# THE WORLD OF LAPP

**e**Mobility









Bem-vindo

Добро пожаловать

Witamy

Varmt välkommen

Srdečně vítám

欢迎光临

Hoș geldiniz

Herzlich willkommen

Ласкаво просимо

Bienvenue

환영합니다

Hartelijk welkom

Welcome

Bienvenidos

Bine ați venit

Benvenuti

### Welcome

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



### 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 connec-

tors. 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 herme-

tically 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 conduitand 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® pro-

duct 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.

**® LAPP GROUP** 



### 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, commercialvehicle 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

2 DEPTH OF THE PROOF

### 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.

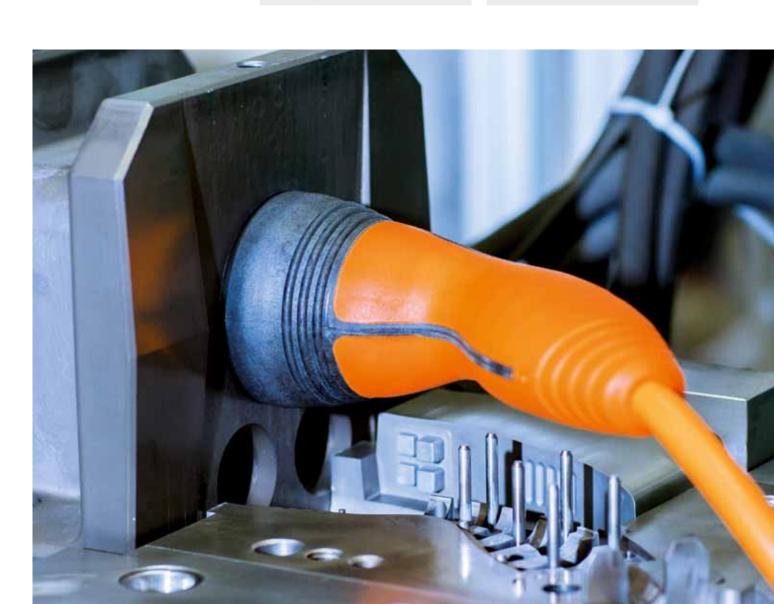
The Lapp Group can be considered a pioneer in emobility: the Lapp Group was one of the first companies to develop a complete, production-ready charging system with cables and a connection system – its LAPP CHARGE product meets all common safety standards. Its design and colour can be modified to suit 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 32A 1P 4000

Charge:	Product group
M3:	Variants: M2 = Mode2 M3 = Mode3
T2P/T1C:	Examples: Infrastructure side/ vehicle side T2P = Type2 plug/ T1C = Type1 connector T2P = Type2 plug/ T2C = Type2 connector T3P = Type3 plug/ -= plain cut (open end) TF = Type F Earthing -= plain cut

H:	Variants: H = Helix S = Straight (straight) C = Coiled (spiralised)
32A:	Variants: 16A 32A
1P	Variants: 1P = 1-phase 3P = 3-phase
4000:	Effective length (mm): 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 Blue-HYBRID. 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



#### 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.lappgroup.com/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



















### CHARGE M3 —/T2C S





### CHARGE M3 —/T1C S





### CHARGE M3 —/T2C C





#### 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 make-up

- Cable for 1-phase charging up to 16 A: ÖLFLEX® Charge 3G 2.5 mm<sup>2</sup>+1x0.5 mm<sup>2</sup>
- Cable for 3-phase charging up to 16 A: ÖLFLEX® Charge 5G 2.5 mm<sup>2</sup>+1x0.5 mm<sup>2</sup>
- Cable for 3-phase charging up to 32 A: ÖLFLEX® Charge 5G 6 mm<sup>2</sup>+1x0.5 mm<sup>2</sup>
- Type 2 connectors are injection moulded in two-components process for optimal ergonomics

#### Technical data



**Approvals** according to VDE-AR-E2283-5 according to EN 61851-1



Temperature range -25 °C to +80 °C

Article number	Version	Spiral length, extended (mm)	Copper index kg/1.000 pieces	Weight (kg/1000 pieces)	PU
Cut off clean, charg	ging cable, vehicle connector type 2 (To	otal length: effective length +1m straigh	t)		
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, charg	ging cable, vehicle connector type 1 (To	otal length: effective length +1m straigh	t)		
74880058	Charging: 1 phase 16A	4,000	421.0	1733	1
74880100	Charging: 1 phase 32A	4,000	784.0	1900	1
Cut off clean, charg	ging cable spiralized, vehicle connector	r type 2 (Total length: effective length +1	m straight)		
74880102	Charging: 1 phase 16A	4,000	705.0	2800	1
74880103	Charging: 3 phase 16A	4,000	1,105.0	3600	1
74880104	Charging: 3 phase 32A	4 000	2.533.0	5800	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 catalogue 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 charging stations

### CHARGE M3 —/T1C C



### CHARGE M3 T2P/— S



### CHARGE M3 T2P/— C



#### Benefits

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

#### Application range

 For charging stations, electric and plug-in hybrid vehicles

#### ■ Product make-up

#### CHARGE M3 —/T1C C

- Cable for 1-phase charging up to 16 A: ÖLFLEX® Charge 3G 2.5 mm²+1x0.5 mm²
- Type 2 connectors are injection moulded in two-components process for optimal ergonomics

#### CHARGE M3 T2P/— S

- Cable for 1-phase charging up to 16 A: ÖLFLEX® Charge 3G 2.5 mm²+1x0.5 mm²
- Cable for 3-phase charging up to 16 A: ÖLFLEX® Charge 5G 2.5 mm²+1x0.5 mm²
- Cable for 3-phase charging up to 32 A: ÖLFLEX® Charge 5G 6 mm²+1x0.5 mm²
- 16 A charging: every connector has a builtin 680 ohm resistor
- 32 A charging: every connector has a builtin 220 ohm resistor

#### CHARGE M3 T2P/-- C

- Cable for 1-phase charging up to 16 A: ÖLFLEX® Charge 3G 2.5 mm<sup>2</sup>+1x0.5 mm<sup>2</sup>
- Cable for 3-phase charging up to 16 A: ÖLFLEX® Charge 5G 2.5 mm²+1x0.5 mm²
- Cable for 3-phase charging up to 32 A: ÖLFLEX® Charge 5G 6 mm<sup>2</sup>+1x0.5 mm<sup>2</sup>
- 16 A charging: every connector has a builtin 680 ohm resistor
- 32 A charging: every connector has a builtin 220 ohm resistor

#### Technical data



Approvals

according to VDE-AR-E2283-5 according to EN 61851-1



Temperature range -25 °C to +80 °C

Article number	Version	Spiral length, extended (mm)	Copper index kg/1.000 pieces	Weight (kg/1000 pieces)	PU
Cut off clean, chai	rging cable spiralized, vehicle connector	r type 1 (Total length: effective length + 1m	straight)		
74880090	Charging: 1 phase 16A	4,000	812.0	2950	1
74880101	Charging: 1 phase 32A	4,000	1,549.0	2200	1
Type 2 plug, orang	ge cable, cut off clean (Total length: effe	ctive 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

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Copper price basis: EUR 150/100kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.



















### CHARGE M3 T2P/T2C S





### CHARGE M3 T2P/T2C C



For electric vehicles with type 2 vehicle inlet

### CHARGE M3 T2P/T2C H



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

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

#### Product make-up

- Cable for 1-phase charging up to 16 A: ÖLFLEX® Charge 3G 2.5 mm<sup>2</sup>+1x0.5 mm<sup>2</sup>
- Cable for 3-phase charging up to 16 A: ÖLFLEX® Charge 5G 2.5 mm<sup>2</sup>+1x0.5 mm<sup>2</sup>
- Cable for 3-phase charging up to 32 A: ÖLFLEX® Charge 5G 6 mm<sup>2</sup>+1x0.5 mm<sup>2</sup>
- Type 2 connectors are injection moulded in two-components process for optimal ergonomics

#### Technical data



according to VDE-AR-E2283-5 according to EN 61851-1



Temperature range -25 °C to +80 °C

Article number	Version	Spiral length, extended (mm)	Copper index kg/1.000 pieces	Weight (kg/1000 pieces)	PU
Plug type 2, charg	ing 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, Charg	ing 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, charg	ing cable Helix, vehicle connector type				
74880065	Charging: 3 phase 16A	4,000	619.0	619	1
74880069	Charging: 3 phase 32A	4,000	1,529.0	1529	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 catalogue 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 electric vehicles with type 1 vehicle



For electric vehicles with type 1 vehicle inlet

### **CHARGE M3 T2P/T1C C**

**CHARGE M3 T2P/T1C S** 



For electric vehicles with type 1 vehicle inlet

### **CHARGE M3 T2P/T1C H**



#### 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

### Product make-up

- Cable for 1-phase charging up to 16 A: ÖLFLEX® Charge 3G 2.5 mm<sup>2</sup>+1x0.5 mm<sup>2</sup>
- Cable for 1-phase charging up to 32 A: Lapp Kabel Charge 3G 6 mm<sup>2</sup> + 1x0.5 mm<sup>2</sup>
- Type 2 connectors are injection moulded in two-components process for optimal ergonomics

#### Technical data



**Approvals** according to VDE-AR-E2283-5 according to EN 61851-1



Temperature range -25 °C to +80 °C

#### Application range

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

Article number	Version	Spiral length, extended (mm)	Copper index kg/1.000 pieces	Weight (kg/1000 pieces)	PU
Plug type 2, charg	ing 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, charg	ing cable spiralised, vehicle connector	type 1			
74880060	Charging: 1 phase 16A	4,000	812.0	3337	1
Plug type 2, charg	ing cable Helix, vehicle connector type				
74880089	Charging: 1 phase 32A	4,000	554.0	2004	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 catalogue 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.















**® LAPP GROUP** 



### CHARGE M3 T3P/T2C S





For electric vehicles with type 2 vehicle inlet

### **CHARGE M3 T3P/T2C C**



For electric vehicles with type 2 vehicle inlet

### CHARGE M3 T3P/T2C H



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

 For charging stations, electric and plug-in hybrid vehicles

#### Product make-up

- Cable for 1-phase charging up to 16 A: ÖLFLEX® Charge 3G 2.5 mm<sup>2</sup>+1x0.5 mm<sup>2</sup>
- Cable for 3-phase charging up to 16 A: ÖLFLEX® Charge 5G 2.5 mm²+1x0.5 mm²
- Cable for 3-phase charging up to 32 A: ÖLFLEX® Charge 5G 6 mm<sup>2</sup>+1x0.5 mm<sup>2</sup>
- Type 2 connectors are injection moulded in two-components process for optimal ergonomics

#### ■ Technical data



**Approvals** according to VDE-AR-E2283-5 according to EN 61851-1



Temperature range -25 °C to +80 °C

Article number	Version	Spiral length, extended (mm)	Copper index kg/1.000 pieces	Weight (kg/1000 pieces)	PU
Plug type 3, charging	g 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	g 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	g cable Helix, vehicle connector type				
74880075	Charging: 3 phase 16A	4,000	619.0	2140	1
74880078	Charging: 3 phase 32A	4,000	1 529 0	3410	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 catalogue 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 electric vehicles with type 1 vehicle inlet



For electric vehicles with type 1 vehicle inlet

### **CHARGE M3 T3P/T1C C**



For electric vehicles with type 1 vehicle inlet

### **CHARGE M3 T3P/T1C H**



#### 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 make-up

- Cable for 1-phase charging up to 16 A: ÖLFLEX® Charge 3G 2.5 mm<sup>2</sup>+1x0.5 mm<sup>2</sup>
- Cable for 1-phase charging up to 32 A: Lapp Kabel Charge 3G 6 mm<sup>2</sup> + 1x0.5 mm<sup>2</sup>

#### Technical data



**Approvals** according to VDE-AR-E2283-5 according to EN 61851-1



Temperature range -25 °C to +80 °C

Article number	Version	Spiral length, extended (mm)	Copper index kg/1.000 pieces	Weight (kg/1000 pieces)	PU
Plug type 3, chargi	ing 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, chargi	ing 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, chargi	ing cable Helix, vehicle connector type				
74880084	Charging: 1 phase 32A	4,000	554.0	3410	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 catalogue 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.

















**® LAPP GROUP** 



### CHARGE M2 TFP/T2C S





Harnessing with In-Cable Control Box for charging mode 2 for electric vehicles with type 2 vehicle inlet

### **CHARGE M2 TFP/T1C S**



Harnessing with In-Cable Control Box for charging mode 2 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

 For charging stations, electric and plug-in hybrid vehicles

#### Product make-up

- Cable for 1-phase charging up to 16 A: ÖLFLEX® Charge 3G 2.5 mm²+1x0.5 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



**Approvals** 

according to VDE-AR-E2283-5 according to EN 61851-1



Temperature range -25 °C to +80 °C

#### ■ Product features

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

Article number	Version	Spiral length, extended (mm)	Copper index kg/1.000 pieces	Weight (kg/1000 pieces)	PU
Plug type F, chargi	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, chargi	ng cable with ICCB, vehicle connector ty	pe 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 catalogue 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.

Special applications

eMobility





















New

### ÖLFLEX® CHARGE OG

Spiralisable, halogen-free battery charging cable acc. VDE-AR-E 2283-5 for charging electrically powered vehicles

LAPP KABEL STUTTGART ÖLFLEX" CHARGE EVC ROHS CE



- VDE EVC type certified
- Halogen-free and flame-retardant
- Spiralizable

#### Benefits

- Normative compliance of the charging process with IEC 61851-1
- VDE EVC certified VDE-AR-E 2283-5 in compliance with the European EVC type as third-party approved component involved in charging
- Low toxicity of flue in the event of fire
- Permanent connection as flexible charging cable to charging station or for permanent on-board carriage inside vehicles
- Suitability of this metre ware for the spiralization finishing process

#### Product features

- Flame-retardant acc. IEC 60332-1-2 as well as Halogen-free acc. VDE-AR-E 2283-5/ appendices B+C, EN 50267-2-1, EN 50267-2-2, EN 50525-1/ appendix C, EN 60684-2
- UV-resistant acc. EN ISO 4892-2, 2.4.20, as well as ozone-resistant acc. EN 50396,
- High resistance to usual vehicle chemicals, such as fuels and oils, according to VDE-AR-E 2283-5, appendix G
- Resistance to acids and solutions acc. EN 60811 (N oxalic acid and N sodium hydroxide solution)
- · Cold-flexible as well as water-resistant at short, complete water contact according to AD6 of HD 516 and VDE-AR-E 2283-5, appendix I

### Norm references / Approvals

 <VDE> EVC cable type certification issued by the electric third-party association VDE according to the VDE application standard VDE-AR-E 2283-5

#### Product make-up

- Finely stranded copper conductors of IEC conductor class 5 acc. IEC 60228/ VDE 0295
- Core insulations of power cores made of special, halogen-free, cross-linked elastomer EVI-2 acc. VDE-AR-E 2283-5
- Use of talcum powder on the power core surfaces
- Core insulation control/ pilot core(s): Halogen-free, thermoplastic, special compound EVI acc. VDE-AR-E 2283-5
- Twisted core assembly including power cores acc. HD 308 as well as control/ pilot core(s)
- Halogen-free, outer sheath made of PUR in compliance with the normative compound EVM acc. VDE-AR-E 2283-5
- · Colour of the outer sheath: Orange

#### Technical data



#### Core identification code

Power cores: colour-coded according to HD 308/VDE 0293-308 Control/Pilot core: White



#### **Conductor stranding**

Fine wire according to IEC 60228/ VDE 0295, class 5 Bare strands



Minimum bending radius 10 x outer diameter

Nominal voltage



 $U_0/U = 450/750 \text{ V DC}$ Test voltage



At the core: 2.5 kV AC At the finished cable: 3 kV AC

Protective conductor



Always with protective conductor (PE), hence uppercase "G" as part of the

dimension abbreviation



Temperature range -25 °C to +80 °C

Maximum permissible conductor temperature: +90 °C

Article number	Number of cores and mm² per conductor	Copper index (kg/km)	Weight (kg/km)
74880550	3G2,5+1X0,5	76.8	155
74880558	3G6+1X0,5	177.6	330

Article number	Number of cores and mm² per conductor	Copper index (kg/km)	Weight (kg/km)
74880574	5G2,5+1X0,5	124.8	260
74880582	5G6+1X0.5	292 8	460

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 catalogue 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.

#### Socket outlet Type 2 IP54 up to 63A and connector locking





- with screw termination for 3P+N+PE as well as PP+CP
- · with easy CONTACT and silver plated contacts
- · with connector locking and suitable acuator
- we recommend the control via EVCP2-Controller 74880215 or 74880218

Version	Part no.
up to 20A	74880200
up to 32A	74880201
up to 63A	74880202

#### Socket outlet Type 2 IP54 up to 63A with cover and connector locking





- with screw termination for 3P+N+PE as well as PP+CP
- with easy CONTACT and silver plated contacts
- · with hinged cover locking and suitable actuator
- with connector locking and suitable acuator
- we recommend the control via EVCP2-Controller 74880215 or 74880220

Version	Part no.
up to 20A	74880203
up to 32A	74880204
up to 63A	74880205

### Socket outlet Type 2 IP54 up to 63A with RGB LED as well as cover and connector locking





- with screw termination for 3P+N+PE as well as PP+CP
- with easy CONTACT and silver plated contacts
- · with connector locking and suitable acuator
- with cover locking and suitable actuator
- with double RGB LED light
- we recommend the control via EVCP2-Controller 74880215 or 74880220

Version	Part no.
up to 20A	74880206
up to 32A	74880207
up to 63A	74880208

### Socket outlet Type 2 IP54 up to 63A and connector locking





- with screw termination for 3P+N+PE as well as PP+CP
- with easy CONTACT and silver plated contacts
- · with connector locking and suitable acuator
- we recommend the control via EVCP2-Controller 74880215 or 74880218

Version	Part no.
up to 20A	74880209
up to 32A	74880210
up to 63A	74880211

### Socket outlet Type 2 IP54 up to 63A with RGB LED and connector locking





- with screw termination for 3P+N+PE as well as PP+CP
- with easy CONTACT and silver plated contacts
- · with connector locking and suitable acuator
- with double RGB LED light
- we recommend the control via EVCP2-Controller 74880215 or 74880218

Version	Part no.
up to 20A	74880212
up to 32A	74880213
up to 63A	74880214

### **EVCP2 Controller Mode 3/ Type 2**



#### Standard Function:

- Power supply when loss of power
- integrated power supply from 230 V to 12 V
- Charging current adjustable from 6 A 80 A with rotary control switch
- additional 12 V outlets for peripheral equipment
- Control of RGB light possible
- Control of charging air gap switch and connector locking

Version	Part no.
Standard, plus monitoring with RS485	74880215
Vehicle connector permanent con- nected to EVSE. Type 1 and Typ 1 and monitoring	74880216
Standard, plus cover locking and end switch and monitoring with RS485	74880217
Standard plus analog input and monitoring with RS485	74880218
Vehicle connector permanent con- nected with EVSE 74880219 Type 1 and Type 2 plus analog input and monitoring with RS485	74880219
Standard plus cover locking, end switch and analog input and monitoring with RS485	74880220
Software and enhanced handbook for adjusting and monitoring with RS232/RS485	74880221

#### **Actuator connecting cable**



- Actuator coupler with 3 single cores 0,5 x 1000 mm
- Connecting cable for connector or cover locking

Pa	rt no.
74	880222

eMobility

#### Vehicle connector Type 1 up to 32A

Version	Part no.
up to 20A	74880223
up to 32A	74880224

- freely attachable
- L1+L2/N+PE und CP+CS
- Protection rating IP44



Plug Type 2 up to 63A

Version	Part no.
up to 20A, 1-phase	74880225
up to 32A, 1-phase	74880226
up to 20A, 3-phase	74880227
up to 32A, 3-phase	74880228
up to 63A, 3-phase	74880229

- freely attachable
- · with integrated resistance coding
- 3(1)P+N+PE and CP+PP
- Protection rating IP44



#### Vehicle connector Type 2 up to 63A

Version	Part no.
up to 20A, 1-phase	74880230
up to 32A, 1-phase	74880231
up to 20A, 3-phase	74880232
up to 32A, 3-phase	74880233
up to 63A, 3-phase	74880234

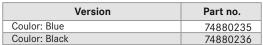
- · freely attachable
- · with integrated resistance coding
- 3(1)P+N+PE and CP+PP
- Protection rating IP44







#### Socket outlet ground receptacle 16A 230V, German System



- Protection rating IP54
- Flange 50 x 50 mm
- Nickel plated contacts
- with auxiliary contact "closing contact"
- suitable for 16A continuous load







#### Socket outlet ground receptacle 16A 230V, German System

Version	Part no.
Coulor: Blue	74880237
Coulor: Black	74880238

- · without hinged cover
- Flange 50 x 50 mm
- Nickel plated contacts
- with auxiliary contact "closing contact"
- suitable for 16A continuous load





#### Socket outlet ground receptacle 16A 230V, Belgian/French System

Version	Part no.
Coulor: Blue	74880239
Coulor: Black	74880240

- Protection rating IP54
- Flange 50 x 50 mm
- Nickel plated contacts
- with auxiliary contact "closing contact"
- suitable for 16A continuous load





#### Socket outlet Type 23, Swiss System

Version	Part no.
Coulor: Blue	74880241
Coulor: Black	74880242

- Protection rating IP54
- Flange 50 x 50 mm
- Nickel plated contacts
- with auxiliary contact "closing contact"
- suitable for 16A continuous load

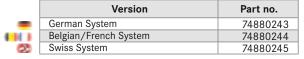


eMobility

#### Socket outlet ground receptacle with flat design



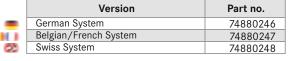
- · Nickel plated contacts
- suitable for 16A continuous load
- with auxiliary contact "closing contact"



#### Socket outlet ground receptacle with hinged cover locking



- · Nickel plated contacts
- suitable for 16A continuous load
- with auxiliary contact "closing contact"
- with hinged cover locking



#### Socket outlet ground receptacle with hinged cover locking and LED



- · Nickel plated contacts
- suitable for 16A continuous load
- with auxiliary contact "closing contact"
- · with hinged cover locking
- · with double RGB LED light

	Version	Part no.
-	German System	74880249
0.3	Belgian/French System	74880250
2	Swiss System	74880251

#### Socket outlet ground receptacle



- · Nickel plated contacts
- suitable for 16A continuous load
- with auxiliary contact "closing contact"

	Version	Part no.
	German System	74880252
1 DE 1	Belgian/French System	74880253
3	Swiss System	74880254

#### Socket outlet ground receptacle with LED



- · Nickel plated contacts
- suitable for 16A continuous load
- with auxiliary contact "closing contact"
- with double RGB LED light

	Version	Part no.	
-	German System	74880255	
	Belgian/French System	74880256	
3	Swiss System	74880257	

#### Socket outlet CEE 3-way 230V



- with inclination
- Flange 85x85
- bore hole 70 x 70 mm
- · Nickel plated contacts
- with auxiliary contact "closing contact" and "break contact"

Version	Part no.
up to 16A	74880258
up to 32A	74880259

#### Socket outlet CEE 5-way 400V



- · with inclination
- Flange 85x85
- bore hole 70 x 70 mm
- Nickel plated contacts
- with auxiliary contact "closing contact" and "break contact"

Version	Part no.
up to 16A	74880260
up to 32A	74880261

#### 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. Copyright by U.I. Lapp GmbH. Reprinting or reproduction of the text or the illustrations may be made only with written approval and with correct indication of source. We reserve the right to make modifications to our products, especially those based on technical improvements or continued development. All illustrations and numerical data etc. are therefore without warranty and are subject to change.



# ÖLFLEX®

## **UNITRONIC®**

**ETHERLINE®** 

**HITRONIC®** 

**EPIC**<sup>®</sup>

**SKINTOP®** 

**SILVYN®** 

**FLEXIMARK®** 









www.lappgroup.com