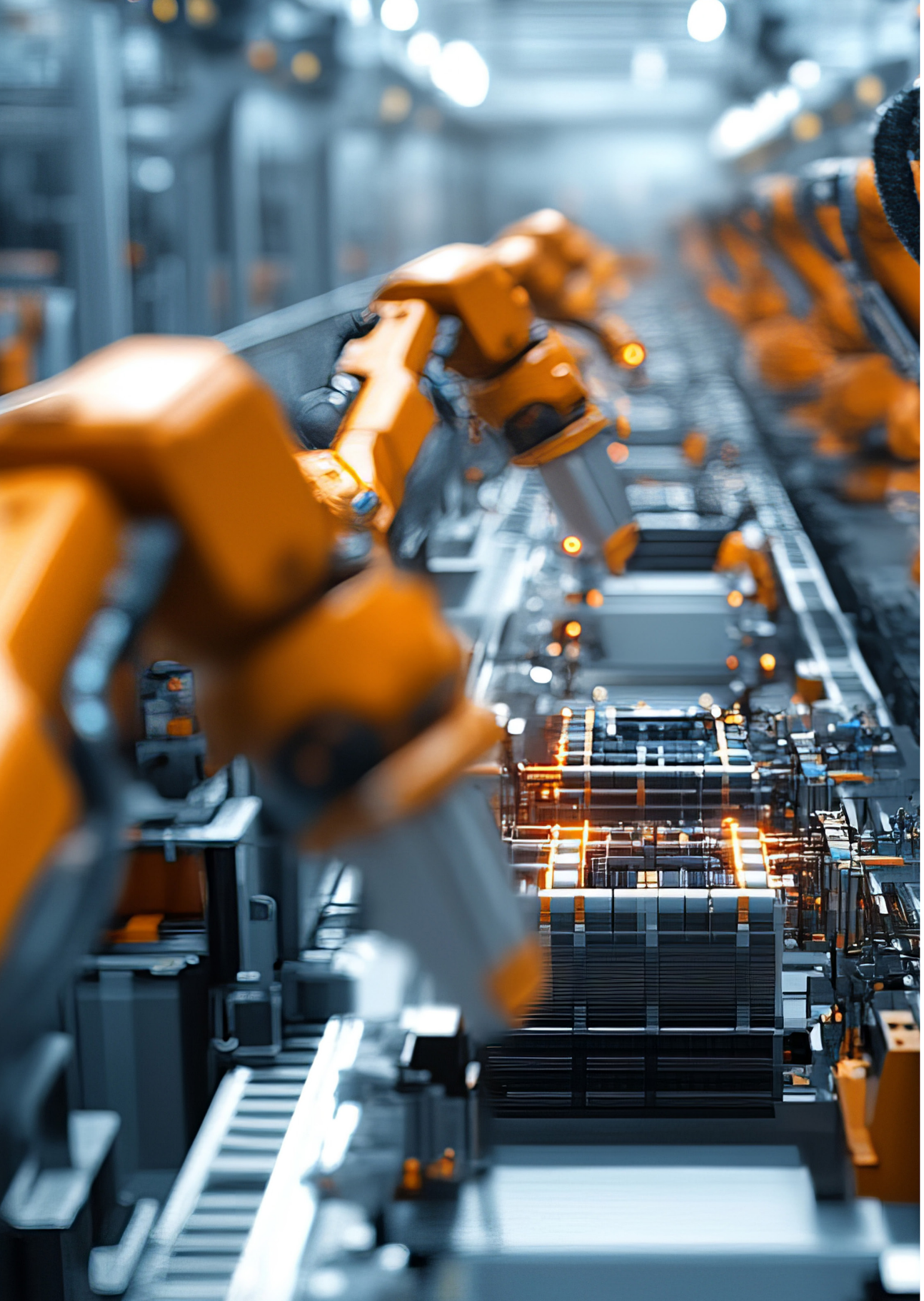
Battery industry

Connectivity solutions for battery and
electric vehicle production, energy storage systems
and charging infrastructure

LAPP



We meet the requirements of a modern battery industry – today and with a view to the future.

The world is changing: in the age of electrification, the demand for energy is rising rapidly. The battery industry is becoming a key technology. It enables electromobility, supports charging infrastructure and stationary energy storage, and thus supplies data centres, industrial plants and machine parks. The increasing demand for energy requires ever more powerful battery technologies.

LAPP powers the battery industry

Whether in the production hall, at fast charging stations outdoors or in outdoor energy storage containers – reliability, resilience and global usability are the focus everywhere. LAPP develops connection technology that meets these requirements:

Our cables, connectors and pre-assembled systems ensure reliable energy and data transmission, are specially designed for high mechanical, thermal and chemical stresses, and comply with international standards. They are designed for use in extreme weather and stress conditions and guarantee maximum reliability. With robust connectivity solutions from LAPP, you can be sure that your systems will deliver peak performance around the clock and worldwide. Let's shape the future of energy and mobility solutions together!

Together we are shaping the future of production

Battery production places the highest demands on technology and processes: high pressure to innovate, complex manufacturing processes and the demand for maximum efficiency characterises the industry. With LAPP as your partner, you benefit from innovative connection technology that not only meets your current requirements, but is also equipped to meet the challenges of tomorrow.

Modularity, scalability and reliability

With the right solutions from LAPP, you can ensure maximum efficiency and availability along the entire value chain. Our highly flexible cables and precisely assembled cable sets reduce installation times, minimise maintenance costs and increase overall plant efficiency.
Modular connector and cable systems from LAPP adapt dynamically when production processes need to be expanded or infrastructure changed. Our connectivity solutions enable you to expand your infrastructure step by step – from the first prototype to large-scale series production – without interrupting existing processes. This allows you to remain flexible at all times.

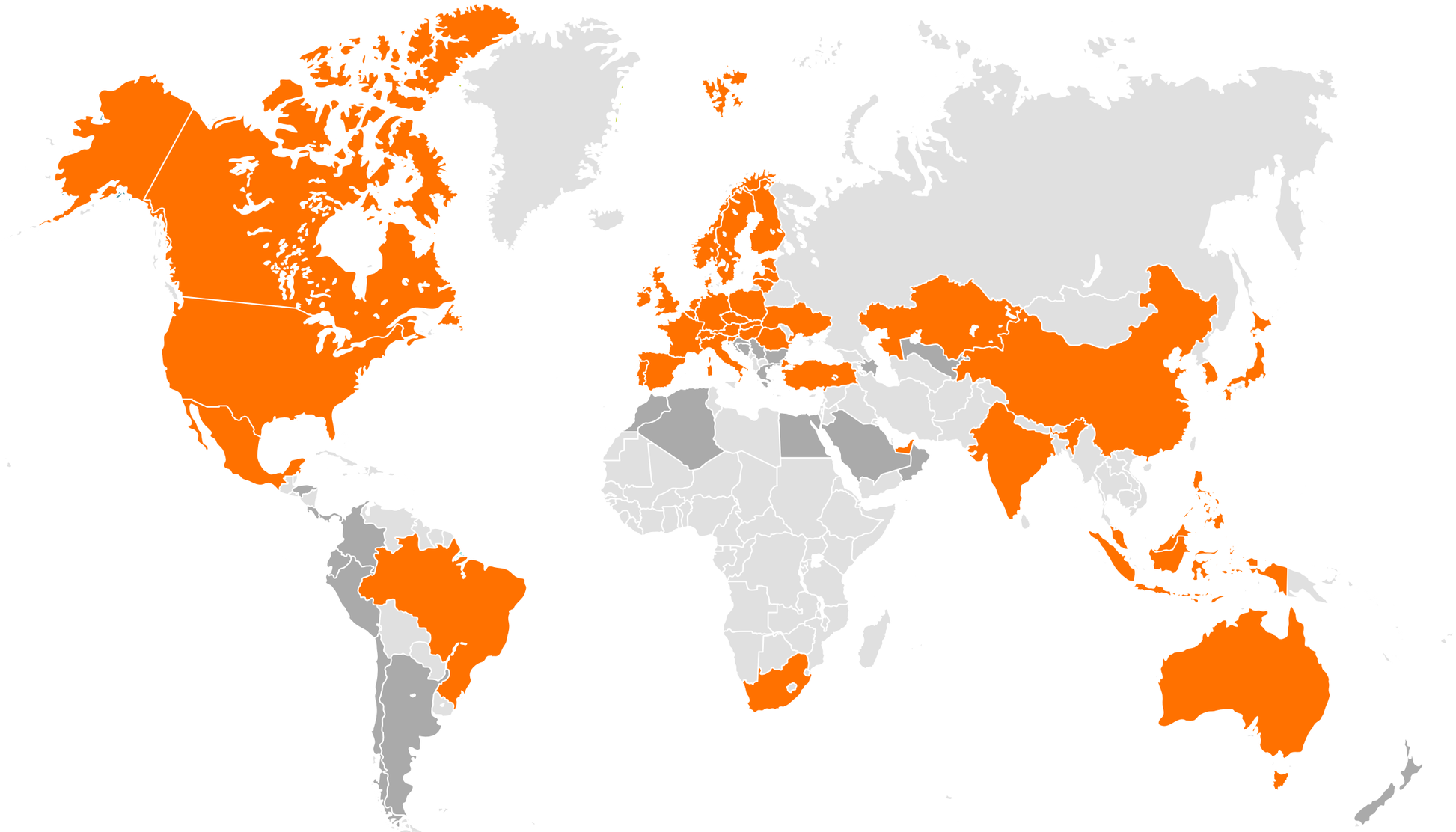
We are your partner for the future of the battery industry

Rely on LAPP's expertise to future-proof your production lines, charging infrastructure and energy storage systems. With high-performance products, global service and technical advice, we are your reliable partner in a connected, electrified and sustainable world.

With LAPP at your side, you can concentrate on your core competencies – we provide the right connectivity solutions to ensure that your production processe.

Connectivity solutions for the battery industry of tomorrow

www.lapp.com/en/de/e/092001



Countries with LAPP sales companies in the global sales network

Countries with international representatives in the global sales network

Always close to you

Always at your side – worldwide and reliable

LAPP is a globally active company that is always available to provide you with fast and reliable support, wherever you are in the world. Thanks to our international network and locally based teams, we offer you not only high-quality products, but also tailor-made connectivity solutions that are perfectly matched to the specific requirements of your regional markets. No matter where you are, with LAPP you can be sure that your needs will be met efficiently and with the highest precision.

Your logistics – always one step ahead with LAPP

As your logistics expert, LAPP has a global network that guarantees a seamless and efficient supply chain. From consulting and installation to the integration of our solutions, we accompany you every step of the way and ensure that our products are optimally adapted to your processes. This allows you to concentrate fully on your core competencies while we design your logistics processes to be efficient, sustainable and future-proof.

Working together for limitless collaboration

With LAPP, you not only get innovative products, but also a partner whose expertise and commitment ensure your success. Put your trust in LAPP – for a partnership that knows no boundaries and sets global standards.

Get in touch with our experts
www.lapp.com/en/de/e/000040

LAPP – your global partner for innovative connectivity solutions in the battery industry

With a globally available product portfolio, LAPP offers tailor-made connectivity solutions that have been specially developed for the requirements of the battery industry. Whether in the production of battery cells, electromobility or stationary energy storage systems – our solutions are flexible, reliable and fully compatible. They can be seamlessly integrated into any infrastructure. This enables easy implementation and smooth scaling of your systems.

Certified quality for global markets

Our products are not only market-tested worldwide, but also certified for local approvals in all relevant regions. This guarantees you access to safe, high-quality connectivity solutions that meet the highest international safety and quality standards – regardless of whether your applications are used in manufacturing, at charging points or in energy storage containers.

Efficiency and reliability – Plug-and-play for the battery industry

LAPP supplies plug-and-play products and specially adapted solutions that enable quick and modular installation. Our cables, connectors and pre-assembled systems are designed for extreme mechanical, thermal or chemical stresses and ensure that your processes in battery production, charging infrastructure and energy storage run efficiently and without disruption.

Comprehensive solutions for your value chain

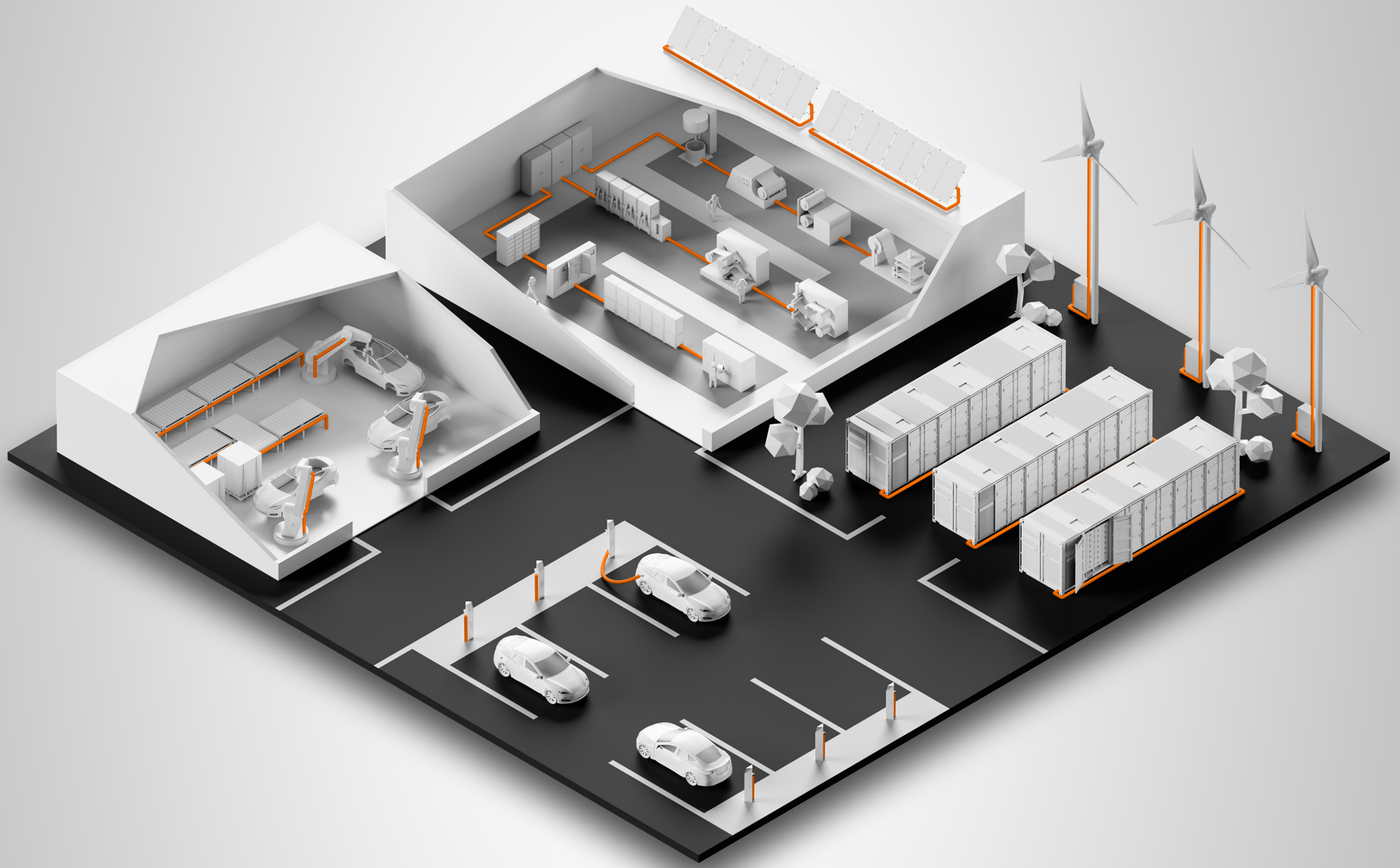
As a comprehensive partner, LAPP offers more than just products: we also provide additional services that help you free up valuable resources. Our tailor-made connectivity solutions are perfectly matched to the requirements of the battery industry and thoroughly tested. This allows you to concentrate on your core competencies while we ensure that your systems are future-proof and reliable.

Advancing the battery industry with LAPP

With LAPP, you have a strong partner at your side to help you master the challenges of the battery industry. Take advantage of our expertise to make your processes efficient, use your resources optimally and make your infrastructure fit for tomorrow's requirements. Trust LAPP – for a connected, electrified and sustainable future.

Connectivity solutions for the battery industry of tomorrow
www.lapp.com/en/de/e/092001

The right solution for every requirement



Our solutions for the battery industry of tomorrow

The battery industry is the key to a sustainable and electrified world. From the production of modern batteries and high-performance energy storage systems to electromobility and charging infrastructure – every stage of this value chain requires innovative technologies and consistently reliable connectivity solutions.

Battery manufacturing

The manufacturing of modern batteries is a highly complex, multi-stage process that requires maximum precision, speed and reliability. From mixing the electrode materials to cell assembly and module and pack assembly, all stages of production must be perfectly coordinated. The right connectivity solutions play a key role here: they ensure continuous energy and data transfer between machines, controllers, sensors and actuators.

In battery production environments, connection technology is subject to high mechanical, thermal and chemical stresses: highly dynamic movements in robotics applications, exposure to chemicals and heat in individual process steps, and continuous operation in multi-shift systems. Unplanned downtime or quality deviations can not only cause high costs, but also jeopardise delivery dates.

Connectivity solutions for the battery industry of tomorrow
www.lapp.com/en/de/e/092001

Battery energy storage systems (BESS)

Battery energy storage systems are the backbone of the energy transition. They store excess energy from renewable sources such as wind and solar parks, balance out grid fluctuations and enable a predictable, stable energy supply. Whether as a containerised solution for use in the field, as industrial emergency power storage or as large-scale grid storage, the connection technology must work reliably in every configuration.

BESS applications place particularly high demands on cables and connectors: high current-carrying capacity over long periods of time, excellent insulation properties, weather and UV resistance for outdoor installations, as well as flame resistance and protection against short circuits or overvoltage. Added to this is the need for flexible scalability in order to adapt storage solutions to different capacity requirements.

Electric vehicle production & charging infrastructure

Electromobility is one of the fastest-growing markets worldwide. In addition to the construction of high-performance electric vehicles, efficient production and a secure charging infrastructure play a central role in the success of the industry.
In both areas, durable and reliable connection systems are crucial.

Highly automated production lines are used in vehicle production – from body construction and final assembly to inspection and testing stations. Here, cables and connectors must not only withstand high mechanical loads, but also ensure precise data and energy transmission. In the charging infrastructure, on the other hand, connectivity solutions are required that can withstand permanently high currents, changing weather conditions and intensive use.

Battery manufacturing

Regions	
APAC	●
AMS	●
EMEA	●

	Mixing	Coating	Slitting/Notching	Tab Welding	Stacking	Electrolyte Injection	Degassing	Formation	Testing
ÖLFLEX®									
ÖLFLEX® CLASSIC 100 CY			●●		●●				
ÖLFLEX® CLASSIC 110 / 110 CY	●●	●●	●●	●●	●●	●●	●●	●●	
ÖLFLEX® CLASSIC 110 BK 0.6/1KV	●●								
ÖLFLEX® CLASSIC 110H / 110CH	●●	●●					●●		
ÖLFLEX® CLASSIC 115 CY		●●				●●	●●	●●	
ÖLFLEX® CLASSIC 130H	●●	●●	●●		●●		●●	●●	●●
ÖLFLEX® CLASSIC 135CH	●●	●●						●●	●●
ÖLFLEX® CLASSIC 6130H / 6130CH	●							●	
ÖLFLEX® CLASSIC 6135CH	●							●	
ÖLFLEX® CLASSIC 400 P								●●	
ÖLFLEX® 150		●●				●●	●●		
ÖLFLEX® 191 / 191 CY	●●	●●	●●		●●	●●	●●	●●	
ÖLFLEX® 191K / 191K CY	●	●	●		●	●	●	●	
ÖLFLEX® FD 810		●●				●●	●●	●●	
ÖLFLEX® FD 855 P / 855 CP		●●					●●	●●	●●
ÖLFLEX® FD 891 / 891 CY		●●				●●	●●		
ÖLFLEX® FD 90 / 90 CY	●●					●●		●●	
ÖLFLEX® CHAIN 809 SC	●●	●●					●●		
ÖLFLEX® CHAIN 819 P / 819 CP				●●		●●			
ÖLFLEX® ROBOT 900 P / 900 DP		●●		●●		●●	●●	●●	
ÖLFLEX® ROBOT F1		●●				●	●●		●●
ÖLFLEX® SERVO FD 796 CP			●●	●●	●●				
ÖLFLEX® SERVO FD 798 CP			●●	●●	●●				
ÖLFLEX® SERVO 2XSLCH-JB	●●								
ÖLFLEX® SERVO 2YSLCYK-JB		●●					●●		
H05V-K	●●	●●				●●	●●	●●	
H05Z-K 90°C						●●			
H07V-K	●●	●●				●●	●●	●●	
H07Z-K 90°C	●●	●●	●●		●●		●●	●●	●●
NSGAFÖU 1,8/3kV				●●				●●	
ÖLFLEX® WIRE MS 2.1	●●	●●				●●	●●	●●	
ÖLFLEX® WIRE 1063 SC	●							●	
ÖLFLEX® HEAT 125 SC	●●	●●					●●	●●	●●
ÖLFLEX® HEAT 180 SiF / SiF A		●●					●●		
ÖLFLEX® HEAT 180 SiHF		●●				●●			
ÖLFLEX® HEAT 180 EWKF		●●					●●		
ÖLFLEX® HEAT 205 SC		●●					●●		
ÖLFLEX® HEAT 260 C								●●	
ÖLFLEX® HEAT 350 SC		●●	●●		●●		●●		
ÖLFLEX® TRAIN 3GKW SC								●	
ÖLFLEX® DC ESS SC	●●							●●	
ÖLFLEX® DC ESS SC U		●					●	●	
ÖLFLEX® CONTROL TM		●●				●●	●●		
ÖLFLEX® TRAY II						●●			

ÖLFLEX® CONNECT									
ÖLFLEX® CONNECT (Harnessing Solutions)	●●	●●	●●	●●	●●	●●	●●	●●	●●
ETHERLINE®									
ETHERLINE® FD P CAT.5	●●	●●		●●			●●		
ETHERLINE® FD P CAT.6	●●								
ETHERLINE® FD P FC UL/CSA CAT.5						●●		●●	●●
ETHERLINE® H CAT.5e		●●	●●		●●		●●	●●	●●
ETHERLINE® PN CAT.5e Y	●●			●●					
ETHERLINE® PN CAT.5e FRNC FLEX FC						●●		●●	●●
ETHERLINE® Y FC UL/CSA CAT.5	●●		●●		●●				
ETHERLINE® LAN CAT.6A S/FTP						●●		●●	
ETHERLINE® LAN 1000 S/FTP CAT.7A LSZH									●●
TOSIBOX®	●	●	●	●	●	●	●	●	●
UNITRONIC®									
UNITRONIC® LiYY / LiYY A		●●		●●			●●		
UNITRONIC® LiYCY / LiYCY A		●●		●●		●●	●●	●●	
UNITRONIC® Li2YCY PiMF								●●	●●
UNITRONIC® LiHCH / LiHCH TP	●●	●●				●●	●●	●●	●●
UNITRONIC® LiHH	●●	●●					●●	●●	●●
UNITRONIC® BUS CAN	●●	●●					●●	●●	
UNITRONIC® BUS CC		●●	●●		●●		●●		
UNITRONIC® BUS CC FD P FRNC			●●		●●				
UNITRONIC® FD		●●		●●			●●	●●	
UNITRONIC® FD P Plus								●●	●●
UNITRONIC® FD CP (TP) Plus A						●●		●●	
UNITRONIC® LAN 600 S						●●			
EPIC®									
EPIC® POWER LS1	●	●	●	●	●	●	●	●	●
EPIC® POWER S120 (EPIC® Booksize)	●				●				●
EPIC® Cordsets	●	●	●	●	●	●	●	●	●
EPIC® Drivecliq RJ45 (ETHERLINE® DRIVECLIQ 6SL3060)	●	●	●	●	●	●	●	●	●
EPIC® DATA M12D	●	●	●	●	●	●	●	●	●
EPIC® DATA M8/M12	●	●	●	●	●	●	●	●	●
EPIC® DATA RJ45	●●	●●	●●	●●	●●	●●	●●	●●	●●
EPIC® H-Q	●	●	●	●	●	●	●	●	●
EPIC® POWER LOCK	●				●				
EPIC® Patchcords	●	●	●	●	●	●	●	●	●
EPIC® Rectangular/HDC	●	●	●	●	●	●	●	●	●
EPIC® M23	●●	●●	●●	●●	●●	●●	●●	●●	●●
SKINTOP®									
SKINTOP® Cable glands (Plastic, brass, stainless steel)	●●	●●	●●	●●	●●	●●	●●	●●	●●
SKINTOP® CUBE	●●	●●	●●	●●	●●	●●	●●	●●	●●
SKINTOP® MULTI	●●	●●	●●	●●	●●	●●	●●	●●	●●
SKINTOP® CLICK	●●	●●	●●	●●	●●	●●	●●	●●	●●
SILVYN®									
SILVYN® Conduit	●●	●●	●●	●●	●●	●●	●●	●●	●●
FLEXIMARK®									
FLEXIMARK® Cable markers plastic & stainless	●●	●●	●●	●●	●●	●●	●●	●●	●●
Cable Accessories									
Cable ties	●●	●●	●●	●●	●●	●●	●●	●●	●●
Electrical connection material	●●	●●	●●	●●	●●	●●	●●	●●	●●
Insulating and shrinking products	●●	●●	●●	●●	●●	●●	●●	●●	●●

Battery energy storage system (BESS)

Regions	
APAC	●
AMS	●
EMEA	●

	Battery Module	BMS: Battery Management System	DC Panel	PCS: Power Conversion/ Conditioning System	PMS: Energy/ Power Management System	FPS: Fire Protection System	HVAC System	Gridpoint Controller (optional)	External Connection
ÖLFLEX®									
ÖLFLEX® 191	●●	●●		●●	●●	●●	●●		
ÖLFLEX® CLASSIC 110	●●	●●		●●	●●	●●	●●		
ÖLFLEX® DC ESS SC		●●		●●	●●				●●●
ÖLFLEX® DC ESS SC U		●	●	●	●			●	●●
ÖLFLEX® DC ESS SC A			●						
H05V-K				●●	●●				
H0V7-K				●●●	●●●				
ÖLFLEX® WIRE MS 2.1		●●●	●●●	●●●	●●●				
ÖLFLEX® WIRE MS 2.2		●●●	●●●	●●●	●●●				
ÖLFLEX® WIRE 1063 SC		●		●	●				
ÖLFLEX® HEAT 125 SC A	●●								
ÖLFLEX® HEAT 180 SiF / SiF A	●●	●●							
ÖLFLEX® HEAT 260 C	●●	●●							
ÖLFLEX® VFD 2XL							●●		
ÖLFLEX® VFD Slim/ 1XL/ 2XL Symmetrical							●		
ÖLFLEX® TRAY VTC				●	●		●		
ÖLFLEX® TRAY II	●●			●●	●●				
ÖLFLEX® TRAY II CY				●●	●●		●●		
ÖLFLEX® TRAY 6111 MC	●			●	●				
ÖLFLEX® CONNECT									
ÖLFLEX® CONNECT (Harnessing Solutions)	●●●	●●●	●●	●●	●●	●●	●●		●●
ETHERLINE®									
ETHERLINE® FD P CAT.5		●●			●●			●●	
ETHERLINE® FD P CAT.6		●●			●●			●●	
ETHERLINE® CAT.5e, 6a, 7		●●		●●	●●		●●	●●	
ETHERLINE® FD P FC UL/CSA CAT.6		●●						●●	
ETHERLINE® H CAT.5e	●●	●●	●●	●●	●●●	●●	●●		●●
ETHERLINE® LAN 350 CAT.6	●●	●●	●●	●●	●●	●●	●●		●●
ETHERLINE® CAT.6A SF/UTP	●●	●●	●●	●●	●●	●●	●●		●●
ETHERLINE® PN CAT.6A FC	●●	●●	●●	●●	●●	●●	●●		●●
ETHERLINE® PN Cabinet CAT.6A	●●	●●	●●	●●	●●	●●			
UNITRONIC®									
UNITRONIC® LiYCY (TP)	●●	●●	●●	●●	●●	●●	●●		
UNITRONIC® LiYCY / LiYCY A		●●							
UNITRONIC® BUS CAN	●●	●●●	●●	●●	●●●	●●	●●●	●●	
UNITRONIC® BUS CAN TRAY	●●	●●	●●	●●	●●	●●	●●		
UNITRONIC® BUS LD		●●		●●	●●●	●●	●●●	●●	
UNITRONIC® SENSOR FD		●●			●●		●●	●●	
UNITRONIC® 300	●●	●●●	●●	●●	●●●	●●	●●●	●●	
UNITRONIC® 300 S		●●					●●	●●	
UNITRONIC® 190			●●	●●	●●		●●	●●	
HITRONIC®									
HITRONIC® Fibre Optic Cables					●●				●●
EPIC®									
EPIC® BATTERY F & M	●		●		●				●
EPIC® DATA CAN Sub-D	●●	●●	●●	●●	●●	●●	●●		
EPIC® DATA M8/M12		●		●	●	●	●	●	●
EPIC® DATA M12D		●							
EPIC® DATA RJ45	●●	●●●	●●	●●●	●●●	●●	●●●	●	●●
EPIC® Patchcords		●						●	
EPIC® POWER LOCK					●				●
EPIC® POWER LS1		●		●					
EPIC® Rectangular/HDC							●		●
EPIC® SOLAR			●		●				
EPIC® M23		●		●	●	●	●		●
SKINTOP®									
SKINTOP® Metallic glands							●●	●●	●●
SKINTOP® Non-metallic glands	●●	●●●	●●●	●●●	●●●	●●●	●●●	●●	●●
SKINTOP® CUBE	●●	●●	●●	●●	●●	●●	●●	●●	●●
SKINTOP® MULTI	●●	●●	●●	●●	●●	●●	●●		●●
SKINTOP® CLICK		●	●				●		
SKINTOP® BS-M		●●	●●	●●			●●	●●	
SKINTOP® ST-M		●●	●●				●●		
SKINTOP® MS-SC-M, MS-M BRUSH				●●			●●		
SILVYN®									
SILVYN® Conduit				●	●	●	●		●●
FLEXIMARK®									
FLEXIMARK® Cable markers plastic & stainless	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●
Cable Accessories									
Cable ties	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●
Electrical connection material	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●
Insulating and shrinking products	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●

Electric vehicle manufacturing (EV) & charging infrastructure

Regions	
APAC	●
AMS	●
EMEA	●

	Press Shop	Powertrain	Paint Shop	Body Shop /Assembly	DC Charging Control Cabinet
ÖLFLEX®					
ÖLFLEX® CLASSIC 409	●●	●●	●●	●●	
ÖLFLEX® CLASSIC 490	●●	●●		●●	
ÖLFLEX® CLASSIC 490P	●●	●●		●●	
ÖLFLEX® CLASSIC 400 P	●●	●●	●●	●●	
ÖLFLEX® 150 / 150 CY	●●			●●	
ÖLFLEX® 150 QUATTRO	●	●	●	●	
ÖLFLEX® 191 / 191 CY	●●	●●	●●	●●	
ÖLFLEX® 191K / 191K CY	●	●	●	●	
ÖLFLEX® 540 P	●●	●●	●●	●●	
ÖLFLEX® FD Auto-X	●	●	●	●	
ÖLFLEX® FD 855 P / 855 CP	●●	●●	●●	●●	
ÖLFLEX® FD 90 / 90 CY	●●	●●	●●	●●	
ÖLFLEX® CHAIN 809 / 809CY	●●	●●	●●	●●	
ÖLFLEX® CHAIN 890 / 890CY	●	●	●	●	
ÖLFLEX® CHAIN 896P	●●	●●	●●	●●	
ÖLFLEX® CHAIN TM, CHAIN CY	●●	●●	●●	●●	
ÖLFLEX® Power Multi	●●	●●	●●	●●	
ÖLFLEX® ROBOT 900 P / 900 DP	●●	●●	●●	●●	
ÖLFLEX® ROBOT F1	●●	●●	●●	●●	
ÖLFLEX® SERVO FD 796 CP	●●	●●	●●	●●	
ÖLFLEX® SERVO FD 798 CP	●●	●●	●●	●●	
ÖLFLEX® SERVO FD zeroCM	●●	●●	●●	●●	
ÖLFLEX® Servo 7DSL	●●	●●	●●	●●	
ÖLFLEX® DC ESS SC U					●
ÖLFLEX® CONTROL TM	●●	●●	●●	●●	
ÖLFLEX® VFD 2XL			●●		
ÖLFLEX® VFD Slim/ 1XL/ 2XL Symmetrical	●	●	●	●	
ÖLFLEX® FD VFD	●	●	●	●	
ÖLFLEX® VFD 1XL w Signal	●	●	●	●	
ÖLFLEX® VFD 2XL w Signal	●●	●●	●●	●●	
ÖLFLEX® TRAY VTC	●	●	●	●	
ÖLFLEX® TRAY II	●●	●●	●●	●●	
ÖLFLEX® TRAY II CY	●●	●●	●●	●●	
ÖLFLEX® CONNECT					
ÖLFLEX® CONNECT (Harnessing Solutions)					●●
Servo assemblies	●●	●●	●●	●●	
Ethernet Cordsets (5e, 6a, PROFINET, BUS, Sensor)	●●		●●	●●	

ETHERLINE®					
ETHERLINE® FD P CAT.5	●●	●●	●●	●●	
ETHERLINE® FD P CAT.6	●●	●●	●●	●●	
ETHERLINE® CAT.5e, 6, 7	●●	●●	●●	●●	●●
ETHERLINE® EC FD CAT.5e	●●	●●	●●	●●	
ETHERLINE® H CAT.5e					●●
UNITRONIC®					
UNITRONIC® BUS PB Torsion	●●	●●	●●	●●	
UNITRONIC® BUS LD	●●		●●	●●	●●
UNITRONIC® Sensor FD					●●
UNITRONIC® BUS CAN	●●		●●	●●	●●
UNITRONIC® FD CP (TP) Plus A					●●
UNITRONIC® 300	●●	●●	●●	●●	●●
UNITRONIC® 300 S	●●	●●	●●	●●	
UNITRONIC® 190	●●	●●	●●	●●	●●
UNITRONIC® 190 CY	●●	●●	●●	●●	
UNITRONIC® Spiral	●●	●●	●●	●●	
EPIC®					
EPIC® Cordsets		●			●
EPIC® DATA M8/M12	●		●	●	●
EPIC® DATA PB Sub D FC	●		●	●	●
EPIC® DATA RJ45	●		●	●	●
EPIC® H-Q	●		●	●	●
EPIC® M23			●	●	●
EPIC® Patchcords		●	●	●	●
EPIC® Pin & Sleeve	●	●	●	●	
EPIC® POWER LOCK	●		●	●	
EPIC® Rectangular/HDC	●		●	●	●
SKINTOP®					
SKINTOP® Cable glands (Plastic, brass, stainless steel)	●●	●●	●●	●●	●●
SKINTOP® CUBE				●●	
SKINTOP® MULTI				●●	
SKINTOP® CLICK	●●	●●	●●	●●	
SKINTOP® ST-M	●●	●●	●●	●●	
SKINTOP® BS-M	●●	●●	●●	●●	
SKINTOP® MS-SC-M, MS-M BRUSH	●●	●●	●●	●●	
SILVYN®					
SILVYN® Conduit	●●		●●	●●	●●
FLEXIMARK®					
FLEXIMARK® Cable markers plastic & stainless					●●
Cable Accessories					
Cable ties	●●	●●	●●	●●	●●
Electrical connection material	●●	●●	●●	●●	●●
Insulating and shrinking products	●●	●●	●●	●●	●●

New product available end of November 2025

ÖLFLEX® HV EV

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A special silicone elastomer compound for insulation and sheathing ensures thermal resistance up to +200 °C. In addition, the double cable shield provides effective protection against electromagnetic interference.

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www.lapp.com/en/de/e/088801

Energy needs smart connections.

Durable cables for necessary battery storage

Electricity from renewable sources plays a crucial role in the energy transition. However, as sun and wind are only available depending on the time of day and the weather, green electricity cannot be generated at all times. This makes battery storage systems indispensable for a stable grid in the future. These storage systems are highly complex technological systems that require a great deal of expertise. LAPP is an expert in the necessary connection solutions and offers companies a comprehensive service – from consulting to the delivery of cables, connection components and customised systems.

“And what do we do when the sun isn’t shining?” is one of the most frequently asked questions when discussing electricity generation from renewable energy sources – in this case photovoltaics. The transition to renewable energies has turned the secure and timely supply of energy into a new, unprecedented challenge. Energy storage systems (ESS) offer a technological approach to control the fluctuations of supply and demand, increase the reliability of the energy infrastructure and realise efficient solutions for both energy suppliers and consumers.

Therefore, one solution for the continuous usability of energy from renewable sources is to store, for example, surplus solar power generated during the day in an energy storage system. If a household produces electricity via solar panels, a connected ESS can store this in a battery and make it available when needed. If the household owns an electric car, for example, this could also be used to charge it overnight.

Due to climate protection efforts, clean electricity is becoming relevant in all areas of life – both private and industrial. As a result, the demand for electricity storage is also increasing. However, according to experts, large storage capacities need to be built in order to meet this demand in the future and achieve climate targets – according to the International Energy Agency (IEA), 10,000 gigawatt hours will be needed worldwide by 2040. This corresponds to the amount of energy required to supply around 2.86 million households with electricity for a year.

High demands on the connection technology

The number of energy storage systems must therefore be increased accordingly. “Anyone who produces energy storage systems quickly realises that there is a lot to consider – especially when it comes to connection technology,” says John Nijhuis, Project Manager in Benelux and ESS expert at LAPP. LAPP is a leading expert in integrated solutions and branded products in the field of cable and connection technology. A customer segment in the Netherlands produces the basic structures of the storage systems in containers, which they later send to the battery manufacturers for further assembly. Everything has to fit into this basic structure – including the cable installation. But that’s not so easy. “On the one hand, there are different solutions for different usage scenarios,” says John Nijhuis, “so I have to ask myself which cable has the necessary electrical properties for my specific application and which components can I connect with it?” In addition, there are corresponding certification processes that must be carried out correctly, as well as fire protection requirements. “Our customers are experts in storage systems, but not in the complex connection technology behind them,” explains John Nijhuis. That’s why ESS manufacturers are increasingly asking LAPP for support.

This support starts long before the delivery of cables. In order to know what a manufacturer needs for its ESS project, an inventory is required. “In the pre-project phase, we contact various departments of the customer that are relevant to production,” explains Yooshin Kim, LAPP expert for energy storage systems and Sales Representative in Korea, who looks after one of the most important ESS target markets in the APAC region. Generally, the specific requirements are first discussed with the R&D department and the design team, says Yooshin Kim. It must be clarified where components such as the battery or battery management systems will be located in the ESS container. This determines which cables and connection systems are required and – accordingly – which certifications they must have.

First ESS special cable came from Korea

“When the ESS market got rolling, there were simply no suitable connection solutions for these systems,” says Yooshin Kim. So a new cable concept was needed. LAPP observed the developments in energy storage solutions and thought about potential connection solutions. It was clear that suitable cables had to be particularly fire-resistant, as batteries are fundamentally a fire hazard, which is why the cables should not favour the spread of fire. The experts at LAPP in Korea developed the first special cable for energy storage systems – the LAPP ÖLFLEX® DC ESS SC U – to connect the power management system to the battery. It is particularly fire-resistant and also highly flexible, so that it can be adapted to the diverse conditions of the ESS container and easily installed. The cable is now in use at LAPP all over the world.

However, LAPP does not simply supply a special cable, but also focuses on the other needs of its customers. “We know that, in addition to high quality standards, customers need two things from us in particular: Firstly, the most cost-effective solution possible and secondly, fast delivery,” says John Niijhuis. LAPP therefore relies on pre-assembled connection solutions from the LAPP Harnessing Solutions system in order to reduce the effort for customers throughout the entire process. Customers are supplied with ready-made cable assemblies that they only need to install at the designated points in the ESS containers.

Depending on the purpose, additional LAPP cables can be used in a standard ESS system. In addition to the aforementioned LAPP ÖLFLEX® DC ESS SC U, ÖLFLEX® Classic 110, ÖLFLEX® 191 and ÖLFLEX® TRAY 6111 are also used to supply power to the various control systems. UNITRONIC® LiYCY (TP), UNITRONIC® BUS CAN and BUS LD are used as data cables. ETHERLINE® Cat.6A for example is suitable as Ethernet cable.

High-quality components for an efficient complete solution

The combination of products and service – both consulting and pre-assembly – characterises LAPP as a reliable partner. Manufacturers of ESS systems are accompanied and supported by LAPP right from the start of the planning process so that the right cables can be selected for the respective purposes in the ESS container. The LAPP portfolio offers an extensive selection of connection solutions. Manufacturers also save time with customised cable harnesses, which are supplied ready-made by LAPP and only need to be inserted in the right place.

Complete solutions such as those from LAPP not only make the work of battery storage manufacturers easier, but also contribute directly to the success of their solutions. And if storage solutions are successfully produced and used, this is ultimately also a success for the energy transition and the planet. Because with many functioning battery storage systems, the green electricity produced can also be stored and used as required. Even when the sun is not shining, LAPP’s connection solutions help to ensure that clean solar power can be used – for example to charge your own electric car.

Read more:
lappconnect.lappgroup.com/en/expertise/durable-cables-for-necessary-battery-storage/

From product customer to system partner:

Order in the battery rack with LAPP Harnessing Solutions

What initially sounded like a routine project turned out to be a real stress test: a machine and plant manufacturer had to deliver a ready-made test cell for a well-known battery manufacturer in just ten weeks – including a battery rack with thousands of cables and hundreds of cable markings. A mission for LAPP: The global market leader for integrated solutions and branded products in the field of cable and connection technology was able to deliver as requested with its system solutions, LAPP Harnessing Solutions, thus laying the foundation for a long-term partnership.

In the age of electrification, the demand for high-performance battery technology is growing rapidly. Data centers, machine parks, and industrial plants will require more energy in the future, ideally from renewable sources. However, wind and sun are not available around the clock. Battery manufacturers around the world are therefore working hard on the next innovations that will significantly improve charging speed and capacity.

As part of these developments, a well-known battery manufacturer commissioned a machine and plant manufacturer to design a test cell for one of its battery and energy storage systems. At its heart is a highly complex wired battery cabinet containing over 11,600 cables with 264 individual markings. The machine manufacturer, which had previously sourced individual connection components from LAPP, immediately recognized that this challenge required system expertise. For the first time, the company therefore opted for the complete solution LAPP Harnessing Solutions.

Two countries, one goal: precise delivery

The particular challenge was to deliver several custom-fit cable assemblies to various component manufacturers in Europe within a very short time frame. The deadline: ten weeks from the initial inquiry to delivery. Added to this was the accelerated procurement of special components. By guaranteeing short delivery times, LAPP was able to prevail against the competition and secure the contract for the production plant in the Czech Republic.

On-time delivery was made possible by the smooth cooperation of an experienced and interdisciplinary team: the internal sales team in Stuttgart, Germany, and the LAPP hub in Otrokovice, Czech Republic, worked closely and transparently together from the initial customer contact through to calculation and production. Every step was coordinated and every interface clearly defined. “We set up the project as a partnership from the outset, with clear responsibilities, short decision-making paths, and open communication with the customer,” says Andreas Klotz, Head of Harnessing Sales Cluster DACH. “This enabled us not only to meet the complex requirements, but even to exceed expectations.” The ability to combine technical expertise with administrative flexibility was a key factor in the success of the project.

A new dimension of partnership

LAPP thus demonstrated to the customer its expertise as a comprehensive system provider that goes beyond the delivery of individual connection components. The on-time delivery under high time pressure marked the starting point for a new strategic partnership. The long-standing product customer has developed into an international system customer, which is now supported by an interdisciplinary team from sales, engineering, and production.

Last but not least, the project underscores the importance of proactive customer service for the successful integration of system solutions: Close communication between the responsible contact person at LAPP and the customer ensured quick feedback, efficient coordination, and mutual trust. This has enabled LAPP to further consolidate its role as a solution provider for customized assemblies. The next steps are already being planned: the collaboration is to be extended to other applications in the field of energy storage. What began as a project order is developing into a long-term partnership – with LAPP as a system partner at the side of a global machine manufacturer.

“The project has shown what is possible when sales, engineering, and manufacturing work hand in hand,” summarizes Nico Brüggert, Project Manager ÖLFLEX® CONNECT. “Through intensive support and international teamwork, we were able to prove our performance promise beyond the standard product business and inspire a long-standing customer with our LAPP Harnessing Solutions.” |

Read more:
lappconnect.lappgroup.com/en/expertise/from-product-customer-to-system-partner/

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