


Nexans

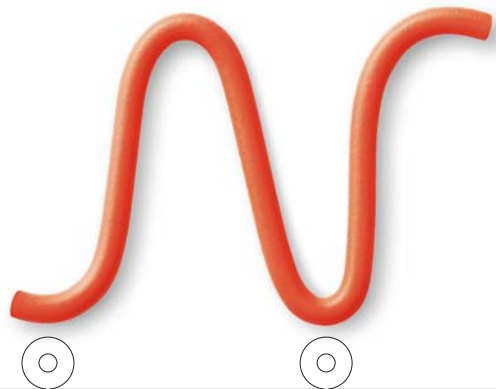


A u t o m o b i l e

The more sophisticated the car, the more it depends on .

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The automotive world is at a crossroads. Customers are calling for cheaper, safer, more compact cars, with increasing intelligence and eco-friendliness. Tomorrow's car will use advanced "mechatronics" to provide emission control and fuel economy. Information systems will provide everything from traction monitoring and night vision



to mobile-based satellite positioning (GPS). Car and car equipment manufacturers are meeting this challenge through innovation. Already, the average car contains up to 5 km of cables. Soon 30% of the price of a car will reflect electronic equipment. An important new development is the upgrading to hybrid 12/42V electrical

systems to power new electronic devices. As underhood temperatures rise above 150°C (300°F) due to less space and air flow, more robust wire and cable insulations and jackets are required.



In an industry where globalization is driving both manufacturing and marketing, a new spirit of cooperation is essential. Cables and components for automobiles require close partnership in R&D, risk-sharing, logistics, manufacturing flexibility and a commitment to a model for its lifetime. Only a core supplier

dedicated to tailored power/information solutions can provide the systems you need for the exciting road ahead.





Nexans provides a variety of complete systems, tailored components and premium cables for an industry on the move worldwide. To serve the competitive automobile

environment, Nexans produces a wide choice of high-performance products: electrical "harnesses" to provide vital information and energy; precision wires for

sensors and small motors; self-bonding winding wires; coils and transformers for starter/alternators. Passenger safety and comfort are assured by our reliable ABS cables

and special cables used in heated seats and automated windows. By taking a system approach, we help simplify installation, lower costs and eliminate maintenance.



### **Nexans supports for the highway ahead:**

- Complete cabling solutions for power and signal transmission
- Full production platform support, including R&D
- Simultaneous engineering in partnership with the customer
- Robust design, high mechanical strength and environmental-friendliness
- Cost-effective designs and materials, plus installation simplicity
- Easy maintenance and repair with standard tools and equipment
- High series runs and just-in-time delivery
- Quality guarantees, including the exclusive QS9000 qualification
- A strong commitment to safety and energy-efficiency
- A total cable supplier for tomorrow's automotive needs

 can't control the weather, but we do make lighting and air conditioning.

**Electrical harnesses  
for cars**

Nexans designs, engineers, produces and installs efficient automotive harnesses of up to 300 wires that link information and energy systems for lights, air-conditioning and next-generation dashboard intelligence.

**Rods and conductors**

Using our own facilities we manufacture wires in copper, brass and bronze with diameters from 3.80 up to 11.80 mm. Our customers transform these rods by cold heading into contactors and cable anchorage for car equipment manufacturers. We have also developed a special bronze wire, for contactors,

which provides higher mechanical characteristics. Our aluminium products achieve significant weight gains. For battery cables, light-weight aluminium promises to be the conductor of the future.

**Winding wires**

Our durable winding wires are present throughout the automobile, especially in

the passenger compartment in the dozens of small motors used for safety, comfort and convenience.

Nexans also assures that electronic coils can be wound quickly and smoothly by applying a special enamel which provides insulation and resistance to heat, mechanical shock and chemicals. Coils are





found in engine-related items, and all instruments and dials for speed and fuel, etc. By transforming electrical fields into information, they endow driving with intelligence. Nexans' high-precision manufacturing techniques and secure insulation guarantee fail-safe performance.



### **Winding wires**

A new generation of Magnetbond® self-bonding wires, using a special thermal adherent coating, saves manufacturers a step in motor production. Nexans offers its customers maximum production flexibility by shipping winding wires on a daily basis which allow them to hold no stock.

### **Power and control**

Many types of special cables are used wherever energy or information are needed, for example in battery leads, heated seats or control functions. Our products are known for being extremely light, oil-resistant and safe. To provide passenger protection in the event of an accident, Nexans develops a variety of HFFR cables that are fire resistant, do not spread flames and do not generate excessive smoke.

### **Instrumentation**

As underhood temperatures rise, cables have to withstand temperatures above 150°C (300°F). Nexans' robust lead wire for oxygen sensors (which measure unburned fuel in the exhaust to help provide a cleaner burn) are thermal rated up to 300°C (572°F). We also provide ABS cables used on brake-pad wear sensors.

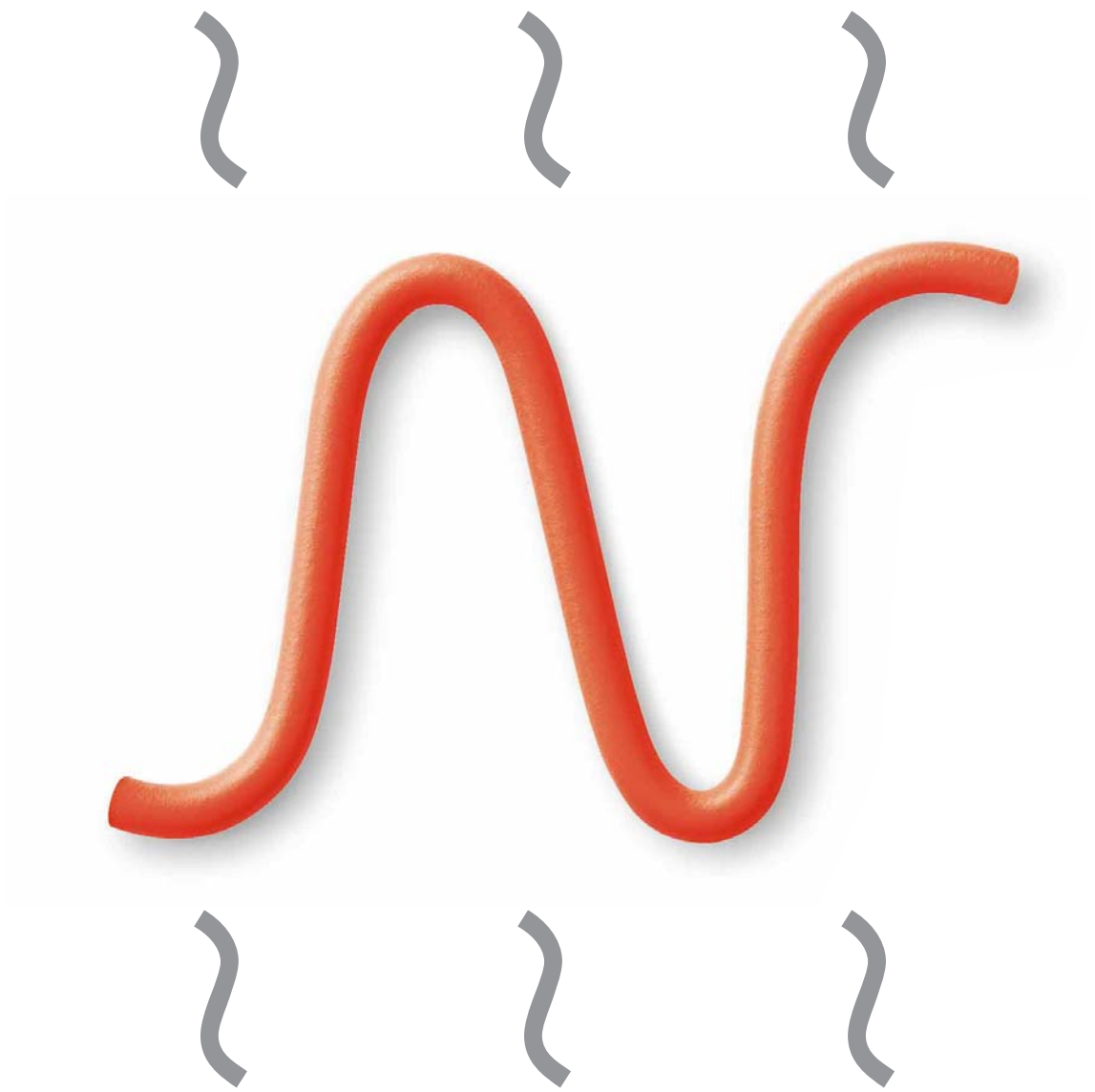



### **Communication and navigation**

High frequency coaxial cables are used for all multimedia aspects of cars: connection with antennas and navigation systems (GPS), connection between the antenna and hands-free GSM, radio links, remote door control. Nexans produces an entire range of EMI-protected RG58, RG174, and RG179, RG142 and RG316 cables plus box duplexers. We are capable of designing special versions

to meet the specific needs of the automobile industry.





 keeps its cool at up to 300 degrees.

Car and car equipment manufacturers need a close and lasting relationship with a core supplier committed to innovation, manufacturing support and on-time delivery. That is why Nexans has developed a total service concept worldwide.

#### **Simultaneous engineering**

Once a project is set up, our engineers become an integral part of the development team for the lifetime of the car model. Drawing on cross-functional teams, we take a "system" approach to every problem, always looking for the most efficient solution.

#### **Digital modeling**

To cut down lead times, we have developed digital mock-ups using CAD software, which can be thoroughly tested on computers before going into production. This means an active role in design and risk-sharing at every level.

#### **Joint production**

Working closely with the customer on the production floor, our experts directly download their designs into our computers, which we use for development, testing and our own production.

#### **Logistics and control**

Our production operates in tandem with our customers' production schedule through Electronics Data Interchange, while advanced logistics and control assure rapid delivery of cables and systems when and where they are needed.

#### **Safety and security**

To meet growing safety and environmental concerns, Nexans is committed to high QS9000 standards, new halogen-free materials, fail-safe designs, a recycling program for materials and environmentally-friendly manufacturing.

#### **Innovation**

Because any car model's projected lifetime depends on it, Nexans is continuing to innovate across the board. Not only are we pioneering the shift to 42V automotive electric systems, we have also made significant breakthroughs in self-bonding winding wires.



## N is with you on the road to change.

At the heart of the automotive revolution is the fact that tomorrow's cars will probably consume as much information as they do energy, and be more efficient than ever before. This consumer expectation,



driven by national governments dedicated to "zero emission" standards, means that one cannot grind to a halt and go into reverse.

Car and car equipment manufacturers who want to stay out in front have to do more than just follow the vehicle ahead. They have to be in the fast lane, and take the lead in every aspect of operations: R&D, testing, prototype design,

manufacturing, marketing and maintenance.

Nexans is not just along for the ride. We are right there beside you, calculating the best route, foreseeing dangers ahead, and suggesting time and money-saving solutions.

With your goals firmly in mind, we are developing advanced cabling, components and systems for a car's lifetime. We guarantee

availability, easy installation, and minimum maintenance.

Furthermore, we are fully committed to innovation and to seeing that all products meet the highest standards for safety and environmental-friendliness.





In the race for change,  
Nexans provides the skills  
and technology you need  
to be a winner.

# Nexans: some key figures.

- Total Sales\*: 4.6 billion euro.

- Nexans Positions:

- N° 1 worldwide for winding wires

- N° 1 worldwide for submarine power cables

- N° 1 European for rods

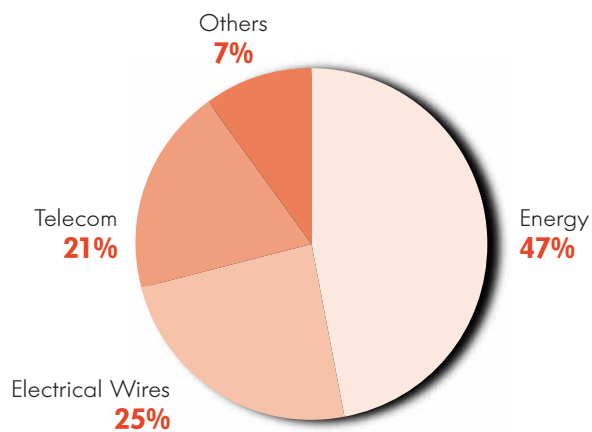
- N° 1 European for equipment cables

- N° 1 European for data transmission special cables

- N° 2 worldwide for LAN cables

- N° 2 worldwide for ground network power cables

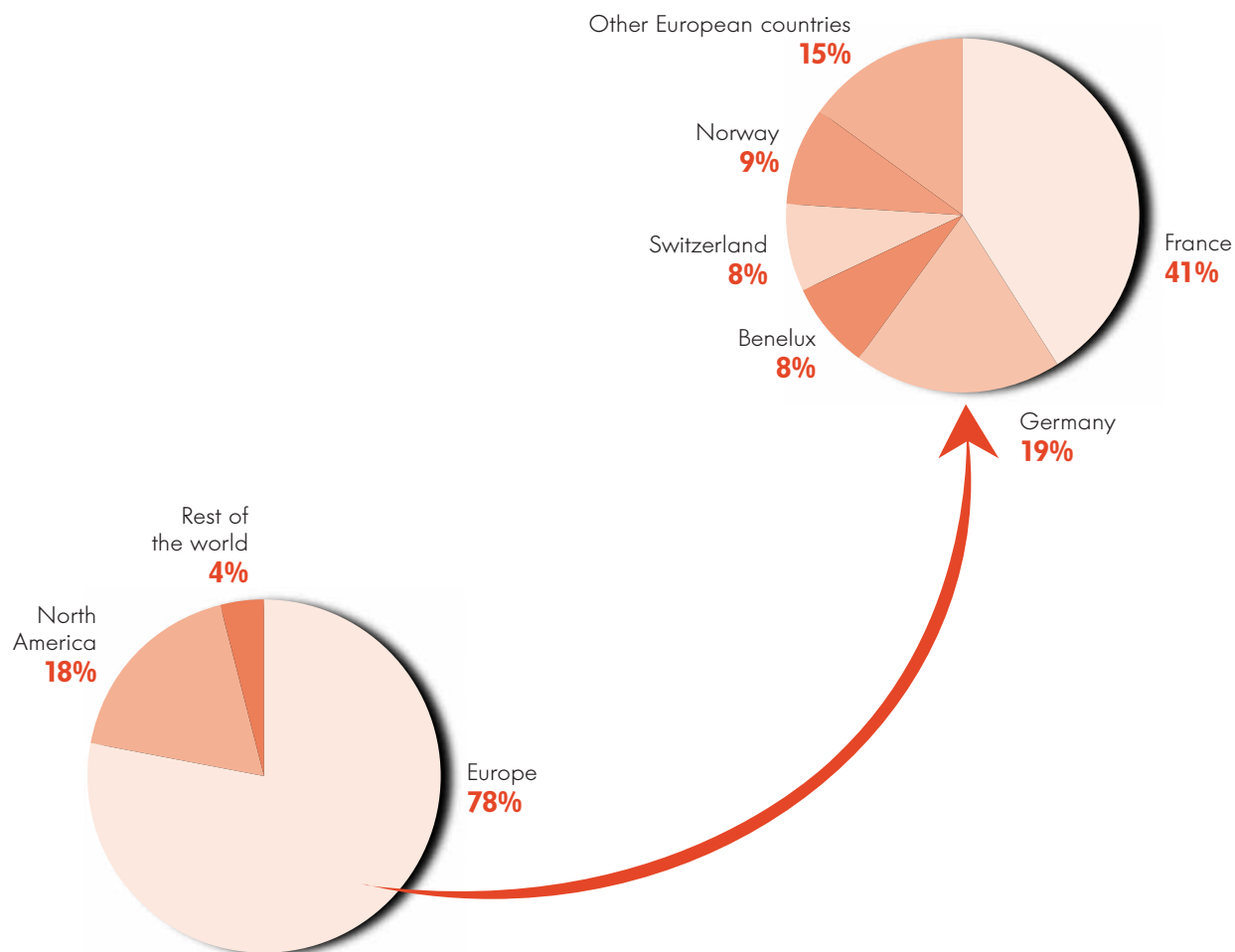
- N° 2 European for electrical wires



\*Proforma figures. 2000 estimates at current copper price.

Total sales\*  
by activity





Total sales\*  
by origin



The future runs through Nexans.

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