

## Nexans' NEWSENSE® Microcables Open Up New Dimensions In Invasive Surgery

*Nexans has developed a new micro-extrusion process that creates the thinnest possible insulating jacket to enable minimally invasive medical cables to be manufactured with diameters of less than 0.1 mm.*

**Paris La Défense, April 11, 2018** – Modern medicine is on a constant quest to develop minimally invasive surgical and diagnostic procedures. This presents medical device manufacturers with a major, ongoing challenge to increase the miniaturization of their components. Providing the vital power and data connection for these miniature devices is driving the development of a new generation of microcables with diameters of just 0.1 mm or even less. Today, the game is changing with the introduction of Nexans' range of NEWSENSE® microcables with an insulation jacket of only 15 microns thick.

### Designing cables smaller than the eye can see

While medical microcables must ensure the performance, reliability and safety essential for any medical application, their size also plays a decisive role in reducing the impact of invasive procedures. One of the main limiting factors in the miniaturization of cables is the thickness of the insulating jacket. Until now, with a "standard" extrusion process, it was not possible to go below 30 microns thickness – or 30 thousandths of a millimeter (mm). Although at this size the insulation is just a little thinner than the finest human hair (75-125 microns) it would still take up some 84 percent of the overall cross-section of a 0.1 mm diameter cable.

With its new extrusion process, Nexans is able to reduce the insulation jacket of its NEWSENSE® cables down to 15 microns thickness. This allows the manufacture of smaller diameter cables that offer a variety of advantages for invasive surgery. They are easier to insert inside catheters, such as when used in trans-catheter applications in cardiovascular electrophysiology and neurology. They are also less traumatic for patients when used for direct insertion in the body, such as with pacemakers.

A further benefit of the new design is that it offers the capability to incorporate more cables within the same cross-section to allow increased functionality. The extruded layer is also smooth, regular and cosmetically appealing as well as being easy to strip for termination.

One of the first NEWSENSE® designs is a new space-saving cable for trans-catheter applications. This design uses two AWG52 (20 micron copper diameter) insulated wires stranded together as a twisted pair. Shielding against external electromagnetic disturbances is provided by 15 micron diameter wires in silver plated copper alloy. Externally, the cable has a biocompatible, low-friction fluoropolymer jacket extruded with a 0.14 mm final outer diameter.

*"The medical cable market is growing by some five to 10 percent year on year, and the development of the new microcables will enable Nexans to reinforce its already strong position and open up some exciting possibilities for new applications," said **Thierry Malvache, Nexans Medical Product Manager**. "This project has really pushed the envelope of what is possible with extrusion technology, and its success is a tribute to the high level of cooperation between our medical cable factory and the Nexans Research Center in Lyon."*

NEWSENSE® microcables, together with other medical cables, are manufactured at Nexans France specialized facility in Draveil, France.

---

## About Nexans

As a global leader in advanced cabling and connectivity solutions, Nexans brings energy to life through an extensive range of best-in-class products and innovative services. For over 120 years, innovation has been the company's hallmark, enabling Nexans to drive a safer, smarter and more efficient future together with its customers. Today, the Nexans Group is committed to facilitating energy transition and supporting the exponential growth of data by empowering its customers in four main business areas: Building & Territories (including utilities, smart grids, e-mobility), High Voltage & Projects (covering offshore wind farms, submarine interconnections, land high voltage), Telecom & Data (covering data transmission, telecom networks, hyperscale data centers, LAN), and Industry & Solutions (including renewables, transportation, Oil & Gas, automation, and others).

Corporate Social Responsibility is a guiding principle of Nexans' business activities and internal practices. In 2013 Nexans became the first cable provider to create a Foundation supporting sustainable initiatives bringing access to energy to disadvantaged communities worldwide. The Group's commitment to developing ethical, sustainable and high-quality cables drives its active involvement within several leading industry associations, including Europacable, the National Electrical Manufacturers Association (NEMA), International Cablemakers Federation (ICF) or CIGRE to mention a few.

Nexans employs more than 26,000 people with industrial footprint in 34 countries and commercial activities worldwide. In 2017, the Group generated 6.4 billion euros in sales. Nexans is listed on Euronext Paris, compartment A.

For more information, please visit: [www.nexans.com](http://www.nexans.com)

& follow us on:



### Contacts :

#### Press

Angéline Afanoukoe

Tel: +33 (0)1 78 15 04 67

[angeline.afanoukoe@nexans.com](mailto:angeline.afanoukoe@nexans.com)

Ksenia Kanareva

Tel: +33 (0)1 78 15 04 74

[ksenia.kanareva@nexans.com](mailto:ksenia.kanareva@nexans.com)

#### Investor relations

Michel Gédéon

Tel: +33 (0)1 78 15 05 41

[michel.gedeon@nexans.com](mailto:michel.gedeon@nexans.com)

Marieme Diop

Tel: +33 (0)1 78 15 05 40

[marieme.diop@nexans.com](mailto:marieme.diop@nexans.com)