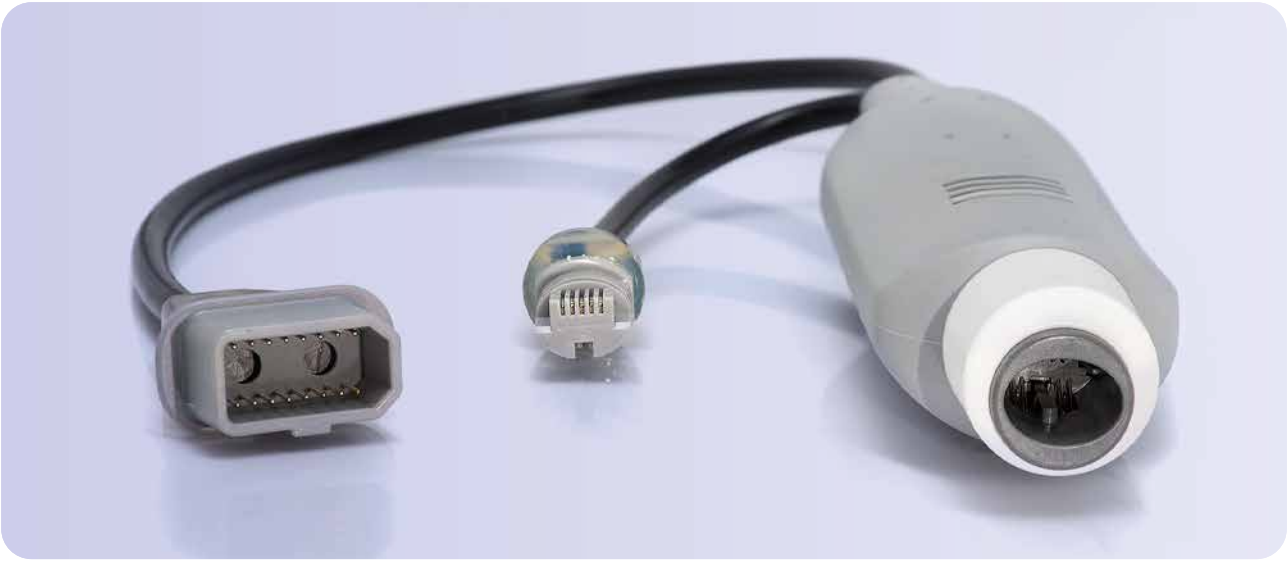
SMART CABLE ASSEMBLIES

BRINGING INTELLIGENCE CLOSER TO THE PATIENT

Innovation in the medical device industry demands not just precision, but intelligence at every level of patient care. Smart Cable Assemblies represent a major leap forward in bridging that gap, embedding functional intelligence directly within the cable itself. At TSE, a brand of Paragon Medical, we specialize in advancing this concept through Smart Cable Assemblies. These next-generation cables bridge the gap between traditional signal transmission and intelligent data processing, bringing computation and sensing closer to the patient.



What Is a PCB and Why It Matters in Smart Cables

A Printed Circuit Board (PCB) serves as the foundation for modern electronics, enabling the organized routing of electrical signals between components. In the context of Smart Cable Assemblies, the PCB plays a critical role by housing active electronic chips and circuits that enhance the cable's functionality. Whether rigid or flexible (flex circuit), the PCB acts as the "intelligence hub" inside the cable, enabling data processing, signal amplification, conditioning, and communication directly at the patient's side.

Why Smart Cables Matter in Modern Medical Devices

Traditional medical cables serve a basic but essential function: they transfer electrical signals from patient sensors to monitoring equipment. While effective, they lack the ability to process or interpret the information they carry. Smart Cable Assemblies, however, introduce an additional layer of sophistication by integrating miniature PCBs or flex circuits into the cable infrastructure. These components can condition signals, filter noise, amplify outputs, or even perform basic decision-making tasks before passing data to the primary medical system.

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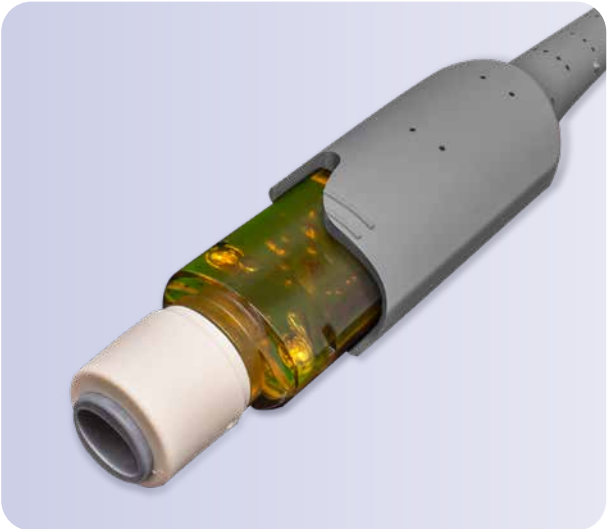

Expertise in Design, Integration, and Manufacturing

TSE brings deep expertise in designing, prototyping, and manufacturing Smart Cable Assemblies for the medical field. Our specialized team collaborates closely with customers to create customized smart interconnects tailored to specific applications and regulatory needs.

We integrate PCBs or flex circuits into cable designs with precision, protecting sensitive electronics through multiple overmolding techniques.

Core Applications include:

- Patient monitoring
- Electrophysiology
- Medical surgical tools
- Neuromodulation

Full-Spectrum Manufacturing Capabilities

Custom Interconnects: Collaborative designs tailored for unique customer requirements, tested rigorously to meet industry standards.

Low-Pressure Molding: Specialized encapsulation techniques to protect critical PCB components with faster, efficient cycle times.

Liquid Silicone Rubber Molding (LSR): Overmolding processes ideal for flexible, robust, and biocompatible assemblies.

Custom Connector Design: Whether leveraging standard formats or developing space-saving, multi-functional custom interfaces, TSE collaborates to create connector solutions optimized for medical device integration.

Contact Engineering: TSE offers tailored contact solutions to enhance signal integrity, durability, and device functionality.

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