

# Ground power – built to perform.

Shaping the  
future together.

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

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





# 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.



# The 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 400 Hz connector differentiates by the easy exchangeable wear parts and an individually configurable interface. In addition to the 400 Hz equipment, AC and DC chargers

for cars, busses and tractors complete the product portfolio of Dynell.

The AC and DC chargers can be connected via a sophisticated load management system which is controlled by a pioneering backend system.

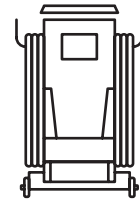
The combination of the systems allows advanced managed charging stations and optimized usage of the available electricity grid at the airport.



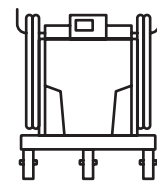
# Our product range.



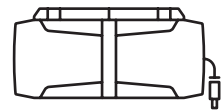
SOLID-STATE GPU



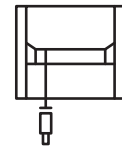
SOLID-STATE GPU  
MOVEABLE



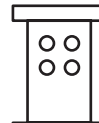
SOLID-STATE GPU  
TOWABLE



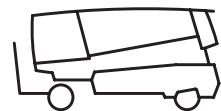
COMBINATION SOLID-STATE  
GPU AND COIL SYSTEMS



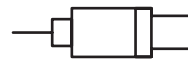
COIL SYSTEMS



PIT SYSTEMS



BATTERY AND  
DIESEL-DRIVEN GPU

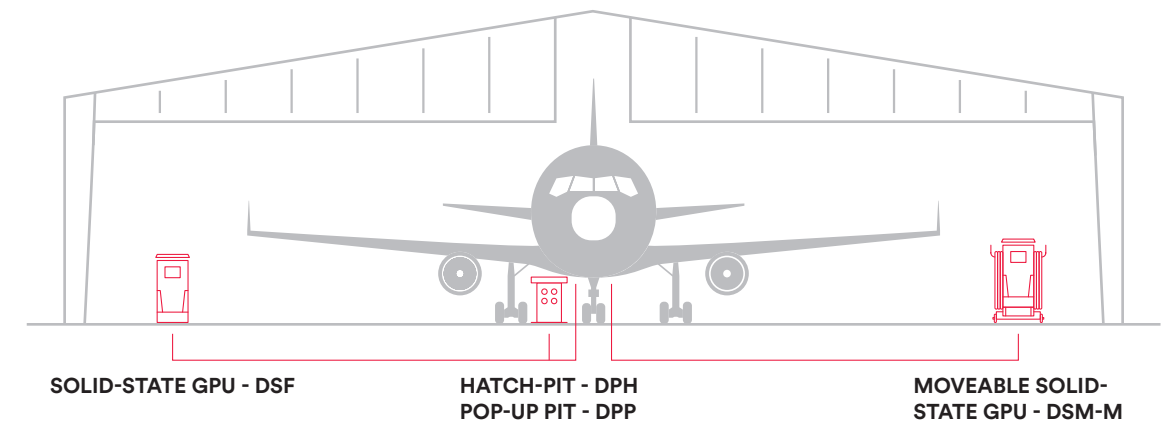
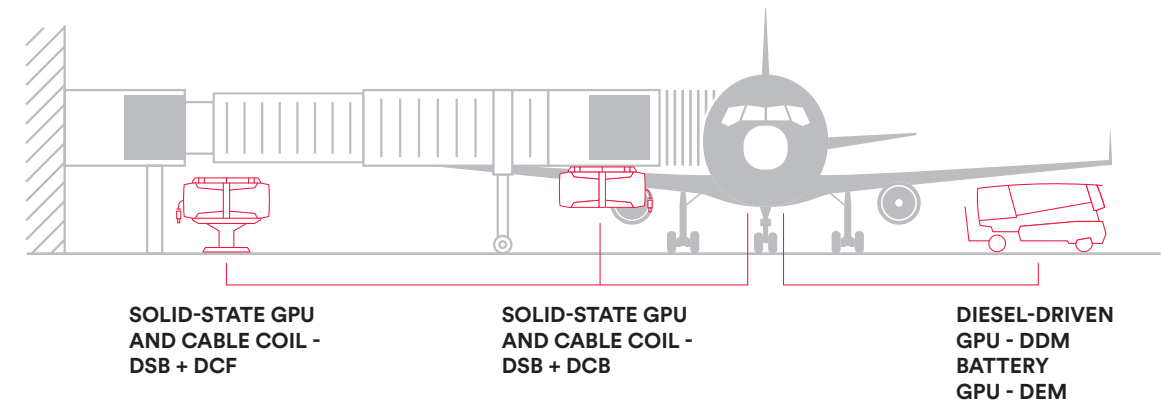
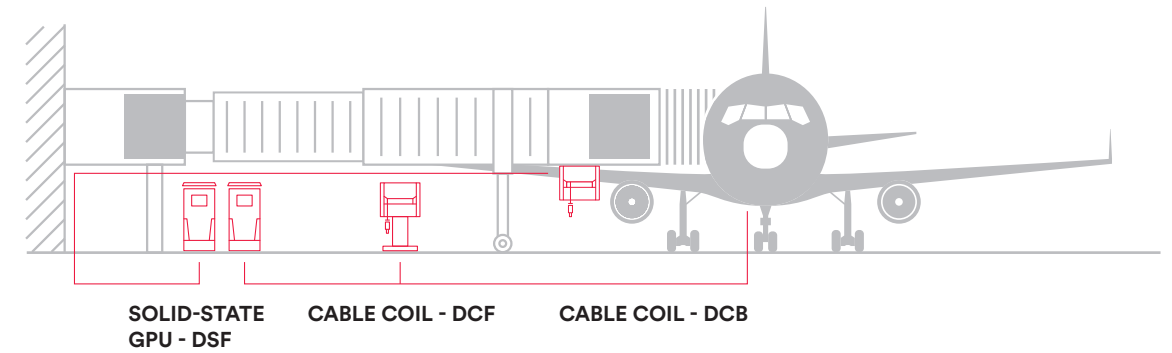
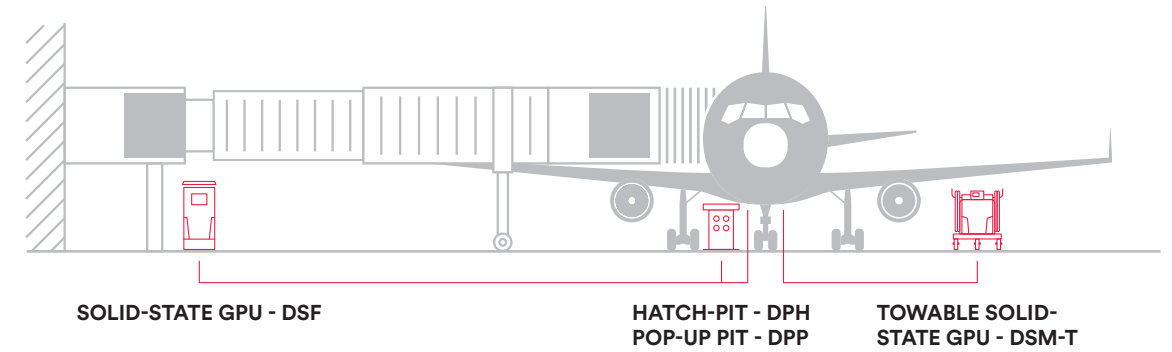


400 HZ CONNECTORS



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.



### 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.



### 02 — Mobile Version

The Dynell solid-state frequency converter is available in different mobile versions. The DSM 020-090-M is specially designed for the use in hangars. It can easily be moved by one person and has enough space to stow all input and output cables. The DSM 020-180-T is designed to be used on the apron. It can easily be hitched up and towed to wherever it is needed. Here too, all input and output cables can be easily stowed on the unit. In addition, all solid-state frequency converter, including the mobile versions, are available with simultaneous or non-simultaneous 28 VDC output.



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
- Lowest MTTR
- Plug & Play – easy installation
- Comfortably combinable with all connection systems
- Recyclable materials (PMMA)
- Easy and intuitive operation
- Different mobile versions for all fields of application available

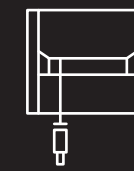
# DCB / DCF / DSB + DCB — Coil Systems Built to facilitate tasks.

## 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-frequency converter family. 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/DDM — Battery and 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.



Empower a CO<sup>2</sup> free future with Dynell's battery mobile ground power unit. The latest battery design combined with the innovative solid-state technology provides a green 400 Hz and 28 VDC power everywhere needed at non electrified places, no matter whether it is a narrow or wide body aircraft.

## Advantages

- Empower the future - Dynell CO<sup>2</sup> - free solution
- Remote access - 3G ready
- Highest efficiency due to solid - state technology
- Compact and easy to use design
- Individually scalable battery packs up to wide body aircrafts



# DMC — 400 HZ Connectors A strong connection.

## 01 — User Friendly

The Dynell 400 Hz connector fits all common aircrafts. The most important operation states of the GPU can be easily checked through the optional LED status display. Four different buttons allow easy control and an optional temperature sensor inside the power contacts protects the connector against overheating.

## 02 — Easy service

Extremely fast exchangeability of wear parts (e.g. nose, wear protection) and the two-part contacts keep maintenance time short. The extra-large connection space allows the assembly of the main wires before potting. The Dynell 400 Hz connector has two separate connection areas for easy replacement of the buttons and LEDs.



## 03 — High grade materials

Using high-grade materials, the Dynell 400 Hz connector shows extreme abrasion- and chemical resistance as well as improved mechanical, thermal and chemical properties. For optimum conductivity and extreme corrosion resistance, the silver-plated contacts of the connector are made of CuTeP.



The Dynell 400 Hz connector sets new standards. Extra-large connection spaces reduce installation time to a minimum. High-quality materials ensure extreme longevity of the wear parts. The unrivalled service-friendly design reduces maintenance and saves valuable time and money.

## Advantages

- Extra-large connection spaces
- High quality materials
- Service-friendly design
- Optimum conductivity
- Extreme corrosion resistance



# DHC / DNC — Charging Systems

## Game-changing products for your business.

### 01 — Charging at its best

The Dynell charging system can be fully customized to your needs. Whether you need AC- or DC-power – we deliver it! 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 — Intelligent communication

The charging systems are equipped with various communication capabilities. Due to the importance, it is easy to incorporate our stations into our load management and backend systems – or even in already existing systems.



### 03 — Maintenance

As with all our products, we try to use the best materials in terms of quality, maintenance requests and environmental compatibility. Based on this choice, we can guarantee long service-intervals and low maintenance costs for all our Dynell-charger-products.



Based on 75 kW power-stacks, the DHC modular Hypercharger system is the perfect solution to charge your battery-driven vehicles, such as busses, E-GPU, tractors or pushbacks. Thanks to individual configuration, the DHC System is available up to 300 kW with all prevailing charging standards. With a wide voltage range from 150 to 1000 VDC and its various communication capabilities, this charging station is something you do not want to miss in your infrastructure.

## Advantages

- Modular design
- All prevailing charging standards
- Wide output voltage range
- Various communication capabilities
- Easy installation
- Low maintenance costs
- Intuitive operation



**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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