easy Locking Connector.

Medical-equipment products are subject to the EU Medical Device Regulation (MDR). The framework has been in force since 2021, and transitional provisions remain in force until 2025. Manufacturers of medical equipment must register their products and therefore need a large amount of documentation. binder supports its customers in this process by providing the necessary technical documents. In close cooperation with the customers, the company elaborates which documents are concerned. In addition, binder is certified according to DIN EN ISO 13485 and thus meets the high quality standards regarding product safety and efficacy that are required in medical engineering.  
  
**570 Series – simple but reliable**  
One particular feature of the application in medical devices – in contrast to many industrial uses – is the need to frequently disconnect and reconnect the interfaces. This is because in clinical use, but also in homecare, it is often necessary to exchange and interconnect portable devices. The ELC is therefore designed to endure more than 5,000 mating cycles. Mating is intuitive, and blind mating is possible even by non-professionals: The alignment of the plug to the socket is predetermined by an asymmetric hexagon shape in the mating area, which prevents mismating. Snap-in hooks ensure simple but effective locking; the latter is easy for the operator to recognize by the snapped-in hooks.

The ELC cable connector consists of two assemblies that can be simply attached together during assembly and automatically snap into place. The two parts can thereafter only be separated with the aid of a special detachment tool. This prevents unintended disconnection by the user and thus contributes to the safety of the interface.  
  
**Protected, rugged, well tolerable**  
The 570 series ELC is protected to IP54 against contact, dust, and splash water from all directions. The female panel mount connector is designed to provide protection against the ingress of splash water and liquids, as well as accidental electrical contact, even when disconnected. In addition to an O-ring, a flat seal is also available as an alternative for device installation; thus, a recess in the housing is not necessary.

The mechanical resistance of the connector with solder termination was verified by means of shock and vibration tests in accordance with DIN EN 60601-1-11 and by means of a drop test according to DIN EN 60601-1.

Another property relevant to medical equipment is the biocompatibility of the ELC, which has been tested and confirmed by an independent external laboratory in accordance with the DIN EN ISO 10993-5 standard. In addition, the 570 series is DEHP-free (except the contact body) and thus well tolerated by skin. The connectors are easy to clean and resistant to disinfectants.

The ergonomically designed housing of the ELC is made of plastic (PA66) and available in gray-white, similar to RAL 9002.  
  
**About binder**binder, headquartered in Neckarsulm, Germany, is a family-owned company shaped by traditional values and one of the leading specialists for circular connectors. Since 1960, binder has been synonymous with the highest quality. The company works with more than 60 sales partners on six continents and employs around 2,000 people worldwide.

The binder group includes the binder headquarters, 16 affiliated companies, two system service providers as well as an innovation and technology center. In addition to Germany, the binder sites are located in Austria, China, France, Hungary, the Netherlands, Singapore, Sweden, Switzerland, the UK, and the USA.  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
Figure caption:  
Durable, and designed for safe, blind mating – 570 series Easy Locking Connector (ELC). Photo: binder  
  
Fields of application:

* Medical devices in clinical and healthcare use

Features:

* Locking system: Snap-in with snap hooks
* Termination: crimp
* Wire gauge: max. 0,25 mm² (max. AWG 24)
* Pin count: 4-, 8-, 12-pin
* Rated current: 2 A
* Rated voltage: 250 V (4-, 8-pin), 150 V (12-pin)
* Protection degree: IP54
* Mating cycles: > 5.000
* Special features: biocompatible, non-irritant to skin, resistant to disinfectants

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