

Main catalogue

English Edition

آروند انرژی 



LAPP

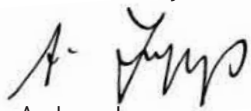
Dear customers,

Here it is – the LAPP main catalogue 2020/21. When my parents founded LAPP more than 60 years ago, they didn't need a catalogue yet – a short item list was enough. Since then, our main catalogue has become a standard work in connection technology and with more than 1,000 pages it shows how LAPP has changed from a garage company in the late 50s to a global player.

And of course, LAPP continues to change, just like the world around us, and perhaps – thinking especially of digital transformation – faster than ever before. Particularly in this situation, it is important to us to be there for you, our valued customers, as a reliable partner guide through the jungle of connection technology that you have come to know. This is why we have significantly expanded our portfolio of solutions for industrial data communication – and so you will not only find cables, connectors and other passive components in this catalogue, but also a whole range of industrial switches, firewalls and other active components: the complete “nerve system” for the smart factory of tomorrow.

The fact that we are no longer thinking about products, but rather in terms of portfolios, is an expression of another important change that LAPP has made in recent years: the cable manufacturer we started as back in the 50s has long since become a solution provider. This also helps us to respond more effectively to your changing needs. Where you might previously have needed ÖLFLEX® cables, and perhaps EPIC® connectors and SKINTOP® cable glands, today you are looking for complete solutions from a single source – and you can find them at LAPP for almost all questions relating to industrial connection technology, whether it is supplying power or connecting smart machines, or both in one.

Yours sincerely,



Andreas Lapp



Legend

Industries

-  Automation
-  e-Mobility
-  Food & Beverage
-  Mechanical and Plant Engineering
-  Oil & Gas
-  Rail
-  Solar Energy
-  Wind Energy

Product characteristics

-  Suitable for outdoor use
-  Good chemical resistance
-  Flame-retardant
-  Wide clamping range
-  Halogen-free
-  Heat-resistant
-  Cold-resistant
-  Corrosion-resistant
-  Maximum vibration protection
-  Mechanical resistance
-  Assembly time
-  Low weight
-  Oil-resistant
-  Optimum strain relief
-  Space requirement
-  Power chain
-  Clean room
-  Robust
-  Acid-resistant
-  Reliability
-  Integrated SKINTOP® cable gland
-  Voltage
-  Connector with standard housing unit
-  Interference signals
-  Temperature-resistant
-  Torsion-resistant
-  Torsion load
-  UV-resistant
-  Waterproof
-  Variety of approval certifications

Please note:

The purpose of the icons is to provide you with a quick overview and a rough indication of the product features to which the corresponding information relates. You can find details of product characteristics in the “technical data” sections on the product pages.

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Andreas Lapp,
Matthias Lapp,
Ursula Ida Lapp,
Alexander Lapp,
Siegbert Lapp.

On course for success

Family business and global player

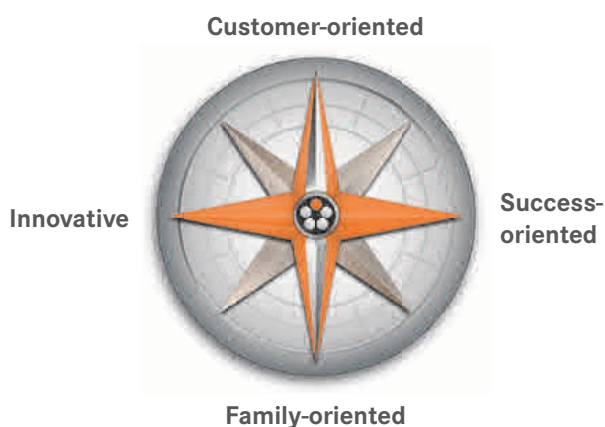
LAPP is both. The history of our company has been one of success and expansion ever since it was founded in 1959 by Ursula Ida and Oskar Lapp. It remains resolutely family owned to this day. We safeguard our success by staying close to our customers and markets, maintaining our innovative strength and brand quality, and being a reliable partner. We provide continuity, always guided in our thoughts and actions by our values.

Success built on family values

At LAPP, we maintain values that promote cooperation and enable relationships with employees, suppliers and customers based on partnership and trust. Good relations and mutual respect are key elements of our company culture and a central plank of company policy. We know that our successful business development of the last decades is down in particular to our 4,650 skilled and dedicated

staff around the world, as well as the reliable partnership with our customers.

With 18 production facilities, over 44 sales companies and hundreds of dedicated consultants, we are always close to the individual needs and challenges of our customers all over the globe. We are constantly developing our products and system solutions, setting standards in safety, quality and functionality. This is why we are one of the world's leading manufacturers of integrated solutions and branded products in cable and connection technology. As our success story enters its third generation, we are aware of our duty to the future.





LAPP

**For the connections
that are most
important.**



As a family company, we know how important reliable connections are. This applies both to our international customer relationships and to our connection solutions.

From ÖLFLEX® power and control cables and EPIC® industrial connectors to the latest solutions for industrial communication. Our products are used in production machinery, industrial robots, trains, food processing systems, wind turbines, charging systems for electric vehicles, photovoltaic and wind power plants, and much

more. We have more than 60 years of expertise in the manufacture of connection solutions. We manufacture most of our pioneering products ourselves. In the process, we focus on the needs of our customers. And if you don't find what you're looking for, our experts will work with you to develop a solution. We're right

“For me, the beginning of LAPP’s success story is due to the way we do things. We try to truly understand our customers’ problems and their daily work, and find inventive and bold solutions for them. We are always looking to break new ground, while thinking and acting from a long-term perspective. This is becoming even more important today and in the future. The market is becoming more complicated and is moving at a faster pace because we are growing with our own ambitions as well as with those of our customers.”

Matthias Lapp,
CEO LA EMEA

where you need us – with 44 sales companies and around 100 agencies worldwide. This is why we can proudly say:

LAPP. Reliably connecting the world.

Room for innovations

With creative processes and innovative projects, we will be able to offer our customers completely new connection solutions in the future. Our formula for success: agile working methods, motivated employees and the courage to fail.



Innovation is one of the fundamental values at LAPP. In addition to tried-and-tested Stage-Gate processes, which are particularly suitable for incremental innovations, we are increasingly relying on disruptive and transformational innovation processes. With the slogan “Innovation for future”, we are working on developing solutions that meet challenges for which there has not previously been an established approach. We are confident this will enable us to successfully implement completely new ideas in the future.

Predictive maintenance:

Predicting failures

One example of a disruptive innovation project is predictive maintenance for

cables. The LAPP developers have succeeded in coming up with a solution that does not involve sacrificial cores or other additional elements: The system works with conventional LAPP cables. For users, this means no additional effort during connection. Retrofitting existing systems is also possible as a result. As a next step, we will now refine the solution and develop a suitable business model with pilot customers.

Cloud marking:

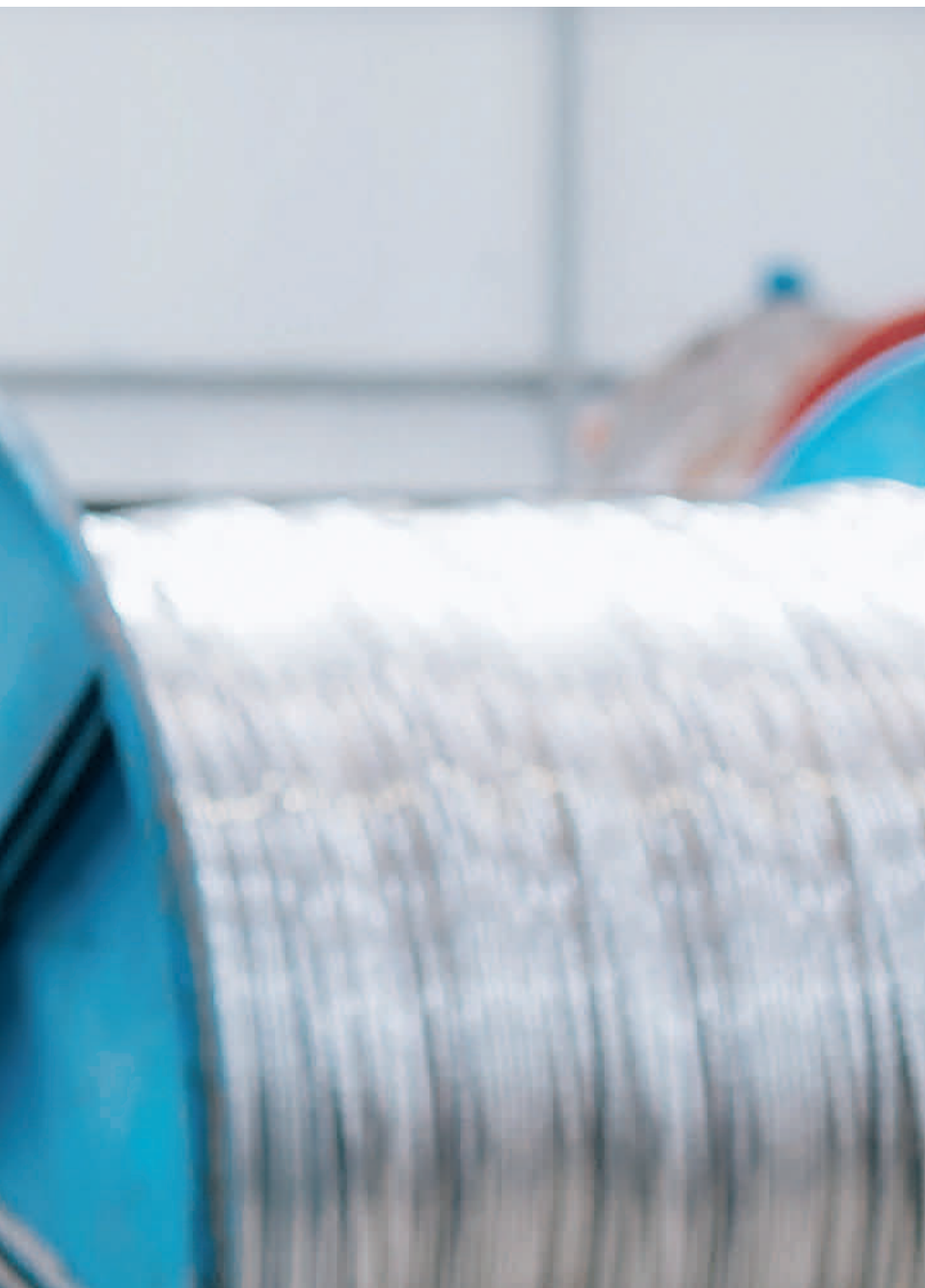
Digital cable marking for assemblers

Cloud marking is a technically implemented disruptive innovation. It makes it easier for assemblers to assign and mark cable products. The markings for the cables are

stored and processed in the cloud. Manual copying and attachment, where errors can easily creep in, are a thing of the past.

Reliable partner through innovation

We rely on innovative strength to react to changing customer requirements. If required, we will also develop completely new solutions for your needs. With a new innovation concept and a broad product portfolio, LAPP will continue to be a reliable partner in the digitalized future.

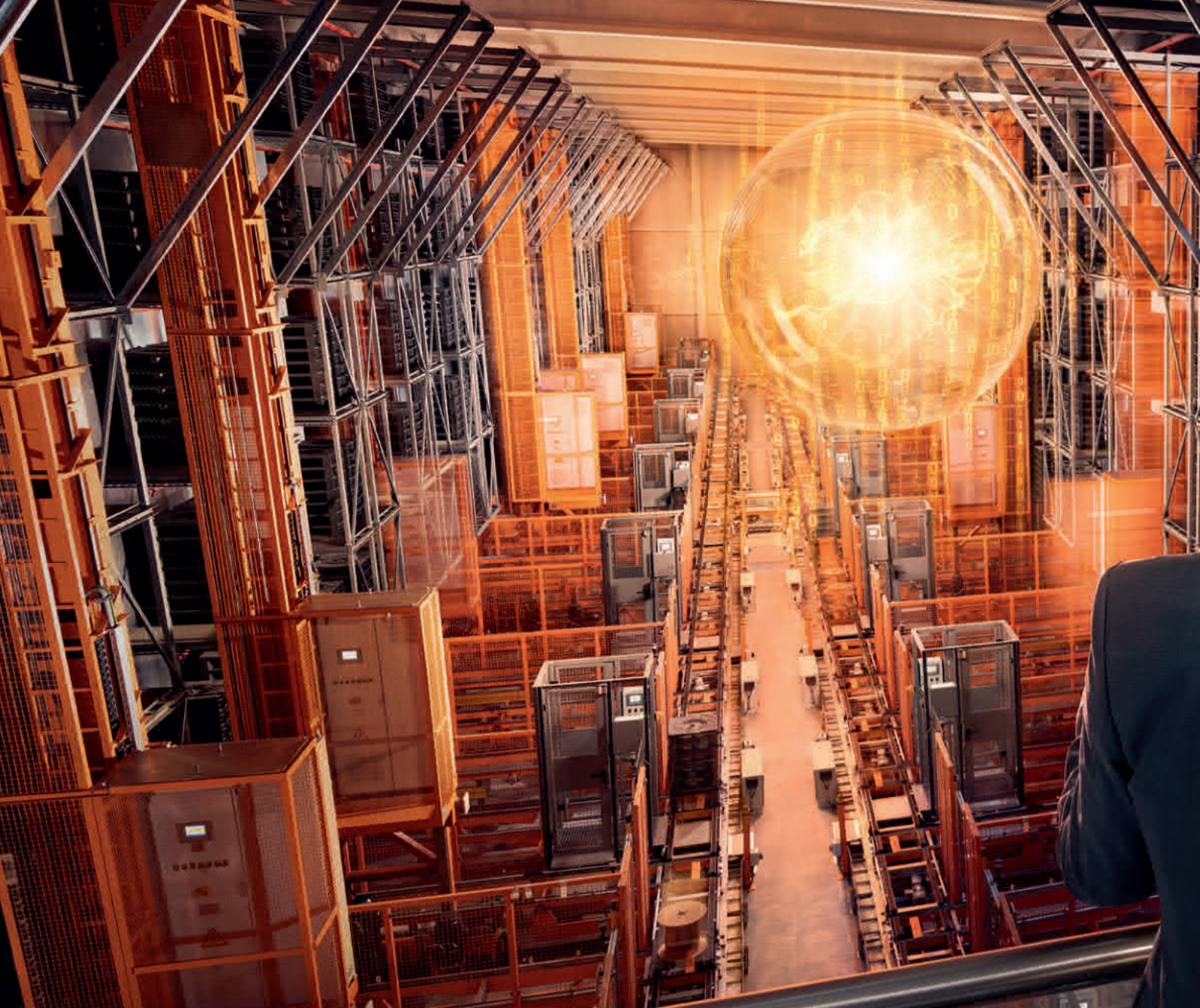


“Our innovations will no longer relate to the products alone. We want to pursue all the ideas that will benefit our customers. So that may be a service or a logistics solution.”

Guido Ege,
Head of Product Management and
Product Development



www.lappkabel.com/innovations



Industrial Communication

**We connect
industry
to the future**



Ensuring future competitiveness: LAPP is facilitating the transition to smart factories with innovative connection solutions and complete industrial infrastructures from a single source.

Who will be competitive in the future? Companies that are driving the transition to a smart factory today – and securing their competitiveness for tomorrow.

LAPP is the right partner for this. Our Industrial Communication division offers innovative connection solutions and complete solutions for data communication in industrial buildings.

Tailored complete solutions

At LAPP, the focus is on the customer and their specific needs. That is why we offer advice that is independent of any specific protocol and technology. Because our

position is clear: We provide every customer with exactly the solution that will make them more competitive. LAPP customers benefit from our know-how in two ways, as we are a specialist in cable solutions with manufacturing expertise.

We are a leader in terms of our technological expertise and as a member of the key user organisations, we actively shape the market.

Quality for your safety

The Industrial Internet of Things (IIoT) places high demands on connection technology. Data transmission must be guaranteed at all times to avoid scenarios that can lead to production failures and risk to people. LAPP supplies network components of high quality that reliably connect sensors and actuators.

High-level experts

Our customers value us as experts and partners. Our qualification drive is designed to make sure we live up to the trust placed in us. E-learning modules and a certified training programme continuously bring our employees all over the world right up to date.



44

sales companies

100

sales partners
worldwide

Over **1,100**
railway technology
products

578

TRAIN cable types
and dimensions

More than
1.1 million

metres of specialist
TRAIN cables in stock

Rail is the future

Rail is a long-term and future-proof means of transport. LAPP supplies powerful connection technology all over the world for the efficient railway industry of tomorrow – with very short lead times.

Due to global warming and the necessary adaptation of our mobility concepts, worldwide demand for public transport is growing. Rail plays an important role here: The much discussed concept of e-mobility has long since become reality on the tracks. Wherever people are transported, the requirements in terms of the quality and safety of the products are extremely high. LAPP meets these standards with its TRAIN division, which specialises in solutions for the railway industry. We supply cable types for almost all applications in railway vehicles of all kinds: from the coupling to the drive motor and the door automation to ventilation and toilets. Tailored and with no minimum order quantity.

Delivery concept for rapid availability

A challenge for the industry is the long delivery times of up to four months for railway-specific products. Thanks to the

LAPP logistics concept, we can supply national and international customers reliably, quickly and from a single source – within 24 hours in Germany. "Many of our 40,000 standard products are always in stock. Thanks to our worldwide subsidiaries and large stocks, the goods can be with the customer within a few days. Almost anywhere in the world. This optimises the costs for our customers and makes the entire supply chain more flexible", guarantees Thorsten Grünberg, Market Manager Train at LAPP.

Cable quality that meets the highest standards

Thanks to electron beam cross-linking, our ÖLFLEX® TRAIN, ETHERLINE® TRAIN and UNITRONIC® TRAIN cables are exceptionally resistant to heat, oil, acid and UV radiation and also exhibit the highest possible mechanical robustness. The production site for the ÖLFLEX® TRAIN is certified in compliance with the

International Railway Industry Standard (IRIS). This means that our cables meet the stringent requirements in international standards for this specialist sector. In terms of fire protection, for example, almost all LAPP products for the railway industry meet the highest hazard level Hazard Level 3 (HL3) in the international standard EN-45545-2.





ÖLFLEX® CONNECT

System solutions made by LAPP

With ÖLFLEX® CONNECT, we completed the step from component supplier to system supplier, offering complete solutions from a single source – from specialised cable assemblies and industry-standard servo connections to complex high-speed drag chain systems. We are constantly expanding our engineering, production and assembly capacities around the world.

The benefits for you:

- No capital expenditure for own production facilities
- Lean supply base leads to lower operating costs
- Low inventory levels thanks to complete assemblies
- Excellent functional reliability

ÖLFLEX® CONNECT CABLES

www.lappkabel.com/oelflexconnect



Cable systems made by LAPP

Our product range stretches from single cores and multicore cables through to EMC-shielded cables, all of which can be fitted with a wide selection of crimp contacts, connectors and housings. We also offer highly flexible and durable spiral cables in premium quality, as well as glass fibre assemblies, which we can produce, test and deliver in both standard and custom lengths.

Our comprehensive range of services:

- Cable cutting as required
- Unwinding with specified bending radius
- Stripping, crimping, heat shrinking
- Markings & printings
- Testing



ÖLFLEX® CONNECT CHAIN

Power chain systems made by LAPP

When it comes to assembled drag chains, you can benefit from our extensive know-how and many years of experience.

basic chain core chain extended chain

basic chain

Nylon or steel drag chains with highly flexible cables, cable protection conduits, hydraulic or pneumatic hoses with **no termination** such as connectors or flanges

core chain

Nylon or steel drag chains with highly flexible cables, cable protection conduits, hydraulic or pneumatic hoses **including termination** (connectors, flanges)

extended chain

Nylon or steel drag chains with highly flexible cables, cable protection conduits, hydraulic or pneumatic hoses **including termination** (connectors, flanges) **and functional units** such as towing arms or supporting structures

ÖLFLEX® CONNECT SERVO

Servo systems made by LAPP

As a leading manufacturer of assembled servo cable systems, we offer solutions for all industry standards for customers from different areas of mechanical engineering and drive systems. These range from the cost-effective **basic line** for applications free of aggressive environmental influences, to the **core line** that is specially designed for dynamic applications, right up to the highly dynamic performance class of the **extended line**. LAPP therefore offers the right solution for every set of requirements.

basic line core line extended line





Project Business

**We lead
your project
to success**



Deployed worldwide: LAPP experts and project teams provide customers with excellent advice and develop optimum cable, service and connection solutions on site. Look at the smallest details without losing sight of the whole: LAPP provides complete management of highly complex products. Whether it's a solar park, an industrial automation project or network expansion.

**Project consulting
for increased efficiency**

Wherever LAPP is helping its customers worldwide: Our project and cable experts are known for precise planning, exact coordination of delivery

and the entire logistics process. Combined with high reliability and a product range that won't put a strain on the budget, these are our crucial guarantees of successful project management.

Experts in all phases

Our teams guide your project safely through each phase, looking at the smallest details while never losing sight of the big picture. We calculate your needs precisely, define a precise schedule and identify the optimum connection solutions or customised products. LAPP experts have all the expertise needed in each individual project phase – from the start to success!

Your personal contact

LAPP is a family-run company. We place great emphasis on trust, good cooperation and excellent project management throughout your project. We are committed to this. It is therefore natural for us that your LAPP expert is on-site with you, knows your specific requirements and is your personal contact person from day one of the project through to its successful completion.

A local service all over the world

We are present on five continents with the usual high LAPP quality. Do you need experts for your project who can adapt to your specific requirements quickly and focus on solutions? Our experienced project teams are on site all over the world and can easily access the LAPP service and logistics centres.

e-services: developed for our customers

LAPP offers its customers e-services, which are optimally tailored to their individual requirements. Online ordering, exchanging documents or scanning products – we have the right solution for everything.



Simply order online

"We need to be able to react quickly on a building site," reports our customer Erwin Haider from Gerstlauer. "If a cable routing is changed, the colleague scans the barcode with their mobile phone and orders the cable in the LAPP e-shop. It is delivered the next day and we can continue working – in France, Belgium or wherever we are at the time."

The e-services from LAPP have a number of impressive advantages: order easily and conveniently online at all times, minimise administration work and use the time saved to concentrate on your core business. If they have any questions, our customers can contact our representatives at any time and we will provide them with individual support.

Take action faster with LAPP's e-services



e-Shop

In the office, on the building site or in the warehouse? At www.lappgroup.com, you can order online in the LAPP e-shop day and night and access a range of over 40,000 standard items. There are numerous advantages: You will immediately see the availability and delivery dates and you can use custom conditions thanks to your personalised user profile.



LAPP Kanban-Scanner

Mobility with the LAPP Kanban scanner: Scan articles, adjust order quantities and automatically transfer the data to LAPP and to your own ERP system. The ordering process with the robust hand scanner is so simple and effective.



Scan2LAPP

Faster, smarter, Scan2LAPP: Scan and order the desired products with Scan2LAPP via your smartphone or tablet in the LAPP e-shop shopping basket. Scan2LAPP can be used by anyone – without any additional registration or app.



EDI

Automatically exchange orders, invoices or delivery notes: With EDI (Electronic Data Interchange), LAPP offers a standardised interface for secure exchange of business documents between ERP systems.



BMEcat

For a quick overview: With the standardised electronic BMEcat, you can integrate the LAPP catalogue into your inventory management system and access all data. In conjunction with EDI, you can then order from LAPP directly from your system or order platform.

OCI

The Open Catalogue Interface, or OCI for short, is an open and standardised interface. Using suitable ERP software, you can automatically transmit your shopping basket content from the LAPP e-shop to your inventory management system. This exchange facility saves time and minimizes the error rate.



Uncompromising quality – worldwide



ÖLFLEX®
Power and control cables

ÖLFLEX® has become synonymous with power and control cables. Our flexible and oil-resistant cables satisfy the highest demands and can withstand even the very toughest conditions.



UNITRONIC®
Data communication systems

Our high-quality UNITRONIC® data network cables and field bus components provide a forward-looking solution for all applications in industrial machinery and plant engineering. From transmission of simple control signals to field bus signals in complex network structures – we offer a dependable cabling and connection solution for almost every situation.



ETHERLINE®
Data communication systems for ETHERNET technology

Our ETHERLINE® branded products open up a secure, fast and reliable path to the future of Ethernet applications, e.g. PROFINET®. The systems are made up of durable and robust cables and connection components for passive and active network technology, and deliver an effective solution for almost any application, particularly in an industrial environment.



HITRONIC®
Optical transmission systems

HITRONIC® fibre optic cables make transmitting large data volumes easy: fault free, bug proof and at almost light speed. Even electromagnetic radiation does not interfere with the transmission. The HITRONIC® range includes the ideal solution for indoor or outdoor use, for demanding conditions, and even for use in power chains.



EPIC®
Industrial connectors

EPIC® industrial connectors can be found everywhere in industrial machinery and plant engineering, for measuring, control and drives. EPIC® is a flexible system of housings, inserts and contacts: all extremely robust, absolutely safe and simplicity itself to assemble.



SKINTOP®
Cable glands

Simply feed in the cable and twist. That's it. Our SKINTOP® cable glands provide secure connections in no time. The universal systems are simple but effective. They secure and centre the cable, hermetically seal it and guarantee optimum strain relief.



SILVYN®
Protective cable conduit systems and cable carrier systems

The universal range of SILVYN® protection and guidance systems protect cables effectively against dust, moisture, mechanical, thermal and chemical influences. The versatile SILVYN® CHAIN range of energy supply chains also protects and guides cables in dynamic applications.



FLEXIMARK®
Marking systems

The requirement: permanent marking. The solution: FLEXIMARK®. These sophisticated systems mean that a clear overview inside a control cabinet is no longer just a pipe dream. From simple labels for manual marking through to electronic markings, the FLEXIMARK® range is guaranteed to be permanent.