CUSTOMIZED CABLE SOLUTIONS FOR AIRPORT SAFETY, SECURITY AND EFFICIENCY

Nexans
BRINGS ENERGY TO LIFE

CHANGES IN THE AIR…

Scheduled passenger traffic of airlines is currently growing at about 5% a year, with the Asia- Pacific region continuing to lead the world (14% domestically). Air freight has been increasing by some 7-8% annually and is bound to triple in the coming years. These trends have had an important impact on passenger and cargo airport infrastructure on all continents.

New, large airports are being built everywhere, while existing facilities are undergoing massive upgrades, not only to accommodate growth, but to handle a new generation of super jets, like the Airbus 380. Currently, there are nearly 300 projects to build or refurbish airports worldwide, including 40 major hubs which will function as "aerotropolises" containing massive warehousing, office buildings, commercial areas, and multimodal transportation facilities.

As an aviation administration, airport authority, designer, engineering prime contractor, operational manager, or industrial OEM, you are constantly dealing with complexity and pressures of a fast-paced global business. To achieve the highest levels of safety and security, you need enhanced equipment, systems and networks to assure safe takeoffs, landings and ground/air control, and smooth passenger processing in terminals.

You want to secure a steady energy supply, reinforce operational efficiency, and deliver important customer services, from wireless communications to entertainment, all of which depend on the reliability and performance of your cable infrastructure.

What airports expect from cable manufacturers:

- Cables, components and systems to enhance safety and fire performance
- Security throughout the airport for baggage handling, passenger control, anti-intrusion
- Efficient, robust, compatible and upgradeable energy and telecommunications networks
- Ability to handle rapid expansion due to new Airbus 380 and passenger growth
- Advanced IT solutions, like Video-Over-IP and enhanced LAN networking
- Delivery, installation, and maintenance anywhere in the world
- Cable repair workshop and facilities (24/7 hotline)

…CALL FOR NEW CABLE SOLUTIONS ON THE GROUND

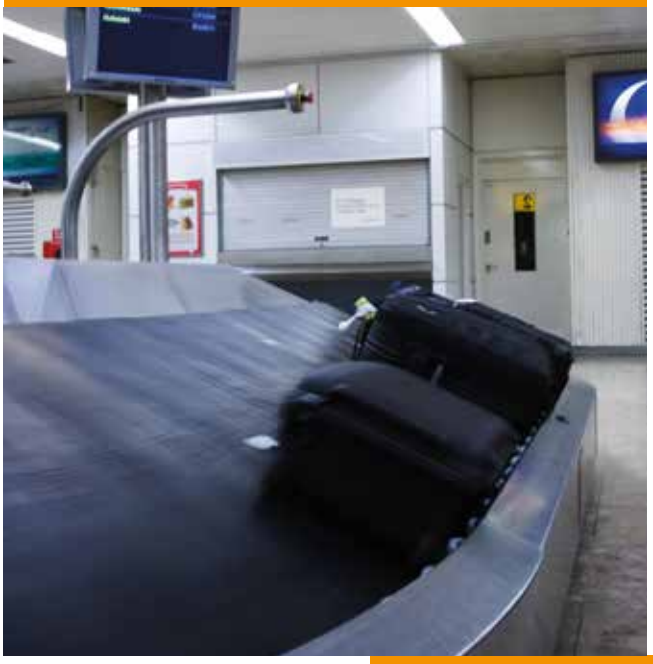
Energy and information are at the core of your airport operations, and are critical to issues like security, efficiency, safety, service and economic viability. In turn, the systems and software needed to run airports depend on reliable cabling.

Nexans supplies a complete range of cables and accessories for all of your airport infrastructures, from key energy and communication networks to airfield ground lighting, baggage handling, bridge cabling and aircraft power handoff at aircraft parking areas. We can provide a complete cable package for an entire airport, including standard and special cables, connectivity, and active components.

Our twin expertise in energy and telecommunications allows us to find hybrid or complementary answers, drawing on products developed for other industrial, infrastructure and building markets. For example, the autonomous power and communication networks of the airport must connect to the city or country networks and use products which are compliant with the local standards of power utilities and telecom operators.

Nexans expertise for security, reliability and efficiency

- Complete range of products for "greenfield" airports and refurbishing existing facilities
- Next-generation networks for biometric applications, Industrial Ethernet, and air traffic control
- Advanced energy networks with emergency power capability and connection to national grids
- Preliminary layout, design, technical assistance, installation and maintenance training
- Fire-performance cables for public safety, and low EMI for data transmission security
- Reliable delivery through dedicated logistics, and plant capacity worldwide
- Full conformity with aviation legislation and specifications worldwide



NEXANS PROVIDES A FULL RANGE OF CABLES...

ENERGY NETWORKS/ BUILDING INFRASTRUCTURE

HV/MV XLPE underground cables and joints

For underground ducts or galleries to maintain reliable power for all vital airport applications. Cold-shrink joints make installation easier.

> These cables and joints currently equip Madrid Barajas and Korea's Incheon airports, and are being installed in Sheremetyevo International Airport in Moscow.

LV and MV cables

A wide range of cables and wires for overall energy supply, for lighting, heating, air conditioning, parking areas, etc. Special versions include flat cables for modular lighting in corridors, and prewired conduits.

> These cables fully comply with all international standards, and are widely used in airports around the world.

Fire-performance cables

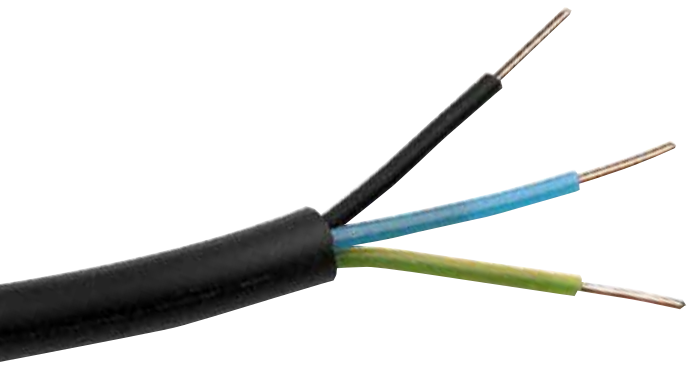
Fire-reaction cables (up to 1 kV) prevent fire propagation and reduce smoke emission; fire-resistant cables provide LV power for alarms, smoke evacuation, lighting, sprinklers and safety lighting systems which continue to operate during a fire.

> Nexans' fire-performance cables are used in Barcelona, Charles-de-Gaulle (Paris), Nice and Bâle-Mulhouse airports.

Heating cables and mats

Nexans heating cables provide roof de-icing and subsurface heating for outdoor public areas, including entrances, car ramps and parking areas.

> Used in Nordic countries, China and North America to eliminate snow accumulation and ice, Nexans heating cables have already obtained important UL certification.



AIRFIELD GROUND LIGHTING

Primary circuit (5 kV)

Located between Constant Current Regulators (CCRs) and transformers on the runways, these durable, watertight cables are available in several XLPE insulated versions with PVC, PE or XLPE sheaths; they are ideal for ducts, trenches or direct burial.

> Nexans supplied 2,700 km of primary circuit cables to Abu Dhabi (UAE), 1,500 km to Jeddah (Saudi Arabia), and 1,600 km to Hong Kong (China) International Airports.

Secondary circuit

This highly flexible multiple 2-core standard rubber cable provides short spans for 1,000 volt connections between runway transformers and lamps.

> Installed in airports in Europe, the Middle East and East-Asia, a complete range of secondary circuit cables can be delivered in extremely short timeframes. Nexans is the only cable company manufacturing both primary and secondary circuit cables.

...AND ACCESSORIES FOR ALL AIRPORT FUNCTIONS

BAGGAGE HANDLING SYSTEMS

Flexible halogen-free control and power cables

These fire-retardant cables provide signalling, control and power supply for conveyor belts, motors, sensors, x-rays and sorters. Not only do they protect personnel and equipment from smoke and corrosive gases, they can safely operate in temperatures up to 90° C.

> Nexans delivered 4,200 km of power and control cables for Madrid-Barajas Airport Terminal 4, and 1,900 km of cables for Dubai's passenger and cargo terminals.

Flexible halogen-free bus cables

Three kinds of bus cable are available: Profibus, Asi Bus, and Hybrid Bus for baggage handling, and other applications like security, surveillance, building management, and climate control, etc.

> For Beijing's International Airport, Nexans provided some 230 km of bus cables.

Plastic optical fiber

Because of its large core, POF is easy to install and offers advantages of small bending radius, and high mechanical strength in vibrating environments.

> To take advantage of the latest baggage handling technologies, Beijing Airport installed some 80 km of plastic optical fiber in its network.

Flexible PVC control and power cables

An economical standard product for baggage handling operations, where confined space and high density buildings do not pose a risk.

> PVC control and power cables were used for the expansion of Vietnam's Tan Son Nhat Airport.

COMMUNICATION NETWORK

LAN/WAN cabling systems

Fiber for both backbones and horizontal cabling; and copper solutions, from Category 5e to Category 6a and 7a for horizontal cabling. Because of the need for long runways and strategically-placed buildings, airports have campus-like requirements which are best met with combined fiber and copper.

> Nexans solutions allow large hubs to operate over longer distances and at higher data speeds. Incheon International Airport in Korea, and Changi in Singapore both use our cables and systems, as well as JFK's Jet Blue terminal, and Phoenix Arizona's Sky Harbor International.

Active equipment, networking systems and accessories

Intelligent switches and converters for cable ducts, workstations and outside installations; Fast Ethernet and Gigabit Ethernet capacity for fiber and copper-based network infrastructures.

> In Germany's Cologne-Bonn Airport, Nexans active network solutions are omnipresent: from baggage handling and transport, to administrative buildings, wireless and other outdoor applications. They have also been installed at Frankfurt, Munich and Düsseldorf airports.

Optical fiber cables and interconnecting components

Multimode and singlemode cables can be used as backbones for Voice-Data-Image and control applications within all-digital networks of modern airports based on Internet Protocol convergence. Fiber eliminates Electromagnetic Interference (EMI) in dense and "electrically polluted" environments.

> Nexans supplies optical fiber cables for Madrid Barajas Airport, and Optical Distribution Mainframes for network management at Charles-de-Gaulle airport in Paris.

Intelligent Infrastructure Management (IIM)

IIM enhances visibility of airport networks by automatically mapping, locating, reporting and alerting on any event. Information from the network layer provides 100% accurate records of cable routing, connec-tivity, device identification, status and location, etc.

> Nexans LANsense IIM is being used at Korea's Incheon International Airport to monitor and control the communications network within an intelligent building infrastructure.

Bus, Batibus and Profibus cables

Provide signal transmission for controlling measurement and industrial applications in the maintenance hangar workshops; also used for building management: from security and lighting to indoor climate control.

> Omnipresent in the airport environment for controlling maintenance machinery and vital airport functions.

VDI, CCTV and VOIP cables

Voice-Data-Image (VDI), CCTV and Video-Over-IP cables are being integrated on one platform to assure all surveillance and access functions. A fiber link (sometimes with coaxial cables) handles multiple cameras where distance is a factor.

> For sharp digital images and luggage tracking, IP cameras will eventually replace expensive CCTV cameras.

BRIDGE CABLING SYSTEMS

Bridge cables

Static and mobile bridges (bet-ween aircraft and the passenger gates) require reliable control and energy cables. Nexans cables meet national standards, a wide voltage range and extreme temperature criteria.

> Nexans offers a full range of bridge cables according to VDE, CC (Chinese), CSA, UL, and HAR (European Harmonization) standards, one of the few manufacturers to do so. These cables operate safely in the hottest and coldest climates.

AIRCRAFT POWERING CABLING SYSTEMS

400 Hertz cables

Nexans manufactures two types of cables to hand off power to aircraft while parked: unshielded and shielded PVC cables which are in fixed installations in ducts running between the terminal building and the gate or ground socket; and shorter cables, with a rubber or PUR outer sheath, which can connect via the bridge, mobile tenders or service vehicles.

> Nexans cables meet the strictest civil aviation standards for ground power supply.

SERVICES TO MEET OPERATIONAL GOALS

GLOBAL EXPERTISE

As a cable supplier serving diverse vertical markets, Nexans not only follows world airport trends from the inside, it develops best-of-class solutions especially customized for the demanding airport environment.

LOCAL PRESENCE

Because Nexans is present around the world, the international airport business always has experts close at hand, speaking their language, familiar with the challenges they face, and being able to draw on both local and companywide resources. Fast, reliable supply, and correct installation are a priority.

TECHNICAL LEADERSHIP

A high-tech international hub, often built by an international consortium, requires state-of-the-art products, especially in the area of special cables (e.g. for fire-performance and data reliability). With its Competence and Research Centers, Nexans has always remained one step ahead.

Nexans brings energy to life through an extensive range of cables and cabling solutions that deliver increased performance for our customers worldwide. Nexans' teams are committed to a partnership approach that supports customers in four main business areas: Power transmission and distribution (submarine and land), Energy resources (Oil & Gas, Mining and Renewables), Transportation (Road, Rail, Air, Sea) and Building (Commercial, Residential and Data Centers). Nexans' strategy is founded on continuous innovation in products, solutions and services, employee development, customer training and the introduction of safe, low-environmental-impact industrial processes. In 2013, Nexans became the first cable player to create a Foundation to introduce sustained initiatives for access to energy for disadvantaged communities worldwide. Nexans is an active member of Europacable, the European Association of Wire & Cable Manufacturers, and a signatory of the Europacable Industry Charter. The Charter expresses its members' commitment to the principles and objectives of developing ethical, sustainable and high-quality cables. We have an industrial presence in 40 countries and commercial activities worldwide, employing close to 26,000 people and generating sales in 2015 of 6.2 billion euros. Nexans is listed on NYSE Euronext Paris, compartment A.

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