

## EV Fast Charging Stations





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## Complete stations for heavy duty vehicle charging

Nidec Industrial Solutions is your reliable partner for heavy duty vehicle charging infrastructure. We are a global supplier of power electronic equipment, automation technologies and battery energy storage systems. This background allows us to deliver cost-effective Electric Vehicle Charging Infrastructure solutions, minimizing cost of installation and reducing overall operating costs.

The Nidec Group provides a wide product range for the automotive sector and it is committed to evolve its automotive business to help address the mobility issues of future society. The Group holds the world's largest market share in power steering motors and the whole product range includes automotive cameras, control valves, electric oil pumps and other automotive components. In addition, the Nidec Group is focused on developing traction motors, products for connected cars, autonomous driving, and vehicle electrification to make more contributions to safety, dependability, and eco-friendliness of cars.

# Configurable Solutions



Nidec's Electric Vehicle Charging Infrastructure consists of a Power Supply Unit with high charging capacity that can be connected to a LV or MV grid network.

Our flexible solutions can meet different power needs from 100 kW up and can be adapted to different layouts.

Our charging station can be powered with an integrated energy storage system.

## An integrated energy storage system:

- solves limited connections from the grid not providing enough power for all the connected vehicles
- reduces the initial investment without modifying the MV infrastructure
- reduces the operational costs by allowing the possibility to recharge the batteries when the cost of the energy is more convenient
- shaves the peaks of recharging requests avoiding/reducing the waiting time.

The batteries can be powered by the grid or renewable energy sources like PV.

Suitable for opportunity or depot overnight charging



High charging capacity with connection to LV or MV grid network



Optional integrated energy storage system for a flat and scheduled power from the grid to reduce the required grid connection, the initial investments and the operational costs



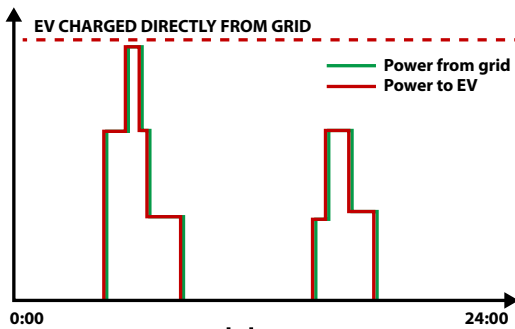
Designed to be powered by either the grid or renewable energy sources like PV



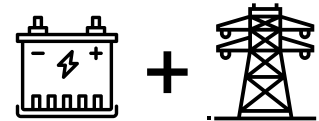
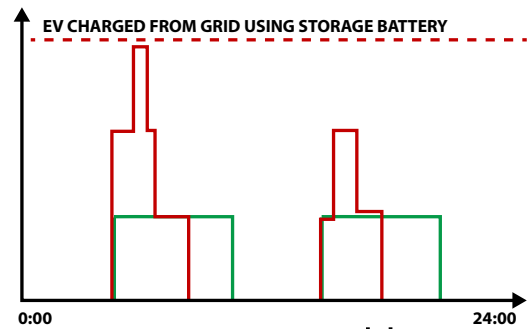
Optimized charging time thanks to highly advanced Energy Management System



# Optional Integrated Energy Storage System



- High infrastructure cost
- High operational cost
- Unsecured charge fulfillment



- Low infrastructure cost
- Low operational cost
- High charge fulfillment
- Possible integration with small local renewable (PV) plants



# Overnight Depot Charging



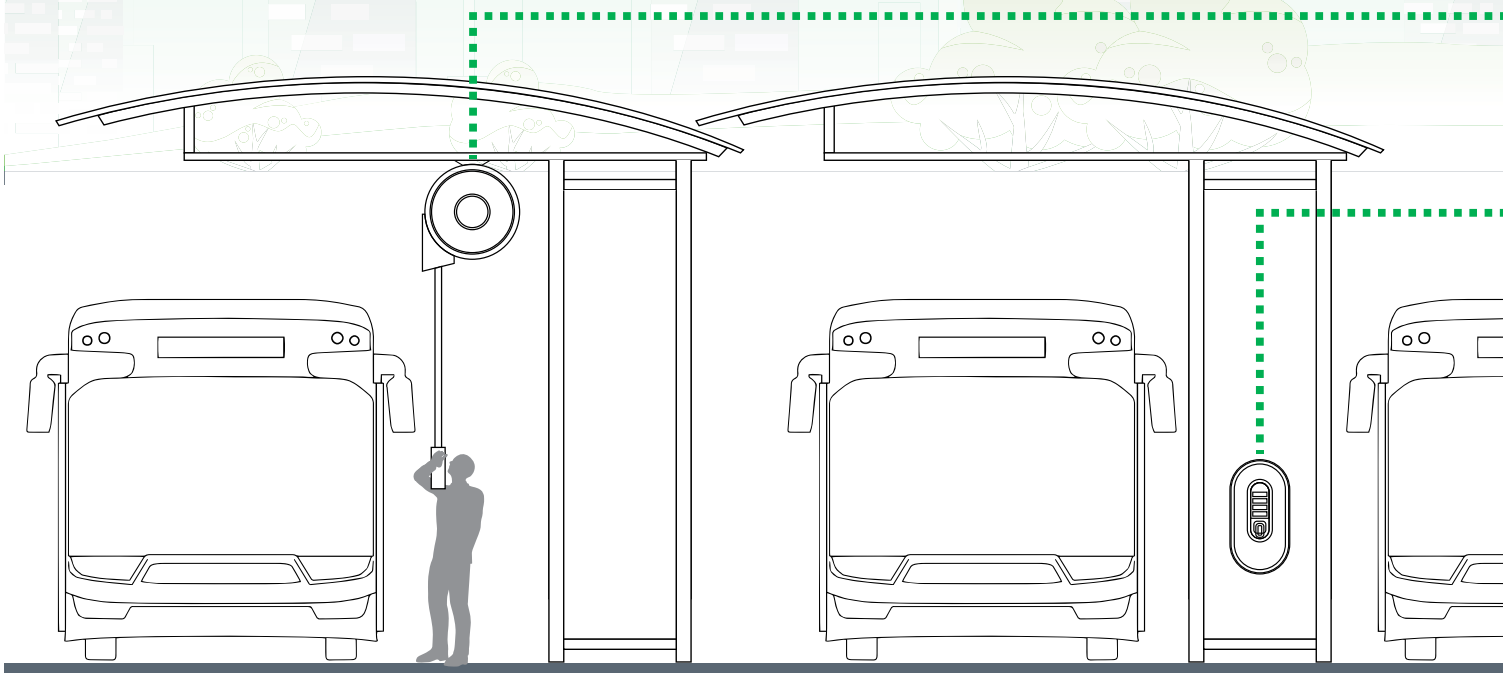
Our system optimizes overnight depot charging, thanks to its smart charging functions and flexible layout.

According to the installation/fleet needs, the flexible configuration allows one charger per vehicle and one single power cabinet paired with several depot dispensers. In this case the charging sequence can be either parallel or sequential according to the available energy.

If needed, we can equip the charging station with an integrated energy storage system, allowing flat and scheduled power to be sourced from the grid, solving limited connections that don't provide enough power for all vehicles.

This solution reduces the initial investment and operational costs can be optimized by scheduling when to recharge the batteries.

We can adapt our solution for any space requirement, configuring it with roof, wall or floor mounting dispensers, depending on your needs.

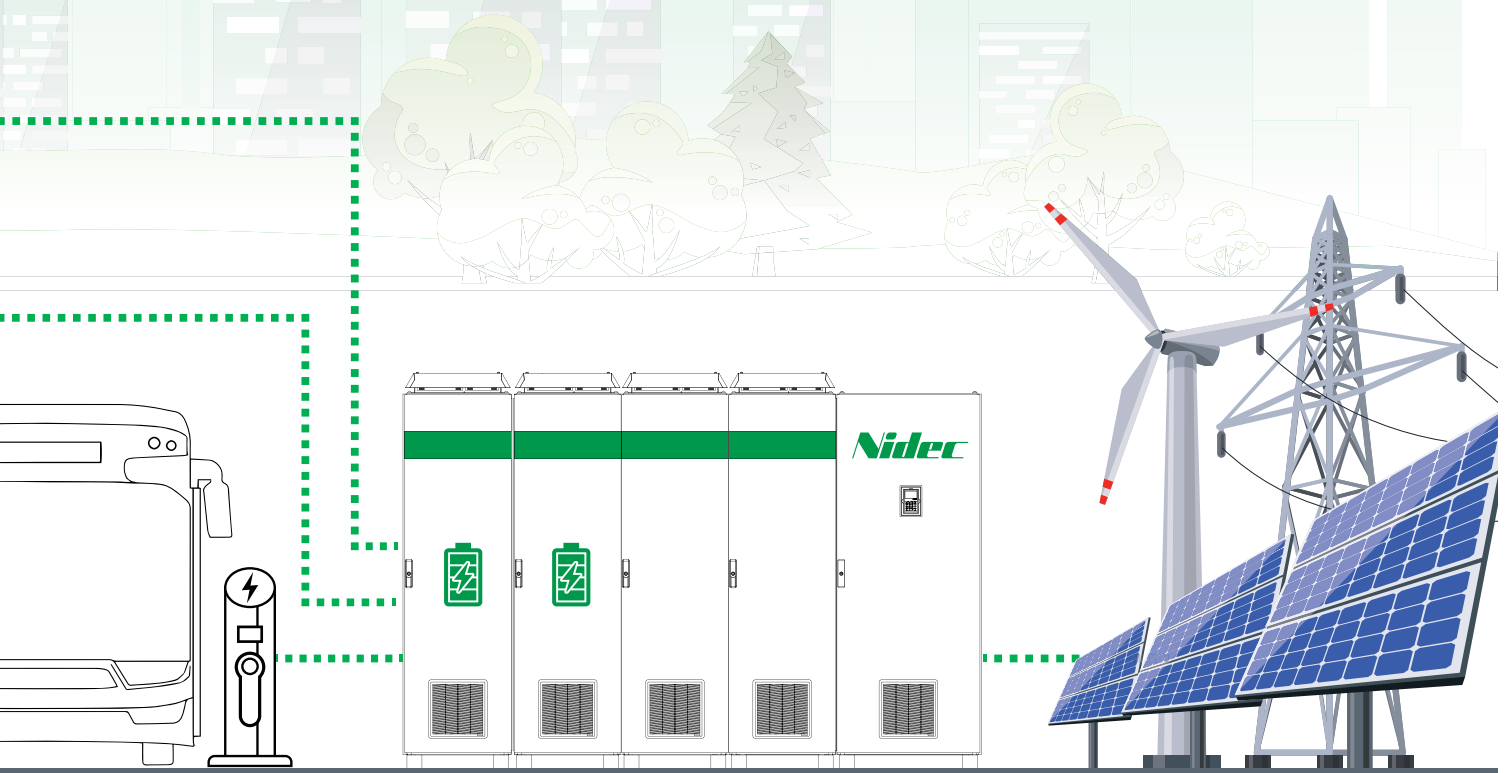




- **Optimized charging time**
- **Lower, flat and scheduled power from grid**
- **Compact footprint**

The smart charging algorithms balance the total capacity of the grid over the number of vehicles charging. The charger changes its configuration automatically, depending on the vehicles connected, priorities and the available energy.

Our system includes remote control monitoring which gives visibility to how long and how fast a vehicle charges.



# Opportunity Charging



Whether you are looking for opportunity charging stations for short-cycle repetitive routes or for longer ranges, Nidec Industrial Solutions can offer the right solution.

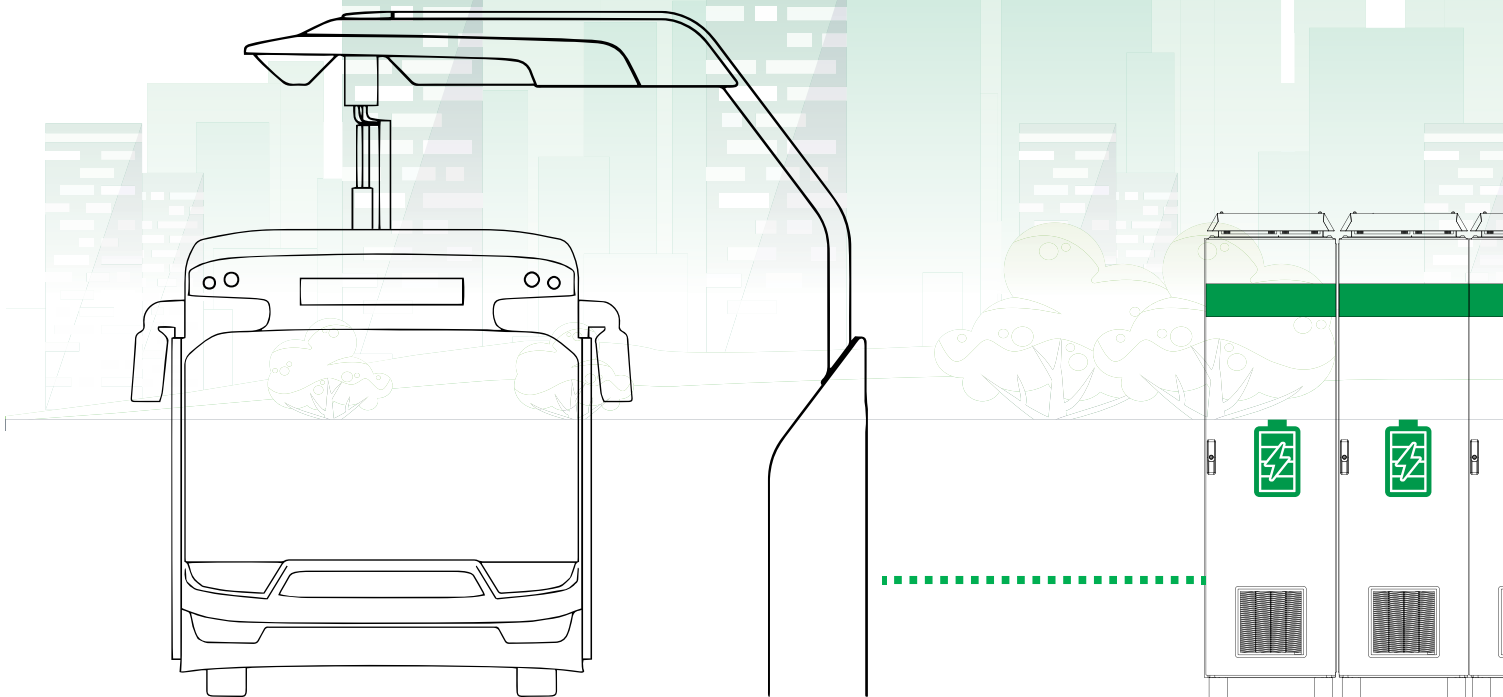
Our charging infrastructure can be coupled with different types of pantograph (roof mounted/inverted) to fit various types of vehicles.

Even if the charging point is located in a remote area, our system provides maximum control of the charging session through remote monitoring.

The high charging capacity of our system makes it possible to recharge the vehicle rapidly at strategic points along the route, in just a few minutes, while passengers get on and off the vehicle.

The system can be supplied with an integrated energy storage system, allowing flat and scheduled power to be sourced from the grid. With an energy requirement of 50 kW, it is able to rapidly supply up to 350 kW (more on request) of power output to any electric vehicle.

The system can be powered by either the grid or renewable energy sources like PV.







- **Flexible design**
- **Easily accessible parts for fast maintenance**
- **Remote diagnostics and management tools**

#### BATTERY SYSTEM CHARACTERISTICS

Cell chemistry	Lithium ion
Battery capacity	Modular, from 158 kWh according to requirements
Cooling type	Air



# Technical Data

<b>OVERNIGHT DEPOT CHARGING</b>	
Network	3 ph., 50/60 Hz +/- 5%,
Input voltage	LV: 400 Vac +/-10% MV: Any voltage (with the installation of a MV/LV transformer)
<b>CHARGER MAIN CHARACTERISTICS</b>	
Output Power	From 100 kW
DC output voltage range	150 – 950 Vdc
Maximum output current	200 A (limited by CCS cable) Higher currents with liquid-cooled cables
DC connection standard	IEC 61851-23 / DIN 70121/ ISO 15118
Connection method between charger and bus	CCS1 or CCS2 or CHAdeMO
Display	Graphic Dot matrix. Bigger (e.g. 5 inch touch) on request
Dimensions (W, D, H)	Power Unit: Modular, from 1200x600x2211 mm Depot dispenser: According to the model (roof/wall/floor mounted)
Network connection	Mobile GSM communication 10/100 base-T Ethernet OCPP protocol (other on request)
Noise emissions	Low-noise suitable for installation in residential areas
<b>WORKING CONDITIONS / INSTALLATION</b>	
Operating Temperature	Standard -10°C +50°C. Other on requests.
Environment	Outdoor/Indoor
Protection	Power Unit: IP54- IK10 Depot dispenser: IP65- IK10
Cable length between depot power unit and cabinet	Up to 150 m

<b>OPPORTUNITY CHARGING</b>	
Network	3 ph., 50/60 Hz +/- 5%,
Input voltage	LV: 400 Vac +/-10% MV: Any voltage (with the installation of a MV/LV transformer)
<b>CHARGER MAIN CHARACTERISTICS</b>	
Output Power	From 100 kW
DC output voltage range	150 – 950 Vdc
Maximum output current	600 A (limited by contact hood)
DC connection standard	IEC 61851-23 / DIN 70121/ ISO 15118
Connection method between charger and bus	4-pole contact dome
Dimensions (W, D, H)	Power Unit: Modular, from 1200x600x2211 mm
Network connection	Wi-Fi, Mobile GSM communication 10/100 base-T Ethernet OCPP protocol (other on request)
Noise emissions	Low-noise suitable for installation in residential areas
<b>WORKING CONDITIONS / INSTALLATION</b>	
Operating Temperature	Standard -10°C +50°C. Other on requests.
Environment	Outdoor/Indoor
Protection	IP54- IK10
Cable length between power unit and totem	Up to 100 m



**INDUSTRIAL SOLUTIONS**