



**Cable harnesses for customized design
and manufacturing efficiency**

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.



Cable harnesses 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, from a single core to complex hybrid cable constructions.

As an Original Equipment Manufacturer, you want to reduce the number of suppliers to one company that can take full responsibility for the design, prototyping, manufacture and supply of harnesses so that you can shorten throughput time on the series assembly line. You often need a standardized "kit" for 150 to 400 harnesses at a time. Your supplier must be able to produce both energy and data harnesses capable of resisting diesel fuel, and the harsh railway environment. Cable cross-sections can be very large (up to 185 mm²); but they must be easy to handle and install.

To help you achieve this, Nexans offers custom-designed **cable harnesses**.

Harnesses
for all train
management systems



Cable harnesses: complex cable combinations to simplify assembly



Nexans harnesses consolidate cables and connectors for both energy and data in locomotives, wagons and train sets.

Each harness contains various types of conductors, from small system connectors to large cables running between transformers/alternators and the electric traction drives. Nexans supplies virtually everything, from a single wheel speed sensor and small system harnesses up to full backbone harness assemblies for locomotives and train sets.

This Nexans solution gives you:

- Feasibility studies for pilot projects
- Design and engineering capability which

translates functional specifications into product definitions and prototypes

- Testing and qualification for in-line production continuity
- Flexibility to deal with last-minute modifications on series runs
- Durability and resistance to heat, oil, chemicals, vibration and harsh climactic conditions
- Access to new technologies, from simple connector assembly to casting and molding
- Easy installation since harnesses are custom-designed to meet space limitations
- Technical support to guarantee long operational life
- On-time delivery onsite and transfer of training skills

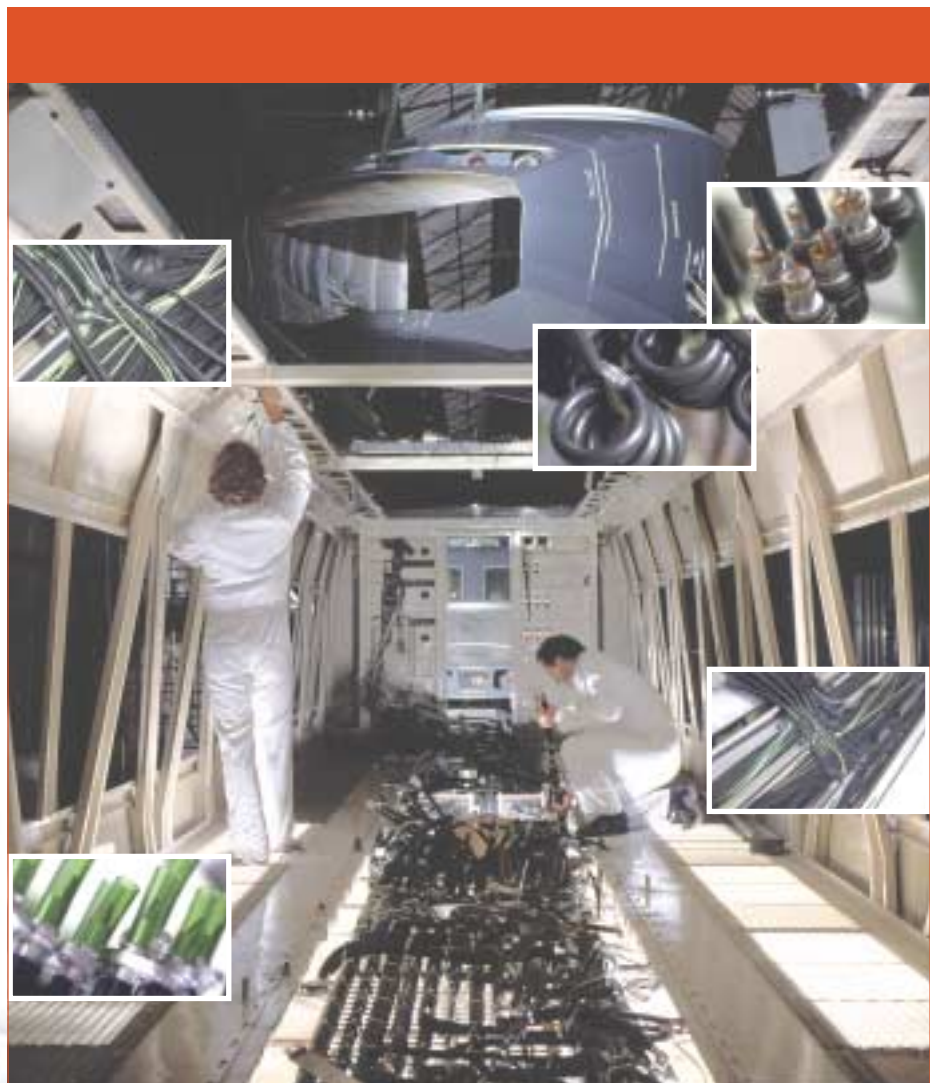


Nexans enhances supply chain performance

Beyond mere technical solutions destined for the specialized railway environment, Nexans helps

to improve both supply chain performance and on-site installation at the customer's production plant or on a remote project location by providing simplified packaging and logistic solutions. This includes special value-added preparation of cables (e.g. simple "plug & play" terminations) and customized hybrid lay-ups.

Cable harnesses





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