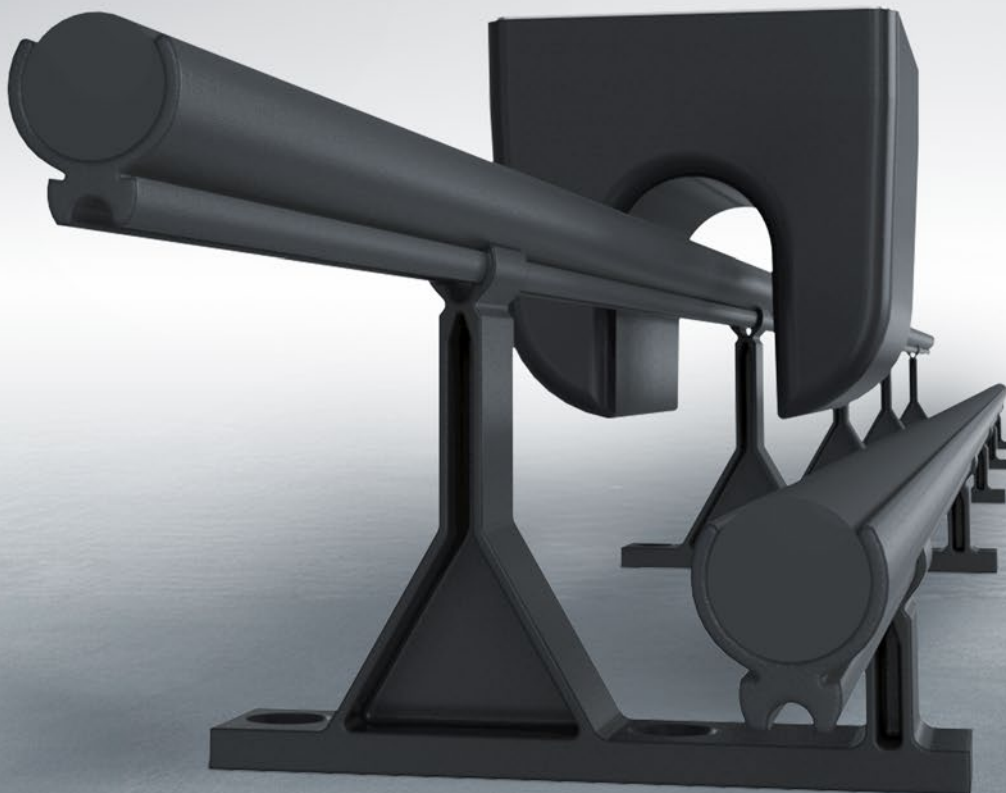
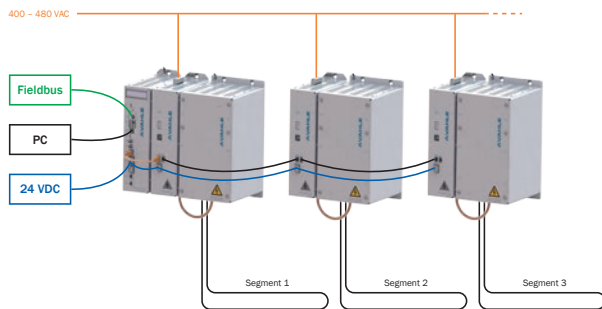


CPS® 140KHZ

CONTACTLESS POWER SUPPLY
140 KHZ TECHNOLOGY



CPS® 140KHZ – KEY HIGHLIGHTS



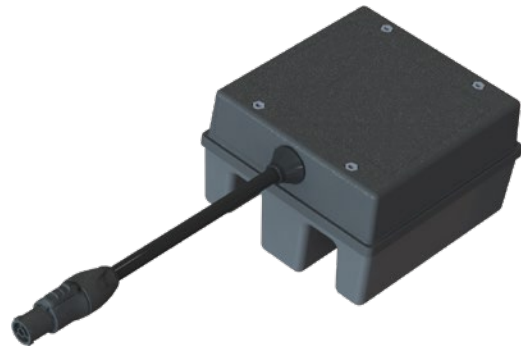
MODULAR DESIGN

Due to the modular structure of the CPS® 140kHz system, many diverse combinations of power ranges can be assembled. The primary side consists of 3.4 kW or 10 kW elements for a modular equipment.

Pickups with an output of 150 W–4 kW can be used on the secondary side. Additionally, it is possible to parallel the outputs from multiple secondaries to obtain higher power per vehicle. The top can switch from regulated DC output voltage to a DC-Bus that allows up to 30 kW.

SPACE-SAVING COMPACT DESIGN

The extreme compact design of the CPS® 140kHz 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 possible, in part, due to the separation of Pickup and Regulator. The Pickup needs to be mounted directly interfacing the primary track while the Regulator can be mounted anywhere on the vehicle allowing for easier access and maintenance. The connection between Pickup and Regulator is by coaxial cable which minimizes any radiated interference.



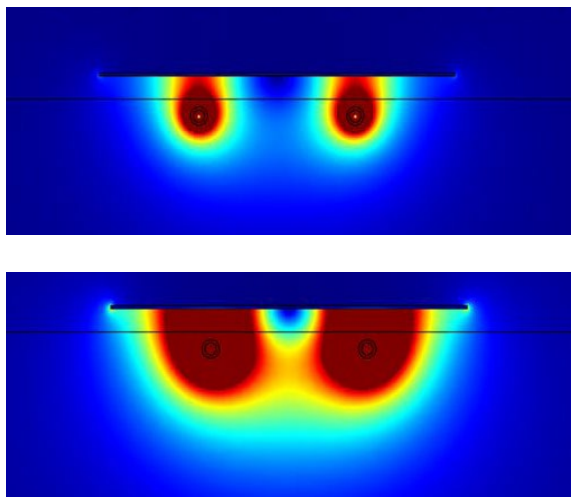
SERVICE AND DIAGNOSIS MODUL

CPS® 140kHz's primary-sided service and diagnostic module allow for whole-system performance control and monitoring. Fieldbus partnered with offered 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 CPS® 140kHz system. All settings are stored on an SD card. Failures and interferences are recorded internally and can be transmitted via a selectable interface allowing fast diagnostics and solutions in case of an event.

GUIDANCE

The main function of the track power cables in the floor is to transfer power to the Pickup(s) on AGVs. However, these cables can also be tracked, using a guidance sensor, to provide a guidance signal to the AGV controller.

The VAHLE Guidance sensor can navigate straight and curved pathways, as well as switches, crossing and power loops. PROFINET-IO and Ether-Net-IP interfaces are available, to provide range of communication options AGV controllers.

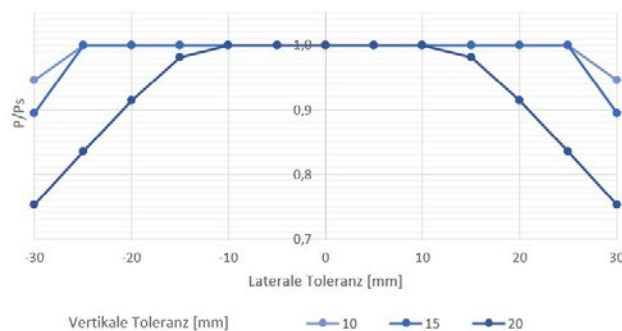


REDUCED IRON-FREE ZONE

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.

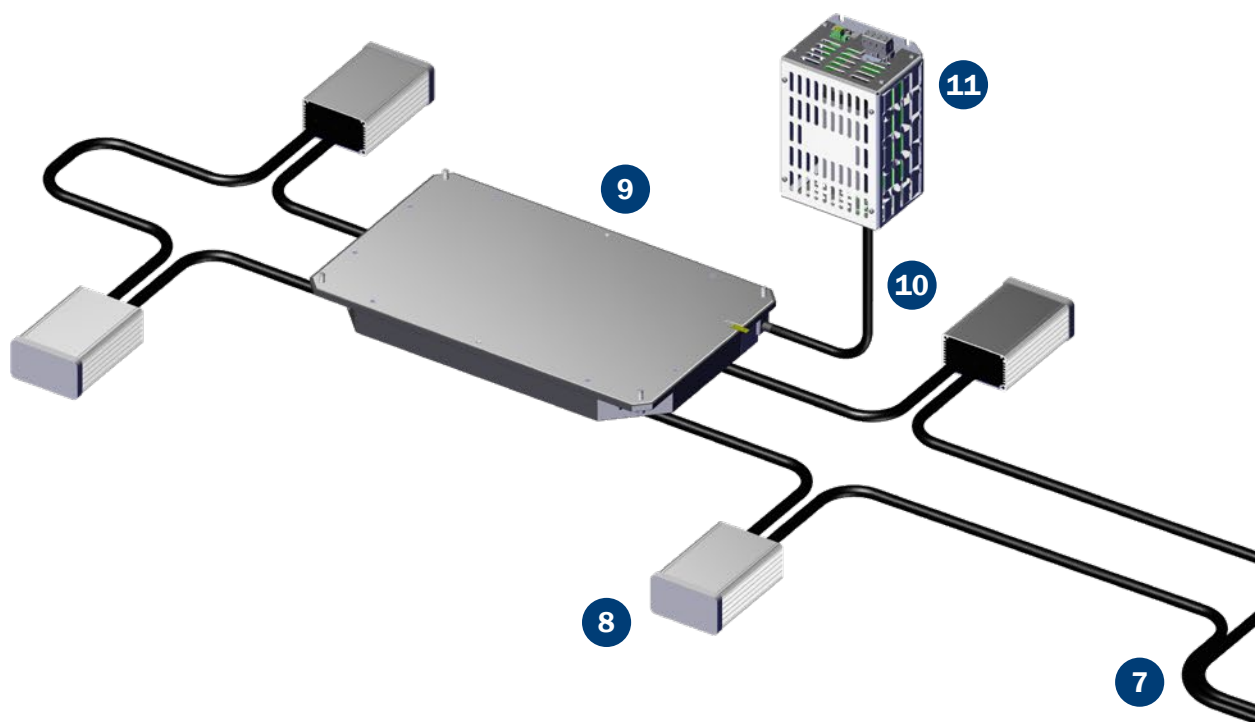
LARGE LATERAL TOLERANCES

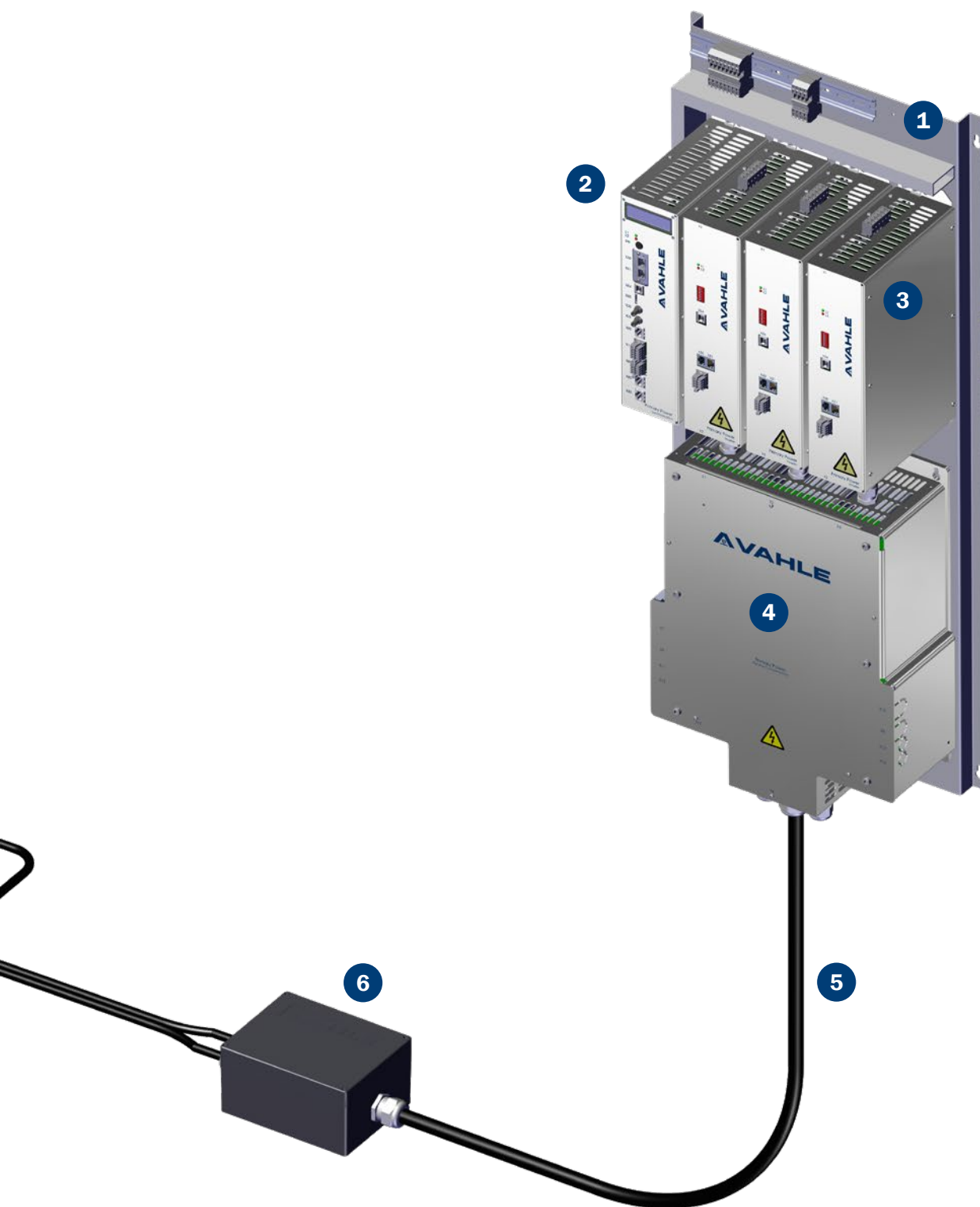
The goal during development was to increase the vertical and lateral displacement tolerances to a world class level never achieved before in the industry. When the tolerances are exceeded only a small derating occurs. Even when the specified tolerance range is exceeding closely to the specified, only a small derating will occur. This makes it possible, to drive through most of the trajectory reliable.



CPS® 140KHZ – SYSTEM OVERVIEW

- ❶ PPU Primary Unit
- ❷ PPS: Primary Power Synchronization
- ❸ PPI: Primary Inverter
- ❹ PPGC: Gyrator and Compensation
- ❺ CX45: Track Power Coaxial Cable
- ❻ TPFB: Track Power Feed Box
(optional required, if Track Power Coaxial Cable CX45 required)
- ❼ PX45: Track Power Cable
- ❽ TPCB: Track Power Compensation Box
- ❹ F-PU: Flat Pickup
- ❿ CX12: Mobile Power Coaxial Cable
- ⓫ RE: Regulator





PRIMARY POWER UNIT – PPU330

TECHNICAL DATA

Electrical data

Power (nominal/peak)	3.3 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 %
Auxilliary (required)	24 VDC $\pm 10\%$, 4 A

Interface

Interface	Profinet-IO
	EtherNet/IP
Data rate.....	500 kBit/s
Status information	Enable 140 kHz, fieldbus reset, fieldbus error, system error, warning

Mechanical data (Master)

Dimension (mounting plate) ..	500 x 445 x 256.4 mm
Dimension (components)	368.5 x 378.5 x 226.4 mm
Ambient temperature.....	0 ... +40 °C non-condensing
Operation.....	3M4, 7M2
Environment	General industrial
Cooling	Convection
Protection type	IP20
Connection power	Cage clamp 4 mm ²
Connection auxilliary.....	Cage clamp 1.5 mm ²
Connection fieldbus	RJ45



PPU330, 3.3 kW Master



PPU330, 3.3 kW Slave

Mechanical data (Slave)

Dimension (mounting plate) ..	500 x 355 x 256.4 mm
Dimension (components)	273.5 x 378.5 x 226.4 mm
Ambient temperature.....	0 ... +40 °C non-condensing
Operation.....	3M4, 7M2
Environment	General industrial
Cooling	Convection
Protection type	IP20
Connection power	Cage clamp 4 mm ²
Connection auxilliary.....	Cage clamp 1.5 mm ²
Connection fieldbus	RJ45

RANGE OF PRODUCTS

Description		Order No.
vPOW_PPU330.3-140-045-M-EI	Primary Unit 3.3 kW / Mounting plate / 140 kHz / 45 A / Master / EtherNet/IP	10027433
vPOW_PPU330.3-140-045-M-PN	Primary Unit 3.3 kW / Mounting plate / 140 kHz / 45 A / Master / Profinet IO	10027434
vPOW_PPU330.3-140-045-S-NI	Primary Unit 3.3 kW / Mounting plate / 140 kHz / 45 A / Slave / No Fieldbus	10027436
vPOW_PPU330.2-140-045-M-EI	Primary Unit 3.3 kW / Components with accessory / 140 kHz / 45 A / Master / EtherNet/IP	10023411
vPOW_PPU330.2-140-045-M-PN	Primary Unit 3.3 kW / Components with accessory / 140 kHz / 45 A / Master / Profinet IO	10023412
vPOW_PPU330.2-140-045-S-NI	Primary Unit 3.3 kW / Components with accessory / 140 kHz / 45 A / Master / No Fieldbus	10023413

Description		Order No.
vPOW_PPU10k.3-140-045-M-PN	Primary Unit 10 kW / 140 kHz / 45 A / Master / Profinet IO	10027189
vPOW_PPU10k.3-140-045-M-EI	Primary Unit 10 kW / 140 kHz / 45 A / Master / EtherNet/IP	10027191
vPOW_PPU10k.3-140-045-M-IO	Primary Unit 10 kW / 140 kHz / 45 A / Master / Digital I/O	10027192
vPOW_PPU10k.3-140-045-S-NI	Primary Unit 10 kW / 140 kHz / 45 A / Slave / No Fieldbus To extend the Primary Unit up to 20 kW or 30 kW	10027193
vPOW_PPU30k.1-140-045 expansion kit	Expansion Kit to install PPU30k	10025435
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

TRACK EQUIPMENT



Coaxial cable



Distance cable



Compensation box



Connection boxes

RANGE OF PRODUCTS

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_PX45DC	Track Power Litz Cable Drag Chain capable / 140 kHz / 45 A	10027865
vPOW_TPCB.2-140-045-F	Track Power Compensation Box / 140 kHz / 45 A / Fixed capacity	10027809
vPOW_TPFB.3-140-045-1	Track Power Feed Box / 140 kHz / 45 A / 1 Power Input: CX45 / 1 Power	10027810
vPOW_TPFB.4-140-045-1	Track Power Feed Box / 140 kHz / 45 A / 1 Power Input: PX45 / 1 Power output: PX45 / IP54	10027811
vPOW_TPFB.1-140-045-2	Track Power Feed Box / 140 kHz / 45 A / 1 Power output Box for connection between Primary Cable PX45 and 2x Primary Cable PX45	10022185
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 6x Primary Cable PX45	10019008

VEHICLE EQUIPMENT – GUIDANCE

TECHNICAL DATA

Mechanical data

Dimension..... 239.45 x 155 x 46.50 mm

Mounting holes..... 140 x 141 mm

Weight..... 1 kg

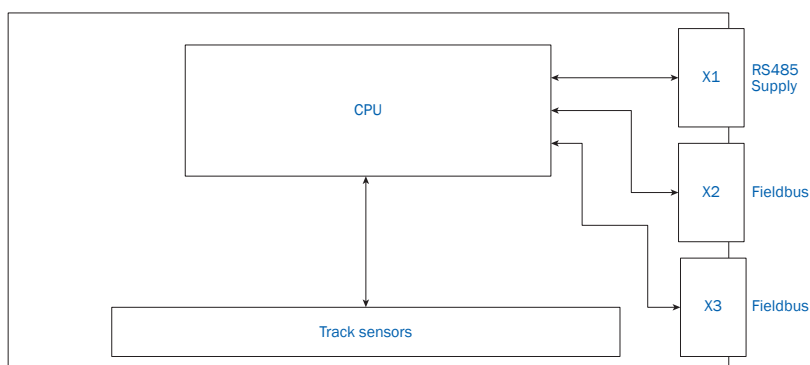
Protection type IP54

Ambient temperature..... 0 ... 40 °C non-condensing

Environment General industrial



BLOCK DIAGRAM



RANGE OF PRODUCTS

Description		Order No.
vPOW_Pilot.1-45-140-PN	Guidance Sensor / 140 kHz / 45 A / Profinet IO	10018392
vPOW_Pilot.1-45-140-EI	Guidance Sensor / 140 kHz / 45 A / EtherNet/IP	10018394

PRINCIPLE ARRANGEMENT TRACK GUIDANCE

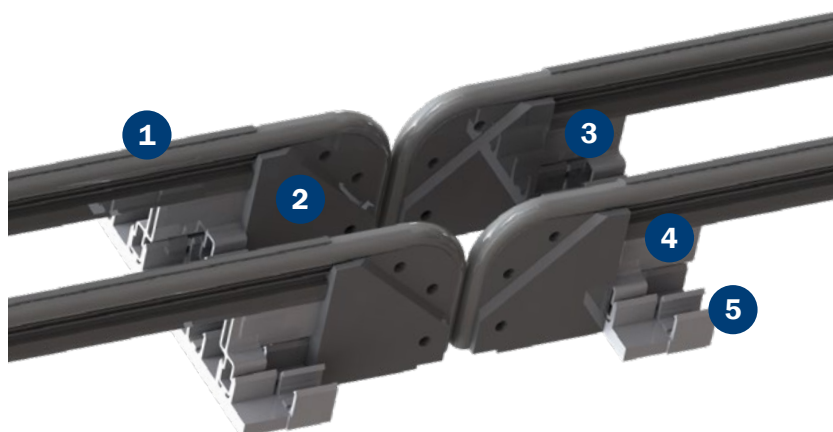


Bottom view

EMS INSTALLATION

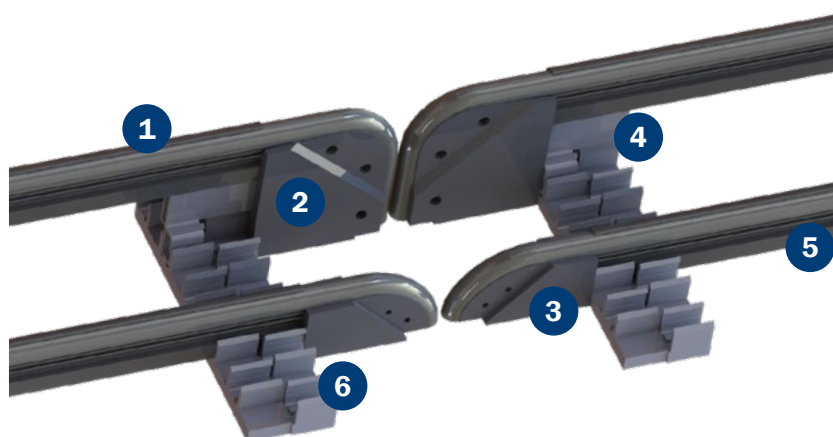
Overview E-Pickup

- 1 Cable conduit
- 2 Feeding (active conductor)
- 3 Spacer for cable conduit
- 4 Spacer for cable conduit (mirrored)
- 5 Compact hanger



Overview U-Pickup

- 1 Cable conduit
- 2 Feeding (active conductor)
- 3 Feeding (passive conductor)
- 4 Spacer for cable conduit
- 5 Filling rod for cable conduit
- 6 Compact hanger

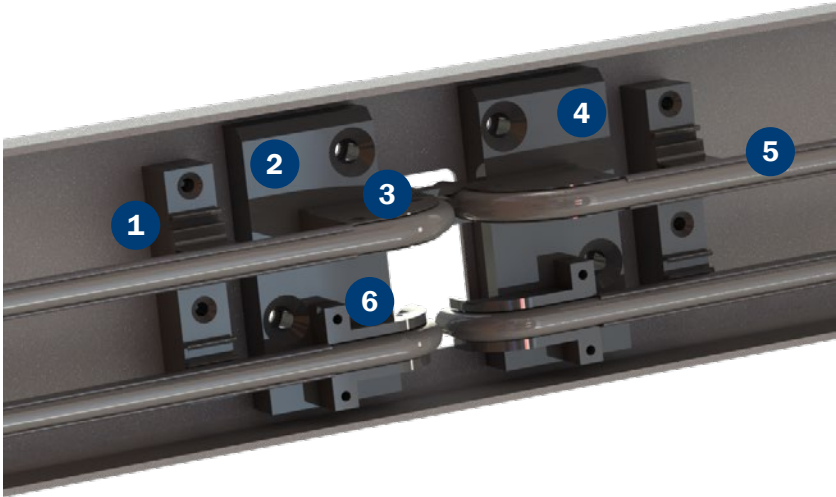


RANGE OF PRODUCTS

Description		Order No.
AH-KA10L-8/16,5-10N-PA-14	Screwed compact hanger 8 pole	0142075
AH-KA10L-10/16,5-N-PA-14	Screwed compact hanger 10 pole	0142076
PLZL-A071,8/00000-090-0H-11,0-K-0000-0+V	Feeding / active conductor / use with screwed compact hanger	10025930
PLZL-A030,0/00000-090-0R-11,0-K-0000-0+V	Feeding / passive conductor	10022182
PLAH-A52,7/00000-000-00-0000-0-0000-1+V	Spacer for cable conduit / 52.7 mm	10020582
PLAH-A52,7/00000-000-MI-0000-0-0000-1+V	Spacer for cable conduit / mirrored / 52.7 mm	10024107
PLKL-A006,5/00000-000-00-11,0-E-6000-1+V	Cable conduit / straight / D = 11 mm / 6 m	0915116
PLKL-A006,5/00000-000-00-11,0-E-2000-1+V	Cable conduit / straight / D = 11 mm / 2 m	0915155
PLKL-A006,5/00000-UNI-HR-11,0-0-3000-6+V	Cable conduit / curved / D = 11 mm / 3 m	10020864
FÜLLSTAB FÜR VKS-PROFIL	Filling rod for the cable conduit of the passive conductor / 3 m	1023278

SORTER INSTALLATION

- 1 Compact hanger 3 in 1
- 2 Spacer for feeding left
- 3 Feeding (active conductor)
- 4 Spacer for feeding right
- 5 Cable conduit
- 6 Feeding (passive conductor)

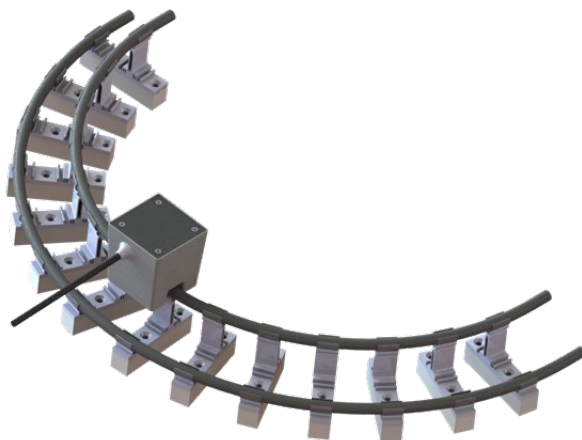


RANGE OF PRODUCTS

Description		Order No.
PLKH-B60,8/00000-010-02-000D-0-62,8-1+V	Compact hanger 3 in 1 / 60.8 mm / sorter mounting / clip in mechanism	10028258
PLZL-0050,0/00000-090-H0-11,0-0-0000-4+V	Feeding / active conductor	0915295
PLZL-0015,2/00000-090-R0-11,0-0-0000-4+V	Feeding / passive conductor	0915296
PLKL-B007,7/00000-000-00-11,0-E-3000-1+V	Cable conduit / straight / D = 11 mm / 3 m	0915299/00
PLKL-B007,7/00000-000-00-11,0-E-2000-1+V	Cable conduit / straight / D = 11 mm / 2 m	0915298
PLKL-B007,7/00000-000-00-11,0-E-0020-1+V	Cable conduit / straight / D = 11 mm / 20 mm	10024680
PLZL-Z018,5/00000-010-HR-000H-L-0000-4+U	Spacer for feeding left	10001430
PLZL-Z018,5/00000-010-HR-000H-R-0000-4+U	Spacer for feeding right	10001426

U015 – SYSTEM INTEGRATION

EXAMPLE: SORTER INSTALLATION

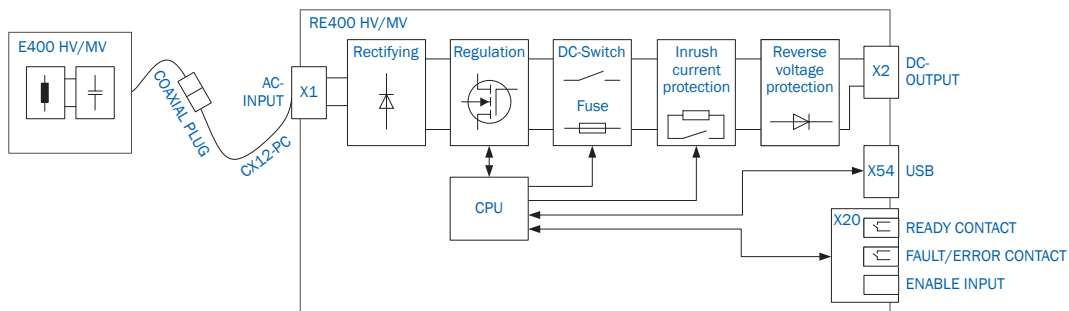


VEHICLE EQUIPMENT FOR 560 V AND 283 V

E-PICKUP E400-140 AND REGULATOR RE400



BLOCK DIAGRAM



RANGE OF PRODUCTS

Description		Order No.
vPOW_E400.1-140-045-04-L0-HV-05	E-Pickup / 4 kW / 140 kHz / 45 A / Duty 40 % / Linear / High Voltage / Nominal power 1.6 kW / Peak power 4 kW	10023621
vPOW_RE400.2-140-560-04-NI-LI-RC-NI	Regulator / 1.6 kW / 140 kHz / 560 V / ED 40 % / Thermal monitoring / LITE / Relay contact / No Auxilliary / Output voltage 560 VDC $\pm 5\%$ / Peak power 4 kW / No Battery Charging / Parallelizable output	10023622
vPOW_E400.1-140-045-02-L0-MV-05	E-Pickup / 4 kW / 140 kHz / 45 A / Duty 20 % / Linear / Mid Voltage / Nominal power 1.6 kW / Peak power 4 kW	10023601
vPOW_RE400.2-140-283-02-NI-LI-RC-NI	Regulator / 1.6 kW / 140 kHz / 283 V / ED 20 % / Thermal monitoring / LITE / Relay contact / No Auxilliary / Output voltage 283 VDC $\pm 5\%$ / Peak power 4 kW / No Battery Charging / Parallelizable output	10023602
vPOW_CX12-PC	Track Power Coaxial Cable between Pickup and Regulator / 12 A	see page 25

TECHNICAL DATA

Electrical data

Peak power	4 kW
Nominal power	1.6 kW
Output voltage	560 VDC / 283 VDC $\pm 5\%$
Output current max.....	8 A / 16 A
Duty cycle.....	40 % / 20 % Duty (10 min cycle)
Track current	45 A
Track frequency.....	140 kHz
Track conductor spacing.....	70 mm

Protection

Output over voltage.....	Yes
Output over current.....	Yes
Pickup monitoring	I2T
Inrush current limitation	integrated precharging circuit
Max. reverse voltage.....	750 VDC

Regulator mechanical data

Dimension.....	245 x 156 x 90 mm
Mounting holes.....	235.25 x 99 mm
Weight.....	1.6 kg
Protection rating.....	IP20
Ambient temperature.....	0 ... +40 °C non-condensing
Environment	General industrial

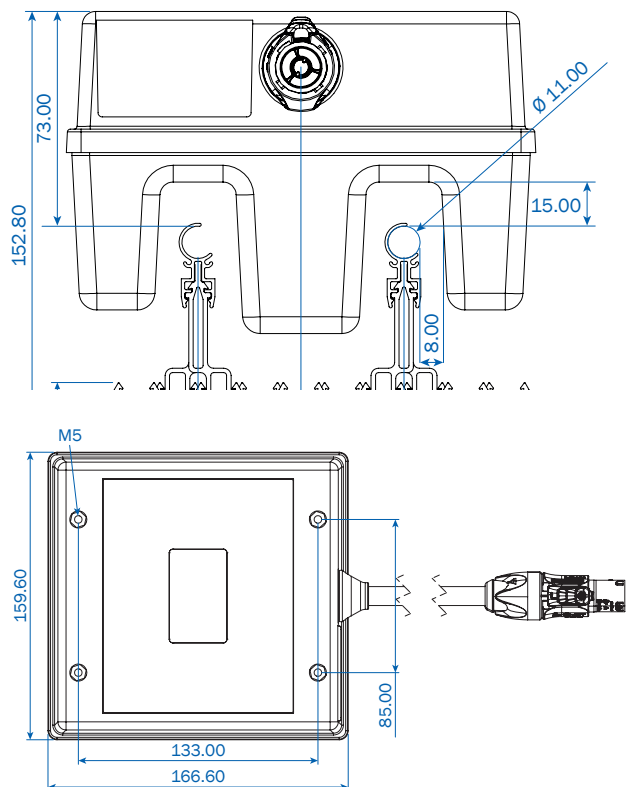
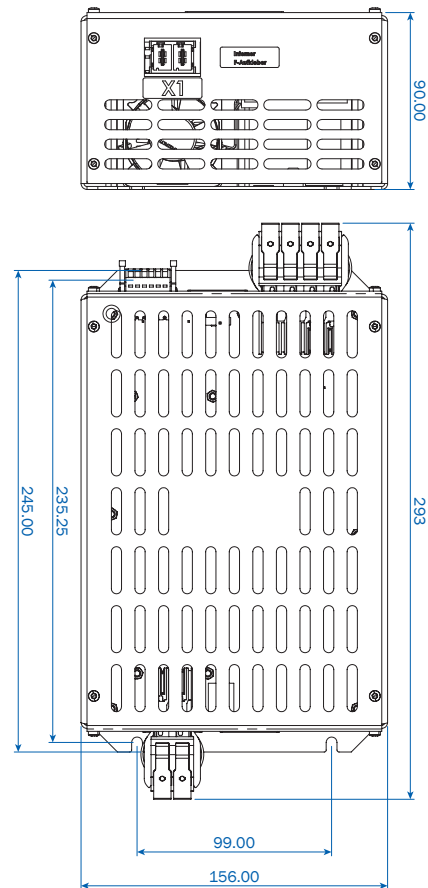
Pickup connection cable

Length	0.5/1.5/3.5/5.5
Outer diameter	11 mm
Connections.....	Pre-terminated
Application.....	Fixed
Min. bending radius	8 x D

Pickup mechanical data

Dimension.....	166.6 x 159.6 x 109.5 mm
Mounting holes.....	133 x 85 mm
Weight.....	5 kg
Nominal airgap.....	8 mm (from top of track cable to bottom of Pickup)
Vertical tolerances	± 8 mm
Lateral tolerances	± 8 mm
Protection rating.....	IP54
Color.....	RAL 9004
Ambient temperature.....	0 ... +40 °C non-condensing
Environment	General industrial
Cooling	Natural convection

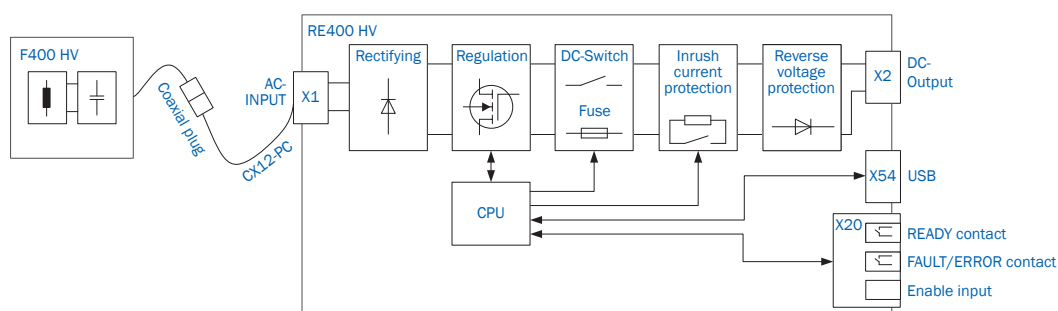
DIMENSIONS



VEHICLE EQUIPMENT FOR 560V F-PICKUP F400-140 AND REGULATOR RE400



BLOCK DIAGRAM



RANGE OF PRODUCTS

Description		Order No.
vPOW_F400.1-140-045-03-L0-HV	F-Pickup / 4 kW / 140 kHz / 45 A / Duty 30 % / Linear / High Voltage / Nominal power 1.2 kW / Peak power 4 kW	10033340
vPOW_RE400.2-140-560-03-FB-LI-RC-NI	Regulator / 1.2 kW / 140 kHz / 560 V / Duty 30 % / No thermal monitoring / LITE / Relay contact / No Auxilliary / Output voltage 560 VDC $\pm 5\%$ / Peak power 4 kW / No Battery Charging / Parallelizable output	10033339
vPOW_CX12-SF	Track Power Coaxial Cable between Pickup and Regulator / 12 A / Spring-cage connection F-Pickup	see page 25

TECHNICAL DATA

Electrical data

Peak power	4 kW
Nominal power	1.2 kW
Output voltage	560 VDC
Output current max.....	8 A
Duty cycle.....	30 %
Track current	45 A
Track frequency.....	140 kHz
Track conductor spacing.....	110 mm

Protection

Output over voltage.....	Yes
Output over current.....	Yes
Pickup monitoring	I2T
Inrush current limitation	integrated precharging circuit
Max. reverse voltage.....	750 VDC

Regulator mechanical data

Dimension.....	245 x 156 x 90 mm
Mounting holes.....	235.25 x 99 mm
Weight.....	1.6 kg
Protection rating.....	IP20
Ambient temperature.....	0 ... +40 °C non-condensing
Environment	General industrial

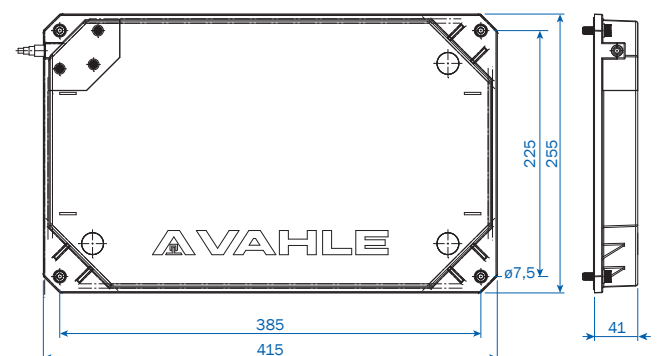
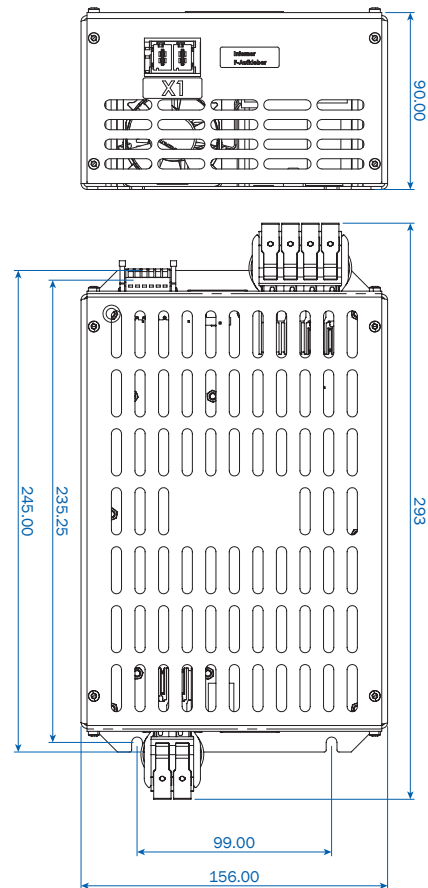
Pickup connection cable

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

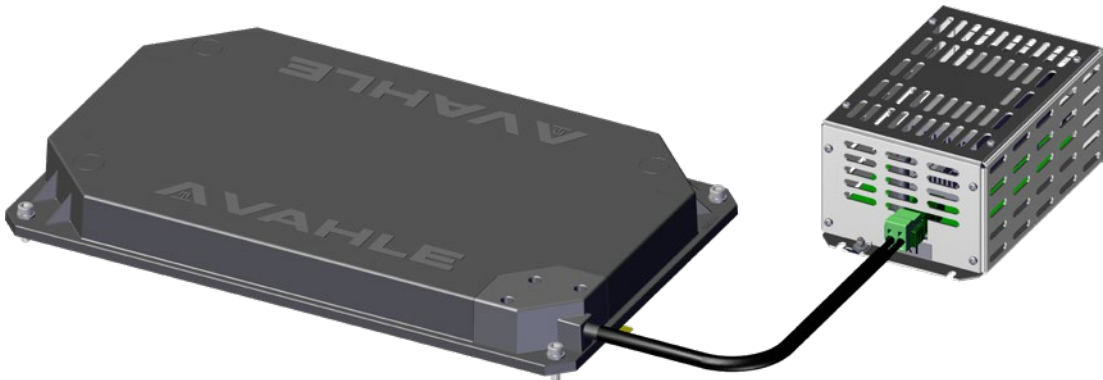
Pickup mechanical data

Dimension.....	415 x 255 x 41 mm
Mounting holes.....	385 x 225 mm
Weight.....	9,5 kg
Nominal airgap.....	15 mm (from top of track cable to bottom of Pickup)
Vertical tolerances	±5 mm
Lateral tolerances	±20 mm
Protection rating.....	IP54
Color.....	RAL 9004
Ambient temperature.....	0 ... +40 °C non-condensing
Environment	General industrial
Cooling	Natural convection

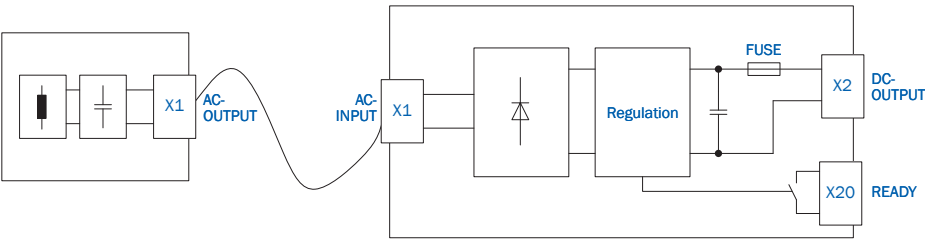
DIMENSIONS



VEHICLE EQUIPMENT FOR 560V
F-PICKUP FXXX-140 AND REGULATOR REXXX



BLOCK DIAGRAM



RANGE OF PRODUCTS

Description		Order No.
vPOW_F330.1-140-045-04-L0-HV	F-Pickup / 3.3 kW / 140 kHz / 45 A / Duty 40 % / Linear / High Voltage / 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 560 VDC $\pm$ 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 / High Voltage / 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 560 VDC $\pm$ 5 % / Peak power 2.5 kW / No Battery Charging / Parallelizable output	10018452
vPOW_CX12-SF	Track Power Coaxial Cable between Pickup and Regulator / 12 A / Spring-cage connection F-Pickup	see page 25

TECHNICAL DATA

Electrical data

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

Protection

Output over voltage.....	Yes
Output over current.....	Yes
Max. reverse voltage	750 VDC

Regulator mechanical data

Dimension.....	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

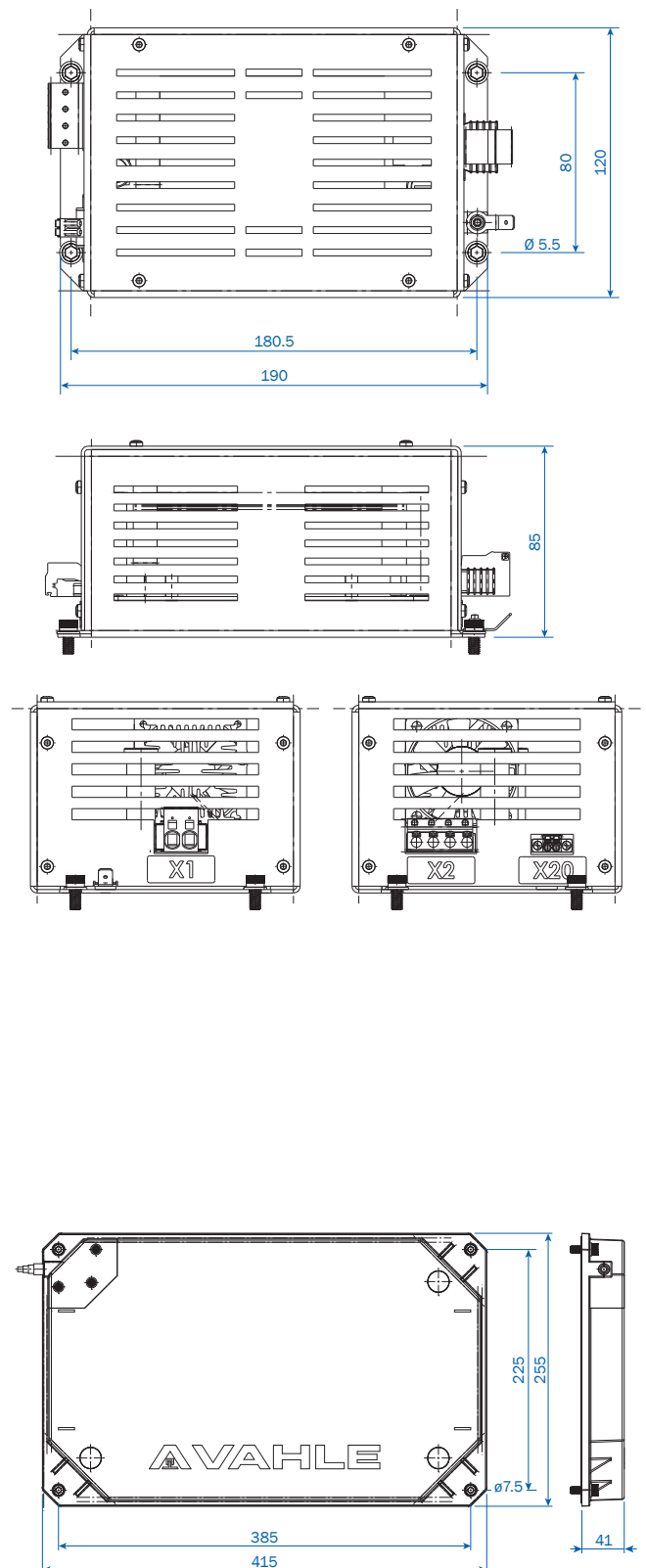
Pickup connection cable

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

Pickup mechanical data

Dimension.....	415 x 255 x 41 mm
Mounting holes.....	385 x 225 mm
Weight	9,5 kg
Nominal airgap	15 mm (from top of track cable to bottom of Pickup)
Vertical tolerances	± 5 mm
Lateral tolerances	± 20 mm
Protection rating.....	IP54
Color	RAL 9004
Ambient temperature.....	0 ... +40 °C non-condensing
Environment	General industrial
Cooling	Natural convection

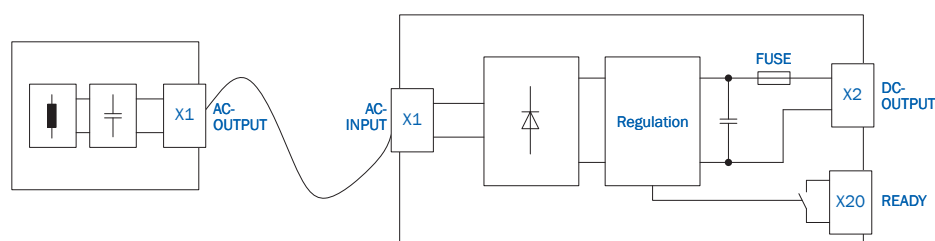
DIMENSIONS



VEHICLE EQUIPMENT FOR 560V AND 283V U-PICKUP U150-140 AND REGULATOR RE150



BLOCK DIAGRAM



RANGE OF PRODUCTS

Description		Order No.
vPOW_U150.1-140-045-04-L0-HV-05	Pickup U150 for 45 A / 140 kHz linear inductive application / 0.5 m cable attached / Nominal Power 0.6 kW / Peak Power 1.5 kW / Duty 40 %	10028750
vPOW_U150.1-140-045-04-L0-HV-10	Pickup U150 for 45 A / 140 kHz linear inductive application / 1 m cable attached / Nominal Power 0.6 kW / Peak Power 1.5 kW / Duty 40 %	10028751
vPOW_U150.1-140-045-04-L0-HV-15	Pickup U150 for 45 A / 140 kHz linear inductive application / 1.5 m cable attached / Nominal Power 0.6 kW / Peak Power 1.5 kW / Duty 40 %	10028752
vPOW_U150.1-140-045-04-L0-HV-20	Pickup U150 for 45 A / 140 kHz linear inductive application / 2 m cable attached / Nominal Power 0.6 kW / Peak Power 1.5 kW / Duty 40 %	10028753
vPOW_RE150.1-140-560-04-NI-LI-RC-NI	Regulator / 1.5 kW / 140 kHz / 560 V / Duty 40 % / No thermal monitoring / LITE / Relay contact / No Auxilliary / Output voltage 560 VDC $\pm 5\%$ / Peak power 1.5 kW / No Battery Charging / Parallelizable output	10018453
vPOW_RE150.1-140-283-04-NI-LI-RC-NI	Regulator / 1.5 kW / 140 kHz / 283 V / Duty 40 % / No thermal monitoring / LITE / Relay contact / No Auxilliary / Output voltage 283 VDC $\pm 5\%$ / Peak power 1.5 kW / No Battery Charging / Parallelizable output	10023616

TECHNICAL DATA

Electrical data

Peak power	1.5 kW
Nominal power	0.6 kW
Output voltage	560 VDC / 283 VDC $\pm 5\%$
Output current max.....	3 A / 6 A
Duty cycle.....	40% Duty (10 min cycle)
Track current	45 A
Track frequency.....	140 kHz

Protection

Output over voltage.....	Yes
Output over current.....	Yes
Max. reverse voltage.....	750 VDC

Regulator mechanical data

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

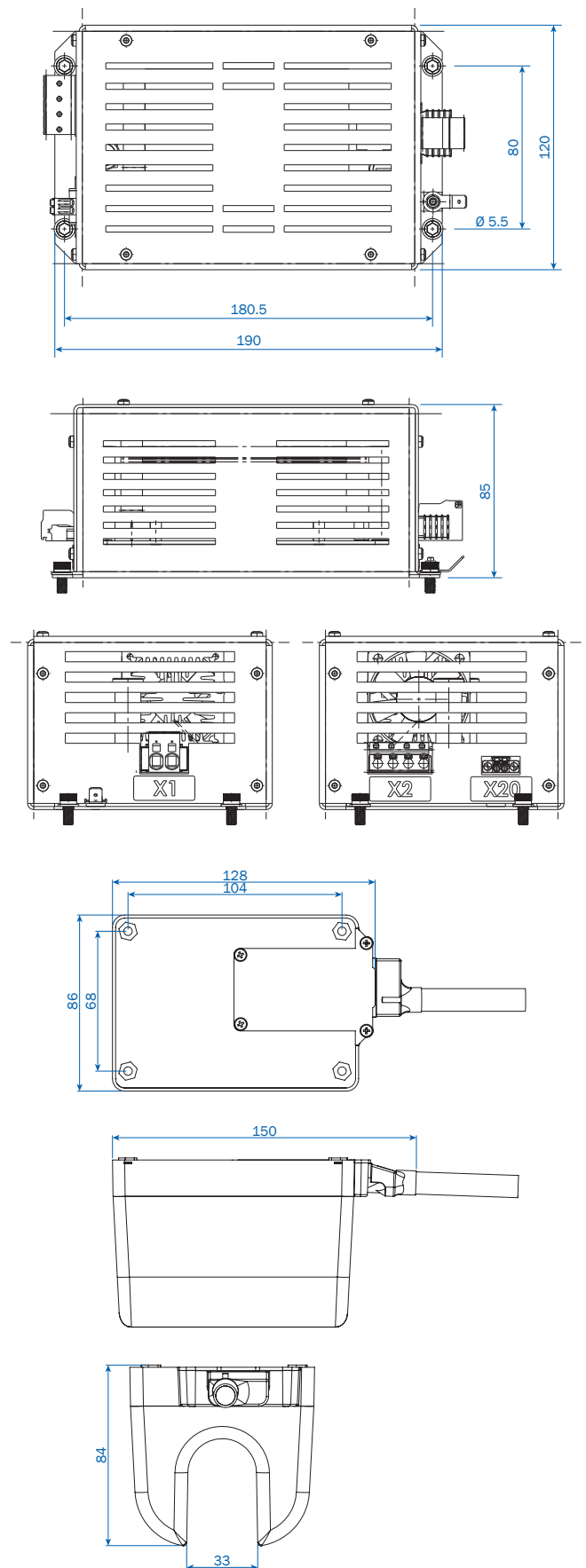
Pickup connection cable

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

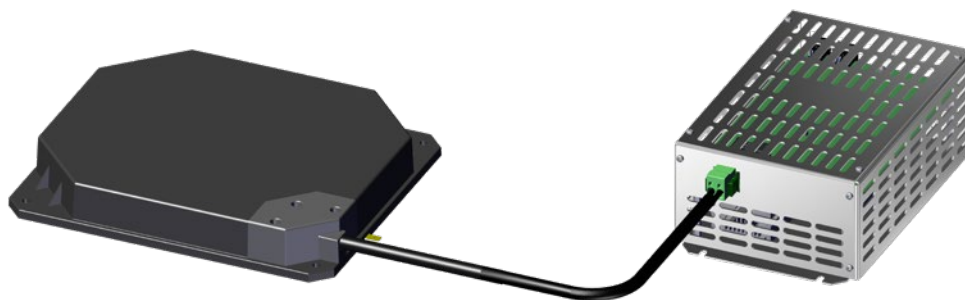
Pickup mechanical data

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

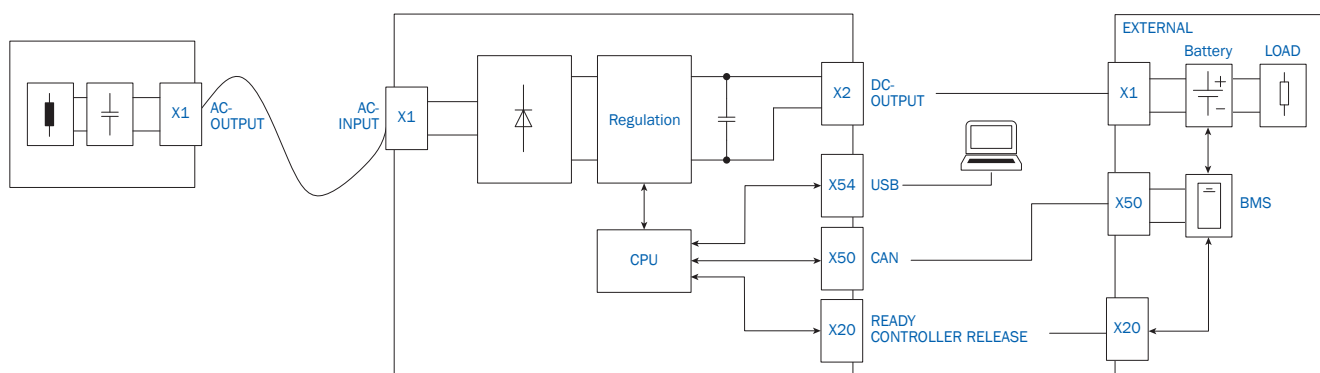
DIMENSIONS



VEHICLE EQUIPMENT FOR 24 V AND 48 V F-PICKUP FXXX-140 AND REGULATOR REXXX



BLOCK DIAGRAM



RANGE OF PRODUCTS

Description		Order No.
vPOW_F075.1-140-045-10-LP-LV	F-Pickup / 0.75 kW / 140 kHz / 45 A / Duty 100 % / Linear, Punctual / Low Voltage / Peak power 0.75 kW	10018445
vPOW_RE075.1-140-024-10-FA-AD-CA-NI	Regulator / 0.75 kW / 140 kHz / 24 V / Duty 100 % / Thermal monitoring / Advanced / CAN / No Auxilliary / Output voltage 24 VDC $\pm 5\%$ / 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 / 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	10018454
vPOW_F150.1-140-045-10-LP-LV	F-Pickup / 1.5 kW / 140 kHz / 45 A / Duty 100 % / Linear, Punctual / Low Voltage / Peak power 1.5 kW	10018444
vPOW_RE150.1-140-048-10-FA-AD-CA-NI	Regulator / 1.5 kW / 140 kHz / 48 V / Duty 100 % / Thermal monitoring / Advanced / CAN / No Auxilliary / Output voltage 48 VDC $\pm 5\%$ / 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 / 48 V / Duty 40 % / Thermal monitoring / LITE / Relay contact / No Auxilliary / Output voltage 48 VDC $\pm 5\%$ / Peak power 1.5 kW / No Battery Charging / Parallelizable output	10021454
vPOW_TPCP150.1-140-045-NI-R1	Charging Plate / 324x150x12 mm / IP54 / RAL 9004	10019007
vPOW_CX12-SF	Track Power Coaxial Cable between Pickup and Regulator / 12 A / Spring-cage connection F-Pickup	see page 25

TECHNICAL DATA

Electrical data

Continuous power	0.75 / 1.5 kW
Output voltage	24 / 48VDC $\pm 5\%$
Output current max.....	31.3 / 31.3 A
Duty cycle.....	100 % Duty
Track current	45 A
Track frequency.....	140 kHz

Protection

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

Regulator mechanical data

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

Charging plate mechanical data

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

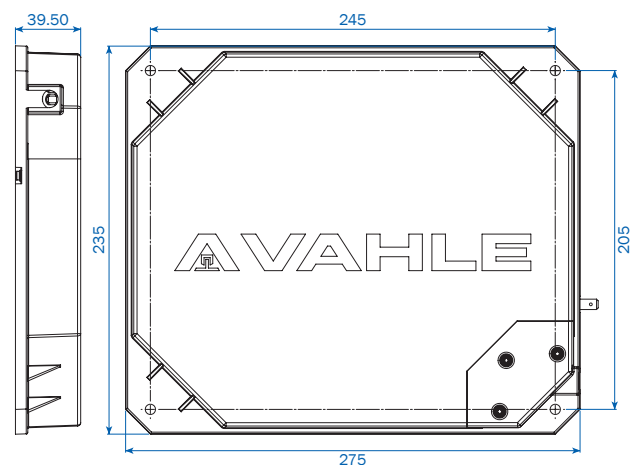
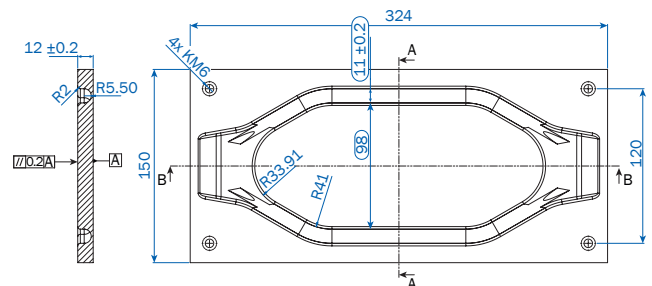
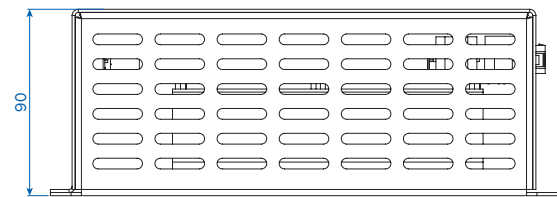
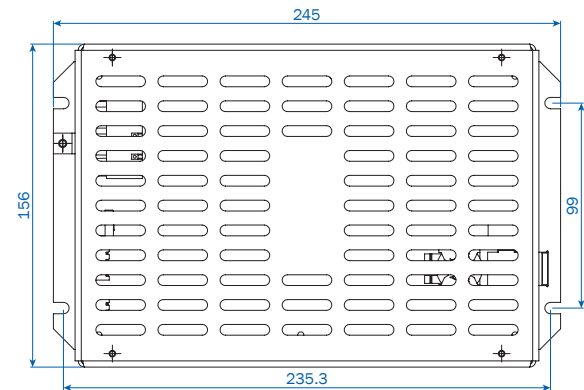
Pickup connection cable

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

Pickup mechanical data

Dimension.....	275 x 235 x 39.5 mm
Mounting holes.....	245 x 205 mm
Weight	5 kg
Nominal airgap*.....	5 mm (from top of TPCP to bottom of Pickup)
Vertical tolerances*	± 2 mm
Lateral tolerances	± 10 mm
Protection type	IP54
Color.....	RAL 9004
Ambient temperature.....	0 ... +40 °C non-condensing
Environment	General industrial
Cooling	Natural convection

DIMENSIONS

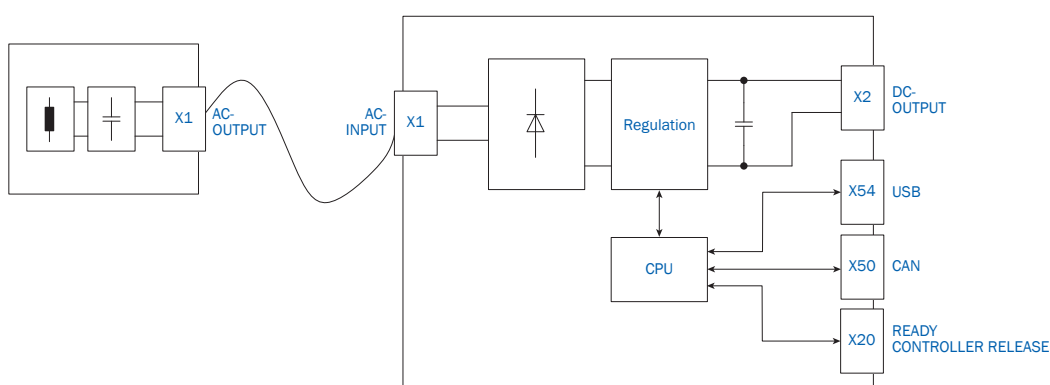


* Linear Charging is also available.

VEHICLE EQUIPMENT FOR 24 V AND 48 V U-PICKUP UXXX-140 AND REGULATOR REXXX



BLOCK DIAGRAM



RANGE OF PRODUCTS

Description		Order No.
vPOW_U150.1-140-045-04-L0-LV-05	Pickup U150 for 45 A / 140 kHz linear inductive application / 0.5 m cable attached / Nominal Power 0.6 kW / Peak Power 1.5 kW / Duty 40 %	10027258
vPOW_U150.1-140-045-04-L0-LV-10	Pickup U150 for 45 A / 140 kHz linear inductive application / 1 m cable attached / Nominal Power 0.6 kW / Peak Power 1.5 kW / Duty 40 %	10028747
vPOW_U150.1-140-045-04-L0-LV-15	Pickup U150 for 45 A / 140 kHz linear inductive application / 1.5 m cable attached / Nominal Power 0.6 kW / Peak Power 1.5 kW / Duty 40 %	10028748
vPOW_U150.1-140-045-04-L0-LV-20	Pickup U150 for 45 A / 140 kHz linear inductive application / 2 m cable attached / Nominal Power 0.6 kW / Peak Power 1.5 kW / Duty 40 %	10028749
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_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_RE150.1-140-072-04-UA-LI-RC-NI	Regulator RE150 with 72 VDC $\pm 5\%$ Nominal Power 0.6 kW / Peak Power 1.5 kW / Duty 40 % at 10 min cycle	10024891

TECHNICAL DATA

Electrical data

Peak power	0.75 / 1.5 kW
Nominal power	0.3 / 0.6 kW
Output voltage	24 / 48 VDC $\pm 5\%$
Output current max.....	31.3 / 31.3 A
Duty cycle.....	40% Duty (10 min cycle)
Track current	45 A
Track frequency.....	140 kHz

Protection

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

Regulator mechanical data

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

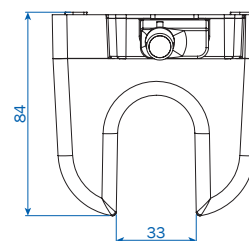
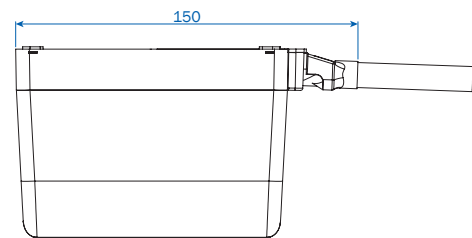
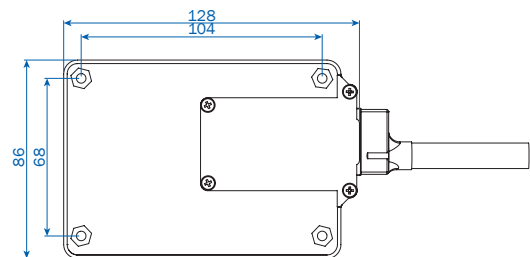
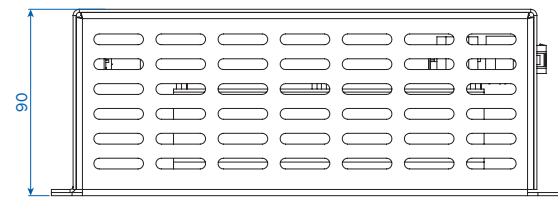
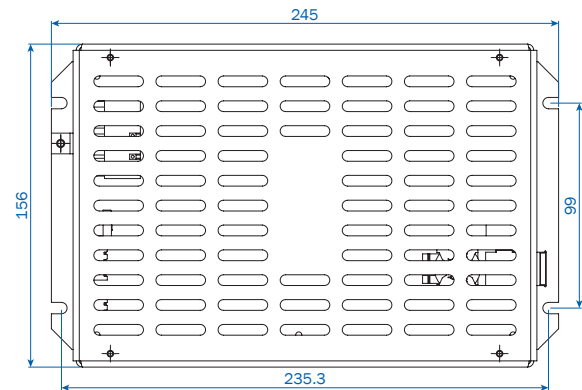
Pickup connection cable

Length.....	0.5/1/1.5/2 m
Outer diameter	11 mm
Connections.....	Pre-terminated
Application.....	Fixed
Min. bending radius	8 x D

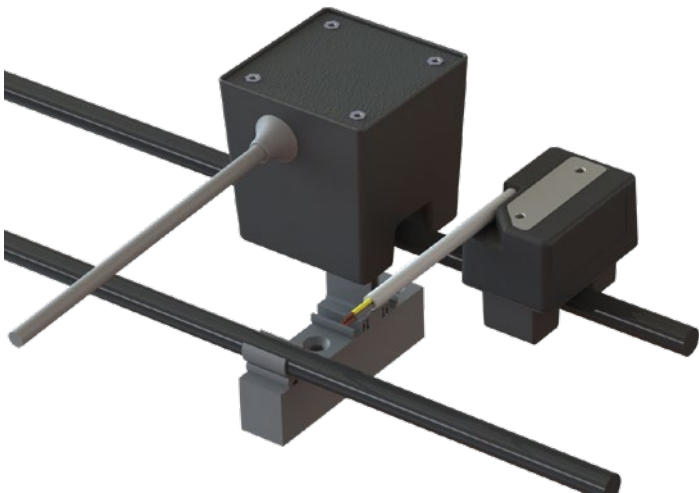
Pickup mechanical data

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

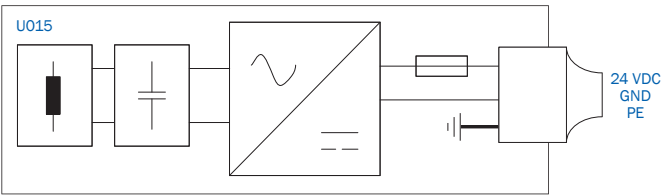
DIMENSIONS



VEHICLE EQUIPMENT FOR 24 V
U-PICKUP U015 AND U007



BLOCK DIAGRAM



RANGE OF PRODUCTS

Description		Order No.
vPOW_U015.1-024-07-140-045-LN-NI-LO	U-Pickup / 150 W / 24 VDC / Duty 70 % / 140 kHz / 45 A / LITE / Not parallelizable / No interface / Linear / IP65 / Output voltage 24 VDC $\pm$ 10 % / Peak power 150 W (0.5 sec)	10022728
vPOW_U007.1-024-06-140-045-LN-NI-LO	U-Pickup / 70 W / 24 VDC / Duty 60 % / 140 kHz / 45 A / LITE / Not parallelizable / No interface / Linear / IP65 / Output voltage 24 VDC $\pm$ 10 % / Peak power 70 W	10027518

TECHNICAL DATA

Electrical data

Peak power	0.15 kW
Nominal power	0.1 kW
Output voltage	24 VDC $\pm 10\%$
Output current max.....	6 A
Duty cycle.....	70%
Track current	45 A
Track frequency.....	140 kHz

Protection

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

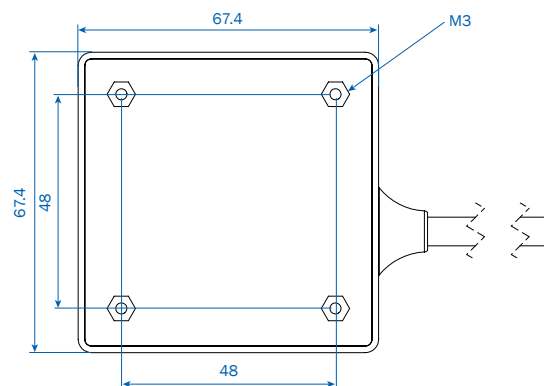
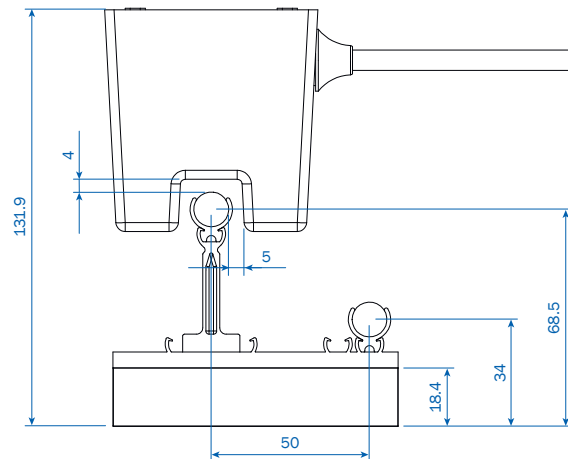
Pickup connection cable

Length	1 m
Outer diameter	6.5 mm
Connections.....	Pre-terminated
Application	Flexible
Min. bending radius	5 x D

Pickup mechanical data

Dimension.....	67.4 x 67.4 x 71 mm
Mounting holes.....	48 x 48 mm
Weight	650 g
Nominal airgap.....	4 mm (from top of track cable to bottom of Pickup)
Vertical tolerances	± 1 mm
Lateral tolerances	± 1 mm
Protection type	IP65
Color	RAL 9004
Ambient temperature.....	+5 ... +40 °C non-condensing
Environment	General industrial/ clean room
Cooling	Natural convection

DIMENSIONS



TECHNICAL DATA

Electrical data

Peak power	70 W
Nominal power	30 W
Output voltage	24 VDC $\pm 10\%$
Output current max	3 A
Duty cycle	60 %
Track current	45 A
Track frequency	140 kHz

Protection

Output over current	Yes
Over temperature	Yes
Short circuit protection	Yes

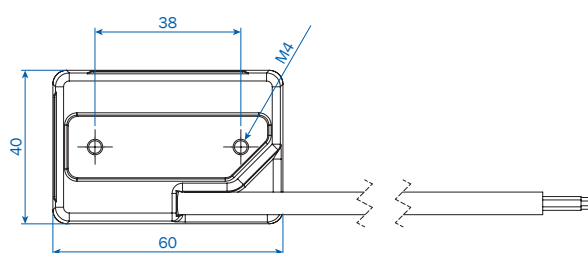
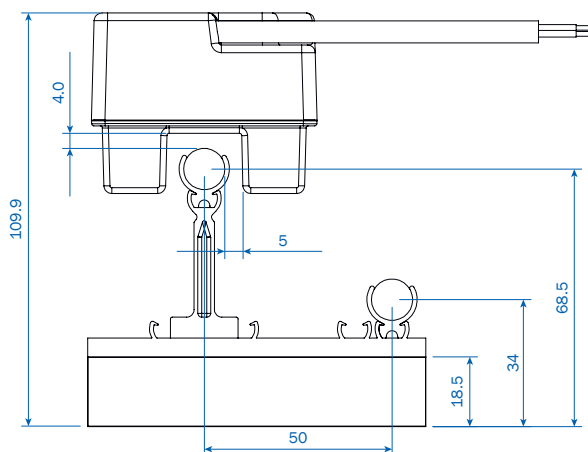
Pickup connection cable

Length	1 m
Outer diameter	5.5 mm
Connections	Pre-terminated
Application	Flexible
Min. bending radius	4 x D

Pickup mechanical data

Dimension	48 x 40 x 60 mm
Mounting holes	2x M4, 38 mm space
Weight	175 g (incl. 1 m cable 215 g)
Nominal airgap	4 mm
Vertical tolerances	± 1 mm
Lateral tolerances	± 1 mm
Protection type	IP65
Color	RAL 9004
Ambient temperature	+5 ... +40 °C non-condensing
Environment	General industrial / clean room
Cooling	Natural convection

DIMENSIONS



VEHICLE EQUIPMENT

MOBILE CABLE BETWEEN PICKUP AND REGULATOR



Coaxial cable spring-cage connection F-Pickup

Coaxial cable PowerCon connection E-Pickup

RANGE OF PRODUCTS

Description		Order No.
vPOW_CX12-10-SF	Track Power Coaxial Cable between Pickup and Regulator / 12A / 1.0 meter / Spring terminal connection F-Pickup / Diameter 11.2 mm / Bending radius 8xD	10018432
vPOW_CX12-20-SF	Track Power Coaxial Cable between Pickup and Regulator / 12A / 2.0 meter / Spring terminal connection F-Pickup / Diameter 11.2 mm / Bending radius 8xD	10018433
vPOW_CX12-40-SF	Track Power Coaxial Cable between Pickup and Regulator / 12A / 4.0 meter / Spring terminal connection F-Pickup / Diameter 11.2 mm / Bending radius 8xD	10018434
vPOW_CX12-60-SF	Track Power Coaxial Cable between Pickup and Regulator / 12A / 6.0 meter / Spring terminal connection F-Pickup / Diameter 11.2 mm / Bending radius 8xD	10018435
vPOW_CX12-05-PC	Track Power Coaxial Cable between Pickup and Regulator / 12A / 0.5 meter / PowerCon connection E-Pickup / Diameter 11.2 mm / Bending radius 8xD	10023617
vPOW_CX12-15-PC	Track Power Coaxial Cable between Pickup and Regulator / 12A / 1.5 meter / PowerCon connection E-Pickup / Diameter 11.2 mm / Bending radius 8xD	10023618
vPOW_CX12-35-PC	Track Power Coaxial Cable between Pickup and Regulator / 12A / 3.5 meter / PowerCon connection E-Pickup / Diameter 11.2 mm / Bending radius 8xD	10023619
vPOW_CX12-55-PC	Track Power Coaxial Cable between Pickup and Regulator / 12A / 5.5 meter / PowerCon connection E-Pickup / Diameter 11.2 mm / Bending radius 8xD	10023620

[illegible]

NOTES

NOTES

NOTES



Paul Vahle GmbH & Co. KG

Westicker Str. 52
59174 Kamen
Germany

+49 2307 7040
info@vahle.com
vahle.com

You can find your local contact at:

vahle.com/contact