



■ Transportation Solutions

USB Charging Systems

**Smart solutions for charging mobile phones,
tablets and laptops on rail vehicles**

USB Charging Systems

SAFELY CHARGED



USB Charging Ports
DC 24 V
2 x USB-A
Rear mounting



USB Charging Ports
DC 24 V
2 x USB-A
Front mounting



USB Charging System
DC 24 - 110 V
DC/DC converter 60 W PD
+ charging cables



Socket-outlets Type F
With built-in USB Charger
1 x USB-A / 1 x USB-C



Socket-outlets Type E
With built-in USB Charger
1 x USB-A / 1 x USB-C



Socket-outlets double C
With built-in USB Charger
2 x USB-C

Comply with the standards
EN 50155, EN 50121-3-2, EN 61373 and EN 45545-2

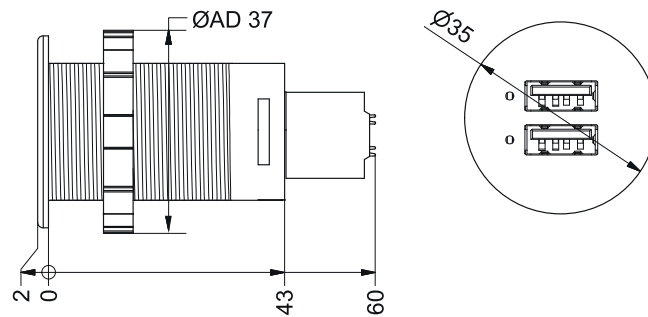
USB Charging Systems

USB Charging Ports DC 24 V / 2 x USB-A



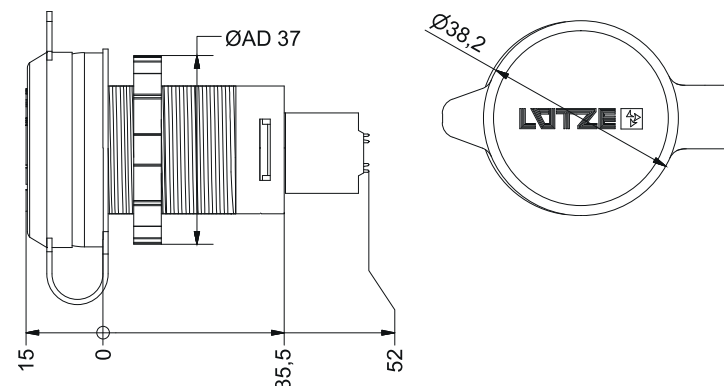
Rear mounting

Part no.	819005	819016
Supply voltage	DC 24 V	
Voltage range	DC 16,8 to 30 V	
Rated current	700 mA	
Output voltage	DC 5 V \pm 0,25 V	
Output current per port	1,5 A	
Status LED per port	green	blue
Temperature range	-40 °C to +70 °C	
Efficiency	90%	
Contact durability	5000	
Output protection	short circuit / overload	
Galvanic isolation	no	
Connection type	Push-in terminal pluggable, with loop through function (part no. 819902, not included in delivery) 0,2 mm ² to 1,5 mm ²	



Rear mounting with cover cap (IP65 in the front)

Part no.	819009	819017
Supply voltage	DC 24 V	
Voltage range	DC 16,8 to 30 V	
Rated current	700 mA	
Output voltage	DC 5 V \pm 0,25 V	
Output current per port	1,5 A	
Status LED per port	green	blue
Temperature range	-40 °C to +70 °C	
Efficiency	90%	
Contact durability	5000	
Output protection	short circuit / overload	
Galvanic isolation	no	
Connection type	Push-in terminal pluggable, with loop through function (part no. 819902, not included in delivery) 0,2 mm ² to 1,5 mm ²	

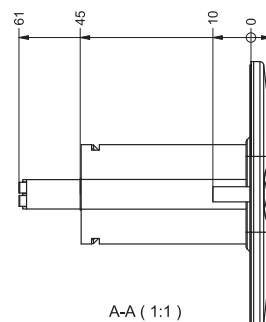
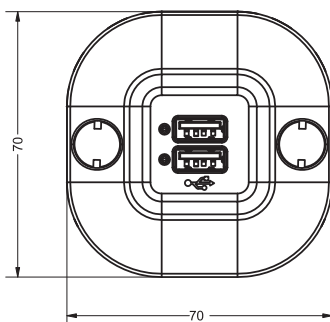


USB Charging Ports DC 24 V / 2 x USB-A



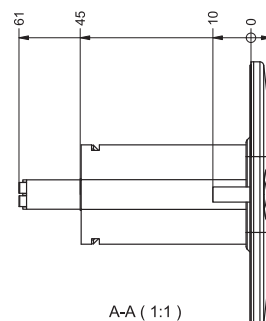
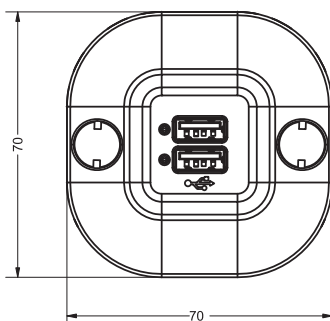
Front mounting, white

Part no.	819019	819021
Supply voltage	DC 24 V	
Voltage range	DC 16,8 to 30 V	
Rated current	700 mA	
Output voltage	DC 5 V \pm 0,25 V	
Output current per port	1,5 A	
Status LED per port	green	blue
Temperature range	-40 °C to +70 °C	
Efficiency	90%	
Contact durability	5000	
Output protection	short circuit / overload	
Galvanic isolation	no	
Connection type	Push-in terminal pluggable, with loop through function (part no. 819902, not included in delivery) 0,2 mm ² to 1,5 mm ²	



Front mounting, anthracite

Part no.	819020	819022
Supply voltage	DC 24 V	
Voltage range	DC 16,8 to 30 V	
Rated current	700 mA	
Output voltage	DC 5 V \pm 0,25 V	
Output current per port	1,5 A	
Status LED per port	green	blue
Temperature range	-40 °C to +70 °C	
Efficiency	90%	
Contact durability	5000	
Output protection	short circuit / overload	
Galvanic isolation	no	
Connection type	Push-in terminal pluggable, with loop through function (part no. 819902, not included in delivery) 0,2 mm ² to 1,5 mm ²	



USB Charging Systems

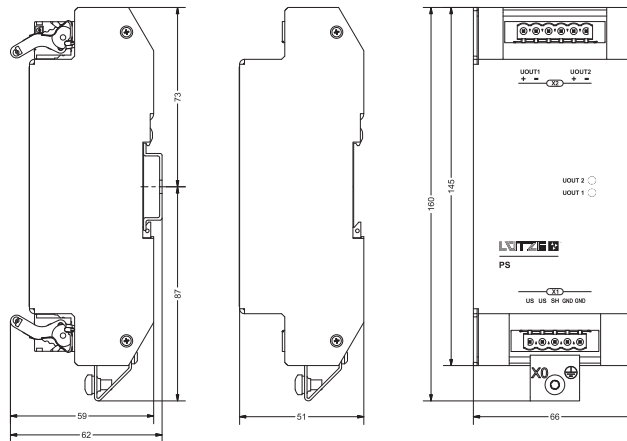
USB Charging System DC 24 - 110V

Consists of a DC/DC converter and suitable charging cable



DC/DC converter

Part no.	819001	819003	819024
Supply voltage	DC 24 to 110 V		
Voltage range	DC 16,8 to 137,5 V		
Output voltage	DC 5,3 - 20 V \pm 0,25 V		
Output current per port	2,1 A	1,5 A	3 A
Status LED per port	green		
Temperature range	-40 °C to +70 °C		
Output protection	short circuit / overload		
Galvanic isolation	yes		
Connection type	Push-in terminal pluggable 0,2 mm ² to 2,5 mm ²		



Charging cables with 2 x USB-A port

Working as Dedicated Charging Port (DCP) acc. to USB Battery Charging Specification BC 1.2

Part no.	819900.0100	819900.0200	819905.0200
Rated current per port	1,5 A	1,5 A	2,4 A
Cable length	1 m	2 m	2 m
Temperature range	-40 °C to +70 °C		
Contact durability	1500		
Cable construction	4 x AWG 22		

Charging cable with 2 x USB-A port

Especially suitable for charging Apple devices



Part no.	819906.0200
Rated current per port	2,1 A
Cable length	2 m
Temperature range	-40 °C to +70 °C
Contact durability	1500
Cable construction	4 x 0,5 mm ²

Charging cable with 1 x USB-A port and 1 x USB-C port



Part no.	819907.0200
Rated current USB-A	2,1 A
Rated current USB-C	1,5 A
Cable length	2 m
Temperature range	-40 °C to +70 °C
Contact durability USB-A	3000
Contact durability USB-C	10000
Cable construction	4 x 0,5 mm ²

Charging cable with 1 x USB-C port



Part no.	819908.0200
Rated current USB-C	3 A
Cable length	2 m
Temperature range	-40 °C to +70 °C
Contact durability USB-C	10000
Cable construction	6 x 0,5 mm ²

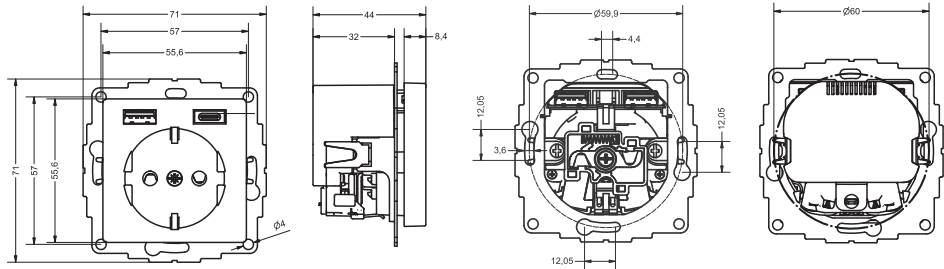
USB Charging Systems

Socket-outlets with integrated USB Charger



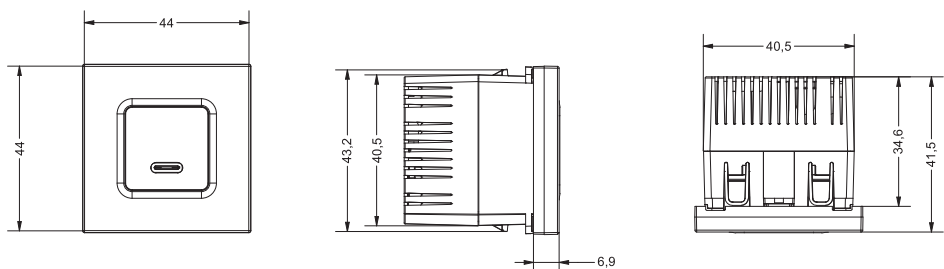
Type F with 1 x USB-A and 1 x USB-C port

Part no.	810028	810029
Rated voltage socket	AC 250 V	
Rated current socket	16 A	
Connector type socket	F (CEE 7/3)	
Contact durability socket	5000	
Output voltage	DC 5 V ± 0,25 V	
Output current	3 A	
Output power	15 W for both ports	
Contact durability USB-A	5000	
Contact durability USB-C	10000	
Color	Matt white	Anthracite
Temperature range	-25 °C to +55 °C	
Efficiency	> 86%	
Stand-by consumption	< 70 mW	
Galvanic isolation	yes	
Connection type	Spring terminal 1,5 mm ² to 2,5 mm ²	



USB-C 65W Power Delivery charger

Part no.	819026
Input Voltage	220-250 V AC, 50 Hz
Input Current	max 0,5 A
Output Voltage	DC 5 V - 20 V
Output Current	3.0 A - 3,25 A
Power Output	max. 65 W
Energy Efficiency	≥80 %
Power Disipation (Standby consumption)	≥50 mW
Connector	Type USB-C
Expected lifetime	at full load 20000 h

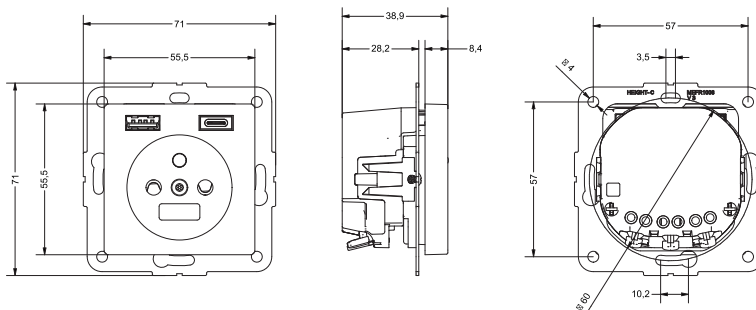


Socket-outlets with integrated USB Charger



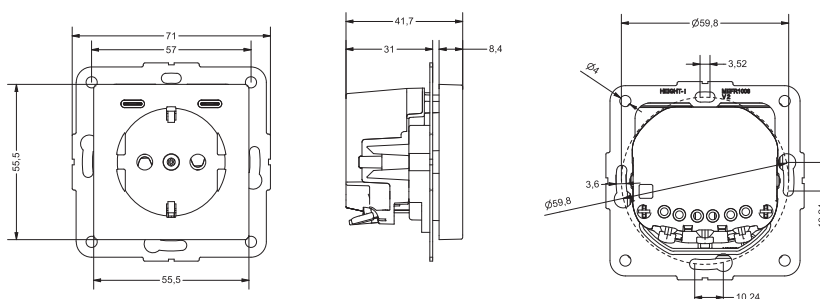
Type E with 1 x USB-A and 1 x USB-C port

Part no.	810062	810063
Rated voltage socket	AC 250 V	
Rated current socket	16 A	
Connector type socket	E (CEE 7/5)	
Contact durability socket	25000	
Output voltage	DC 5 V ± 0,25 V	
Output current	3A	
Output power	15 W for both ports	
Contact durability USB-A	5000	
Contact durability USB-C	10000	
Color	Matt white	Anthracite
Temperature range	-25 °C to +55 °C	
Efficiency	> 86%	
Stand-by consumption	< 50 mW	
Galvanic isolation	yes	
Connection type	Spring terminal 1,5 mm ² to 2,5 mm ²	



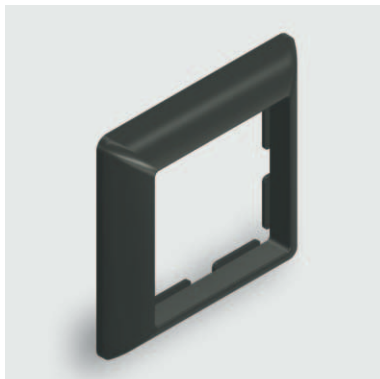
Type F with 2 x USB C port

Part no.	810050	810051
Rated voltage socket	AC 250 V	
Rated current socket	16 A	
Connector type socket	F (CEE 7/5)	
Contact durability socket	25000	
Output voltage	DC 5 V ± 0,25 V	
Output current	3 A	
Output power	15 W for both ports	
Contact durability USB-C	10000	
Color	Matt white	Anthracite
Temperature range	-25 °C to +55 °C	
Efficiency	> 86%	
Stand-by consumption	< 50 mW	
Galvanic isolation	yes	
Connection type	Spring terminal 1,5 mm ² to 2,5 mm ²	

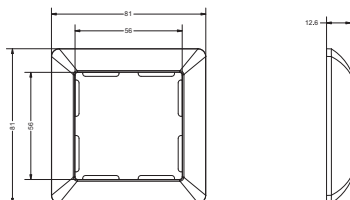


USB Charging Systems

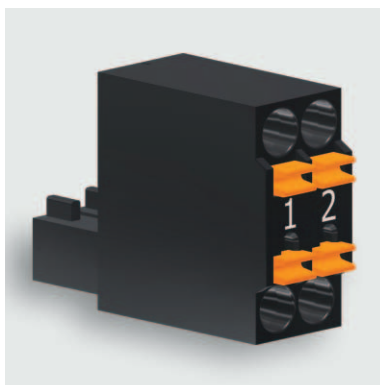
Cover frames



Part no.	810034	810035
Color	Matt white	Anthracite
Suitable for socket-outlet part no.	810028 810030	810029 810031

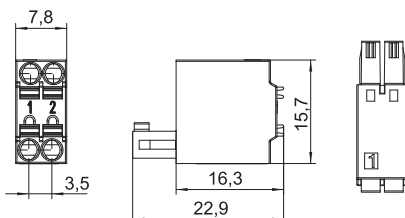


Accessories



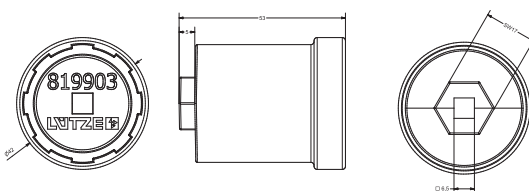
Pluggable terminal block for USB charging ports DC 24 V

Part no.	819902
Rated voltage	160 V
Rated current	8 A
Pole number	2
Pin spacing	3,5 mm
Connection type	Push-In spring terminal, pluggable with loop-through function 0,2 mm ² to 1,5 mm ²
Suitable for	Part no. 819005, 819009, 819016, 819017, 819019 - 819022



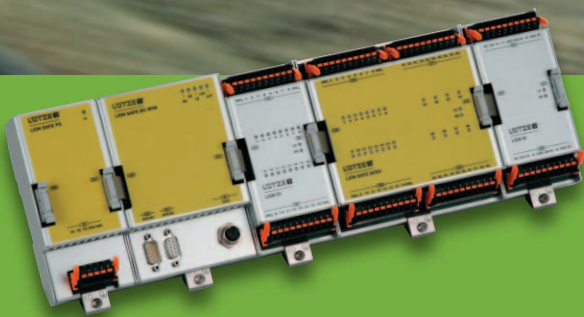
Assembly tool for USB charging ports DC 24 V (rear mounting)

Part no.	819903
Drives	Square drive 1/4" and wrench size 17
Suitable for	Part no. 819005, 819009, 819016, 819017



We are on Track!

Electronic control for rail vehicles



Control Technology



Interface



Indication



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