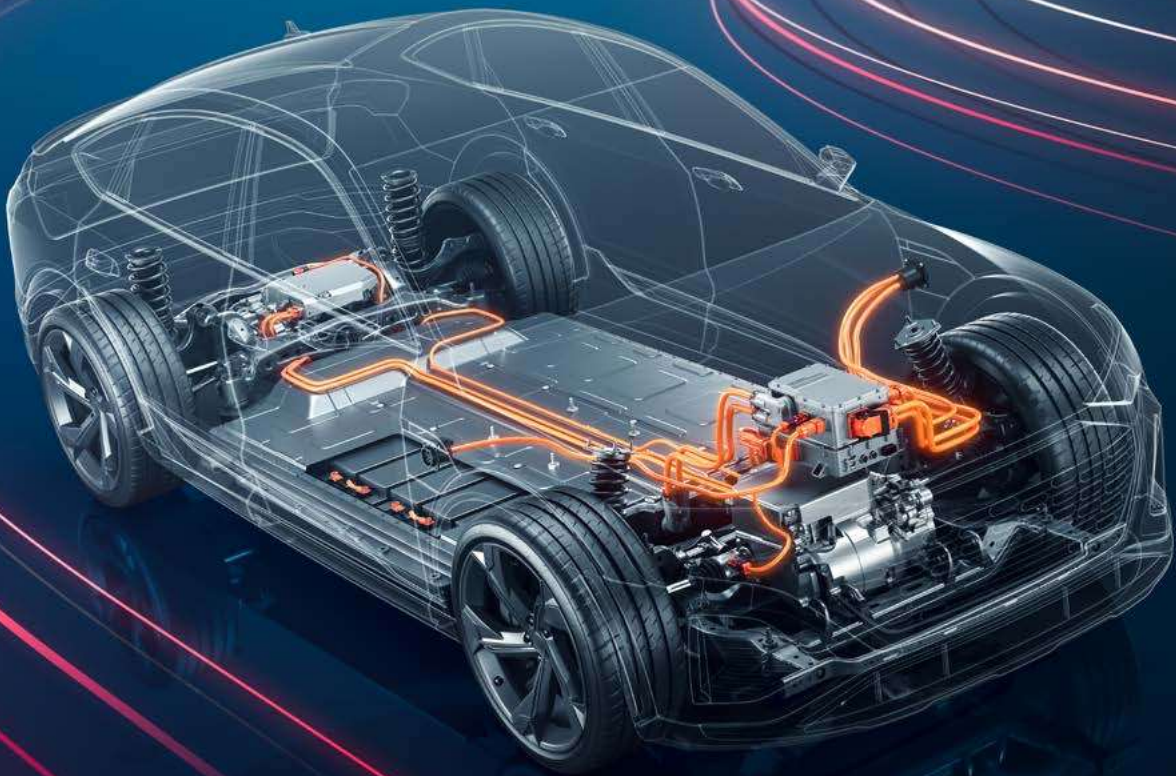


High-Voltage and Low-Voltage Products

Connector Systems for E-Mobility

AUTOMOTIVE





Rosenberger Automotive – a Synonym for Quality and Innovation

On the following pages we present the high-quality Rosenberg high-voltage connector systems developed in our automotive business area. They fulfill the tough requirements of the automotive industry.



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The Rosenberger online catalog contains the current power connector systems for e-mobility with specific details, including data sheets, assembly instructions and panel piercings.



www.rosenberger.com/ok/hv

Rosenberger Automotive

At Rosenberger, we firmly believe in developing technology for the future. We are currently working on products and solutions that will shape our lives in the future.

We want to get faster and smarter in what we do and how we do it. Advanced driver assistance systems, connected car technology, electric mobility, infotainment systems – Rosenberger is extremely committed to designing innovative connector systems for future automotive electronics.

Rosenberger Automotive Data Connector Systems

In 2000, Rosenberger started working in the automotive sector, designing and producing customized and standard products for these specific markets.

Rosenberger Automotive is a specialist development partner when it comes to integrating connector designs and customer-specific solutions with the highest quality and best performance – while continuing to meet customer price targets.

The contact systems have been specially designed to fulfill the tough requirements of the automotive industry. From the beginning, Rosenberger has developed a close and open relationship with its customers.

The priority in the most automotive applications, such as autonomous driving and driver assistance systems, is to ensure safety. It is necessary to determine exact positions, continuously calculate routes, and detect and classify objects. High data volumes from several cameras, various sensors, and navigation sources must be combined and transported for this purpose – in real time.

Application Areas

- Autonomous driving
- Driver assistance systems
- Navigation
- Infotainment
- Rear entertainment
- Internet and mobile communication
- “WiGig” (Wireless Gigabit)

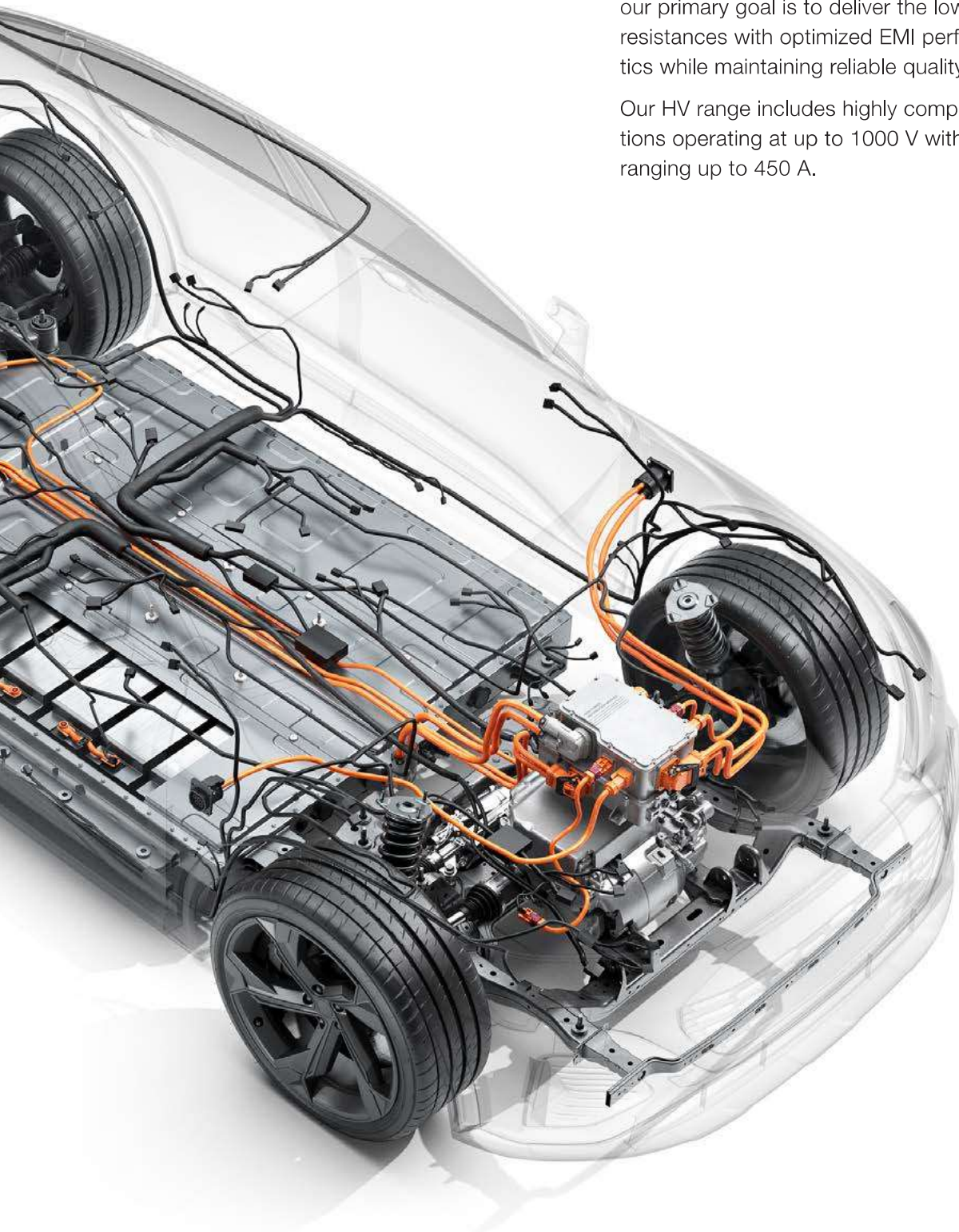


Rosenberger Power Connector Systems for E-Mobility

The ongoing shift from combustion engines towards hybrid and electric motors in vehicles calls for continuous innovation in connector technology.

Electrical components must not only be robust and as space-saving as possible, but also capable of safe operation at high voltages and extreme currents. Therefore, our primary goal is to deliver the lowest possible contact resistances with optimized EMI performance characteristics while maintaining reliable quality standards.

Our HV range includes highly compact connection solutions operating at up to 1000 V with continuous currents ranging up to 450 A.



Rosenberger Connector Systems for E-Mobility

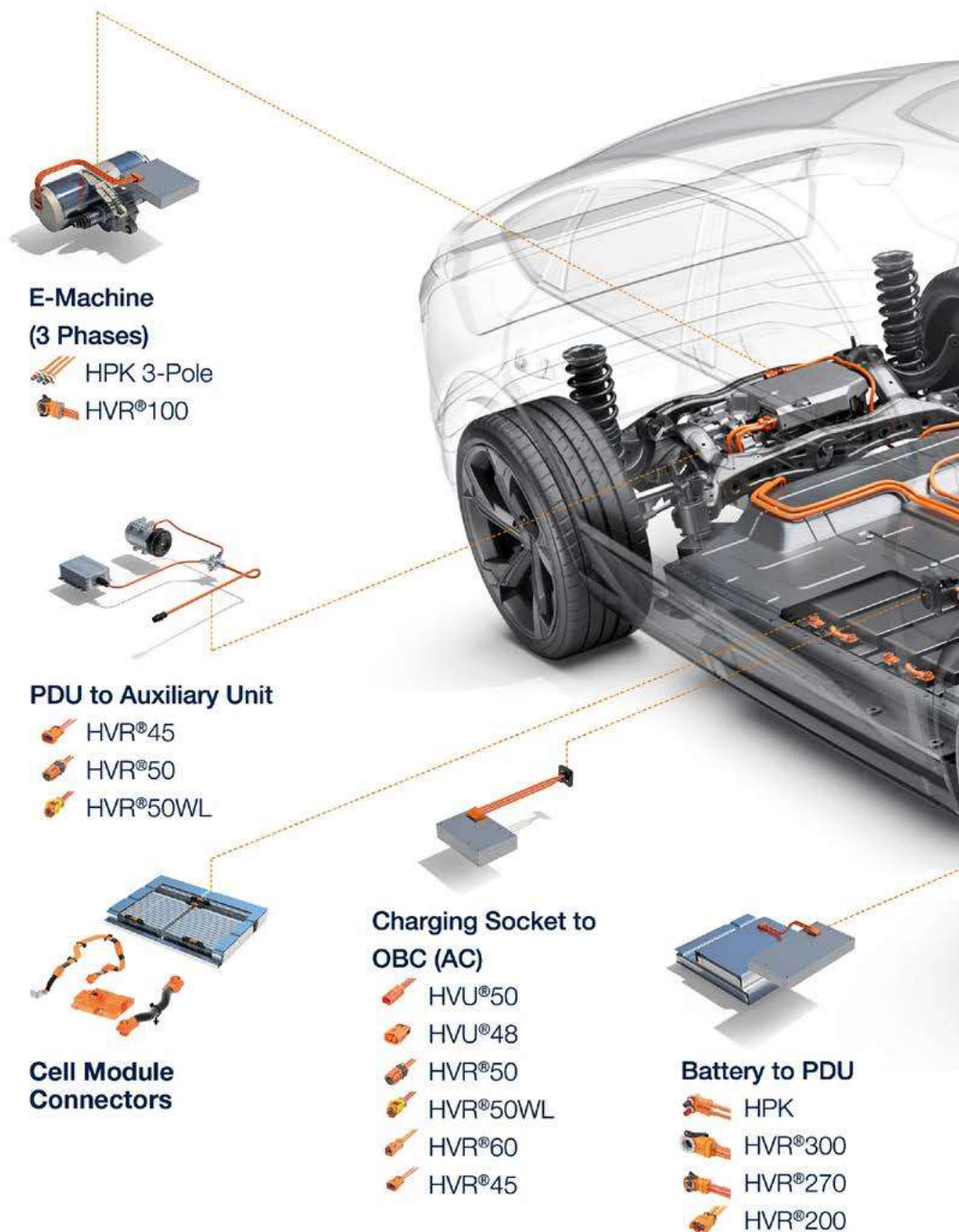
Developed especially for optimized power transmission in electric and hybrid vehicles, the extensive portfolio of Rosenberger power connectors is designed to meet customer requirements for maximum quality, reliability, performance, at best costs.

Maximum currents ranging from 50 A to 450 A and cable cross sections from 3 mm² to 120 mm² are covered, as well as power distribution units for customer-specific assemblies.

When electrical power transmission performance really counts Rosenberger has the perfect connection.

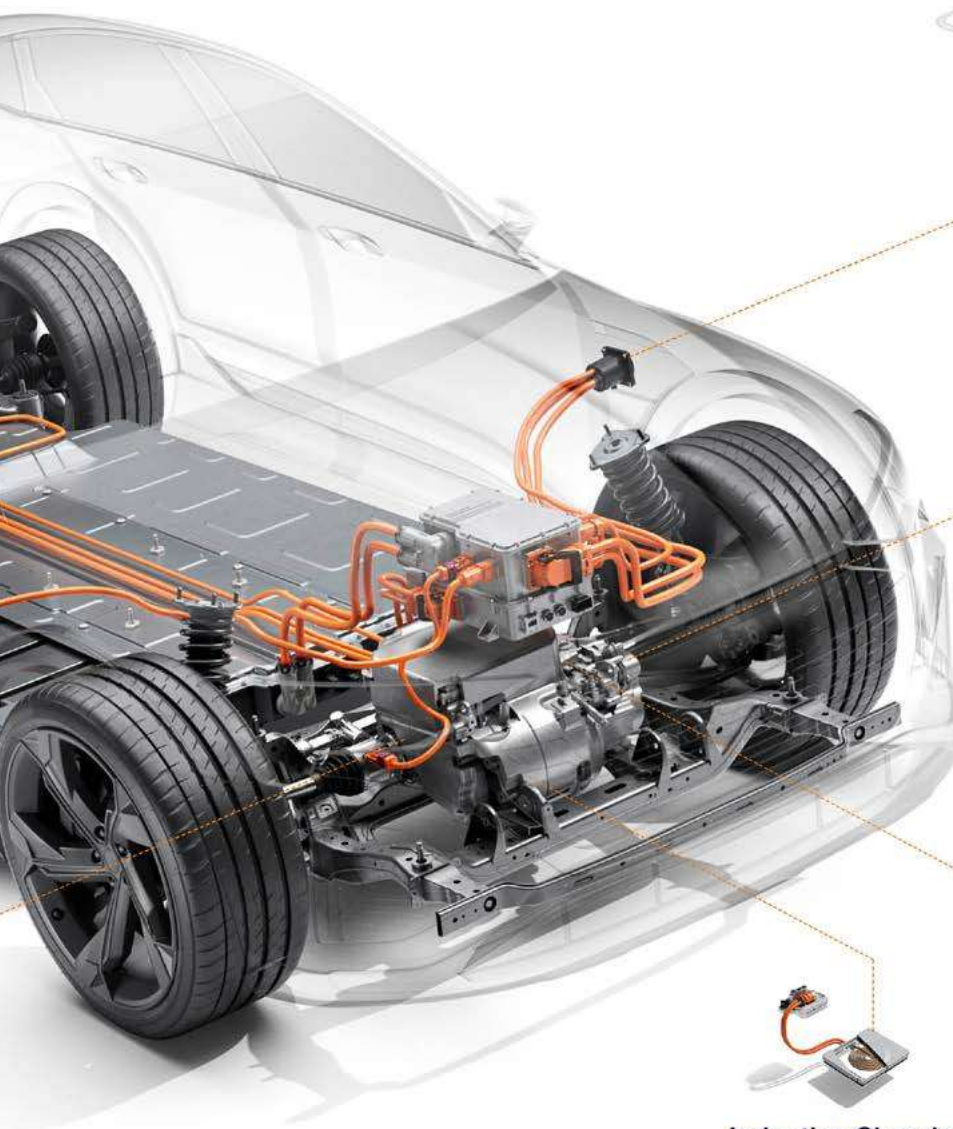
Product Portfolio

- High-voltage connectors shielded (HVR series)
- High-voltage connectors unshielded (HVU series)
- High-power connectors (HPK series)
- HV components (power distribution units, splitter, cell module connectors)
- Low-voltage connectors
- LEV connectors





Features and Benefits

- High current performance
- Minimum installation space
- Highest vibration classes
- In-house thermal simulation
- Contact system and connecting technology
- Assembly
- Best EMI performance after aging due to silver plated contacts and special screw technology
- Detailed assembly instruction for cable-side and device-side
- Qualified to national and international standards (LV215, USCAR ...)



Charging Socket to Battery (DC)

-  HVR®420
-  HVR®300
-  HVVU®400

PDU to E-Machine (2 Phases)

-  HPK
-  HVR®300
-  HVR®270

Inductive Charging

-  HVR®50
-  HVR®50WL

OBC to Battery

-  HVR®45
-  HVR®50
-  HVR®50WL
-  HVR®200

Rosenberger Number Code

HV Connectors

H2	K	1	01-	W	2	A	035	B1	-A
									Coding
									Plating
									Cable size specified in mm ²
									Cable group
									Number of center contacts
									Backend type
									0 screw version outer and center contact
									1 crimped outer and center contact
									2 mated outer contact – screwed center contact
									5 press-fitted outer contact – crimped center contact
									9 special types
									V crimped outer contact – crimp-welded center contact
									W crimped outer contact – welded center contact
									Successive number
									Configuration
									1 straight
									2 right angle
									Gender
									K jack
									S plug
Connector series									

HV Device Socket (Header)

HV	L	1	02-	5	B-	002	B1	-A
								Coding
							Plating	
							Successive number	
							Cable dimension	
							0 no cable	
							A 2.5 mm ²	
							B 4 mm ²	
							C 6 mm ²	
							D 16 mm ²	
							E 25 mm ²	
							F 35 mm ²	
							G 50 mm ²	
							H 70 mm ²	
							J 90 mm ²	
							Backend type	
							Successive number	
							Configuration	
							1 straight	
							2 right angle	
							L/S Header plug	
Connector series								

HVR[®] High-Voltage Shielded Connectors

Rosenberger's extensive portfolio of shielded high-voltage connectors has been developed especially for optimized power transmission in electric vehicles.

For Rosenberger, the product development goal is clear: minimum contact resistance plus high power density coupled with excellent EMC performance properties.

They meet customer requirements in terms of quality, reliability, performance and price. The shielded HV product line includes extremely compact connection solutions up to 1000 V with continuous currents up to 450 A, that can be operated over entire product lifetimes.





HPK

The Rosenberger HPK system can achieve 280 A at 85 °C up to 1000 V. With their excellent vibration and current capacity performance the HPK connectors are well-suited to typical high-voltage electric vehicle applications such as the connection between battery, inverter and PDU as well as to e-machine.

The range includes 1-, 2- or 3-pole connectors which for maximum flexibility can be used with copper or aluminum cables in different cable cross sections. Straight and angled cable connectors as well as corresponding headers are available, optional with HVIL (high-voltage interlock).

Product Portfolio

- Cable connectors 1-pole, 2-pole (3-pole on request)
- Header optional with HVIL (high-voltage interlock)
- Cable assemblies

Features

- Shielded
- Current capacity (straight 50 mm²) 280 A at 85 °C
- Working voltage 1000 V DC
- Test voltage 3200 V DC
- Temperature range -40 °C to +140 °C
- IP class mated according to IP6K9K/IPX8/IPXXD
- IP class unmated according to IPXXB
- Creepage (straight) ≥ 5.02 mm
- Creepage (right angle) ≥ 8.9 mm
- Clearance (straight) ≥ 4.91 mm
- Clearance (right angle) ≥ 9 mm
- Engine vibration SG2 according to LV, similar to V1 according to USCAR
- Mating cycles ≥ 50
- Cross sections 16 mm², 25 mm², 35 mm², 50 mm²
- Different axis possible for the connection of the header

Benefits

- Versatile product range
- High temperature and vibration performance
- Design makes this series easier to assemble, creating faster processes and higher quality
- Optional with HVIL (high-voltage interlock)
- Cable connectors with or without SVS (screw locking feature)
- New versions with stamped outer contact element and material PBT

Applicable Standards

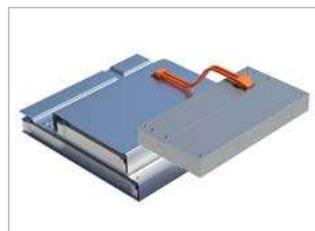
- Interface according to Rosenberger RN_084-01
- Rosenberger RN_087-01
- Rosenberger RN_087-04
- Rosenberger series code H4
- RoHS compliant



Applications



E-Machine (3 phases)

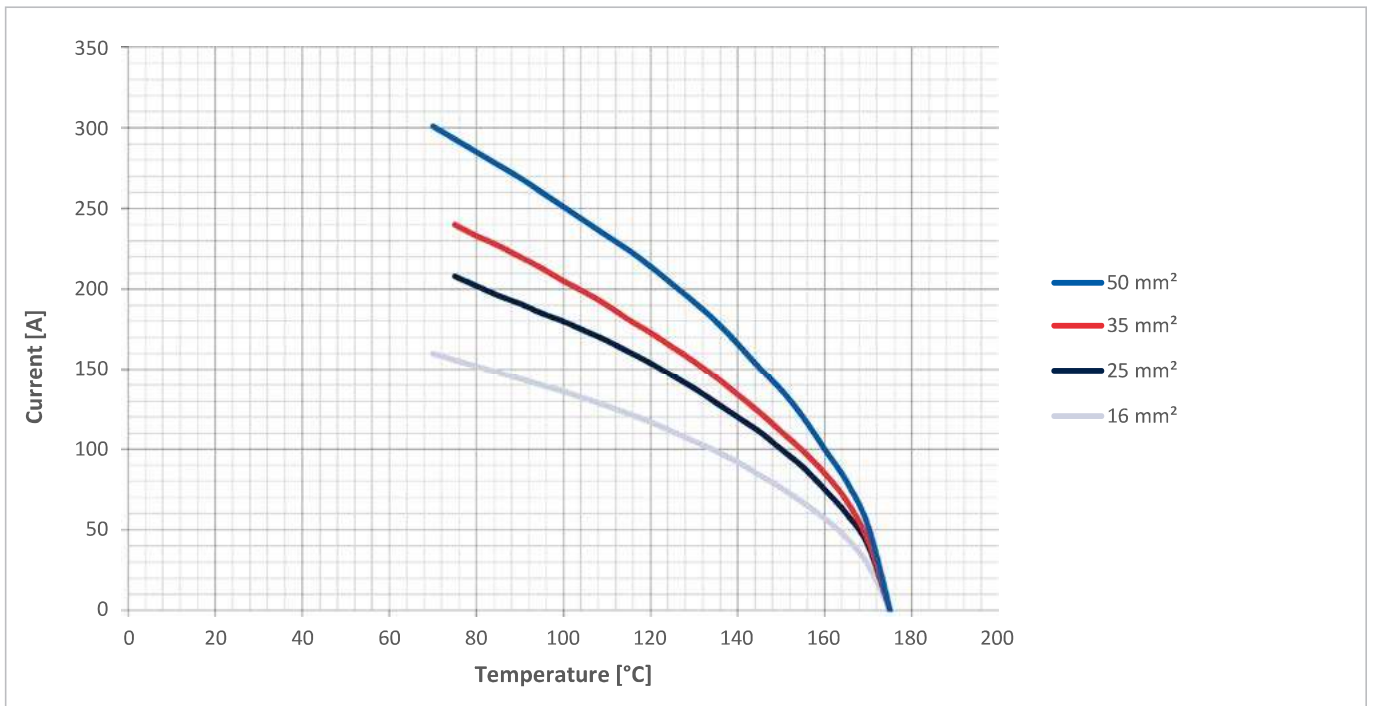


Battery to PDU

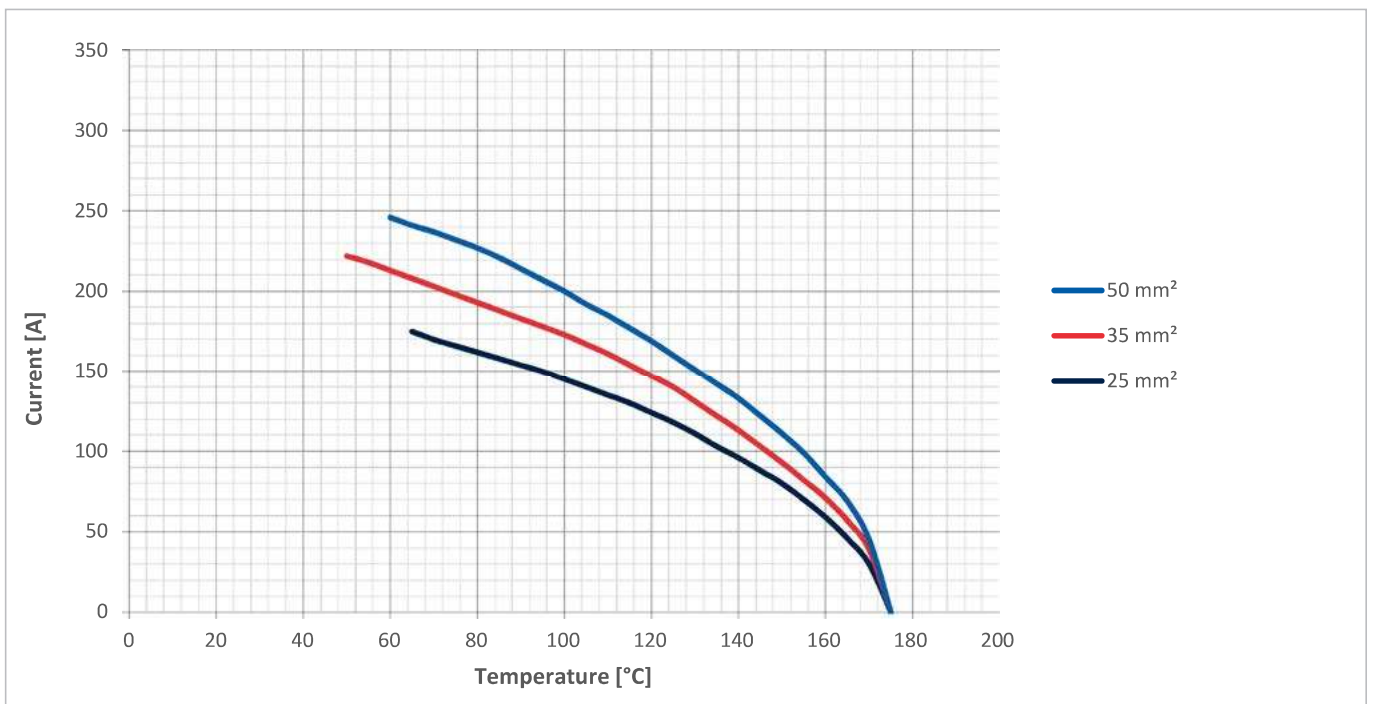


PDU to E-machine
(2 phases)

Derating Graph according to DIN EN 60512-5-2








HPK Straight Copper Cables



HPK Straight Aluminum Cables

Products

HPK Cable Jack with HVIL

Rosenberger No.	Description	Cable Cross Section	Assembly Instruction	Product
H4K134-W10016B1-YY	Straight jack 1-pole With SVS With HVIL Shielded	16 mm ²	MA_HV0104	
H4K134-W10025B1-YY		25 mm ²		
H4K134-W10035B1-YY		35 mm ²		
H4K134-W10050B1-YY		50 mm ²		
H4K136-W10016B1-YY	Straight jack 1-pole Without SVS With HVIL Shielded	16 mm ²	MA_HV0104	
H4K136-W10025B1-YY		25 mm ²		
H4K136-W10035B1-YY		35 mm ²		
H4K136-W10050B1-YY		50 mm ²		
H4K280-W10016B1-YY	Right angle jack 1-pole, cable down With SVS With HVIL Shielded	16 mm ²	MA_HV0121	
H4K280-W10025B1-YY		25 mm ²		
H4K280-W10035B1-YY		35 mm ²		
H4K280-W10050B1-YY		50 mm ²		
H4K282-W10016B1-YY	Right angle jack 1-pole, cable down Without SVS With HVIL Shielded	16 mm ²	MA_HV0121	
H4K282-W10025B1-YY		25 mm ²		
H4K282-W10035B1-YY		35 mm ²		
H4K282-W10050B1-YY		50 mm ²		
170-101-00000	Protection cap for jack With and without HVIL			


HPK Header Plug with HVIL

Rosenberger No.	Description	Product
H4S115-91-H00B-Y	Header 1-pole Outgoing busbar straight With HVIL Shielded	


-Y/-YY: please fill-in requested coding

Products

HPK Cable Jack with HVIL

Rosenberger No.	Description	Cable Cross Section	Assembly Instruction	Product
H4K180-W20016B1-YYY	Straight jack 2-pole With SVS With HVIL Shielded	16 mm ²	MA_HV0128	
H4K180-W20025B1-YYY		25 mm ²		
H4K180-W20035B1-YYY		35 mm ²		
H4K180-W20050B1-YYY		50 mm ²		
H4K182-W20016B1-YYY	Straight jack 2-pole Without SVS With HVIL Shielded	16 mm ²	MA_HV0128	
H4K182-W20025B1-YYY		25 mm ²		
H4K182-W20035B1-YYY		35 mm ²		
H4K182-W20050B1-YYY		50 mm ²		
H4K280-W20016B1-YYY	Right angle jack 2-pole, cable down With SVS With HVIL Shielded	16 mm ²	MA_HV0205	
H4K280-W20025B1-YYY		25 mm ²		
H4K280-W20035B1-YYY		35 mm ²		
H4K280-W20050B1-YYY		50 mm ²		
H4K290-W20016B1-YYY	Right angle jack 2-pole, cable up With SVS With HVIL Shielded	16 mm ²	MA_HV0205	
H4K290-W20025B1-YYY		25 mm ²		
H4K290-W20035B1-YYY		35 mm ²		
H4K290-W20050B1-YYY		50 mm ²		
H4K282-W20016B1-YYY	Right angle jack 2-pole, cable down Without SVS With HVIL Shielded	16 mm ²	MA_HV0205	
H4K282-W20025B1-YYY		25 mm ²		
H4K282-W20035B1-YYY		35 mm ²		
H4K282-W20050B1-YYY		50 mm ²		
H4K292-W20016B1-YYY	Right angle jack 2-pole, cable up Without SVS With HVIL Shielded	16 mm ²	MA_HV0205	
H4K292-W20025B1-YYY		25 mm ²		
H4K292-W20035B1-YYY		35 mm ²		
H4K292-W20050B1-YYY		50 mm ²		
170-101-00000	Protection cap for jack With and without HVIL			






HPK Header Plug with HVIL

Rosenberger No.	Description	Product
H4S115-92-H00B-YY	Header 2-pole Outgoing busbar straight With HVIL Shielded	
H4L108-00-001B-YY	Header 2-pole Outgoing busbar right angle With HVIL Shielded	

-YY/-YYY: please fill-in requested coding

Products

HPK Cable Jack without HVIL

Rosenberger No.	Description	Cable Cross Section	Assembly Instruction	Product
H4K135-W10016B1-YY	Straight jack 1-pole With SVS Without HVIL Shielded	16 mm ²	MA_HV0104	
H4K135-W10025B1-YY		25 mm ²		
H4K135-W10035B1-YY		35 mm ²		
H4K135-W10050B1-YY		50 mm ²		
H4K137-W10016B1-YY	Straight jack 1-pole Without SVS Without HVIL Shielded	16 mm ²	MA_HV0104	
H4K137-W10025B1-YY		25 mm ²		
H4K137-W10035B1-YY		35 mm ²		
H4K137-W10050B1-YY		50 mm ²		
H4K281-W10016B1-YY	Right angle jack 1-pole, cable down With SVS Without HVIL Shielded	16 mm ²	MA_HV0121	
H4K281-W10025B1-YY		25 mm ²		
H4K281-W10035B1-YY		35 mm ²		
H4K281-W10050B1-YY		50 mm ²		
H4K283-W10016B1-YY	Right angle jack 1-pole, cable down Without SVS Without HVIL Shielded	16 mm ²	MA_HV0121	
H4K283-W10025B1-YY		25 mm ²		
H4K283-W10035B1-YY		35 mm ²		
H4K283-W10050B1-YY		50 mm ²		
170-101-00000	Protection cap for jack With and without HVIL			

HPK Header Plug without HVIL

Rosenberger No.	Description	Product
H4S115-91-000B-Y	Header 1-pole Outgoing busbar straight Without HVIL Shielded	








-Y/-YY: please fill-in requested coding

For more information
refer to our website:
www.rosenberger.com/hpk




Products

HPK Cable Jack without HVIL

Rosenberger No.	Description	Cable Cross Section	Assembly Instruction	Product
H4K181-W20016B1-YYY	Straight jack 2-pole With SVS Without HVIL Shielded	16 mm ²	MA_HV0128	
H4K181-W20025B1-YYY		25 mm ²		
H4K181-W20035B1-YYY		35 mm ²		
H4K181-W20050B1-YYY		50 mm ²		
H4K183-W20016B1-YYY	Straight jack 2-pole Without SVS Without HVIL Shielded	16 mm ²	MA_HV0128	
H4K183-W20025B1-YYY		25 mm ²		
H4K183-W20035B1-YYY		35 mm ²		
H4K183-W20050B1-YYY		50 mm ²		
H4K281-W20016B1-YYY	Right angle jack 2-pole, cable down With SVS Without HVIL Shielded	16 mm ²	MA_HV0205	
H4K281-W20025B1-YYY		25 mm ²		
H4K281-W20035B1-YYY		35 mm ²		
H4K281-W20050B1-YYY		50 mm ²		
H4K291-W20016B1-YYY	Right angle jack 2-pole, cable up With SVS Without HVIL Shielded	16 mm ²	MA_HV0205	
H4K291-W20025B1-YYY		25 mm ²		
H4K291-W20035B1-YYY		35 mm ²		
H4K291-W20050B1-YYY		50 mm ²		
H4K283-W20016B1-YYY	Right angle jack 2-pole, cable down Without SVS Without HVIL Shielded	16 mm ²	MA_HV0205	
H4K283-W20025B1-YYY		25 mm ²		
H4K283-W20035B1-YYY		35 mm ²		
H4K283-W20050B1-YYY		50 mm ²		
H4K293-W20016B1-YYY	Right angle jack 2-pole, cable up Without SVS Without HVIL Shielded	16 mm ²	MA_HV0205	
H4K293-W20025B1-YYY		25 mm ²		
H4K293-W20035B1-YYY		35 mm ²		
H4K293-W20050B1-YYY		50 mm ²		
170-101-00000	Protection cap for jack With and without HVIL			

HPK Header Plug without HVIL

Rosenberger No.	Description	Product
H4S115-92-000B-YY	Header 2-pole Outgoing busbar straight Without HVIL Shielded	

-YY/-YYY: please fill-in requested coding