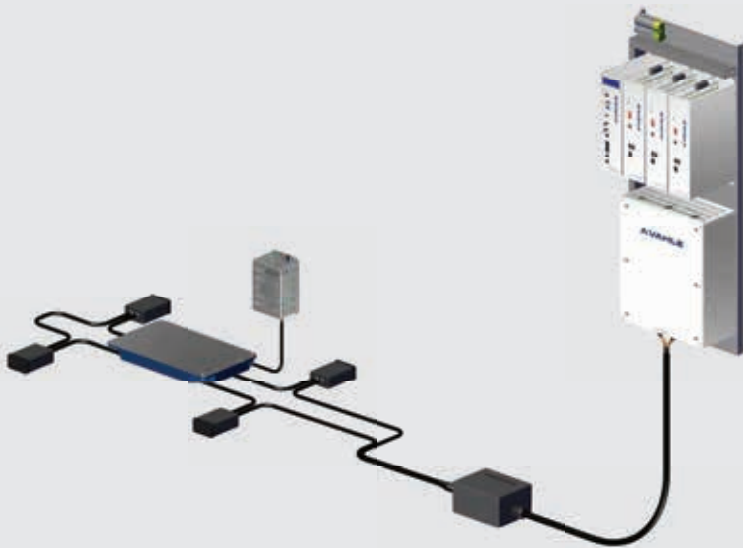




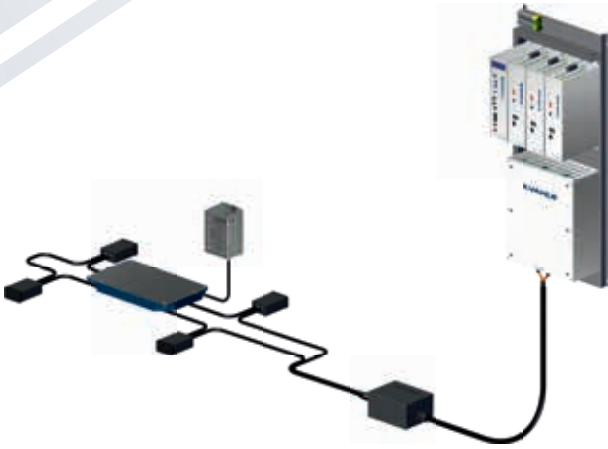
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**vPOWER - CONTACTLESS POWER SUPPLY**  
**140 KHZ TECHNOLOGY**



## VPOWER - KEY HIGHLIGHTS

### CONTACTLESS POWER SOLUTION

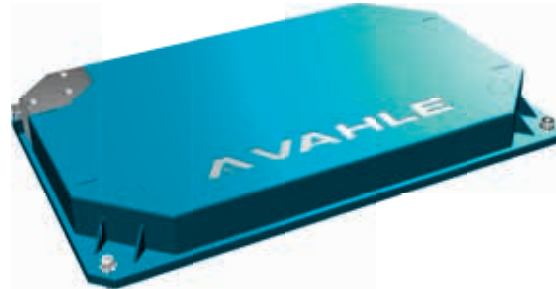


### MODULAR DESIGN

Due to the modular structure of the vPOWER system, many diverse combinations of power ranges can be assembled. The primary side consists of 10kW elements, and the secondary side uses 1.5kW, 2.5kW or 3.3kW elements. Additionally, it is possible to parallel the outputs from multiple secondary units to obtain higher power per vehicle. The top can switch from regulated DC output voltage to a DC-Bus that allows up to 10kW.

### SPACE-SAVING COMPACT DESIGN

The extremely compact design of the vPOWER components means a contactless power system can be implemented on vehicles with minimum space availability. New compensation boxes can be laid underground to minimize hazards and space needed. This is achieved due to the separation of Pickup and Regulator electronics. The Pickup must be mounted directly facing the primary track cable, while the Regulator electronics can be mounted anywhere on the vehicle allowing for easier access and maintenance. The connection between Pickup and Regulator is via coaxial cable which minimizes any radiated interference.

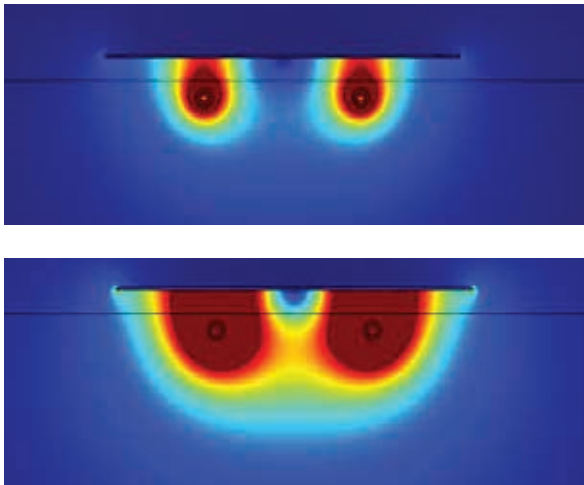
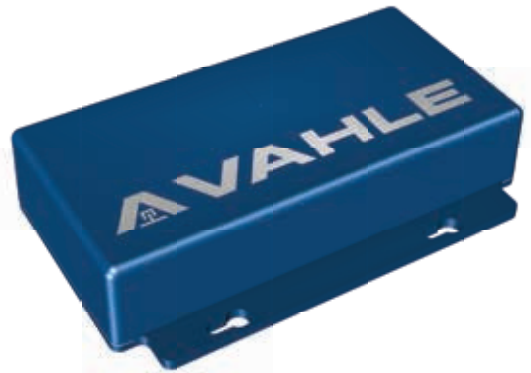


### SIMPLE SERVICE AND DIAGNOSTIC TESTING

vPOWER's primary-sided service and diagnostic module allows for complete-system performance control and monitoring. Fieldbus, partnered with available protocols PROFINET-IO, EtherNet-IP, and CC-Link IE, enable worldwide operational capabilities. Important system vitals such as current, voltage, phase angle, and more can be read via an integrated LCD display of a vPOWER system. Failures and interferences are recorded internally and can be transmitted via a selectable interface, thus allowing fast diagnostics and solutions in case of an event.

## GUIDANCE

The primary purpose of the power cables installed in the track is to transfer power to the Pickup(s) on the mobile vehicle. However, these cables can also be tracked, using a guidance sensor, to provide a guidance signal to the controller. AGVs are typical applications where this guidance can be beneficial. The VAHLE guidance sensor can navigate straight and curved pathways, as well as switches, crossings, and power loops. RS485, CAN, PROFINET-IO, EtherNet-IP and CC Link interfaces are available to provide a range of communication options AGV controllers.

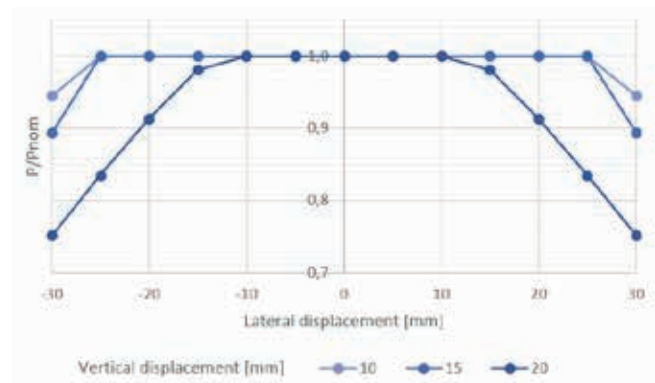


## REDUCED IRON-FREE ZONE

By increasing the frequency by a factor of 7, the primary current compared to the former VAHLE inductive technology was reduced. This reduction has a great advantage – the distance to ferromagnetic metals can be reduced during power transfer significantly. When there is an aluminum plate within a distance of 20mm to the primary field, the power loss in the plate will be reduced by 56% compared to former VAHLE 124A 20kHz products, allowing a greater degree of autonomy in the laying of the primary cable.

## LARGE LATERAL TOLERANCE

The goal during development was to increase the vertical and lateral displacement tolerances to a world class level never achieved before in the industry. When the tolerances are exceeded, only a small reduction in rating occurs. Even when the specified tolerance range is exceeding closely to the specified, only a small derating will occur. These improvements greatly increase system reliability during vehicle travel.

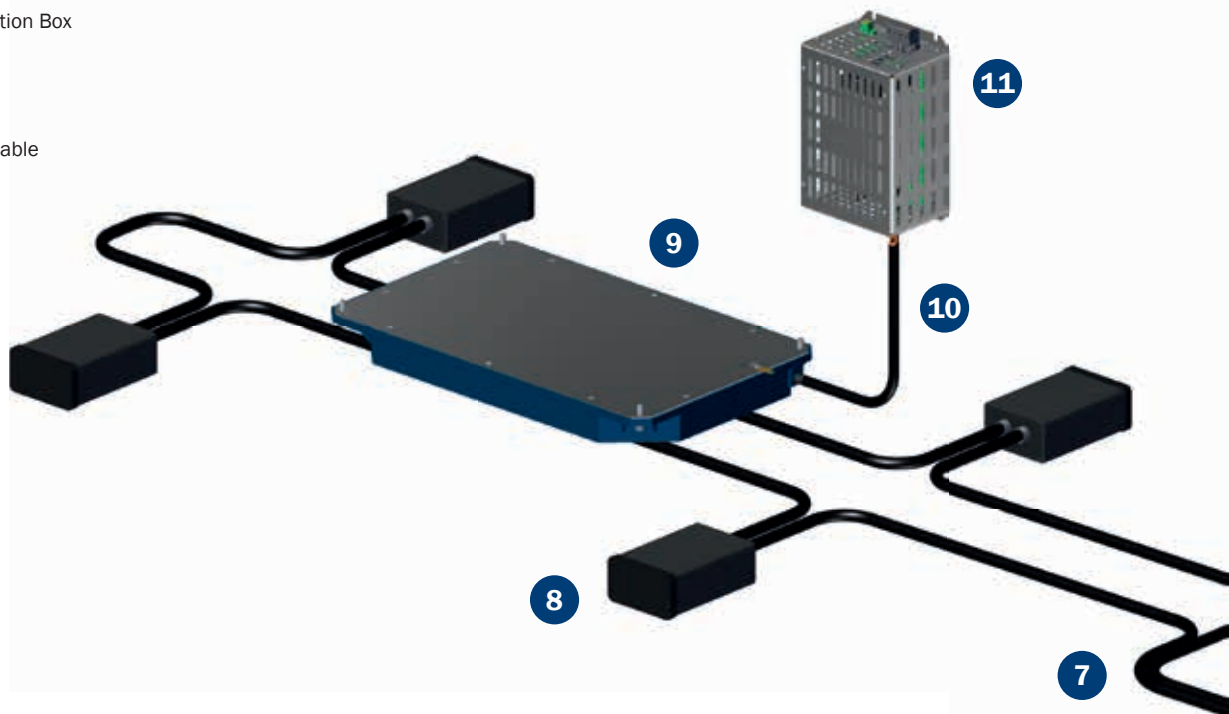


## VPOWER - SYSTEM OVERVIEW

- 1 PPU Primary Unit
- 2 PPS: Primary Power Synchronization
- 3 PPI: Primary Inverter
- 4 PPGC: Gyration and Compensation
- 5 CX45: Track Power Coaxial Cable
- 6 TPFB: Track Power Feed Box

(optional required, if Track Power Coaxial Cable CX45 required)

- 7 PX45: Track Power Litz Cable
- 8 TPCB: Track Power Compensation Box
- 9 F-PU: Flat Pickup
- 10 CX12: Mobile Power Coaxial Cable
- 11 RE: Regulator





# PRIMARY EQUIPMENT

## OVERVIEW

### PPU10 M

#### PRIMARY POWER UNIT 10 KW MASTER



### PPU10 S

#### PRIMARY POWER UNIT 10 KW SLAVE



# PRIMARY POWER UNIT - PPU10

## TECHNICAL DATA

### Power Specification

Power (nominal/peak) .....	10 kW
Supply voltage .....	400-480 VAC $\pm$ 10%
	3 phase symmetric
Supply frequency.....	50-60 Hz
Supply net system.....	TT, TN (grounded neutral)
Output current/frequency .....	45 A/140 kHz
Efficiency PPU.....	95%
Auxiliary (required) .....	24 VDC $\pm$ 10%, 4 A/5 A/7 A

### Mechanical Specification

Dimensions.....	1030 x 445 x 240 mm (10 kW unit)
Ambient temperature.....	0-40 °C non-condensing
Operation.....	3M4, 7M2
Environment .....	General industrial
Cooling.....	Convection
Protection rating.....	IP20
Connection power .....	Cage clamp 4 mm <sup>2</sup>
Connection auxiliary.....	Cage clamp 1.5 mm <sup>2</sup>
Connection fieldbus .....	RJ45

### Power Specification

Interface .....	Profinet IO
	EtherNet/IP
	CC-Link IE
Data rate.....	500kBit/s
Status information .....	Enable 140kHz, Fieldbus
	Reset, Fieldbus Error,
	System Error, Warning*

## PRIMARY EQUIPMENT CONFIGURATION

Based on the 10 kW primary units, it is possible to configure primary units for higher performance. For example, a 40kW base consists of a 10kW primary unit “master” and three 10 kW primary units “slave”.

## PRODUCT RANGE

Description		Order No.
vPOW_PPU10k.1-140-045-M-PN	Primary Power Unit 10kW / 140kHz / 45A / Master / Profinet IO	10017414
vPOW_PPU10k.1-140-045-M-EI	Primary Power Unit 10kW / 140kHz / 45A / Master / EtherNet/IP	10017415
vPOW_PPU10k.1-140-045-M-IO	Primary Power Unit 10kW / 140kHz / 45A / Master / Digital I/O	10017417
vPOW_PPU10k.1-140-045-S-NI	Primary Power Unit 10kW / 140kHz / 45A / Slave / No Interface To extend the Primary Power up to 20kW or 40kW	10017420
vPOW_FOC-05	Fiber optic cable for synchronizing the Primary Power Unit / FOC Cable - pre-terminated 5 m / U-DQ(ZN)BH	10019420
vPOW_FOC-10	Fiber optic cable for synchronizing the Primary Power Unit / FOC Cable - pre-terminated 10 m / U-DQ(ZN)BH	10019421
vPOW_FOC-25	Fiber optic cable for synchronizing the Primary Power Unit / FOC Cable - pre-terminated 25 m / U-DQ(ZN)BH	10019422
vPOW_FOC-50	Fiber optic cable for synchronizing the Primary Power Unit / FOC Cable - pre-terminated 50 m / U-DQ(ZN)BH	10019423

\*Additional status information to be added: Temperature, voltage, current, phase angle, and real power.

# TRACK EQUIPMENT



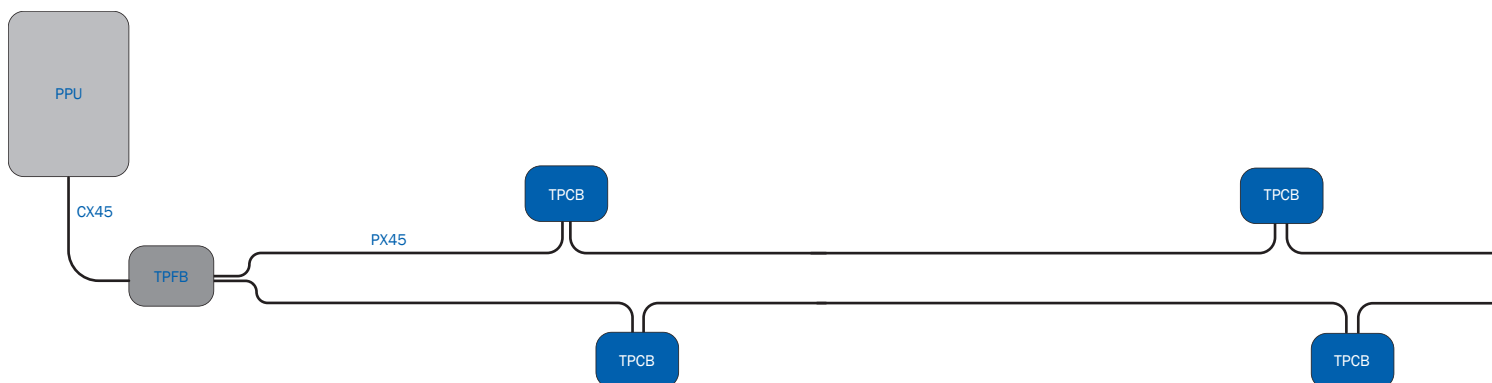
**POWER CABLES**



**POWER BOXES**

## PRODUCT RANGE

Description		Order No.
vPOW_CX45	Track Power Coaxial Cable between PPU and TPFB / 140 kHz / 45 A	10021717
vPOW_PX45	Track Power Litz Cable / 140 kHz / 45 A	10021716
vPOW_TPCB1-140-045-F	Track Power Compensation Box / 140kHz / 45 A / fixed capacity	10017421
vPOW_TPFB.1-140-045-1	Track Power Feed Box / 140 kHz / 45 A / 1 Power output Box for connection between Track Power Coaxial Cable CX45 and Primary Cable PX45	10017422
vPOW_TPFB.1-45-140-6	Track Power Feed Box / 140 kHz / 45 A / 6 Power outputs Box for connection between Track Power Coaxial Cable CX45 and Primary Cable PX45	10019008





# VEHICLE EQUIPMENT - GUIDANCE

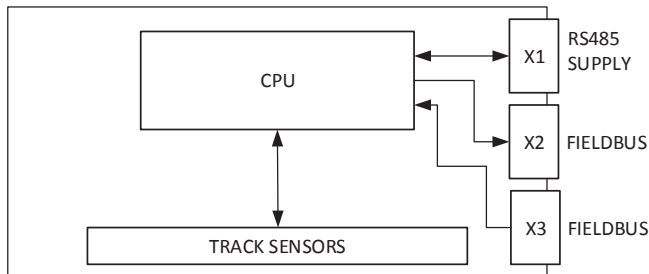
## TECHNICAL DATA

### Mechanical Specification

Dimensions.....239.45x155x48.50mm  
 Mounting holes.....140x141mm  
 Weight.....1 kg  
 Protection rating.....IP54  
 Temperature.....0-40°C Non-condensing  
 Environment.....General industrial

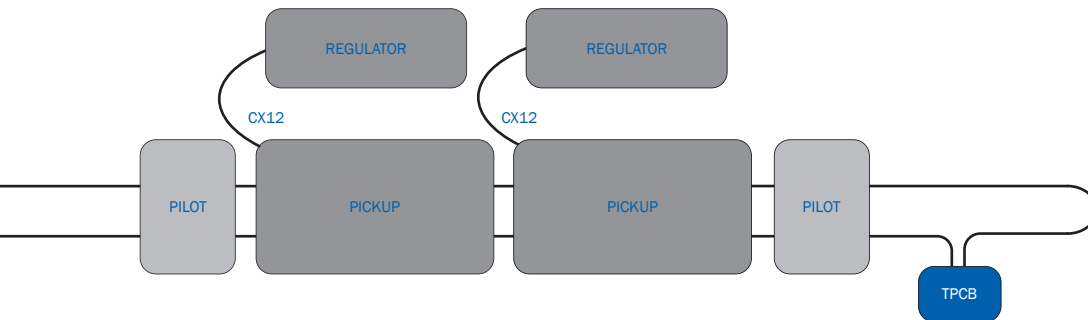


## BLOCK DIAGRAM



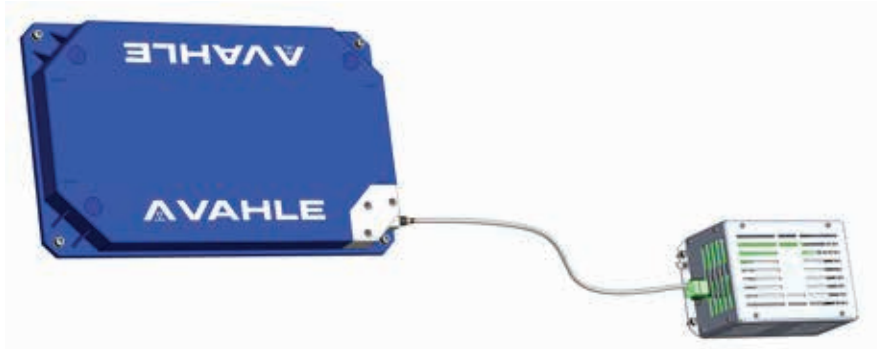
## PRODUCT RANGE

Description		Order No.
vPOW_Pilot.x-45-140-PN	Guidance Sensor / 140kHz /45A Profinet IO	10018392
vPOW_Pilot.x-45-140-EI	Guidance Sensor / 140kHz /45A EtherNet/IP	10018394

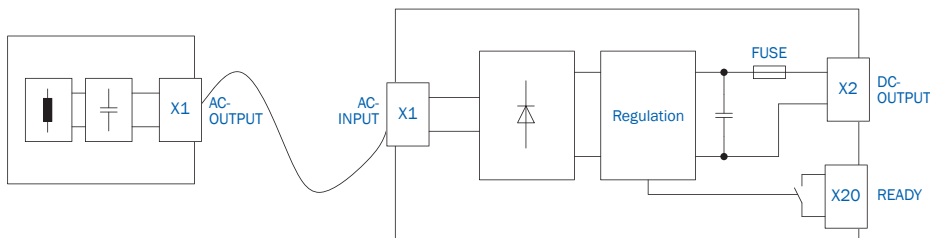


# VEHICLE EQUIPMENT FOR 560 VDC

## F-PICKUP FXXX-140 AND REGULATOR REXXX



### BLOCK DIAGRAM



### PRODUCT RANGE

Description		Order No.
vPOW_F330.1-140-045-04-L0-HV	F-Pickup / 3.3 kW / 140 kHz / 45 A / Duty 40% / Linear / 235 ... 362 VAC / Nominal power 1.3 kW / Peak power 3.3 kW	10017429
vPOW_RE330.1-140-560-04-NI-LI-RC-NI	Regulator / 3.3 kW / 140 kHz / 560 V / Duty 40% / No thermal monitoring / LITE / Relay contact / No Auxilliary / Output voltage 560VDC $\pm$ 5% / Peak power 3.3 kW / No Battery Charging / Parallelizable output	10017430
vPOW_F250.1-140-045-04-L0-HV	F-Pickup / 2.5 kW / 140 kHz / 45 A / Duty 40% / Linear / 235 ... 362 VAC / Nominal power 1.0 kW / Peak power 2.5 kW	10018442
vPOW_RE250.1-140-560-04-NI-LI-RC-NI	Regulator / 2.5 kW / 140 kHz / 560 V / Duty 40% / No thermal monitoring / LITE / Relay contact / No Auxilliary / Output voltage 560VDC $\pm$ 5% / Peak power 2.5 kW / No Battery Charging / Parallelizable output	10018452
vPOW_CX12	Track Power Coaxial Cable between Pickup and Regulator / 12 A	see page 18

## TECHNICAL SPECIFICATIONS

### Electrical Data System

Peak power .....	3.3 kW / 2.5 kW
Duty cycle.....	40 % ED @ 10 minute cycle
Nominal power .....	1.3 kW / 1.0 kW
Track current .....	45 A
Track frequency.....	140 kHz
Track conductor spacing.....	110 mm
Output voltage .....	560VDC $\pm$ 5%
Output current.....	6.5 A

### Protection

Output over voltage.....	Yes
Over temperature.....	Yes
Max. reverse voltage.....	750VDC

### Regulator Mechanical Data

Dimensions.....	190 x 120 x 85 mm
Mounting holes.....	180.5 x 80 mm
Weight.....	1 kg
Protection rating.....	IP20
Ambient temperature.....	0 ... +40 °C non-condensing
Environment .....	General industrial

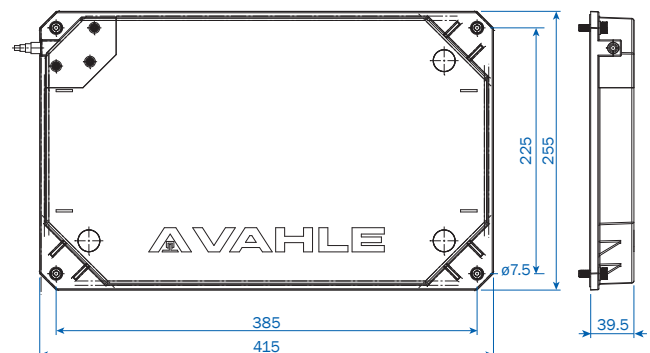
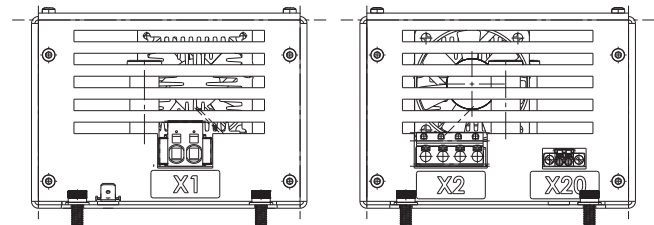
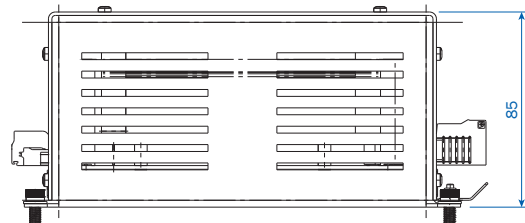
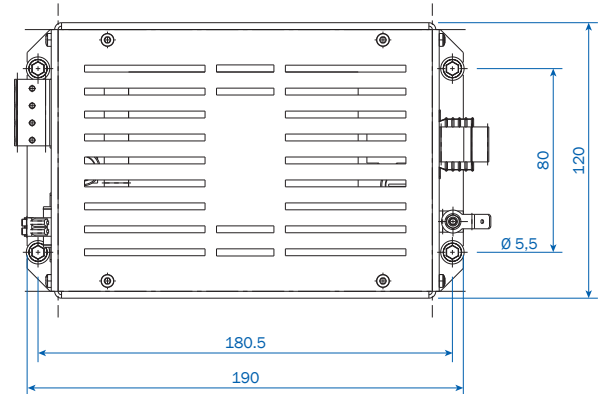
### Pickup Connection Cable Data

Length.....	1/2/4/6 m
Outer diameter .....	11 mm
Connections.....	Pre-terminated
Flexibility .....	Flexible
Min. bending radius .....	90 mm

### Pickup Mechanical Data

Dimensions.....	415 x 255 x 39.5 mm
Mounting holes.....	385 x 225 mm
Weight.....	10 kg
Nominal air gap (from top of track cable to bottom of Pick-Up) .....	15 mm
Vertical displacement .....	$\pm$ 5 mm
Lateral displacement.....	$\pm$ 20 mm
Protection rating.....	IP54
Color.....	RAL 9004
Ambient temperature.....	0 ... +40 °C non-condensing
Environment .....	General industrial
Cooling.....	Natural convection

## DIMENSIONS

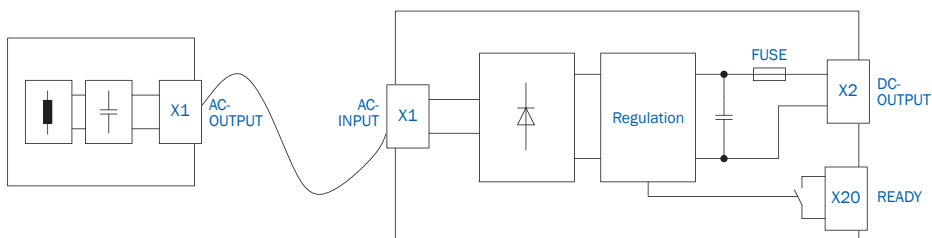


# VEHICLE EQUIPMENT FOR 560 VDC

## U-PICKUP UXXX-140 AND REGULATOR REXXX



### BLOCK DIAGRAM



### PRODUCT RANGE

Description		Order No.
vPOW_U150.1-140-045-04-LO-HV	U-Pickup / 1.5 kW / 140 kHz / 45 A / Duty 40 % / Linear / 235... 362 VAC / Nominal power 0.6 kW / Peak power 1.5 kW	10018449
vPOW_RE150.1-140-560-04-NI-LI-RC-NI	Regulator / 1.5 kW / 140 kHz / 560V / Duty 40 % / No thermal monitoring / LITE / Relay contact / No Auxilliary / Output voltage 560VDC $\pm$ 5 % / Peak power 1.5 kW / No Battery Charging / Parallelizable output	10018453
vPOW_CX12	Track Power Coaxial Cable between Pickup and Regulator / 12 A	see page 18

## TECHNICAL SPECIFICATIONS

### Electrical Data System

Peak power .....	1.5 kW
Duty cycle.....	40 % ED @ 10 minute cycle
Nominal power .....	0.6 kW
Track current .....	45 A
Track frequency.....	140 kHz
Output voltage.....	560VDC $\pm$ 5%
Output current.....	3 A

### Protection

Output over voltage.....	Yes
Over temperature.....	Yes
Max. reverse voltage.....	750VDC

### Regulator Mechanical Data

Dimensions.....	190 x 120 x 85 mm
Mounting holes.....	180.5 x 80 mm
Weight.....	1 kg
Protection rating.....	IP20
Ambient temperature.....	0 ... +40 °C non-condensing
Environment .....	General industrial

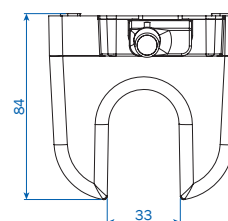
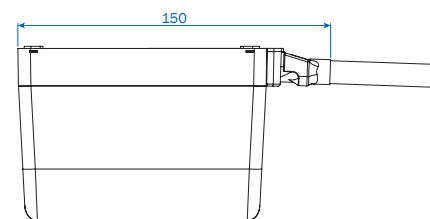
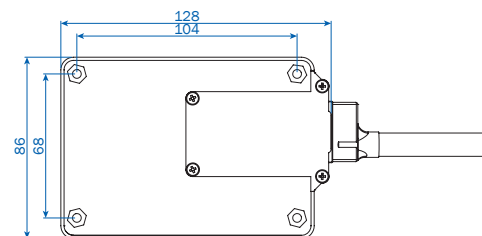
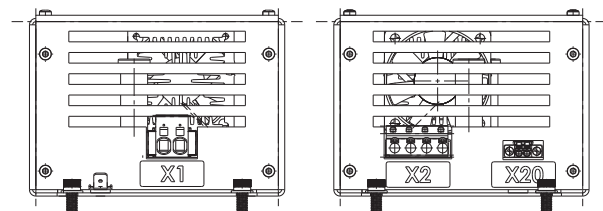
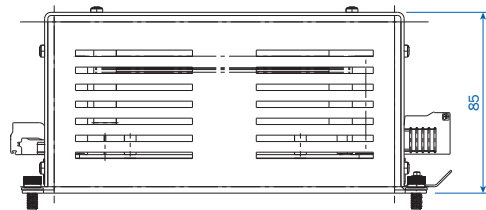
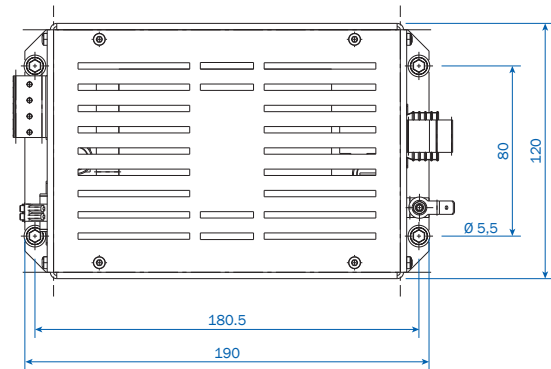
### Pickup Connection Cable Data

Length.....	1/2/4/6 m
Outer diameter .....	11 mm
Connections.....	Pre-terminated
Flexibility .....	Flexible
Min. bending radius .....	8 x D

### Pickup Mechanical Data

Dimensions.....	128 x 86 x 84mm
Mounting holes.....	104 x 68 mm
Weight.....	3 kg
Nominal air gap (from top of track cable to bottom of Pick-Up) .....	15 mm
Vertical tolerance .....	$\pm$ 15 mm
Lateral tolerance .....	$\pm$ 10 mm
Protection rating.....	IP54
Color.....	RAL 9004
Ambient temperature.....	0 ... +40 °C non-condensing
Environment .....	General industrial
Cooling.....	Natural convection

## DIMENSIONS

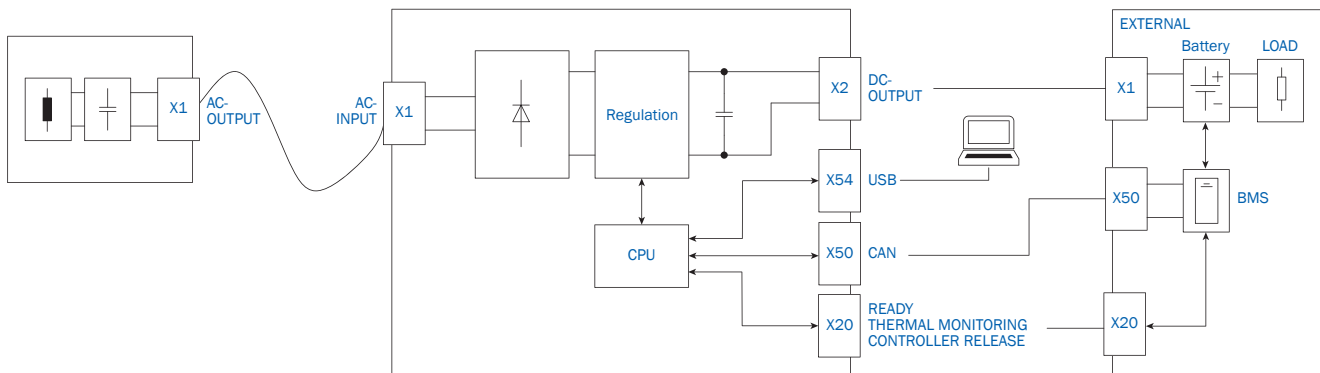


# VEHICLE EQUIPMENT FOR 24 VDC AND 48 VDC

## F-PICKUP FXXX-140 AND REGULATOR REXXX



### BLOCK DIAGRAM



### PRODUCT RANGE

Description		Order No.
vPOW_F075.1-140-045-10-LP-LV	F-Pickup / 0.75 kW / 140 kHz / 45 A / Duty 100% / Linear, Punctual / 70 ... 200 VAC / Peak power 0.75 kW	10018445
vPOW_RE075.1-140-024-10-FA-AD-CA-NI	Regulator / 0.75 kW / 140 kHz / 24V / Duty 100% / Thermal monitoring / Advanced / CAN / No Auxilliary / Output voltage 24VDC / Peak power 0.75 kW / Battery Charging (external BMS)	10018411
vPOW_RE075.1-140-024-04-FA-LI-RC-NI	Regulator / 0.75 kW / 140 kHz / 24V / Duty 40% / Thermal monitoring / LITE / Relay contact / No Auxilliary / Output voltage 24VDC $\pm$ 5% / Peak power 0.75 kW / No Battery Charging / Parallelizable output	10018454
vPOW_F150.1-140-045-10-LP-LV	F-Pickup / 1.5 kW / 140 kHz / 45 A / Duty 100% / Linear, Punctual / 70 ... 200 VAC / Peak power 1.5 kW	10018444
vPOW_RE150.1-140-048-10-FA-AD-CA-NI	Regulator / 1.5 kW / 140 kHz / 48V / Duty 100% / Thermal monitoring / Advanced / CAN / No Auxilliary / Output voltage 48VDC / Peak power 1.5 kW / Battery Charging (external BMS)	10018412
vPOW_RE150.1-140-048-04-FA-LI-RC-NI	Regulator / 1.5 kW / 140 kHz / 48V / Duty 40% / Thermal monitoring / LITE / Relay contact / No Auxilliary / Output voltage 48VDC $\pm$ 5% / Peak power 1.5 kW / No Battery Charging / Parallelizable output	10021454
vPOW_TPCP150.1-140-045-NI-R1	Charging Plate / 324 x 150 x 12 mm / IP54 / RAL 9004	10019007
vPOW_CX12	Track Power Coaxial Cable between Pickup and Regulator / 12 A	see page 18

## TECHNICAL SPECIFICATIONS

### Electrical Data System

Continuous power .....	0.75 / 1.5 kW
Duty cycle.....	100%
Track current .....	45 A
Track frequency.....	140 kHz
Output voltage.....	24 / 48VDC
Output current max.....	31.3 / 31.3 A

### Protection

Output over voltage.....	Yes
Over temperature.....	Yes
Max. reverse voltage.....	750VDC

### Regulator Mechanical Data

Dimensions.....	245 x 156 x 90 mm
Mounting holes.....	235.3 x 99 mm
Weight.....	1.5 kg
Protection rating.....	IP20
Ambient temperature.....	0 ... +40 °C non-condensing
Environment .....	General industrial

### Charging Plate Mechanical Data

Dimensions.....	324 x 150 x 12 mm
Mounting holes.....	294 x 120 mm
Weight.....	2 kg
Protection rating.....	IP54
Color.....	RAL 9004
Hardwearing .....	150 kg

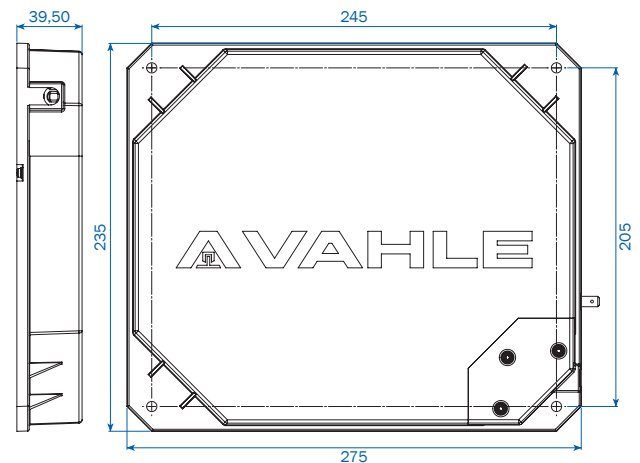
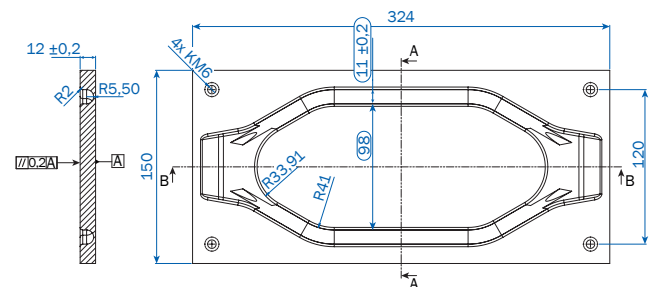
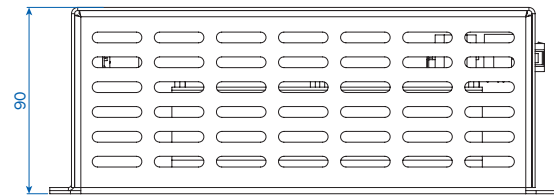
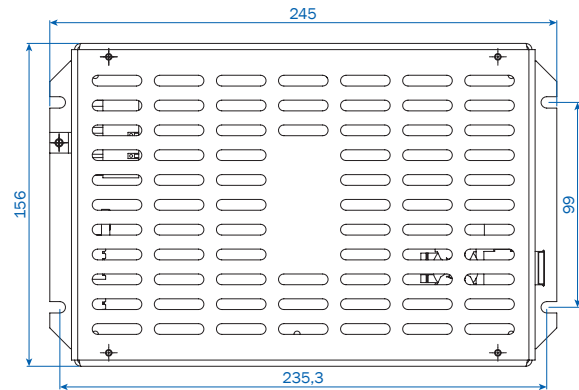
### Pickup Connection Cable Data

Length.....	1/2/4/6 m
Outer diameter .....	11 mm
Connections.....	Pre-terminated
Flexibility .....	Flexible
Min. bending radius.....	8 x D

### Pickup Mechanical Data

Dimensions.....	275 x 205 x 39.5mm
Mounting holes.....	245 x 205 mm
Weight.....	5 kg
Nominal air gap.....	5 mm
Vertical tolerance.....	± 2 mm
Lateral tolerance .....	± 10 mm
Protection rating.....	IP54
Color.....	RAL 9004
Ambient temperature.....	0 ... +40 °C non-condensing
Environment .....	General industrial
Cooling.....	Natural convection

## DIMENSIONS

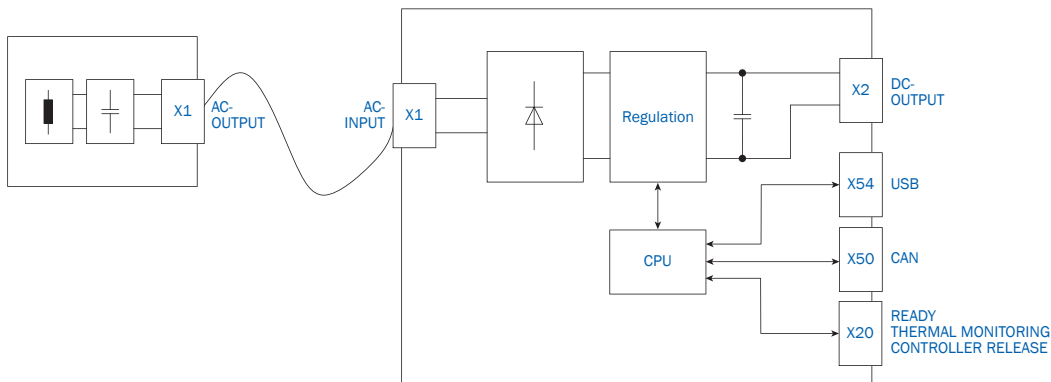


# VEHICLE EQUIPMENT FOR 24 VDC AND 48 VDC

## U-PICKUP FXXX-140 AND REGULATOR REXXX



### BLOCK DIAGRAM



### PRODUCT RANGE

Description		Order No.
vPOW_U075.1-140-045-04-LO-LV	U-Pickup / 0.75 kW / 140 kHz / 45 A / Duty 40% / Linear / 70...200 VAC / Nominal power 0.3 kW / Peak power 0.75 kW	10018447
vPOW_RE075.1-140-024-10-UA-AD-CA-NI	Regulator / 0.75 kW / 140 kHz / 24 V / Duty 100% / Thermal monitoring / Advanced / CAN / No Auxilliary / Output voltage 24 VDC / Peak power 0.75 kW / Battery Charging (external BMS)	10021438
vPOW_RE075.1-140-024-04-UA-LI-RC-NI	Regulator / 0.75 kW / 140 kHz / 24 V / Duty 40% / Thermal monitoring / LITE / Relay contact / No Auxilliary / Output voltage 24 VDC $\pm$ 5% / Peak power 0.75 kW / No Battery Charging / Parallelizable output	10018455
vPOW_U150.1-140-045-04-LO-LV	U-Pickup / 1.5 kW / 140 kHz / 45 A / Duty 40% / Linear / 70...200 VAC / Nominal power 0.6 kW / Peak power 1.5 kW	10018448
vPOW_RE150.1-140-048-10-UA-AD-CA-NI	Regulator / 1.5 kW / 140 kHz / 48 V / Duty 100% / Thermal monitoring / Advanced / CAN / No Auxilliary / Output voltage 48 VDC / Peak power 1.5 kW / Battery Charging (external BMS)	10017418
vPOW_RE150.1-140-048-04-UA-LI-RC-NI	Regulator / 1.5 kW / 140 kHz / 48 V / Duty 100% / Thermal monitoring / LITE / Relay contact / No Auxilliary / Output voltage 48 VDC $\pm$ 5% / Peak power 1.5 kW / No Battery Charging / Parallelizable output	10018456
vPOW_CX12	Track Power Coaxial Cable between Pickup and Regulator / 12 A	see page 18



## TECHNICAL SPECIFICATIONS

### Electrical Data System

Continuous power .....	0.75 / 1.5 kW
Nominal Power .....	0.3 / 0.6 kW
Duty cycle.....	40%
Track current .....	45 A
Track frequency.....	140 kHz
Output voltage .....	24 / 48VDC
Output current max.....	31.3 / 31.3 A

### Protection

Output over voltage.....	Yes
Over temperature.....	Yes
Output over current.....	Yes

### Regulator Mechanical Data

Dimensions.....	245 x 156 x 90 mm
Mounting holes.....	235.3 x 99 mm
Weight.....	1 kg
Protection rating.....	IP20
Ambient temperature.....	0 ... +40 °C non-condensing
Environment .....	General industrial

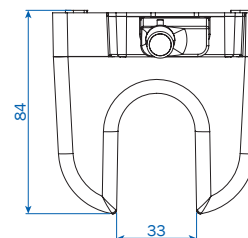
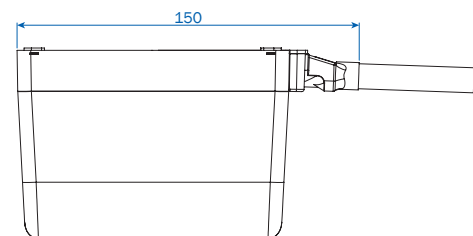
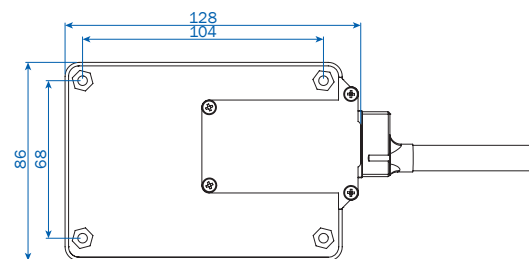
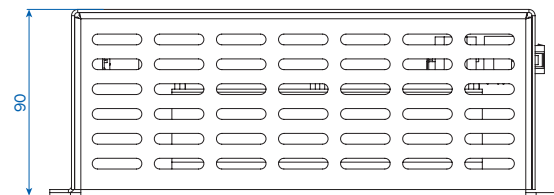
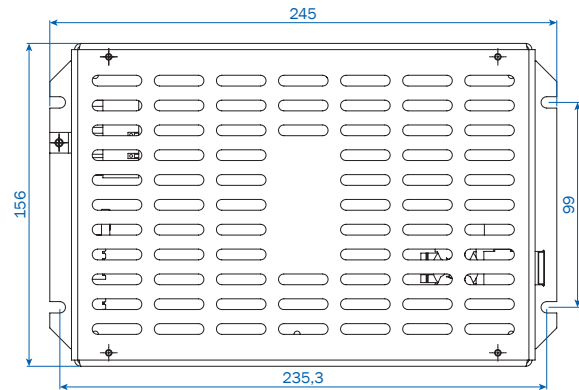
### Pickup Connection Cable Data

Length.....	1/2/4/6 m
Outer diameter .....	11 mm
Connections.....	Pre-terminated
Flexibility.....	Flexible
Min. bending radius.....	8 x D

### Pickup Mechanical Data

Dimensions.....	128 x 86 x 84mm
Mounting holes.....	104 x 68 mm
Weight.....	3 kg
Nominal air gap (from top of track cable to bottom of Pick-Up) .....	15 mm
Vertical tolerance.....	± 15 mm
Lateral tolerance .....	± 10 mm
Protection rating.....	IP54
Color.....	RAL 9004
Ambient temperature.....	0 ... +40 °C non-condensing
Environment .....	General industrial
Cooling.....	Natural convection

## DIMENSIONS



# VEHICLE EQUIPMENT

## MOBILE CABLE BETWEEN PICKUP AND REGULATOR



Power Cables

### PRODUCT RANGE

Description	Order No.
vPOW_CX12-10-SF Track Power Coaxial Cable between Pickup and Regulator / 12 A / 1.0 Meter / Spring terminal connection / Litz 2x1440x0.071 mm / Copper cross section 6 mm <sup>2</sup> F-Pickup Diameter 11.2 mm / Bending radius 8xD	10018432
vPOW_CX12-20-SF Track Power Coaxial Cable between Pickup and Regulator / 12 A / 2.0 Meter / Spring terminal connection / Litz 2x1440x0.071 mm / Copper cross section 6 mm <sup>2</sup> F-Pickup Diameter 11.2 mm / Bending radius 8xD	10018433
vPOW_CX12-40-SF Track Power Coaxial Cable between Pickup and Regulator / 12 A / 4.0 Meter / Spring terminal connection / Litz 2x1440x0.071 mm / Copper cross section 6 mm <sup>2</sup> F-Pickup Diameter 11.2 mm / Bending radius 8xD	10018434
vPOW_CX12-60-SF Track Power Coaxial Cable between Pickup and Regulator / 12 A / 6.0 Meter / Spring terminal connection / Litz 2x1440x0.071 mm / Copper cross section 6 mm <sup>2</sup> F-Pickup Diameter 11.2 mm / Bending radius 8xD	10018435
vPOW_CX12-05-HU Track Power Coaxial Cable between Pickup and Regulator / 12 A / 0.5 Meter / Hotmelt connections / Litz 2x1440x0.071 mm / Copper cross section 6 mm <sup>2</sup> U-Pickup Diameter 11.2 mm / Bending radius 8xD	10020371
vPOW_CX12-10-HU Track Power Coaxial Cable between Pickup and Regulator / 12 A / 1.0 Meter / Hotmelt connections / Litz 2x1440x0.071 mm / Copper cross section 6 mm <sup>2</sup> U-Pickup Diameter 11.2 mm / Bending radius 8xD	10020372
vPOW_CX12-15-HU Track Power Coaxial Cable between Pickup and Regulator / 12 A / 1.5 Meter / Hotmelt connections / Litz 2x1440x0.071 mm / Copper cross section 6 mm <sup>2</sup> U-Pickup Diameter 11.2 mm / Bending radius 8xD	10020373
vPOW_CX12-20-HU Track Power Coaxial Cable between Pickup and Regulator / 12 A / 2.0 Meter / Hotmelt connections / Litz 2x1440x0.071 mm / Copper cross section 6 mm <sup>2</sup> U-Pickup Diameter 11.2 mm / Bending radius 8xD	10020374

# VEHICLE EQUIPMENT

## OVERVIEW CONFIGURATION PICK AND REGULATOR

Pickup \ Regulator	No Battery Charging			Battery Charging				No Battery Charging			
	vPOW_RE330.1 560V 10017430	vPOW_RE250.1 560V 10018452	vPOW_RE150.1 560V 10018453	vPOW_RE075.1 24V 10018411	vPOW_RE150.1 48V 10018412	vPOW_RE075.1 24V 10021438	vPOW_RE150.1 48V 10017418	vPOW_RE075.1 24V 10018454	vPOW_RE150.1 48V 10021454	vPOW_RE075.1 24V 10018455	vPOW_RE150.1 48V 10018456
vPOW_F330.1-140 10017429	✓										
vPOW_F250.1-140 10018442		✓									
vPOW_U150.1-140 10018449			✓								
vPOW_F075.1-140 10018445				✓				✓			
vPOW_F150.1-140 10018444					✓				✓		
vPOW_U075.1-140 10018447						✓				✓	
vPOW_U150.1-140 10018448							✓				✓



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