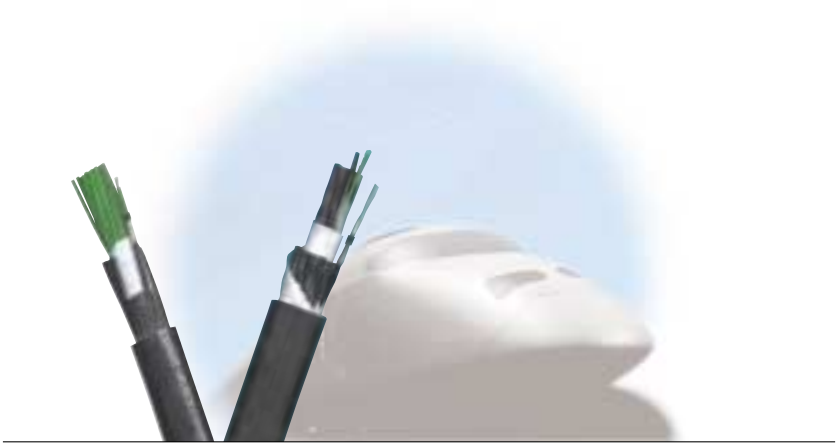
Nexans



Jumper cables for durability, flexibility and multiple functions

Nexans, worldwide leader in cables and cabling systems

As a global expert in cables and cabling systems, Nexans brings an extensive range of advanced copper and optical fiber solutions to three key sectors of the economy: **infrastructure, industry and buildings.**

Its cables and systems can be found in every area of people's lives, from rolling stock and railway infrastructure to telecommunications and energy networks, aeronautics, aerospace, automobiles, petrochemicals, windmills, medical applications, etc.

The presence of Nexans in over 65 countries gives it a full mastery of both national and international standards. Its 10 Competence Centers and International Research Center work closely with customers to constantly improve its standard range of products and technologies and to develop customized, country and industry-specific solutions.

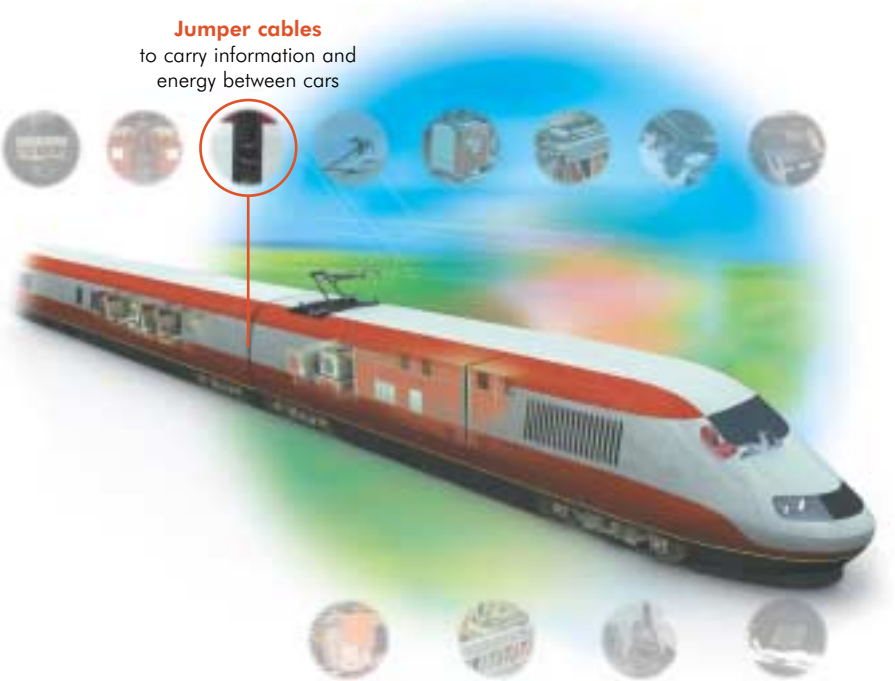
Jumper cables from Nexans, a wide range of products covering diverse railway standards

The rolling stock industry is now at a crucial point in its development. New challenges must be met due to long-awaited equipment upgrades, booming freight traffic and high-speed train projects, and the growing need for conventional subways, fully-automated metros, and light-rail suburban vehicles worldwide.

Nexans manufactures a complete range of rolling stock cables and components, meeting national and international standards, in addition to providing system integration, extensive customer service and innovative products for future needs. We supply both standard items and customized solutions, and reinforce system interoperability to meet the challenge of ERTMS and ETCS.

A chain is only as strong as its weakest link. That is why you are especially concerned about the security of your jumper cables which carry essential power and data between wagons. Since they are the most exposed cable on the train and in perpetual movement, you want them to be tough, flexible and long-lasting. Since every train differs, you want them custom-designed to meet your specific functionalities. They also have to be easy to plug, unplug and replace, with virtually no maintenance.

To help you achieve this, Nexans offers durable, easy-to-connect **jumper cables.**



Jumper cables: extra flexible and durable power and data links between wagons

To carry diverse power and control/communications between wagons, Nexans produces a complete range of custom-designed jumpers containing single and multicore, screened and unscreened, jacketed or unjacketed cables in class 6 conductor designs. Special data jumpers can incorporate coaxial cables for video and Internet connections, or optical fiber and Wire Train Bus (WTB) and Multifunction Vehicle Bus (MVB) cables for the Train Communication Network. For optimum flexibility and safety, Nexans has developed a highly flexible silicone-rubber-insulated sheathing which generates little smoke, and has relatively long functional endurance under fire conditions.

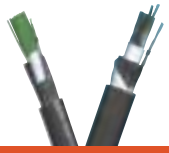
This Nexans solution gives you:

- Durability for the entire lifetime of each wagon or coach
- Reliability since every jumper set is pre-tested on specialized train equipment to guarantee at least one million cycles (i.e. 40 years)
- Custom design with a combination of diverse cable types to meet your onboard applications
- Convenience since they are extremely easy to plug and unplug, with the jumper perfectly adapted to the connector
- Adaptability for fitting all standard connectors
- Fire protection for people and equipment through Halogen-Free Fire-Retardant (HFFR) materials
- Compactness and optimized structure to carry a greater number of cables in the same diameter
- Virtually no maintenance for the entire life cycle of equipment

Nexans provides jumpers for rolling stock worldwide

Nexans has developed jumper cables for most of the major OEMs for both main-line and mass transit applications (SNCF, RATP, etc.). It equipped a fleet of driverless Siemens-built automated light vehicles for Lille, France, and Turin, Italy. Meanwhile, jumpers are being designed, manufactured and delivered for trains and metros in places as far-flung as Italy, Spain, Ireland and Korea.

Jumper cables



Product families	Product family names	Standards / Specs
Jumpers for energy, data and control transmission	**Examples of existing constructions*:**	
	2PE925 = 28 x 0.93 mm² + (5 x 0.93 mm²) screened and jacketed wires + 9 x (2 x 0.93 mm²) screened pairs	• NFF 63808, EN 50306, NFF 63295
	2PE920 = 6 x 6 mm² + 20 x 2.61 mm²	• NFF 63808, EN 50306, NFF 63295
	2PA721 = data bus 120 ohms (2 x 0.6 mm²) screened	• NFF 63808, EN 50306, NFF 63295
Jumpers for power transmission	**Examples of existing constructions*:**	
	Z3000 SS 50 to 240 mm² NFF63827	• NFF 63827, NFF 63296
	Y 1500 SS 10 to 240 mm² NFF63296 (gasoil resistant)	• NFF 63827, NFF 63296
	Mixed construction = 2 x 50 mm² + 3 x 6 mm²	• NFF 63827, NFF 63296

** These examples represent a short overview of our expertise. Nexans is able to study any custom design construction following a technical specification.*

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Global expert in cables and cabling systems

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