

# EV CHARGING SOLUTIONS



# EV CHARGERS

Electric vehicles are the means of transport that will lead us to a sustainable, clean and pollution-free world for our children and future generations, a world powered by renewable energy and independent from fossil fuels.





## Contents

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<b>POWER ELECTRONICS</b>	<b>03</b>
HOW WE WORK	05
POWER ON SUPPORT	07
FULL 360° SERVICE	09
WORLDWIDE	11
<b>COMMERCIAL PRODUCT RANGE</b>	<b>15</b>
NB STATION	17
NB 100 / NB 120	31
NB 50 / NB 60	41
NB DISPENSER	51
NB POD	61
NB CITY	65
NB WALL	75
<b>INDUSTRIAL PRODUCT RANGE</b>	<b>85</b>
NBI STATION	87
NBI DISPENSER	103
<b>WARRANTY AND CONTACT</b>	<b>113</b>

**Since 1987**, Power Electronics has been producing high-power soft starters and variable speed drives for low and medium voltage AC motor applications, as well as solar inverters for photovoltaic power generation. Today, it also manufactures equipment for the charging of all types of electric vehicles, as a result of the company's commitment to electric mobility. All this experience has enabled Power Electronics to position itself as a leading manufacturer of power electronics thanks to the unique characteristics of its products, its design patents and the fastest delivery time in the market, as well as unique customer service and reference in the sector, Power On Support 24/7.



**30 YEARS OF PRODUCT EXCELLENCE**



**24/7 POWER ON SUPPORT**



**INTERNATIONAL PRESENCE**



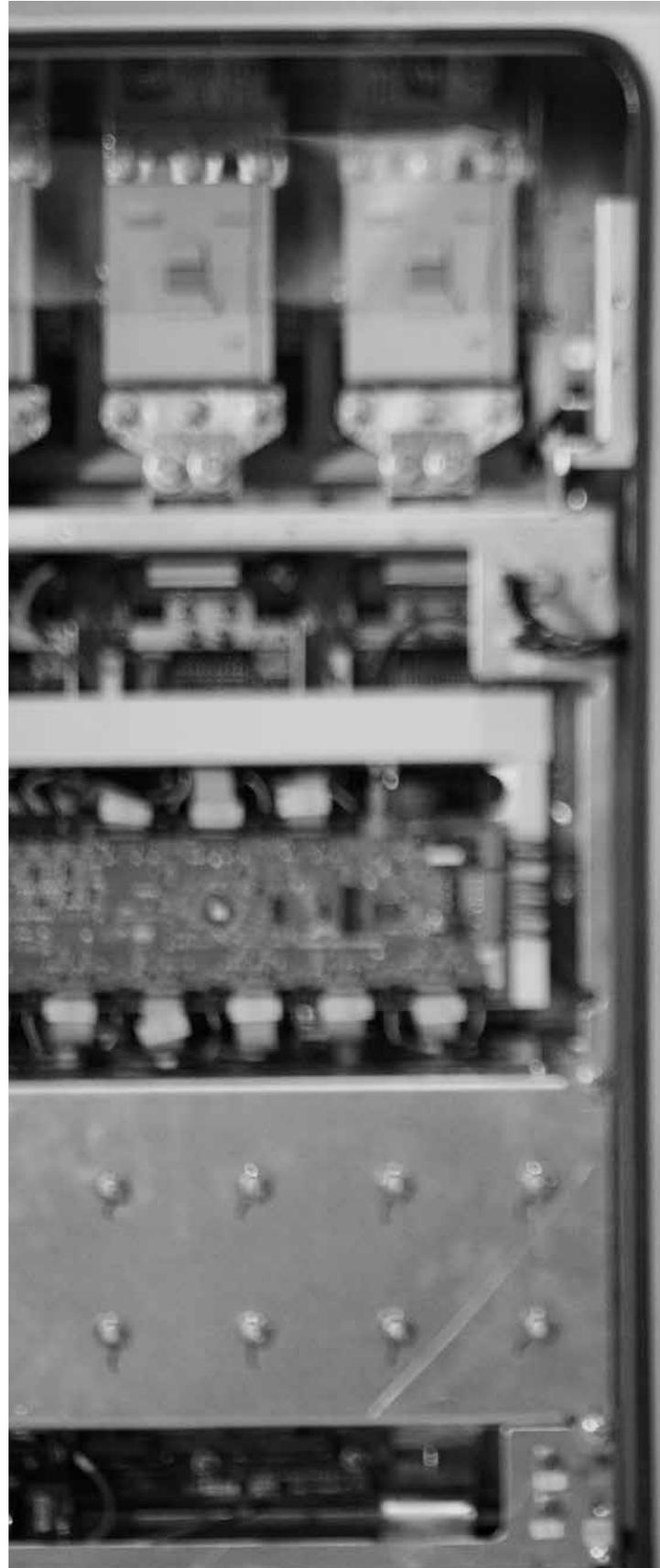
**FINANCIAL STABILITY AND STRENGTH**



**INDEPENDENT REPORTS AND CERTIFICATIONS**



**SUSTAINABLE GROWTH**





## Engineering & Consulting

**Energy projects** often require customer specific solutions, for this reason our clients also have our Engineering and Consulting department at their disposal, which is comprised of a wide number of highly skilled and experienced engineers that are available to modify our standard product to suit customer demands and ensure our clients get the product they need.

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TECHNICAL ADVICE  
ENGINEERING  
CUSTOMIZED SOLUTIONS  
PROJECT MANAGEMENT  
COMMISSIONING  
24/7 SERVICE

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## Vertical integration

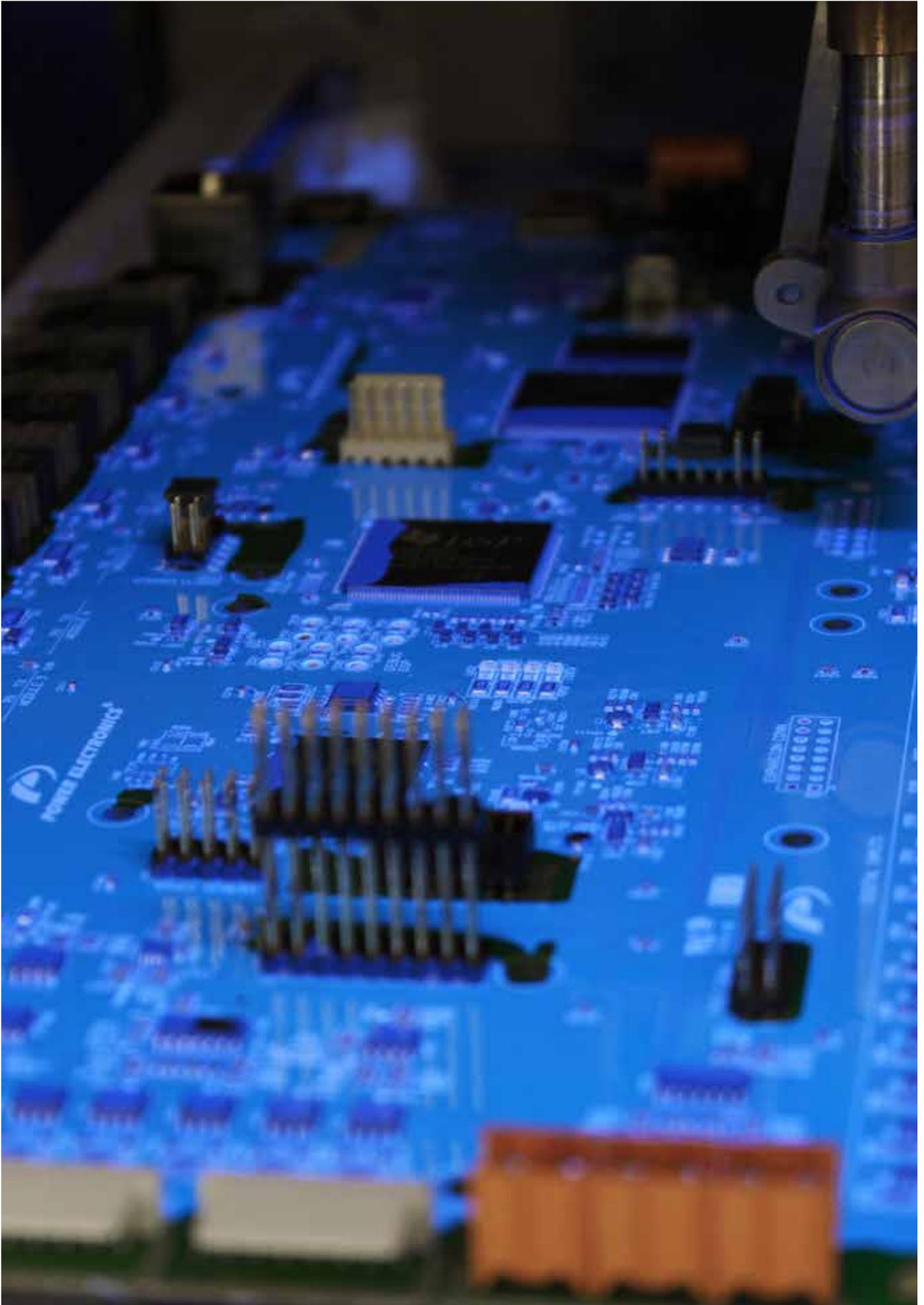
**Flexibility and specialization** play a key role in the manufacture of standard products, but even more so in personalized products. We integrate the mechanics of our equipment into our design and manufacturing. Vertical integration gives us the flexibility to adapt to customer requirements and still provide very short delivery times.

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INNOVATION & DESIGN FLEXIBILITY  
HIGH QUALITY COMPONENTS  
RELIABLE ENGINEERING  
FACTORY TESTED  
VALUE CHAIN SUPERVISION  
IMMEDIATE DELIVERY

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*"We design, manufacture and test  
the electronic boards of all our products"*







AVAILABILITY



COMMISSIONING



CUSTOMER SUPPORT



ON-SITE ASSISTANCE



SPARE PARTS WARRANTY



TRAINING SEMINARS



WARRANTY

## POWER ON SUPPORT

**Power on Support is the concept** of a customer oriented strategy implemented by Power Electronics since its origins more than 30 years ago with 24/7 after sales service available for all our customers and end users without the need for a signed O&M contract.

Customer Oriented Strategy.



**O&M**

- Remote fault diagnosis
- Charging sessions monitoring
- Charging point status
- Remote software updating



**Customer back-office compatibility**

- OCPP 1.6
- Modbus TCP
- 3G / 4G connectivity
- Flexible integration



**Payment platform**

- Credit / debit card
- RFID card
- Mobile apps
- Cyber security



**Grid**

- IEC 60870 integration
- Power curtailment
- Low harmonics content
- High power factor

**FULL 360° SERVICE**

Power Electronics offers an innovative charging solution adapted to every client's needs. With its advanced connectivity, the NB Station allows having the main services to operate, use and manage EV networks now and in the future.

**Compatible with any back-office**

OCPP is the internationally established open protocol for the communication between EV charging stations and any back-office system around the world. Power Electronics offers an easy integration to any back-office systems using standard-based APIs.

**O&M monitoring tools**

Optionally, Power Electronics can provide an advanced monitoring tool, a useful and intuitive platform for remote O&M management.



## Worldwide Presence

From the beginning, customer service and internationalization have been key elements for the development of the company. Thanks to the global expansion in the five continents, today we have presence and provide technical service throughout the world.



HEADQUARTERS



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**+28**

DELEGATIONS

---

**+100**

SALES COUNTRIES

---

**+25 GW**

INSTALLED POWER

---

**+18 GW**

ANNUAL CAPACITY PRODUCTION

---



UNITED KINGDOM

POLAND

GERMANY

FRANCE

ITALY

PORTUGAL

SPAIN

TURKEY

MOROCCO

UNITED ARAB EMIRATES

INDIA

CHINA

S. KOREA

JAPAN

MALAYSIA

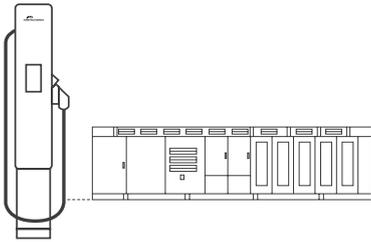
SINGAPORE

SOUTH AFRICA

AUSTRALIA

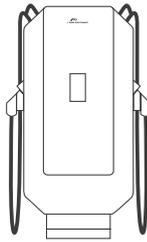
NEW ZEALAND

# Commercial product range



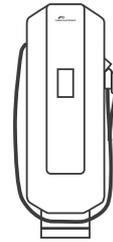
## NB Station

60 kW / 120 kW / 175 kW / 350 kW  
P. 17



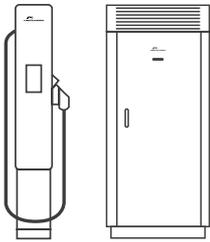
## NB 100 / NB 120

100 kW @ 400 Vac  
120 kW @ 480 Vac  
P. 31



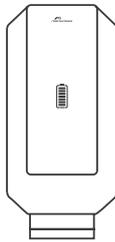
## NB 50 / NB 60

50 kW @ 400 Vac  
60 kW @ 480 Vac  
P. 41



## NB Dispenser

50 kW / 100 kW / 150 kW @ 400 Vac  
60 kW / 120 kW / 180 kW @ 480 Vac  
P. 51



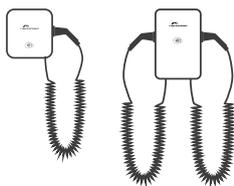
## NB POD

65 kWh  
100 kW  
P. 61



## NB City

2 x 22 kW 400 Vac (IEC)  
2 x 7.7 kW 240 Vac (US)  
P. 65

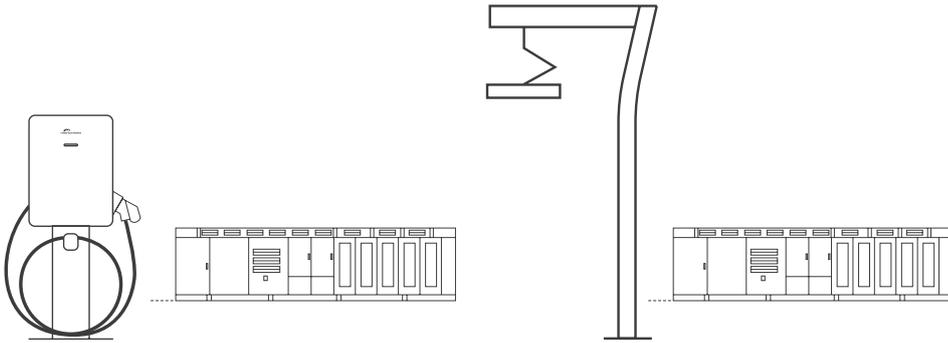


## NB Wall

Up to 2 x 22 kW 400 Vac (IEC)  
Up to 2 x 7.7 kW 240 Vac (US)  
P. 75

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# Industrial product range

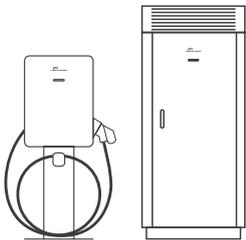


## NBi Station

Posts: 60 kW / 120 kW / 175 kW

Pantographs: 175 kW / 350 kW / 450 kW / 600 kW

P. 87



## NBi Dispenser

50 kW / 100 kW / 150 kW @ 400 Vac

60 kW / 120 kW / 180 kW @ 480 Vac

P. 103

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Product range

## Commercial

Power Electronics offers unique charging solutions for electric vehicles, in the commercial, urban and domestic areas, for light fleet vehicles and car parks. The commercial product range is focused on providing innovative solutions with a distinguished design.





# NB Station

TURN-KEY SOLUTION

MAXIMUM FLEXIBILITY

USER-FRIENDLY INTERFACE

SMART POWER BALANCE

BUS PLUS READY

BACK-OFFICE INTEGRATION OCPP 1.6

## THE FUTURE OF SMART E-MOBILITY

NB Station offers a complete flexible turn-key solution with its successful and revolutionary outdoor design based on our more than 30 years of experience in the manufacture of power electronics. NB Station consists of a central power station which supplies energy to DC charging posts. Specially designed with a modular concept, the central power station can reach up to 1200 kW, combining DC posts from 60 kW to 350 kW. It is the ideal solution to optimize the CAPEX and OPEX of the charging infrastructure. NB Station is the best solution for service stations and motorways, applications with high rotation of vehicles and where it is required a simple, fast and safe charging experience.

# TURN-KEY SOLUTION

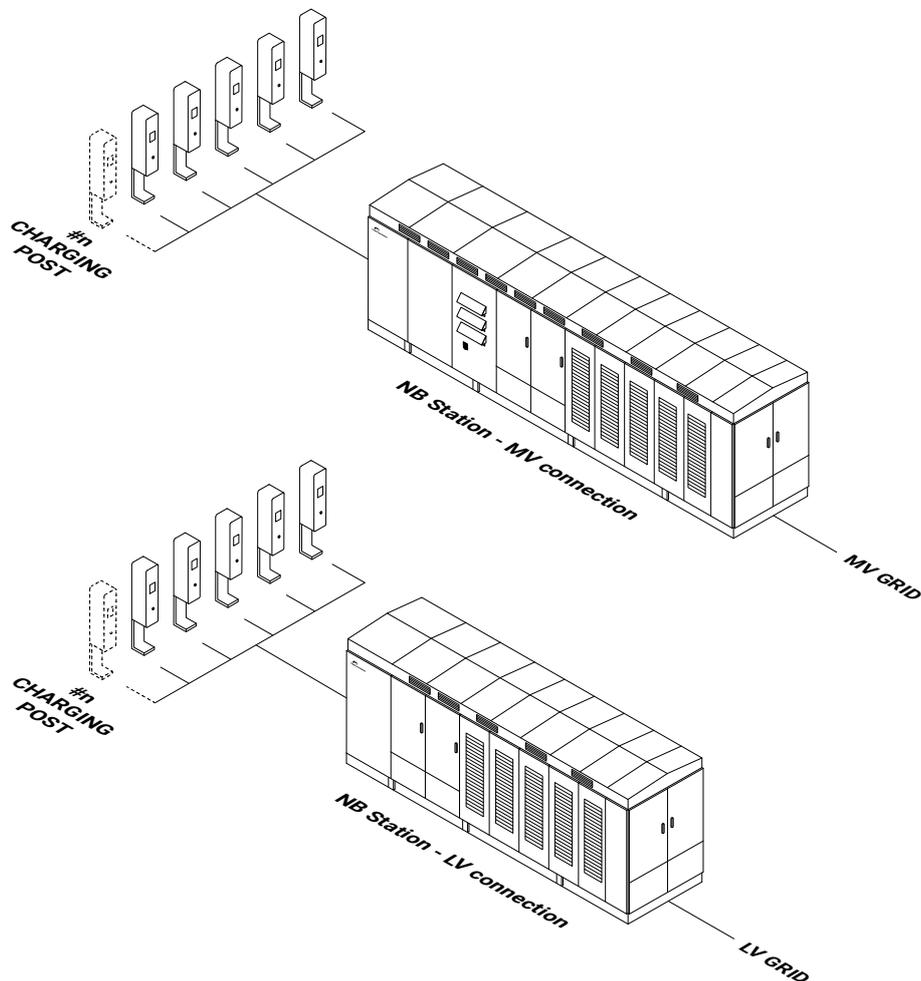
**NB Station reduces the space required, simplifies installation and significantly reduces connection costs and necessary resources.**

NB Station consists of a central power station which supplies energy to charging posts, designed for an easy interaction with the electric vehicle drivers and following the current standards of user safety.

Being expandable over time, the central power station, has been developed to be able to increase the charging power, offering a solution which can grow with the electric vehicles market demand and the batteries technologies. It can be a low voltage or a medium voltage station.

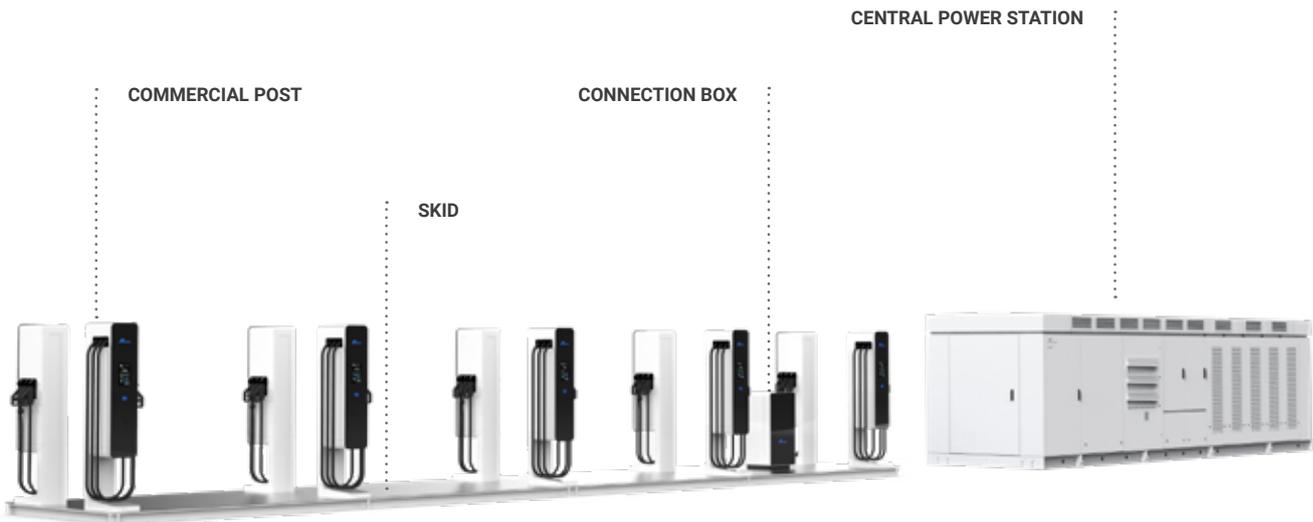
The central power station according to the client's needs can integrate the following medium voltage components:

- MV switchgear.
- MV transformer.
- Metering supervision equipment.
- Customizable user cabinet with an independent electric circuit for the client's needs.



**Speed up your charging installation with a flexible turn-key platform**

Depending on the output power required, the client can choose a wide number of charging posts to fit any project and to configure the best layout. The skid solution, which is based on an outdoor platform made of high resistance galvanized steel with a non-slip surface, offers a plug and play solution. In the skid, all posts are wired and a connection box is included to connect to the central power station.



# MAXIMUM FLEXIBILITY

**NB Station is a modular solution that can reach up to 1200 kW, combining DC posts from 60 kW to 350 kW. The configuration can be with a low voltage or a medium voltage station.**

### Field replaceable power stages

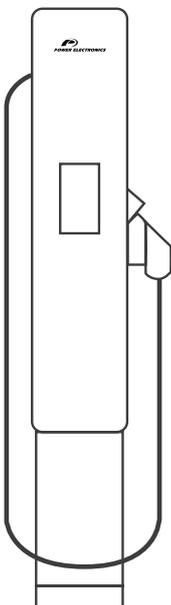
Following a modular philosophy, NB Station is composed of FRUs (Field Replaceable Units), designed to be easily replaceable on site without the need of advanced technical service personnel, providing a safe, reliable and fast Plug&Play assembly system. In the event of a fault, the faulty module is taken off-line and its power is distributed evenly among the remaining functioning FRUs. It is a solution to be easily upgraded for the next EV generation and the most reliable charger in the market.

### High DC voltage retrofit

NB Station allows an easy retrofit to charge at different voltage levels depending on the electric vehicle battery configuration. Maximum charging voltage can be 500 Vdc or 1000 Vdc.

### Connector types

NB Station is compatible with the most extended DC connectors (CCS, CHAdeMO and GB/T).



DC CONNECTOR  
**CCS-1**



DC CONNECTOR  
**CCS-2**



DC CONNECTOR  
**CHAdeMO**



DC CONNECTOR  
**GB/T**



**NBS - MV station**



**NBSK - LV station**

# USER-FRIENDLY INTERFACE

### Intuitive experience

With a user-friendly interface, the 10" display allows an optimal user experience and the visualization of statistics of the charging processes. Power Electronics posts integrate a status indicator so that the drivers can easily identify its availability. It provides drivers a fast, safe and simple interaction.

### Payment and authentication system

Every charging post is compatible with any payment and authentication system, offering the most useful solutions in the market for an easy interaction with the customer.



#### RFID

Drivers can launch a charging session by tapping their RFID card.



#### Credit / debit card

Compatibility with contact-less (NFC) solutions, letting drivers initiate the charging process by simply tapping their credit / debit card.



#### Smartphone

Compatible with the most extended apps in the market. These apps for EV drivers are able to start a charging session, reserve a post at any time, or simply manage their historical charging sessions.

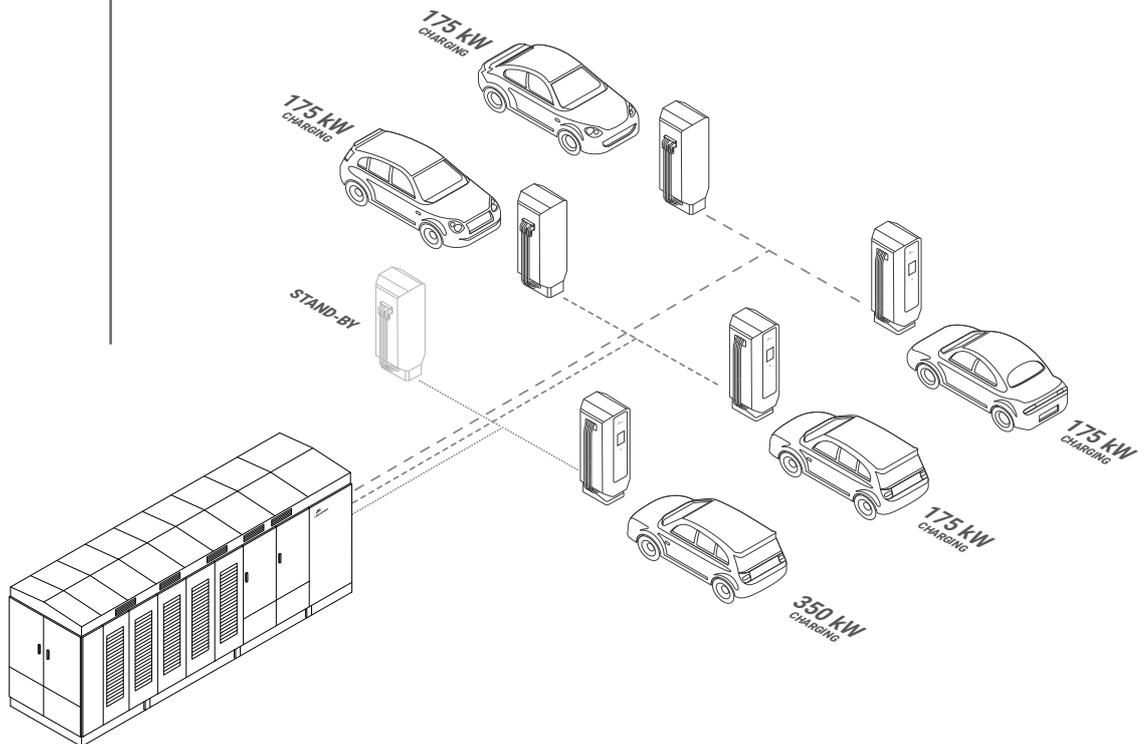
# SMART POWER BALANCE

## SMART POWER BALANCE TECHNOLOGY

NB Station allows the optimization of the use of the charging point and dynamic balancing of power depending on the vehicle to be charged.

### CONFIGURATION EXAMPLE

NB Station NBSK1000S  
Six charging posts of 350 kW



**Power Balance**

Power Electronics has developed the most advanced functionality for power balancing in vehicle fleet management.

NB Station includes an advanced DC Smart Power Balance technology that allows for charging at different power levels matching all EV needs.



# BUS PLUS READY

**Our wide experience in the renewable energy sector, designing and manufacturing solar inverters, allows us to offer an integral solution.**

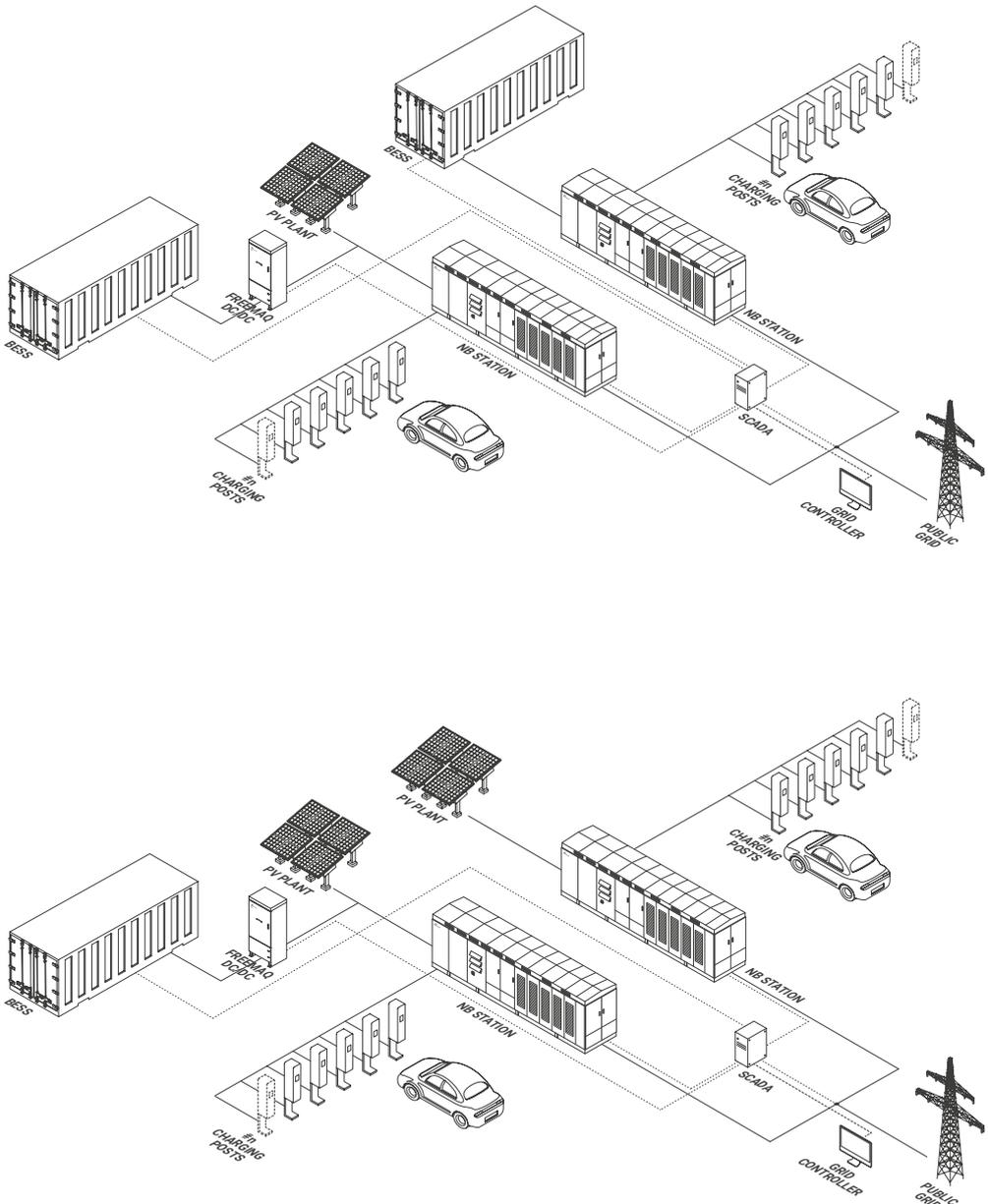
NB STATION IS ABLE TO TAKE  
ADVANTAGE OF AN ENDLESS  
ENERGY SOURCE, THE SUN



NB Station allows the EV charging from different power sources: photovoltaic field, battery system and utility grid.

Adding a Freemaq DC/DC converter allows to store the photovoltaic excesses in the battery system. Stored energy can be exported to the grid when the price is higher, maximizing the revenues of the charging business.

In addition, the battery system allows to attenuate the intermittent nature of renewable energy sources offering a continuous charging system.



# SMART AND CUSTOMIZABLE DESIGN

EXACTLY THE WAY YOU WANT

## **Customizable external enclosures**

Power Electronics offers customizable external enclosures for the central power station and the posts. The color can be modified or logos and advertising can be added.

## **Vehicle detection**

Optionally, it is possible to include the vehicle detection function, which allows starting the charging process when the car is close to the charging post.



**EXAMPLES OF POST CUSTOMIZATIONS**

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**EXAMPLES OF POWER STATION CUSTOMIZATIONS**

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**NBS**



**NBSK**



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Consult with Power Electronics for other options and colours.

## NB STATION

## NBS

REFERENCE	NBS0350 NBS0350S	NBS0500 NBS0500S	NBS0700 NBS0700S	NBS1000 NBS1000S	
DC OUTPUT	Station maximum power [kW]	420	600	840	1200
	Charging post power [kW]	60 / 120 / 175 / 350			
	Voltage range [V]	50 - 500 / 150 - 1000			
	Available connectors	CCS <sup>[1]</sup> , CHAdeMO, GB/T			
AC INPUT	Voltage [V]	15 / 20 / 25 <sup>[2]</sup>			
	Power factor	> 0.99			
	Frequency [Hz]	50 / 60			
	Efficiency	94%			
GENERAL	Interface	10" touchscreen			
		Status LED indicator			
		Emergency stop (optional)			
		Vehicle detection (optional)			
		Credit / debit card reader compatibility (optional)			
		RFID card reader (optional)			
	Protections	Isolation monitoring			
		Over-voltages / under-voltages			
		Over-currents / short-circuits			
		RCD			
		Over-temperatures			
	User auxiliary services supply [kW]	15 / 20 / 25			
	Cable length [m] <sup>[3]</sup>	3			
	Cable length [ft] <sup>[3]</sup>	9.84			
	Degree of protection	NEMA 3R - IP54 / IK10 <sup>[4]</sup>			
	Operating temperature	From -25°C to 50°C (optionally, from -30°C to 50°C)			
	Relative humidity	4% - 95%			
	Maximum altitude (above sea level)	2000 m; > 2000 m power derating (max. 3000 m)			
	Customization	Enclosure / Display			
	Communications	OCPP 1.6, Ethernet, 3G/4G connectivity (optional), Wifi (optional)			
Charging post dimensions (W x D x H) [mm]	300 x 500 x 1800				
Charging post dimensions (W x D x H) [ft]	1.0 x 1.6 x 5.9				
Other station options	Motorized protection switchgear (remote operation)				

## STANDARD CONFIGURATIONS

REFERENCE	SMART POWER BALANCE	POSTS					
		NBDC060	NBDC120	NBDC120C <sup>[5]</sup>	NBDC175	NBDC175C <sup>[5]</sup>	NBDC350C <sup>[5]</sup>
NBS0350	-	7	3	3	2	2	1
NBS0350S	✓	-	6	6	4	4	2
NBS0500	-	10	5	5	3	3	-
NBS0500S	✓	-	10	10	6	6	-
NBS0700	-	14	7	7	4	4	2
NBS0700S	✓	-	14	14	8	8	4
NBS1000	-	20	10	10	6	6	3
NBS1000S	✓	-	20	20	12	12	6

[1] CCS-1 for US market. CCS-2 for IEC market.  
[2] Consult with Power Electronics.

[3] Optional cable length of 5 m / 18 ft.  
[4] IK08 for display and ventilation grilles.

[5] Cooled connector.

## NB STATION

## NBSK

REFERENCE		NBSK0350 NBSK0350S	NBSK0500 NBSK0500S	NBSK0700 NBSK0700S	NBSK1000 NBSK1000S	
DC OUTPUT	Station maximum power [kW]	420	600	840	1200	
	Charging post power [kW]	60 / 120 / 175 / 350				
	Voltage range [V]	50 - 500 / 150 - 1000				
	Available connectors	CCS <sup>[1]</sup> , CHAdeMO, GB/T				
AC INPUT	Voltage [V]	400 ± 10 % / 480 ± 10 %				
	Power factor	> 0.99				
	Frequency [Hz]	50 / 60				
	Efficiency	95%				
GENERAL	Interface	10" touchscreen				
		Post status LED indicator				
		Emergency stop (optional)				
		Vehicle detection (optional)				
		Credit / debit card reader compatibility (optional)				
		RFID card reader (optional)				
		Protections				
	Isolation monitoring					
	Over-voltages / under-voltages					
	Over-currents / short-circuits					
	RCD					
	Over-temperatures					
	User auxiliary services supply [kW]		15 / 20 / 25			
	Cable length [m] <sup>[2]</sup>		3			
	Cable length [ft] <sup>[2]</sup>		9.84			
	Degree of protection		NEMA 3R - IP54 / IK10 <sup>[3]</sup>			
	Operating temperature		From -25°C to 50°C (optionally, from -30°C to 50°C)			
Relative humidity		4% - 95%				
Maximum altitude (above sea level)		2000 m; > 2000 m power derating (max. 3000 m)				
Customization		Enclosure / Display				
Communications		OCPP 1.6, Ethernet, 3G/4G connectivity (optional), Wifi (optional)				
Charging post dimensions (W x D x H) [mm]		300 x 500 x 1800				
Charging post dimensions (W x D x H) [ft]		1.0 x 1.6 x 5.9				

## STANDARD CONFIGURATIONS

REFERENCE	SMART POWER BALANCE	POSTS					
		NBDC060	NBDC120	NBDC120C <sup>[4]</sup>	NBDC175	NBDC175C <sup>[4]</sup>	NBDC350C <sup>[4]</sup>
NBSK0350	-	7	3	3	2	2	1
NBSK0350S	✓	-	6	6	4	4	2
NBSK0500	-	10	5	5	3	3	-
NBSK0500S	✓	-	10	10	6	6	-
NBSK0700	-	14	7	7	4	4	2
NBSK0700S	✓	-	14	14	8	8	4
NBSK1000	-	20	10	10	6	6	3
NBSK1000S	✓	-	20	20	12	12	6

[1] CCS-1 for US market. CCS-2 for IEC market.  
[2] Optional cable length of 5 m / 18 ft.

[3] IK08 for display and ventilation grilles.  
[4] Cooled connector.



# NB 100 / NB 120

UP TO 4 VEHICLES CHARGING AT THE SAME TIME

USER-FRIENDLY INTERFACE

SMART FLEET MANAGEMENT

BUS PLUS READY

BACK-OFFICE INTEGRATION OCPP 1.6

## DC STAND-ALONE CHARGER

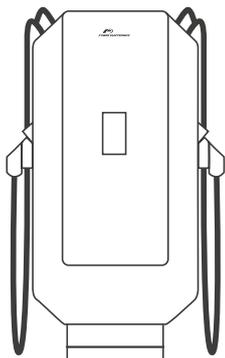
NB 100 / NB 120 is an outdoor, robust and attractive charger, which allows the simultaneous charging of four vehicles with output power of up to 100 kW in DC (120 kW in US) and 43 kW in AC (7.7 kW in US). NB 100 / NB 120 can be set to charge at 400 or 800 Vdc depending on the battery characteristics of the electric vehicle. Its smart design offers an easy, fast and safe charging experience, which makes it the best solution for sites where it is required a combination of design, high power and innovation.

# UP TO 4 VEHICLES CHARGING AT THE SAME TIME

**NB 100 / NB 120 has been designed to obtain the maximum income with a stand-alone charger.**

## Connector types

Each charger can install up to four connectors per post, allowing four vehicles to be charged simultaneously (2 in DC and 2 in AC). The charger is compatible with the most extended DC connectors (CCS, CHAdeMO and GB/T) and AC connectors.



DC CONNECTOR  
**CCS-1**



DC CONNECTOR  
**CCS-2**



DC CONNECTOR  
**CHAdeMO**



DC CONNECTOR  
**GB/T**



AC CONNECTOR  
**Type 1**



AC CONNECTOR  
**Type 2**



# USER-FRIENDLY INTERFACE

## Intuitive experience

With a user-friendly interface, the 10" display allows an optimal user experience and the visualization of statistics of the charging processes. Power Electronics posts integrate a status indicator so that the drivers can easily identify its availability. It provides drivers a fast, safe and simple interaction.

## Payment and authentication system

Every charging post is compatible with any payment and authentication system, offering the most useful solutions in the market for an easy interaction with the customer.



### RFID

Drivers can launch a charging session by tapping their RFID card.



### Credit / debit card

Compatibility with contact-less (NFC) solutions, letting drivers initiate the charging process by simply tapping their credit / debit card.



### Smartphone

Power Electronics' NB Charger smartphone application allows monitoring and the scheduling charging sessions, consult statistics and historical, update the software version, define users' roles and manage the charging energy.

# SMART FLEET MANAGEMENT

**Power Electronics has developed the most advanced functionality for power balancing in vehicle fleet management. Designed to minimize the initial investment and the operation costs.**

**Smart Fleet Management** functionality is able to balance the power based on the number of charging posts in use. Therefore, the total power required to supply the total energy gets substantially reduced, representing a cost reduction in the electrical facility infrastructure and a cost saving due to a minor power contracted. Besides, the hardware and the back-office communication is optimized.

## Total power available 100%

Vehicle 1  
Normal preference 20%

Vehicle 2  
High preference 50%

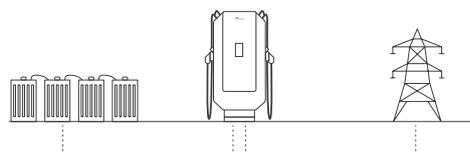
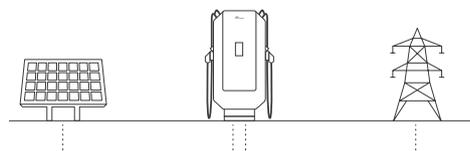
Vehicle 3  
Normal preference 20%

Vehicle 4  
Low preference 10%



# BUS PLUS READY

NB 100 / NB 120 can connect to a DC power supply to provide electric vehicle charging power. The power source could be the photovoltaic energy, a battery system or the utility grid.



# SMART AND CUSTOMIZABLE DESIGN

## EXACTLY THE WAY YOU WANT

### **Customizable external enclosures**

Power Electronics offers customizable external enclosures. Customize your charging post with branded labels that feature clients logos, texts and advertisement.

### **Graphic advertising**

NB 100 / NB 120 offers the option of installing an advertising panel on the back of the equipment.

### **Vehicle detection**

Optionally, it is possible to include the vehicle detection function, which allows starting the charging process when the car is close to the charging post.

### **AC charging**

It is possible to include an AC Type 1 or 2 charging connector, which allows a charging power up to 43 kW or 7.7 kW in US.



## EXAMPLES OF POST CUSTOMIZATIONS

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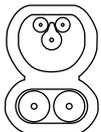


**NB 100**

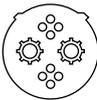
**IEC**

<b>DC OUTPUT (default)</b>	Power [kW]	100
	Voltage range [V]	50 - 500 / 150 - 1000
	Current [A]	250
	Available connectors	CCS- 2 <sup>[1]</sup> , GB/T, CHAdeMO
<b>AC OUTPUT (option)</b>	Power [kW]	22 / 43
	Voltage range [V]	400 ± 10 %
	Current [A]	32 / 63
	Available connectors	Type 2 <sup>[1]</sup>
<b>AC INPUT FOR DC OUTPUT</b>	Power [kVA]	105
	Voltage [V]	400 ± 10 %
	Current [A]	152
	Power factor	> 0.99
	Frequency [Hz]	50 / 60
	Efficiency	95%
<b>GENERAL</b>	Interface	10" touchscreen Emergency-stop (optional) Post status LED indicator Credit / debit card reader compatibility (optional) RFID card reader (optional)
	Protections	Isolation monitor Over-voltages / Under-voltages Over-currents / Short-circuits Over-temperatures
	Others	Smart Fleet Management Vehicle detection (optional)
	Cable length (m) <sup>[2]</sup>	4
	Number of connectors	Up to 4
	Enclosure color	White (RAL 9016 - microtexture painting) / Black glass
	Customization	Enclosure / Glass / Display
	Advertising	Back side
	Degree of protection	IP54   IK10 <sup>[3]</sup>
	Operating temperature	From -25°C to 50°C (optionally, from -30°C to 50°C)
	Relative humidity	4% - 95%
	Maximum altitude (above sea level)	2000 m; > 2000 m power derating (max. 3000 m)
	Communications	OCPP 1.6, Ethernet, 3G/4G connectivity (optional), Wifi (optional)
	Dimensions (W x D x H) [mm]	870 x 790 x 1800
	Regulation	IEC 61851-1, IEC 61851-23, IEC 61851-24, IEC 61000-6-2, IEC 61000-6-3

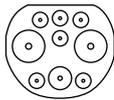
**AVAILABLE DC CONNECTORS**



**CCS-2**

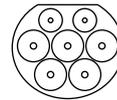


**CHAdeMO**



**GB/T**

**AVAILABLE AC CONNECTORS**



**AC Type 2**

[1] Type 1 under request.  
[2] Optional cable length of 5 m.

[3] IK08 for display and ventilation grilles.

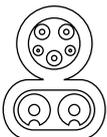
**NB 120**

**US**

<b>DC OUTPUT (default)</b>	Power [kW]	120
	Voltage range [V]	50 - 500 / 150 - 1000
	Current [A]	250
	Available connectors	CCS-1, CHAdeMO, GB/T
<b>AC OUTPUT (option)</b>	Power [kW]	6.7 - 7.7
	Voltage range [V]	208 / 240 ± 10 %
	Current [A]	32
	Available connectors	Type 1
<b>AC INPUT FOR DC OUTPUT</b>	Power [kVA]	126
	Voltage [V]	480 ± 10 %
	Current [A]	152
	Power factor	> 0.99
	Frequency [Hz]	60
	Efficiency	95%
<b>GENERAL</b>	Interface	10" touchscreen
		Emergency-stop (optional)
		Post status LED indicator
		Credit / debit card reader compatibility (optional)
		RFID card reader (optional)
	Protections	Isolation monitor
		Over-voltages / Under-voltages
		Over-currents / Short-circuits
		Over-temperatures
	Others	Smart Fleet Management
		Vehicle detection (optional)
	Cable length [ft] <sup>[1]</sup>	13.12
	Enclosure color	White (RAL 9016 - microtexture painting) / Black glass
	Customization	Enclosure / Glass / Display
	Advertising	Back side
	Degree of protection	NEMA 3R
	Operating temperature	From -25°C to 50°C (optionally, from -30°C to 50°C)
Relative humidity	4% - 95%	
Maximum altitude (above sea level)	2000 m; > 2000 m power derating (max. 3000 m)	
Communications	OCPP 1.6, Ethernet, 3G/4G connectivity (optional), Wifi (optional)	
Dimensions [ft]	2.85 x 2.60 x 5.90	
Regulation	UL 2202, UL 2594, NEC 625, FCC Part 15 Class A	

**AVAILABLE DC CONNECTORS**

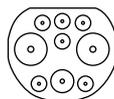
**AVAILABLE AC CONNECTORS**



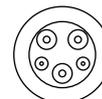
**CCS-1**



**CHAdeMO**



**GB/T**



**AC Type 1**

[1] Optional cable length of 18 ft.



# NB 50 / NB 60

SIMULTANEOUS DC + AC CHARGING

USER-FRIENDLY INTERFACE

SMART FLEET MANAGEMENT

BUS PLUS READY

BACK-OFFICE INTEGRATION OCPP 1.6

## THE COMBINATION OF AESTHETICS AND ADVANCED FUNCTIONALITIES

NB 50 / NB 60 is an outdoor, robust and attractive charger, designed for durability, reliability and ease of maintenance. With output power up to 50 kW in DC (60 kW in US and 43 kW in AC (7.7 kW in US)), NB 50 / NB 60 allows the simultaneous charging of two vehicles in DC and AC. NB 50 / NB 60 can be set to charge at 400 or 800 Vdc depending on battery characteristics of the electric vehicle. Its smart design offers a simple, fast and safe charging experience, which makes it being the best solution for sites that require the combination of design, high power and innovation.

# SIMULTANEOUS DC + AC CHARGING

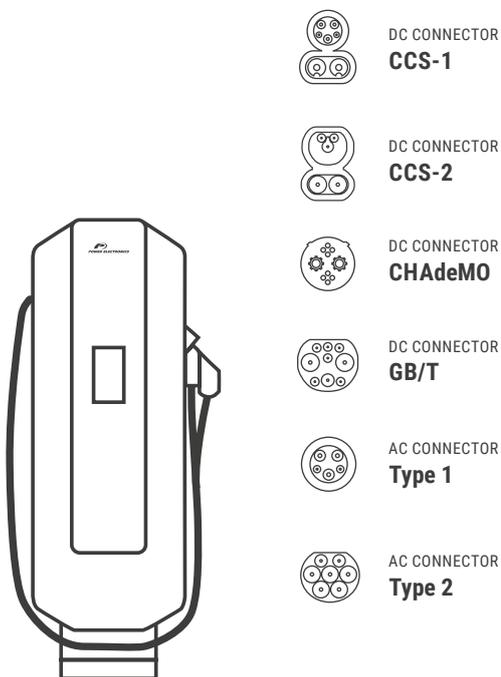
**NB 50 / NB 60 has been designed to obtain the maximum income with a stand-alone charger.**

## Connector types

Each charger can install up to three connectors per post, allowing the simultaneous charging of two vehicles 1 in DC and 1 in AC. The charger is compatible with the most extended connectors for DC charging (CCS, CHAdeMO and GB/T) and AC.

## High DC voltage retrofit

NB 50 / NB 60 allows an easy retrofit to charge at different voltage levels depending on the electric vehicle battery configuration. The maximum charging voltage can be 500 Vdc or 1000 Vdc.



# USER-FRIENDLY INTERFACE

## Intuitive experience

With a user-friendly interface, the 10" display allows an optimal user experience and the visualization of statistics of the charging processes. Power Electronics posts integrate a status indicator so that the drivers can easily identify its availability. It provides drivers a fast, safe and simple interaction.



## Payment and authentication system

Every charging post is compatible with any payment and authentication system, offering the most useful solutions in the market for an easy interaction with the customer.



### RFID

Drivers can launch a charging session by tapping their RFID card.



### Credit / debit card

Compatibility with contact-less (NFC) solutions, letting drivers initiate the charging process by simply tapping their credit / debit card.



### Smartphone

Power Electronics' NB Charger smartphone application allows monitoring and the scheduling charging sessions, consult statistics and historical, update the software version, define users' roles and manage the charging energy.

# SMART FLEET MANAGEMENT

**Power Electronics has developed the most advanced functionality for power balancing in vehicle fleet management. Designed to minimize the initial investment and the operation costs.**

**Smart Fleet Management** functionality is able to balance the power based on the number of charging posts in use. Therefore, the total power required to supply the total energy gets substantially reduced, representing a cost reduction in the electrical facility infrastructure and a cost saving due to a minor power contracted. Besides, the hardware and the back-office communication is optimized.

## Total power available 100%

Vehicle 1  
Normal preference 20%

Vehicle 2  
High preference 50%

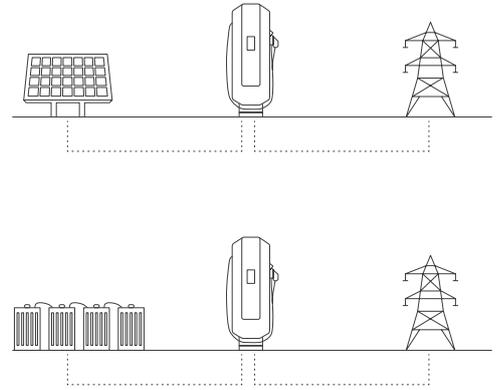
Vehicle 3  
Normal preference 20%

Vehicle 4  
Low preference 10%



# BUS PLUS READY

NB 50 / NB 60 can connect to a DC power supply to provide electric vehicle charging power. The power source could be the photovoltaic energy, a battery system or the utility grid.



# SMART AND CUSTOMIZABLE DESIGN

## EXACTLY THE WAY YOU WANT

### **Customizable external enclosures**

Power Electronics offers customizable external enclosures. Customize your charging post with branded labels that feature clients logos, texts and advertisement.

### **AC charging**

It is possible to include an AC Type 1 or 2 charging connector, which allows a charging power up to 43 kW or 7.7 kW in US.

### **Vehicle detection**

Optionally, it is possible to include the vehicle detection function, which allows starting the charging process when the car is close to the charging post.



## EXAMPLES OF POST CUSTOMIZATIONS

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**NB 50**

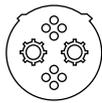
**IEC**

<b>DC OUTPUT (default)</b>	Power [kW]	50
	Voltage range [V]	50 - 500 / 150 - 1000
	Current [A]	125
	Available connectors	CCS-2 <sup>[2]</sup> , GB/T, CHAdeMO
<b>AC OUTPUT (option)</b>	Power [kW]	22 / 43
	Voltage range [V]	400 ± 10 %
	Current [A]	32 / 63
	Available connectors	Type 2 <sup>[1]</sup>
<b>AC INPUT FOR DC OUTPUT</b>	Power [kVA]	52
	Voltage [V]	400 ± 10 %
	Current [A]	76
	Power factor	> 0.99
	Frequency [Hz]	50 / 60
	Efficiency	95%
<b>GENERAL</b>	Interface	10" touchscreen Emergency stop (optional) Status LED indicator Credit / debit card reader compatibility (optional) RFID card reader (optional)
	Protections	Isolation monitor Over-voltages / under-voltages Over-currents / short-circuits Over-temperatures
	Others	Smart Fleet Management Vehicle detection (optional)
	Cable length [m] <sup>[2]</sup>	3
	Enclosure color	White (RAL 9016 - microtexture painting) / Black glass
	Customization	Enclosure / Glass / Display
	Degree of protection	IP54   IK10 <sup>[3]</sup>
	Operating temperature	From -25°C to 50°C (optionally, from -30°C to 50°C)
	Relative humidity	4% - 95%
	Maximum altitude (above sea level)	2000 m; > 2000 m power derating (max. 3000 m)
	Communications	OCPP 1.6, Ethernet, 3G/4G connectivity (optional), Wifi (optional)
	Dimensions (W x D x H) [mm]	600 x 700 x 1800
	Regulation	IEC 61851-1, IEC 61851-23, IEC 61851-24, IEC 61000-6-2, IEC 61000-6-3

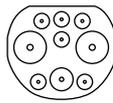
**AVAILABLE DC CONNECTORS**



**CCS-2**

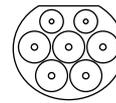


**CHAdeMO**



**GB/T**

**AVAILABLE AC CONNECTORS**



**AC Type 2**

[1] Type 1 under request.  
[2] Optional cable length of 5 m.

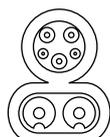
[3] IK08 for display and ventilation grilles.

**NB 60**

**US**

<b>DC OUTPUT (default)</b>	Power [kW]	60
	Voltage range [V]	50 - 500 / 150 - 1000
	Current [A]	150
	Available connectors	CCS-1, CHAdeMO, GB/T
<b>AC OUTPUT (option)</b>	Power [kW]	6.7 - 7.7
	Voltage range [V]	208 / 240 ± 10 %
	Current [A]	32
	Available connectors	Type 1
<b>AC INPUT FOR DC OUTPUT</b>	Power [kVA]	63
	Voltage [V]	480 ± 10 %
	Current [A]	76
	Power factor	> 0.99
	Frequency [Hz]	60
	Efficiency	95%
<b>GENERAL</b>	Interface	10" touchscreen Emergency stop (optional) Status LED indicator Vehicle detection (optional) Credit / debit card reader compatibility (optional) RFID card reader (optional)
	Protections	Isolation monitor Over-voltages / under-voltages Over-currents / short-circuits Over-temperatures
	Others	Smart Fleet Management Vehicle detection (optional)
	Cable length [ft] <sup>[2]</sup>	9.8
	Enclosure color	White (RAL 9016 - microtexture painting) / Black glass
	Customization	Enclosure / Glass / Display
	Degree of protection	NEMA 3R
	Operating temperature	From -25°C to 50°C (optionally, from -30°C to 50°C)
	Relative humidity	4% - 95%
	Maximum altitude (above sea level)	2000 m; > 2000 m power derating (max. 3000 m)
	Communications	OCPP 1.6, Ethernet, 3G/4G connectivity (optional), Wifi (optional)
	Dimensions (W x D x H) [ft]	2 x 2.3 x 5.9
	Regulation	UL 2202, UL 2594, NEC 625, FCC Part 15 Class A

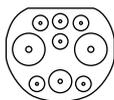
**AVAILABLE DC CONNECTORS**



**CCS-1**

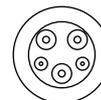


**CHAdeMO**



**GB/T**

**AVAILABLE AC CONNECTORS**



**AC Type 1**

[1] Possible update, DC voltage range from 150 V to 1000 V.

[2] Optional cable length of 18 ft.



# NB Dispenser

FLEXIBLE ARCHITECTURE

USER-FRIENDLY INTERFACE

SMART POWER BALANCE

BUS PLUS READY

BACK-OFFICE INTEGRATION OCPP 1.6

## THE COMBINATION OF MODULARITY AND HIGH PERFORMANCE

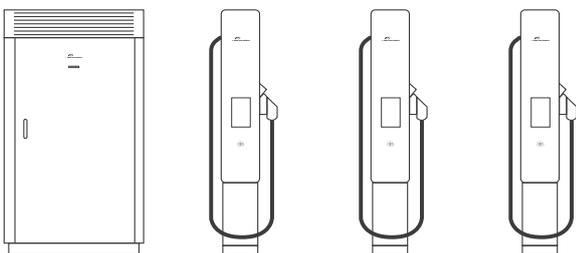
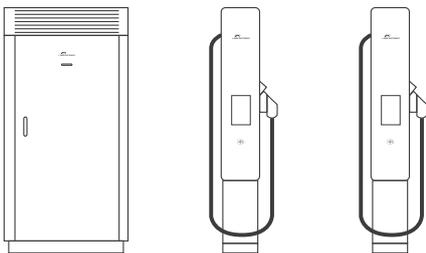
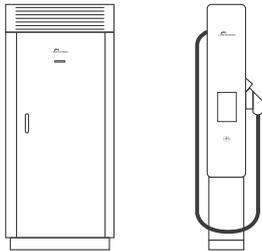
NB Dispenser is an outdoor robust and modular charger, designed for durability, reliability and ease of maintenance. Thanks to its flexible architecture NB Dispenser series allows the installation in any location. The charging solution consists of a power cabinet with low voltage input, which combines with commercial posts. With output power up to 150 kW in DC (180 kW in US), NB Dispenser allows the simultaneous charging of three vehicles thanks to the advanced functionality, Smart Power Balance. NB Dispenser can be configured to charge either at 400 or 800 Vdc depending on the characteristics of the electric vehicle battery. Its smart design offers a simple, fast and safe charging experience, which makes it being the best solution for sites that require the combination of design, high power and innovation.

# FLEXIBLE ARCHITECTURE

**NB Dispenser is the charging solution for locations where space is at a premium.**

The NB Dispenser series is a DC charging solution with low voltage input consisting of a power cabinet which supplies energy to commercial charging posts. The posts offer a user interface simple and attractive, meeting current safety standards.

The available power cabinet configurations are from 50 kW to 150 kW (from 60 kW up to 180 kW in US) and are combined with DC post of 50, 100 and 150 kW (60, 120 and 180 kW in US).



# USER-FRIENDLY INTERFACE

## Intuitive experience

With a user-friendly interface, the 10" display allows an optimal user experience and the visualization of statistics of the charging processes. Power Electronics posts integrate a status indicator so that the drivers can easily identify its availability. It provides drivers a fast, safe and simple interaction.

## Payment and authentication system

Every charging post is compatible with any payment and authentication system, offering the most useful solutions in the market for an easy interaction with the customer.



### RFID

Drivers can launch a charging session by tapping their RFID card.



### Credit / debit card

Compatibility with contact-less (NFC) solutions, letting drivers initiate the charging process by simply tapping their credit / debit card.



### Smartphone

Compatible with the most extended apps in the market. These apps for EV drivers are able to start a charging session, reserve a post at any time, or simply manage their historical charging sessions.

# SMART POWER BALANCE

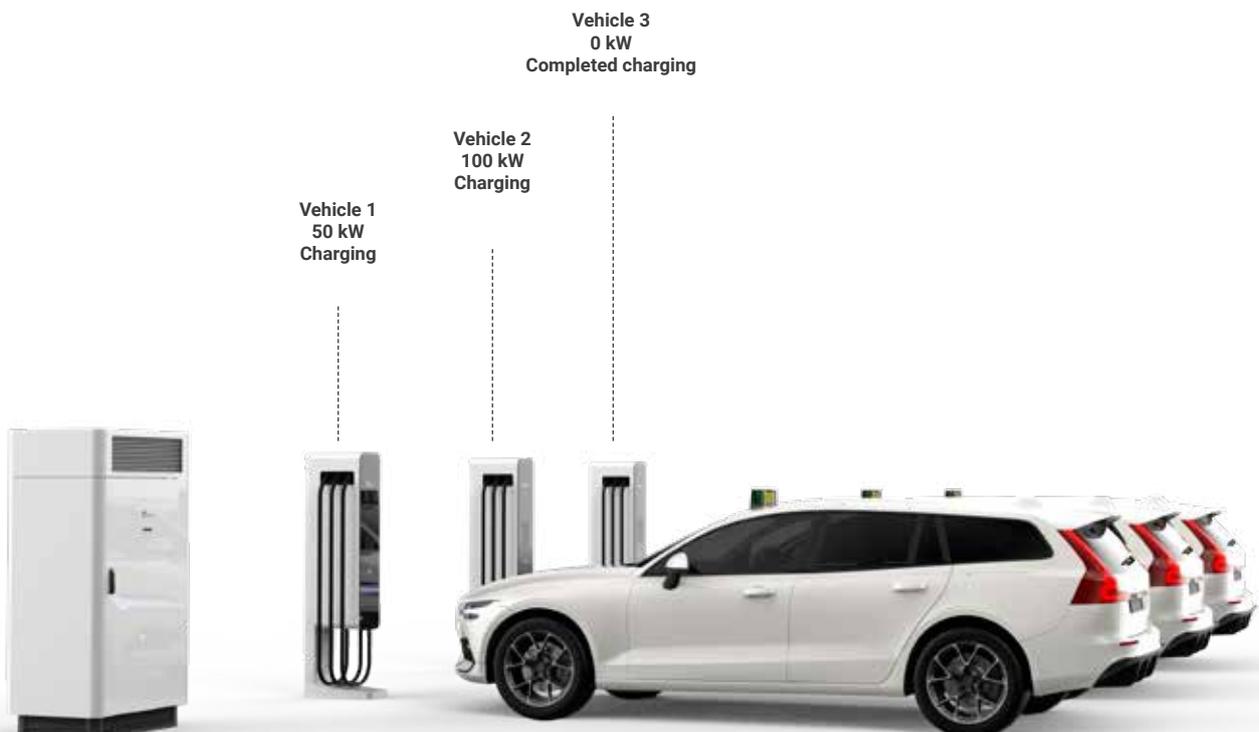
**Power Electronics has developed the most advanced functionality for power balancing in vehicle fleet management. Designed to minimize the initial investment and the operation costs.**

**Smart Power Balance** functionality is able to balance the power based on the number of charging posts in use. Therefore, the total power required to supply the total energy gets substantially reduced, representing a cost reduction in the electrical facility infrastructure and a cost saving due to a minor power contracted. Besides, the hardware and the back-office communication is optimized.

## CONFIGURATION EXAMPLE

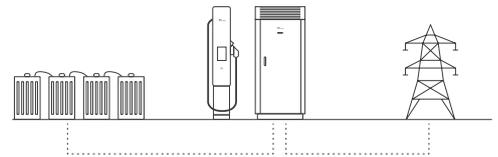
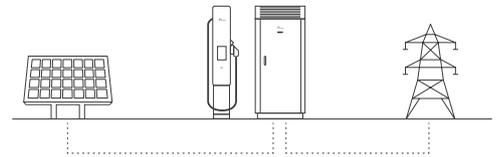
NBD150S

Three NBDC100 posts of 100 kW



# BUS PLUS READY

NB Dispenser can connect to a DC power supply to provide electric vehicle charging power. The power source could be the photovoltaic energy, a battery system or the utility grid.



# SMART AND CUSTOMIZABLE DESIGN

## EXACTLY THE WAY YOU WANT

### **Customizable external enclosures**

Power Electronics offers customizable external enclosures. Customize your charging post with branded labels that feature clients logos, texts and advertisement.

### **AC charging**

It is possible to include an AC Type 1 or 2 charging connector, which allows a charging power up to 43 kW or 7.7 kW in US.

### **Vehicle detection**

Optionally, it is possible to include the vehicle detection function, which allows starting the charging process when the car is close to the charging post.



## EXAMPLES OF CUSTOMIZATIONS

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## NB DISPENSER

IEC

REFERENCE	NBD050 NBD050S	NBD100 NBD100S	NBD150 NBD150S	
<b>DC OUTPUT</b>	Power cabinet maximum output power [kW]	50	100	150
	Post maximum power [kW]	50	50 / 100	50 / 100 / 150
	Voltage range [V]	50 - 500 / 150 - 1000		
	Available connectors	CCS-2 <sup>[1]</sup> , CHAdeMO, GB/T		
<b>AC OUTPUT</b>	Power [kW]	22 / 43		
	Voltage [V]	400 ± 10 %		
	Available connectors	AC Type 2 <sup>[1]</sup>		
<b>AC INPUT</b>	Power [kW]	53	105	158
	Voltage [V]	400 ± 10 %		
	Power factor	> 0.99		
	Frequency [Hz]	50 / 60		
	Efficiency	95%		
<b>GENERAL</b>	Interface	10" touchscreen		
		Post status LED indicator		
		Emergency stop (optional)		
		Credit / debit card reader compatibility (optional)		
		RFID card reader (optional)		
		Isolation monitor		
		Over-voltages / under-voltages		
	Protections	Over-currents / short-circuits		
		RCD		
		Over-temperatures		
		Vehicle detection (optional)		
	Others	Vehicle detection (optional)		
	Cable length [m] <sup>[2]</sup>	3		
	Degree of protection	IP54   IK10 <sup>[3]</sup>		
	Operating temperature	From -25°C to 50°C (optionally, from -30°C to 50°C)		
	Relative humidity	4% - 95%		
	Maximum altitude (above sea level)	2000 m; > 2000 m power derating (max. 3000 m)		
Customization	Enclosure / display			
Communications	OCPP 1.6, Ethernet, 3G/4G connectivity (optional), Wifi (optional)			
Post dimensions (W x D x H) [mm]	300 x 500 x 1800			

## STANDARD CONFIGURATIONS

REFERENCE	SMART POWER BALANCE	POSTS			
		NBDC050	NBDC100	NBDC150	NBDC150C <sup>[4]</sup>
NBD050	-	1	-	-	-
NBD100	-	2	1	-	-
NBD100S	√	-	2	-	-
NBD150	-	3	-	1	1
NBD150S	√	-	3	3	3

[1] Type 1 on demand.

[2] Optional cable length 5 m.

[3] IK08 for display and ventilation grilles.

[4] Cooled connector.

## NB DISPENSER

US

REFERENCE	NBD060 NBD060S	NBD120 NBD120S	NBD180 NBD180S	
<b>OUTPUT (DC)</b>	Power cabinet maximum output power [kW]	60	120	180
	Post maximum power [kW]	60	60 / 120	60 / 120 / 180
	Voltage range [V]	50 - 500 / 150 - 1000		
	Available connectors	CCS-1, CHAdeMO, GB/T		
<b>AC OUTPUT</b>	Power [kW]	6.7 / 7.7		
	Voltage [V]	208 / 240 ± 10 %		
	Available connectors	AC Type 1		
<b>AC INPUT</b>	Power [kW]	63	126	189
	Voltage [V]	480 ± 10 %		
	Power factor	> 0.99		
	Frequency [Hz]	60		
	Efficiency	95%		
<b>GENERAL</b>	Interface	10" touchscreen		
		Post status LED indicator		
		Emergency stop (optional)		
		Credit / debit card reader compatibility (optional)		
		RFID card reader (optional)		
		Isolation monitor		
		Over-voltages / under-voltages		
	Protections	Over-currents / short-circuits		
		CCID		
		Over-temperatures		
		Vehicle detection (optional)		
	Others	Vehicle detection (optional)		
	Cable length [ft] <sup>[1]</sup>	9.84		
	Degree of protection	NEMA 3R		
	Operating temperature	From -25°C to 50°C (optionally, from -30°C to 50°C)		
	Relative humidity	4% - 95%		
	Maximum altitude (above sea level)	2000 m; > 2000 m power derating (max. 3000 m)		
Customization	Enclosure / display			
Communications	OCPP 1.6, Ethernet, 3G/4G connectivity (optional), Wifi (optional)			
Post dimensions (W x D x H) [ft]	1.0 x 1.6 x 5.9			

## STANDARD CONFIGURATIONS

REFERENCE	SMART POWER BALANCE	POSTS				
		NBDC060	NBDC120	NBDC120C <sup>[2]</sup>	NBDC180	NBDC180C <sup>[2]</sup>
NBD060	-	1	-	-	-	-
NBDD120	-	2	1	1	-	-
NBD120S	√	-	2	2	-	-
NBD180	-	3	-	-	1	1
NBD180S	√	-	3	3	3	3

[1] Optional cable length 18 ft.

[2] Cooled connector.



# NB POD

FULLY INTEGRATED BMS

65 KWH LITHIUM-ION BATTERY

INTEGRATED PROTECTIONS

LOAD LEVELING

PEAK POWER SHAVING

## THE COMBINATION OF DESIGN AND STORAGE

NB POD is an outdoor storage system, robust and attractive, designed with durability, reliability and ease of maintenance. NB POD integrates a 65 kWh and 100 kW lithium-ion, and allows easy connection with any DC charger in the Power Electronics product range. It is a completely autonomous system, which integrates protections and the control of the battery system. NB POD allows reducing the contracted power of the recharging infrastructure and to store energy in periods of low demand to pour it out in periods of high demand.

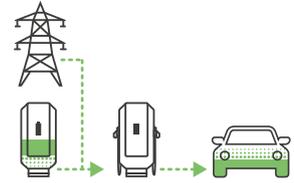
# OPERATION MODES



**MODE 1**  
NB POD charging from the grid



**MODE 2**  
Vehicle charging from NB POD



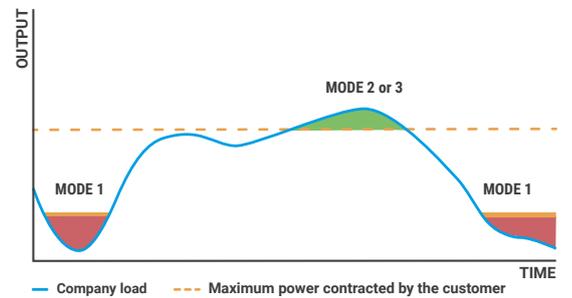
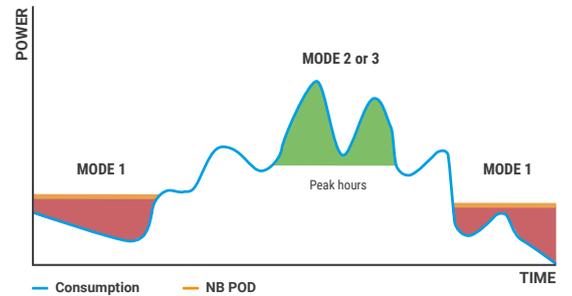
**MODE 3**  
Vehicle charging from NB POD + Grid

## Load leveling

NB POD is able to store energy during periods of low demand from the grid, in order to later use this energy to charge vehicles when the price per kWh is high. This has the benefit of using the battery stored energy at a higher market price during peak periods.

## Peak power shaving

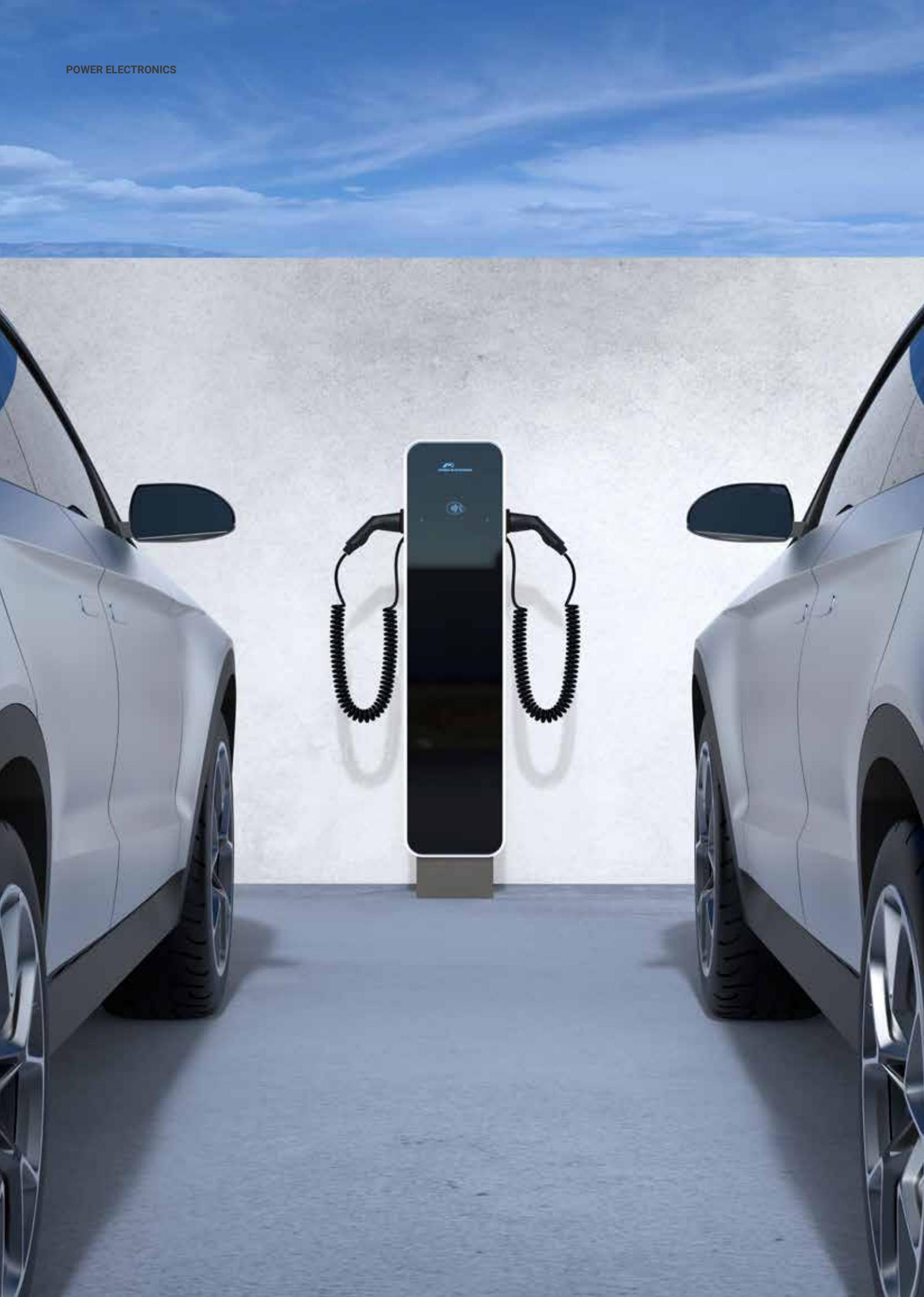
By delivering stored energy to the charger during periods of high demand, it reduces the burden on the distribution network and increases significantly its efficiency. Energy is stored during periods of low demand increasing the load on the grid. During peak periods this stored energy is used to charge electric vehicles. In addition the use of NB POD allows the charger's owner to reduce the total power contracted required and therefore a cost reduction.



**NB POD**

<b>BATTERY</b>	Battery technology	Lithium-ion
	Battery capacity	65 kWh
	Battery power	100 kW
<b>RACK MANAGEMENT UNIT</b>	BMS communication protocol	Modbus TCP, Modbus RTU
	Protections	Fully integrated
		Over-voltages / Under-voltages
		Over-currents / Short-circuits
		Over-temperatures
<b>GENERAL DATA</b>	Dimensions [mm]	870 x 790 x 1800
	Dimensions [ft]	2.85 x 2.60 x 5.90
	Degree of protection	NEMA 3R - IP54
	Enclosure color <sup>[1]</sup>	White (RAL 9016 - microtexture painting) / Front colour black
	Operating temperature	From -25°C to 50°C (optionally, from -30°C to 50°C)
	Relative humidity	4% - 95%
	Maximum altitude (above sea level)	2000 m
	Cooling system	Heating, ventilation and air conditioning
	Communications	Ethernet, RS485
	Interface	Status LED indicator
Emergency stop (optional)		

[1] Consult with Power Electronics for other options.



# NB City

USER-FRIENDLY INTERFACE

SMART FLEET MANAGEMENT

DYNAMIC POWER CONTROL

BACK-OFFICE INTEGRATION OCPP 1.6

## THE BEST SOLUTION FOR SMART CITIES

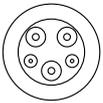
NB City is a robust and attractive outdoor AC charging system, making it ideal for “smart” cities. It has been designed with durability, reliability and ease of maintenance in mind. With output power of 2 x 22 kW (2 x 7.7 kW in US), NB City is compatible with AC Type 1 and 2 connectors.

Its smart design offers a simple, fast and easy charging experience, which makes NB City the best AC charging solution for applications that require maximum urban integration with the most advanced functionalities.

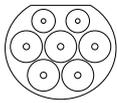
# MULTIPLE CONNECTION OPTIONS

**NB City has been designed to offer the most flexible charging solution to be installed in smart cities.**

NB City is compatible with Type 1 and 2 AC connectors with outlet socket options or versions with straight and spiral cables.



**AC Type 1**



**AC Type 2**

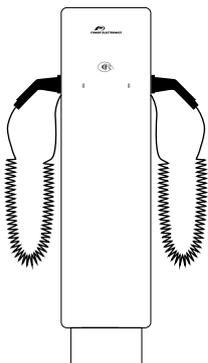
## OUTLET SOCKET VERSION

**2 x Type 2**



## HARD-WIRED VERSION

**2 x Type 1 or 2 x Type 2**



# USER-FRIENDLY INTERFACE

## Intuitive experience

NB City has a smartphone app to facilitate the interaction with the user. Optionally, it can install a display that allows the visualization of the charging process. Power Electronics chargers integrate a state indicator so that the drivers can easily identify its availability.

## Payment and authentication system

Every charging post is compatible with any payment and authentication system, offering the most useful solutions in the market for an easy interaction with the customer.



### Bluetooth

Presence recognition through bluetooth connectivity.



### RFID

Drivers can launch a charging session by tapping their RFID card.



### Credit / debit card

Compatibility with contact-less (NFC) solutions, letting drivers initiate the charging process by simply tapping their credit / debit card.



### Smartphone

Power Electronics' NB Charger smartphone application allows monitoring and the scheduling charging sessions, consult statistics and historical, update the software version, define users' roles and manage the charging energy.

# ENERGY MANAGEMENT

**Power Electronics has developed the most advanced functionalities for power balancing in vehicle fleet management. Designed to minimize the initial investment and operation costs.**

## Smart Fleet Management

This functionality is able to balance the power based on the number of charging posts in use. Therefore, the total power required to supply the total energy gets substantially reduced, representing a cost reduction in the electrical

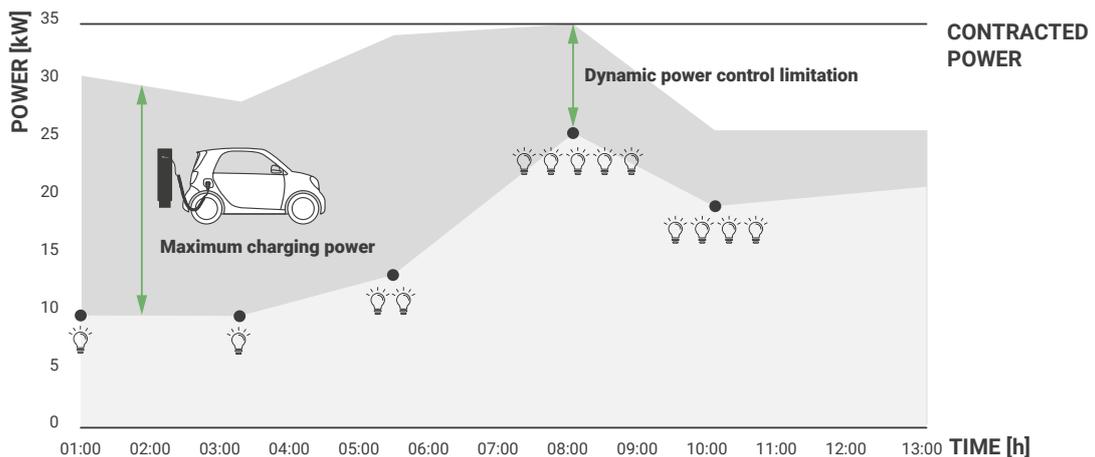
facility infrastructure and a cost saving due to a minor power contracted. Besides, the hardware and the back-office communication is optimized.



## Dynamic Power Control

This optional device ensures dynamic adaptation of the power being used to charge the vehicle in accordance with the

energy being consumed by other electrical loads in the facility, without having to increase contractual power capacity.



# SMART AND CUSTOMIZABLE DESIGN

## Customizable external enclosures

Power Electronics offers customizable external enclosures. The color can be changed or logos and advertising can be added. Optionally, a panel for advertising can be included on the back of the charger.



## NB CITY

IEC

Model	ADVANCED	PROFESSIONAL
AC input [V]	400 (3ph + N +PE)	
Maximum output power per connector [kW]	22.2	
Energy measurement	Internal energy measurement	
	-	MID meter
Energy management	Smart Fleet Management	
Communications	Wifi	
	-	3G/4G connectivity
	Ethernet	
	OCPP 1.6	
Authentication	Bluetooth	
	RFID card reader	
Protections	RCD Type A	
	MCB	
	-	RCM
External enclosure	IP54 / IK10 (IK08 for display and ventilation grilles)	
	White colour (RAL 9016 - microtexture painting)	
	C4 anti-corrosion paint <sup>[1]</sup>	
Glass colour	Black	
Operating temperature	From -25°C to 50°C	
Relative humidity	4% - 95%	
Interface	NB Charger App - Status indicator - Time schedule	
Dimensions (W x D x H) [mm]	350 x 200 x 1300	
Regulation	IEC 61851-1, IEC 61000-6-2, IEC 61000-6-3	

## STANDARD MODELS

MODEL	REFERENCE	TYPE OF CONNECTOR
ADVANCED	NBCHA46	2 x AC Type 2 (Plug - 3 m)
	NBCHA47	2 x AC Type 2 (Socket)
PROFESSIONAL	NBCHP46	2 x AC Type 2 (Plug - 3 m)
	NBCHP47	2 x AC Type 2 (Socket)

[1] C3 anti-corrosion paint for stainless steel enclosure.

**AVAILABLE OPTIONS****IEC**

<b>ENCLOSURE</b>	Customizable enclosure colour
	Customizable foot colour
	Customizable glass colour
	Stainless steel AISI 316L (2B)
	PE logo substitution
	Extra logo
<b>CONNECTION CONFIGURATION</b>	Advertising (back side)
	4 m cable (spiral)
	5 m cable (straight)
	Anti-vandalism system (socket outlet)
<b>PROTECTIONS</b>	Connector locker
	Surge arrester Type 2
	Surge arrester Type 1+2
<b>INTERFACE</b>	RCD Type A with automatic reset <sup>[1]</sup>
	Display
<b>ENERGY MANAGEMENT</b>	Dynamic Power Control (< 65 A)
	Dynamic Power Control (< 100 A)

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[1] Optional for Professional models.

## NB CITY

US

<b>Reference</b>	NBCUA28
<b>AC input [V]</b>	208 / 240 (L1, L2, PE)
<b>Maximum output power per connector [kW]</b>	6.7 o 7.7
<b>Connector</b>	2 x AC Type 1 (12 ft)
<b>Energy measurement</b>	Internal energy measurement
<b>Energy management</b>	Smart Fleet Management
<b>Communications</b>	Wifi
	3G/4G connectivity
	Ethernet
	OCPP 1.6
<b>Authentication</b>	Bluetooth
	RFID card reader
<b>Protections</b>	CCID
	MCB
<b>External enclosure</b>	NEMA 3R - White colour (RAL 9016 - microtexture painting) - C4 anti-corrosion paint <sup>[1]</sup>
<b>Glass colour</b>	Black
<b>Operating temperature</b>	From -13°F to 122°F
<b>Relative humidity</b>	4% - 95%
<b>Interface</b>	NB Charger App - Status indicator - Time schedule
<b>Dimensions (W x D x H) [ft]</b>	1.15 x 0.65 x 4.27
<b>Regulation</b>	UL 2594, FCC Part 15 Class B, NEC 625

[1] C3 anti-corrosion protection for stainless steel enclosure.

**AVAILABLE OPTIONS****US**

<b>ENCLOSURE</b>	Customizable enclosure colour
	Customizable foot colour
	Customizable glass colour
	Stainless steel AISI 316L (2B)
	PE logo substitution
	Extra logo
<b>CONNECTION CONFIGURATION</b>	Advertising (back side)
	13.1 ft cable (spiral)
	18 ft cable (straight)
<b>PROTECTIONS</b>	Connector locker
	Surge arrester Type 2
<b>INTERFACE</b>	Surge arrester Type 1+2
	Display
<b>ENERGY MANAGEMENT</b>	Revenue meter
	Dynamic Power Control (< 65 A)
	Dynamic Power Control (< 100 A)



# NB Wall

USER-FRIENDLY INTERFACE

SMART FLEET MANAGEMENT

DYNAMIC POWER CONTROL

BACK-OFFICE INTEGRATION OCPP 1.6

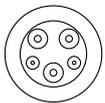
## THE BEST SOLUTION FOR HOME AND CAR PARKS

NB Wall is a robust and attractive outdoor AC charging system, making it ideal for car parks and smart homes. It has been designed with durability, reliability and ease of use in mind. With output power of 2 x 22 kW (2 x 7.7 kW in US), NB Wall is compatible with AC Type 1 and 2 connectors. Its smart design offers a simple, fast and easy charging experience, which makes NB Wall the best AC charging solution for applications that require maximum integration with the most advanced functionalities.

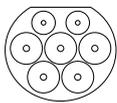
# MULTIPLE CONNECTION OPTIONS

**NB Wall has been designed to offer the most flexible charging solution to be installed in car parks and smart homes.**

With up to 2 x 22 kW (2 x 7.7 kW in US) NB Wall is compatible with Type 1 and 2 AC connectors with outlet socket options or versions with straight and spiral cables.



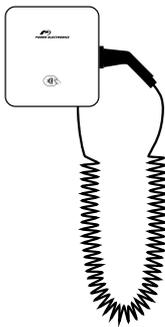
**AC Type 1**



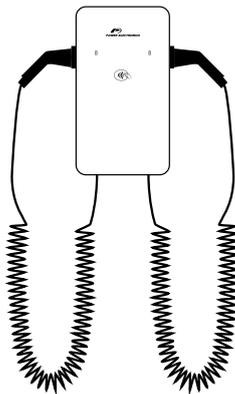
**AC Type 2**

## OUTLET SOCKET VERSION

Type 1 or Type 2



2 x Type 1 or 2 x Type 2



## HARD-WIRED VERSION

Type 2



2 x Type 2



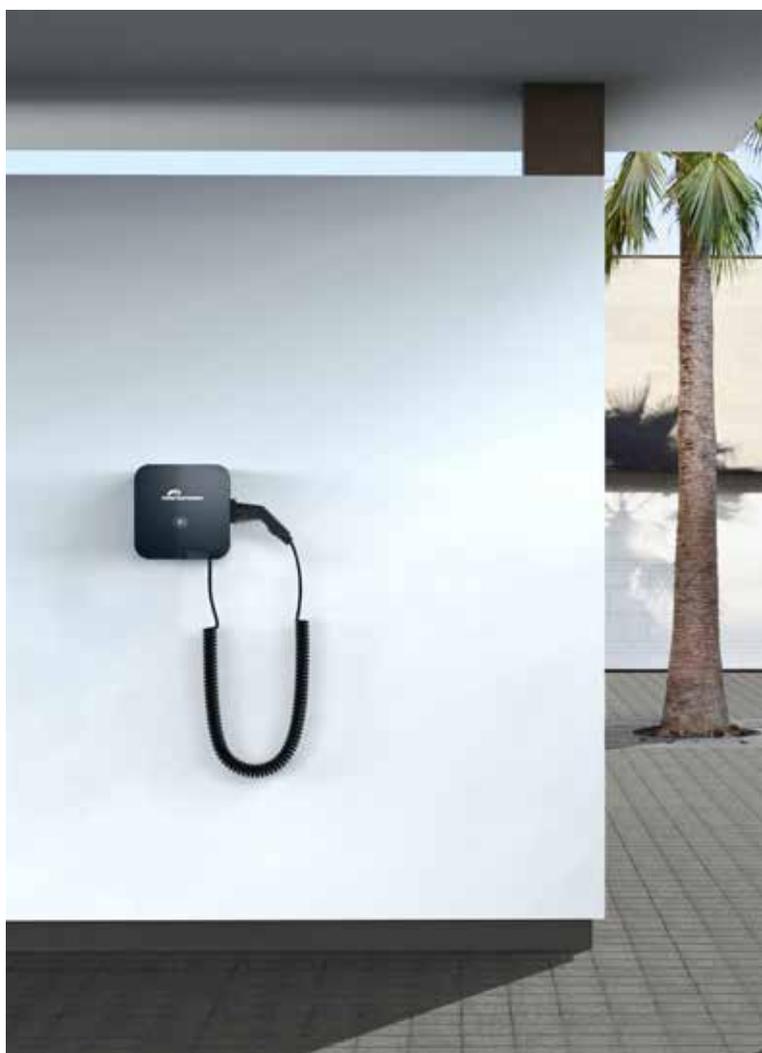
# USER-FRIENDLY INTERFACE

## Intuitive experience

NB Wall has a smartphone app to facilitate the interaction with the user. Power Electronics chargers integrate a state indicator so that the drivers can easily identify its availability.

## Payment and authentication system

Every charger is compatible with any payment and authentication system, offering the most useful solutions in the market for an easy interaction with the customer.



## Bluetooth

Presence recognition through bluetooth connectivity.



## RFID

Drivers can launch a charging session by tapping their RFID card.



## Credit / debit card

Compatibility with contact-less (NFC) solutions, letting drivers initiate the charging process by simply tapping their credit / debit card.



## Smartphone

Power Electronics' NB Charger smartphone application allows monitoring and the scheduling charging sessions, consult statistics and historical, update the software version, define users' roles and manage the charging energy.

# ENERGY MANAGEMENT

**Power Electronics has developed the most advanced functionalities for power balancing in vehicle fleet management. Designed to minimize the initial investment and operation costs.**

## Smart Fleet Management

This functionality is able to balance the power based on the number of charger in use. Therefore, the total power required to supply the total energy gets substantially reduced, representing a cost reduction in the electrical

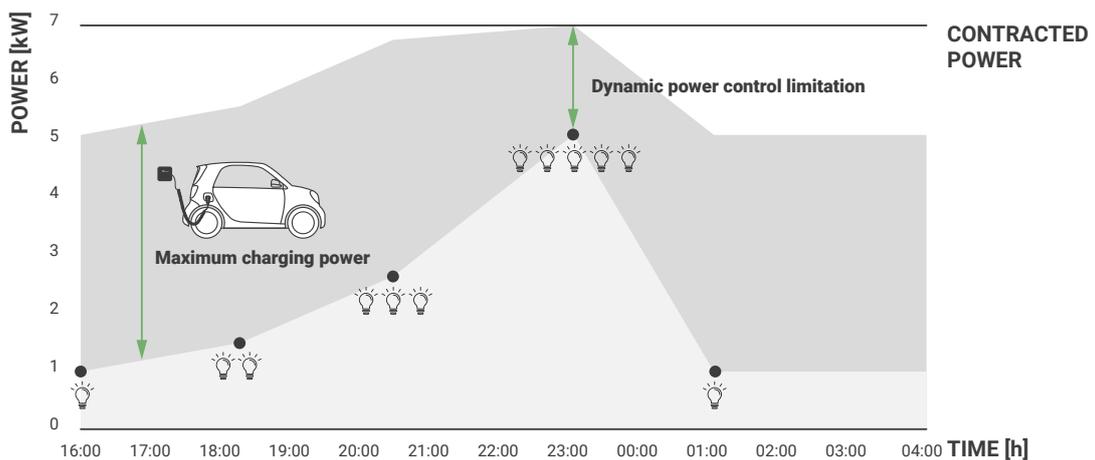
facility infrastructure and a cost saving due to a minor power contracted. Besides, the hardware and the back-office communication is optimized.



## Dynamic Power Control

This optional device ensures dynamic adaptation of the power being used to charge the vehicle in accordance with the

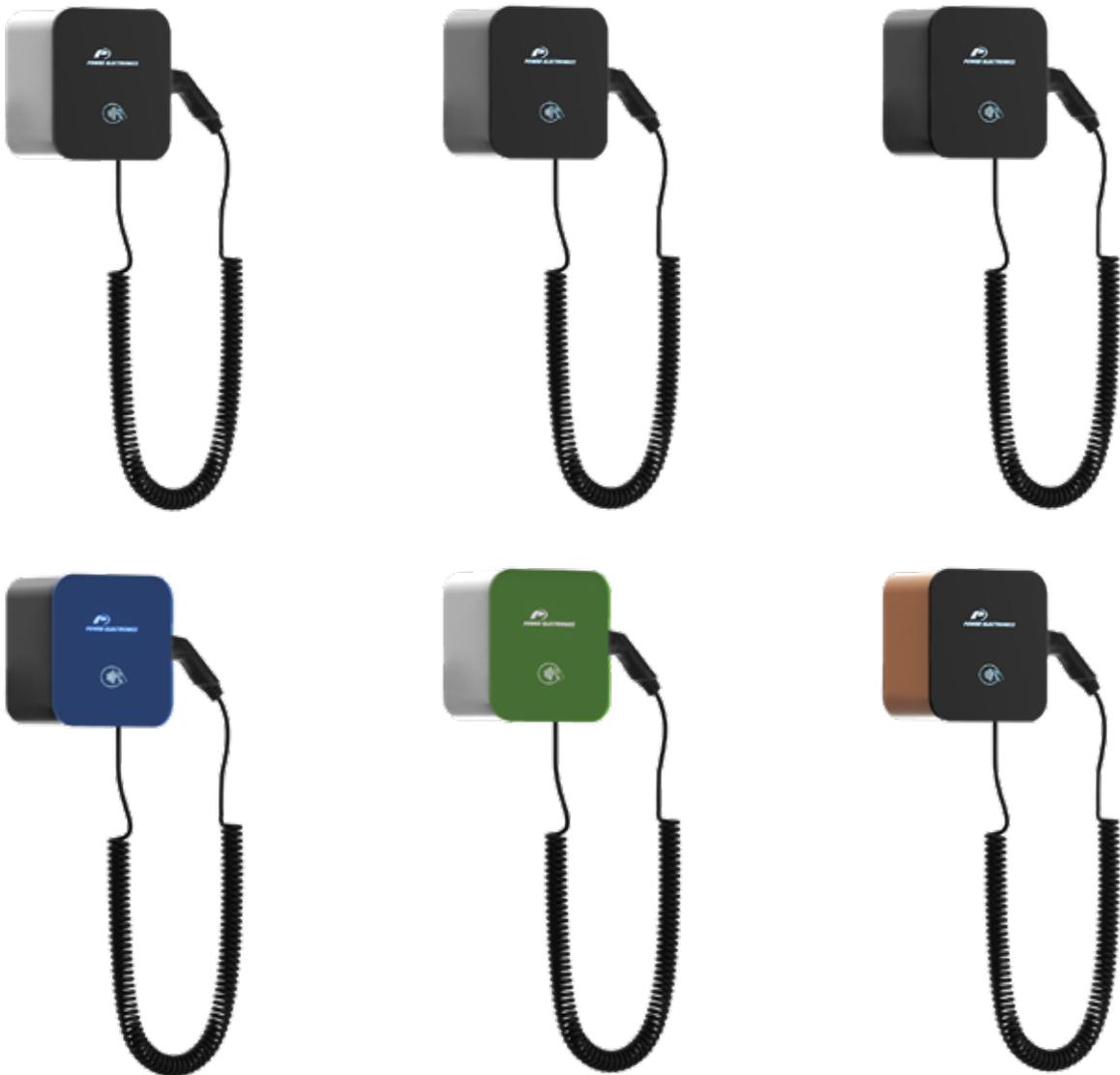
energy being consumed by other electrical loads in the facility, without having to increase contractual power capacity.



# SMART AND CUSTOMIZABLE DESIGN

## Customizable external enclosures

Power Electronics offers customizable external enclosures. The color can be changed or logos and advertising can be added.



## NB WALL

IEC

Model	ADVANCED	PROFESSIONAL
Frame	1	2
AC input [V]	400 (3ph + N + PE)	
Maximum output power per connector [kW]	22.2	
Energy measurement	Internal energy measurement	
	-	MID meter
Energy management	Smart Fleet Management	
Communications	Wifi	
	-	3G / 4G connectivity
	Ethernet	
	OCPP 1.6	
Authentication	Bluetooth	
	RFID card reader	
Protections	RCD Type A	
	-	RCM
External enclosure	IP54 / IK10 (IK08 for display and ventilation grilles)	
	White colour (RAL 9016 - microtexture painting)	
	C4 anti-corrosion protection <sup>[1]</sup>	
Glass colour	Black	
Operating temperature	From -25°C to 50°C	
Relative humidity	4% - 95%	
Cable input	Bottom input	Bottom and rear input
Interface	NB Charger App - Status indicator - Time schedule	
Dimensions (W x D x H) [mm]	310 x 200 x 310	310 x 200 x 560
Regulation	IEC 61851-1, IEC 61000-6-2, IEC 61000-6-3	

## STANDARD MODELS

MODEL	REFERENCE	TYPE OF CONNECTOR
ADVANCED	NBWHA41	1 x AC Type 2 (Plug - 3 m)
	NBWHA42	1 x AC Type 2 (Socket)
PROFESSIONAL	NBWHP46	2 x AC Type 2 (Plug - 3 m)
	NBWHP47	2 x AC Type 2 (Socket)

[1] C3 anti-corrosion protection for stainless steel enclosure.

## AVAILABLE OPTIONS

IEC

	DESCRIPTION	ADVANCED	PROFESSIONAL
<b>ENCLOSURE</b>	Customizable enclosure colour	○	○
	Customizable glass colour	○	○
	Stainless steel AISI 316L (2B)	○	○
	PE logo substitution	○	○
	Extra logo	○	○
<b>CONNECTION CONFIGURATION</b>	4 m cable (spiral)	○	○
	5 m cable (straight)	○	○
	Cable holder	○	○
	Anti-vandalism system (socket outlet)	○	○
	Connector locker	○	○
<b>PROTECTIONS</b>	RCM	○ <sup>[1]</sup>	●
	RCD Type A automatic reset	-	○
	MCB	○ <sup>[1]</sup>	○
<b>COMMUNICATIONS</b>	3G / 4G connectivity	○	●
<b>ENERGY MANAGEMENT</b>	MID meter	○ <sup>[1]</sup>	●
	Dynamic Power Control (< 65 A)	○	○
	Dynamic Power Control (< 100 A)	○	○

- Not available option
- Available option
- Included by default

[1] Maximum three components: RCD Type A + RCM + MID / RCD Type A + RCM + MCB / RCD Type A + MCB + MID.

## NB WALL

US

Model	ADVANCED	PROFESSIONAL
Reference	NBWUA23	NBWUP28
Frame	1	2
AC input [V]	208 / 240 (L1, L2, PE)	
Maximum output power per connector [kW]	6.7 o 7.7	
Connector type	1 x AC Type 1 (12 ft)	2 x AC Type 1 (12 ft)
Energy measurement	Internal energy measurement	
Energy management	Smart Fleet Management	
Communications	Wifi	
	-	3G / 4G connectivity
	Ethernet	
	OCPP 1.6	
Authentication	Bluetooth	
	RFID card reader	
Protections	CCID	
External enclosure	NEMA 3R - White colour (RAL 9016 - microtexture painting) - C4 anti-corrosion protection <sup>[1]</sup>	
Glass colour	Black	
Operating temperature	From -13°F to 122°F	
Relative humidity	4% - 95%	
Cable input	Bottom input	Bottom and rear input
Interface	NB Charger App - Status indicator - Time schedule	
Dimensions (W x D x H) [ft]	1.01 x 0.65 x 1.01	1.01 x 0.65 x 1.84
Regulation	UL 2594, FCC Part 15 Class B, NEC 625	

[1] C3 anti-corrosion protection for stainless steel enclosure.

**AVAILABLE OPTIONS**

**US**

	DESCRIPTION	ADVANCED	PROFESSIONAL
<b>ENCLOSURE</b>	Customizable enclosure colour	○	○
	Customizable glass colour	○	○
	Stainless steel AISI 316L (2B)	○	○
	PE logo substitution	○	○
	Extra logo	○	○
<b>CONNECTION CONFIGURATION</b>	13.1 ft cable (spiral)	○	○
	18 ft cable (straight)	○	○
	Cable holder	○	○
	Plug-in version NEMA 6-50	○	-
	Connector locker	○	○
<b>PROTECTIONS</b>	MCB	○	○
<b>COMMUNICATIONS</b>	3G/4G connectivity	○	●
<b>ENERGY MANAGEMENT</b>	Revenue meter	○	○
	Dynamic Power Control (< 65 A)	○	○
	Dynamic Power Control (< 100 A)	○	○

- Not available option
- Available option
- Included by default



Product range

## Industrial

Power Electronics offers unique solutions for customers who need a dedicated electric vehicle charging system for both light and heavy duty vehicles. The industrial product range focuses on providing robust, durable and innovative solutions.





# NBi Station

TURN-KEY SOLUTION

MAXIMUM FLEXIBILITY

USER-FRIENDLY INTERFACE

SMART POWER BALANCE

BUS PLUS READY

BACK-OFFICE INTEGRATION OCPP 1.6

## HEAVY VEHICLES CHARGING SOLUTIONS

NBi Station offers a complete flexible turn-key solution with its successful and revolutionary outdoor design based on our more than 30 years of experience in the manufacture of power electronics. NBi Station consists of a central power station which supplies energy to DC charging posts or pantographs. Specially designed with a modular concept, the central power station can reach up to 1200 kW, combining DC posts up to 350 kW and pantographs up to 600 kW. It is the ideal solution to optimize the CAPEX and OPEX of the charging infrastructure. NBi Station is the best solution for bus stations, depots and motorways, applications with high rotation of vehicles and where it is required a simple, fast and safe charging experience.

# TURN-KEY SOLUTION

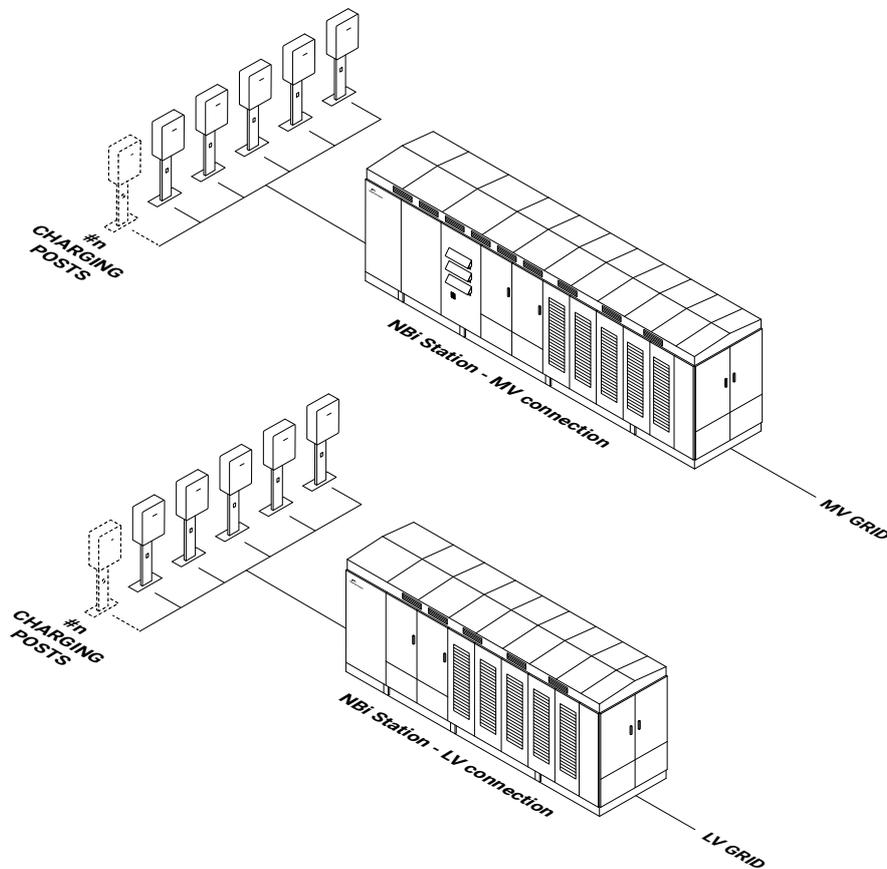
**NBi Station reduces site design, simplifies the installation and significantly reduces connection costs and resources needed.**

NBi Station consists of a central power station which supplies energy to charging posts, designed for an easy interaction with the electric vehicle drivers and following the current standards of user safety.

Being expandable over time, the central power station, has been developed to be able to increase the charging power, offering a solution which can grow with the electric vehicles market demand and the batteries technologies. It can be a low voltage or a medium voltage station.

The central power station according to the client's needs can integrate the following medium voltage components:

- MV switchgear.
- MV transformer.
- Metering supervision equipment.
- Customizable user cabinet with an independent electric circuit for the client's needs.

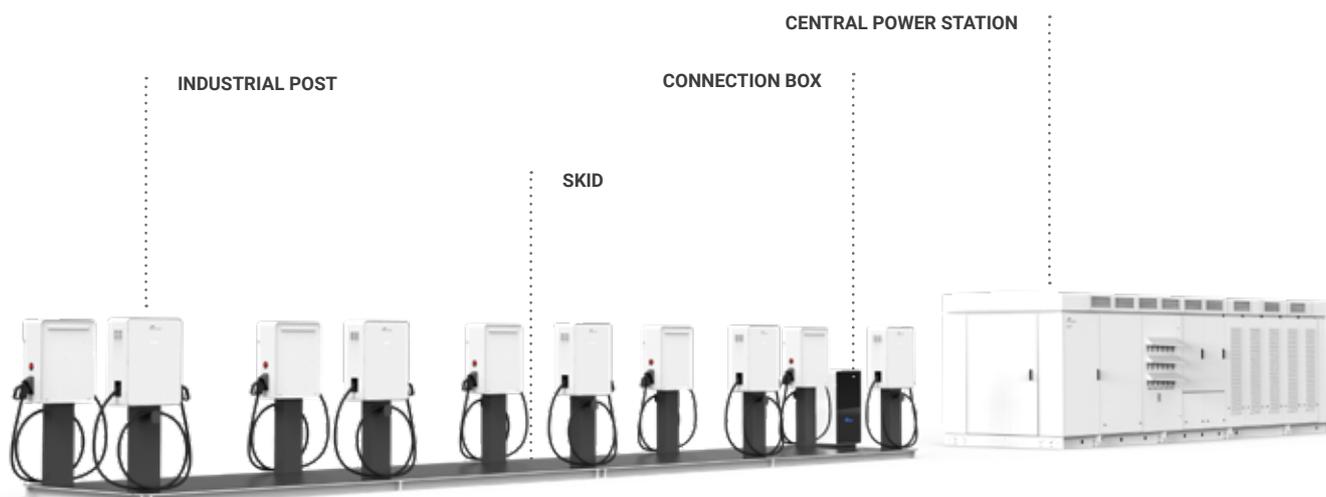


**Speed up your charging installation with a flexible turn-key platform**

Depending on the output power required, the client can choose a wide number of charging posts to fit any project and to configure the best layout. The skid solution, which is based on an outdoor platform made of high resistance galvanized steel with a non-slip surface, offers a plug and play solution. In the skid, all posts are wired and a connection box is included to connect to the central power station.

**Field replaceable power stages**

Following a modular philosophy, NBi Station is composed of FRUs (Field Replaceable Units), designed to be easily replaceable on site without the need of advanced technical service personnel, providing a safe, reliable and fast Plug&Play assembly system. In the event of a fault, the faulty module is taken off-line and its power is distributed evenly among the remaining functioning FRUs. It is a solution to be easily upgraded for the next EV generation and the most reliable charger in the market.



# MAXIMUM FLEXIBILITY

**Power Electronics has a wide range of high power chargers up to 1000 V, designed to serve long-range electric vehicles. NBi Station is compatible with industrial posts and automatic pantograph based charging solutions.**

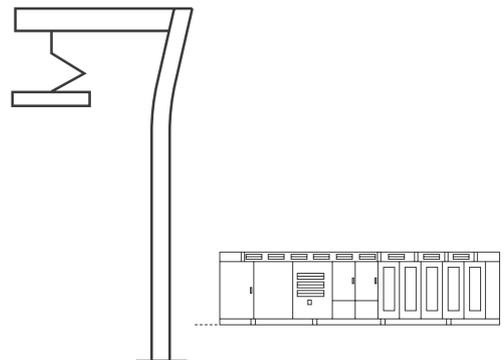
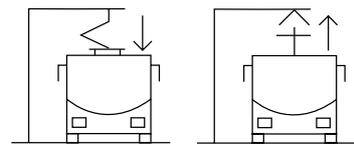
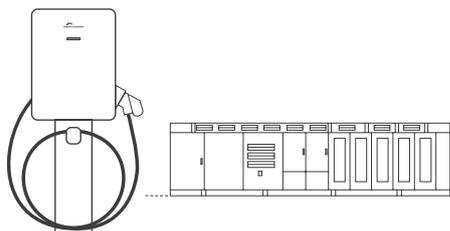
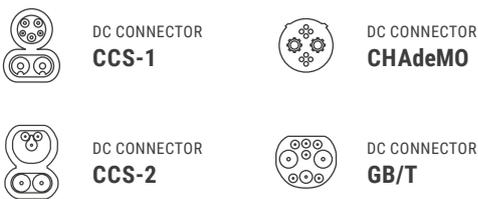
Suitable with any application that requires an efficient solution, maximum flexibility and availability for high rotation electric vehicles fleets. Power Electronics charging stations are compatible with current and future heavy electric vehicles, buses and electric trucks.

## NBi Station + industrial post

Compatible with the most extended DC connectors (CCS, CHAdeMO and GB/T). Industrial charging posts are the most cost effective solution for depot charging infrastructure and industrial areas.

## NBi Station + pantograph

Compatible with multiple pantograph manufacturers, "bottom-up" and "top-down". Wireless communication with the electric vehicle according to ISO/IEC 15118 (OPPCharge compatible) and IEC 61851-23 (CCS) to speed up charging processes and to avoid wasting valuable bus operating time.



# USER-FRIENDLY INTERFACE

## Intuitive experience

Power Electronics posts integrate a status indicator so that the drivers can easily identify its availability. It provides drivers a fast, safe and simple interaction.

## Payment and authentication system

Every charging post is compatible with any payment and authentication system, offering the most useful solutions in the market for an easy interaction with the customer.



### RFID

Drivers can launch a charging session by tapping their RFID card.



### Credit / debit card

Compatibility with contact-less (NFC) solutions, letting drivers initiate the charging process by simply tapping their credit / debit card.



### Smartphone

Compatible with the most extended apps in the market. These apps for EV drivers are able to start a charging session, reserve a post at any time, or simply manage their historical charging sessions.

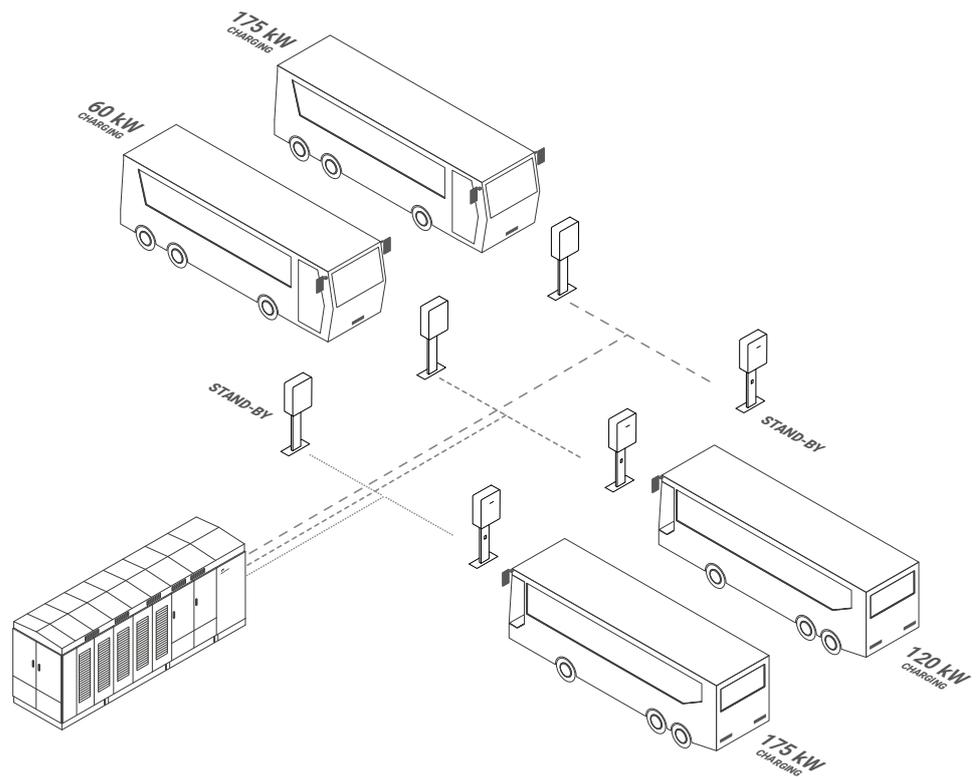
# SMART POWER BALANCE

## SMART POWER BALANCE TECHNOLOGY

NBi Station allows the optimization of the use of the charging point and dynamic balancing of power depending on the vehicle to be charged.

### EXAMPLE CONFIGURATION

NBi Station NBSK0500S  
Six charging posts of 175 kW



**Power Balance**

Power Electronics has developed the most advanced functionality for power balancing in vehicle fleet management.

NBi Station includes an advanced DC Smart Power Balance technology that allows for charging at different power levels matching all EV needs.



# BUS PLUS READY

**Our wide experience in the renewable energy sector, designing and manufacturing solar inverters, allows us to offer an integral solution.**

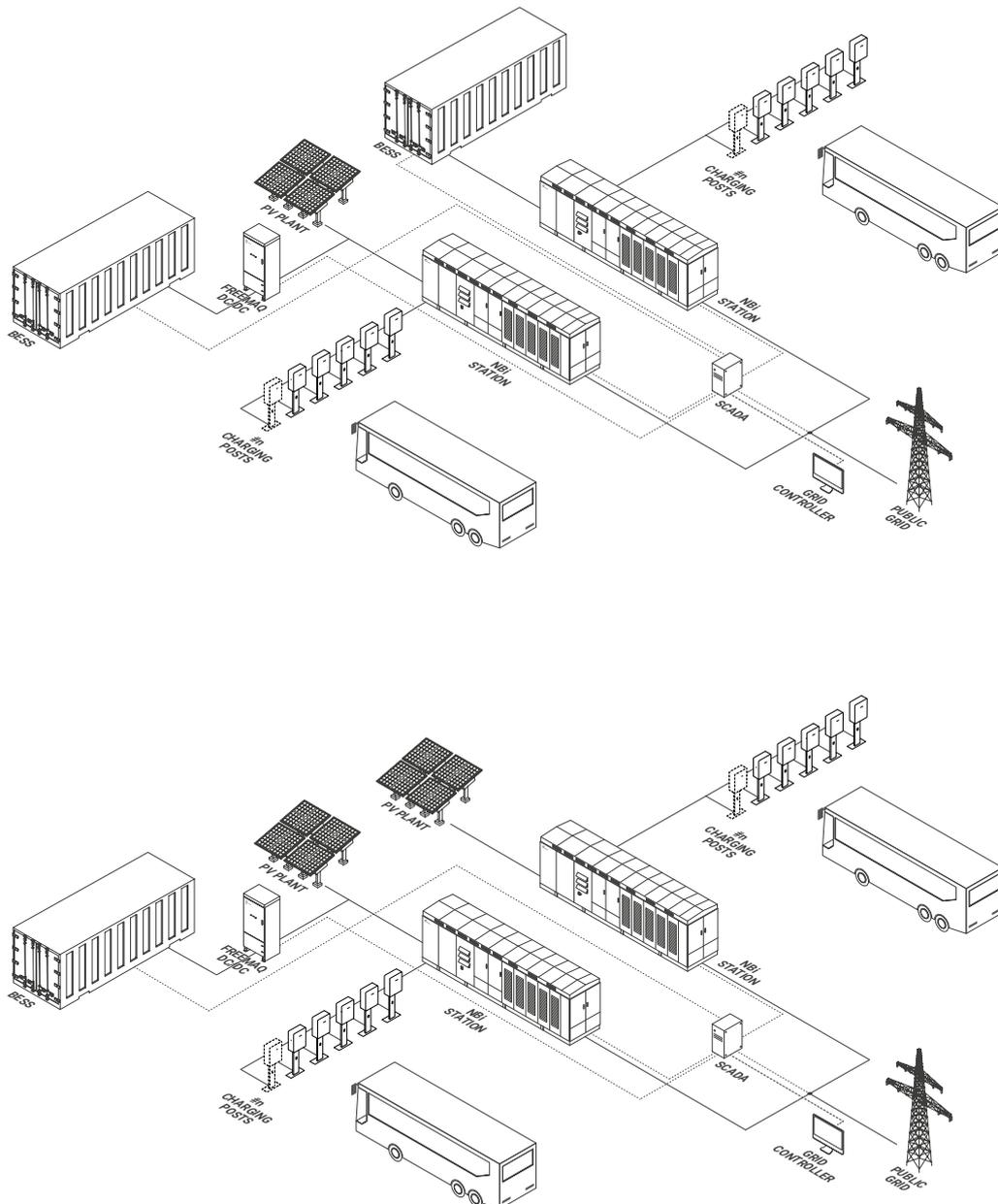
**NBI STATION IS ABLE TO TAKE  
ADVANTAGE OF AN ENDLESS  
ENERGY SOURCE, THE SUN**



NBi Station allows the EV charging from different power sources: photovoltaic field, battery system and utility grid.

In addition, the battery system allows to attenuate the intermittent nature of renewable energy sources offering a continuous charging system.

Adding a Freemaq DC/DC converter allows to store the photovoltaic excesses in the battery system. Stored energy can be exported to the grid when the price is higher, maximizing the revenues of the charging business.



# SMART AND CUSTOMIZABLE DESIGN

## EXACTLY THE WAY YOU WANT

### **Customizable external enclosures**

Power Electronics offers customizable external enclosures for the central power station and the posts. The color can be modified or logos and advertising can be added.

### **Vehicle detection**

Optionally, it is possible to include the vehicle detection function, which allows starting the charging process when the car is close to the charging post.



## EXAMPLES OF POST CUSTOMIZATIONS

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## EXAMPLES OF POWER STATION CUSTOMIZATIONS

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### NBS



### NBSK



## NBI STATION + POSTS

NBS

REFERENCE	NBS0350 NBS0350S	NBS0500 NBS0500S	NBS0700 NBS0700S	NBS1000 NBS1000S
DC OUTPUT	Station maximum power [kW]	420	600	840
	Charging post power [kW]	60 / 120 / 175		
	Voltage range [V]	50 - 500 / 150 - 1000		
	Available connectors	CCS <sup>[1]</sup> , CHAdeMO, GB/T		
AC INPUT	Voltage [V] <sup>[2]</sup>	15 / 20 / 25 <sup>[2]</sup>		
	Power factor	> 0.99		
	Frequency [Hz]	50 / 60		
	Efficiency	94%		
GENERAL	Interface	Status LED indicator		
		Button to stop charging		
		Emergency stop (optional)		
		RFID card reader (optional)		
	Protections	Isolation monitoring		
		Over-voltages / under-voltages		
		Over-currents / short-circuits		
		Over-temperatures		
	User auxiliary services supply [kW]	15 / 20 / 25		
	Cable length [m] <sup>[3]</sup>	4		
	Cable length [ft] <sup>[3]</sup>	13.12		
	Degree of protection	NEMA 3R - IP54 / IK10 <sup>[4]</sup>		
	Operating temperature	From -25°C to 50°C (optionally, from -30°C to 50°C)		
	Relative humidity	4% - 95%		
	Maximum altitude (above sea level)	2000 m; > 2000 m power derating (max. 3000 m)		
	Customization	Enclosure		
	Communications	OCPP 1.6, Ethernet, 3G/4G connectivity (optional), Wifi (optional)		
Charging post dimensions (W x D x H) [mm]	600 x 300 x 800			
Charging post dimensions (W x D x H) [ft]	2.0 x 1.0 x 2.6			
Other station options	Motorized protection switchgear (remote operation)			

## STANDARD CONFIGURATIONS

REFERENCE	SMART POWER BALANCE	POSTS		
		NBDI060	NBDI120	NBDI175
NBS0350	-	7	3	2
NBS0350S	√	-	6	4
NBS0500	-	10	5	3
NBS0500S	√	-	10	6
NBS0700	-	14	7	4
NBS0700S	√	-	14	8
NBS1000	-	20	10	6
NBS1000S	√	-	20	12

[1] CCS-1 for US market. CCS-2 for IEC market.  
[2] Consult with Power Electronics.

[3] Optional cable length of 7 m / 22.97 ft.  
[4] IK08 for display and ventilation grilles.

## NBI STATION + PANTOGRAPHS

## NBS

REFERENCE	NBS0350 NBS0350S	NBS0500 NBS0500S	NBS0700 NBS0700S	NBS1000 NBS1000S
DC OUTPUT	Station maximum power [kW]	420	600	1200
	Charging power [kW]	175 / 350 / 450 / 600		
	Voltage range [V]	150 - 1000		
AC INPUT	Voltage [V]	15 / 20 / 25 <sup>[1]</sup>		
	Power factor	> 0.99		
	Frequency [Hz]	50 / 60		
	Efficiency	94%		
GENERAL	Protections	Isolation monitoring		
		Over-voltages / under-voltages		
		Over-currents / short-circuits		
		RCD		
		Over-temperatures		
	User auxiliary services supply [kW]	15 / 20 / 25 <sup>[1]</sup>		
	Degree of protection	NEMA 3R - IP54		
	Operating temperature	From -25°C to 50°C (optionally, from -30°C to 50°C)		
	Relative humidity	4% - 95%		
	Maximum altitude (above sea level)	2000 m; > 2000 m power derating (max. 3000 m)		
Communications	OCPP 1.6, Ethernet, 3G/4G connectivity (optional), Wifi (optional)			
Other station options	Motorized protection switchgear (remote operation)			

## STANDARD CONFIGURATIONS

REFERENCE	SMART POWER BALANCE	PANTOGRAPHS			
		175 kW	350 kW	450 kW	600 kW
NBS0350	-	2	1	-	-
NBS0350S	√	4	2	-	-
NBS0500	-	3	-	1	-
NBS0500S	√	6	-	2	-
NBS0700	-	4	2	-	1
NBS0700S	√	8	4	-	2
NBS1000	-	6	3	2	-
NBS1000S	√	12	6	4	-

[1] Consult with Power Electronics.

## NBI STATION + POSTS

NBSK

REFERENCE	NBSK0350 NBSK0350S	NBSK0500 NBSK0500S	NBSK0700 NBSK0700S	NBSK1000 NBSK1000S	
OUTPUT (DC)	Station maximum power [kW]	420	600	840	1200
	Charging post power [kW]	60 / 120 / 175			
	Voltage range [V]	50 - 500 / 150 - 1000			
	Available connectors	CCS <sup>[1]</sup> , CHAdeMO, GB/T			
INPUT (AC)	Voltage [V] <sup>[2]</sup>	400 ± 10 % / 480 ± 10 %			
	Power factor	> 0.99			
	Frequency [Hz]	50 / 60			
	Efficiency	95%			
GENERAL	Interface	Status LED indicator			
		Button to stop charging			
		Emergency stop (optional)			
		RFID card reader (optional)			
	Protections	Isolation monitoring			
		Over-voltages / under-voltages			
		Over-currents / short-circuits			
		Over-temperatures			
	User auxiliary services supply [kW]	15 / 20 / 25			
	Cable length [m] <sup>[3]</sup>	4			
	Cable length [ft] <sup>[3]</sup>	13.12			
	Degree of protection	NEMA 3R - IP54 / IK10 <sup>[3]</sup>			
	Operating temperature	From -25°C to 50°C (optionally, from -30°C to 50°C)			
	Relative humidity	4% - 95%			
	Maximum altitude (above sea level)	2000 m; > 2000 m power derating (max. 3000 m)			
	Customization	Enclosure			
	Communications	OCPP 1.6, Ethernet, 3G/4G connectivity (optional), Wifi (optional)			
Charging post dimensions (W x D x H) [mm]	600 x 300 x 800				
Charging post dimensions (W x D x H) [ft]	2.0 x 1.0 x 2.6				

## STANDARD CONFIGURATIONS

REFERENCE	SMART POWER BALANCE	POSTS		
		NBDI060	NBDI120	NBDI175
NBSK0350	-	7	3	2
NBSK0350S	√	-	6	4
NBSK0500	-	10	5	3
NBSK0500S	√	-	10	6
NBSK0700	-	14	7	4
NBSK0700S	√	-	14	8
NBSK1000	-	20	10	6
NBSK1000S	√	-	20	12

[1] CCS-1 for US market. CCS-2 for IEC market.  
[2] Optional cable length of 7 m / 22.97 ft.

[3] IK08 for display and ventilation grilles.

## NBI STATION + PANTOGRAPHS

## NBSK

REFERENCE		NBSK0350 NBSK0350S	NBSK0500 NBSK0500S	NBSK0700 NBSK0700S	NBSK1000 NBSK1000S
DC OUTPUT	Station maximum power [kW]	420	600	840	1200
	Charging power [kW]	175 / 350 / 450 / 600			
	Voltage range [V]	150 - 1000			
AC INPUT	Voltage [V]	400 ± 10 % / 480 ± 10 %			
	Power factor	> 0.99			
	Frequency [Hz]	50 / 60			
	Efficiency	95%			
GENERAL	Protections	Isolation monitoring			
		Over-voltages / under-voltages			
		Over-currents / short-circuits			
		RCD			
		Over-temperatures			
	User auxiliary services supply [kW]	15 / 20 / 25 <sup>[1]</sup>			
	Degree of protection	NEMA 3R - IP54			
	Operating temperature	From -25°C to 50°C (optionally, from -30°C to 50°C)			
	Relative humidity	4% - 95%			
	Maximum altitude (above sea level)	2000 m; > 2000 m power derating (max. 3000 m)			
Communications	OCPP 1.6, Ethernet, 3G/4G connectivity (optional), Wifi (optional)				

## STANDARD CONFIGURATIONS

REFERENCE	SMART POWER BALANCE	PANTOGRAPHS			
		175 kW	350 kW	450 kW	600 kW
NBSK0350	-	2	1	-	-
NBSK0350S	√	4	2	-	-
NBSK0500	-	3	-	1	-
NBSK0500S	√	6	-	2	-
NBSK0700	-	4	2	-	1
NBSK0700S	√	8	4	-	2
NBSK1000	-	6	3	2	-
NBSK1000S	√	12	6	4	-

[1] Consult with Power Electronics.



# NBi Dispenser

FLEXIBLE ARCHITECTURE

USER-FRIENDLY INTERFACE

SMART POWER BALANCE

BUS PLUS READY

BACK-OFFICE INTEGRATION OCPP 1.6

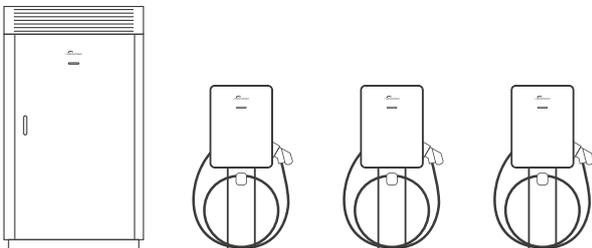
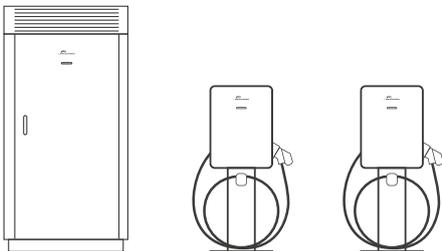
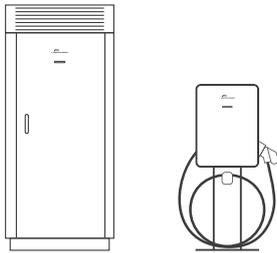
## THE COMBINATION OF MODULARITY AND HIGH PERFORMANCE

NBi Dispenser is an outdoor robust and modular charger, designed for durability, reliability and ease of maintenance. Thanks to its flexible architecture NBi Dispenser series allows the installation in any location. The charging solution consists of a power cabinet with low voltage input, which combines with industrial posts. With output power of up to 150 kW in DC (180 kW in US), NBi Dispenser allows the simultaneous charging of three vehicles thanks to the advanced functionality, Smart Power Balance. NBi Dispenser can be configured to charge either at 400 or 800 Vdc depending on the characteristics of the electric vehicle battery. Its smart design offers a simple, fast and safe charging experience, which makes it being the best solution for sites with space reduced that require maximum return on investment.

# FLEXIBLE ARCHITECTURE

**NBi Dispenser is the charging solution for locations where space is at a premium.**

The NBi Dispenser series is a DC charging solution with low voltage input consisting of a power cabinet which supplies energy to industrial charging posts. The available power cabinet configurations are from 50 kW to 150 kW (from 60 kW up to 180 kW in US) and are combined with DC post of 50, 100 and 150 kW (60, 120 and 180 kW in US).



# USER-FRIENDLY INTERFACE

## Intuitive experience

Power Electronics posts integrate a status indicator so that the drivers can easily identify its availability. It provides drivers a fast, safe and simple interaction.

## Payment and authentication system

Every charging post is compatible with any payment and authentication system, offering the most useful solutions in the market for an easy interaction with the customer.



### RFID

Drivers can launch a charging session by tapping their RFID card.



### Credit / debit card

Compatibility with contact-less (NFC) solutions, letting drivers initiate the charging process by simply tapping their credit / debit card.



### Smartphone

Compatible with the most extended apps in the market. These apps for EV drivers are able to start a charging session, reserve a post at any time, or simply manage their historical charging sessions.

# SMART POWER BALANCE

**Power Electronics has developed the most advanced functionality for power balancing in vehicle fleet management. Designed to minimize the initial investment and the operation costs.**

Smart Power Balance functionality is able to balance the power based on the number of charging posts in use. Therefore, the total power required to supply the total energy gets substantially reduced, representing a cost reduction in the electrical facility infrastructure and a cost saving due to a minor power contracted. Besides, the hardware and the back-office communication is optimized.

## CONFIGURATION EXAMPLE

NBD150S Industrial

Three charging posts NBD1100 of 100 kW

Vehicle 3  
100 kW  
Charging

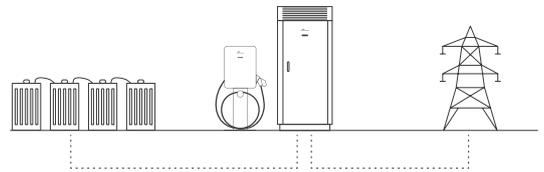
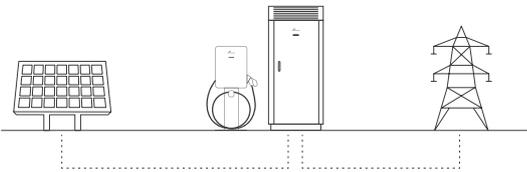
Vehicle 2  
50 kW  
Available

Vehicle 1  
0 kW  
Completed charging



# BUS PLUS READY

NBi Dispenser can connect to a DC power supply to provide electric vehicle charging power. The power source could be the photovoltaic energy, a battery system or the utility grid.



# SMART AND CUSTOMIZABLE DESIGN

## EXACTLY THE WAY YOU WANT

### **Customizable external enclosures**

Power Electronics offers customizable external enclosures for the central power station and the posts. The color can be modified or logos and advertising can be added.

### **Vehicle detection**

Optionally, it is possible to include the vehicle detection function, which allows starting the charging process when the car is close to the charging post.



### EXAMPLES OF POST CUSTOMIZATIONS

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## NBI DISPENSER

IEC

REFERENCE	NBD050 NBD050S	NBD100 NBD100S	NBD150 NBD150S	
<b>DC OUTPUT</b>	Power cabinet maximum output power [kW]	50	100	150
	Post maximum power [kW]	50	50 / 100	50 / 100 / 150
	Voltage range [V]	50 - 500 / 150 - 1000		
	Available connectors	CCS-2 <sup>[1]</sup> , CHAdeMO, GB/T		
<b>AC OUTPUT</b>	Power [kW]	53	105	158
	Voltage [V]	400 ± 10 %		
	Power factor	> 0.99		
	Frequency [Hz]	50 / 60		
	Efficiency	95%		
<b>GENERAL</b>	Interface	Post status LED indicator		
		Button to stop charging		
		Emergency stop (optional)		
		RFID card reader (optional)		
	Protections	Isolation monitor		
		Over-voltages / under-voltages		
		Over-currents / short-circuits		
		RCD		
		Over-temperatures		
	Others	Vehicle detection (optional)		
	Cable length [m] <sup>[2]</sup>	4		
	Degree of protection	IP54 / IK10 <sup>[3]</sup>		
	Operating temperature	From -25°C to 50°C (optionally, from -30°C to 50°C)		
	Relative humidity	4% - 95%		
	Maximum altitude (above sea level)	2000 m; > 2000 m power derating (max. 3000 m)		
Customization	Enclosure			
Communications	OCPP 1.6, Ethernet, 3G/4G connectivity (optional), Wifi (optional)			
Post dimensions (W x D x H) [mm]	600 x 300 x 800			

## STANDARD CONFIGURATIONS

REFERENCE	SMART POWER BALANCE	POSTS		
		NBDI050	NBDI100	NBDI150
NBD050	-	1	-	-
NBD100	-	2	1	-
NBD100S	√	-	2	-
NBD150	-	3	-	1
NBD150S	√	-	3	3

[1] CCS-1 on demand

[2] Optional cable length 7 m.

[3] IK08 for ventilation grilles.

## NBI DISPENSER

US

REFERENCE	NBD060 NBD060S	NBD120 NBD120S	NBD180 NBD180S	
<b>DC OUTPUT</b>	Power cabinet maximum output power [kW]	60	120	180
	Post maximum power [kW]	60	60 / 120	60 / 120 / 180
	Voltage range [V]	50 - 500 / 150 - 1000		
	Available connectors	CCS-1, CHAdeMO, GB/T		
<b>AC OUTPUT</b>	Power [kW]	63	126	189
	Voltage [V]	480 ± 10 %		
	Power factor	> 0.99		
	Frequency [Hz]	60		
	Efficiency	95%		
<b>GENERAL</b>	Interface	Post status LED indicator		
		Button to stop charging		
		Emergency stop (optional)		
		RFID card reader (optional)		
	Protections	Isolation monitor		
		Over-voltages / under-voltages		
		Over-currents / short-circuits		
		RCD		
		Over-temperatures		
	Others	Vehicle detection (optional)		
	Cable length [ft] <sup>[1]</sup>	13.12		
	Degree of protection	NEMA 3R		
	Operating temperature	From -25°C to 50°C (optionally, from -30°C to 50°C)		
	Relative humidity	4% - 95%		
Maximum altitude (above sea level)	2000 m; > 2000 m power derating (max. 3000 m)			
Customization	Enclosure			
Communications	OCPP 1.6, Ethernet, 3G/4G connectivity (optional), Wifi (optional)			
Post dimensions (W x D x H) [ft]	2.0 x 1.0 x 2.6			

## STANDARD CONFIGURATIONS

REFERENCE	SMART POWER BALANCE	POSTS		
		NBDI060	NBDI120	NBDI180
NBD060	-	1	-	-
NBDD120	-	2	1	-
NBD120S	√	-	2	-
NBD180	-	3	-	1
NBD180S	√	-	3	3

[1] Optional cable length 22.97 ft.



## WARRANTY

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Power Electronics (the Seller) warrants that their Products are free of faults and defects for a period of 3 years, valid from the date of delivery to the Buyer. It shall be understood that a product is free of faults and defects when its condition and performance is in compliance with its specification.

The warranty shall not extend to any Products whose defects are due to (i) careless or improper use, (ii) failure to observe the Seller's instructions regarding the transport, installation, functioning, maintenance and the storage of the Products, (iii) repairs or modifications made by the Buyer or third party without prior written authorization of the Seller, (iv) negligence during the implementation of authorized repairs or modifications, (v) if serial numbers are modified or illegible, (vi) anomalies caused by, or connected to, the elements coupled directly by the Buyer or by the final customer, (vii) accidents or events that place the Product outside its storage and operational specification, (viii) continued use of the Products after identification of a fault or defect.

The warranty excludes components that must be replaced periodically such as fuses, lamps & air filters or consumable materials subject to normal wear and tear.

The warranty excludes external parts that are not manufactured by the Seller under the brand of Power Electronics.

The Seller undertakes to replace or to repair, himself, at their discretion, any Product or its part that demonstrates a fault or defect, which is in conformance with the aforementioned terms of the warranty. Reasonable costs associated with the disassembly/ assembly, transport and customs of equipment will also be undertaken by the Seller except in cases of approved intervention by the Buyer and/or their representative where cost allocation has been previously agreed.

In case of fault or defect, the Buyer shall notify the Seller in writing by using the following contact email: [quality@power-electronics.com](mailto:quality@power-electronics.com), of the presence of any fault or defect within 15 days of the fault or defect event. The serial number of the defective product plus a brief description of the fault must be included in the email.

Failure to notify the Seller of fault or defect within this time period may result in the warranty becoming invalid. In the event of replacement of defective Product or part thereof, the property of the Product or part shall be transferred to the Seller.

The Seller shall bear no liability for damages to property or third persons, even as manufacturer of the Products, other than that expressly provided by virtue of applicable mandatory law provisions.

In any case, the Seller shall not be liable for indirect or consequential damages of whatsoever nature as, by way of example, production losses or unearned profits.

The Seller shall, at their discretion, forfeit all warranty rights of the Buyer if the total sum of the contract and payment has not been reached in accordance with the agreed conditions of the contract.

No other warranties, express or implied, are made with respect to the Products including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose. In any case, the

Buyer's right to damages shall be limited to a maximum amount equal to no more than the price obtained by the Seller of the faulty or defective Products.

These conditions shall apply to any repaired or replacement products. Notwithstanding the above, the replacement of a Product does not imply an extension of the term of warranty outside that of the original term.

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