

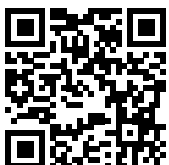
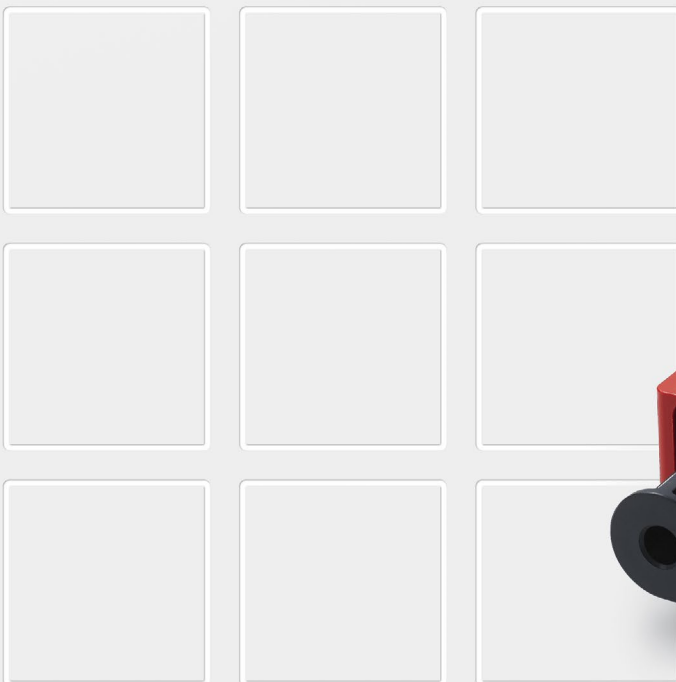
# 1

## Connectors

LV80/120  
LV160/250  
LV320/400  
LV500

High power charging connectors  
for DC applications

Catalogue A84.en



More information  
[schaltbau.com](http://schaltbau.com)

## LV series – high power charging connectors

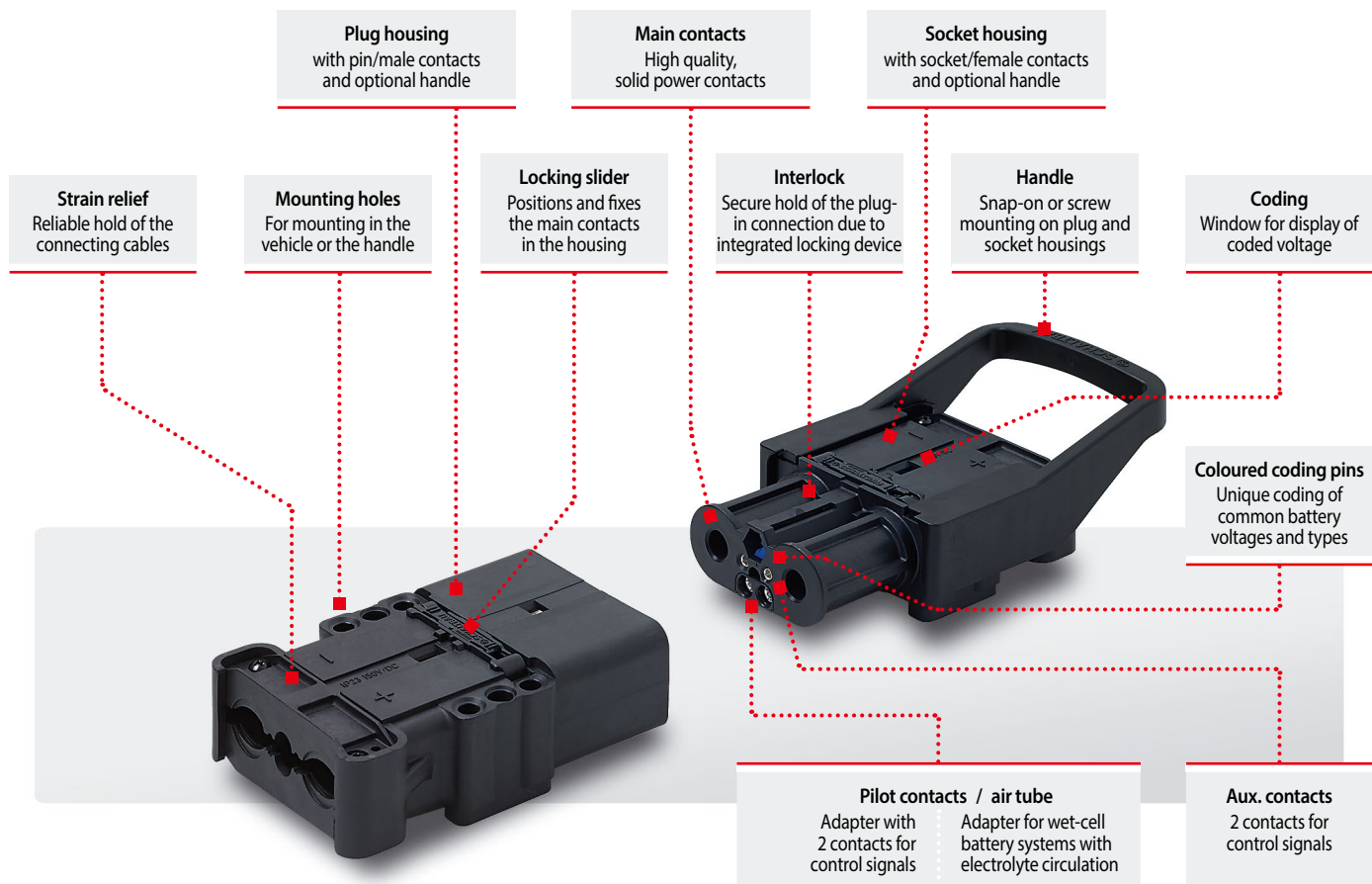
### Schaltbau charging connectors – More power for faster charging

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

LV series

-  **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

## Features

LV series



### 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  $-30\text{ }^{\circ}\text{C}$  up to  $+130\text{ }^{\circ}\text{C}$ .

### 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 system** Voltage and user coding

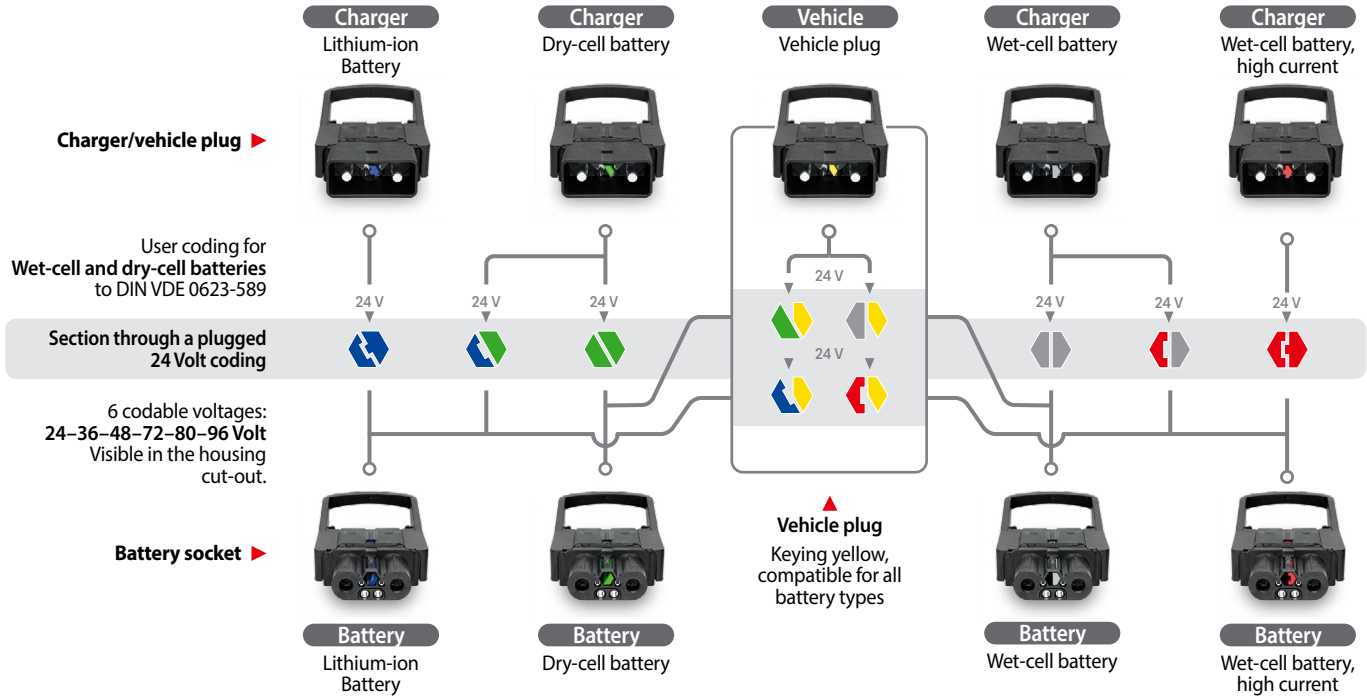
LV series

**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.

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



**Ordering code**

LV series

Example: **LV320/400-bl-S95-4-0-0**

<b>Series</b>	LV500 LV320/400 LV160/250 LV80/120	500 A @ AWG4/0 450 A @ AWG4/0 250 A @ 50 mm <sup>2</sup> 160 A @ 25 mm <sup>2</sup>	<b>Packing</b>	Sets & single parts	0
<b>Keying 24-36-48-72-80-96 V</b>	bl rd gy gn yl 00	Blue, lithium-ion battery Red, wet-cell battery, high current Grey, wet-cell battery Green, dry-cell battery Yellow, vehicle plug, universal w/o	<b>Handle</b>	Snap-on handle, black Snap-on handle, red Screw-on handle, black Screw-on handle, red w/o	1 2 3 4 0
<b>Main contacts, design</b>	P S	Plug, pin contacts Socket, socket contacts	<b>Pilot contacts/air tube, aux. contacts*</b>	2x pilot contacts / 1x air tube 2x aux. contacts	1 2 3 4 5 0
<b>Main contacts, wire cross section</b>	4/0 95 70 50 35 25 16 10	AWG 4/0, LV500, LV320/400 95 mm <sup>2</sup> , LV320/400 70 mm <sup>2</sup> , LV320/400 50 mm <sup>2</sup> , LV320/400, LV160/250 35 mm <sup>2</sup> , with reducing bushing: LV320/400, LV160/250 25 mm <sup>2</sup> , LV80/120, with reducing bushing: LV160/250 16 mm <sup>2</sup> , with reducing bushing: LV80/120 10 mm <sup>2</sup> , with reducing bushing: LV80/120			

\* 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](#)



QR code scan and configure

**Specifications**

Series	Standard	LV500	LV 320/400	LV160/250	LV80/120
<b>Number of contacts max.</b>		① 2 main contacts + optional: ② Adapter for 2 pilot contacts or air tube + ③ 2 aux. contacts			
<b>Contact arrangement</b>					
View on mating face		Charger/vehicle plug      Battery socket			
<b>Plug-in sequence</b>		Main contacts > Aux. contacts > Pilot contacts			
<b>Rated operating current</b>					
Main contacts @20° C	DIN VDE 0623-589 UL CSA	--- 500 A @ AWG 4/0 300 A @ AWG 4/0	390 A @ 95 mm <sup>2</sup> 440 A @ AWG 4/0 280 A @ AWG 4/0	250 A @ 50 mm <sup>2</sup> 250 A @ 50 mm <sup>2</sup> ---	160 A @ 25 mm <sup>2</sup> 120 A @ 25 mm <sup>2</sup> ---
Pilot/aux. contacts @20° C	DIN VDE 0623-589 UL CSA	20 A @ 2.5 mm <sup>2</sup>	20 A @ 2.5 mm <sup>2</sup>	20 A @ 2.5 mm <sup>2</sup>	20 A @ 2.5 mm <sup>2</sup>
<b>Rated voltage</b>					
	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 ---
<b>Voltage keying</b>		24/36/48/72/80/96 V			
<b>Main contacts</b>					
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 mm <sup>2</sup>	---	●*	---	---
	70 mm <sup>2</sup>	---	●*	---	---
	50 mm <sup>2</sup>	---	●	●	---
	35 mm <sup>2</sup>	---	●**	●**	---
	25 mm <sup>2</sup>	---	---	●**	●
	16 mm <sup>2</sup>	---	---	---	●**
	10 mm <sup>2</sup>	---	---	---	●**
<b>Pilot contacts</b>	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 mm <sup>2</sup>	●	●	●	●
with reducing bushing	1.5 mm <sup>2</sup>	●**	●**	●**	●**
with reducing bushing	1.0 mm <sup>2</sup>	●**	●**	●**	●**
with reducing bushing	0.5 mm <sup>2</sup>	●**	●**	●**	●**
<b>Air tube</b>					
Pressure	0.8 bar / 11.6 PSI	●	●	●	●
Connection diameter	6 mm	●	●	●	●
<b>Aux. contacts</b>	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 mm <sup>2</sup>	●	●	●	●
with reducing bushing	1.5 mm <sup>2</sup>	●**	●**	●**	●**
with reducing bushing	1.0 mm <sup>2</sup>	●**	●**	●**	●**
with reducing bushing	0.5 mm <sup>2</sup>	●**	●**	●**	●**
<b>Ingress protection rating (IP code)</b>	DIN EN 60529	IP23***	IP23***	IP23***	IP23***
<b>Temperature range</b>		-30 °C ... +130 °C	-30 °C ... +90 °C	-30 °C ... +90 °C	-30 °C ... +90 °C
<b>Mechanical endurance</b>	DIN EN 1175	>5,000 mating cycles	>5,000 mating cycles	5,000 mating cycles	5,000 mating cycles
<b>Housing material</b>					
PBT GF30 (free of PBB and PBDE)		●	●	●	●
Flammability rating		●	●	●	●
Glow wire resistance	UL 94-V0	●	●	●	●
Acid resistance	IEC 695-2-1 DIN EN 1175	●	●	●	●
<b>Handle, colour</b>					
black / red (for emergency cutout)		●/●	●/●	●/●	●/●
<b>Approvals</b>					

\* 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.

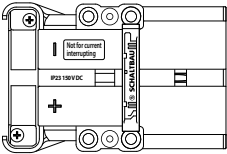
\*\* Reduction of wire cross section

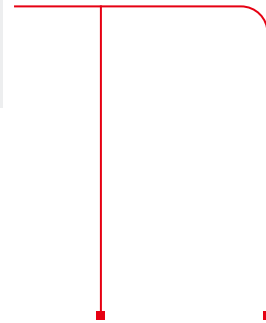
\*\*\* IPx3 in horizontal mounting position

**LV500** Charger and vehicle plug configuration

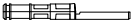


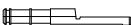

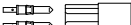






LV series

**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	●	●

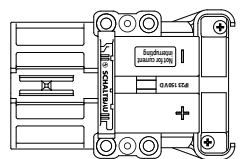
**LV500 Battery socket configuration**

LV series

**Battery socket**

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

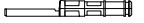

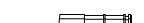


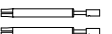
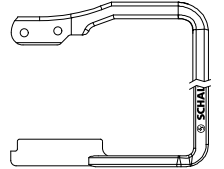
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Main contacts Wire cross section	Basic set	Ordering code	Item no.	Figure
AWG 4/0	Contents consisting of: Battery socket for pilot contacts Main contacts socket Slider Strain relief	LV500-00-S4/0-0-0-0	1-1448-357270	
AWG 4/0	Contents consisting of: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

**Additional components**

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

2

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 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**

for assembly and disassembly

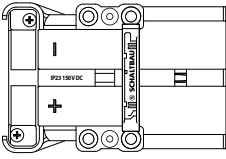
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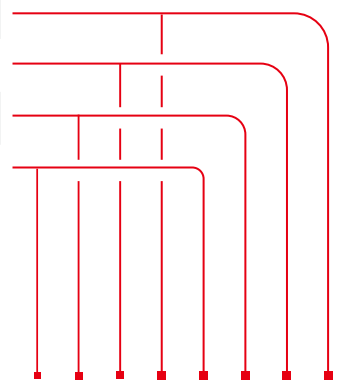
Battery socket for pilot contacts	Battery socket with air tube	Description	Ordering code	Item no.
●	●	1x hydraulic crimping tool without crimp inserts, for main contacts	CTH-U/≤300	1-1440-357320
●	●	1x electrical crimping tool without crimp inserts, for main contacts	CTE-U/≤400	1-1440-355163
●	●	1x set crimp insert for CTH/CTE, for main contacts 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 mm <sup>2</sup>	CTM-H/≤6.00	1-1440-339551
●	---	1x extraction tool for pilot contacts	ETC-C/H	1-1440-267598

**LV320/400** Charger and vehicle plug configuration


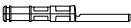




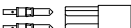
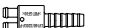




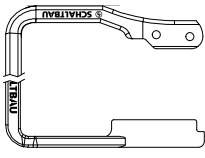
LV series

**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 mm <sup>2</sup>
	1-1448-355833	LV320/400-00-P70-0-0-0-0		70 mm <sup>2</sup>
	1-1448-355831	LV320/400-00-P50-0-0-0-0		50 mm <sup>2</sup>



**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 mm <sup>2</sup>	● --- --- ---	● --- --- ---
	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 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	● ● ● ●	● ● ● ●
1-1440-354255	CID-W-50/S	1x set crimp insert for CTH/CTE, for main contacts 50 mm <sup>2</sup>	● --- --- ---	● --- --- ---
1-1440-354256	CID-W-70/S	1x set crimp insert for CTH/CTE, for main contacts 70 mm <sup>2</sup>	--- ● --- ---	--- ● --- ---
1-1440-354258	CID-W-95/S	1x set crimp insert for CTH/CTE, for main contacts 95 mm <sup>2</sup>	--- --- ● ---	--- --- ● ---
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	● ● ● ●	● ● ● ●

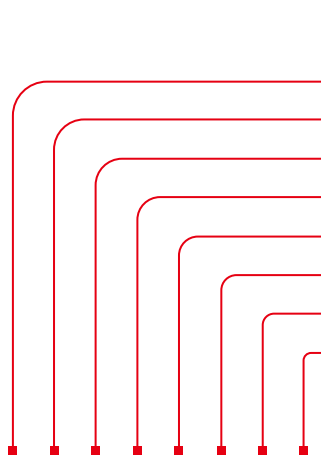
**LV320/400** Battery socket configuration

LV series

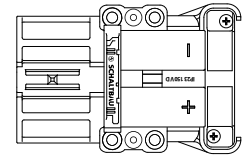
**Battery socket**

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

1



Main contacts Wire cross-section	Basic set	Ordering code	Item no.
AWG 4/0	Contents consisting of:	LV320/400-00-S4/0-0-0-0	1-1448-355838
95 mm <sup>2</sup>	Battery socket for pilot contacts	LV320/400-00-S95-0-0-0	1-1448-355836
70 mm <sup>2</sup>	Main contacts socket	LV320/400-00-S70-0-0-0	1-1448-355834
50 mm <sup>2</sup>	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 mm <sup>2</sup>	Battery socket with air tube	LV320/400-00-S95-1-0-0	1-1448-356591
70 mm <sup>2</sup>	Main contacts socket	LV320/400-00-S70-1-0-0	1-1448-356590
50 mm <sup>2</sup>	Slider	LV320/400-00-S50-1-0-0	1-1448-356586
	Strain relief	LV320/400-00-S50-1-0-0	1-1448-356586



**Additional components**

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

2

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
● ● ● ●	--- -- -- ---	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 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**  
for assembly and disassembly

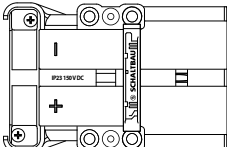
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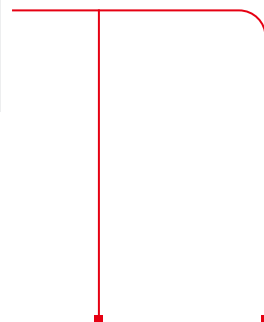
Battery socket for pilot contacts	Battery socket with air tube	Description	Ordering code	Item no.
● ● ● ●	● ● ● ●	1x hydraulic crimping tool without crimp inserts, for main contacts	CTH-U/≤300	1-1440-357320
● ● ● ●	● ● ● ●	1x electrical crimping tool without crimp inserts, for main contacts	CTE-U/≤400	1-1440-355163
--- -- -- ●	--- -- -- ●	1x set crimp insert for CTH/CTE, for main contacts 50 mm <sup>2</sup>	CID-W-50/S	1-1440-354255
--- -- ● ---	--- -- ● ---	1x set crimp insert for CTH/CTE, for main contacts 70 mm <sup>2</sup>	CID-W-70/S	1-1440-354256
--- ● --- ---	--- ● --- ---	1x set crimp insert for CTH/CTE, for main contacts 95 mm <sup>2</sup>	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 mm <sup>2</sup>	CTM-H/≤6.00	1-1440-339551
● ● ● ●	--- -- -- ---	1x extraction tool for pilot contacts	ETC-C/H	1-1440-267598

**LV160/250** Charger and vehicle plug configuration



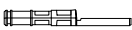




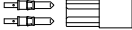
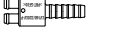








LV series

**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 mm <sup>2</sup>



**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 mm <sup>2</sup>	●	●
2x 	1-1448-161137	Rb-50/25-Ag	2x reducing bushing main contacts, wire cross section 50 to 25 mm <sup>2</sup>	●	●
	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	●	---
	1-3440-329130	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 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	●	●
1-1440-354255	CID-W-50/S	1x set crimp insert for CTH/CTE, for main contacts 50 mm <sup>2</sup>	●	●
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	●	●
1-1448-151481	LV160/250-ET-Ac	1x extraction tool for auxiliary contacts	●	●

Subject to change

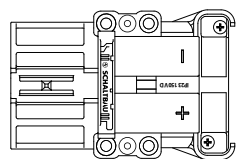
**LV160/250** Battery socket configuration

LV series

**Battery socket**

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




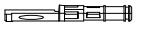
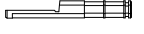
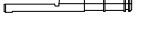

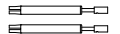



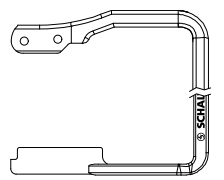
1

Main contacts Wire cross-section	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**

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

2

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**  
for assembly and disassembly

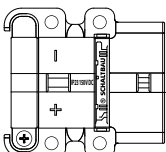
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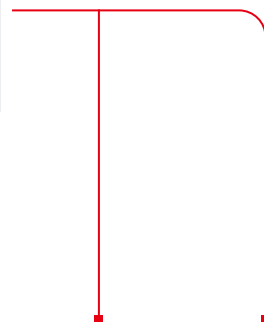
Battery socket for pilot contacts	Battery socket with air tube	Description	Ordering code	Item no.
●	●	1x hydraulic crimping tool without crimp inserts, for main contacts	CTH-U/≤300	1-1440-357320
●	●	1x electrical crimping tool without crimp inserts, for main contacts	CTE-U/≤400	1-1440-355163
●	●	1x set crimp insert for CTH/CTE, for main contacts 50 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

**LV80/120** Charger and vehicle plug configuration





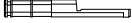
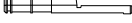
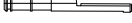
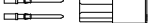





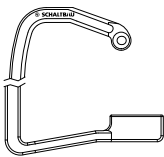
LV series

**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 mm <sup>2</sup>



**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 mm <sup>2</sup>	●	●
2x 	1-1448-161115	Rb-25/10-Ag	2x reducing bushing main contacts, wire cross section 25 to 10 mm <sup>2</sup>	●	●
	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	●	●
	1-2448-134737	LV80/120-P-Ata	1x air tube for electrolyte circulation wet-cell battery	optionally ●	---
	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 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>	●	●
	1-1448-153432	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 mm <sup>2</sup>	●	●
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>	●	●
1-1448-135003	LV80/120-ET-Ac	1x extraction tool for pilot and aux. contacts	●	●

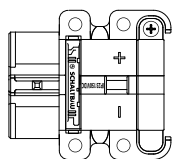
**LV80/120 Battery socket configuration**

LV series

**Battery socket**

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




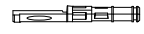







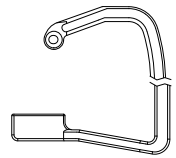
1

Main contacts Wire cross section	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**

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

2

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 <b>Blue</b> for Li-Ionen batteries	LV80/120-0/S-Lc-bl	1-3448-302027	
●	●	1x keying <b>Red</b> for high-current wet-cell batteries	LV80/120-0/S-Wc-rd	1-3448-302023	
●	●	1x keying <b>Grey</b> for wet-cell batteries	LV180/120-P/S-Wc-gy	1-2448-134782	
●	---	1x keying <b>Green</b> 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 <b>Black</b> incl. mounting screws	LV80/120-H-bk/S	1-1448-153432	
●	●	1x screw-on handle <b>Red</b> incl. mounting screws	LV80/120-H-rd/S	1-1448-153498	
●	●	1x snap-on handle <b>Black</b> mountable without tools	LV80/120-H-bk-sp	1-2448-134806	
●	●	1x snap-on handle <b>Red</b> mountable without tools	LV80/120-H-rd-sp	1-2448-134975	

**Tools**

for assembly and disassembly

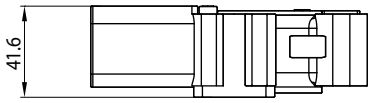
3

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 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

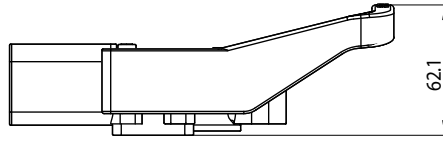
**LV500** Dimension diagrams

Series LV

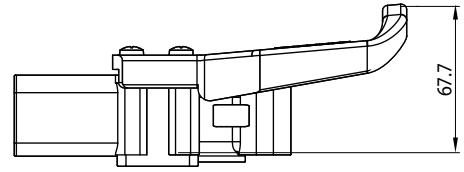
• **Charger plug / vehicle plug**



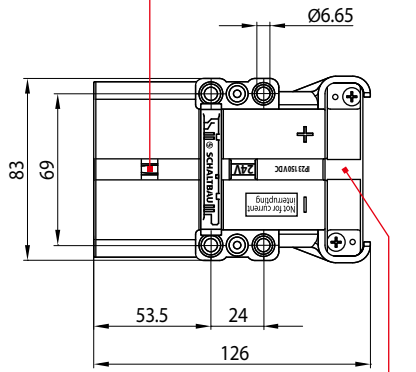
**Snap-on handle**



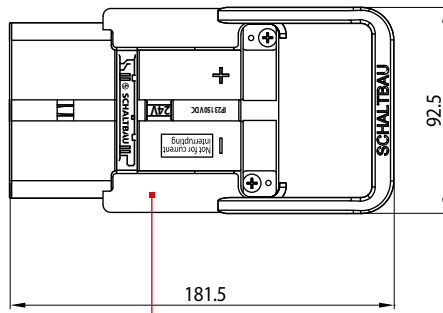
**Screw-on handle**



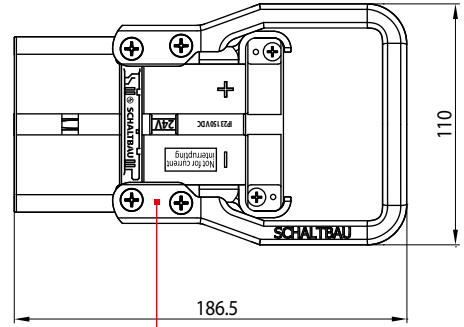
Integrated lock function



Strain relief (clamp)

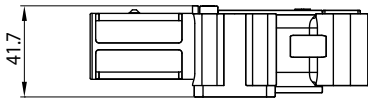


Snap-on handle  
LV160/320-H-bk-sp, black (●)  
LV160/320-H-rd-sp, red (●)

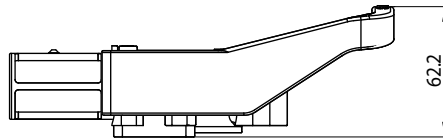


Screw-on handle  
LV160/320-H-bk/S, black (●)  
LV160/320-H-rd/S, red (●)

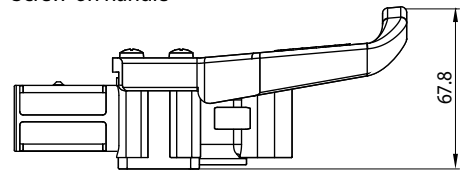
• **Battery socket**



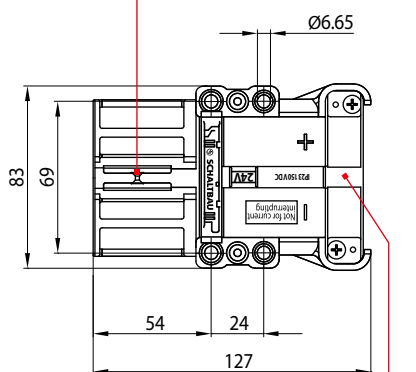
**Snap-on handle**



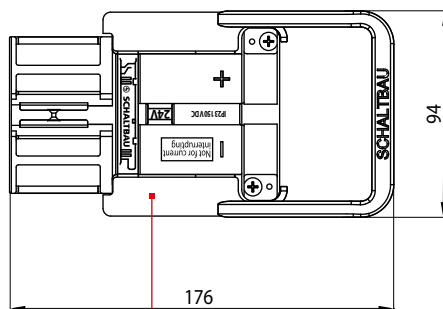
**Screw-on handle**



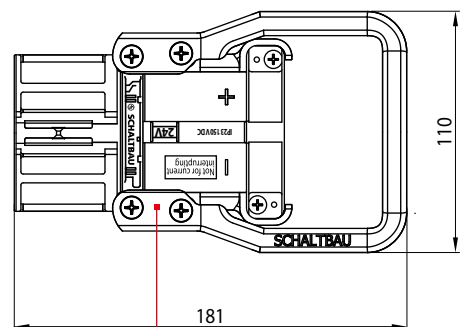
Integrated lock function



Strain relief (clamp)



Snap-on handle  
LV160/320-H-bk-sp, black (●)  
LV160/320-H-rd-sp, red (●)

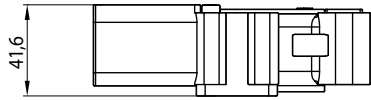


Screw-on handle  
LV160/320-H-bk/S, black (●)  
LV160/320-H-rd/S, red (●)

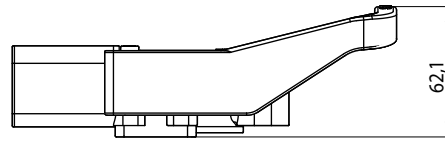
**LV320/400** Dimension diagrams

Series LV

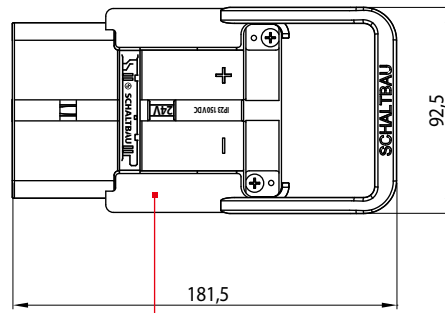
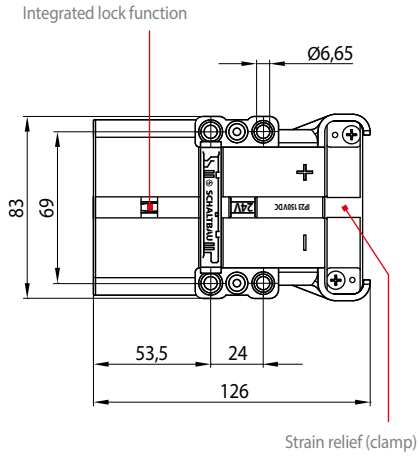
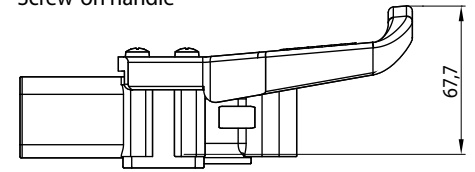
• **Charger plug / vehicle plug**



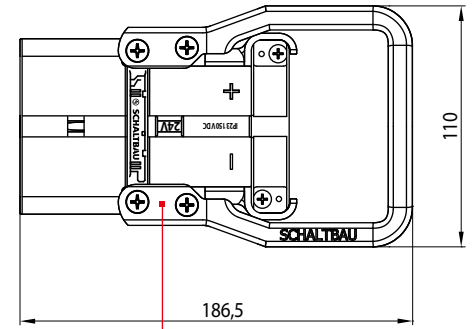
Snap-on handle



Screw-on handle

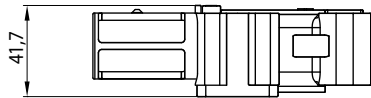


Snap-on handle  
LV160/320-H-bk-sp, black [●]  
LV160/320-H-rd-sp, red [●]

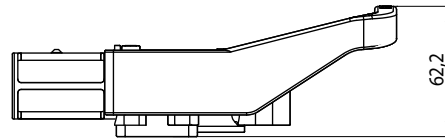


Screw-on handle  
LV160/320-H-bk/S, black [●]  
LV160/320-H-rd/S, red [●]

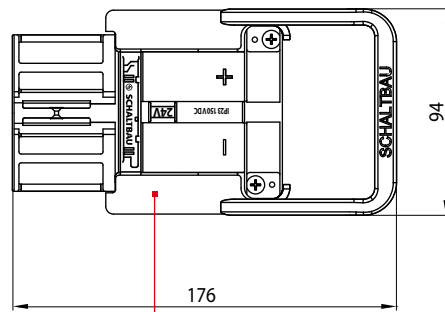
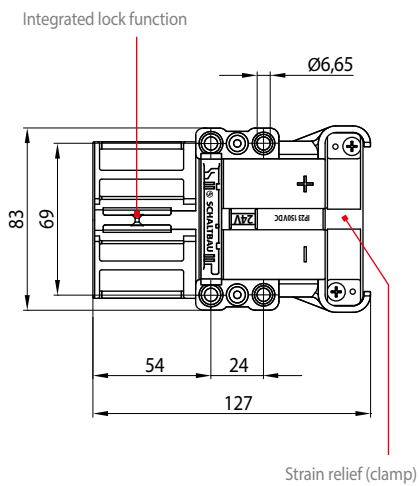
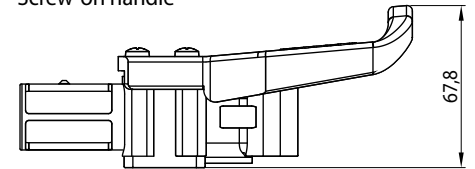
• **Battery socket**



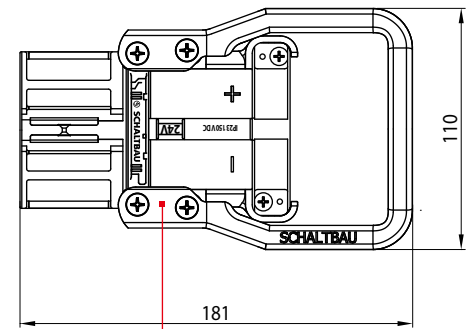
Snap-on handle



Screw-on handle



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

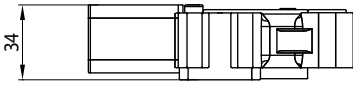


Screw-on handle  
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LV160/320-H-rd/S, red [●]

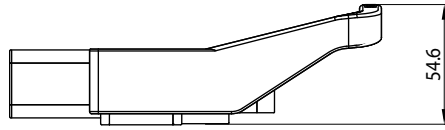
**LV160/250** Dimension diagrams

Series LV

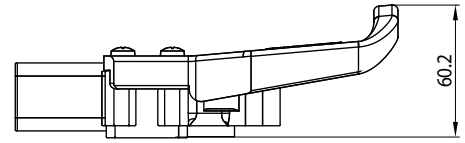
• **Charger plug / vehicle plug**



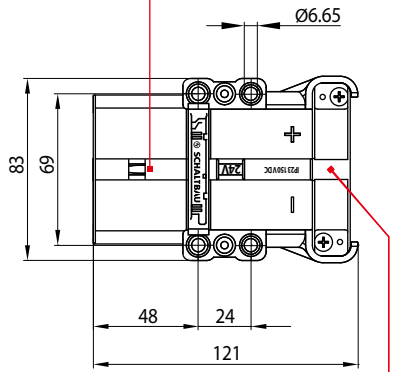
**Snap-on handle**



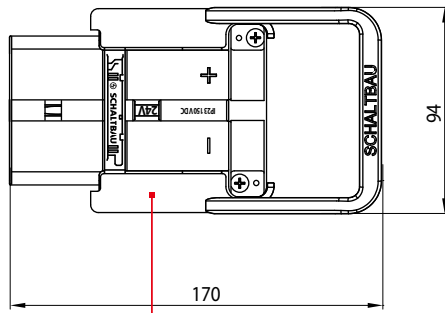
**Screw-on handle**



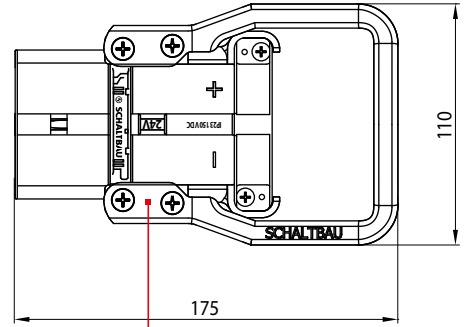
Integrated lock function



Strain relief (clamp)

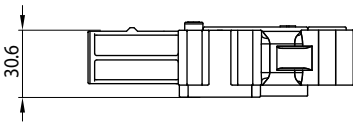


Snap-on handle  
LV160/320-H-bk-sp, black [●]  
LV160/320-H-rd-sp, red [●]

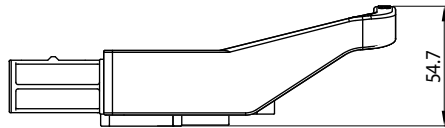


Screw-on handle  
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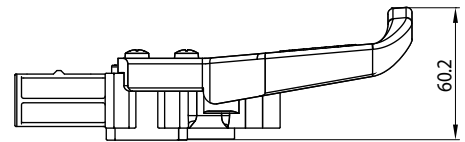
• **Battery socket**



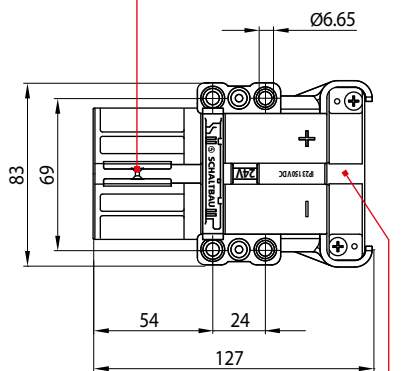
**Snap-on handle**



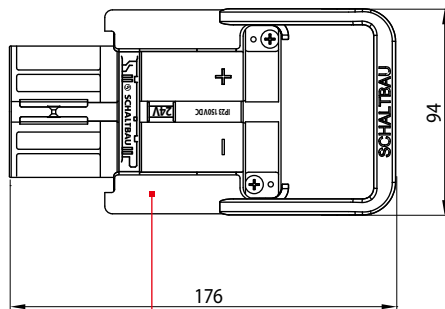
**Screw-on handle**



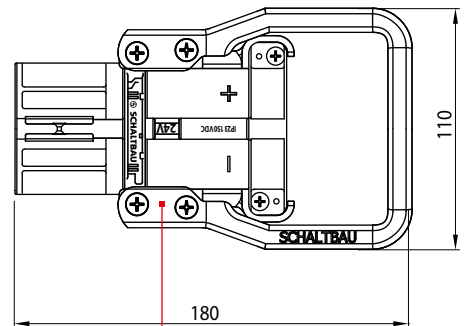
Integrated lock function



Strain relief (clamp)



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

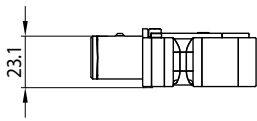


Screw-on handle  
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LV160/320-H-rd/S, red [●]

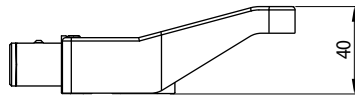
**LV80/120** Dimension diagrams

Series LV

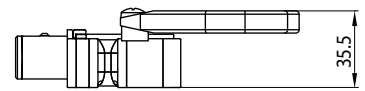
• **Charger plug / vehicle plug**



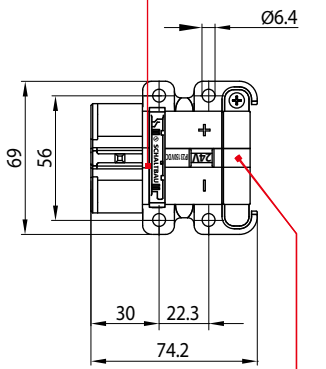
**Snap-on handle**



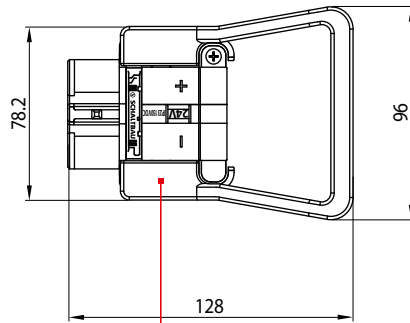
**Screw-on handle**



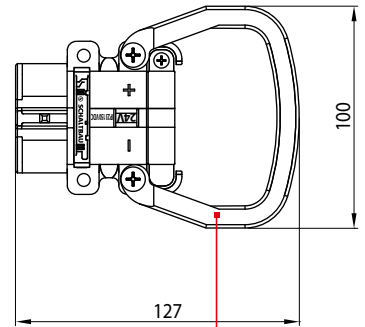
Integrated lock function



Strain relief (clamp)

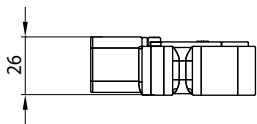


Snap-on handle  
LV80/120-H-bk-sp, black [●]  
LV80/120-H-rd-sp, red [●]

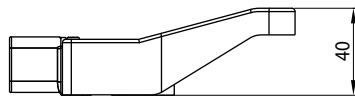


Screw-on handle  
LV80/120-H-bk/S, black [●]  
LV80/120-H-rd/S, red [●]

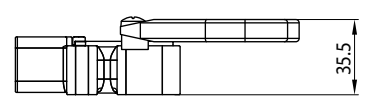
• **Battery socket**



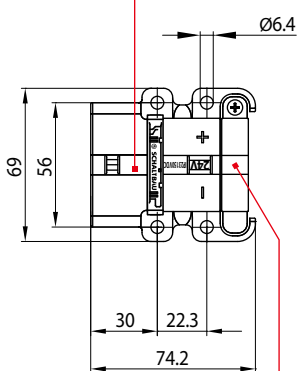
**Snap-on handle**



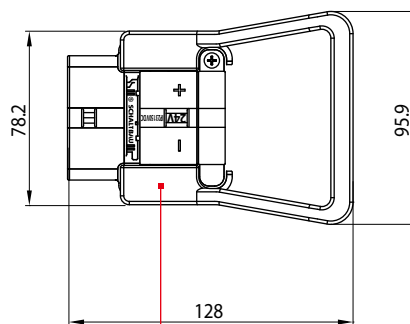
**Screw-on handle**



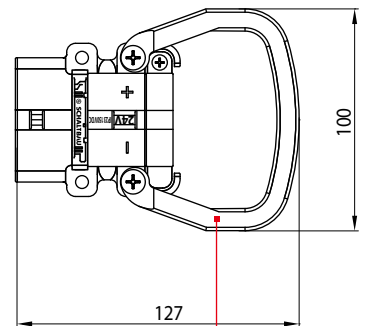
Integrated lock function



Strain relief (clamp)



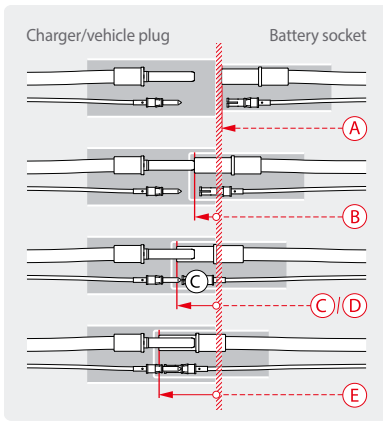
Snap-on handle  
LV80/120-H-bk-sp, black [●]  
LV80/120-H-rd-sp, red [●]



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

LV series

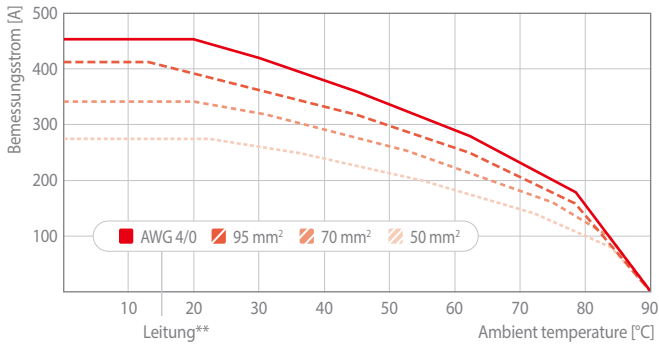


Description	Dimensions in [mm]	LV500	LV320/400	LV160/250	LV80/120
<ul style="list-style-type: none"> <li>Unmated connection</li> </ul>	Ⓐ ▶	0	0	0	0
<ul style="list-style-type: none"> <li>Main contacts touching</li> <li>Auxiliary contacts unmated</li> <li>Pilot contacts unmated</li> </ul>	Ⓑ ▶	17.5	17.5	12.8	5.9
<ul style="list-style-type: none"> <li>Main contacts partly plugged</li> <li>Auxiliary contacts touching</li> <li>Pilot contacts touching</li> </ul>	Ⓒ ▶	33	33	24.2	10.35
<ul style="list-style-type: none"> <li>Main contacts touching</li> <li>Auxiliary contacts touching</li> <li>Pilot contacts touching</li> </ul>	Ⓓ ▶	34	34	28.6	11.4
<ul style="list-style-type: none"> <li>Mated connection</li> </ul>	Ⓔ ▶	45	45	39.7	22.9

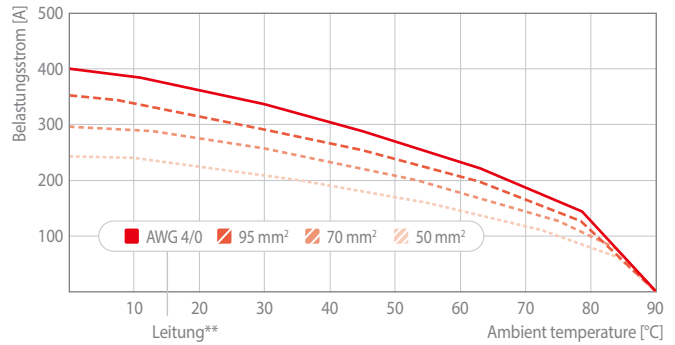
**Current carrying capacity curves and derating curves**

LV series

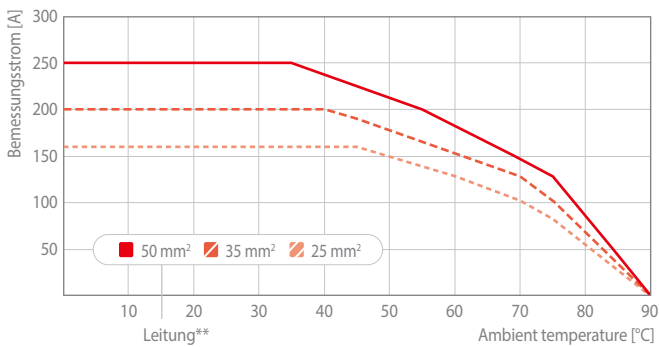
• LV320/400 Current carrying capacity curves\*



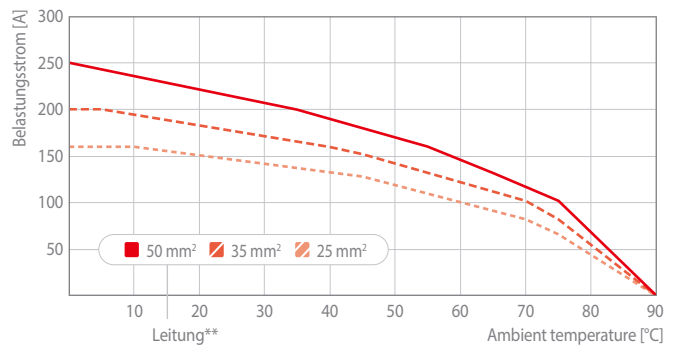
• LV320/400 Derating curves\*



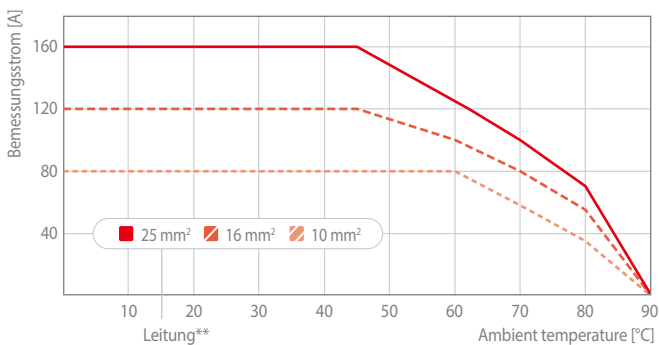
• LV160/250 Current carrying capacity curves\*



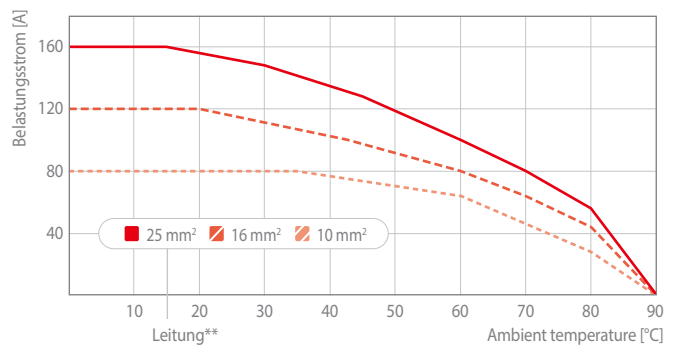
• LV160/250 Derating curves\*



• 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

Series LV

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 programme, 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/download1en](https://schaltbau.info/download1en). The updated catalogue renders the previous issue invalid.



**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.

### 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 manual [A84-M.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.

### 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.**

# Schaltbau GmbH

For detailed information on our products and services visit our website – or give us a call!

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Internet [www.schaltbau.de](http://www.schaltbau.de)  
e-mail [contact@schaltbau.de](mailto:contact@schaltbau.de)

**Find your worldwide contact person. We are here for you, personally!**



with compliments:



The production facilities of Schaltbau GmbH have been IRIS certified since 2008.



Certified to DIN EN ISO 14001 since 2002. For the most recent certificate visit our website.



Certified to DIN EN ISO 9001 since 1994. For the most recent certificate visit our website.

## Electrical Components and Systems for Railway Engineering and Industrial Applications

### Connectors

- Connectors manufactured to industry standards
- Connectors to suit the special requirements of communications engineering (MIL connectors)
- Charging connectors for battery-powered machines and systems
- Connectors for railway engineering, including UIC connectors
- Special connectors to suit customer requirements

### Snap-action switches

- Snap-action switches with positive opening operation
- Snap-action switches with self-cleaning contacts
- Snap-action switch made of robust polyetherimide (PEI)
- Snap-action switch with two galvanically isolated contact bridges
- Special switches to suit customer requirements

### Contactors Emergency disconnect switches

- Single and multi-pole DC contactors
- High-voltage AC/DC contactors
- Contactors for battery powered vehicles and power supplies
- Contactors for railway applications
- Terminal bolts and fuse holders
- DC emergency disconnect switches
- Special contactors to suit customer requirements

### Electrics for rolling stock

- Equipment for driver's cab
- Equipment for passenger use
- High-voltage switchgear
- High-voltage heaters
- High-voltage roof equipment
- Equipment for electric brakes
- Design and engineering of train electrics to customer requirements

We reserve the right to make technical alterations without prior notice.

For updated product information visit [www.schaltbau-gmbh.de](http://www.schaltbau-gmbh.de).

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