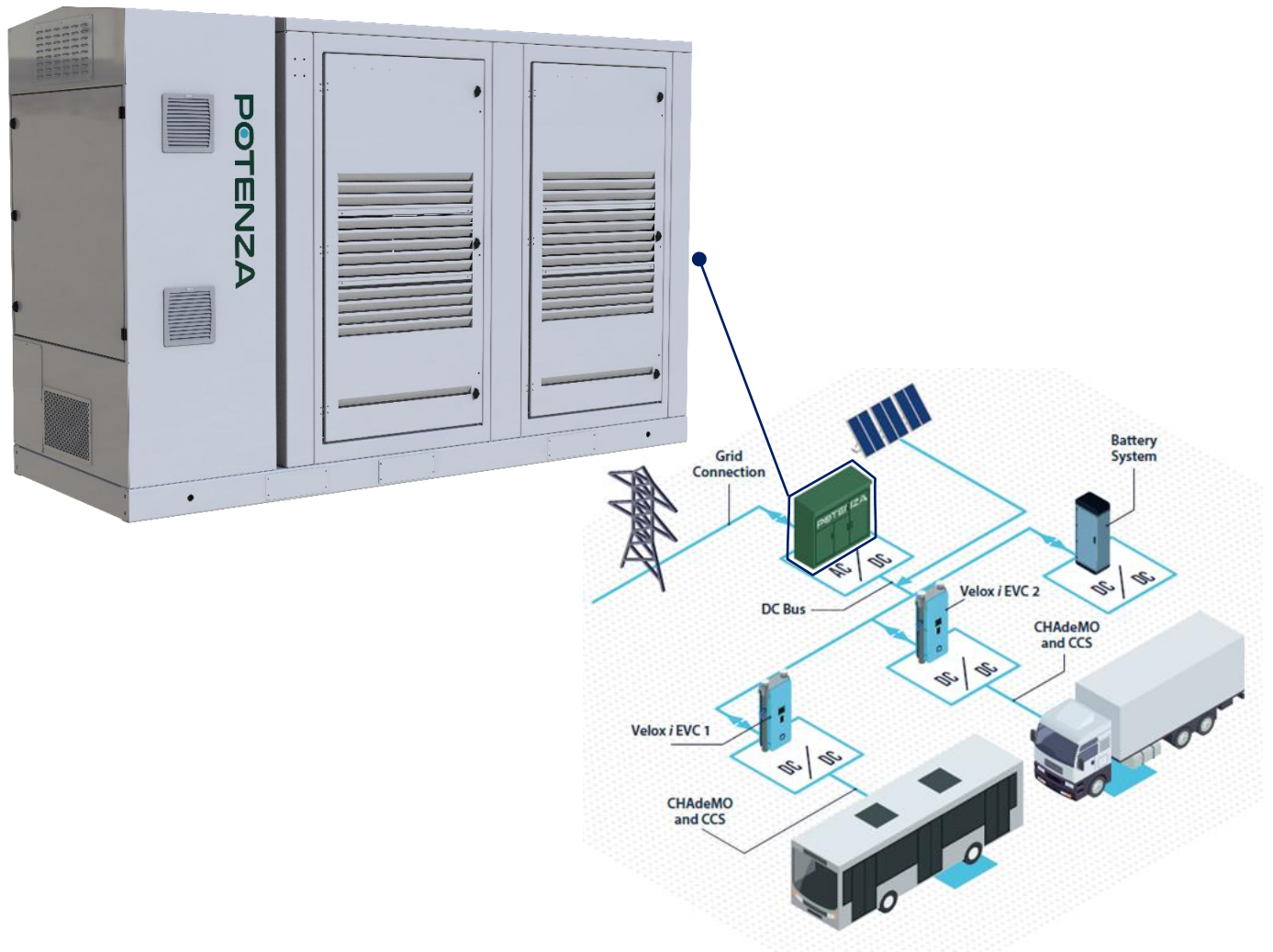


THE POWER OF TOMORROW. TODAY.



POTENZA RANGE

EV GRID CONNECTION



FLEXIBLE GRID CONNECTION SOLUTIONS FOR YOUR EV CHARGERS

Turbo Power Systems' advanced POTENZA EV grid connection solutions for VELOX chargers enable you to optimize your EV charging through-life costs to meet the demanding challenges of fleet electrification.

Whether you need to connect to the Low or Medium Voltage grid, charge or discharge vehicles, we have the solution for you that will ensure that grid capacity constraints and spiralling electricity costs no longer restrict the scale of charging solution required for your fleet needs.

MCS READY

SMART FLEET

V2X COMPATIBLE

KEY BENEFITS – POTENZA



- ✓ Potenza offers flexible solutions for Low or Medium Voltage grid connection of large vehicle charging schemes, with capability for uni-directional or bi-directional (V2X) vehicle charging
- ✓ The grid connection devices form and control the technologically advanced bi-directional SMART FLEET DC Grid network to which our Velox Ultra-Rapid DC chargers are connected and seamlessly integrate with renewable energy, battery storage, and other consumer loads to minimize grid upgrade expenses and on-site fueling costs
- ✓ The POTENZA range is engineered to deliver power with minimal Total Harmonic Distortion (THD) or impact on the grid, to ensure compliance with local grid codes. With THD levels below 3.0%, POTENZA Distribution Grid Inverter not only meets, but exceeds, stringent industry standards, guaranteeing reliable and consistent power delivery at the point of grid connection
- ✓ POTENZA is also designed to optimize Power Factor, ensuring grid compliance and maximum utilisation of charging infrastructure. Improving the Power Factor means less reactive power, which also leads to significant savings on utility charges. Additionally, by keeping your business compliant with the regulations, it avoids costly penalties and ensures smooth operations
- ✓ POTENZA Distribution Grid Inverter goes one step further providing the ability for reactive power injection back to the grid, a feature which Distribution Network Operators (DNOs) can command in the future to improve grid performance
- ✓ Our unique 30-year life design and service support model delivers unrivalled reliability and efficiency for our products, which both protects the lifespan of your investment and affords you sector-leading green credentials
- ✓ Our standard warranty is 24 months from the date of commissioning. There are options to extend the warranty if required

POTENZA DGI (DISTRIBUTION GRID INVERTER)

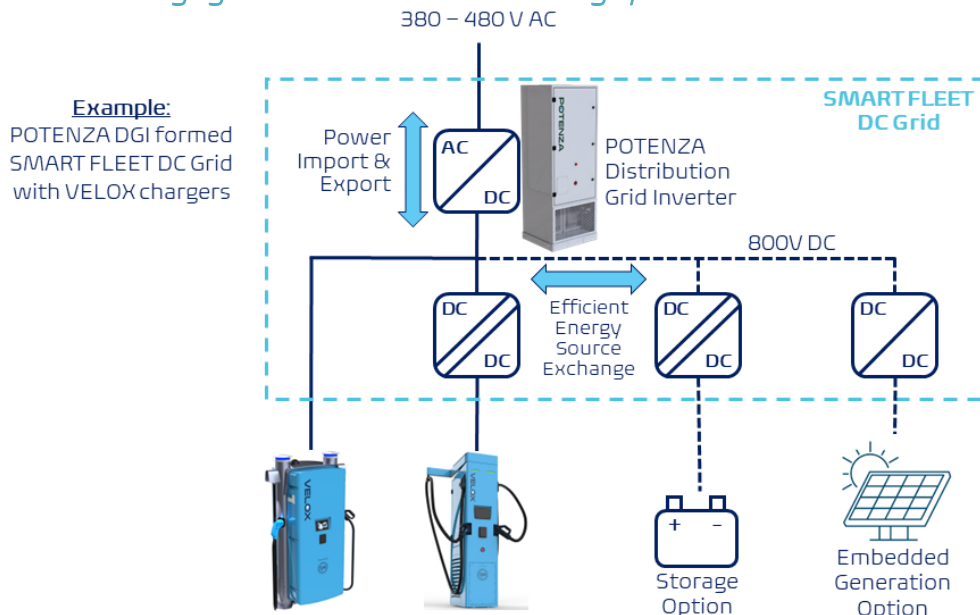


A REVOLUTIONARY STEP IN EV CHARGING

The POTENZA Distribution Grid Inverter is the powerhouse of our SMART FLEET DC Grid system. This isn't just any rectifier, the POTENZA Distribution Grid Inverter intelligently manages the microgrid, seamlessly integrating the VELOX Ultra-Rapid DC chargers with (optional) battery storage and/or embedded generation, such as Solar PV. By connecting all these low carbon technologies to a common DC bus ring, we unlock a host of advantages: reducing the grid capacity needed for EV charging, simplifying grid connections, maximizing energy utilization, and slashing vehicle fueling costs.

The POTENZA Distribution Grid Inverter is also bi-directional, enabling not just the charging of vehicles and batteries, but also the export of energy from sources connected within the SMART FLEET DC Grid to the consumer load or the network grid itself. This capability unlocks the potential for Vehicle to Everything (V2X) and Vehicle to Grid (V2G) to further reduce on site electricity costs and even facilitate the trading of electricity through aggregation.

Do you want microgrid charging but don't need V2G? Check out Potenza Distribution Transformer Rectifier, our import only Medium Voltage grid connection solution for high power schemes.



POTENZA DGI (DISTRIBUTION GRID INVERTER)	
TECHNICAL DATA	
Electrical	
Rated AC power	315 kVA @ 400 V L-L
AC Voltage	380 V – 480 V L-L
Frequency	50 / 60 Hz
Number of phases	3 + PE
Rated DC voltage	800 V
Rated DC current	386 A
Rated current 457 A Average efficiency	> 98 % (G2V / microgrid import) > 98 % (V2G / V2X / microgrid export)
Power factor	> 0.99 default (fully controllable)
Max. Total Harmonic distortion @rated power	< 3%
Optional Interface Protection Box configuration for EV charger / Battery / Generator connection	6 x 200 A
User	
User display	HMI (option)
Communication interface	Modbus TCP/IP
Operating modes available	G2V / V2G / V2X / DC Microgrid import and export / DNO active grid side management command (option)
General	
Dimensions	770 (W) x 685 (D) x 2,290 (H) mm
Weight	490 kg
Ingress Protection Rating	IP 31
Operating temperature range	-30 °C to +50 °C
Storage temperature range	-40 °C to +60 °C
Humidity	< 95% non-condensing
Certificates, standards, directives *Certification 2026	CE, UKCA, G99/1, IEC 62477-1 UL1741-SA*, UL 9741*, IEEE 1547-2018*
EMC standards Number of DC outputs terminal	EN 61000-2-2, EN 61000-4- pts 2 to 6, EN 61000-4- pts 11 & 13, EN 61000-6-pts 2 & 4, IEC 61000-4-13

KEY FEATURES

- Up to 360 kW capacity per POTENZA Distribution Grid Inverter
- Parallel unit operation for increased capacity
- 380 - 480 V bi-directional grid connection for power import (charging - G2V) and export (arbitrage - V2G) as standard. Medium Voltage grid connection available using additional step-down transformers
- Active grid-side power management to maximize available charging capacity
- Silicon Carbide (SiC) design for high efficiency > 98% and near silent operation due to ultrasonic switching
- Communication interfaces available through CAN Bus, Modbus and Ethernet
- Reliable and robust hardware power modules all designed and produced in-house
- Optional Interface Box to isolate SMART FLEET DC Grid connected chargers, storage and/or generation
- Near zero THD with unity or grid compensating power factor optimization

APPLICATIONS

- High power, ultra-rapid DC charging with integrated or multiple compact VELOX chargers
- Vehicle to Grid (V2G) and Vehicle to Everything (V2X) capable charging schemes
- SMART FLEET DC Grid forming and control, enabling grid power import and export to and from connected storage, generation and VELOX chargers

POTENZA DTR (DISTRIBUTION TRANSFORMER RECTIFIER)

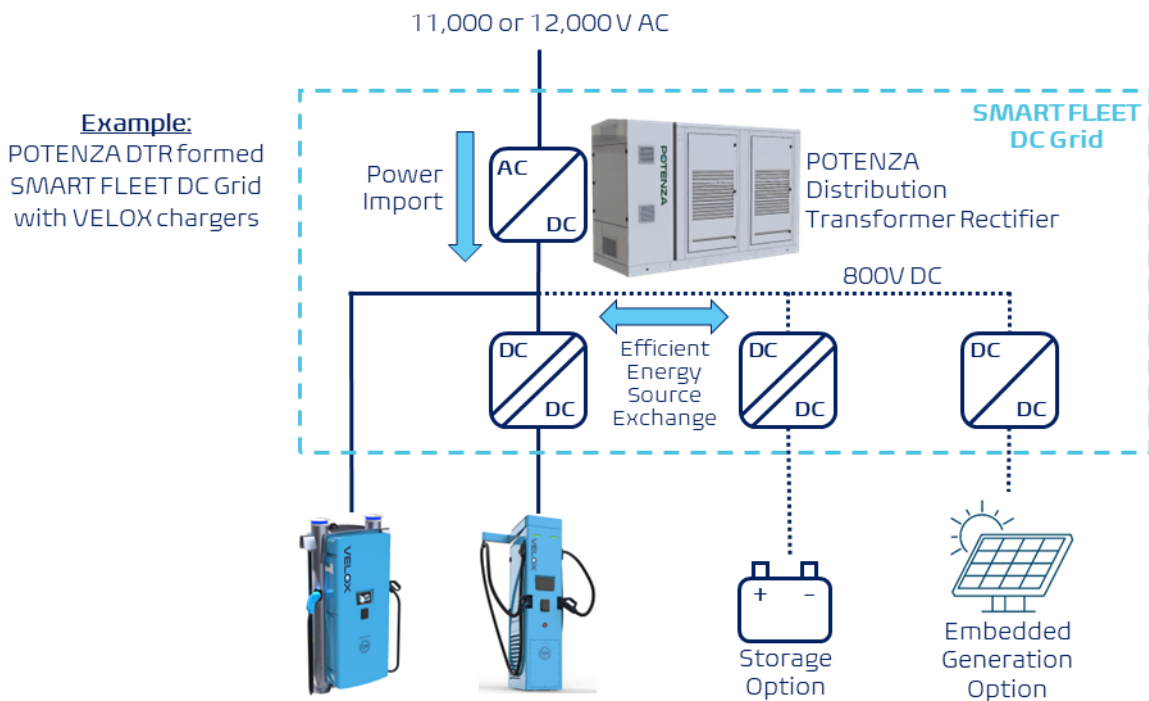


OPTIMISED HIGH-POWER CHARGING INFRASTRUCTURE

Our POTENZA Distribution Transformer Rectifiers provide a direct connection of high-power SMART FLEET charging systems to the Medium Voltage grid without the need for separate step-down distribution transformers. Consolidating the functions of voltage transformation and rectification in one single unit delivers ultra-rapid charging infrastructure which is highly optimized for cost, size and performance.

More than just an ordinary rectifier, the POTENZA Distribution Transformer Rectifier creates the SMART FLEET DC Grid directly from the Medium Voltage on which VELOX Ultra-Rapid DC chargers are connected, together with (optional) battery storage and/or embedded generation, such as Solar PV. By unifying these low carbon technologies into a common DC microgrid multiple benefits arise, which ultimately minimize grid capacity demand for EV charging whilst simplifying grid connection complexities, maximizing energy source capacity and minimizing fueling costs.

Do you want to export energy to the grid or V2G?... Check out Potenza Distribution Grid Inverter, our ground-breaking inverter product for total microgrid management.



POTENZA DTR (DISTRIBUTION TRANSFORMER RECTIFIER)	
TECHNICAL DATA	
Electrical	
Rated AC power	1,360 kVA
Rated AC Voltage	11,000 / 12,000 V L-L
Frequency	50 / 60 Hz
Number of phases	3 + PE
Rated DC Voltage	800 V
Rated DC Current	1,546 A
Average efficiency	> 97 % (G2V / microgrid import)
Power factor	> 0.95 default (fully controllable)
Max. total harm distortion @rated power	< 5%
User	
User display	HMI (option)
Communication interface	Mod Bus / TCP
Operating modes available	G2V / DC Microgrid import
General	
Dimensions	3,378 (W) x 1,300 (D) x 2,270 (H) mm
Weight	6,500 kg
Ingress Protection Rating	IP 54 / NEMA 3 XR
Operating temperature range	-30 °C to +50 °C
Storage temperature range	-40 °C to +60 °C
Humidity	< 95% non-condensing
Certificates, standards, directives	IEC 62477-1, NFPA 70, UL 508A, UL2202, UL 8240, IEE 519

KEY FEATURES

- Up to 1,200 kW capacity per POTENZA Distribution Transformer Rectifier
- Parallel unit operation for increased capacity
- Direct connection to 11,000 and 12,000 V Medium Voltage grids
- 18 Pulse Rectifier for grid compliant Power Factor and Total Harmonic Distortion (THD)
- Communication interfaces are available through CAN Bus, Modbus and Ethernet
- Reliable and robust passive hardware designed in-house
- Optional interface box to isolate SMART FLEET DC Grid connected chargers, storage and/or generation

APPLICATIONS

- High power, ultra-rapid DC charging with integrated or multiple compact VELOX chargers
- Vehicle to Everything (V2X) charging without the facility for grid energy export (V2G)
- DC Microgrid forming enabling grid power import to connected storage, generation and VELOX chargers
- Medium Voltage grid connection for access to multi-Megawatt charging capacities

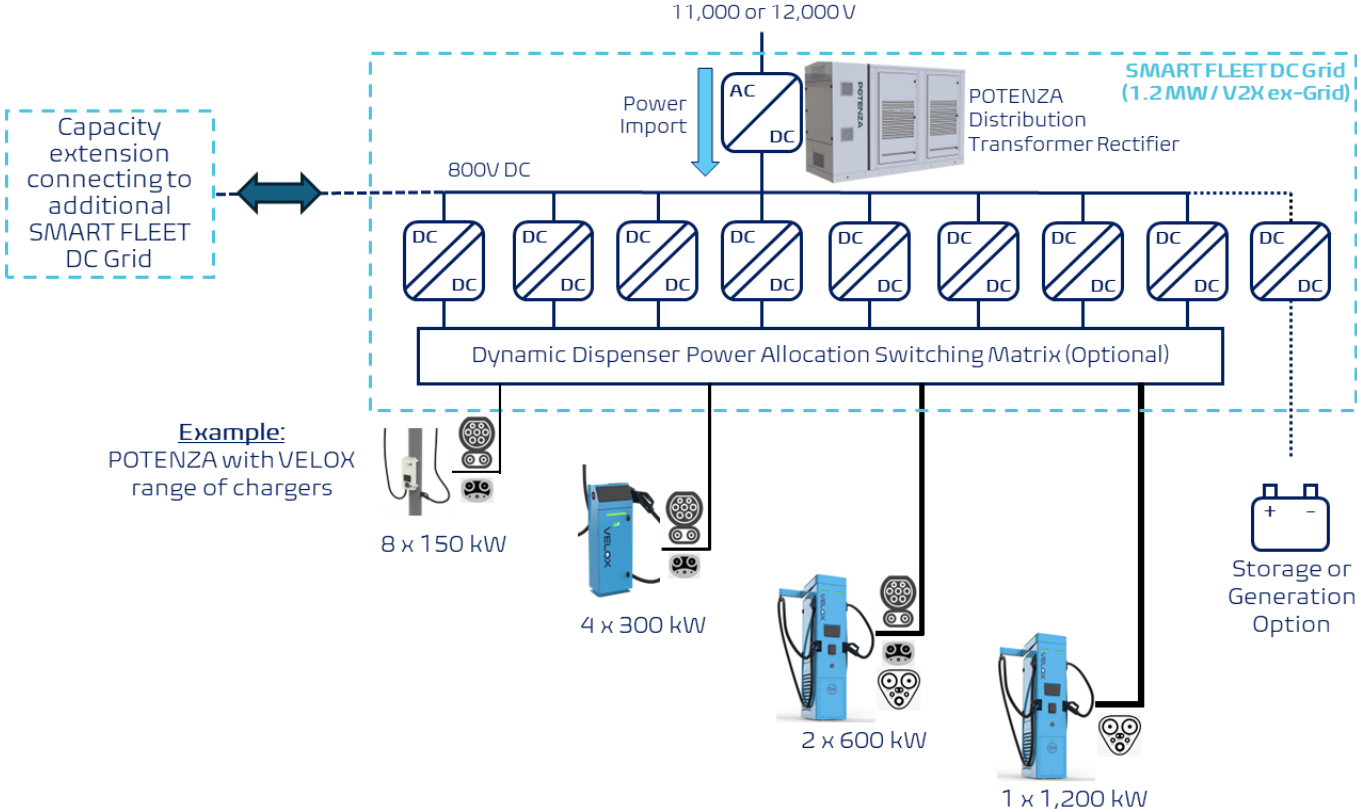
USE CASE: POTENZA - PREPARING eHGV FLEETS FOR THE FUTURE

The challenge to electrify distribution depots, being far from trivial, demands a smart future-proofed solution that can meet the charging needs of CCS / NACS vehicles today, while being easily adapted to charge the MCS (Megawatt Charging System) capable vehicles of tomorrow.

POTENZA EV Grid Connection products provide optimized solutions for accessing and maximizing the necessary grid capacity required for large-scale vehicle charging schemes. When combined with TPS’s powerful VELOX chargers, our products ensure seamless charging for all vehicle types, supporting battery voltages up to 1,250 V to meet MCS standards.

The SMART FLEET charging hub created below uses the POTENZA Distribution Transformer Rectifier to access 1,200 kW of grid power directly from where it is available - the Medium Voltage grid in this case - without the need for a separate transformer substation. Forming a SMART FLEET DC Grid to support additional energy sources in the form of batteries and clean fuel generators, POTENZA directly enables the integration of locally installed power capacity to contribute towards vehicle charging to minimize the impact to the grid while reducing fueling costs at times of peak grid demand and high associated electricity costs.

By integrating dynamically configurable and scalable VELOX chargers ranging from 150 kW CCS / NACS to 1,200 kW MCS or more, the distribution depot operator and the landlord gain access to THE POWER OF TOMORROW. TODAY.



Example: POTENZA with VELOX range of chargers

TPS is a leading UK designer and manufacturer with over 45 years of expertise in delivering cutting-edge transportation and critical infrastructure industrial electrical energy systems.

We will be happy to discuss your project or enquiries further, please contact our sales department at sales@turbopowersystems.com or ring us on +44 (0) 191 482 9227

Turbo Power Systems Ltd.

1 Queens Park | Queensway North | Team Valley Trading Estate | Gateshead | NE11 0QD | United Kingdom

www.turbopowersystems.com



TURBO POWER SYSTEMS
Powering Intelligent Solutions