



# LV

High power charging connectors  
for DC applications

# LV series - high power charging connectors



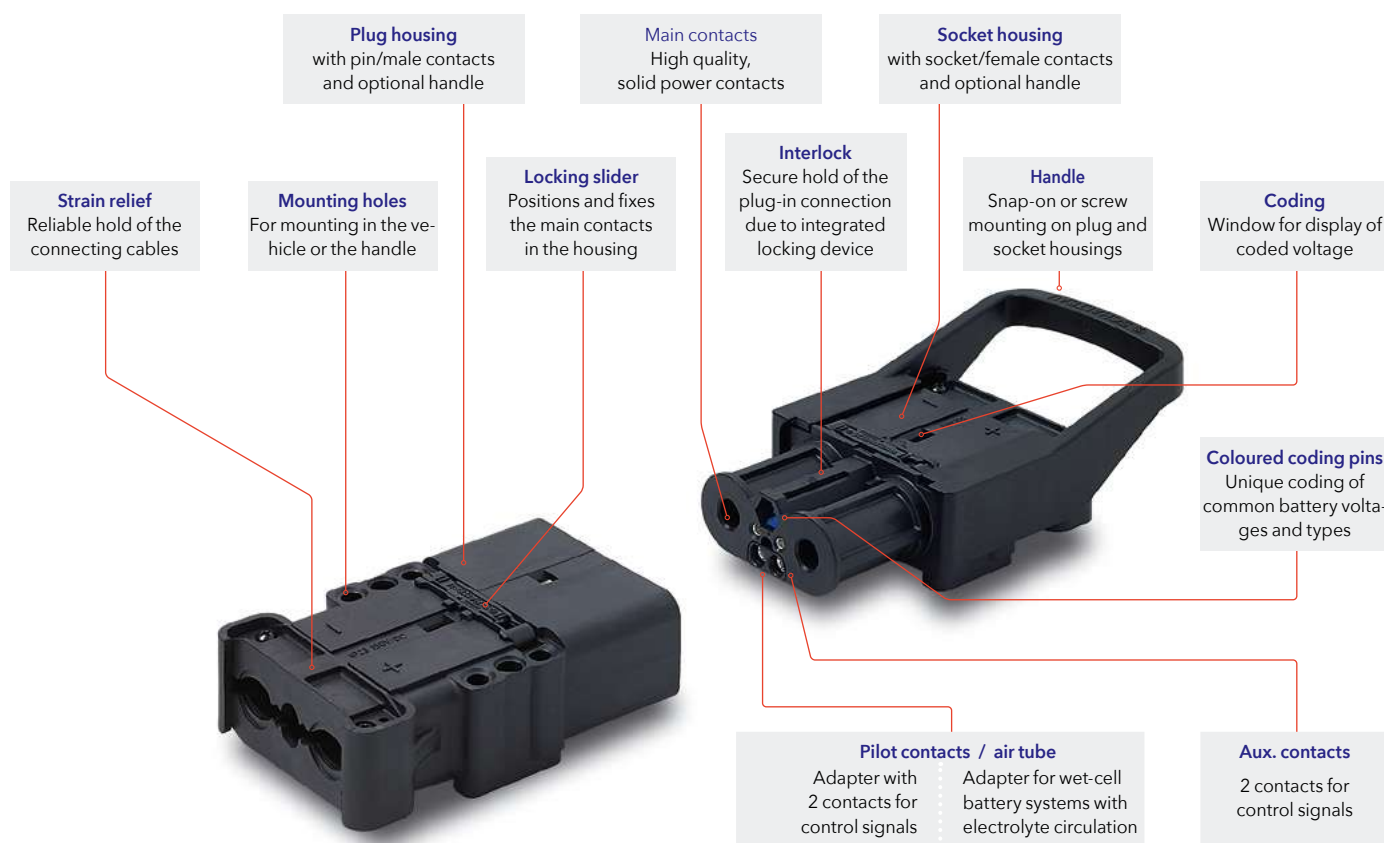
## High power charging connectors - More power for faster charging.

Modern charging connectors with a new optimised main contact system: The solid power contacts can carry high currents with minimal self-heating, have extremely low contact resistance and noticeably reduced contact forces for a significantly longer service life.

Schaltbau devices and charging connectors meet the requirements of EN 1175 and DIN VDE 0623-589 for high current carrying capacity\*. They enable active energy and battery management that optimises the current flow and increase lifespan of the batteries.

Thanks to their modularity, Schaltbau charging connectors can be individually configured. Additional pilot contacts are available for battery management.

In addition to pilot contacts, adapters are also available to allow air to pass through during the charging process or to fill the battery with demineralised water. For more information, please see our catalogue > **A841 Multifunctional adapters for charging connectors** or visit > [www.schaltbau.com](http://www.schaltbau.com).



\* The current carrying capacity meets the technical requirements of the EN 1175 and DIN VDE 0623-589 standards. Due to the connection of the W-crimping, there are deviations in the physical dimensions from the aforementioned standards in this area, which do not affect the product properties with regard to the current load.

## Applications

### e-Mobility

- Sweepers, refuse collection vehicles, cleaning vehicles
- Golf carts, airport caddies, quads
- Vehicles for persons with reduced mobility
- Buses, rail vehicles

### Intralogistics

- Forklift trucks, also driverless
- Automatic guided vehicles (AGV)
- Autonomous Mobile Robots (AMR)

### Chargers and battery systems

- Mobile and stationary chargers
- Standard and fast chargers for intermediate charging in multi-shift operations
- Lithium-ion, dry and wet batteries
- Battery test stands

### High-quality, solid power contacts for a permanently high current carrying capacity

Schaltbau's new optimised main contacts ensure a permanently high current-carrying capacity and minimal contact heating. These properties are achieved through very low contact resistances in the mated contact system over the entire service life. Thanks to reduced contact forces in the main contact system, there is less wear during mating and unmating. This extends the service life and also noticeably improves the ergonomics when mating and unmating.

### Mechanical safety in rough everyday use

Schaltbau charging connectors have durable, robust housing components and reliably withstand rough everyday use. They also have the following important mechanical properties:

- Integrated locking against shock and vibration:  
An easy-to-release locking device is integrated into the charging connector, which ensures functional safety in case of shocks and vibrations.
- Integrated strain relief:  
Keeps the mechanical load of the connecting cables away from the electrically conductive contacts. In addition, the plug-in connection is secured against tensile, pressure and torsional stresses.
- Integrated contact locking:  
The main contacts are safely aligned and fixed by a locking mechanism in the housing.

### Arc prevention when plugging and unplugging the connector

Avoiding an electric arc when plugging in or disconnecting the connector increases safety, protects the main contacts and increases the service life.

This goal is achieved by:

- Last-mate/first-break signal contacts (LMFB):  
The signal contacts are designed in order to start the charging process after the main contacts are already plugged in and to end it before the main contacts are disconnected. The signal contacts in the control circuit enable timely disconnection and ensure load-free plugging and unplugging.
- High Voltage Interlock Loop (HVIL):  
This so-called "power kill" contact, made with two signal contacts, enables timely disconnection in the control circuit and ensures load-free plugging and unplugging.

### Modularity, interconnectivity, material properties

The connectors are modular in design and have excellent material properties.

- Modularity:  
The low number of individual components and the usability in several series enable an individual and cost-effective realisation of your applications. Unnecessary stock positions are avoided.
- Interconnectivity:  
The LV series is intermateable with commercially available charging connectors according to EN 1175 and DIN VDE 0623-589 with a comparable design.
- High acid resistance:  
Resistance of the plastics to sulphuric acid according to EN 1175
- Flammability:  
All plastics meet the glow wire resistance according to IEC 695-2-1 and the fire protection requirements according to UL 94-V0 and to EN 45545
- Temperature resistance:  
The materials used stand for dimensional stability and functionality at temperatures from -30 °C up to +130 °C

### Schaltbau charging connectors

Modular design for scalable solutions between vehicle, battery and charger



**LV80/120**

Charging connector for reliable current-carrying capacity up to 160 amps. Version dry-cell battery socket with red handle.



**LV160/250**

Charging connector for reliable current-carrying capacity up to 250 amps. Version battery socket high current wet-cell battery with black handle, screwed.



**LV320/400**

Charging connector for reliable current-carrying capacity up to 450 amps. Version battery socket lithium-ion battery with red handle.



**LV500**

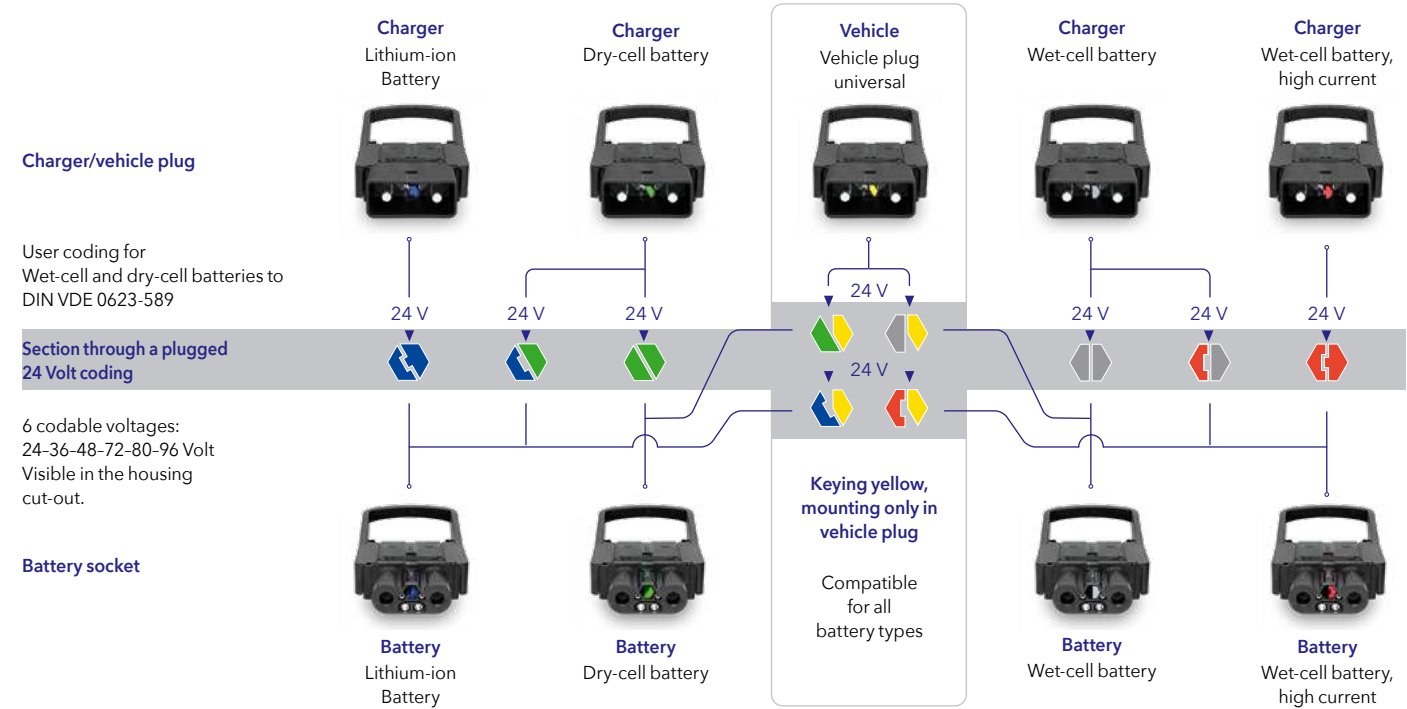
Charging connector for reliable current-carrying capacity up to 500 amps. Version battery socket with black handle.

Keying to DIN VDE 0623-589

Coding pins ensure clear and reliable coding of battery voltage and battery type. The position of the coloured coding pin is used for correct voltage assignment. A total of 6 voltages can be coded. The colour and shape of the coding pin also enable the battery type to be clearly assigned. This ensures that only valid combinations can be plugged in. For example, the socket

of a lithium-ion battery can only be connected to the plug of a charger station for lithium-ion batteries or dry batteries. The vehicle connector is a special feature. The yellow keying pin is used exclusively in the vehicle connector and is universally compatible with all battery types. Coded for the correct voltage, it is compatible with all battery types.

User coding: Section through a plugged-in 24 volt coding



Ordering code

Series

LV500 500 A @ AWG4/0

LV320/400 450 A @ AWG4/0

LV160/250 250 A @ 50 mm<sup>2</sup>

LV80/120 160 A @ 25 mm<sup>2</sup>

Keying 24-36-48-72-80-96 V

bl Blue, lithium-ion battery

rd Red, wet-cell battery, high current

gy Grey, wet-cell battery

gn Green, dry-cell battery

yl Yellow, vehicle plug only, universal

00 w/o

Main contacts, design

P Plug, pin contacts

S Socket, socket contacts

Main contacts, wire cross section

4/0 AWG 4/0, LV500, LV320/400

95 95 mm<sup>2</sup>, LV320/400

70 70 mm<sup>2</sup>, LV320/400

50 50 mm<sup>2</sup>, LV320/400, LV160/250

35 35 mm<sup>2</sup>, with reducing bushing: LV320/400, LV160/250

25 25 mm<sup>2</sup>, LV80/120, with reducing bushing: LV160/250

16 16 mm<sup>2</sup>, with reducing bushing: LV80/120

10 10 mm<sup>2</sup>, with reducing bushing: LV80/120

LV320/400-bl-S95-4-0-0

Packing

Sets & single parts 0

Handle

Snap-on handle, black 1

Snap-on handle, red 2

Screw-on handle, black 3

Screw-on handle, red 4


w/o 0

Pilot contacts/air tube, aux. contacts\*

@ Keying	2x Pilot contacts or air tube	2x Aux. contacts	
rd, gy	---	---	1
bl, rd, gy, gn, yl**	•	---	2
rd, gy	---	•	3
bl, rd, gy, gn, yl**	•	•	4
bl, rd, gy, gn, yl**	---	•	5
bl, rd, gy, gn, yl**	---	---	0

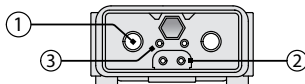
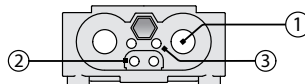




\* Schaltbau charging connectors can be equipped with pilot contacts/air tube and auxiliary contacts. The connection cross-section is 2.5 mm<sup>2</sup>. Reducing bushings for 1,5 - 1,0 - 0,5 mm<sup>2</sup> are optionally available. Do you need both or more options? For more information, see: > Multifunctional adapters for LV

\*\* yl = yellow, only for vehicle plugs, universal



QR code scan and configure

## Features

Series	Standard	LV500	LV320/400	LV160/250	LV80/120	
Number of contacts max.		① 2 main contacts + optional: ② Adapter for 2 pilot contacts or air tube + ③ 2 aux. contacts				
Contact arrangement						
View on mating face		Charger/vehicle plug		Battery socket		
Plug-in sequence		Main contacts > Aux. contacts > Pilot contacts				
Rated operating current						
Main contacts	@20° C	DIN VDE 0623-589 UL CSA	--- 500 A @ AWG 4/0 300 A @ AWG 4/0	390 A @ 95 mm² 440 A @ AWG 4/0 280 A @ AWG 4/0	250 A @ 50 mm² 250 A @ 50 mm²	160 A @ 25 mm² 120 A @ 25 mm² ---
Pilot/aux. contacts	@20° C	DIN VDE 0623-589 UL CSA	20 A @ 2,5 mm²	20 A @ 2,5 mm²	20 A @ 2,5 mm²	20 A @ 2,5 mm²
Rated voltage						
		DIN VDE 0623-589 UL CSA	150 V 150 V 150 V	150 V 150 V 150 V	150 V 150 V ---	150 V 150 V ---
Voltage keying						
Rated operating voltage	DIN VDE 0623-589	24/36/48/72/80/96 V				
Main contacts						
Number of			2	2	2	2
Contact diameter			10 mm	10 mm	8.5 mm	6.5 mm
Contact surface			Silver	Silver	Silver	Silver
Terminal type			W crimping	W crimping	W crimping	W crimping
Wire cross section	AWG 4/0		●	●	---	---
	95 mm²		---	●*	---	---
	70 mm²		---	●*	---	---
	50 mm²		---	●	●	---
	35 mm²		---	●**	●**	---
	25 mm²		---	---	●**	●
	16 mm²		---	---	---	●**
	10 mm²		---	---	---	●**
Pilot contacts						
		DIN VDE 0623-589				
Number of			2	2	2	2
Contact diameter			4 mm	4 mm	4 mm	2.3 mm
Contact surface			Silver	Silver	Silver	Silver
Terminal type			Crimping	Crimping	Crimping	Crimping
Wire cross section	2.5 mm²		●	●	●	●
with reducing bushing	1.5 mm²		●**	●**	●**	●**
with reducing bushing	1.0 mm²		●**	●**	●**	●**
with reducing bushing	0.5 mm²		●**	●**	●**	●**
Air tube						
Pressure	0.8 bar / 11.6 PSI		●	●	●	●
Connection diameter	6 mm		●	●	●	●
Aux. contacts						
		DIN VDE 0623-589				
Number of			2	2	2	2
Contact diameter			4 mm	4 mm	2.3 mm	2.3 mm
Contact surface			Silver	Silver	Silver	Silver
Terminal type			Crimping	Crimping	Crimping	Crimping
Wire cross section	2.5 mm²		●	●	●	●
with reducing bushing	1.5 mm²		●**	●**	●**	●**
with reducing bushing	1.0 mm²		●**	●**	●**	●**
with reducing bushing	0.5 mm²		●**	●**	●**	●**
Ingress protection rating (IP code)						
	DIN EN 60529	IP23***	IP23***	IP23***	IP23***	IP23***
Temperature range						
		-30 °C ... +130 °C	-30 °C ... +90 °C	-30 °C ... +90 °C	-30 °C ... +90 °C	-30 °C ... +90 °C
Mechanical endurance						
	DIN EN 1175	>5,000 mating cycles	>5,000 mating cycles	5,000 mating cycles	5,000 mating cycles	5,000 mating cycles
Housing material						
PBT GF30 (free of PBB and PBDE)		●	●	●	●	●
Flammability rating	UL 94-V0	●	●	●	●	●
Glow wire resistance	IEC 695-2-1	●	●	●	●	●
Acid resistance	DIN EN 1175	●	●	●	●	●
Handle, colour						
black / red (for emergency cutout)		● / ●	● / ●	● / ●	● / ●	● / ●
Approvals						
						

\* Drop height of 1.5 m max. for LV320/400 with wire cross section 70 mm<sup>2</sup> and 95 mm<sup>2</sup>. Reduced drop height when stretched connector cable.

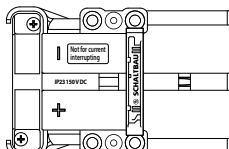
\*\* Reduction of wire cross section

\*\*\* IPx3 in horizontal mounting position

1

**Charger and vehicle plug**


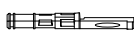



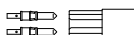

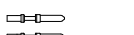
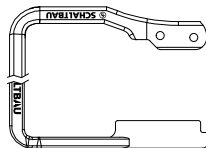
Basic set with main contacts

Figure	Item no.	Ordering code	Basic set	Main contacts Wire cross-section
	1-1448-357266	LV500-00-P4/0-0-0-0	Contents consisting of: Plug housing Charger/vehicle connector Main contacts, pin Slider Strain relief	AWG 4/0

2

**Additional components**

Voltage coding, pilot contacts or air tube, auxiliary contacts, reducing bushings, handles

Figure	Item no.	Ordering code	Description	Charger plug	Vehicle plug
	1-3448-302017	LV160/320-P/0-Lc-bl	1x keying <b>Blue</b> for Li-Ionen batteries	●	---
	1-3448-301977	LV160/320-P/0-Wc-rd	1x keying <b>Red</b> for high-current wet-cell batteries	●	---
	1-2448-134908	LV160/320-P/S-Wc-gy	1x keying <b>Grey</b> for wet-cell batteries	●	---
	1-2448-134895	LV160/320-P/S-Dc-gn	1x keying <b>Green</b> for dry-cell batteries	●	---
	1-2448-134919	LV160/320-P/0-Un-yl	1x keying <b>Yellow</b> Universal, for vehicle plug	---	●
	1-1448-152473	LV160/320-P-Pc-2.5-Ag/S	1x pilot contact adapter with 2x pin contacts for control signals	● optionally	●
	1-2448-134851	LV160/320-P-Ata	1x air tube for electrolyte circulation wet-cell battery	●	---
	1-1448-175283	LV320/400-P-Ac-2.5-Ag	2x auxiliary contact pin for control signals	●	●
2x/4x ⇐	1-3440-329129	Rb-2.5/1.5-Ag	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.5 mm <sup>2</sup>	●	●
2x/4x ⇐	1-3440-329118	Rb-2.5/1.0-Ag	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.0 mm <sup>2</sup>	●	●
2x/4x ⇐	1-3440-329130	Rb-2.5/0.5-Ag	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 0.5 mm <sup>2</sup>	●	●
	1-1448-153410	LV160/320-H-bk/S	1x screw-on handle <b>Black</b> incl. mounting screws	●	●
	1-1448-153421	LV160/320-H-rd/S	1x screw-on handle <b>Red</b> incl. mounting screws	●	●
	1-2448-303613	LV160/320-H-bk-sp	1x snap-on handle <b>Black</b> mountable without tools	●	●
	1-2448-337116	LV160/320-H-rd-sp	1x snap-on handle <b>Red</b> mountable without tools	●	●

3

**Tools**

for assembly and disassembly

Item no.	Ordering code	Description	Charger plug	Vehicle plug
1-1440-357320	CTH-U/≤300	1x Hydraulic crimping tool without crimp inserts, for main contacts	●	●
1-1440-355163	CTE-U/≤400	1x Electrical crimping tool without crimp inserts, for main contacts	●	●
1-1440-354259	CID-W-4/0/S	1x set crimp insert for CTH/CTE, for main contacts AWG 4/0	●	●
1-1440-339551	CTM-H/≤6.00	1x crimping tool for pilot/aux. contacts for 0.5 / 1.0 / 1.5 / 2.5 mm <sup>2</sup>	●	●
1-1440-267598	ETC-C/H	1x extraction tool for pilot contacts	●	●

## Battery socket

1

Basic set with main contacts, optional for pilot contacts or with air tube

Wire cross-section	Main contacts Basic set	Ordering code	Item no.	Figure
AWG 4/0	Contents consisting of: Battery socket for pilot contacts Main contacts socket Slider Strain relief	LV500-00-S4/0-0-0-0	1-1448-357270	
AWG 4/0	Contents consisting of: Battery socket with air tube Main contacts socket Slider Strain relief	LV500-00-S4/0-1-0-0	1-1448-356593	

## Additional components

2

Voltage coding, pilot contacts or air tube, auxiliary contacts, reducing bushings, handles

Battery socket for pilot contacts	Battery socket with air tube	Description	Ordering code	Item no.	Figure
●	---	1x keying <b>Blue</b> for Li-Ionen batteries	LV160/320-0/S-Lc-bl	1-3448-302018	
●	●	1x keying <b>Red</b> for high-current wet-cell batteries	LV160/320-0/S-Wc-rd	1-3448-301993	
●	●	1x keying <b>Grey</b> for wet-cell batteries	LV160/320-P/S-Wc-gy	1-2448-134908	
●	---	1x keying <b>Green</b> for dry-cell batteries	LV160/320-P/S-Dc-gn	1-2448-134895	
●	---	2x pilot socket contacts for control signals	SC-C/2.50-Ag	1-1440-110345	
---	●	1x air adapter and 1x spacer, already included in the basic set	---	---	
●	●	2x aux. socket contacts for control signals	LV320/400-S-Ac-2.5-Ag	1-1448-175294	
●	●	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.5 mm²	Rb-2.5/1.5-Ag	1-3440-329129	⇒ 2x/4x
●	●	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.0 mm²	Rb-2.5/1.0-Ag	1-3440-329118	⇒ 2x/4x
●	●	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 0.5 mm²	Rb-2.5/0.5-Ag	1-3440-329130	⇒ 2x/4x
●	●	1x screw-on handle <b>Black</b> incl. mounting screws	LV160/320-H-bk/S	1-1448-153410	
●	●	1x screw-on handle <b>Red</b> incl. mounting screws	LV160/320-H-rd/S	1-1448-153421	
●	●	1x snap-on handle <b>Black</b> mountable without tools	LV160/320-H-bk-sp	1-2448-303613	
●	●	1x snap-on handle <b>Red</b> mountable without tools	LV160/320-H-rd-sp	1-2448-337116	

## Tools for assembly and disassembly

3

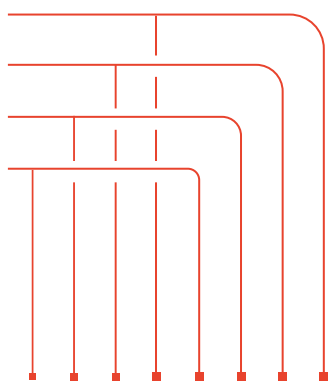
Battery socket for pilot contacts	Battery socket with air tube	Description	Ordering code	Item no.
●	●	1x hydraulic crimping tool without crimp inserts, for main contacts	CTH-U/≤300	1-1440-357320
●	●	1x electrical crimping tool without crimp inserts, for main contacts	CTE-U/≤400	1-1440-355163
●	●	1x set crimp insert for CTH/CTE, for main contacts AWG 4/0	CID-W-4/0/S	1-1440-354259
●	●	1x crimping tool for pilot/aux. contacts for 0.5 / 1.0 / 1.5 / 2.5 mm²	CTM-H/≤6.00	1-1440-339551
●	---	1x extraction tool for pilot contacts	ETC-C/H	1-1440-267598

1

## Charger and vehicle plug

### Basic set with main contacts







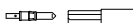
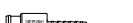




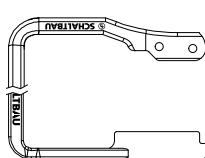
Figure	Item no.	Ordering code	Basic set	Main contacts Wire cross-section
	1-1448-355837	LV320/400-00-P4/0-0-0-0	Contents consisting of: Plug housing Charger/vehicle connector Main contacts, pin Slider Strain relief	AWG 4/0
	1-1448-355835	LV320/400-00-P95-0-0-0-0		95 mm²
	1-1448-355833	LV320/400-00-P70-0-0-0-0		70 mm²
	1-1448-355831	LV320/400-00-P50-0-0-0-0		50 mm²



2

## Additional components

Reducing bushings, voltage coding, pilot contacts or air tube, auxiliary contacts, handles

Figure	Item no.	Ordering code	Description	Charger plug	Vehicle plug
2x 	1-1448-161148	Rb-50/35-Ag	2x reducing bushing main contacts, wire cross section 50 to 35 mm²	● --- --- ---	● --- --- ---
	1-3448-302017	LV160/320-P/0-Lc-bl	1x keying <b>Blue</b> for Li-Ionen batteries	● ● ● ●	--- --- --- ---
	1-3448-301977	LV160/320-P/0-Wc-rd	1x keying <b>Red</b> for high-current wet-cell batteries	● ● ● ●	--- --- --- ---
	1-2448-134908	LV160/320-P/S-Wc-gy	1x keying <b>Grey</b> for wet-cell batteries	● ● ● ●	--- --- --- ---
	1-2448-134895	LV160/320-P/S-Dc-gn	1x keying <b>Green</b> for dry-cell batteries	● ● ● ●	--- --- --- ---
	1-2448-134919	LV160/320-P/0-Un-yl	1x keying <b>Yellow</b> Universal, for vehicle plug	--- --- --- ---	● ● ● ●
	1-1448-152473	LV160/320-P-Pc-2.5-Ag/S	1x pilot contact adapter with 2x pin contacts for control signals	● ● ● ●	● ● ● ●
	1-2448-134851	LV160/320-P-Ata	1x air tube for electrolyte circulation wet-cell battery	optionally ↓ ↓ ↓ ↓	--- --- --- ---
	1-1448-175283	LV320/400-P-Ac-2.5-Ag	2x auxiliary contact pin for control signals	● ● ● ●	● ● ● ●
2x/4x 	1-3440-329129	Rb-2.5/1.5-Ag	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.5 mm²	● ● ● ●	● ● ● ●
2x/4x 	1-3440-329118	Rb-2.5/1.0-Ag	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.0 mm²	● ● ● ●	● ● ● ●
2x/4x 	1-3440-329130	Rb-2.5/0.5-Ag	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 0.5 mm²	● ● ● ●	● ● ● ●
	1-1448-153410	LV160/320-H-bk/S	1x screw-on handle <b>Black</b> incl. mounting screws	● ● ● ●	● ● ● ●
	1-1448-153421	LV160/320-H-rd/S	1x screw-on handle <b>Red</b> incl. mounting screws	● ● ● ●	● ● ● ●
	1-2448-303613	LV160/320-H-bk-sp	1x snap-on handle <b>Black</b> mountable without tools	● ● ● ●	● ● ● ●
	1-2448-337116	LV160/320-H-rd-sp	1x snap-on handle <b>Red</b> mountable without tools	● ● ● ●	● ● ● ●

3

## Tools

for assembly and disassembly

Item no.	Ordering code	Description	Charger plug	Vehicle plug
1-1440-357320	CTH-U/≤300	1x Hydraulic crimping tool without crimp inserts, for main contacts	● ● ● ●	● ● ● ●
1-1440-355163	CTE-U/≤400	1x Electrical crimping tool without crimp inserts, for main contacts	● ● ● ●	● ● ● ●
1-1440-354255	CID-W-50/S	1x set crimp insert for CTH/CTE, for main contacts 50 mm²	● --- --- ---	● --- --- ---
1-1440-354256	CID-W-70/S	1x set crimp insert for CTH/CTE, for main contacts 70 mm²	--- ● --- ---	--- ● --- ---
1-1440-354258	CID-W-95/S	1x set crimp insert for CTH/CTE, for main contacts 95 mm²	--- --- ● ---	--- --- ● ---
1-1440-354259	CID-W-4/0/S	1x set crimp insert for CTH/CTE, for main contacts AWG 4/0	--- --- --- ●	--- --- --- ●
1-1440-339551	CTM-H/≤6.00	1x crimping tool for pilot/aux. contacts for 0.5 / 1.0 / 1.5 / 2.5 mm²	● ● ● ●	● ● ● ●
1-1440-267598	ETC-C/H	1x extraction tool for pilot contacts	● ● ● ●	● ● ● ●

## Battery socket

1

Basic set with main contacts, optional for pilot contacts or with air tube

Wire cross-section	Main contacts Basic set	Ordering code	Item no.	Figure
AWG 4/0	Contents consisting of:	LV320/400-00-S4/0-0-0-0	1-1448-355838	
95 mm²	Battery socket for pilot contacts	LV320/400-00-S95-0-0-0	1-1448-355836	
70 mm²	Main contacts socket	LV320/400-00-S70-0-0-0	1-1448-355834	
50 mm²	Slider	LV320/400-00-S50-0-0-0	1-1448-355832	
AWG 4/0	Contents consisting of:	LV320/400-00-S4/0-1-0-0	1-1448-356592	
95 mm²	Battery socket with air tube	LV320/400-00-S95-1-0-0	1-1448-356591	
70 mm²	Main contacts socket	LV320/400-00-S70-1-0-0	1-1448-356590	
50 mm²	Slider	LV320/400-00-S50-1-0-0	1-1448-356586	

## Additional components

2

Reducing bushings, voltage coding, pilot contacts or air tube, auxiliary contacts, handles

Battery socket for pilot contacts	Battery socket with air tube	Description	Ordering code	Item no.	Figure
---	---	2x reducing bushing main contacts, wire cross section 50 to 35 mm²	Rb-50/35-Ag	1-1448-161148	2x
• • • •	---	1x keying <b>Blue</b> for Li-Ionen batteries	LV160/320-0/S-Lc-bl	1-3448-302018	
• • • •	• • • •	1x keying <b>Red</b> for high-current wet-cell batteries	LV160/320-0/S-Wc-rd	1-3448-301993	
• • • •	• • • •	1x keying <b>Grey</b> for wet-cell batteries	LV160/320-P/S-Wc-gy	1-2448-134908	
• • • •	---	1x keying <b>Green</b> for dry-cell batteries	LV160/320-P/S-Dc-gn	1-2448-134895	
• • • •	---	2x pilot socket contacts for control signals	SC-C/2.50-Ag	1-1440-110345	
---	• • • •	1x air adapter and 1x spacer, already included in the basic set	---	---	---
• • • •	• • • •	2x aux. socket contacts for control signals	LV320/400-S-Ac-2.5-Ag	1-1448-175294	
• • • •	• • • •	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.5 mm²	Rb-2.5/1.5-Ag	1-3440-329129	2x/4x
• • • •	• • • •	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.0 mm²	Rb-2.5/1.0-Ag	1-3440-329118	2x/4x
• • • •	• • • •	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 0.5 mm²	Rb-2.5/0.5-Ag	1-3440-329130	2x/4x
• • • •	• • • •	1x screw-on handle <b>Black</b> incl. mounting screws	LV160/320-H-bk/S	1-1448-153410	
• • • •	• • • •	1x screw-on handle <b>Red</b> incl. mounting screws	LV160/320-H-rd/S	1-1448-153421	
• • • •	• • • •	1x snap-on handle <b>Black</b> mountable without tools	LV160/320-H-bk-sp	1-2448-303613	
• • • •	• • • •	1x snap-on handle <b>Red</b> mountable without tools	LV160/320-H-rd-sp	1-2448-337116	

## Tools

for assembly and disassembly

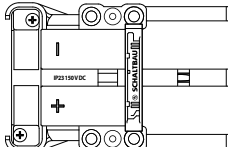
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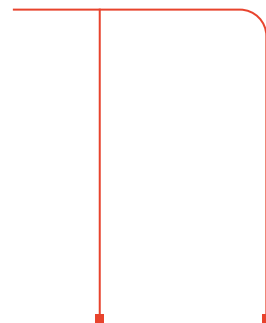
Battery socket for pilot contacts	Battery socket with air tube	Description	Ordering code	Item no.
• • • •	• • • •	1x hydraulic crimping tool without crimp inserts, for main contacts	CTH-U/≤300	1-1440-357320
• • • •	• • • •	1x electrical crimping tool without crimp inserts, for main contacts	CTE-U/≤400	1-1440-355163
---	---	1x set crimp insert for CTH/CTE, for main contacts 50 mm²	CID-W-50/S	1-1440-354255
---	---	1x set crimp insert for CTH/CTE, for main contacts 70 mm²	CID-W-70/S	1-1440-354256
---	---	1x set crimp insert for CTH/CTE, for main contacts 95 mm²	CID-W-95/S	1-1440-354258
• • • •	• • • •	1x set crimp insert for CTH/CTE, for main contacts AWG 4/0	CID-W-4/0/S	1-1440-354259
• • • •	• • • •	1x crimping tool for pilot/aux. contacts for 0.5 / 1.0 / 1.5 / 2.5 mm²	CTM-H/≤6.00	1-1440-339551
• • • •	---	1x extraction tool for pilot contacts	ETC-C/H	1-1440-267598

1

**Charger and vehicle plug**

Basic set with main contacts


















Figure	Item no.	Ordering code	Basic set	Main contacts Wire cross section
	1-1448-355829	LV160/250-00-P50-0-0-0	Contents consisting of: Plug housing Charger/vehicle connector Main contacts, pin Slider Strain relief	50 mm²



2

**Additional components**

Reducing bushings, voltage coding, pilot contacts or air tube, auxiliary contacts, handles

Figure	Item no.	Ordering code	Description	Charger plug	Vehicle plug
2x 	1-1448-161148	Rb-50/35-Ag	2x reducing bushing main contacts, wire cross section 50 to 35 mm²	●	●
2x 	1-1448-161137	Rb-50/25-Ag	2x reducing bushing main contacts, wire cross section 50 to 25 mm²	●	●
	1-3448-302017	LV160/320-P/0-Lc-bl	1x keying <b>Blue</b> for Li-Ionen batteries	●	---
	1-3448-301977	LV160/320-P/0-Wc-rd	1x keying <b>Red</b> for high-current wet-cell batteries	●	---
	1-2448-134908	LV160/320-P/S-Wc-gy	1x keying <b>Grey</b> for wet-cell batteries	●	---
	1-2448-134895	LV160/320-P/S-Dc-gn	1x keying <b>Green</b> for dry-cell batteries	●	---
	1-2448-134919	LV160/320-P/0-Un-yl	1x keying <b>Yellow</b> Universal, for vehicle plug	---	●
	1-1448-152473	LV160/320-P-Pc-2.5-Ag/S	1x pilot contact adapter with 2x pin contacts for control signals	●	●
	1-2448-134851	LV160/320-P-Ata	1x air tube for electrolyte circulation wet-cell battery	optionally ●	---
	1-1448-152951	LV160/250-P-Ac-2,5-Ag	2x auxiliary contact pin for control signals	●	●
2x/4x 	1-3440-329129	Rb-2.5/1.5-Ag	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.5 mm²	●	●
2x/4x 	1-3440-329118	Rb-2.5/1.0-Ag	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.0 mm²	●	●
2x/4x 	1-3440-329130	Rb-2.5/0.5-Ag	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 0.5 mm²	●	●
	1-1448-153410	LV160/320-H-bk/S	1x screw-on handle <b>Black</b> incl. mounting screws	●	●
	1-1448-153421	LV160/320-H-rd/S	1x screw-on handle <b>Red</b> incl. mounting screws	●	●
	1-2448-303613	LV160/320-H-bk-sp	1x snap-on handle <b>Black</b> mountable without tools	●	●
	1-2448-337116	LV160/320-H-rd-sp	1x snap-on handle <b>Red</b> mountable without tools	●	●

3

**Tools**

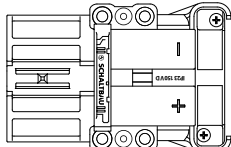
for assembly and disassembly

Item no.	Ordering code	Description	Charger plug	Vehicle plug
1-1440-357320	CTH-U/≤300	1x hydraulic crimping tool without crimp inserts, for main contacts	●	●
1-1440-355163	CTE-U/≤400	1x electrical crimping tool without crimp inserts, for main contacts	●	●
1-1440-354255	CID-W-50/S	1x set crimp insert for CTH/CTE, for main contacts 50 mm²	●	●
1-1440-339551	CTM-H/≤6.00	1x crimping tool for pilot/aux. contacts for 0.5 / 1.0 / 1.5 / 2.5 mm²	●	●
1-1440-267598	ETC-C/H	1x extraction tool for pilot contacts	●	●
1-1448-151481	LV160/250-ET-Ac	1x extraction tool for auxiliary contacts	●	●

## Battery socket

1



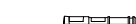


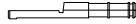

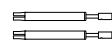



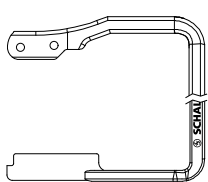
Basic set with main contacts, optional for pilot contacts or with air tube

Wire cross-section	Main contacts Basic set	Ordering code	Item no.	Figure
50 mm <sup>2</sup>	Contents consisting of: Battery socket for pilot contacts Main contacts socket Slider Strain relief	LV160/250-00-S50-0-0-0	1-1448-355830	
50 mm <sup>2</sup>	Contents consisting of: Battery socket with air tube Main contacts socket Slider Strain relief	LV160/250-00-S50-1-0-0	1-1448-356584	

## Additional components

2

Reducing bushings, voltage coding, pilot contacts or air tube, auxiliary contacts, handles

Battery socket for pilot contacts	Battery socket with air tube	Description	Ordering code	Item no.	Figure
●	●	2x reducing bushing main contacts, wire cross section 50 to 35 mm <sup>2</sup>	Rb-50/35-Ag	1-1448-161148	 2x
●	●	2x reducing bushing main contacts, wire cross section 50 to 25 mm <sup>2</sup>	Rb-50/25-Ag	1-1448-161137	 2x
●	---	1x keying <b>Blue</b> for Li-Ionen batteries	LV160/320-0/S-Lc-bl	1-3448-302018	
●	●	1x keying <b>Red</b> for high-current wet-cell batteries	LV160/320-0/S-Wc-rd	1-3448-301993	
●	●	1x keying <b>Grey</b> for wet-cell batteries	LV160/320-P/S-Wc-gy	1-2448-134908	
●	---	1x keying <b>Green</b> for dry-cell batteries	LV160/320-P/S-Dc-gn	1-2448-134895	
●	---	2x pilot socket contacts for control signals	SC-C/2.50-Ag	1-1440-110345	
---	●	1x air adapter and 1x spacer, already included in the basic set	---	---	
●	●	2x aux. socket contacts for control signals	LV160/250-S-Ac-2,5-Ag	1-1448-152962	
●	●	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.5 mm <sup>2</sup>	Rb-2.5/1.5-Ag	1-3440-329129	 ⇒ 2x/4x
●	●	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.0 mm <sup>2</sup>	Rb-2.5/1.0-Ag	1-3440-329118	 ⇒ 2x/4x
●	●	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 0.5 mm <sup>2</sup>	Rb-2.5/0.5-Ag	1-3440-329130	 ⇒ 2x/4x
●	●	1x screw-on handle <b>Black</b> incl. mounting screws	LV160/320-H-bk/S	1-1448-153410	
●	●	1x screw-on handle <b>Red</b> incl. mounting screws	LV160/320-H-rd/S	1-1448-153421	
●	●	1x snap-on handle <b>Black</b> mountable without tools	LV160/320-H-bk-sp	1-2448-303613	
●	●	1x snap-on handle <b>Red</b> mountable without tools	LV160/320-H-rd-sp	1-2448-337116	

## Tools

3

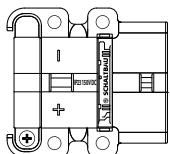
for assembly and disassembly

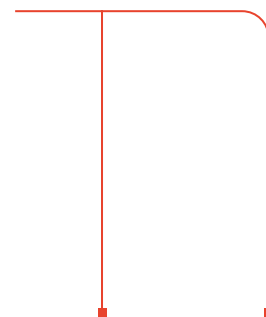
Battery socket for pilot contacts	Battery socket with air tube	Description	Ordering code	Item no.
●	●	1x hydraulic crimping tool without crimp inserts, for main contacts	CTH-U/≤300	1-1440-357320
●	●	1x electrical crimping tool without crimp inserts, for main contacts	CTE-U/≤400	1-1440-355163
●	●	1x set crimp insert for CTH/CTE, for main contacts 50 mm <sup>2</sup>	CID-W-50/S	1-1440-354255
●	●	1x crimping tool for pilot/aux. contacts for 0.5 / 1.0 / 1.5 / 2.5 mm <sup>2</sup>	CTM-H/≤6.00	1-1440-339551
●	●	1x extraction tool for pilot contacts	ETC-C/H	1-1440-267598
●	---	1x extraction tool for auxiliary contacts	LV160/250-ET-Ac	1-1448-151481

1

**Charger and vehicle plug**

Basic set with main contacts



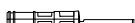










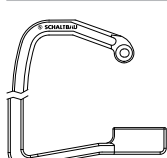
Figure	Item no.	Ordering code	Basic set	Main contacts Wire cross section
	1-1448-355827	LV80/120-00-P25-0-0-0	Contents consisting of: Plug housing Charger/vehicle connector Main contacts, pin Slider Strain relief	25 mm²



2

**Additional components**

Reducing bushings, voltage coding, pilot contacts or air tube, auxiliary contacts, handles

Figure	Item no.	Ordering code	Description	Charger plug	Vehicle plug
2x 	1-1448-161126	Rb-25/16-Ag	2x reducing bushing main contacts, wire cross section 25 to 16 mm²	●	●
2x 	1-1448-161115	Rb-25/10-Ag	2x reducing bushing main contacts, wire cross section 25 to 10 mm²	●	●
	1-3448-302026	LV80/120-P/0-Lc-bl	1x keying <b>Blue</b> for Li-Ionen batteries	●	---
	1-3448-302021	LV80/120-P/0-Wc-rd	1x keying <b>Red</b> for high-current wet-cell batteries	●	---
	1-2448-134782	LV80/120-P/S-Wc-gy	1x keying <b>Grey</b> for wet-cell batteries	●	---
	1-2448-134771	LV80/120-P/S-Dc-gn	1x keying <b>Green</b> for dry-cell batteries	●	---
	1-2448-134793	LV80/120-P/0-Un-yl	1x keying <b>Yellow</b> Universal, for vehicle plug	---	●
	1-1448-152371	LV80/120-P-Pc-2.5-Ag/S	1x pilot contact adapter with 2x pin contacts for control signals	● optionally ●	●
	1-2448-134737	LV80/120-P-Ata	1x air tube for electrolyte circulation wet-cell battery		---
	1-1448-149568	LV80/120-P-Pc/Ac-2.5-Ag	2x auxiliary contact pin for control signals	●	●
2x/4x 	1-3440-329129	Rb-2.5/1.5-Ag	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.5 mm²	●	●
2x/4x 	1-3440-329118	Rb-2.5/1.0-Ag	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.0 mm²	●	●
2x/4x 	1-3440-329130	Rb-2.5/0.5-Ag	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 0.5 mm²	●	●
	1-1448-153432	LV80/120-H-bk/S	1x screw-on handle <b>Black</b> incl. mounting screws	●	●
	1-1448-153498	LV80/120-H-rd/S	1x screw-on handle <b>Red</b> incl. mounting screws	●	●
	1-2448-134806	LV80/120-H-bk-sp	1x snap-on handle <b>Black</b> mountable without tools	●	●
	1-2448-134975	LV80/120-H-rd-sp	1x snap-on handle <b>Red</b> mountable without tools	●	●

3

**Tools**

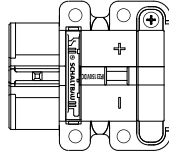
for assembly and disassembly

Item no.	Ordering code	Description	Charger plug	Vehicle plug
1-1440-357320	CTE-U/≤300	1x hydraulic crimping tool without crimp inserts, for main contacts	●	●
1-1440-355163	CTE-U/≤400	1x electrical crimping tool without crimp inserts, for main contacts	●	●
1-1440-354253	CID-W-25/S	1x set crimp insert for CTH/CTE, for main contacts 25 mm²	●	●
1-1440-339551	CTM-H/≤6.00	1x crimping tool for pilot/aux. contacts for 0.5 / 1.0 / 1.5 / 2.5 mm²	●	●
1-1448-135003	LV80/120-ET-Ac	1x extraction tool for pilot and aux. contacts	●	●

## Battery socket

1






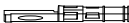

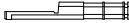

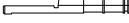






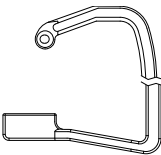



Basic set with main contacts, optional for pilot contacts or with air tube

Wire cross section	Main contacts Basic set	Ordering code	Item no.	Figure
25 mm <sup>2</sup>	Contents consisting of: Battery socket for pilot contacts Main contacts socket Slider Strain relief	LV80/120-00-S25-0-0-0	1-1448-355828	
25 mm <sup>2</sup>	Contents consisting of: Battery socket with air tube Main contacts socket Slider Strain relief	LV80/120-00-S25-1-0-0	1-1448-356583	

## Additional components

2

Reducing bushings, voltage coding, pilot contacts or air tube, auxiliary contacts, handles

Battery socket for pilot contacts	Battery socket with air tube	Description	Ordering code	Item no.	Figure
●	●	2x reducing bushing main contacts, wire cross section 25 to 16 mm <sup>2</sup>	Rb-25/16-Ag	1-1448-161126	 2x
●	●	2x reducing bushing main contacts, wire cross section 25 to 10 mm <sup>2</sup>	Rb-25/10-Ag	1-1448-161115	 2x
●	---	1x keying  for Li-Ionen batteries	LV80/120-0/S-Lc-bl	1-3448-302027	
●	●	1x keying  for high-current wet-cell batteries	LV80/120-0/S-Wc-rd	1-3448-302023	
●	●	1x keying  for wet-cell batteries	LV180/120-P/S-Wc-gy	1-2448-134782	
●	---	1x keying  for dry-cell batteries	LV80/120-P/S-Dc-gn	1-2448-134771	
●	---	2x pilot socket contacts for control signals	LV80/120-S-Pc/Ac-2.5-Ag	1-1448-149579	
---	●	1x air adapter and 1x spacer, already included in the basic set	---	---	
●	●	2x aux. socket contacts for control signals	LV80/120-S-Pc/Ac-2.5-Ag	1-1448-149579	
●	●	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.5 mm <sup>2</sup>	Rb-2.5/1.5-Ag	1-3440-329129	 = 2x/4x
●	●	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 1.0 mm <sup>2</sup>	Rb-2.5/1.0-Ag	1-3440-329118	 = 2x/4x
●	●	2x/4x Reducing bushing pilot/aux. contact wire cross section from 2.5 to 0.5 mm <sup>2</sup>	Rb-2.5/0.5-Ag	1-3440-329130	 = 2x/4x
●	●	1x screw-on handle  incl. mounting screws	LV80/120-H-bk/S	1-1448-153432	
●	●	1x screw-on handle  incl. mounting screws	LV80/120-H-rd/S	1-1448-153498	
●	●	1x snap-on handle  mountable without tools	LV80/120-H-bk-sp	1-2448-134806	
●	●	1x snap-on handle  mountable without tools	LV80/120-H-rd-sp	1-2448-134975	

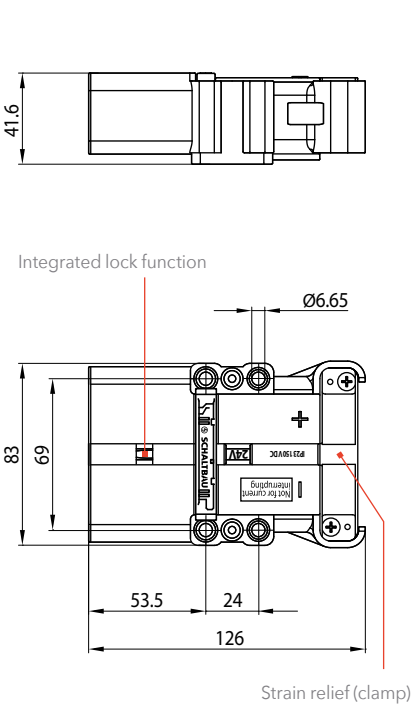
## Tools

3

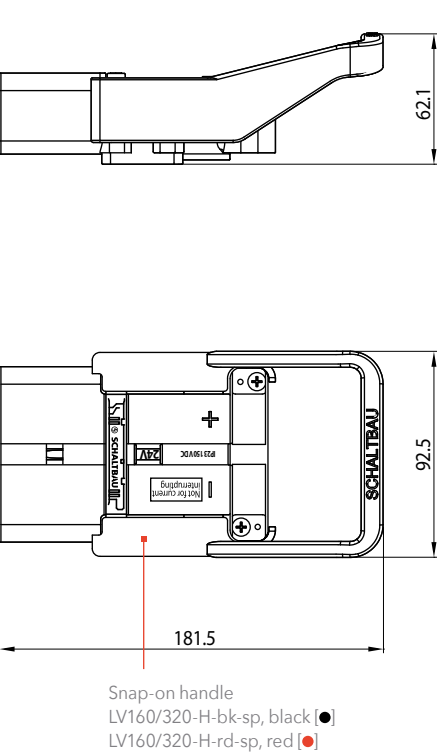
for assembly and disassembly

Battery socket for pilot contacts	Battery socket with air tube	Description	Ordering code	Item no.
●	●	1x hydraulic crimping tool without crimp inserts, for main contacts	CTH-U/≤300	1-1440-357320
●	●	1x electrical crimping tool without crimp inserts, for main contacts	CTE-U/≤400	1-1440-355163
●	●	1x set crimp insert for CTH/CTE, for main contacts 25 mm <sup>2</sup>	CID-W-25/S	1-1440-354253
●	●	1x crimping tool for pilot/aux. contacts for 0.5 / 1.0 / 1.5 / 2.5 mm <sup>2</sup>	CTM-H/≤6.00	1-1440-339551
●	---	1x extraction tool for pilot and aux. contacts	LV80/120-ET-Ac	1-1448-135003

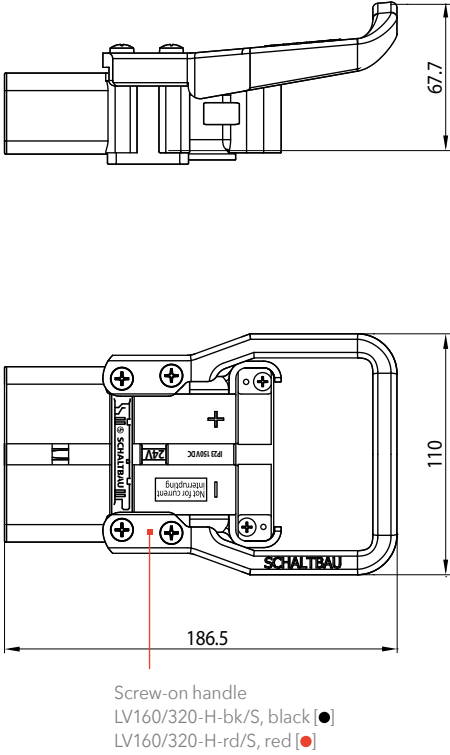
Charger plug / vehicle plug



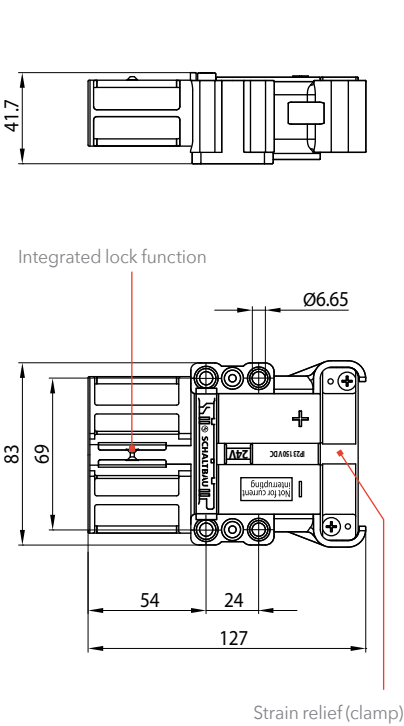
Snap-on handle



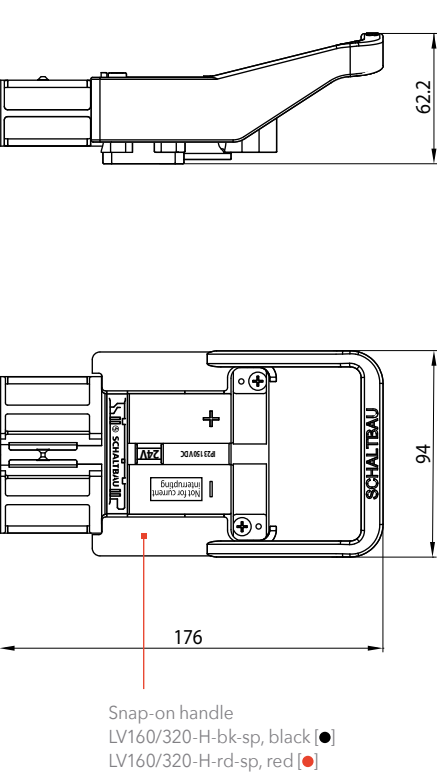
Screw-on handle



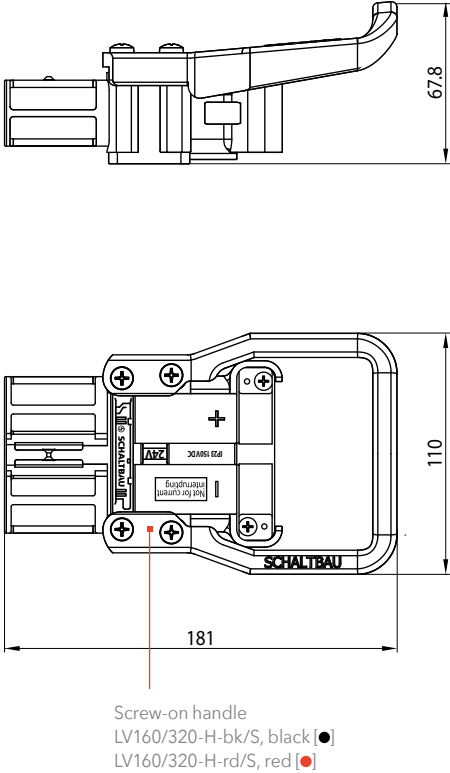
Battery socket



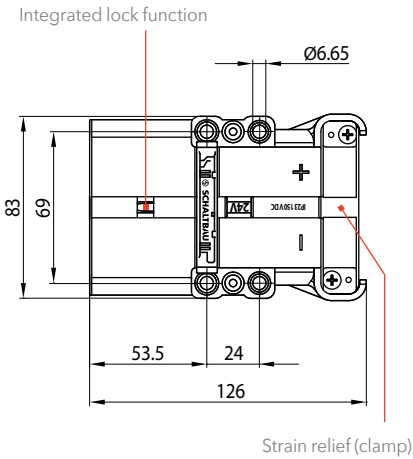
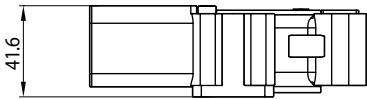
Snap-on handle



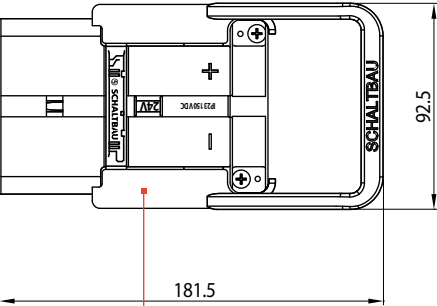
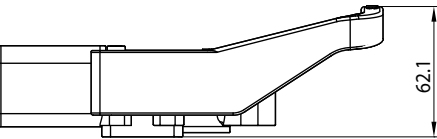
Screw-on handle



Charger plug / vehicle plug

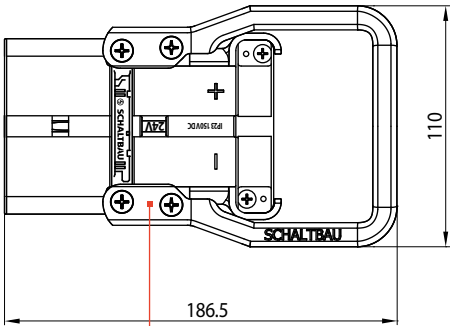
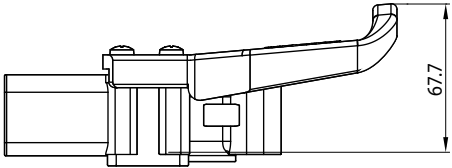


Snap-on handle



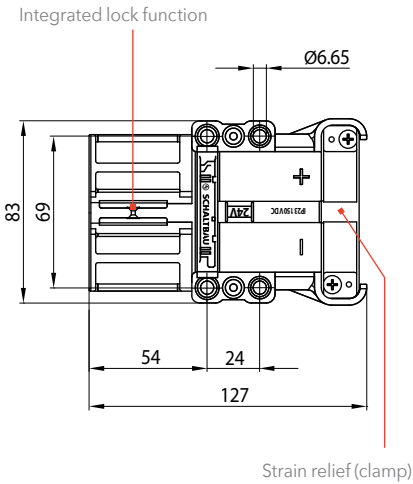
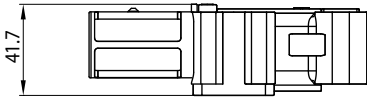
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LV160/320-H-rd-sp, red [●]

Screw-on handle

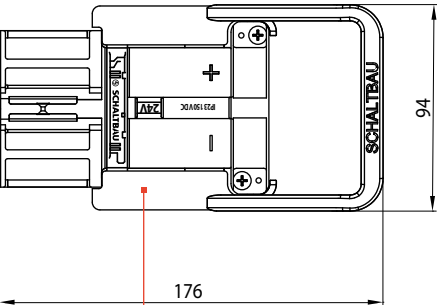
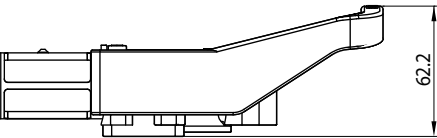


Screw-on handle  
LV160/320-H-bk/S, black [●]  
LV160/320-H-rd/S, red [●]

Battery socket

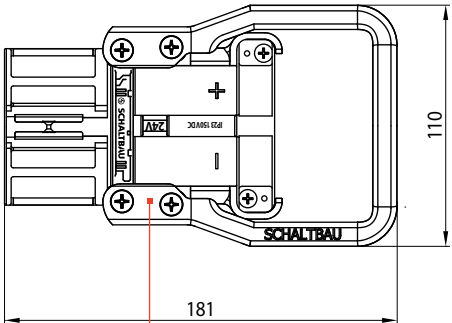
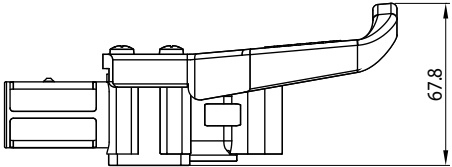


Snap-on handle



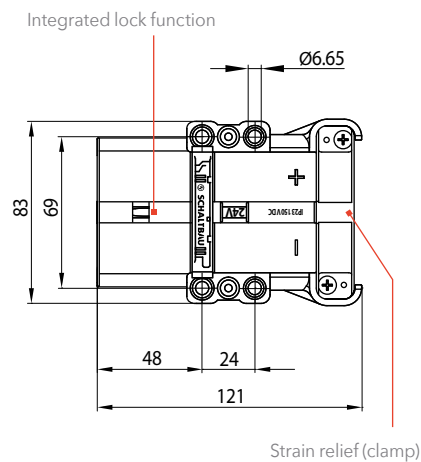
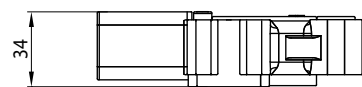
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Screw-on handle

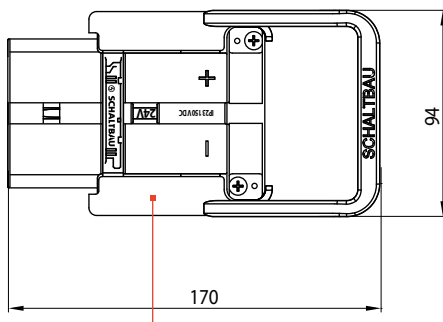
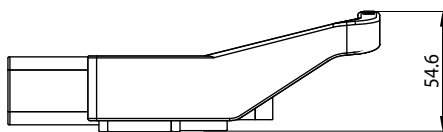


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LV160/320-H-rd/S, red [●]

### Charger plug / vehicle plug

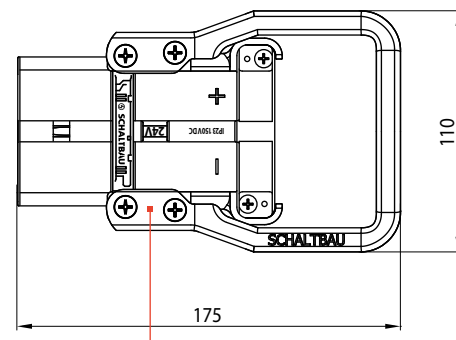
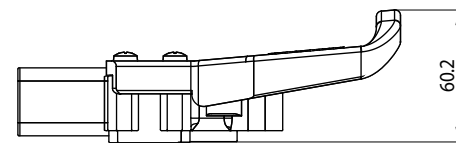


### Snap-on handle



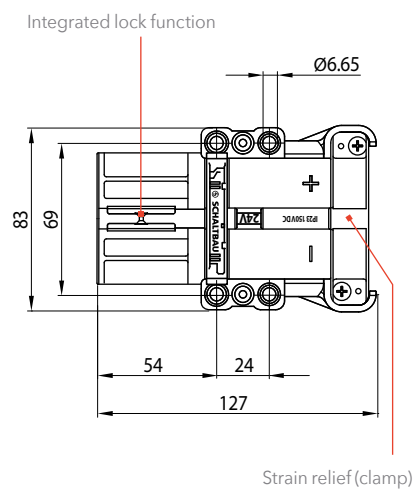
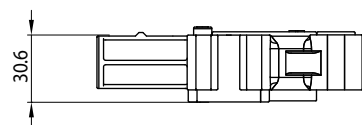
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LV160/320-H-rd-sp, red [●]

### Screw-on handle

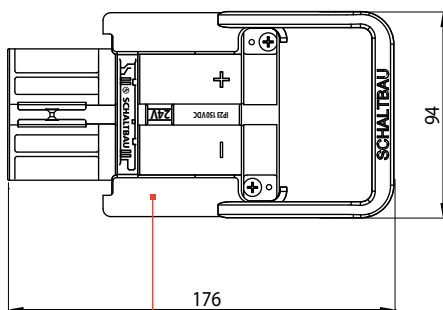
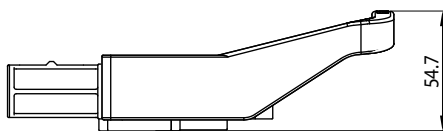


Screw-on handle  
LV160/320-H-bk/S, black [●]  
LV160/320-H-rd/S, red [●]

### Battery socket

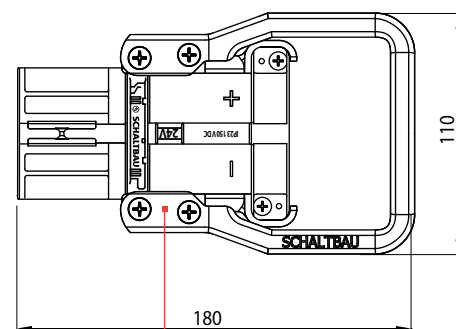
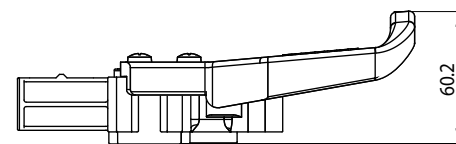


### Snap-on handle



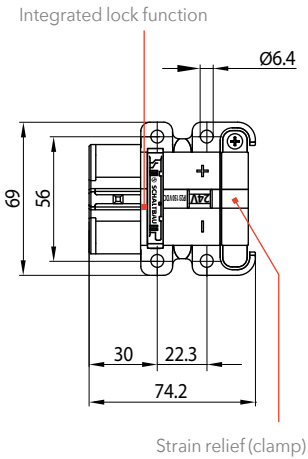
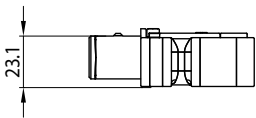
Snap-on handle  
LV160/320-H-bk-sp, black [●]  
LV160/320-H-rd-sp, red [●]

### Screw-on handle

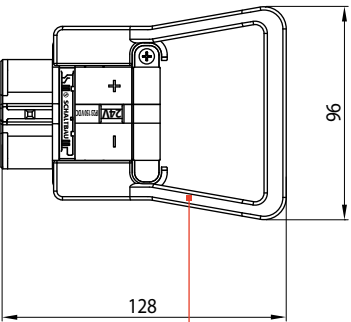
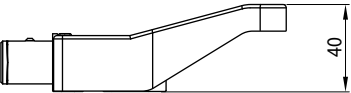


Screw-on handle  
LV160/320-H-bk/S, black [●]  
LV160/320-H-rd/S, red [●]

Charger plug / vehicle plug

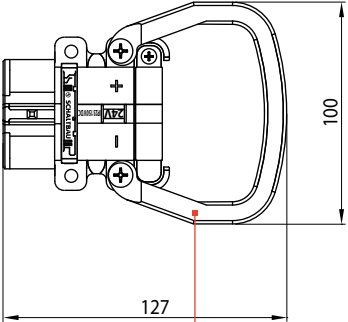
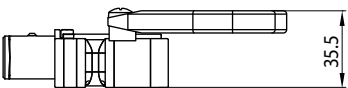


Snap-on handle



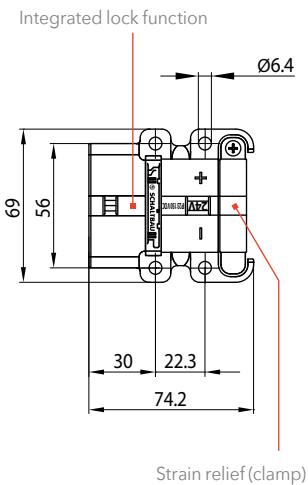
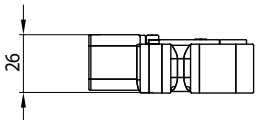
Snap-on handle  
LV80/120-H-bk-sp, black [●]  
LV80/120-H-rd-sp, red [●]

Screw-on handle

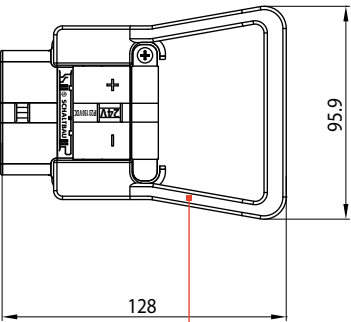
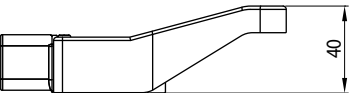


Screw-on handle  
LV80/120-H-bk/S, black [●]  
LV80/120-H-rd/S, red [●]

Battery socket

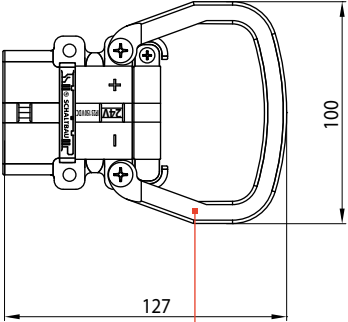
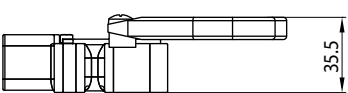


Snap-on handle



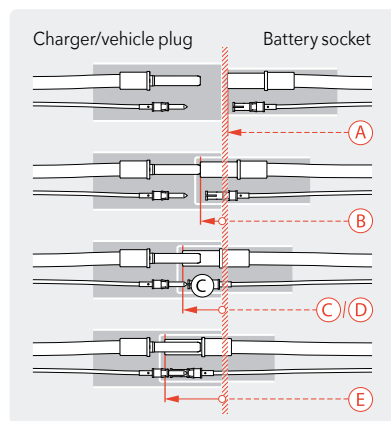
Snap-on handle  
LV80/120-H-bk-sp, black [●]  
LV80/120-H-rd-sp, red [●]

Screw-on handle



Screw-on handle  
LV80/120-H-bk/S, black [●]  
LV80/120-H-rd/S, red [●]

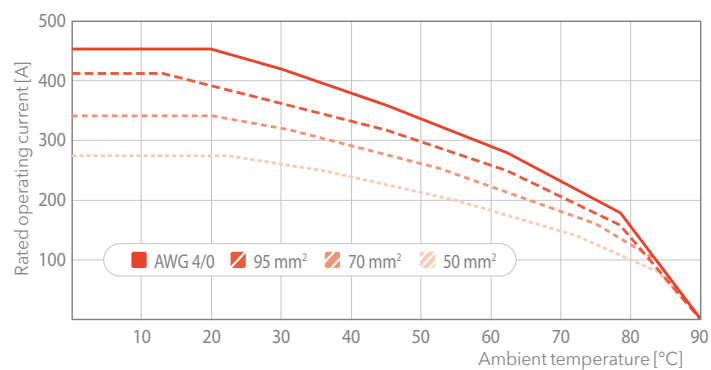
## Plug-in sequence - Mating diagram Charger/vehicle plug - battery socket



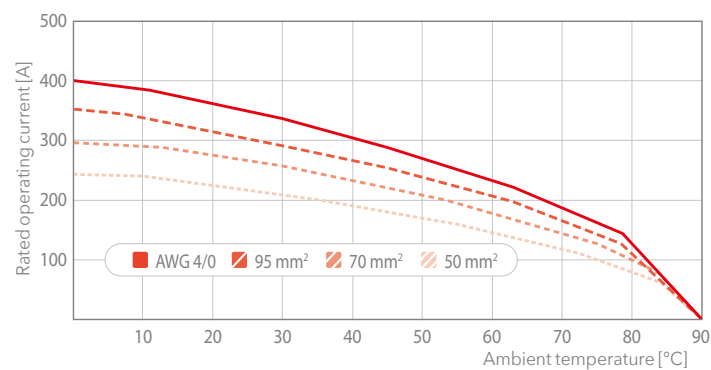
Description	Dimensions in [mm]	LV500	LV320/400	LV160/250	LV80/120
Unmated connection	Ⓐ	0	0	0	0
Main contacts touching Auxiliary contacts unmated Pilot contacts unmated	Ⓑ	17.5	17.5	12.8	5.9
Main contacts partly plugged Auxiliary contacts touching Pilot contacts touching	Ⓒ	33	33	24.2	10.35
	Ⓓ	34	34	28.6	11.4
Mated connection	Ⓔ	45	45	39.7	22.9

## Current carrying capacity curves and derating curves

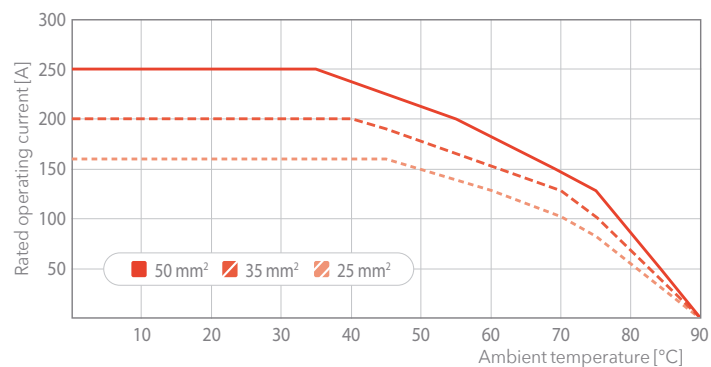
### LV320/400 Current carrying capacity curves\*



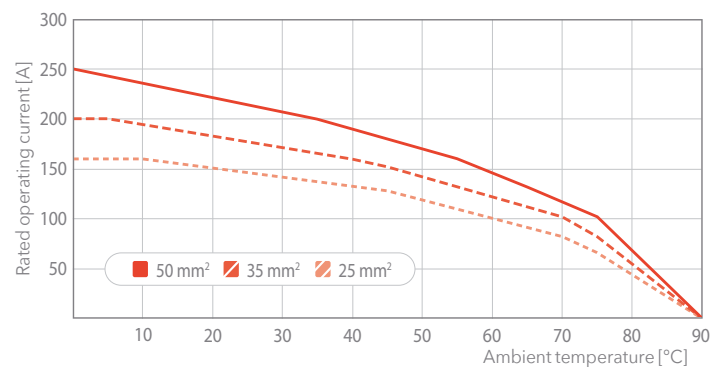
### LV320/400 Derating curves\*



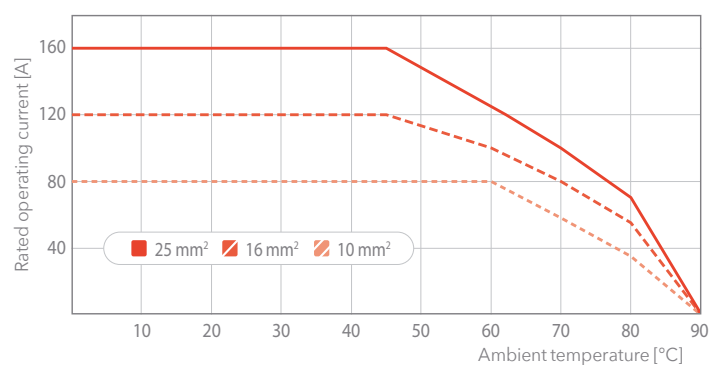
### LV160/250 Current carrying capacity curves\*



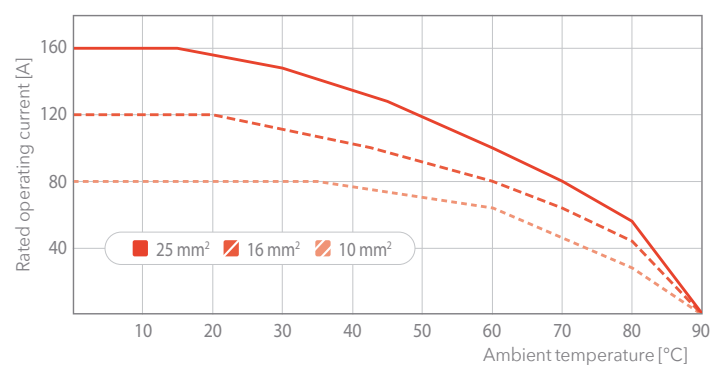
### LV160/250 Derating curves\*



### LV80/120 Current carrying capacity curves\*



### LV80/120 Derating curves\*



Current carrying capacity and derating curves acc. to DIN EN 60512-5-1/2, pilot and auxiliary contacts not energised



Nominal cross-section of cable and crimp connection of main contacts, test with cable H01N2-D, cable length 2 metres each, W crimping

## Installation and safety instructions

The circular industrial connectors dealt with in this catalogue are intended for use with low-voltage systems and special installations. They are designed and tested in compliance with the generally recognised state of the art. However, the improper use, operation, handling, maintenance of or tampering with electric equipment can cause serious or fatal injury to the user or others, and the appliance or other property can be damaged.



Due to our continuous improvement program, the design of our products can be modified at any time. So some features may differ from the descriptions, specifications and drawings in the catalogue. You can download the latest update of the catalogue at > [schaltbau.info/lv-stv-en](https://schaltbau.info/lv-stv-en). The updated catalogue renders the previous issue invalid.

### Installation instructions

- Work on electric equipment may only be performed by a qualified electrician or trained personnel working under the direction and supervision of a qualified electrician according to the applicable rules of electrical engineering.
- The connectors supply power and signals. They are intended for plug-in and detachable connections of components, devices and systems only.
- In order to comply with IEC 61984 make sure that always the current-carrying part of the connector – no matter whether plug or socket – is fitted with female contacts.
- For optimum protection of the cable connection make sure the connector is supplied with a strain relief.
- According to IEC 60352-2 – “Solderless connections” – crimp contacts are required.
- Make sure that there is no undue strain, pressure, flexing and torsion on the cable connection.

### Installation and maintenance instructions LV series



For a detailed list of all safety, installation and maintenance instructions, download our manuals > [A84-M.en](#) and > [A84-MO.en](#)!

### Inverse-polarity protection

In order to guarantee inverse-polarity protection the LV series must always be fitted with a pilot contact adapter or an air tube adapter when intended for intermating with existing connectors of comparable design made by other manufacturers. Schaltbau, therefore, delivers LV series connectors generally with a pilot contact adapter pre-assembled in the socket housing or an enclosed air tube adapter with connectors for electrolyte circulation systems!



Inverse-polarity protection guaranteed when engaging connectors of the same LV series

### Visual inspections

Be sure to make visual inspections regularly. Improper handling of the connector, e.g. when hitting the floor with some impact, can result in breakage, visible cracks and deformation.



Defective and/or leaky parts must be replaced instantaneously

Only authorized and trained personnel are allowed to plan and carry out all mechanical and electrical installations, transport, commissioning, as well as maintenance and repair work. This applies to the observation of the general installation and safety regulations for low-voltage systems as well as the proper use of tools approved for this purpose. Electric equipment requires protection from moisture and dust during installation, operation and storage.



Electrical hazards: Any exposure to the connector's live parts.

Risk of electrical shock!

Observe all applicable national provisions, all safety, accident prevention and environmental regulations as well as the recognized technical rules for safe and proper working.

### Safety instructions

- Carry out regular inspections of all protection and safety devices to see if they work properly.
- According to IEC 61984 connectors used as intended must not be engaged or disengaged when live or under load.
- A connector that does not engage easily requires special attention: Check for the correct orientation or if its contacts got bent or polluted. Never use force! The connector should always engage easily.
- To prevent dust and moisture from entering, make sure that the connector, when not mated, is covered by the protective cap.
- When disengaging a connector, pull the plug and never the cable.
- Use the connector only according to its intended use. Replace or repair damaged parts exclusively with original parts. Any other usage of or tampering with the connector is considered contrary to its intended use. No liability is assumed for damages and accidents caused due to non-compliance with the instructions or improper use of the connector.
- The connectors are designed for special environmental conditions as defined by “Specifications” on page 3 of this catalogue. Any use which goes beyond the limits of these specifications is not regarded as the intended use of the connector.

### Disconnecting when live or under load

Disconnecting the connector when live or under load is generally only permitted under exceptional circumstances or in the case of imminent danger to operational safety according to EN 1175.

If the charging connector is used without auxiliary contacts the life of the main contacts can be considerably shortened because of contact welding when engaging or disengaging the connector.



According to UL 1977, disconnecting the plug connection under load is not permitted. When unmating the connector when live or under load, an arc is generated. That is why disconnecting under load is prohibited in the neighbourhood of explosives and other ignition sources.

## **We enable electrification for a sustainable future**

Schaltbau is a global technology leader specializing in contactors, connectors, switches, and electrical devices.

As pioneers of electrification, Schaltbau has been championing safety on rail for generations. Building on nearly a century of rail experience, with our sub-brand Eddicy we also create future-oriented products and solutions with the highest standards of safety and reliability to switch, connect, control and protect DC applications in energy and e-mobility.

Headquartered in Germany, Schaltbau has a worldwide presence with 12 production and sales sites on all major continents.

Find out more on [www.schaltbau.com](http://www.schaltbau.com).