



Sensor and transducer cables

Special cables for industrial instrumentation

Nexans Expertise in sensor cables

Nexans has a great expertise in research and development of special and customized sensor cables for industrial instrumentation. The sensor cables produced in our Paillart plant (France) are particularly suited to the requirements of industrial applications such as resistance to harsh ambient conditions, high transmission properties, high temperature resistance...

Nexans brings solutions for the most demanding sensor applications:

- Load cells,
- Pressure,
- Displacement,
- Temperature,
- Vibration detectors,
- Flow-meters,
- Process control,
- Analysis.

The Nexans sensor cable range covers markets such as aerospace, transportation (including automotive), defence, naval, gas or water utilities, petrochemical, industrial equipments and electronics.

From 18 to 28 AWG, using a wide range of conductors and extrusion materials, Nexans is able to provide cables with excellent mechanical and chemical characteristics, high resistance for operating in a harsh environment and excellent electrical properties.

Our development and design engineers are also at your disposal to provide their experience in tailoring any of our products to meet your specific requirements.

Approval requirements

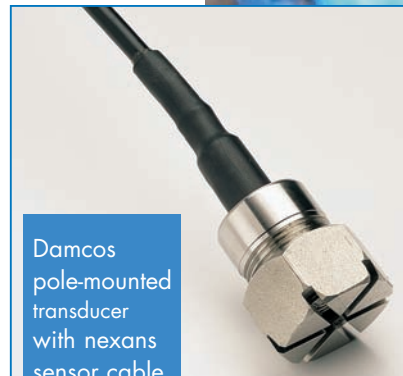
In addition, our cables can be approved according to the request : customer spec, UL, VDE, IEC, RAQ, MIL...

Quality assurance and environmental protection

Nexans has always valued the respect and protection of the environment. Our company follows the life-cycle of its products and concentrates its R&D work on materials which comply with environmental standards, and can be easily recycled.

With forthcoming EU Directives in mind, Nexans has been taking part in pilot schemes to develop recycling processes for end-of-life electrical products. Our sensor cables are totally safe, lead free, cadmium free or without any other heavy metal.

All of our facilities operate under the highest ISO standards. The Paillart production site has obtained from the AFAQ (French Association for Quality Assurance) the ISO 9001 (2000) certification of its Quality System. The Paillart production site is also ISO 14001 certified.



Damcos pole-mounted transducer with nexans sensor cable



Some references

Many customers trust Nexans for their applications including:

- BD Sensors
- Crouzet
- Damcos
- GE Druck
- Tyco Greenspan
- Kriwan
- Panametrics
- Schneider/Télemécanique
- Sortechnik
- Thermik
- Wika...

Nexans Technology

Nexans provides cables available in many different styles including hook-up wires, coaxial cables, multicore and multipair cables and composite cables.

The recommended operating temperatures cover
– 90°C to +200°C with voltage rating of up to 750 volts.

Available constructions

Conductors

- Mainly 1, 2, 4, 6, 8, 12 cores
- From AWG 18 to AWG 28
- Stranded or solid
- Tin plated copper, silver plated copper or Silver plated copper covered steel

Insulation materials

- LSZH
- PTFE
- PP
- PE
- TPE
- Halogen-free
- PVC
- ...

Electronic protection

One or two braids (tin or silver plated copper) with or without foil (polyester/aluminium)

Optional elements

- Mechanical support(s) : 1, 2 or 4 aramid or steel strength members, aramid braid
- Vent tube(s) : 1 (or 2) vent tube in polyamide or PE
- Drain wire in tin plated copper

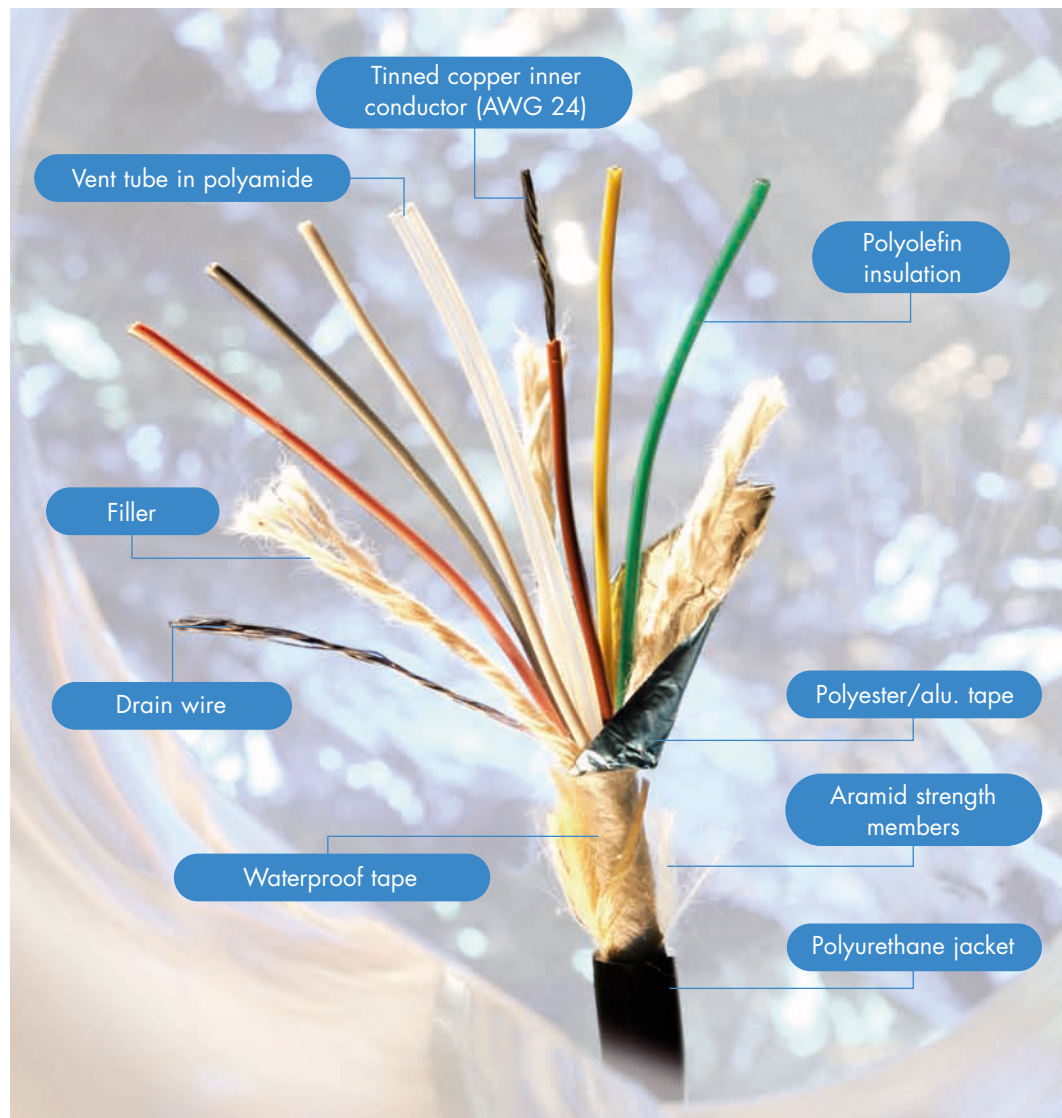
Sheath

- One or two jackets with one or double layer
- PUR, FEP, PUR+FEP, polyimide+PTFE, halogen-free TPE, TPE, PVC

Example of special customized cable

Etude 2PA 417

Sensor cable for water tanks, incorporating a vent tube for accurate fluid level indication irrespective of atmospheric pressure changes
High mechanical resistance.



Nexans Typical constructions

Sensor cables with vent tube

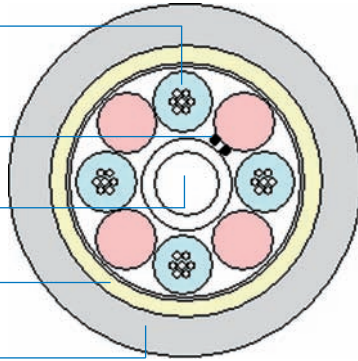
Tin plated copper AWG24
PVC insulation

Aramid strength member

Vent tube

Tinned copper braid

Polyurethane jacket



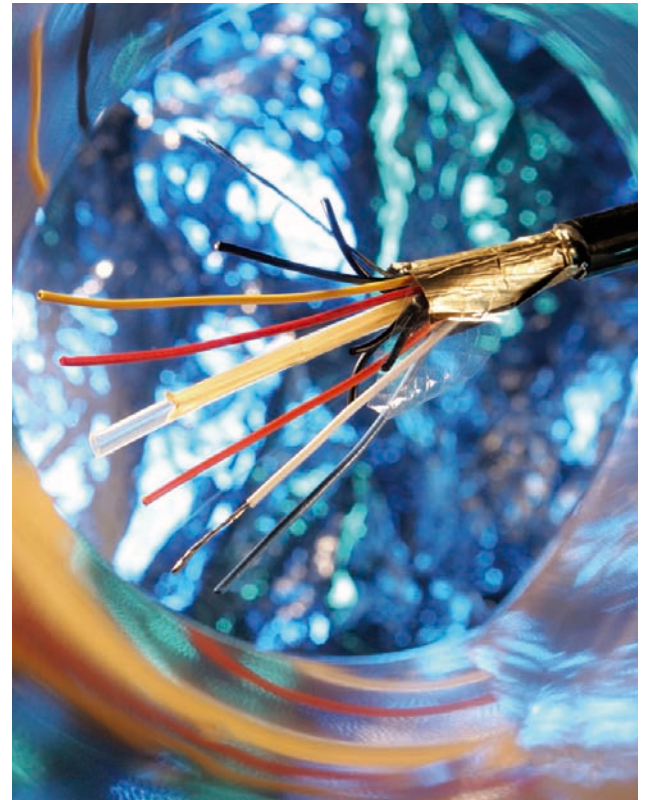
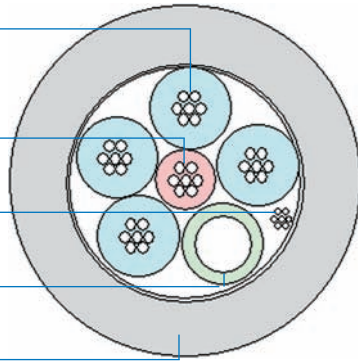
Tin plated copper AWG22
PE insulation

Steel support

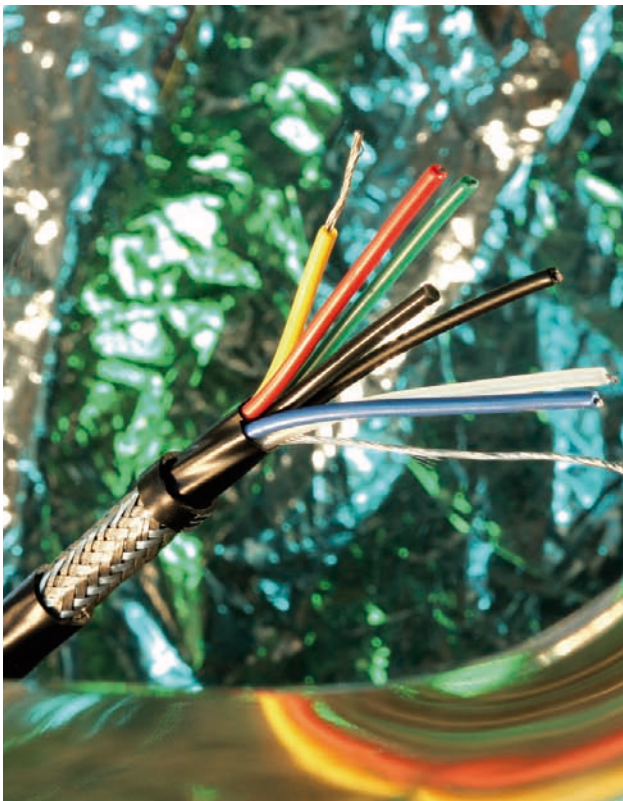
Drain AWG24

Vent tube

Polyurethane jacket



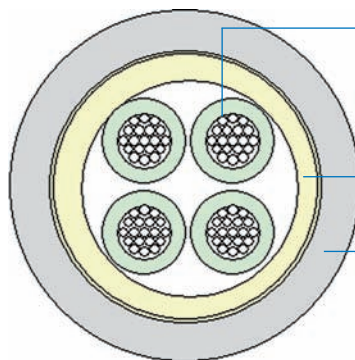
Sensor cables without vent tube



Tin plated copper AWG20
ETFE insulation

Tinned copper braid

TPE jacket

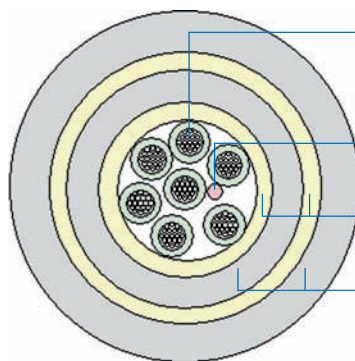


Tin plated copper AWG20
ETFE insulation

Filler

Tinned copper braid

Polyurethane jacket



Nexans High performance cables for sensor applications



Sensor cables for wind turbines



Sensor cables for pressure and level in oil tanker



Instrumentation cables for sensor monitoring, regulation of oil, water and gas flows



Sensor cables for industrial automation

Sensor cables for oil storage tanks

Sensor cables for water storage tanks and water towers



Physical and mechanical requirements

The Nexans sensor cable designs are ideally suited to applications which require:

- Resistance to wear and cut through,
- High tensile strength,
- Low noise cable,
- High or very low operating temperature, etc.

They meet the usual requirements of the market:

- Cylindrical and ease of moulding,
- Good flexibility,
- Matt or gloss appearance,
- Small bulk volume and low weight, etc.

Chemical and environmental requirements

The Nexans sensor cables are well suited to work under stringent conditions and have an excellent chemical resistance:

- Excellent resistance to sea water, mould and fungus,
- Excellent resistance to solvents such as oil, skydrol, petrol, isopropyl alcohol, and aliphatic hydrocarbons,
- Resistance to sunlight, ozone, weather conditions,
- Flame and fire retardant, etc.
- Etc.

Electrical requirements

Nexans sensor cables meet a large number of electrical specifications in terms of operating voltage and electromagnetic protection providing a clean data transmission that helps preserve the information from the sensor.



Global expert in cables and cabling systems

Nexans is the worldwide leader in the cable industry. The Group brings an extensive range of advanced copper and optical fiber cable solutions to the infrastructure, industry and building markets. Nexans cables and cabling systems can be found in every area of people's lives, from telecommunications and energy networks, to aeronautics, aerospace, automobile, railways, building, petrochemical, medical applications, etc. With an industrial presence in 29 countries and commercial activities in 65 countries, Nexans employs 20.000 people and had sales in 2005 of euros 5.4 billion. Nexans is listed on the Paris stock exchange.



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