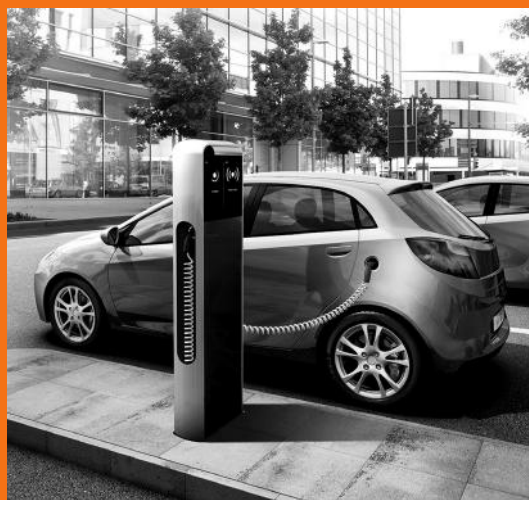
ELECTROUSTIC
DISTRIBUTION OF CONNECTIVITY SOLUTIONS

# THE WORLD OF LAPP

## eMobility

LAPP GROUP


Image source title: Bosch Software Innovations GmbH, ROHDE & SCHWARZ GmbH & Co. KG

# Welcome

To contact your local Lapp Group representative please visit **www.lappgroup.com/worldwide**



LAPP GROUP

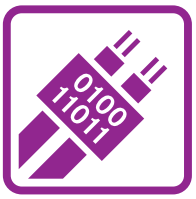
# Brand quality from Stuttgart

## ÖLFLEX®
## Power- and control cables

The world's first brand cable is available in the most varied of versions to match maximum requirements.
**Key features:** Oil-resistant, flexible and available to match almost any requirement or environmental condition – also free of halogens.
**Fields of application:** Multipurpose. Special variants are more and more in demand in the area of renewable energies.

## EPIC®
## Industrial connectors

The brand for strong and reliable connections.
**Key features:** Robust square and circular connectors. Flexible system consisting of housings, inserts, contacts and accessories – for every requirement, the tailor-made solution. Similarly, EPIC® SOLAR plugs for photovoltaics are also part of the extensive product range.
**Fields of application:** Mechanical and systems engineering, drive technology, Automation.

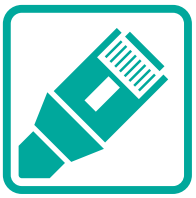



## UNITRONIC®
## Data communication systems

The ideal brand for fast, trend-setting and reliable data transfer.
**Key features:** UNITRONIC® are not only data lines, but also bus lines, which together with active sensor/actuator modules or gateways provide a perfect system for automation.
**Fields of application:** Measurement, control, regulation, bus or LAN networks.

## SKINTOP®
## Cable glands

The brand for multipurpose cable entries in line with the following: quickly fastened, centred and hermetically sealed.
**Key features:** Large clamping areas, optimum strain reliefs, the most diverse of versions such as SKINTOP® CLICK, COLD or CUBE.
**Fields of application:** Everywhere, where cables must be fastened reliably and quickly.



## ETHERLINE®
## Data communication systems for ETHERNET-Technology

The brands for network solutions, safety systems and firewalls in the industrial networking sector.
**Key features:** System solutions consisting hardware, software, consulting, network design and support.
**Fields of application:** Factory automation, Renewable Energy, Building technology, Structured cabling.

## SILVYN®
## Protective cable conduit- and cable carrier systems

The brand for all-round cable protection.
**Key features:** The product range includes SILVYN® cable protection hoses for perfect protection against mechanical and chemical loads, along with SILVYN® CHAIN energy supply chains for highly-dynamic applications.
**Fields of application:** Everywhere that cables have to be additionally protected or routed.



## HITRONIC®
## Optical transmission systems

The brand for split-second, fault-free, intercept-free data transport.
**Key features:** The HITRONIC® product range includes fibre optic cables in the most varied of versions, along with suitable accessories such as splice boxes, wall distributors or couplings.
**Fields of application:** Office and industrial sector, Renewable Energy.


## FLEXIMARK®
## Marking systems

The brand for permanent, clearly-arranged cable markings.
**Key features:** Comprehensive range – from manual labelling solutions onto digital identification. Withstands high chemical, thermal and mechanical loads.
**Fields of application:** All cable, single cores, control cabinets.

# Welcome to the client specialist

**Sometimes, more than 40,000 standard articles are just not enough. Apart from the standard assemblies in the emobility sector, Lapp Systems is a specialist within the Lapp Group for customised assemblies.**

## Cable and line systems

- Complete cable sets for mechanical & systems engineering, commercial-vehicle industry and lots more
- Prewired switching units for electronic and control systems
- Assembled single wires
- Ready-to-install connecting cables with special connectors
- Assembled optical fibres
- High-temperature cables with temperature-resistant special connectors

## Spiral cables

- For trucks as supply and EBS/ABS coils
- As standard lines
- Made of lines specially assembled for the customer
- Spiral hoses with single wires and lines
- Special versions in cone shape

## Energy supply systems

- Ready-to-install energy supply systems in plastic or metal versions. Also with hydraulic and pneumatic lines or mechanical joining technology

## Special applications

- Wiring systems for robot applications
- Conductive fabric cable for energy and data systems

## Extrusion

Do you require an extruded cable and connector system? With our modern machinery park, we offer the entire spectrum from conventional to hot-melt extrusion.

**NEW: Spiral cable configurator: www.lappsystems.de/spiralkabel**

# Recharge with LAPP CHARGE

New environmentally-friendly mobility concepts, particularly emobility (hybrid and pure electric vehicles), are a megatrend. It is likely that a global mass market will develop within a few years – with completely new demands being made on vehicle wiring.

The Lapp Group can be considered a pioneer in emobility: the Lapp Group was one of the first companies to develop a complete, production-ready charging system with cables and a connection system – its LAPP CHARGE product meets all common safety standards. Its design and colour can be modified to suit a customer's requirements. Drivers of electric and plug-in hybrid cars are being won over by the charging system with its attractive and user-friendly design.

**Holistic labelling system of the Lapp Group for „Lapp Charge" charging cable systems, e. g.**

## Charge M3 T2P/T1C H 16A 1P 4000

| | |
|---|---|
| **Charge:** | **Product group** |
| **M3:** | **Variants:**<br>M2 = Mode2<br>M3 = Mode3 |
| **T2P/T1C:** | **Examples:**<br>Infrastructure side/vehicle side<br>T2P = Type2 plug/T1C = Type1 connector<br>T2P = Type2 plug/T2C = Type2 connector<br>T3P = Type3 plug/- = plain cut (open end)<br>TF = Type F Earthing<br>- = plain cut |
| **H:** | **Variants:**<br>H = Helix<br>S = Straight (straight)<br>C = Coiled (spiralised) |
| **16A:** | **Variants:**<br>16A<br>32A |
| **1P** | **Variants:**<br>1P = 1-phase<br>3P = 3-phase |
| **4000:** | **Effective length (mm):**<br>Effective length between connectors or an extra 1000 mm connecting cable in only a single connector |

# Customised connectors for emobility

In addition to products for the charging infrastructure, Lapp also supplies high-voltage cabling for the next generation of vehicles. These high-voltage cables are used in the vehicle interior and can be customised using different connection technologies. Lapp also has its own patented connection solution for use in this sector.

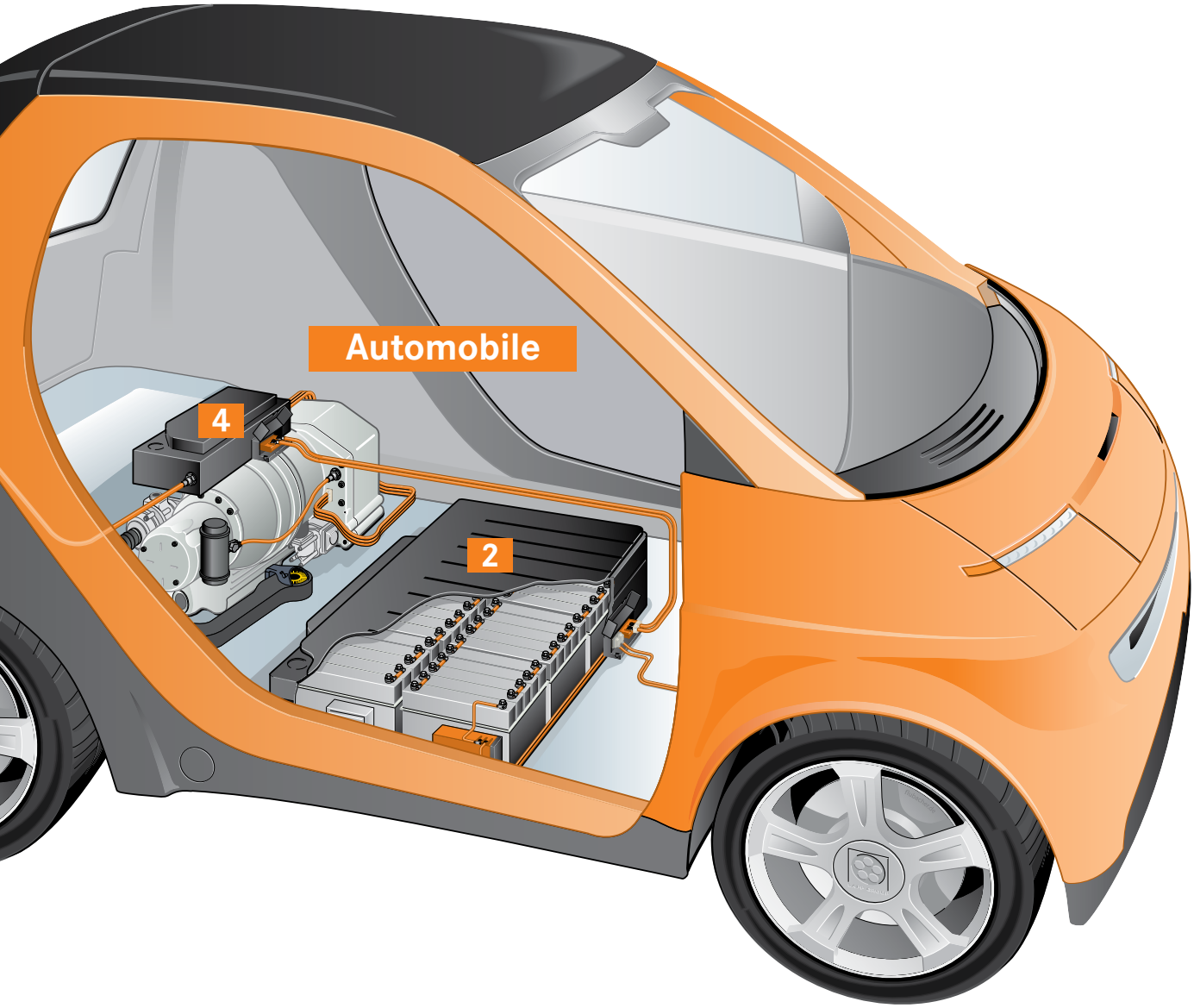
Lapp is already producing special system connections for use in the hybrid power pack of the new Mercedes-Benz S 400 BlueHYBRID. These cables and connection systems are used inside the lithium-ion batteries and meet the high demands for applications in this industry. In addition, Lapp is a engineering partner for several well-known companies currently working on new battery systems which will store electrical energy more effectively.

For more information go to
**www.lappsystems.de/emobility**


**1 Charging cable and connector**
- Mode 1 – 3 charging cable
- Type 1/2/3 connectors
- Special fully assembled products

**2 Battery cabling**
- Customer specific cables and connectors

**Charging cable standard assemblies are available in the new charging cable configurator: www.lappkabel.de/emobility-cablefinder**

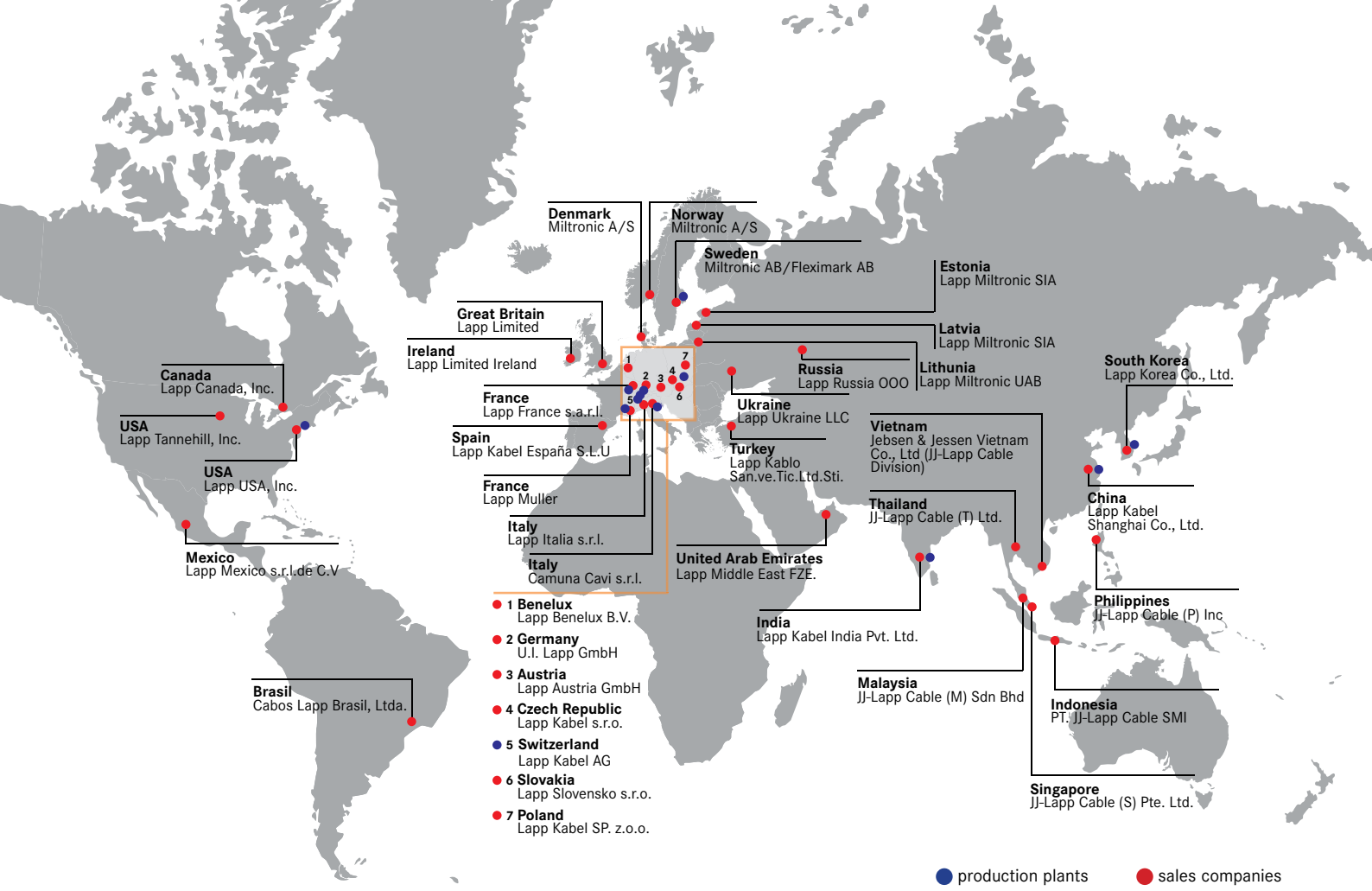



### 3 Charging station

- Charging socket and CP module in different configurations (on request)
- ÖLFLEX® CLASSIC
  Power- and control cables for diverse applications
- Control cabinet single cores
- ÖLFLEX® SPIRAL
  Spiralised connecting cables
- UNITRONIC®
  Data communication systems
- ETHERLINE®
  Data communication systems for ETHERNET-Technology
- SKINTOP®
  Cable glands
- Ground straps
- FLEXIMARK®
  Single core marking, Wrappig Labels, Marking systems

### 4 High voltage cabling

- ÖLFLEX® FD 90 CY
  Highly flexible, shielded single cores
- ÖLFLEX® HEAT
  Cable for expanded ambient temperature
- Customer specific cables and connectors




## At home in Stuttgart, but known all over the world

**The World of Lapp is based in Stuttgart. This is where it all started for our company, which was founded in 1959 as U.I. Lapp KG (now U.I. Lapp GmbH). From its headquarters in Stuttgart we have determinedly evolved to become a global player – with currently 15 production plants in Europe, Asia and America, 41 sales companies, more than 100 sales partners and 3,000 employees. The larger Lapp companies such as Russia, India, China, Canada and Mexico have their own warehouses. The others are promptly supplied through our high-performance logistics centres. At our Lapp Centres we are also strongly committed to enhancing the knowledge of our employees and customers. After all, knowledge is the ink with which the future is written down.**

One of our most successful "products" is that of proximity to our customers. On the one hand, we practice intensive dialogue with designers and planners, manufacturers and users. This enables us to identify new requirements and trends at a much earlier stage, to quickly provide you with suitable solutions. Innovation leadership put into active practice.

On the other hand, proximity to our customers really means something to us: our presence extends all round the globe. As a reliable partner on a local basis we support our customers in exploiting markets by providing them with short delivery times and low logistics costs.

Our current addresses see
**www.lappgroup.com/worldwide**

# Connector and charging socket for emobility

**Together with cooperation partner Bals Elektrotechnik, Lapp offers all components needed for the infrastructure side of emobility.**

Bals
ELEKTROTECHNIK

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57399 KIRCHHUNDEM-ALBAUM
Tel.: +49 2723 771-0
Fax: +49 2723 771-177 / 178
E-Mail: info@bals.com
Internet: www.bals.com


LAPP GROUP

eMobility - Assembled charging line, 7-pin

New

## CHARGE M3 —/T2C S

CE RoHS

**Info**

- For charging stations

New

## CHARGE M3 —/T1C S

CE RoHS

**Info**

- For charging stations

### Benefits

- Resistant to microbes
- Resistant to oil, dust and water
- Special cable design for a long service life
- Flexible at low temperatures
- Withstands high mechancal stress, in particular abrasion and sliding demands

### Application range

- For charging stations, electric and plug-in hybrid vehicles

### Product features

- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- PUR outer sheath
- Suitable for all weather conditions

### Design

**CHARGE M3 —/T2C S**

- Cable for 1-phase charging up to 16 A: Lapp Kabel Charge 3G 2.5 mm² + 2 x 0.5 mm²
- Cable for 3-phase charging up to 16 A: Lapp Kabel Charge 5G 2.5 mm² + 2 x 0.5 mm²
- Cable for 3-phase charging up to 32 A: Lapp Kabel Charge 5G 6 mm² + 2 x 0.5 mm²
- Type 2 connectors are injection moulded in two-components process for optimal ergonomics

**CHARGE M3 —/T1C S**

- Cable for 1-phase charging up to 16 A: Lapp Kabel Charge 3G 2.5 mm² + 2 x 0.5 mm²

### Technical data

**Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5

**Temperature range**
-25°C to +80°C

| Article number | Version | Effective length | Copper index kg/1.000 pieces | Weight (kg/1000 pieces) | PU |
|---|---|---|---|---|---|
| **Cut off clean, charging cable, vehicle connector type 2 (Total length: effective length +1m straight)** | | | | | |
| 74880054 | Charging: 1 phase 16A | 4,000 | 421.0 | 1778 | 1 |
| 74880062 | Charging: 3 phase 16A | 4,000 | 667.0 | 1815 | 1 |
| 74880066 | Charging: 3 phase 32A | 4,000 | 1,529.0 | 2985 | 1 |
| **Cut off clean, charging cable, vehicle connector type 1 (Total length: effective length +1m straight)** | | | | | |
| 74880058 | Charging: 1 phase 16A | 4,000 | 421.0 | 1733 | 1 |

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

New

## CHARGE M3 T2P/— S

RoHS

New

## CHARGE M3 T2P/— C

RoHS

### Benefits
- Resistant to microbes
- Resistant to oil, dust and water
- Special cable design for a long service life
- Flexible at low temperatures
- Withstands high mechancal stress, in particular abrasion and sliding demands

### Application range
- Electric and hybrid cars
- For charging stations, electric and plug-in hybrid vehicles

### Product features
- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- PUR outer sheath
- Suitable for all weather conditions

### Design
- Cable for 1-phase charging up to 16 A: Lapp Kabel Charge 3G 2.5 mm² + 2 x 0.5 mm²
- Cable for 3-phase charging up to 16 A: Lapp Kabel Charge 5G 2.5 mm² + 2 x 0.5 mm²
- Cable for 3-phase charging up to 32 A: Lapp Kabel Charge 5G 6 mm² + 2 x 0.5 mm²
- 16 A charging: every connector has a built-in 680 ohm resistor
- 32 A charging: every connector has a built-in 220 ohm resistor

### Technical data
**Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5

**Nominal voltage**
400 V

**Temperature range**
-25°C to +80°C

| Article number | Version | Effective length | Copper index kg/1.000 pieces | Weight (kg/1000 pieces) | PU |
|---|---|---|---|---|---|
| **Type 2 plug, orange cable, cut off clean (Total length: effective length +1m straight)** | | | | | |
| 74880037 | Charging: 1 phase 16A | 4,000 | 335.0 | 1300 | 1 |
| 74880041 | Charging: 3 phase 16A | 4,000 | 531.0 | 1600 | 1 |
| 74880045 | Charging: 3 phase 32A | 4,000 | 1,216.0 | 2500 | 1 |
| **Type 2 connector, spiral-cable, cut off clean (Total length: effective length +1m straight)** | | | | | |
| 74880039 | Charging: 1 phase 16A | 4,000 | 738.0 | 2200 | 1 |
| 74880043 | Charging: 3 phase 16A | 4,000 | 1,170.0 | 2900 | 1 |
| 74880047 | Charging: 3 phase 32A | 4,000 | 2,390.0 | 4500 | 1 |

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eMobility - Assembled charging line, 7-pin

New

## CHARGE M3 T2P/T2C S

CE RoHS

**Info**

- For electric vehicles with type 2 vehicle inlet

New

## CHARGE M3 T2P/T2C C

CE RoHS

**Info**

- For electric vehicles with type 2 vehicle inlet

New

## CHARGE M3 T2P/T2C H

CE RoHS

**Info**

- For electric vehicles with type 2 vehicle inlet

### Benefits

- Resistant to microbes
- Resistant to oil, dust and water
- Special cable design for a long service life
- Flexible at low temperatures
- Withstands high mechancal stress, in particular abrasion and sliding demands

### Application range

- Electric and hybrid cars
- For charging stations, electric and plug-in hybrid vehicles

### Product features

- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- PUR outer sheath
- Suitable for all weather conditions

### Design

- Cable for 1-phase charging up to 16 A: Lapp Kabel Charge 3G 2.5 mm² + 2 x 0.5 mm²
- Cable for 3-phase charging up to 16 A: Lapp Kabel Charge 5G 2.5 mm² + 2 x 0.5 mm²
- Cable for 3-phase charging up to 32 A: Lapp Kabel Charge 5G 6 mm² + 2 x 0.5 mm²
- Type 2 connectors are injection moulded in two-components process for optimal ergonomics

### Technical data

**Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5

**Temperature range**
-25°C to +80°C

| Article number | Version | Effective length | Copper index kg/1.000 pieces | Weight (kg/1000 pieces) | PU |
|---|---|---|---|---|---|
| **Plug type 2, charging cable, vehicle connector type 2** | | | | | |
| 74880055 | Charging: 1 phase 16A | 4,000 | 349.0 | 2026 | 1 |
| 74880063 | Charging: 3 phase 16A | 4,000 | 554.0 | 2004 | 1 |
| 74880067 | Charging: 3 phase 32A | 4,000 | 1,529.0 | 3410 | 1 |
| **Plug type 2, Charging cable spiralised, Vehicle connector type 2** | | | | | |
| 74880056 | Charging: 1 phase 16A | 4,000 | 8,120.0 | 3375 | 1 |
| 74880064 | Charging: 3 phase 16A | 4,000 | 1,365.0 | 3696 | 1 |
| 74880068 | Charging: 3 phase 32A | 4,000 | 2,205.0 | 4543 | 1 |
| **Plug type 2, charging cable Helix, vehicle connector type 2** | | | | | |
| 74880057 | Charging: 1 phase 16A | 4,000 | 399.0 | 399 | 1 |
| 74880065 | Charging: 3 phase 16A | 4,000 | 619.0 | 619 | 1 |
| 74880069 | Charging: 3 phase 32A | 4,000 | 1,529.0 | 1529 | 1 |

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Photographs are not to scale and do not represent detailed images of the respective products.

New

## CHARGE M3 T2P/T1C S

**Info**
- For electric vehicles with type 1 vehicle inlet

New

## CHARGE M3 T2P/T1C C

**Info**
- For electric vehicles with type 1 vehicle inlet

New

## CHARGE M3 T2P/T1C H

**Info**
- For electric vehicles with type 1 vehicle inlet

### Benefits
- Resistant to microbes
- Resistant to oil, dust and water
- Special cable design for a long service life
- Flexible at low temperatures
- Withstands high mechancal stress, in particular abrasion and sliding demands

### Application range
- Electric and hybrid cars
- For charging stations, electric and plug-in hybrid vehicles

### Product features
- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- PUR outer sheath
- Suitable for all weather conditions

### Design
- Cable for 1-phase charging up to 16 A: Lapp Kabel Charge 3G 2.5 mm² + 2 x 0.5 mm²
- Cable for 1-phase charging up to 32A: Lapp Kabel Charge 3G6mm² + 1x0.5mm²
- Type 2 connectors are injection moulded in two-components process for optimal ergonomics

### Technical data
**Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5

**Temperature range**
-25°C to +80°C

| Article number | Version | Effective length | Copper index kg/1.000 pieces | Weight (kg/1000 pieces) | PU |
|---|---|---|---|---|---|
| **Plug type 2, charging cable, vehicle connector type 1** | | | | | |
| 74880059 | Charging: 1 phase 16A | 4,000 | 349.0 | 2026 | 1 |
| 74880087 | Charging: 1 phase 32A | 4,000 | 758.0 | 2060 | 1 |
| **Plug type 2, charging cable spiralised, vehicle connector type 1** | | | | | |
| 74880060 | Charging: 1 phase 16A | 4,000 | 812.0 | 3337 | 1 |
| **Plug type 2, charging cable Helix, vehicle connector type 1** | | | | | |
| 74880061 | Charging: 1 phase 16A | 4,000 | 399.0 | 2179 | 1 |
| 74880089 | Charging: 1 phase 32A | 4,000 | 554.0 | 2004 | 1 |

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eMobility - Assembled charging line, 7-pin

New

## CHARGE M3 T3P/T2C S

CE RoHS

**Info**

- For electric vehicles with type 2 vehicle inlet

New

## CHARGE M3 T3P/T2C C

CE RoHS

**Info**

- For electric vehicles with type 2 vehicle inlet

New

## CHARGE M3 T3P/T2C H

CE RoHS

**Info**

- For electric vehicles with type 2 vehicle inlet

### Benefits

- Resistant to microbes
- Resistant to oil, dust and water
- Special cable design for a long service life
- Flexible at low temperatures
- Withstands high mechancal stress, in particular abrasion and sliding demands

### Application range

- Electric and hybrid cars
- For charging stations, electric and plug-in hybrid vehicles

### Product features

- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- PUR outer sheath
- Suitable for all weather conditions

### Design

- Cable for 1-phase charging up to 16 A: Lapp Kabel Charge 3G 2.5 mm² + 2 x 0.5 mm²
- Cable for 3-phase charging up to 16 A: Lapp Kabel Charge 5G 2.5 mm² + 2 x 0.5 mm²
- Cable for 3-phase charging up to 32 A: Lapp Kabel Charge 5G 6 mm² + 2 x 0.5 mm²
- Type 2 connectors are injection moulded in two-components process for optimal ergonomics

### Technical data

**Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5

**Temperature range**
-25°C to +80°C

| Article number | Version | Effective length | Copper index kg/1.000 pieces | Weight (kg/1000 pieces) | PU |
|---|---|---|---|---|---|
| **Plug type 3, charging cable, vehicle connector type 2** | | | | | |
| 74880070 | Charging: 1 phase 16A | 4,000 | 349.0 | 2026 | 1 |
| 74880073 | Charging: 3 phase 16A | 4,000 | 554.0 | 2004 | 1 |
| 74880076 | Charging: 3 phase 32A | 4,000 | 1,529.0 | 3410 | 1 |
| **Plug type 3, charging cable spiralised, vehicle connector type 2** | | | | | |
| 74880071 | Charging: 1 phase 16A | 4,000 | 812.0 | 3375 | 1 |
| 74880074 | Charging: 3 phase 16A | 4,000 | 1,463.0 | 3899 | 1 |
| 74880077 | Charging: 3 phase 32A | 4,000 | 2,205.0 | 4543 | 1 |
| **Plug type 3, charging cable Helix, vehicle connector type 2** | | | | | |
| 74880072 | Charging: 1 phase 16A | 4,000 | 399.0 | 2179 | 1 |
| 74880075 | Charging: 3 phase 16A | 4,000 | 619.0 | 2140 | 1 |
| 74880078 | Charging: 3 phase 32A | 4,000 | 1,529.0 | 3410 | 1 |

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Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

New

## CHARGE M3 T3P/T1C S

CE RoHS

**Info**
- For electric vehicles with type 1 vehicle inlet

New

## CHARGE M3 T3P/T1C C

CE RoHS

**Info**
- For electric vehicles with type 1 vehicle inlet

New

## CHARGE M3 T3P/T1C H

CE RoHS

**Info**
- For electric vehicles with type 1 vehicle inlet

### Benefits
- Resistant to microbes
- Resistant to oil, dust and water
- Special cable design for a long service life
- Flexible at low temperatures
- Withstands high mechancal stress, in particular abrasion and sliding demands

### Application range
- Electric and hybrid cars
- For charging stations, electric and plug-in hybrid vehicles

### Product features
- Fine-wire, tinned-copper conductor
- Core insulation: TPE
- PUR outer sheath
- Suitable for all weather conditions

### Design
- Cable for 1-phase charging up to 16 A: Lapp Kabel Charge 3G 2.5 mm² + 2 x 0.5 mm²
- Cable for 1-phase charging up to 32A: Lapp Kabel Charge 3G6mm² + 1x0.5mm²

### Technical data
**Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5

**Temperature range**
-25°C to +80°C

| Article number | Version | Effective length | Copper index kg/1.000 pieces | Weight (kg/1000 pieces) | PU |
|---|---|---|---|---|---|
| **Plug type 3, charging cable, vehicle connector type 1** | | | | | |
| 74880079 | Charging: 1 phase 16A | 4,000 | 349.0 | 2026 | 1 |
| 74880082 | Charging: 1 phase 32A | 4,000 | 554.0 | 3410 | 1 |
| **Plug type 3, charging cable spiralised, vehicle connector type 1** | | | | | |
| 74880080 | Charging: 1 phase 16A | 4,000 | 812.0 | 3375 | 1 |
| 74880083 | Charging: 1 phase 32A | 4,000 | 1,463.0 | 4543 | 1 |
| **Plug type 3, charging cable Helix, vehicle connector type 1** | | | | | |
| 74880081 | Charging: 1 phase 16A | 4,000 | 399.0 | 2179 | 1 |
| 74880084 | Charging: 1 phase 32A | 4,000 | 554.0 | 3410 | 1 |

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Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

eMobility - Assembled charging line, 7-pin

New

## CHARGE M2 TFP/T2C S

CE RoHS

**Info**

- Harnessing with In-Cable Control Box for charging mode 2

New

## CHARGE M2 TFP/T1C S

CE RoHS

**Info**

- Harnessing with In-Cable Control Box for charging mode 2

### Benefits

- Resistant to microbes
- Resistant to oil, dust and water
- Special cable design for a long service life
- Flexible at low temperatures
- Withstands high mechancal stress, in particular abrasion and sliding demands

### Application range

- Electric and hybrid cars
- For charging stations, electric and plug-in hybrid vehicles

### Product features

- Charging current from 6-16A in 5 steps
- Monitoring of protective earth conductor
- PUR outer sheath
- Suitable for all weather conditions

### Design

- Cable for 1-phase charging up to 16 A: Lapp Kabel Charge 3G 2.5 mm² + 2 x 0.5 mm²
- H07BQ-F: Cable from Typ F plug up to ICCB
- Type 2 connectors are injection moulded in two-components process for optimal ergonomics
- Type F cable connectors are injection moulded

### Technical data

**Conductor stranding**
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5

**Temperature range**
-25°C to +80°C

| Article number | Version | Effective length | Copper index kg/1.000 pieces | Weight (kg/1000 pieces) | PU |
|---|---|---|---|---|---|
| **Plug type F, charging cable with ICCB, vehicle connector type 2** | | | | | |
| 74880085 | Charging: 1 phase 16A | 4,000 | 344.0 | 2570 | 1 |
| **Plug type F, charging cable with ICCB, vehicle connector type 1** | | | | | |
| 74880086 | Charging: 1 phase 16A | 4,000 | 344.0 | 2570 | 1 |

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

New

# LAPP KABEL CHARGE 300/500V

## Battery charging cable for charging electrically powered vehicles

LAPPKABEL CHARGE 300/500V 3G6+2X0,5 ROHS CE

**Info**

- **Halogen-free**
- **Technically for charging modes 1 and 3 acc. to IEC 61851-1**

### Benefits

- Optimised for 1-phase AC battery-charging: 3 low-voltage power cores with core insulation colour-code for 3 cores including PE according to harmonisation document HD 308/VDE 0293-308
- Technically suitable for charging modes 1 and 3 (if harnessed with plug conforming to IEC 61851-1 mode 3) according to IEC 61851-1, thanks to 1 or 2 data transmission cores depending on the item

### Application range

- Power and data cable for connecting the power source to the electric-powered vehicle for battery-charging (E-Mobility)
- Other technically feasible charging applications
- Diverse low-voltage applications with parallel control mode
- Outdoor applications
- In wet rooms

### Product features

- Flame-retardant according to IEC 60332-1-2
- Halogen-free according to VDE 0472-815
- Outer sheath is resistant to oil in accordance with EN 60811-2-1,10/VDE 0473-811-2-1,10 and resistant to hydrolysis in accordance with EN 50396,10.3/VDE 0473-396,10.3
- Flexible at low temperatures
- Outer sheath: protection against water and dirt; abrasion, cutting, microbe-resistant

### Approvals (Norm references)

CE RoHS

- VDE CABLE REGISTRATION currently pending
- Design, manufacturing and testing are based on harmonisation document HD 22.10/VDE 0282-10

### Design

- Fine-wire, flexible tinned-copper strand according to IEC 60228 (= VDE 0295), conductor class 5
- Core insulation: thermoplastic elastomer TPE-V
- Outer sheath: TMPU (PUR compound), according to harmonisation document HD 22.10 and EN 50363-10-2
- Outer sheath colour: yellow (RAL 1016); other colours are available upon request

### Technical data

**Core identification code**
Power cores: colour-coded according to HD 308/VDE 0293-308
Signal cores: red in the case of one signal core, 1 x red + 1 x white in the case of two signal cores

**Approvals**
VDE CABLE REGISTRATION currently pending

**Based on**
VDE 0282 Part 10/HD 22.10

**Conductor stranding**
Fine wire according to IEC 60228/VDE 0295, class 5
tinned strands

**Nominal voltage**
$U_0$/U = 300/500 V AC
$U_0$/U = 450/750 V DC

**Test voltage**
At the core: 2 kV AC
At the finished cable: 2.5 kV AC

**Protective conductor**
Always with protective conductor (PE)

**Temperature range**
-40 °C to +90 °C

| Article number | Number of cores and mm² per conductor | Copper index (kg/km) |
|---|---|---|
| 74880512 | 3 G 16 + 1 x 0,5 | 465,6 |
| 74880513 | 3 G 16 + 1 x 0,75 | 468,0 |
| 74880514 | 3 G 16 + 2 x 0,5 | 470,4 |
| 74880515 | 3 G 16 + 2 x 0,75 | 475,2 |
| 74880500 | 3 G 2,5 + 1 x 0,5 | 76,8 |
| 74880501 | 3 G 2,5 + 1 x 0,75 | 79,2 |
| 74880502 | 3 G 2,5 + 2 x 0,5 | 81,6 |
| 74880503 | 3 G 2,5 + 2 x 0,75 | 86,4 |
| 74880504 | 3 G 4 + 1 x 0,5 | 120,0 |
| 74880505 | 3 G 4 + 1 x 0,75 | 122,4 |
| 74880506 | 3 G 4 + 2 x 0,5 | 124,8 |
| 74880507 | 3 G 4 + 2 x 0,75 | 129,6 |
| 74880508 | 3 G 6 + 1 x 0,5 | 177,6 |
| 74880509 | 3 G 6 + 1 x 0,75 | 180,0 |
| 74880510 | 3 G 6 + 2 x 0,5 | 182,4 |
| 74880511 | 3 G 6 + 2 x 0,75 | 187,2 |

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

New

# LAPP KABEL CHARGE 450/750V

**Battery charging cable for charging electrically powered vehicles**


**Info**

- **Halogen-free**
- **Technically for charging modes 1 and 3 acc. to IEC 61851-1**

## Benefits

- Optimised for 3-phase AC battery-charging: 5 low-voltage power cores with core insulation colour-code for 5 cores including PE according to harmonisation document HD 308/VDE 0293-308
- Technically suitable for charging modes 1 and 3 (if harnessed with plug conforming to IEC 61851-1 mode 3) according to IEC 61851-1, thanks to 1 or 2 data transmission cores depending on the item

## Application range

- Power and data cable for connecting the power source to the electric-powered vehicle for battery-charging (E-Mobility)
- Other technically feasible charging applications
- Diverse low-voltage applications with parallel control mode
- Outdoor applications
- In wet rooms

## Product features

- Flame-retardant according to IEC 60332-1-2
- Halogen-free according to VDE 0472-815
- Outer sheath is resistant to oil in accordance with EN 60811-2-1,10/VDE 0473-811-2-1,10 and resistant to hydrolysis in accordance with EN 50396,10.3/VDE 0473-396,10.3
- Flexible at low temperatures
- Outer sheath: protection against water and dirt; abrasion, cutting, microbe-resistant

## Approvals (Norm references)

CE RoHS

- VDE CABLE REGISTRATION currently pending
- Design, manufacturing and testing are based on harmonisation document HD 22.10/VDE 0282-10

## Design

- Fine-wire, flexible tinned-copper strand according to IEC 60228 (= VDE 0295), conductor class 5
- Core insulation: thermoplastic elastomer TPE-V
- Outer sheath: TMPU (PUR compound), according to harmonisation document HD 22.10 and EN 50363-10-2
- Outer sheath colour: yellow (RAL 1016); other colours are available upon request

## Technical data

**Core identification code**
Power cores: colour-coded according to HD 308/VDE 0293-308
Signal cores: red in the case of one signal core, 1 x red + 1 x white in the case of two signal cores

**Approvals**
VDE CABLE REGISTRATION currently pending

**Based on**
VDE 0282 Part 10/HD 22.10

**Conductor stranding**
Fine wire according to IEC 60228/VDE 0295, class 5
tinned strands

**Nominal voltage**
$U_0$/U = 450/750 V AC
$U_0$/U = 675/1125 V DC

**Test voltage**
At the core: 2.5 kV AC
At the finished cable: 3 kV AC

**Protective conductor**
Always with protective conductor (PE)

**Temperature range**
-40 °C to +90 °C

| Article number | Number of cores and mm² per conductor | Copper index (kg/km) |
|---|---|---|
| 74880528 | 5 G 16 + 1 x 0,5 | 772,8 |
| 74880529 | 5 G 16 + 1 x 0,75 | 775,2 |
| 74880530 | 5 G 16 + 2 x 0,5 | 777,6 |
| 74880531 | 5 G 16 + 2 x 0,75 | 782,4 |
| 74880516 | 5 G 2,5 + 1 x 0,5 | 124,8 |
| 74880517 | 5 G 2,5 + 1 x 0,75 | 127,2 |
| 74880518 | 5 G 2,5 + 2 x 0,5 | 129,6 |
| 74880519 | 5 G 2,5 + 2 x 0,75 | 134,4 |
| 74880520 | 5 G 4 + 1 x 0,5 | 196,8 |
| 74880521 | 5 G 4 + 1 x 0,75 | 199,2 |
| 74880522 | 5 G 4 + 2 x 0,5 | 201,6 |
| 74880523 | 5 G 4 + 2 x 0,75 | 206,4 |
| 74880524 | 5 G 6 + 1 x 0,5 | 292,8 |
| 74880525 | 5 G 6 + 1 x 0,75 | 295,2 |
| 74880526 | 5 G 6 + 2 x 0,5 | 297,6 |
| 74880527 | 5 G 6 + 2 x 0,75 | 302,4 |

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100kg. Refer to Appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

**For the use of our products is valid**

The conformity of our products with the relevant European directives and compliance with the provisions contained therein shall be indicated by the CE marking.

The safety of our products is closely associated with how they are used. A knowledge of and adherence to the respective international/national standards of use (e.g. DIN VDE 0100; 0298) are mandatory.

There are particular risks if installed improperly. This applies to all our products/items:

**Processing is only to be done by an authorized electrician! Otherwise, there is the risk of an electric shock or a fire ignited by electric current!**

**Safety**

Without exception our products are tested for application safety in accordance with laid down standards and our own regulations, which complement the standards. Relevant legal requirements and safety regulations are also observed. Provided due care and attention is paid, the possibility of product-specific danger to the user may thus reasonably be excluded. Where products are used carelessly or incorrectly, however, considerable danger to persons and the environment may arise. For this reason, our cables must only be processed and/or used responsibly by trained electricians or specialists. This catalogue contains general information for the application of each product. Independent of such information, the application standards DIN VDE 0298 and DIN VDE 001 for cables will apply. Excerpts from these standards, as well as complementary selection and application tables, design and installation guidelines, are contained in the tables in the appendix to our current Main Catalogue. Our machines and installation tools are – where necessary – designed in accordance with the machine guidelines and display the CE identification mark. It must be noted, however, that our machines and installation tools must only be used by trained specialized personnel and for the purpose for which they were designed. 

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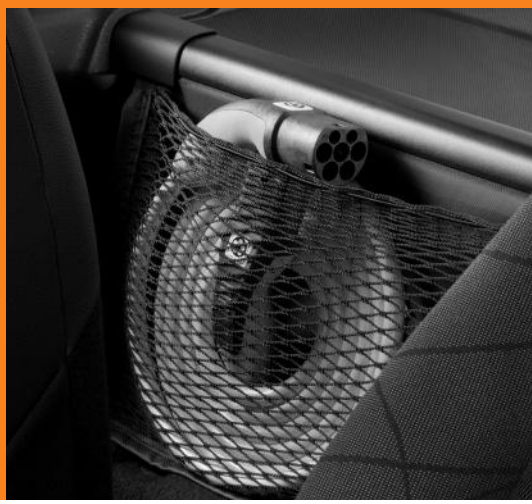

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