

# Ground power – built to perform.

Shaping the  
future together.

[dynell.at](https://www.dynell.at)

**Dynell**<sup>®</sup>  
The power league.





# Discover the future of aviation ground support equipment.



**“It’s very easy to be different but very difficult to be better”**

Jonathan Ive

Dynell stands for “dynamic, electrical, electrifying” and this is what we are. The company was founded in 2019 with the goal to revolutionize the supply of ground support equipment. The core of the company is the team and its spirit.

Our goal is to build a base for everyone on the market. We want to connect employees, customers and suppliers to create added value by faster exchange and improve the future development of the whole market.



Dynell is your competent partner for aviation ground support equipment. As a system integrator, efficiency, performance and reliability build the foundation of our products.

A team of experts with a comprehensive industry knowledge and an innovative mindset is driven by market needs to generate ground-breaking ideas – we set the pace.

**Performance**

Our goals: outstanding performance, highest service life and perfect functionality.

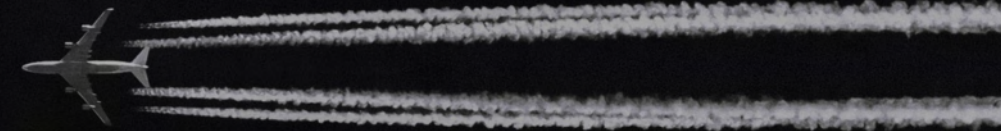
**Efficiency**

We provide optimum efficiency by combining the latest technologies with the highest technical standards.

**Reliability**

We guarantee high reliability of our products associated with a long lifetime.

# power league.





# We feature a complete product range —— to meet your specific requirements.

The innovative product range includes efficient battery and diesel-driven ground power units, a completely new concept for solid-state ground power units and all kinds of connection systems like cable coils and pit systems.

The Dynell Inverter Module (DIM) serves as the core element of Dynell's product line, housing all essential electronic components. It functions both as an inverter and a rectifier, allowing for interchangeable use across all

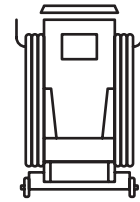
Dynell units. Additionally, its compact size and lightweight design contribute to effortless handling.

The user interface is streamlined to focus on the very essentials, ensuring an intuitive and user-friendly experience for both operators and service staff. Consistency in structure and design is maintained across all Dynell units, promoting familiarity and ease of use.

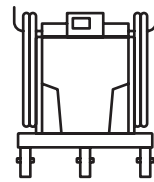
# Our product range.



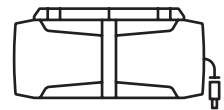
SOLID-STATE GPU



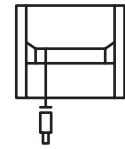
SOLID-STATE GPU MOVEABLE



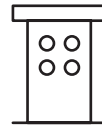
SOLID-STATE GPU TOWABLE



COMBINATION SOLID-STATE GPU AND COIL SYSTEMS



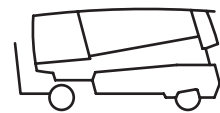
COIL SYSTEMS



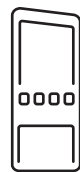
PIT SYSTEMS



ALL ELECTRIC GPU

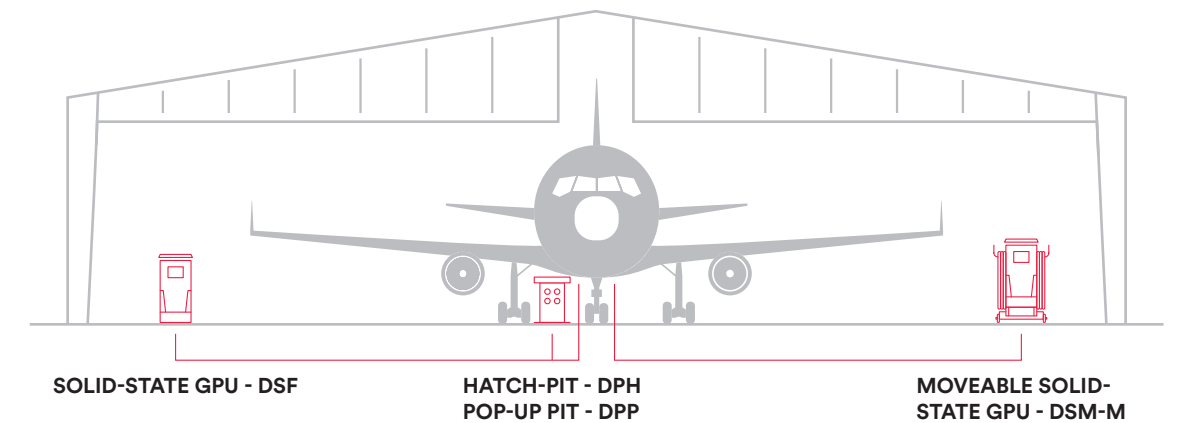
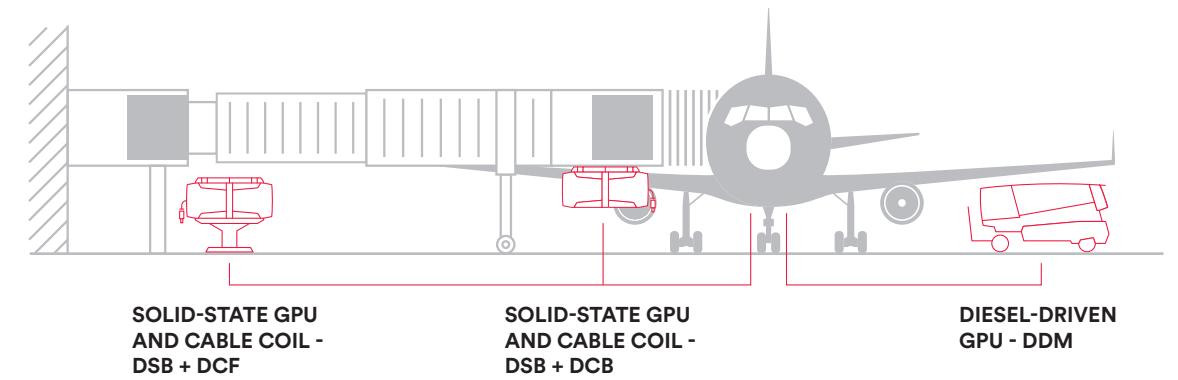
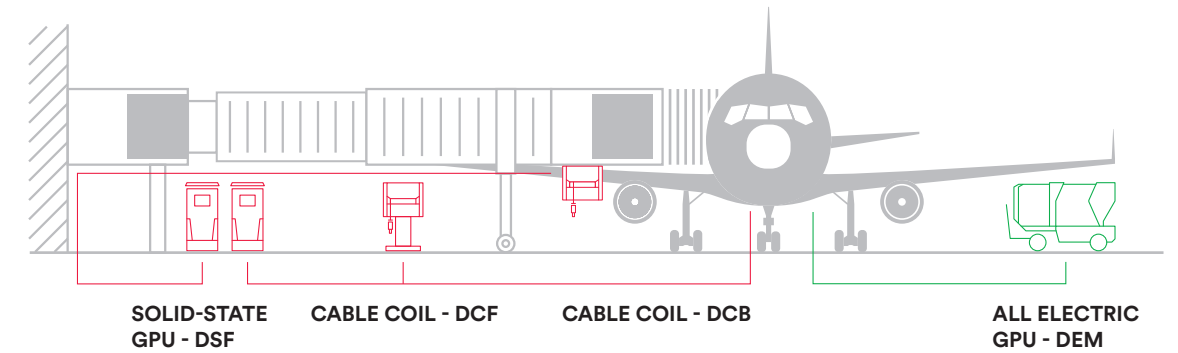
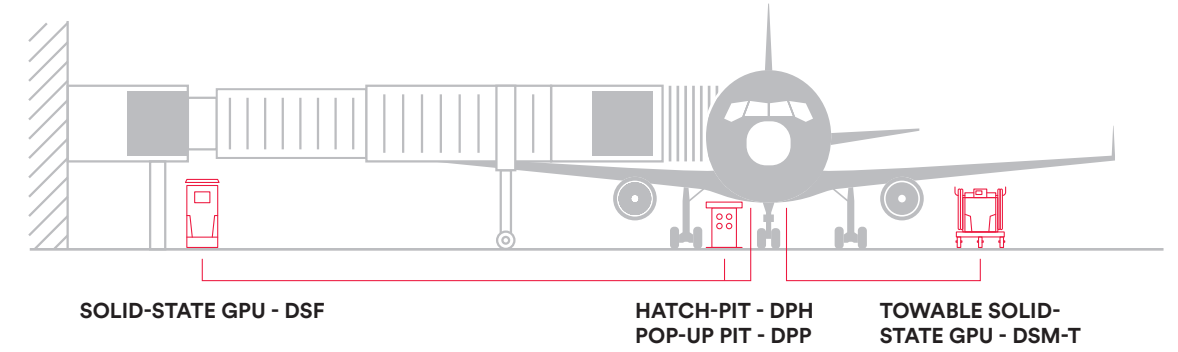


DIESEL-DRIVEN GPU



CHARGING SYSTEMS

# Applications.





# DSF / DSM — Solid-State GPU

## The electrifying power station.

### 01 — Efficiency at its best

The solid-state ground power unit combines a robust design with the latest inverter technology and cuts down lifecycle costs to a minimum due to highest efficiency. The modular design of all major electrical/electronic components guarantees highest output quality and reduces the mean time to repair to a minimum. The solid-state ground power unit is made of fully recyclable materials and therefore presents a sustainable possibility to provide electricity to aircrafts.



### 02 — Mobile Version

Dynell offers a range of mobile versions for their solid-state frequency converters, each catering to specific needs. The DSM 020-090-M variant is specifically tailored for hangar usage. Designed to be easily maneuvered by a single person, it provides ample space for storing all input and output cables. On the other hand, the DSM 020-180-T variant is ideal for apron applications. It can be effortlessly hitched and towed to any desired location, while also featuring convenient cable storage capabilities. Additionally, all solid-state frequency converters, including the mobile versions, are available with options for simultaneous or non-simultaneous 28 VDC output.

### 03 — Modularity

The modular design guarantees security of supply for the aircraft and increased availability, as redundant operation is possible. In addition, the plug and play system allows easy and fast installation with best accessibility to connect input and output cables. The whole system is designed to be fail safe and to ensure highest reliability, substantiated by using only the latest components.



The solid-state GPU is an excellent choice for the 400 Hz power supply. The unit is small and compactly designed but still easy to use and comfortably to maintain. Due to the high-quality output voltage, the DSF can supply all type of aircrafts with the requested voltages and overloads, including Boeing 787 and Airbus A350.

## Advantages

- Compact and modular design
- Latest inverter technology with output power up to 180 kVA
- Lowest MTTR
- Plug & Play – easy installation
- Recyclable materials (PMMA)
- Easy and intuitive operation

# DCB / DCF / DSB + DCB — Coil Systems

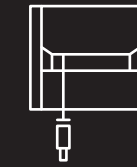
## Built to facilitate tasks.

### 01 — Solid-State GPU

The solid-state ground power unit combines a robust design with the latest inverter technology. The highest efficiency cuts down lifecycle costs to a minimum. The modular design of all major power electrical components guarantees highest output quality and reduces the mean time to repair to a minimum.

### 02 — Cable Coil

The Dynell cable coil is made of durable materials like stainless steel. In combination with the innovative twisted cable concept, service cycles are improved to a maximum. A high-quality variable frequency drive guarantees longest reliability. Due to the easy and fast replacement of the cable, downtime can be reduced to a minimum.



The DSB 090 and the DCB 090 are the perfect combination of a highly efficient solid-state frequency converter and a very durable cable coil. Due to the modular design, both units can be impeccably combined and flexibly mounted on any passenger boarding bridge or on the apron.

## Advantages

- Compact and modular design of a solid-state frequency converter and cable coil
- Lightweight design
- Latest inverter technology
- Recyclable materials (PMMA)
- Stainless steel cable drum
- Plug & Play – easy installation
- Up to 30 m cable
- Easy and intuitive user interface (operation)



# DIM — Dynell Inverter Module

## The core element.

### 01 — Latest inverter technology

The Dynell Inverter Module (DIM) is a bidirectional 3-phase inverter module built with the latest semiconductor technology. The same hardware is used for rectifying the mains voltage and for inverting into the 400 Hz voltage— back-to-back operation. The different firmware is assigned via the CAN-address, which is received through the plug-in system on the back of the module. No address configuration is required – just plug & play. Due to the modern design, the size could be reduced to a minimum and it weighs only 9 kg.



### 02 — Efficiency and Scalability

The nominal output power of one DIM is 22.5 kVA. This allows scalable output power of the solid-state frequency converters in steps of 22.5 kVA up to 180 kVA. If there are unexpected power requirement changes in the future, the output power can be easily up- or downgraded. The efficiency of up to 99% of one DIM module leads to an overall system efficiency of almost 96%. This can be achieved with reduced total harmonic distortion approved by TÜV Austria (Input current distortion <2% / output voltage distortion <1%).



### 03 — Reliability

The Dynell solid state converter is made up of parallel and galvanically isolated modules. In the unlikely event that one module fails, the remaining modules continue supplying without interruption and almost no power limitation due to the high overload capability. Thus, the downtime is reduced to a minimum. Moreover, the DIMs can be easily exchanged due to the plug and play system. As the modules can be used as inverter and rectifier, the spare parts inventory can be reduced accordingly.



The Dynell Inverter Module (DIM) is the core element of the Dynell solid-state frequency converter family and the all electric GPU. It contains all the main electronic components, and the same module is used as inverter and rectifier. This means that the DIMs in all Dynell units can be exchanged. Moreover, the small size and low weight make it very easy to handle.

## Advantages

- Active power factor correction
- Same hardware for inverter and rectifier
- Redundant operation
- Very small size and very low weight – only 9 kg
- Plug & Play system



# DPH / DPP — Pit Systems

## Underfloor infrastructure solutions.

### 01 — Efficiency at its best

You save time and money. The necessary connections are always available on site and ready to use. The thought-out product concept makes the pit system very easy to service and maintain and increases the service cycles. A closed system perfectly uses the available space underneath the apron as it can bear loads up to 90 tons.

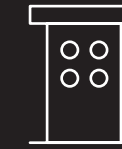


## Options

- Up to four 400 Hz ground power cables including cables and holders - dependent on type
- Maintenance cover / shaft
- Heater, water level detector and water pump
- Electrically driven cable conveyor unit
- Utilities supply on customer request e.g. with connections for compressed air, water, wastewater, data
- Explosion-proof and sand-protected versions available

### 02 — Intelligent and modular design

The innovative, modular design allows an individual configuration of each pit system. This means that additional supplies, controls and connections can be added flexibly on customer demands. Moreover, it is always possible to reconfigure the system or add new items.



The pit systems are simply opened with a single touch and all of the required ground supply is available next to the aircraft. Therefore, the airplane can be easily, fast and safely connected to the 400 HZ ground power or PCA. The pit systems can hold up to four 400 Hz cables or two PCA connections plus additional supplies as needed.

## Advantages

- Easy and ergonomic access to ground supply
- Immediately ready to use as soon as the equipment is raised
- Comfortable and retractable access to all utilities
- Loading category EN124 F900 – up to 90 tons

# DEM — All electric GPU

## Sustainable energy for a greener future.



### 01 — DIM - Dynell Inverter Module

The Dynell Inverter Module (DIM) is the core element of the all-electric GPU. The DIM is already used in all Dynell's solid-state GPUs and is interchangeable between all Dynell products. No configuration is required – just plug & play.

One DIM contains all the electronic components to transform the DC voltage from the battery into 400 Hz. The latest semiconductor technology ensures highest efficiency of up to 99% for one DIM.



### 02 — Batteries

The batteries are based on state-of-the-art Li-ion technology with high energy density for demanding industrial applications. The battery pack is designed in accordance with the highest safety and quality requirements; it is fully CE marked and manufactured in Europe.



### 03 — Modularity and scalability

The unit features a modular and well-organized layout, ensuring convenient and secure access to all areas. The design concept allows for flexible adaptations to changing needs. In the event of unexpected shifts in power requirements, both the output power and battery capacity can be easily adjusted to meet higher or lower demands.



Empower a CO<sub>2</sub>-free future with Dynell's all-electric mobile ground power unit. The latest battery design combined with innovative solid-state technology provides green 400 Hz and 28 VDC power wherever needed at non electrified places.

## Advantages

- Compact and modular design
- Three-layer battery safety system
- CE marked and European made battery packs up to 193 kWh
- Easy and intuitive operation
- Highly efficient latest inverter technology up to 90 kVA output power



# DDM — Diesel-driven GPU

## Mobile power combined with intelligent features.



### 01 — Economical power supply

The combination of the highly efficient generator and the latest engine technologies - EU stage II, IIIA, V and US EPA 2, 3, 4 final - guarantee optimum power supply with reduced operation costs. In addition, the low-maintenance product concept reduces time and costs for spare parts and maintenance.



### 02 — Optimized maintenance

Dynell's diesel-driven ground power units are built to last. The innovative design withstands the harshest conditions on the apron. Due to the thought-out product concept, which is based on the experience by ground handling personnel, very low maintenance is necessary.



### 03 — Intuitive User Interface

The newly designed user interface is reduced to the very essentials. It is intuitively to use for the operator and the service staff. On-site maintenance and service is improved by remote access to all units. In the future, predictive maintenance will further increase the units' availability.



Flexible DDM solutions provide reliable 400 Hz power. The latest engine technologies - EU stage II, IIIA, V and US EPA 2, 3, 4 final - provide the power you need everywhere around the world according to local standards and the highly efficient generator delivers high quality output for every type of aircraft.

## Advantages

- Remote access and GPS
- Reliable 400 Hz power up to 180 kVA
- Latest engine technologies EU stage V
- Highest efficiency
- Best service and maintenance access
- Fully recyclable materials

# DHC / DNC — Charging Systems

## Game-changing chargers for your GSE.

### 01 — Charging at its best

Experience the Dynell charging system, finely tuned for diverse GSE equipment. From 24 V to 1000 V DC power, customization knows no bounds – we deliver it! Unmatched efficiency curbs lifecycle expenses. Modular design of all major power electrical components enhances output quality, minimizing repair downtime. Multiple outputs streamline apron space. Elevate your equipment with Dynell's precision and power.



DNC - Charging System



### 02 — Robust charging solution

Introducing our innovative charging solution, meticulously designed with a sturdy IP54 housing and dynamic active cooling system. This thoughtful engineering enables exceptional performance in the most challenging scenarios. Crafted for enduring resilience, it guarantees unwavering power supply even in the harshest environments. Keep connected as this charging station is something you do not want to miss in your infrastructure.



### 03 — Intelligent communication

Initiating the charging process is a swift and effortless task, adding a touch of convenience to every charging cycle. This time-saving feature accompanies each charging turnaround. Moreover, these stations can be equipped with a range of communication capabilities. Their significance lies in their seamless integration potential with existing BMS or backend systems, ensuring a smooth and harmonious operation.

Based on 75 kW power-stacks (scalable up to 300 kW), the **DHC** modular Hypercharger system ranges from 150 to 1000 VDC is the perfect solution to charge your battery-driven vehicles, such as busses, tractors, or pushbacks.

The **DNC** is an all-in-one solution with an IP54 outdoor housing for multiple outputs (24-120 V) incl. cable balancer dynamic cooling and heating. Unleash 5-30 kW power range for lead-acid or lithium batteries. Elevate your charging experience.

## Advantages

- Outdoor design
- Highest efficiency
- Wide output voltage range
- Various communication capabilities
- Low maintenance costs



Based on a balanced mix of knowledge, experience and innovation, we design, build, distribute and maintain aviation ground support and charging equipment. Our ground-breaking ideas generate the greatest possible customer value for future markets around the globe.

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