

# eMobile Charging cables





## Over half a century competence and experience

Bals is a quality brand for innovation, reliability and service world-wide. For more than 60 years we have been producing connectors for the world market. From the very first day to the present, we rely on the highest quality "Made in Germany". Our plants in Kirchhundem-Albaum and Freiwalde have highly qualified, motivated teams, state-of-the-art production facilities and high-performance logistics.



Our product range ranges from plugs, phase inverters and couplings, through sockets and distribution combinations to special plug-in devices. Numerous certifications of domestic and foreign test institutes as well as utility models and patents document the high technical standard of our products. A special quality feature and exclusively developed by Bals is the maintenance-free quick-connect technology QUICK-CONNECT.

## Two modern factories One consistent quality standard

From the beginning the headquarters of our company is located in Kirchhundem-Albaum (North-Rhine-Westphalia). Product development, marketing and sales, as well as administration are located here. The factory in Freiwalde (Brandenburg), built in 1994 and expanded many times since, has state-of-the-art production facilities for fully-automatic manufacturing of unique plugs and sockets as well as a highly-effective logistics centre.

## Plugs and sockets for the world market

As an independent, medium-sized, family-owned company, we produce standardised industrial plugs and sockets acc. to IEC 60309 1-2 as well as charging components and distributors for the global market. We set new technical standards with innovations and ground-breaking, partially patented new developments such as MULTI-GRIP or QUICK-CONNECT. Our products are sold in more than 80 countries.

## Our responsibility to the highest quality

Quality does not permit any compromise. This has always been the maxim at Bals. The ISO-9001-certified production process in all factories ensures the well-known high product quality. This proof of quality is reflected in patents, certificates from German and foreign testing institutes, as well as the specification of Bals products by highly renowned companies. Innovation is an important quality benchmark for us. This way, we are always setting new standards with intelligent solutions that bring the user sustainable advantages.

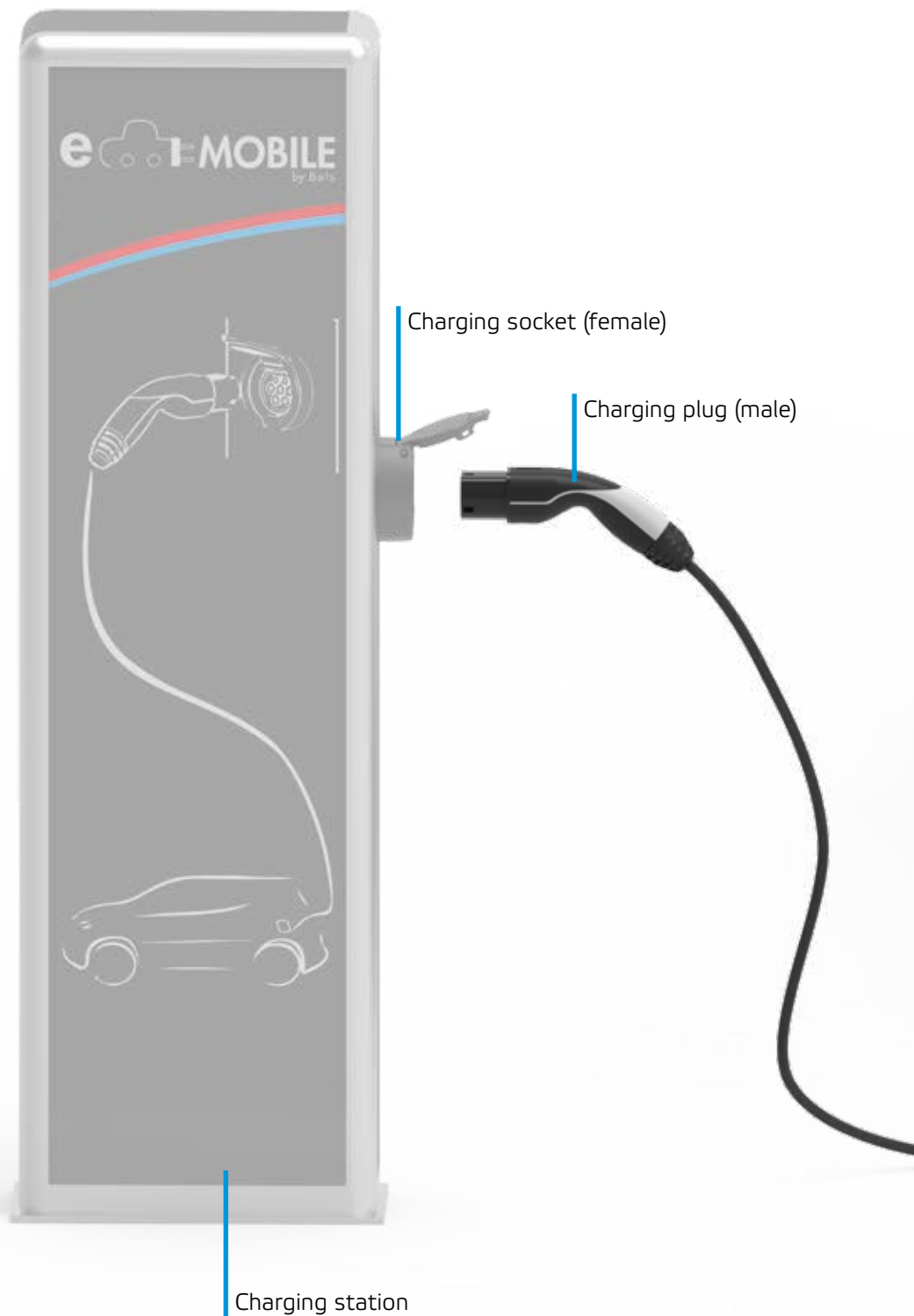
## Charging cables

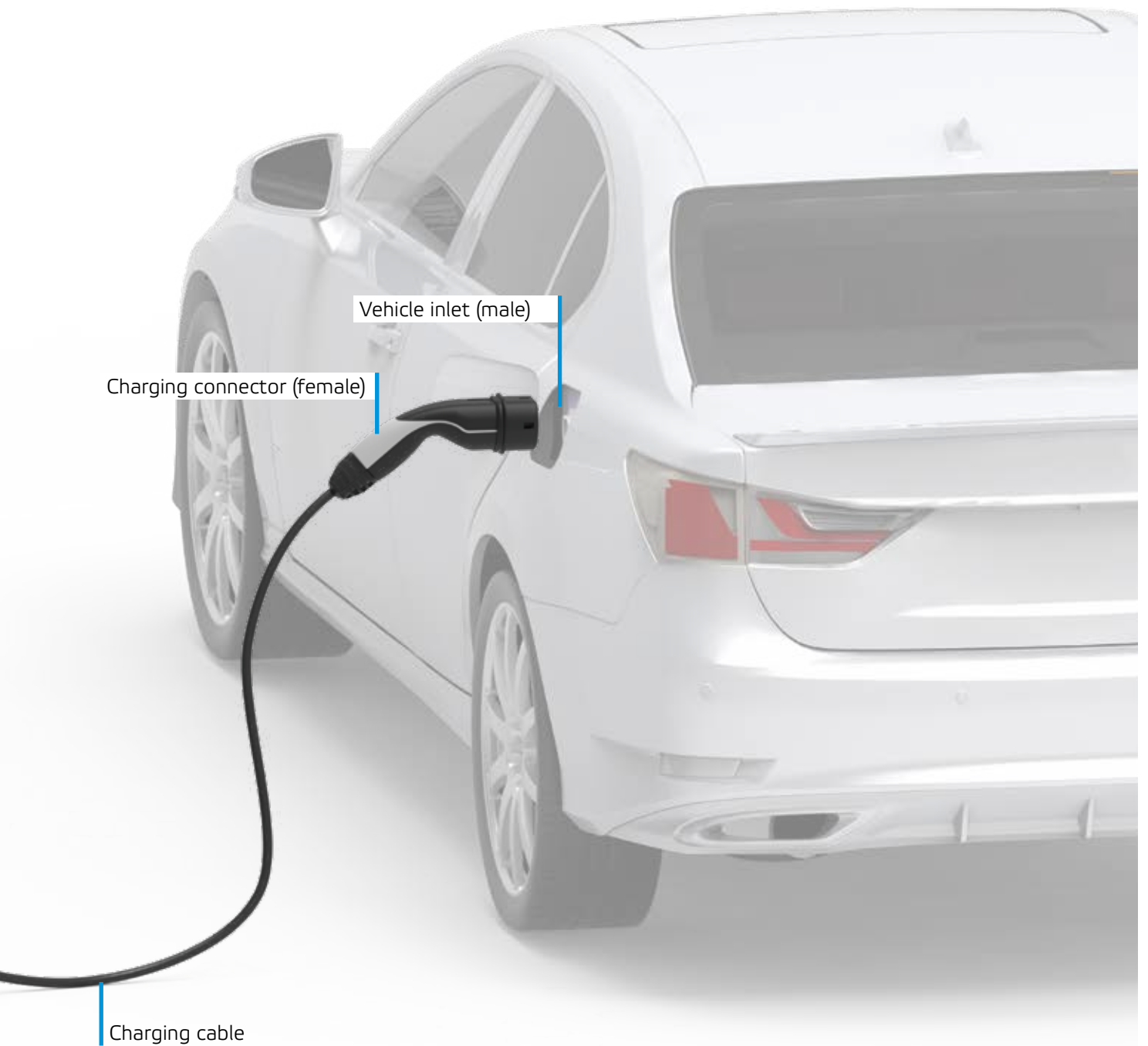
### Information

The weakest link in the charging chain determines the maximum allowed charging current: The charging current from the vehicle is limited depending on the output of the charging station and the resistance coding in the charging line.

The possible resistance codes:

- 20A - 680 Ohm
- 32A - 220 Ohm
- 63A - 100 Ohm





## Consistent further development in design and function

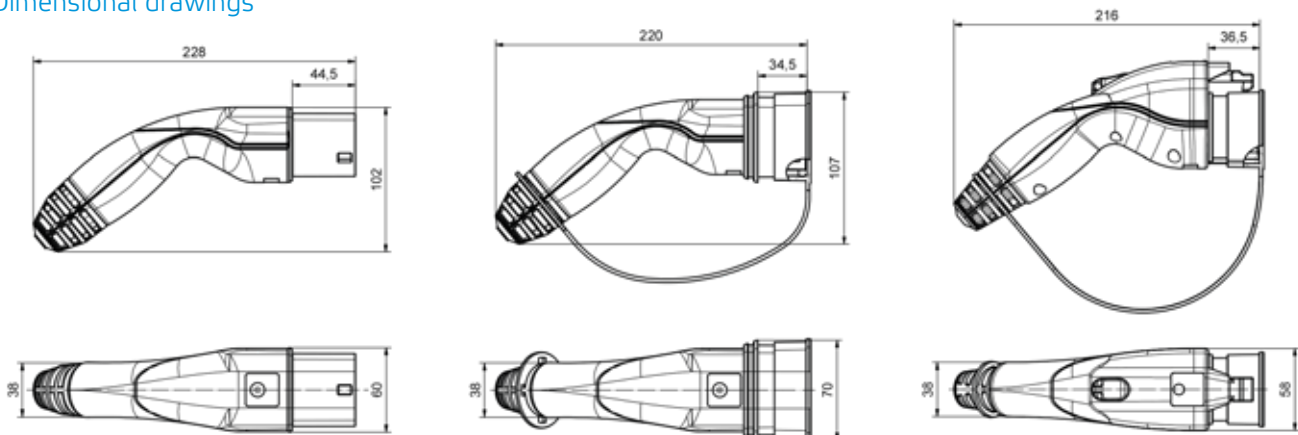
### Type 2 charging cable with plug and connector 3.0



### Type 1 charging connector 3.0



### Dimensional drawings

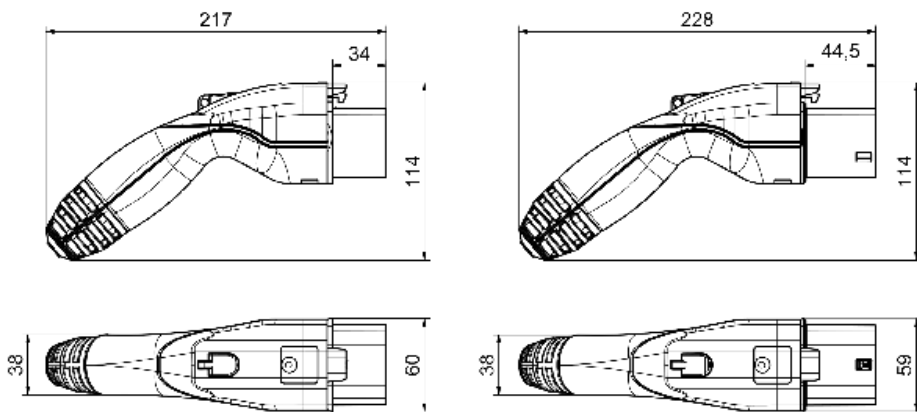





Type GB/T charging cable mit plug EV und EVCS side 3.0



Dimensional drawings






## Overview charging cable with **flat** cable

Picture	Ampere	Vehicle side			Working length					Infrastructure side		
		Type 1	Type 2	Type GB/T	3m	4m	5m	8m	10m	Type 2	Type GB/T	
	20A		X		X						X	
	20A		X			X					X	
	20A		X				X				X	
	20A		X					X			X	
	20A		X						X		X	
	32A		X			X					X	
	32A		X				X				X	
	32A		X					X			X	
	32A		X						X		X	
	32A		X							X	X	
	20A		X			X					X	
	20A		X				X				X	
	20A		X					X			X	
	20A		X						X		X	
	32A		X			X					X	
32A		X				X				X		
32A		X					X			X		
32A		X						X		X		
32A		X							X	X		
20A	X				X					X		
20A	X						X			X		
20A	X							X		X		
20A	X								X	X		
32A	X				X					X		
32A	X						X			X		
32A	X							X		X		
32A	X								X	X		
20A				X	X						X	
20A				X			X				X	
20A				X				X			X	
20A				X					X		X	
32A				X	X						X	
32A				X			X				X	
32A				X				X			X	
32A				X					X		X	
20A				X	X						X	
20A				X			X				X	
20A				X				X			X	
20A				X					X		X	
32A				X	X						X	
32A				X			X				X	
32A				X				X			X	
32A				X					X		X	



Capacity				Phase		Colour			Part. No.	Page
3,7kW	7,4kW	11kW	22kW	1-phase	3-phase	top	middle	bottom		
X				X		black	grey	black	E-329151X030B	13
X				X		black	grey	black	E-329151X040B	13
X				X		black	grey	black	E-329151X050B	13
X				X		black	grey	black	E-329151X080B	13
X				X		black	grey	black	E-329151X100B	13
	X			X		black	grey	black	E-330151X030B	13
	X			X		black	grey	black	E-330151X040B	13
	X			X		black	grey	black	E-330151X050B	13
	X			X		black	grey	black	E-330151X080B	13
	X			X		black	grey	black	E-330151X100B	13
		X			X	black	grey	black	E-331151X030B	13
		X			X	black	grey	black	E-331151X040B	13
		X			X	black	grey	black	E-331151X050B	13
		X			X	black	grey	black	E-331151X080B	13
		X			X	black	grey	black	E-331151X100B	13
			X		X	black	grey	black	E-332151X030B	13
			X		X	black	grey	black	E-332151X040B	13
			X		X	black	grey	black	E-332151X050B	13
			X		X	black	grey	black	E-332151X080B	13
			X		X	black	grey	black	E-332151X100B	13
X				X		black	grey	black	E-322151X030	15
X				X		black	grey	black	E-322151X050	15
X				X		black	grey	black	E-322151X080	15
X				X		black	grey	black	E-322151X100	15
	X			X		black	grey	black	E-323151X030	15
	X			X		black	grey	black	E-323151X050	15
	X			X		black	grey	black	E-323151X080	15
	X			X		black	grey	black	E-323151X100	15
X				X		black	grey	black	E-249151X030	17
X				X		black	grey	black	E-249151X050	17
X				X		black	grey	black	E-249151X080	17
X				X		black	grey	black	E-249151X100	17
	X			X		black	grey	black	E-250151X030	17
	X			X		black	grey	black	E-250151X050	17
	X			X		black	grey	black	E-250151X080	17
	X			X		black	grey	black	E-250151X100	17
		X			X	black	grey	black	E-251151X030	17
		X			X	black	grey	black	E-251151X050	17
		X			X	black	grey	black	E-251151X080	17
		X			X	black	grey	black	E-251151X100	17
			X		X	black	grey	black	E-252151X030	17
			X		X	black	grey	black	E-252151X050	17
			X		X	black	grey	black	E-252151X080	17
			X		X	black	grey	black	E-252151X100	17

## Overview charging cable with **coiled** cable

Picture	Ampere	Vehicle side			Working length			Infrastructure side	
		Type 1	Type 2	Type GB/T	4m	5m	6m	Type 2	Type GB/T
	20A		X		X			X	
	20A		X			X		X	
	20A		X				X	X	
	32A		X		X			X	
	32A		X			X		X	
	32A		X				X	X	
	20A		X		X			X	
	20A		X			X		X	
	20A		X				X	X	
	32A		X		X			X	
	32A		X			X		X	
	32A		X				X	X	
	20A	X			X			X	
	20A	X				X		X	
	20A	X					X	X	
	32A	X			X			X	
	32A	X				X		X	
	32A	X					X	X	
	20A			X	X				X
	20A			X		X			X
	20A			X			X		X
	20A			X	X				X
	20A			X		X			X
	20A			X			X		X
	32A			X	X				X
	32A			X		X			X
	32A			X			X		X
	20A			X	X				X
	20A			X		X			X
	20A			X			X		X
	32A			X	X				X
	32A			X		X			X
	32A			X			X		X

Capacity				Phase		Colour			Part. no.	Page
3,7kW	7,4kW	11kW	22kW	1-phase	3-phase	top	middel	bottum		
X				X		black	grey	black	E-329151XG040B	14
X				X		black	grey	black	E-329151XG050B	14
X				X		black	grey	black	E-329151XG060B	14
	X			X		black	grey	black	E-330151XG040B	14
	X			X		black	grey	black	E-330151XG050B	14
	X			X		black	grey	black	E-330151XG060B	14
		X			X	black	grey	black	E-331151XG040B	14
		X			X	black	grey	black	E-331151XG050B	14
		X			X	black	grey	black	E-331151XG060B	14
			X		X	black	grey	black	E-332151XG040B	14
			X		X	black	grey	black	E-332151XG050B	14
			X		X	black	grey	black	E-332151XG060B	14
X				X		black	grey	black	E-322151XG040	16
X				X		black	grey	black	E-322151XG050	16
X				X		black	grey	black	E-322151XG060	16
	X			X		black	grey	black	E-323151XG040	16
	X			X		black	grey	black	E-323151XG050	16
	X			X		black	grey	black	E-323151XG060	16
X				X		black	grey	black	E-249151XG040	18
X				X		black	grey	black	E-249151XG050	18
X				X		black	grey	black	E-249151XG060	18
	X			X		black	grey	black	E-250151XG040	18
	X			X		black	grey	black	E-250151XG050	18
	X			X		black	grey	black	E-250151XG060	18
		X			X	black	grey	black	E-251151XG040	18
		X			X	black	grey	black	E-251151XG050	18
		X			X	black	grey	black	E-251151XG060	18
			X		X	black	grey	black	E-252151XG040	18
			X		X	black	grey	black	E-252151XG050	18
			X		X	black	grey	black	E-252151XG060	18

## Simple definition of our part numbers for charging cables

Our part numbers have a meaningful structure. This provides our customers with a logical ordering system/order number which describes the electrical design, colours and length of the charging cable.

This is explained below using an example:

Charging cable (cable length: 5m) with charging plug and charging connector, mode 3, type 2, 1-phase, 20A



**E-329151X050**



### Charging cable mode 3 - type 2, cable type: flat

- Vehicle side (EV): type 2 charging connector
- Infrastructure side (EVCS): type 2 charging plug



Color of connectors: black - grey - black

### 1-phase, 20A, max. capacity up to 3,7kW

- Resistance: 680  $\Omega$  in charging plug and connector
- Cable variant: 3x2.5+1x0.5 mm<sup>2</sup>
- Cable colour: black
- Cable  $\varnothing$ : approx. 11 mm

Version	Part No.
Cable length 3,0m	<b>E-329151X030B</b>
Cable length 4,0m	<b>E-329151X040B</b>
Cable length 5,0m	<b>E-329151X050B</b>
Cable length 8,0m	<b>E-329151X080B</b>
Cable length 10,0m	<b>E-329151X100B</b>

### 1-phase, 32A, max. capacity up to 7,4kW

- Resistance: 220  $\Omega$  in charging plug and connector
- Cable variant: 3G6+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable  $\varnothing$ : approx. 14 mm

Version	Part No.
Cable length 3,0m	<b>E-330151X030B</b>
Cable length 4,0m	<b>E-330151X040B</b>
Cable length 5,0m	<b>E-330151X050B</b>
Cable length 8,0m	<b>E-330151X080B</b>
Cable length 10,0m	<b>E-330151X100B</b>

### 3-phase, 20A, max. capacity up to 11kW

- Resistance: 680  $\Omega$  in charging plug and connector
- Cable variant: 5G2,5+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable  $\varnothing$ : approx. 13 mm

Version	Part No.
Cable length 3,0m	<b>E-331151X030B</b>
Cable length 4,0m	<b>E-331151X040B</b>
Cable length 5,0m	<b>E-331151X050B</b>
Cable length 8,0m	<b>E-331151X080B</b>
Cable length 10,0m	<b>E-331151X100B</b>

### 3-phase, 32A, max. capacity up to 22kW

- Resistance: 220  $\Omega$  in charging plug and connector
- Cable variant: 5G6+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable  $\varnothing$ : approx. 17 mm

Version	Part No.
Cable length 3,0m	<b>E-332151X030B</b>
Cable length 4,0m	<b>E-332151X040B</b>
Cable length 5,0m	<b>E-332151X050B</b>
Cable length 8,0m	<b>E-332151X080B</b>
Cable length 10,0m	<b>E-332151X100B</b>

## Charging cables

Type 2 - cable type: coiled

### Charging cable mode 3 - type 2, cable type: coiled

- Vehicle side (EV): type 2 charging connector
- Infrastructure side (EVCS): type 2 charging plug



Color of connectors: black - grey - black

### 1-phase, 20A, max. capacity up to 3,7kW

- Resistance: 680  $\Omega$  in charging plug and connector
- Cable variant: 3x2,5+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable  $\varnothing$ : approx. 11 mm

Version	Part No.
Working length 4,0m	<b>E-329151XG040B</b>
Working length 5,0m	<b>E-329151XG050B</b>
Working length 6,0m	<b>E-329151XG060B</b>

### 1-phase, 32A, max. capacity up to 7,4kW

- Resistance: 220  $\Omega$  in charging plug and connector
- Cable variant: 3G6+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable  $\varnothing$ : approx. 14 mm

Version	Part No.
Working length 4,0m	<b>E-330151XG040B</b>
Working length 5,0m	<b>E-330151XG050B</b>
Working length 6,0m	<b>E-330151XG060B</b>

### 3-phase, 20A, max. capacity up to 11kW

- Resistance: 680  $\Omega$  in charging plug and connector
- Cable variant: 5G2,5+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable  $\varnothing$ : approx. 13 mm

Version	Part No.
Working length 4,0m	<b>E-331151XG040B</b>
Working length 5,0m	<b>E-331151XG050B</b>
Working length 6,0m	<b>E-331151XG060B</b>

### 3-phase, 32A, max. capacity up to 22kW

- Resistance: 220  $\Omega$  in charging plug and connector
- Cable variant: 5G6+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable  $\varnothing$ : approx. 17 mm

Version	Part No.
Working length 4,0m	<b>E-332151XG040B</b>
Working length 5,0m	<b>E-332151XG050B</b>
Working length 6,0m	<b>E-332151XG060B</b>



**Charging cable mode 3 - type 1 to type 2, cable type: flat**

- Vehicle side (EV): type 1 charging connector
- Infrastructure side (EVCS): type 2 charging plug



Color of connectors: black - grey - black

**1-phase, 20A, max. capacity up to 3,7kW**

- Cable variant: 3x2,5+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable ø: approx. 11 mm
- Resistance: 680 Ω in type 2 charging plug, integrated circuit of the total resistance between CS and PE in type 1 charging connector

Version	Part No.
Cable length 3,0m	<b>E-322151X030</b>
Cable length 5,0m	<b>E-322151X050</b>
Cable length 8,0m	<b>E-322151X080</b>
Cable length 10,0m	<b>E-322151X100</b>

**1-phase, 32A, max. capacity up to 7,4kW**

- Cable variant: 3G6+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable ø: approx. 14 mm
- Resistance: 220 Ω in type 2 charging plug, integrated circuit of the total resistance between CS and PE in type 1 charging connector

Version	Part No.
Cable length 3,0m	<b>E-323151X030</b>
Cable length 5,0m	<b>E-323151X050</b>
Cable length 8,0m	<b>E-323151X080</b>
Cable length 10,0m	<b>E-323151X100</b>

## Charging cables

Type 2, Type 1 - cable type: coiled

### Charging cable mode 3 - type 1 to type 2, cable type: coiled

- Vehicle side (EV): type 1 charging connector
- Infrastructure side (EVCS): type 2 charging plug



Color of connectors: black - grey - black

### 1-phase, 20A, max. capacity up to 3,7kW

- Cable variant: 3x2,5+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable ø: approx. 11 mm
- Resistance: 680 Ω in type 2 charging plug, integrated circuit of the total resistance between CS and PE in type 1 charging connector

Version	Part No.
Working length 4,0m	<b>E-322151XG040</b>
Working length 5,0m	<b>E-322151XG050</b>
Working length 6,0m	<b>E-322151XG060</b>

### 1-phase, 32A, max. capacity up to 7,4kW

- Cable variant: 3G6+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable ø: approx. 14 mm
- Resistance: 220 Ω in type 2 charging plug, integrated circuit of the total resistance between CS and PE in type 1 charging connector

Version	Part No.
Working length 4,0m	<b>E-323151XG040</b>
Working length 5,0m	<b>E-323151XG050</b>
Working length 6,0m	<b>E-323151XG060</b>

### Charging cable mode 3 - type GB/T, cable type: flat

- Vehicle side (EV): charging plug type GB/T
- Infrastructure side (EVCS): charging plug type GB/T



Color of connectors: black - grey - black

### 1-phase, 20A, max. capacity up to 3,7kW

- Cable variant: 3x2,5+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable ø: approx. 11 mm
- Resistance: 680 Ω in charging plug EV side, integrated circuit of the total resistance between CC and PE in charging plug EV side

Version	Part No.
Cable length 3,0m	<b>E-249151X030</b>
Cable length 5,0m	<b>E-249151X050</b>
Cable length 8,0m	<b>E-249151X080</b>
Cable length 10,0m	<b>E-249151X100</b>

### 1-phase, 32A, max. capacity up to 7,4kW

- Cable variant: 3G6+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable ø: approx. 14 mm
- Resistance: 220 Ω in charging plug EV side, integrated circuit of the total resistance between CC and PE in charging plug EV side

Version	Part No.
Cable length 3,0m	<b>E-250151X030</b>
Cable length 5,0m	<b>E-250151X050</b>
Cable length 8,0m	<b>E-250151X080</b>
Cable length 10,0m	<b>E-250151X100</b>

### 3-phase, 20A, max. capacity up to 11kW

- Cable variant: 5G2,5+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable ø: approx. 13 mm
- Resistance: 680 Ω in charging plug EV side, integrated circuit of the total resistance between CC and PE in charging plug EV side

Version	Part No.
Cable length 3,0m	<b>E-251151X030</b>
Cable length 5,0m	<b>E-251151X050</b>
Cable length 8,0m	<b>E-251151X080</b>
Cable length 10,0m	<b>E-251151X100</b>

### 3-phase, 32A, max. capacity up to 22kW

- Cable variant: 5G6+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable ø: approx. 17 mm
- Resistance: 220 Ω in charging plug EV side, integrated circuit of the total resistance between CC and PE in charging plug EV side

Version	Part No.
Cable length 3,0m	<b>E-252151X030</b>
Cable length 5,0m	<b>E-252151X050</b>
Cable length 8,0m	<b>E-252151X080</b>
Cable length 10,0m	<b>E-252151X100</b>

### Charging cable mode 3 - type GB/T, cable type: coiled

- Vehicle side (EV): charging plug type GB/T
- Infrastructure side (EVCS): charging plug type GB/T



Color of connectors: black - grey - black

### 1-phase, 20A, max. capacity up to 3,7kW

- Cable variant: 3x2,5+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable ø: approx. 11 mm
- Resistance: 680 Ω in charging plug EV side, integrated circuit of the total resistance between CC and PE in charging plug EV side

Version	Part No.
Working length 4,0m	<b>E-249151XG040</b>
Working length 5,0m	<b>E-249151XG050</b>
Working length 6,0m	<b>E-249151XG060</b>

### 1-phase, 32A, max. capacity up to 7,4kW

- Cable variant: 3G6+1x0,5 mm<sup>2</sup>
- Cable colour: black
- Cable ø: approx. 14 mm
- Resistance: 220 Ω in charging plug EV side, integrated circuit of the total resistance between CC and PE in charging plug EV side

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Working length 4,0m	<b>E-250151XG040</b>
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### 3-phase, 20A, max. capacity up to 11kW

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### 3-phase, 32A, max. capacity up to 22kW

- Cable variant: 5G6+1x0,5 mm<sup>2</sup>
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Working length 5,0m	<b>E-252151XG050</b>
Working length 6,0m	<b>E-252151XG060</b>



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 in  
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