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A high-speed train, primarily red with silver accents, is stopped at a train station platform. The platform has a tiled floor and a white wall with a sign. The train is positioned on tracks with overhead power lines. The scene is captured during the day with soft lighting.

# Solutions for Railway Applications

#wearePremium



# summary

## About us

All our products are Born and Made in Barcelona

## Our values

Innovation | Excellence | Transparency | Flexibility | Passion

## Key figures

## Territory

Partners worldwide

## Products and solutions

Standard products

Custom made solutions

## Documentation

## R&D Department

## Facilities

## Quality

## Some of our customers



# About us

Premium, S.A. was founded in 1981 and for over 39 years it has been engaged in the **design and manufacture** of Power Conversion Systems.

We create products that require **high-quality, reliability, and robustness** and are able to do so from scratch.

Our experience and know-how allows us to work with the most demanding markets.



BORN AND MADE IN BARCELONA. POWERING THE WORLD

# Our values



## Innovation

We are up to date with technological advances



## Excellence

We are customer and results oriented



## Transparency

Our results are shared with all team members



## Flexibility

We easily adapt to changes and improvements

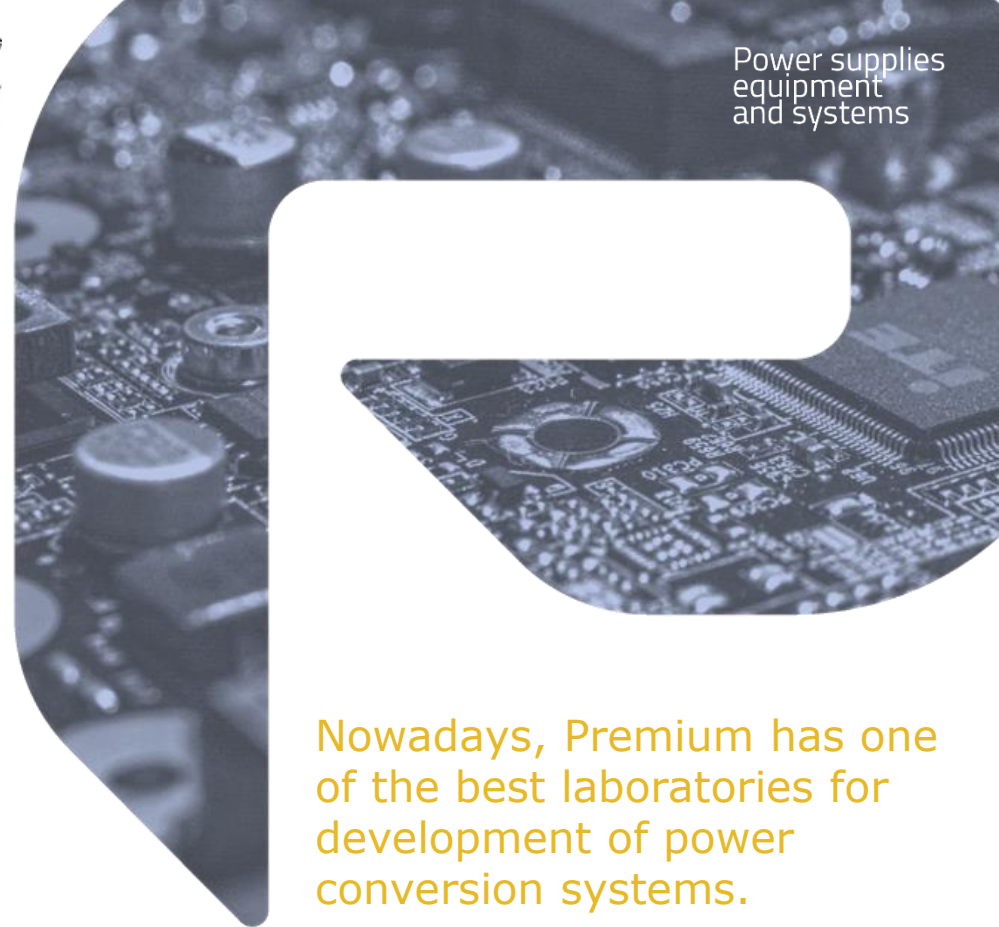
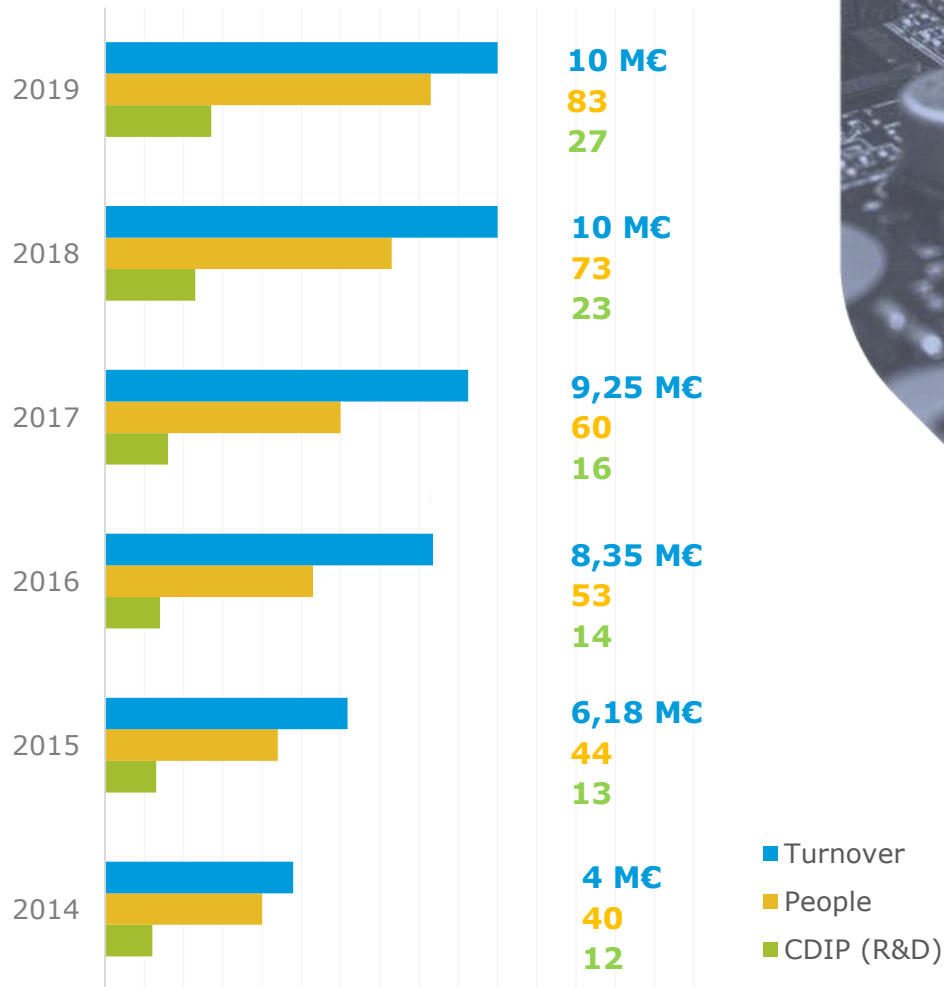


## Passion

We enjoy every phase of what we do



# Key figures



Nowadays, Premium has one of the best laboratories for development of power conversion systems.

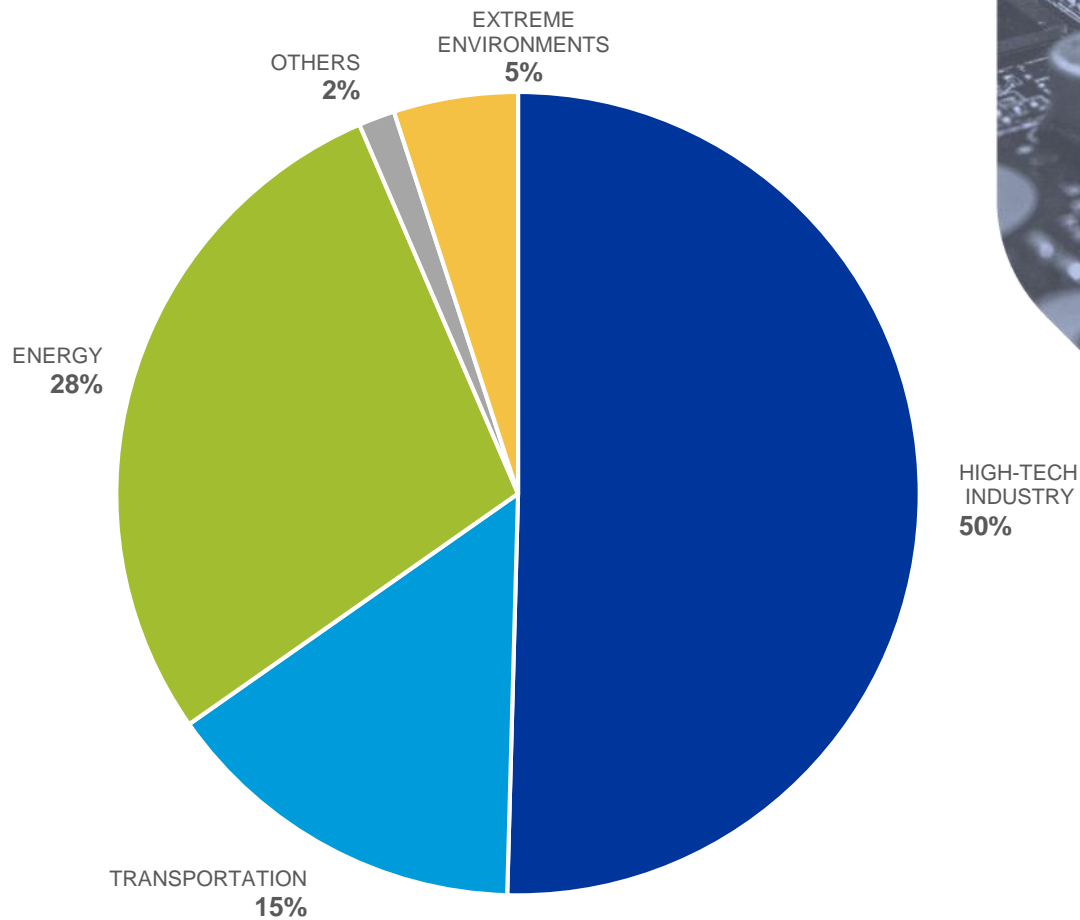


We collaborate in innovative projects with several Universities



We have been recognized as an Innovative SME by the Ministry of Science and Innovation of Spain

# Markets



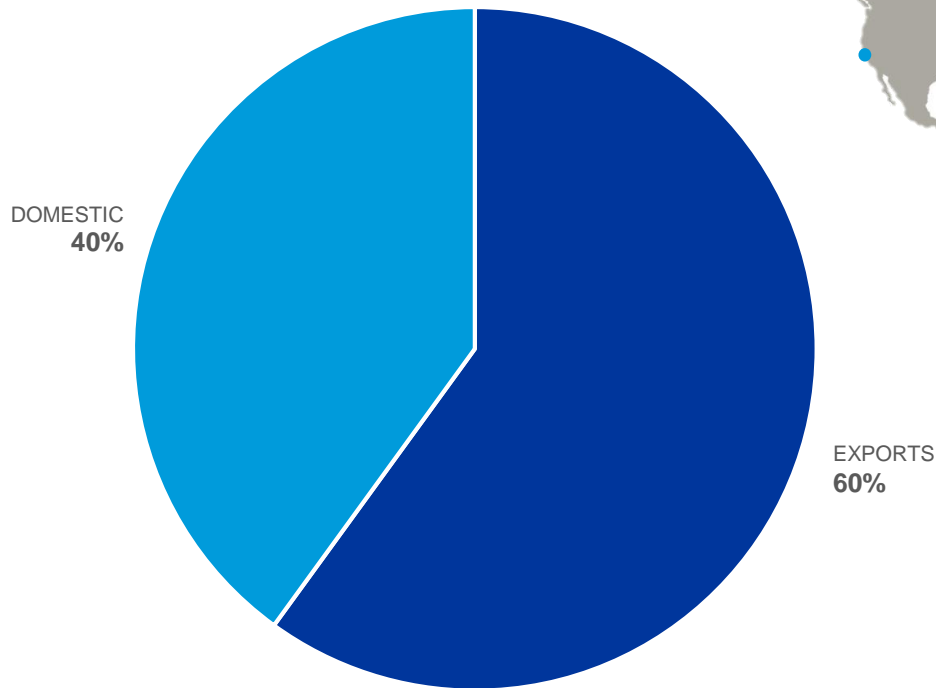
HIGH-TECH  
INDUSTRY  
50%

Our products are used  
in a great variety of applications.

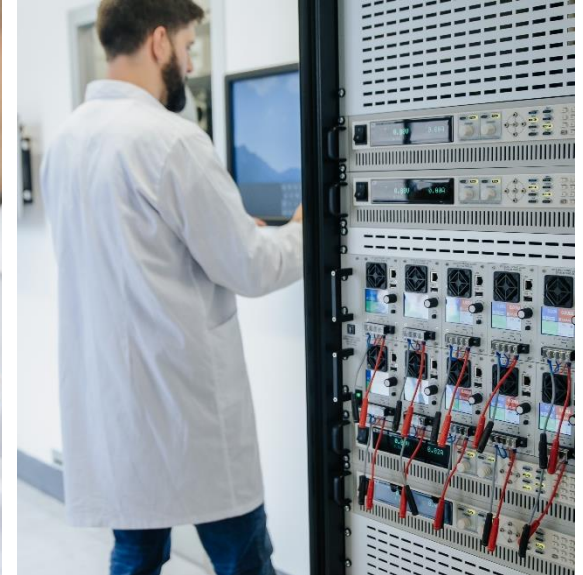
We are mainly focused in the  
international Transportation,  
High-Tech Machinery, Energy  
and Extreme Environments  
market segments.

# Territory

## Broad Network of Partners



# Services



**39** years experience

**100%** products verified

**30k** units delivered  
in 2019

**After-Sales Service**



# Premium and the Railway Market

More than 30 years of experience vouches Premium, S.A. in the international railway market. This path began in 1985 with a special retrofit design for the subway of Madrid (a 300W DC/DC converter with double output) and continues to this day. Premium is outstanding in developing and manufacturing limited series of completely custom-made products.

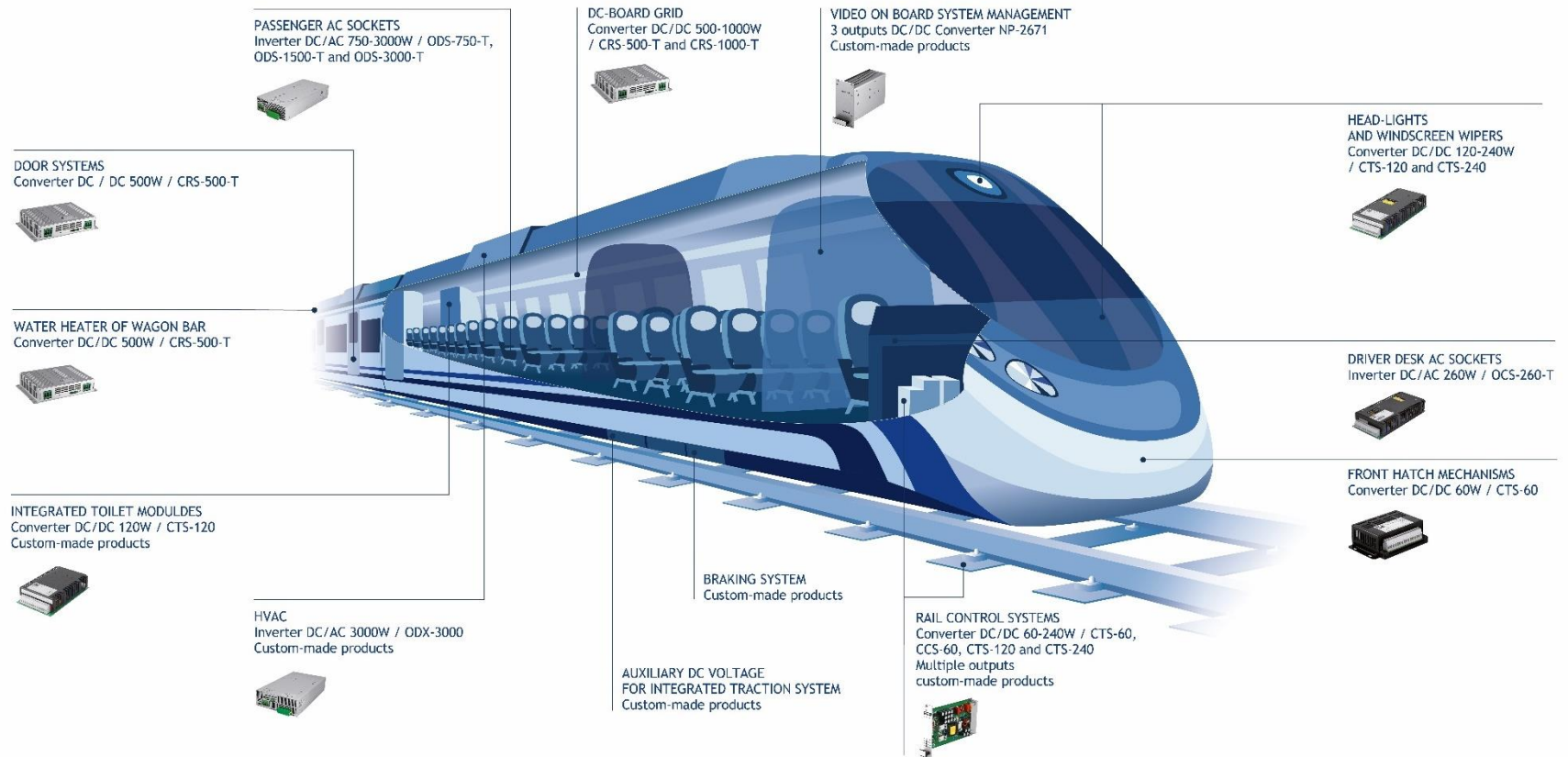
## **Year 1985 NP-0188**

DC/DC converter for the Automatic Train Protection (ATP) system.

*Rolling stock / Custom-made*



# Power Conversion Solutions



# Standard Products



## CTS-240

240W – up to 92% efficiency

### DC/DC CONVERTERS

60W ... 2kW



## ODS-3000

2400W – 3000W

### 1Ph DC/AC INVERTERS

180W...4kW



## ODX-6000

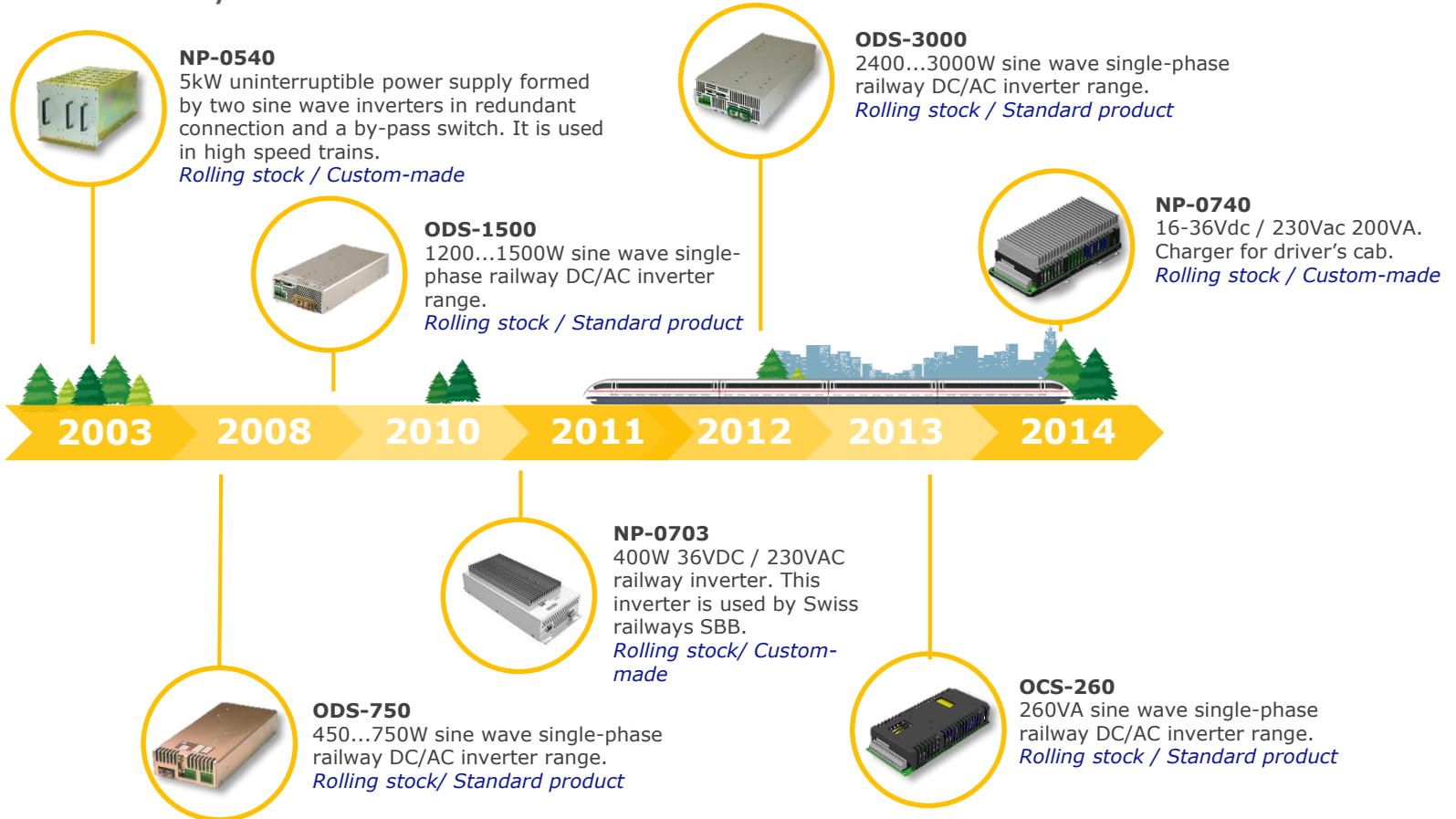
4500W – 6000W

### 3Ph DC/AC INVERTERS

1.1kW... 6kW  
(scalable up to 24kW in  
parallel operation)

# Product Examples

## Single Phase DC/AC





# Product Examples

## Three Phase DC/AC



### NP-0726

1300VA three-phase sinusoidal DC/AC inverter. 72V input and adjustable output voltage (150...250V 3~) and frequency (16...60Hz). Designed to be used as auxiliary converter in HVAC systems. *Rolling stock / Custom-made*



### NP-0713

520W three-phase sinusoidal DC/AC inverter without neutral and with galvanic isolation input to output. Designed to be used as auxiliary converter in HVAC systems. *Rolling stock / Custom-made*



### ODX-1300

260VA sine wave single-phase 1300VA three-phase sinusoidal DC/AC inverter range. Designed to be used as auxiliary converter in HVAC systems. *Rolling stock / Standard product*



### NP-0792

High voltage DC input (750 VDC) to 3-Phase AC output converter with 0.5 kVA continuous and 2.0 kVA peak output power. Designed to be used for signalling control. *Rolling stock / Custom-made*



### NP-0795

3.2 kVA / 2.5 KW 3ph inverter with isolated input – output and 2 output voltage/frequency settings, according EN61287-1 *Rolling stock / Custom-made*

2013

2016

2017

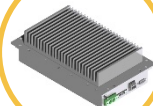
2018

2019



### ODX-3000

2400...3000VA three-phase sinusoidal DC/AC inverter range. Designed to be used as auxiliary converter in HVAC systems. *Rolling stock / Standard product*



### NP-0761

850VA 24VDC/230VAC 3Ph IP66 for HVAC system. *Rolling stock / Custom-made*



### ODX-6000

6kW three-phase sinusoidal DC/AC inverter range. Parallel output up to 30kW. Adjustable output voltage. Soft-start. Suitable for motor control. RS-232 and CAN bus. *Rolling stock / Custom-made*



### NP-0731

110Vdc / 180Vac 750VA three-phase sinusoidal inverter with case IP65. Designed to be used as auxiliary converter in HVAC systems. *Rolling stock / Custom-made*

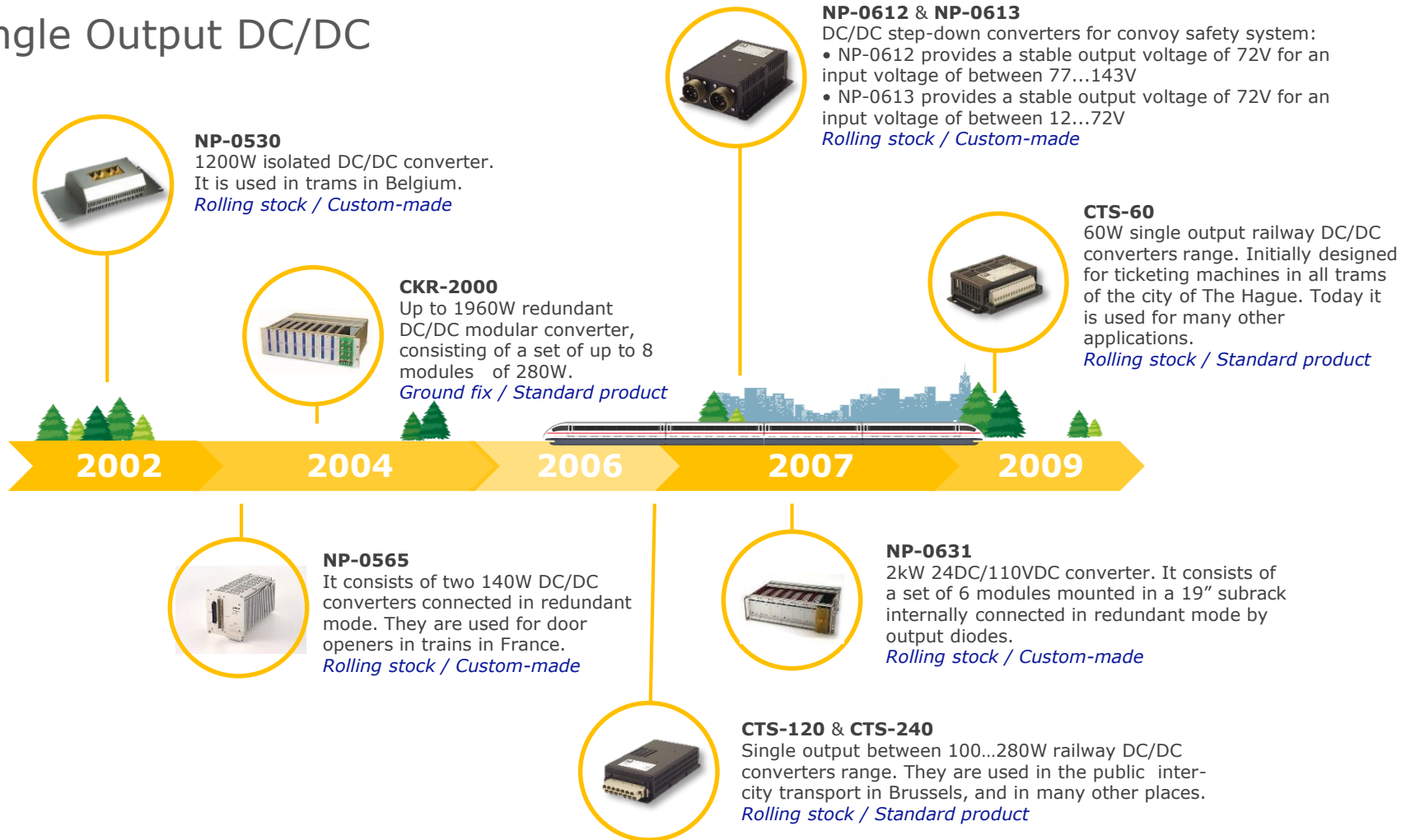


### NP-0788

2740VA three-phase sinusoidal DC/AC inverter. 110V input and adjustable output voltage (50...230V 3~) and frequency (5...75Hz). Designed to be used as auxiliary converter in HVAC systems. *Rolling stock / Custom-made*

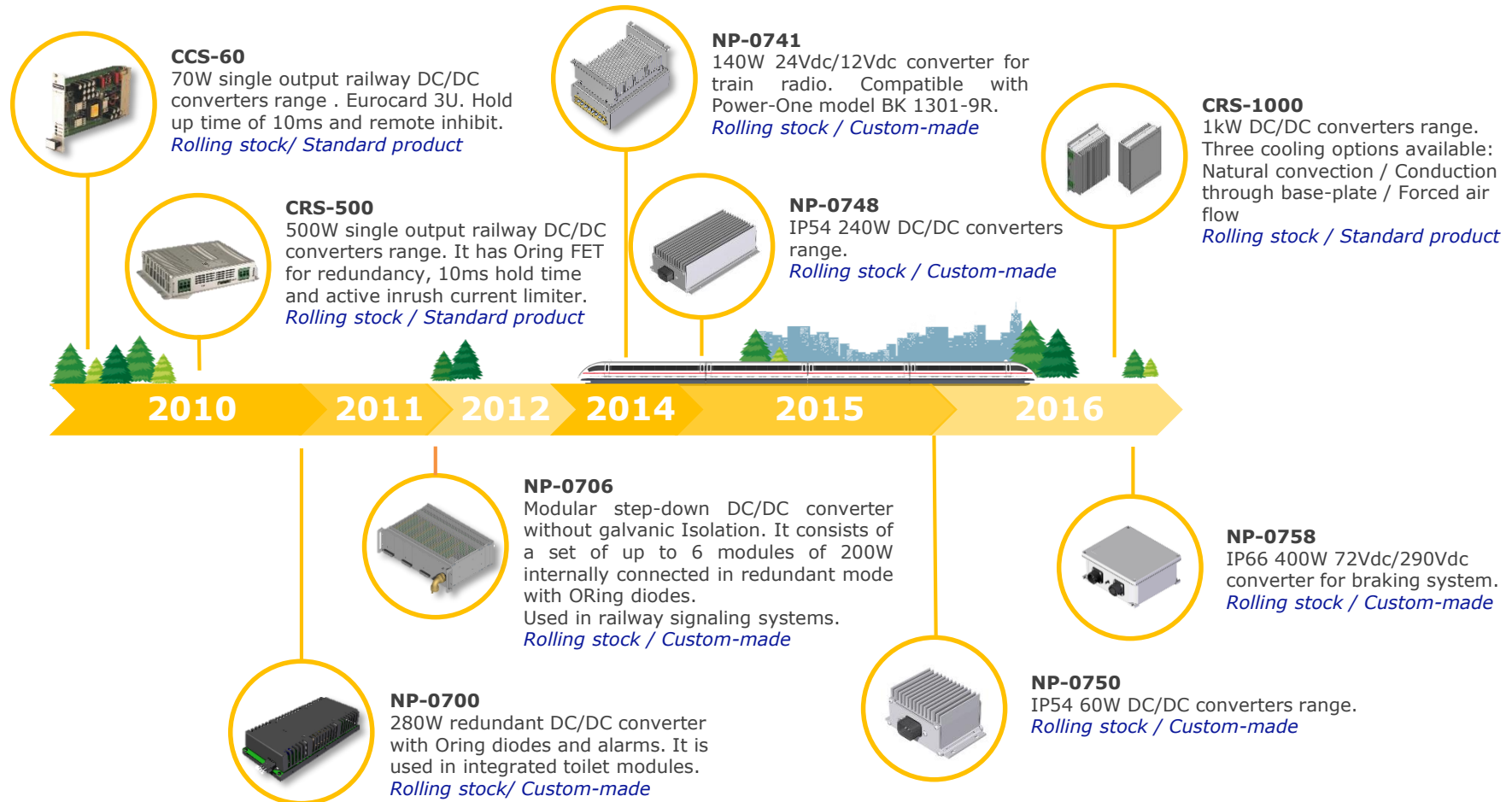
# Product Examples

## Single Output DC/DC



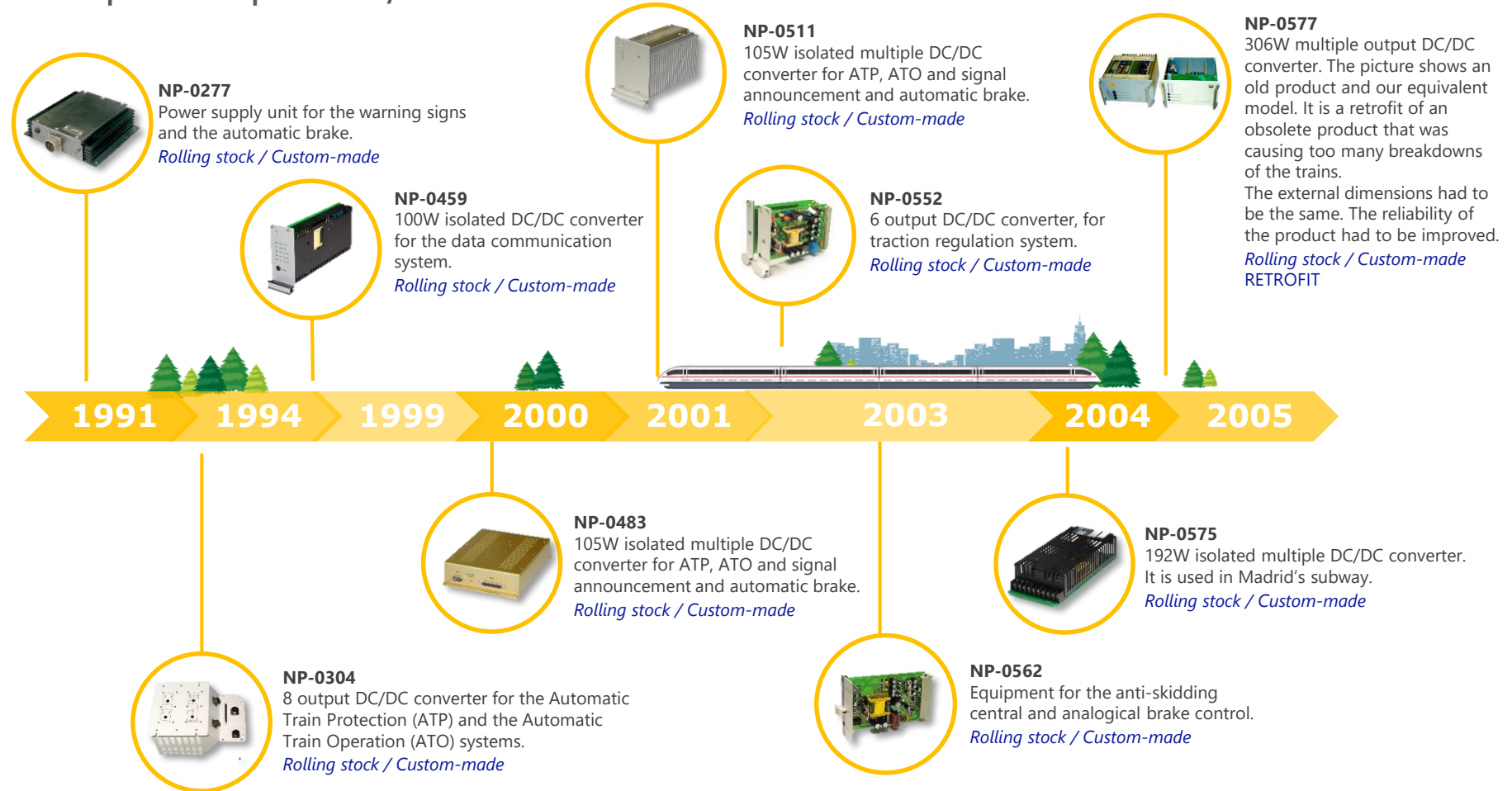
# Product Examples

## Single Output DC/DC



# Product Examples

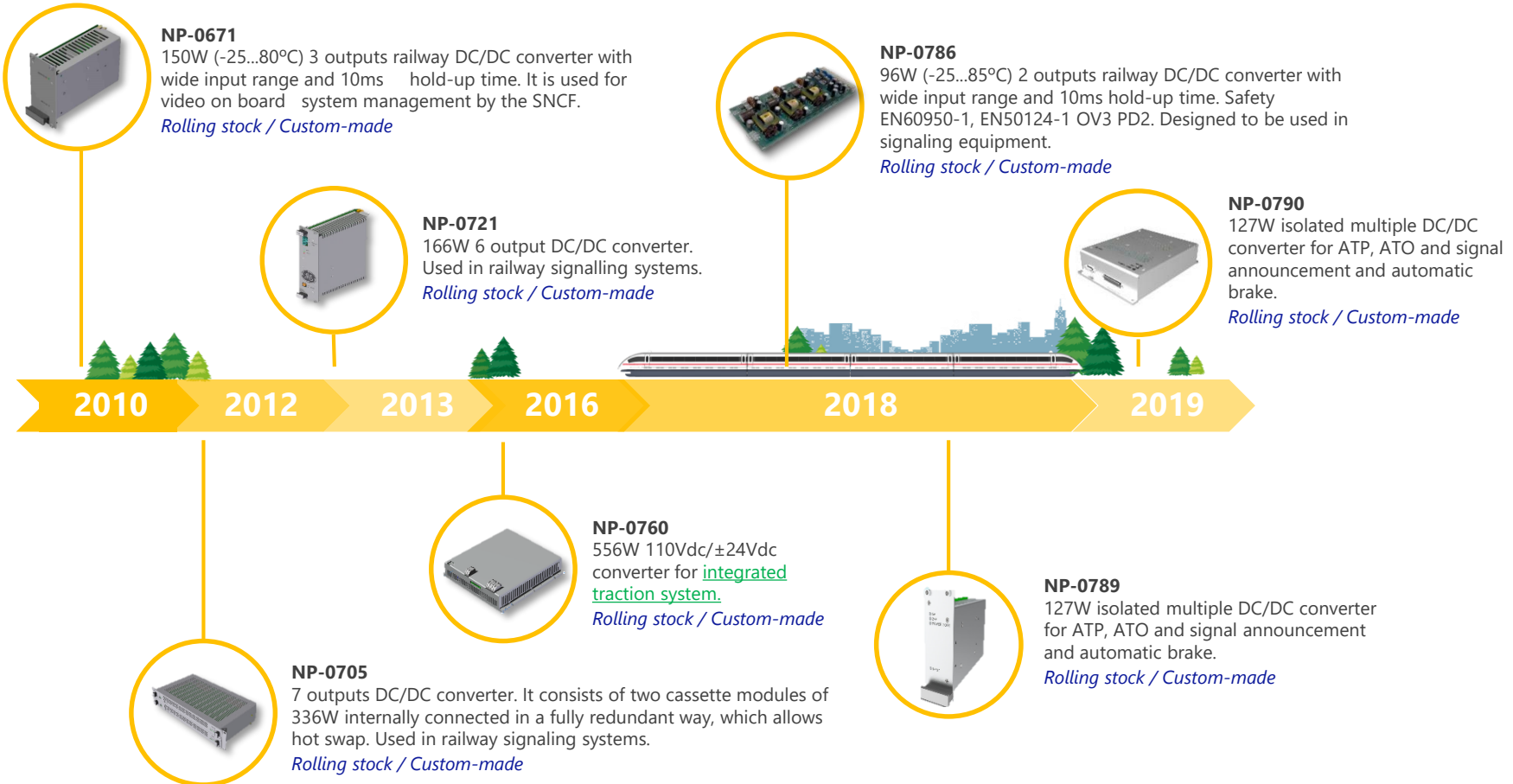
## Multiple Output DC/DC





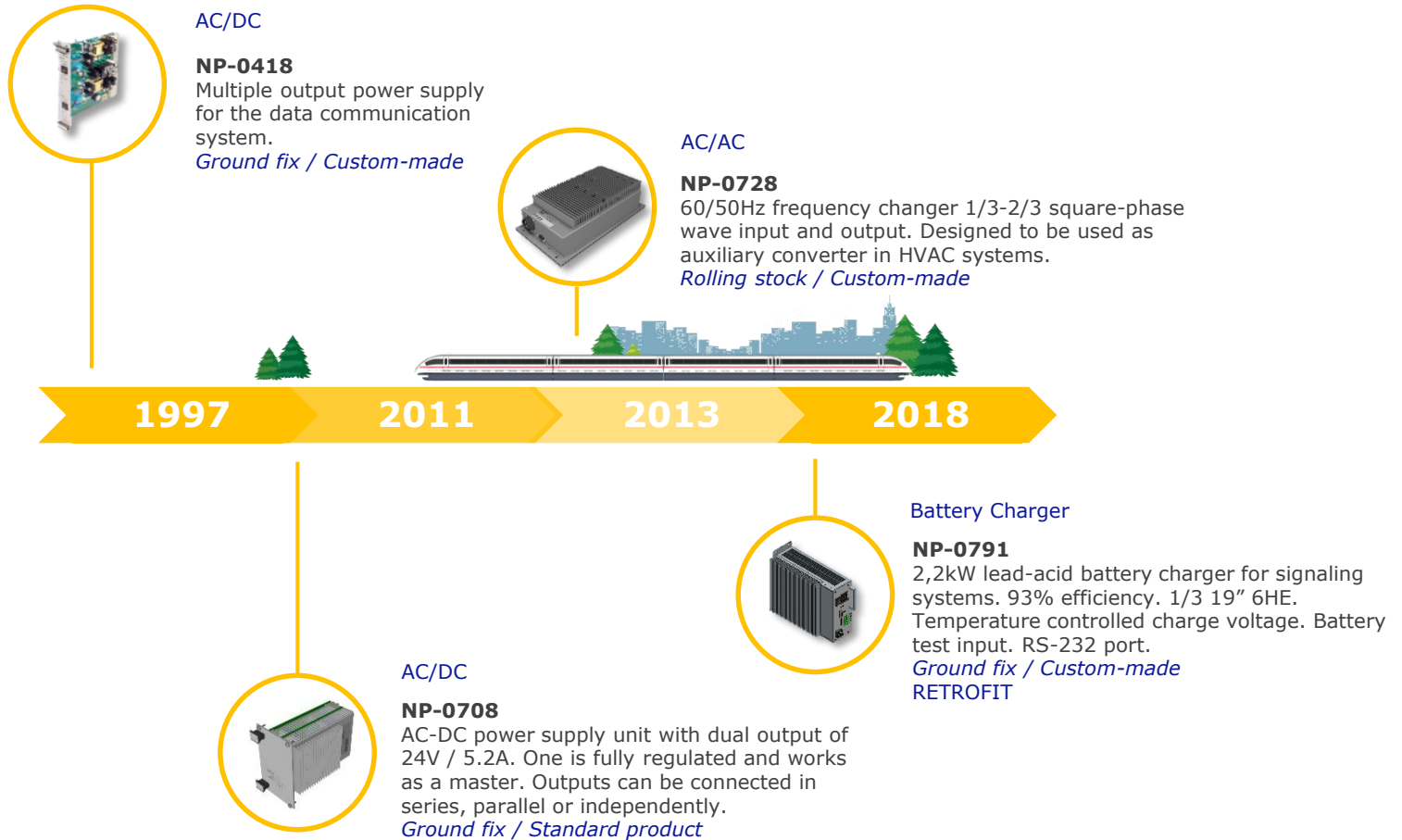
# Product Examples

## Multiple Output DC/DC



# Product Examples

## Other products



# Custom-made solutions

## Technical capabilities



Power from 50W up to 50kVA  
(very high power density, high frequency)



Up to IP68



Efficiencies up to 95%



Wide operating temperatures (-40°...85°)



Input voltages up to 460Vac (1...3-Ph) and  
1100Vdc  
Output voltages up to 440Vac (1...3-Ph)  
and 750Vdc



10kV isolation (surges of  $\pm 20\text{kV}$  1,2/50 $\mu\text{s}$ )



Multiple and Wide input and output  
voltages

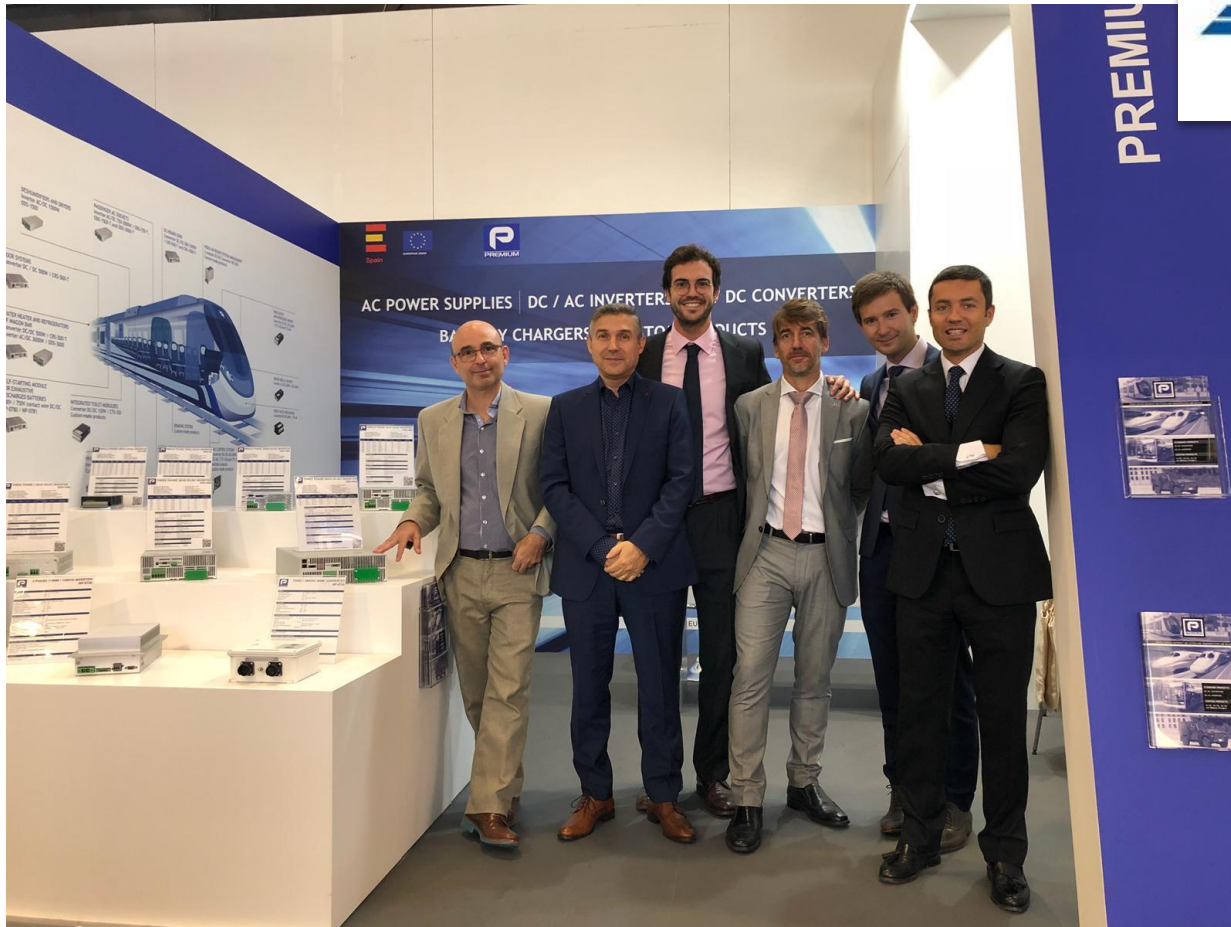


RS232, RS485, I2C, Modbus, CANbus,  
Ethernet, TDRP protocol, etc.

# Teamwork

A team of experts at your service

InnoTrans





# Documentation

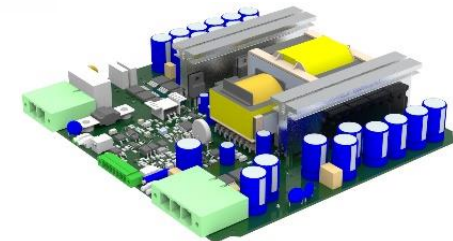
We provide a complete range of test reports and other information on request.

- Functional test report
- 3D Drawings
- Railway rolling stock EN50155
- EMC test report 50121-3-2
- Stress review report
- Temperature test report
- HALT temperature test report
- Shock and vibrations EN61373
- Fire & Smoke EN45545-2
- Safety 50124-1
- Schematics
- MTBF
- CB certificate and report

*Please ask if you have other needs*

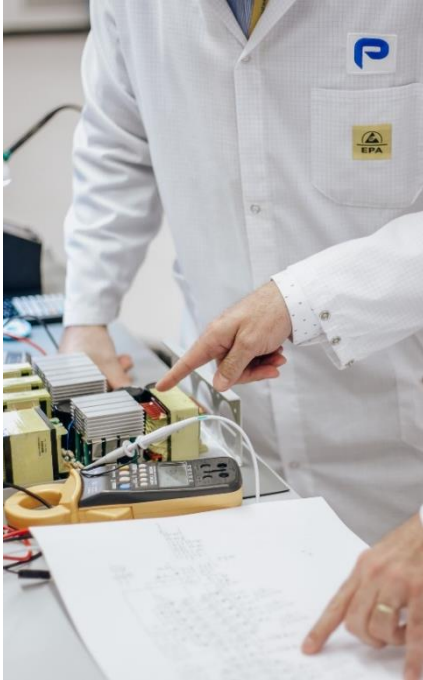


CB



3D drawings

# R&D+I Department

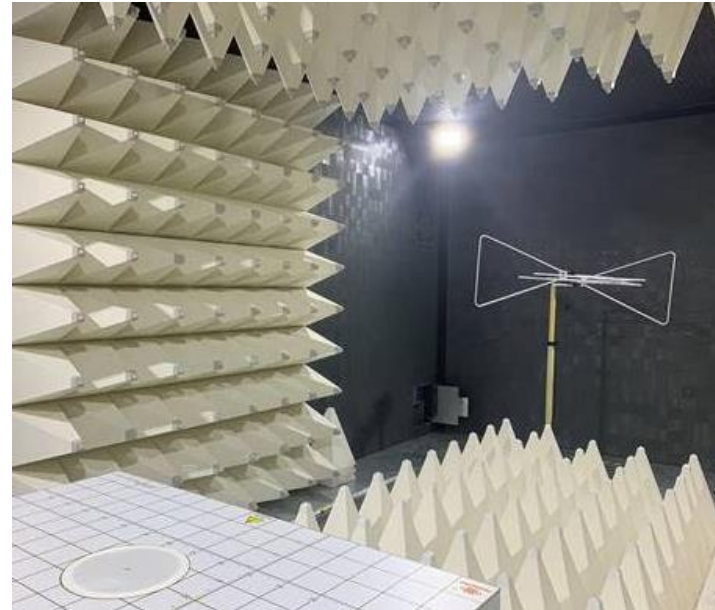


- We design, assemble and verify prototypes in our Research and Development Center
- We also redesign and make product modifications according to every project needs

# R&D+I Department

Testing available:

- Electrical and functional tests
- Climatic tests through a climatic chamber
- Electrical safety: insulation resistance tests and dielectric strength to ensure compliance with safety directives
- EMC tests: electromagnetic compatibility tests in our semi-anechoic chamber
- We also work with external laboratories when necessary





# Facilities





# Quality

- Our Quality Management System is certified according to the Standard UNE EN ISO9001 and has been recently integrated with the environmental standard ISO 14001, as a step forward in our commitment with the company's sustainability
- All series produced undergo a burn-in period, after which each unit is individually tested by an Automatic (computer-controlled) Test Equipment
- A printout report of the measurements obtained during the test is enclosed with each unit. The report is dated and identified by the serial number



# Some of our Customers





# Powering Your Challenge