Nidec Conversion

# DirectPowerPS™ MULTI


# MODULAR BATTERY INTEGRATED CHARGER

**Harness the power of battery storage up to 2.2 MWh to provide ultrafast charging for six vehicles simultaneously, ensuring uninterrupted service even in challenging grid conditions.**

# **MULTI-SCENARIO:** HIGH POWER CHARGING WHEREVER YOU NEED IT THE MOST

## PURE OPERATORS

Expand your business regardless of grid availability. DirectPowerPS Multi is the scalable solution perfect for small and medium-sized charging hubs, providing operators with a reliable, rapid, cost-effective, and ultrafast charging experience.

## SERVICE STATIONS

Ideal for fuel stations transitioning to sustainable operations, the DirectPowerPS Multi provides an ultrafast charging solution that utilizes your existing low voltage grid connection, allowing for seamless integration without the need for extensive renovations.

## FLEETS

Tailored for fleet operators aiming to lower energy costs related to high peak demand and capitalize on additional revenue through stationary battery use, the DirectPowerPS Multi presents a reliable and versatile solution.

## RENEWABLE ENERGY INTEGRATORS

An excellent choice for renewable energy integrators seeking an efficient method to incorporate charging stations with their existing PV assets, the DirectPowerPS Multi guarantees a seamless integration of clean energy and charging services.

# **MULTI-FUNCTIONAL:** ULTRAFAST CHARGING WITH NO LIMITS

## 1 NO EXTRA GRID COSTS WITH LOW VOLTAGE CONNECTION FAST DEPLOYMENT OF YOU ULTRA FAST CHARGER

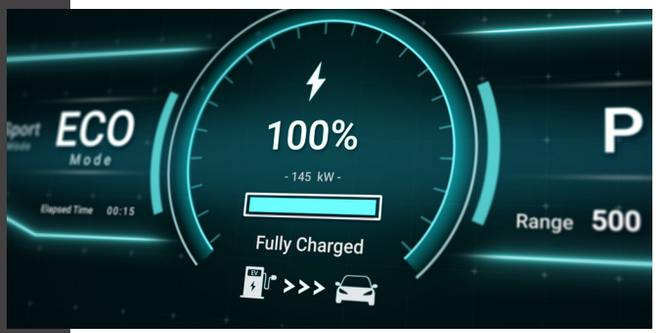
Each power unit connects to the low voltage grid with a capacity of 100 kW or less, eliminating the need for expensive and time-consuming medium voltage upgrades while ensuring an ultra-fast charging experience.

## 2 100% FLEXIBILITY - MODULAR DESIGN

- Select between 2 types of dispensers: DC Compact Dispenser or DC Tower Dispenser
- Choose the battery capacity that most suits your location
- Integrate with a photovoltaic system (optional)

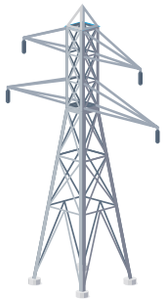
## 3 BATTERY BUFFER FROM 186 KWH TO 2.2 MWH

Utilize excess grid and PV power to charge the battery, enhancing vehicle charging performance. This ensures efficient energy use and delivers an exceptional rapid charging experience in all situations.




## 4 FROM 0 TO 300KW FROM THE GRID

Connect up to 3 power units to the grid, with each unit capable of drawing 100 kW. The integrated DC architecture of the Multi aggregates their power, delivering up to 300 kW for frequent vehicle charging sessions.



# 4x MORE POWER FROM THE POWER-LIMITED GRID

400kW

**From 0 to 100kW with a 400V grid connection**

**LOW POWER**
Input from power-limited grid

**MULTI**

Battery integrated charger

**ULTRA-FAST CHARGING**

Output for fast-charging of electric vehicles

## UP TO 400kW CHARGING

**5** Each charging point delivers up to 400 kW, enabling you to add 100 km of range in just 5 minutes.


## FROM 2 TO 6 DC CHARGING POINTS

**6** Effortlessly charge up to 6 vehicles simultaneously, perfect for small to medium charging hubs. Our versatile solutions meet your unique requirements, providing efficient and reliable power for your fleet or customers.

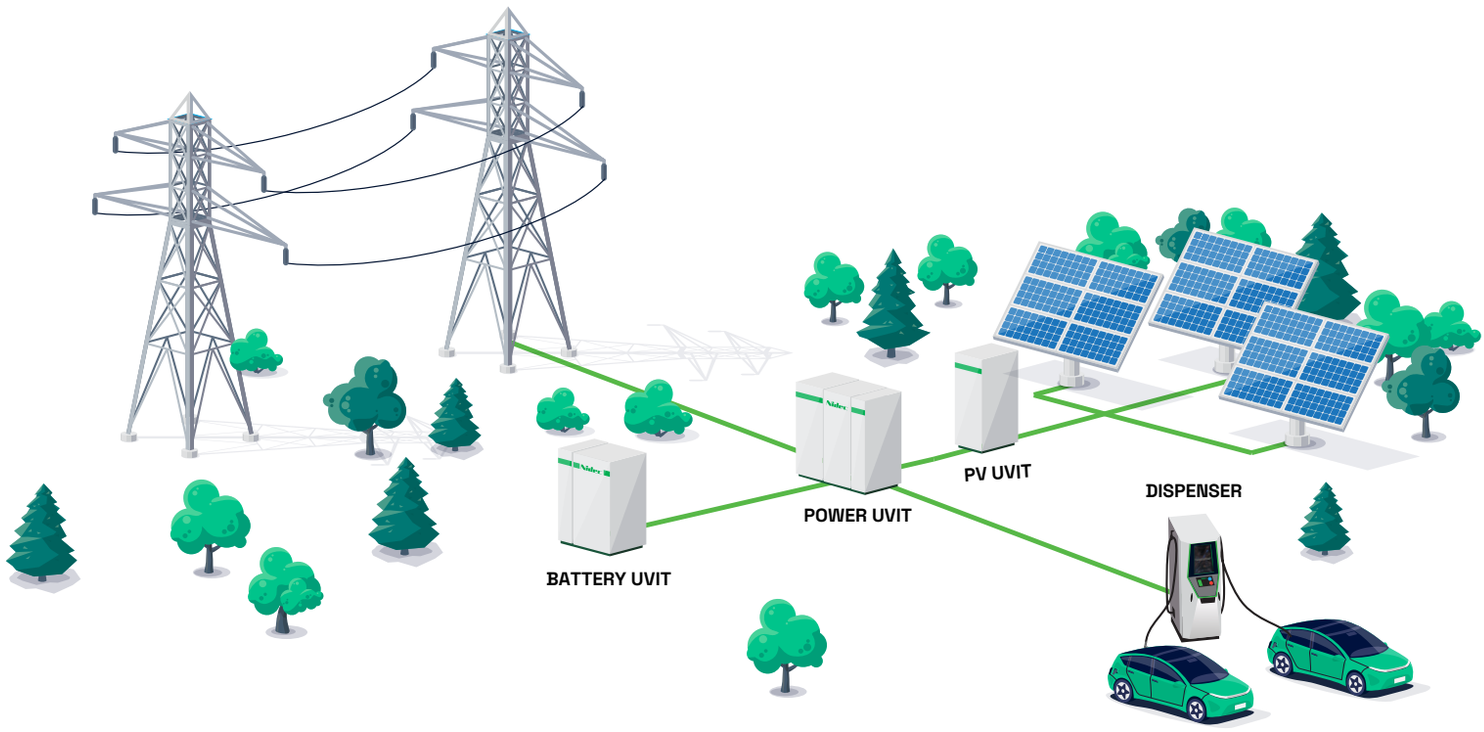
## UP TO 3% MORE EFFICIENCY AND LESS COST

**7** The integration of chargers, batteries and PV on the same DC architecture increases the overall efficiency of the system. This results in a significant cost reduction compared to a standalone battery interfaced directly to the grid, leading to higher margins for the asset owner.


## TURNKEY PROJECTS BY NIDEC

**8** Nidec offers turnkey solutions, including BYS charger management, intallation support, and testing. We ensure a smooth transition from concept to final handover.

# **MULTI-COMPONENT:** PERFECT FIT FOR EVERY CHARGING CHALLENGE



## 1 POWER UNIT

The power unit is the core of the charging system, handling all power conversion from the AC grid to the dispensers and the battery units. Its advanced liquid cooling system enables the best possible cooling which increases the reliability and the lifetime of the systems for the lowest possible Total Cost of Ownership (TCO).

- Up to 3 power units in parallel
- Each power unit can connect to grid up to 100kW
- Liquid cooled
- Battery to Grid ready


## 2 BATTERY UNIT

The battery unit acts as an energy reservoir, storing power during low-demand periods and distributing it during peak charging times. This feature ensures efficient energy management and reduces reliance on the grid, leading to cost savings.

- Three types of battery unit: 186kWh, 279kWh or 372kWh
- Up to 2 battery units for each power unit
- Which leads to 4 type of battery capacity available for each power unit
  - 1 battery cabinet of 186kWh
  - 1 battery cabinet of 279kWh
  - 1 battery cabinet of 372kWh
  - 2 batteries cabinets of 279kWh for a total of 558kWh
  - 2 batteries cabinets of 372kWh for a total of 744kWh

## 3 PV UNIT

The PV Unit allows for the integration of solar energy, enabling the charger to draw power from photovoltaic panels. This connection not only reduces grid consumption but also supports sustainable energy use and can provide additional income through excess power generation.

- Integrated on the DC architecture to charge seamlessly the battery and the vehicles
- Peak Power: 100kWp

# 4 DISPENSER

The dispenser serves as the interface between the Power Unit and the EV, delivering power directly to the vehicle. Designed for user convenience, it can be easily maintained or upgraded to enhance the charging experience.


## DC TOWER DISPENSER

With its standout design, the DC Tower Dispenser not only charges vehicles but also serves as a marketing platform, featuring an advertising screen that boosts visibility and generates additional revenue.

## DC COMPACT DISPENSER

The DC Compact Dispenser is designed for convenience, boasting a compact form factor that allows for effortless installation in space-constrained areas.

## DISPENSERS' FEATURES

1. CCS2 or CHAdeMO
2. Length of cables: 5,7,10 meters
3. Integrated Cable management
4. Advertising screen (32" or 18,5")
5. Intuitive 15"/12" touch user interface
6. LED status of the charging session
7. Payment terminal
8. With or Without Certified meter
9. 2 Modems: OCPP + Nidec BYS

# **MULTI-CONFIGURATION:** CONFIGURE THE MULTI TO SUIT YOUR PREFERENCES

**THE DIRECTPOWER PS MULTI SYSTEM** offers a range of configurations to suit various charging needs

- **MODULAR DESIGN**
- **FROM 0 TO 300KW FROM THE GRID**
- **FROM 2 TO 6 DC CHARGING POINTS**
- **FROM 186KWH TO 2.2MWH OF BATTERY BUFFER**

**INTEGRATED DC ARCHITECTURE**

The integration of DC architecture allows each configuration to efficiently build upon the previous one, adding power units, dispensers, and battery capacity. This results in a robust, flexible, and efficient charging solution. All components are connected on the DC line, enabling seamless sharing of power and energy from the grid and batteries.


**POWER UNIT**


**BATTERY UNIT**

**DISPENSER**

**Configuration: 1 Power unit + 1 Battery Unit + 1 Dispenser:**

**Input:** up to 100kW from the grid

**Output:** 300kW

**Connectors:** 2

**Battery Capacity:** 186kWh or 279kWh or 372kWh

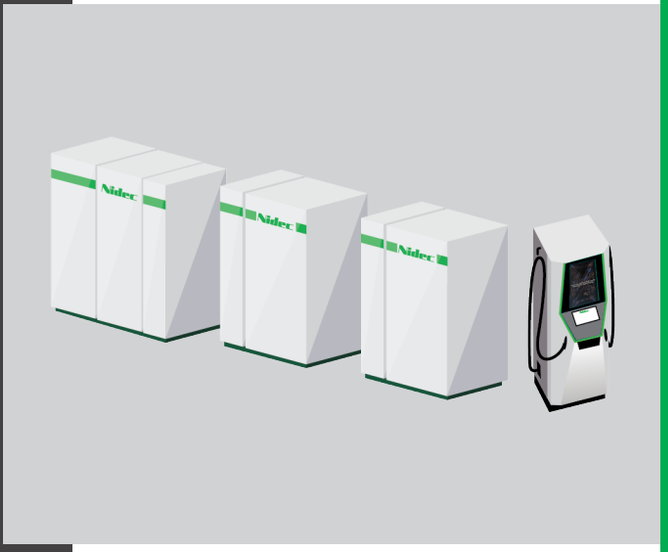

**Configuration: 1 Power unit + 2 Battery Units + 1 Dispenser:**

**Input:** up to 100kW from the grid

**Output:** 300kW

**Connectors:** 2

**Battery Capacity:** 2x279kWh (558kWh) or 2x372 (744kWh)



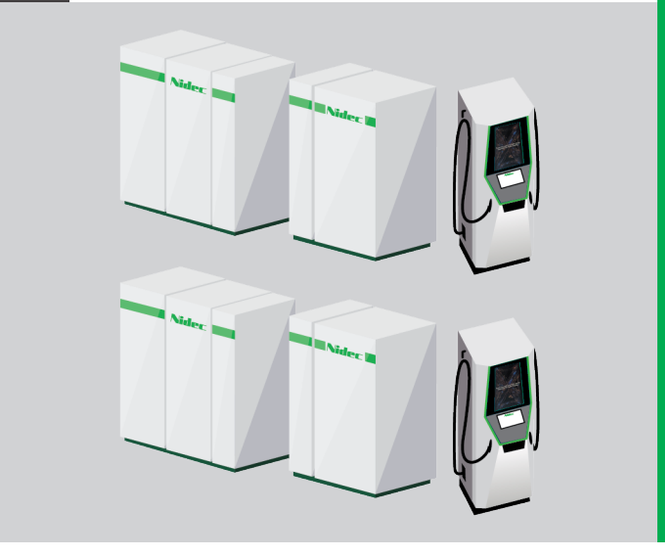

**Configuration: 2 Power units + 2 Battery Units + 2 Dispensers:**

**Input:** up to 200kW from the grid

**Output:** 700kW (400kW on the single dispenser/ connector is available)

**Connectors:** 4

**Battery Capacity:** 2x186kWh (372kWh) or 2x279kWh (558kWh) or 2x372 (744kWh)



**Configuration: 2 Power units + 4 Battery Units + 2 Dispensers:**

**Input:** up to 200kW from the grid

**Output:** 700kW (400kW on the single dispenser/ connector is available)

**Connectors:** 4

**Battery Capacity:** 4x279kWh (1116kWh) 4x372 (1488kWh)

**Configuration: 3 Power units + 3 Battery Units + 3 Dispensers:**

**Input:** up to 300kW from the grid

**Output:** 1050kW (2x400kW on the single dispenser/ connector is available)

**Connectors:** 6

**Battery Capacity:** 3x186kWh (558kWh) or 3x279kWh (837kWh) or 3x372kWh (1116kWh)

**Configuration: 3 Power units + 6 Battery Units + 3 Dispensers:**

**Input:** up to 300kW from the grid

**Output:** 1050kW (2x400kW on the single dispenser/ connector is available)

**Connectors:** 6

**Battery Capacity:** 6x279kWh (1674kWh) or 6x372kWh (2232kWh)

# **BEYOND THE MULTI:** NIDEC SMART E-MOBILITY SOLUTIONS FOR ANY GREATER NEED

**The Nidec Edge**
Choosing Nidec Smart e-Mobility Solutions is more than just selecting a product; it's a partnership with a leader in energy solutions. Each offering embodies Nidec's commitment to innovative design, operational efficiency, and a profound understanding of customer needs. Our solutions deliver future-proof, intelligent, and strategic assets that power today's vehicles while paving the way for  innovations.

**Nidec Smart e-Mobility Solutions**
Nidec Smart e-Mobility Solutions showcase our commitment to energy innovation with customized systems that exceed standard capabilities. Designed for various battery capacities and charger types, these solutions meet unique project needs.

**Advanced Integration Capabilities**
Our ACDC and DCDC converters enable seamless connections for assets over 1MW, facilitating substantial energy integration for ambitious projects.

**Renewable Energy and Power Management**
Central to our solutions is the Nidec power management system, optimizing battery usage and renewable energy for efficient power delivery and sustainability.

**Modular and Mobile Design**
Our modular solutions are housed in 20 or 40-foot containers for easy deployment and flexibility, allowing for rapid installations that can be expanded or relocated.

**Customization and Compatibility**
Nidec Smart e-Mobility Solutions integrate seamlessly with existing infrastructures, enhancing your energy network with tailored, efficient solutions.

# DATA SHEET

| | | |
|---|---|---|
| **POWER UNIT** | | |
| **AC INPUT** | Earthing systems | TT, TN |
| | Input voltage | 400Vac (±10%), 50/60 Hz (±5%) |
| | Input current | Up to 170A |
| | Input power | Up to 100kW |
| | Protections | Overcurrent, overvoltage Type II, integrated surge protection, overtemperature |
| **DC OUTPUT** | Output power | Up to 400kW |
| | Emergency stop button | Up to 2 outputs |
| **INTERFACE** | Connection | Ethernet, Modbus TCP, 3G/4G (optional) |
| | Emergency stop button | Optional |
| **MECHANICAL** | Product dimensions (HxWxD) | 2280 x 1620 x 800 mm |
| | Weight | Up to 1200 kg |
| | Material | Corrosion-protected steel |
| | Customization | Customizable with end user's colours and logos (optional) |
| | Noise level | ≤ 65 dB(A) at distance of 1 m at full power |
| **WORKING AND INSTALLATION CONDITIONS** | Operating temperature | -20°C +50°C (over 50°C with derating) |
| | Installation type | Outdoor |
| | Installation type | Floor mounted |
| | Protection class | IP54 |
| | Protection against Mechanical impact | IK10 |
| | Humidity | From 5% to 95% without condensing |
| | Maximum operating altitude | 2000 m |
| **STANDARDS** | Declaration of conformity | CE, UKCA |
| | Other standards | IEC 61851-1, IEC 61851-22, IEC 61851-23, IEC 61851-24, CEI 0-21 |
| **BATTERY UNIT** | | |
| **AC INPUT** | Earthing systems | TT, TN |
| | Input voltage | 400Vac (±10%), 50/60 Hz (±5%) |
| | Protections | Over Current, Over Voltage, Over Temperature, Under Voltage Protection, Fire suppression system |
| **DC OUTPUT** | Output power | Up to 250kW |
| **ENERGY** | Battery Capacity | 186kWh or 279kWh or 372kWh per each power unit<br>2x186kWh or2x 279kWh or 2x372kWh per each power unit |
| **MECHANICAL** | Product dimensions (HxWxD) | 2458×1303×1300 mm |
| | Weight | From 2302kg and up to 3654kg |
| | Material | Corrosion-protected steel |
| | Customization | Customizable with end user's colours and logos (optional) |
| | Noise level | ≤ 70 dB(A) at distance of 1 m at full power |
| **WORKING AND INSTALLATION CONDITIONS** | Operating temperature | -20°C +50°C (over 50°C with derating) |
| | Installation type | Outdoor |
| | Installation type | Floor mounted |
| | Protection class | IP54 |
| | Protection against Mechanical impact | IK10 |
| | Humidity | From 5% to 95% without condensing |
| | Maximum operating altitude | 2000 m |
| **STANDARDS** | Declaration of conformity | CE, UKCA |

| DISPENSER | | DC TOWER DISPENSER | DC COMPACT DISPENSER |
|---|---|---|---|
| AC INPUT | Earthing systems | TT, TN | |
| | Input voltage | 400Vac (±10%), 50/60 Hz (±5%) | |
| | Protections | Overvoltage Type III, integrated surge protection | |
| DC INPUT | Input voltage | Up to 1000V | |
| | Input current | Up to 500A | |
| OUTPUT | Charge mode | Mode 4 for DC connectors and Mode 3 for AC connector | |
| | Number of outputs | 2 DC + 1 optional AC | 2 DC or 1 DC and 1 AC |
| | Cable length | 5m (up to 10 meters on request) | |
| | Output power | Up to 400kW | |
| | Output voltage | 150 V to 1000 V | |
| | Output current | CCS up to 500A or 600A with additional cooling unit<br>Type 2 up to 32A (optional) | |
| | Dynamic power sharing | The available power is shared between the DC connectors during charging | |
| INTERFACE | Connection | Ethernet, Modbus TCP, 3G/4G (optional) | |
| | User interface display | 15.6" touchscreen and status LED lights | 12.1" touchscreen and status LED lights |
| | Authentication method | Free Vending Mode, RFID, App, Payment terminal with Pin pad (optional) | |
| | Protocol | OCPP 1.6J, OCPP 2.0.1 ready | |
| | Connection/service | Nidec By Your Side (BYS) for remote connection | |
| | Advertising screen | 32" screen | 18,5" screen |
| MECHANICAL | Product dimensions (HxWxD) | Base: 2236 x 800 x 409 mm<br>Total: 2236 x 846 x 594 mm | Base: 1900 x 400 x 300 mm<br>Total: 1900 x 410 x 310 mm |
| | Weight | 435 kg | 100 kg |
| | Material | Corrosion-protected steel | |
| | Customization | Customizable with end user's colours and logos (optional) | |
| | Noise level | ≤ 45 dB(A) at distance of 1 m at full power | |
| WORKING AND INSTALLATION CONDITIONS | Operating temperature | -20°C +50°C (-30°C +50°C as option) | |
| | Installation type | Indoor and Outdoor | |
| | Installation type | Floor mounted | |
| | Protection class | IP55 | |
| | Protection against Mechanical impact | IK10 | |
| | Humidity | From 5% to 95% without condensing | |
| | Maximum operating altitude | 2000 m | |
| STANDARDS | Declaration of conformity | CE, UKCA | |
| | Energy metering | MID / LNE / Eichrecht compliant / PTB compliancy DC outlets | |
| | Other standards | IEC 61851-1, IEC 61851-22, IEC 61851-23, IEC 61851-24, DIN 70121, ISO 15118 | |

Nidec

All for dreams

DirectPower - Multi - REV-003

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