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Potenza  
LV Distribution Grid Inverter (DGI)  
Customer Manual

CM1-2



# IMPORTANT

PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE USE

KEEP SAFE FOR FUTURE REFERENCE

The contents of this Customer Manual are subject to recurring updates and modifications, as the Potenza LV DGI undergoes regular reviews for improvements.

Before any use, please check and download the latest revision of the Customer Manual using the QR code below to stay informed about any future changes.

Hyperlink

[Manual DGI - Turbo Power Systems](#)





**PLEASE NOTE:** This document is intended for the following groups:

- The **OWNER** of the DGI
- **USERS** of the DGI including but not restricted to Installation and Maintenance personnel.

Responsibilities for the OWNER

It is the responsibility of the OWNER to ensure all USERS are able to install, maintain and operate the DGI in a safe manner.

For the purposes of this manual the OWNER is defined as:

The person, people or entity which holds legal title in the DGI. The OWNER is also a USER.

For the purposes of this manual a USER is defined as:

Anybody who comes into contact with the DGI for any purpose after the point of delivery to the OWNER. This includes but is not restricted to:

- Transportation and storage of the DGI
- Installation of the DGI
- Maintenance and inspection of the DGI
- Operation of the DGI for the purpose which it is intended.

Discharging the OWNERS responsibilities includes but is not restricted to:

- Ensuring the instructions in this manual are understood and followed at all times.
- Ensuring installation of the DGI is carried out by appropriately qualified personnel.
- Ensuring all maintenance and inspection of the DGI is carried out by appropriately qualified personnel.
- Ensuring this document is kept in a safe location where it is easily accessible. It is an essential part of the DGI system.

## Copyright

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## 1. General Information

Turbo Power Systems Limited (TPS) operates an integrated Business Management System which includes Health & Safety, Environmental & Quality Management. TPS complies with ISO 45001:2018, ISO 9001: 2015 and ISO / TS 22163:2017.

### 1.1. Product Support Contact Information


#### Turbo Power Systems - UK Headquarters

1 Queen's Park  
Queensway North  
Team Valley Trading Estate  
NE11 0QD  
United Kingdom

 +44 (0) 191 482 9200


 [info@turbopowersystems.com](mailto:info@turbopowersystems.com)

#### Turbo Power Systems - USA Office

 +1 (404) 422 5905

 [gridley@turbopowersystems.com](mailto:gridley@turbopowersystems.com)

#### Turbo Power Systems - Brazil Office


 +55 (21) 96888 2260


 [ahenriques@turbopowersystems.com](mailto:ahenriques@turbopowersystems.com)

You can contact the Turbo Power Systems Customer Support Team via the following means:

 [customersupport@turbopowersystems.com](mailto:customersupport@turbopowersystems.com)

 +44 (0) 191 482 9227

 +44 780 9656 709

 Monday to Friday (excluding bank holidays): 08:00 to 21:00 GMT\*

\*Additional support may be available outside these hours. For further details, please refer to your contract / service level agreement.

 [www.turbopowersystems.com](http://www.turbopowersystems.com)

Before contacting TPS, please ensure you have the serial number of your Potenza LV DGI to hand. Details of where to find the serial number are in section 3.5.1 of this manual. The serial number must be quoted in all communications with TPS.

### 1.2. Language

The original language of the document is English. All other language versions are translations of the original instructions.

### 1.3. Acronyms and Abbreviations

AC	Alternating Current
DC	Direct Current
DC-DC	DC-DC converter
DGI	Distribution Grid Inverter
EV	Electric Vehicle
EVC	Electric Vehicle Charger
HMI	Human Machine Interface
IT	Information Technology
kW	Kilowatt
OWNER	The Person who retains the title of the goods
PCB	Printed Circuit Board
PE	Protective Earth
PV	Photovoltaics
SiC	Silicon Carbide
SWL	Safe Working Load
TPS	Turbo Power Systems
USER	The person who uses the equipment for its intended purpose of creating the DC Microgrid
V2G	Vehicle to Grid
V2X	Vehicle to Everything

### 1.4. Figures

It is not always possible or practical to show the exact configuration of your Potenza LV DGI. Any figures used within this document are indicative and are for instruction and description purposes only.

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## 2. Safety

### 2.1. Safe Working Practices

<b>WARNING</b>
1. Only suitably trained and authorised personnel should be allowed to work on this DGI.
2. This DGI uses high voltage: all possible steps must be taken to maintain safety of the personnel and any staff working near the unit at all times.
3. Once the installation is completed, under no circumstance should the doors be opened unless undertaken by either Turbo Power Systems or an approved / trained person.

### 2.2. Precautionary Notices

	<b>WARNING!</b> <b>RISK OF ELECTROCUTION</b>	Indicates an operation, sequence, or function that, if not observed, may cause electrocution or death to personnel and/or serious damage to equipment. Strictly adhere to all warnings.
	<b>WARNING!</b> <b>RISK OF INJURY</b>	Indicates an operation, sequence, or function that, if not observed, may cause serious injury or death to personnel and/or serious damage to equipment. Strictly adhere to all warnings.
	<b>CAUTION!</b> <b>RISK OF DAMAGE TO EQUIPMENT</b>	Indicates an operation, sequence, or function that, if not observed, may cause damage or malfunction of equipment.
	<b>ATTENTION!</b> <b>OBSERVE PRECAUTIONS FOR HANDLING</b>	This unit contains Electrostatic Sensitive Devices (ESD). DO NOT TOUCH any electrical components without Anti-Static Precautions.
	<b>NOTE</b>	Provides additional explanatory information that may not be readily apparent from the text or illustrations.

### 2.3. Safety Precautions to consider when working on the equipment.

This chapter contains a list of general safety precautions. Before attempting any tasks, read and understand these precautions. Failure to do so can result in death or serious injury to individuals or damage to equipment. If in doubt regarding any of these precautions, ask for an explanation from your immediate supervisor before proceeding with any installation or maintenance task.

#### **WARNING:**

- High Risk of electrocution in this product if doors are opened.
- Lethal AC and DC Voltages are present within this Distribution Grid Inverter when it is not isolated.
- Should the doors need to be opened by either Turbo Power Systems or an approved / trained person, Isolate all supplies and allow a minimum of 5 minutes to discharge.



### 2.4. Safety Precautions during Installation, Operation and Maintenance

- Attention must be given to all precautionary notices explained in this section.
- Do not attempt to operate the DGI if there is visible damage, or the unit is displaying a fault.
- Please report any faults and or damage to the DGI immediately to the OWNER.
- Never apply power to the DGI without the doors closed.
- Always use the DGI as described.
- The DGI should always be installed to allow access and good ventilation, especially to the rear of the unit.
- Do not place any objects which could block the vents. See Appendix A Potenza LV DGI - OUTLINE of this manual for required clearances for ventilation and access.
- Do not install the DGI close to any heat sources.
- If in doubt refer to the installation drawing shown in Appendix A Potenza LV DGI - OUTLINE, with the link to the latest version, which will contain the latest information.

**REPORT ANY PROBLEMS, ISSUES & CONCERNS IMMEDIATELY TO THE OWNER AND TPS**





## 2.5. Disclaimer

The manufacturer (Turbo Power Systems) is not liable for any damages, losses, costs, expenses, or injuries incurred by any USER of the Potenza LV DGI, if such damages, losses, costs, expenses, or injuries occur as a result of failure to comply with all the instructions contained in this manual. This includes but is not limited to the following:

- Any damage or injury caused as a result of power outages or disruptions to the electrical supply of the DGI.
- Any damage resulting from accumulation of dirt or ingress of foreign substances within the DGI.
- Any damage resulting from corrosion of component parts.
- Any damage resulting from any unauthorised upgrades, enhancements or modifications to the equipment or its use.
- Any damage to the software or hardware due to any IT security problem (i.e. virus breakout, malicious hacking of the system, etc).
- Any damage or failure caused by vermin, insect infestations or the like.
- Any damage or failure resulting from faults in some other equipment connected to the scope of work.
- Any damage, injury or loss caused by hazards such as fire, flood, storm or the like, spillage or leakage of chemicals or harmful substances into the DGI.
- Any damage resulting from an external source, unprofessional, incorrect, or non-compliant installation.
- Any damage, injury or loss resulting from improper operation, negligence or unauthorised repairs by third parties.
- Any damage or injury caused by failure to comply with all safety instructions or legal standards by users of the equipment.
- Any damage caused by insufficient ventilation of the DGI.
- Any damage resulting from operation of the DGI outside of its design conditions.

## 2.6. Warranty

As per the Supply of Goods and Services agreement between Turbo Power Systems and the OWNER, the goods supplied, and all products supplied shall:

- Conform to the configuration specified and technical data, contained within section 3.3
- Be of satisfactory quality and fit for any functionality and purpose set out in the configuration specified and technical data, contained within section 3.3
- Be free from defects in design, material and workmanship and remain so for the contract specified period after delivery to the OWNER.

### 3. Product Information

#### 3.1. Functionality

The Turbo Power Systems Potenza LV DGI-phase converter is a general purpose bi-directional frequency converter, that can be used for on-grid applications.

The DGI has been designed and tested in accordance with international standards EN 62477-1 for Electrical Safety, and To IEC 61000-6-4, IEC 61000-6-2, IEC 61000-3-12 for EMC.

As illustrated in Figure 1, a TPS Potenza LV Distribution Grid Inverter (DGI) connects to the 415 VAC grid supply. This module converts the AC grid supply to a regulated 800 VDC bus. The DGI will constantly monitor and maintain this 800 VDC nominal level enabling the establishment of a DC micro grid.

The DGI is designed for continuously rated operation.

As also illustrated in Figure 1, EV Charging, Battery storage and on-site generation, for example solar PV, can be connected to the DC microgrid via their own DC-DC conversion stage. This allows for Bi-Directional power transfer to occur within the DC micro grid. TPS call this system 'Smart Fleet'.

Where specified, TPS own Velox i Ultra Fast EV Chargers connect to this 800 VDC bus via a DC Interface Unit. The Velox i Ultra Fast EVCs contain a 120 kW bi-directional DC-DC converter which controls the charge to an electric vehicle whilst providing V2G/V2X vehicle discharging capability.

An Energy Management System (EMS) controls power transfer between all connected elements within the DC micro grid. It will ensure power is always drawn from battery storage and/or solar energy, when available, at times of peak grid electricity tariff.

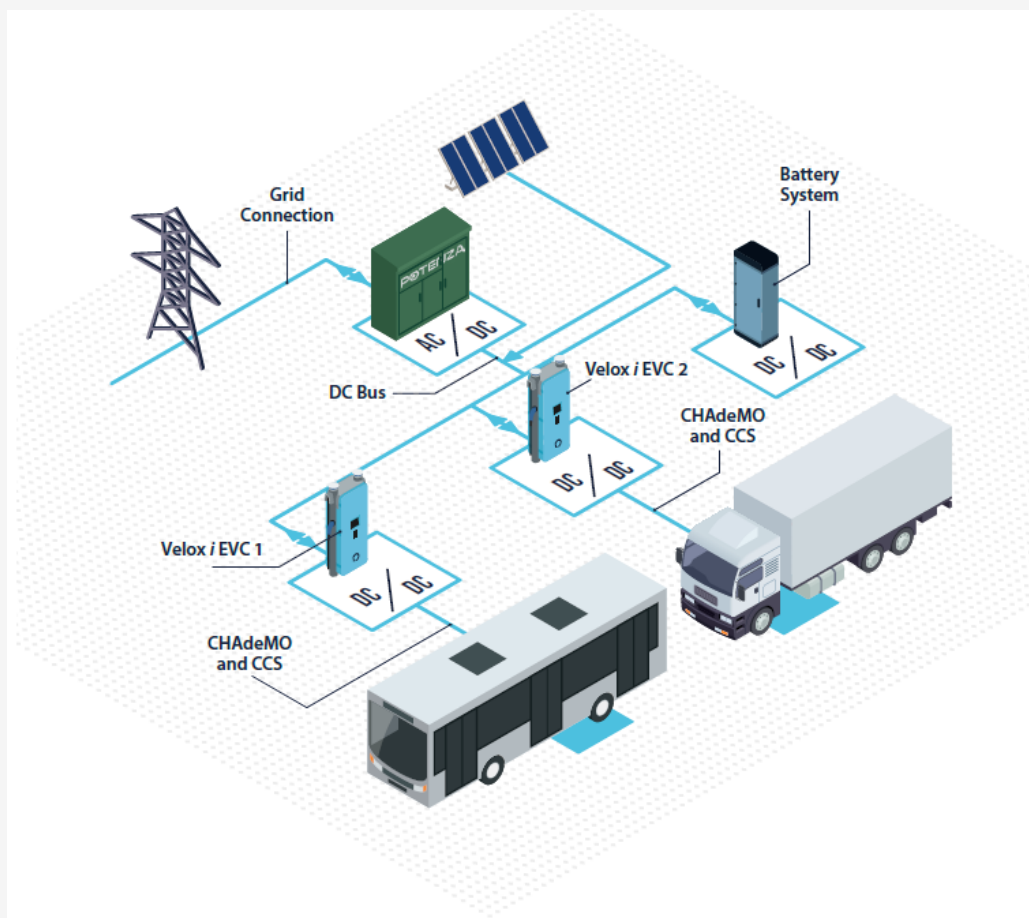


Figure 1 - A typical Potenza LV DGI 'Smart Fleet' system arrangement

### 3.2. Technical Overview

The Potenza LV DGI uses SiC semiconductor devices that have very low losses at high frequency. High frequency operation results in low audible noise with reduction in magnetics component size and weight. The AC-DC section is designed to be able to import or export power from the Power Grid (enabling V2G charging and/or V2X operation). As a result, the DGI can perform the following functions:

- Creation of a DC Micro Grid
- Bi-directional power transfer
- High efficiency
- Near silent operation

Where grid capacity is sufficient, a Potenza LV DGI can be used with one or more of TPS own Velox / EVCs to provide a 'hub and spoke' EV charging system, with V2G/V2X capability. Where grid capacity is insufficient, energy storage and on-site generation can be added to optimise charging site operational costs.

### 3.3. Technical Data

Model	Potenza LV
Rated Power	380 kVA
Rated Input Voltage	Nominal 400 V AC / 3 Phase
Rated Input Current	550 A rms
Total Harmonic Distortion	To Engineering Recommendation G5/4-1 with grid harmonic cancellation possible up to 7th harmonic
Rated Output DC Voltage	800 V DC
Rated Output DC Current	465 A DC
Peak Efficiency	98%
Ambient Temperature	-20 to +35 °C
Installation / IP Rating	Indoor / IP 21
Dimensions (without distribution box)	700 (w) x 665 (d) x 2040 (h)
Noise (not considering GRP enclosure attenuation)	<63 dBA, 5min average at 5 m
Electrical Safety	EN 62477-1
EMC Compliance	To IEC 61000-6-4, IEC 61000-6-2, IEC 61000-3-12
Application	Indoor Substation Furniture Mounted
Ambient Temp. Min	-20°C
Ambient Temp. Max	+35°C
Humidity	85% non-condensing
Pollution Degree	2 – IEC62477
Altitude	<1000 Metres
Enclosure Airflow	Fan assisted ventilation

Note: The above ambient temp max will not trip the unit, only if there is a failure in any of the components will the unit trip

### 3.4. General Arrangement of Potenza LV DGI

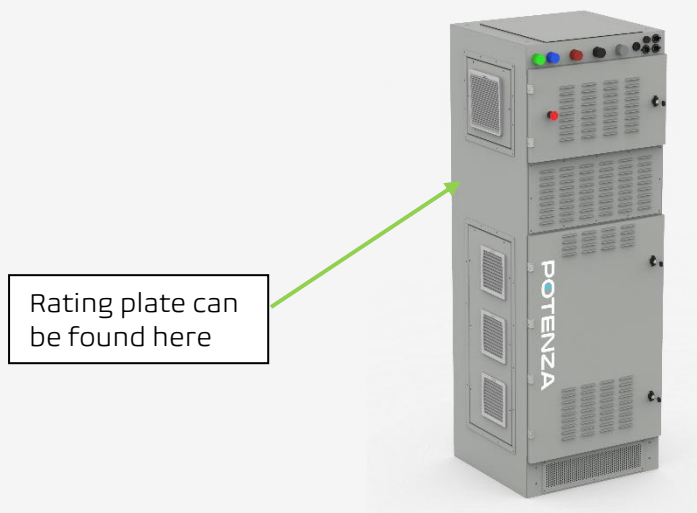


Figure 2 - Potenza LV DGI

### 3.5. General Arrangement of Potenza LV DGI with optional DC Interface Unit



Figure 3 - Potenza LV DGI with integrated DC Interface Unit



### 3.5.1. Rating plate

**PLEASE NOTE:** The rating plate is located on left-side face. Always quote the serial number when contacting the TPS Product Support Team.

## 3.6. Storage

### 3.6.1. General Storage

- The Potenza LV DGI must be transported and stored in its original packaging. TPS is not liable for any damage incurred when the DGI is stored or transported in non-TPS packaging.
- It must be stored out of direct sunlight in a dry environment.
- Always disconnect the input power before removing the DGI for storage or transport.
- Always transport the DGI in the upright position.
- Always lift the DGI crate from the base using a suitable forklift truck.

### 3.6.2. Longer Term Storage

If the Potenza LV DGI is switched off for a period exceeding 6 months, an inspection will be needed before it can be switched back on. This must be carried out by TPS or an approved / trained person. Please contact your TPS Product Support Team. Details are provided in section 1.1.

## 3.7. Packaging

### 3.7.1. DGI

The DGI is fixed onto a pallet. The DGI is encapsulated with a foil bag to prevent moisture ingress, before being enclosed by a bespoke wooden crate. This crate must be kept upright at all times. Care must be taken when removing the crate to avoid damage to the DGI.

The approximate dimensions and weight of the packaged DGI are below:

Height	2,150 mm / 83.9 inches
Width	700 mm / 27.6 inches
Depth	732 mm / 28.8 inches
Weight	540 kg / 1190 lbs with packing crate

### 3.7.2. DGI and Integrated DC Interface Unit

The combined DGI and DC Interface Unit is fixed to a mounting plinth, which is then locked onto a pallet. This is encapsulated with a foil bag to prevent moisture ingress, before being enclosed by a bespoke wooden crate. This crate must be kept upright at all times. Care must be taken when removing the crate to avoid damage to the contents.

The approximate dimensions and weight of the packaged Potenza LV DGI and DC Interface Unit are below:

Height	2,150 mm / 83.9 inches
Width	1406 mm / 55.4 inches
Depth	732 mm / 28.8 inches
Weight	825 kg / 1820 lbs with packing crate

## 4. Installation

**PLEASE NOTE:** The Potenza LV DGI and any combinations must only be installed by Turbo Power Systems or a qualified Installation Engineer.

The qualified Installation Engineer must:

- Have a full working knowledge of the DGI and any DGI combinations, and their safe installation.
- Be qualified according to the applicable local rules to do the work e.g. in the UK, BS 7671 18th Edition, in the USA, NFPA 70, National Electrical Code (NEC)
- Comply with the instructions contained in this manual.

### 4.1. Tools required to install and maintain the Potenza LV DGI and any combinations

This is a non-exhaustive quick reference list of the essential tools required to carry out the key elements of the installation:

- Electrical cable preparation tools to prepare the cables for the AC and DC connections.
- Torque wrench, range 4.5-30 Nm.
- 5mm AF allen key driver for the PowerSafe termination of the 3P conductors.
- 6mm AF allen key driver for the attachment of the DC and PE conductors.

### 4.2. Mechanical Installation of the Potenza LV DGI and any combinations

The location of the Potenza LV DGI and if specified any connected elements, must conform to the following requirements. Prior to final positioning of the cabinets check settings and necessary clearances relative to each other. The 100m distance shown below is due to communication system limitations.

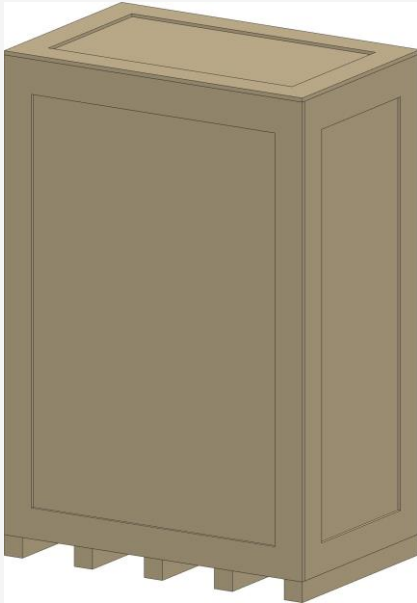
See Appendix A Potenza LV DGI - OUTLINE for the latest information relating the installation and details of recommended clearance zones for the safe operation and maintenance of the units.

### 4.3. Unpacking the Potenza LV DGI (Standalone, no combinations)



Before attempting to unpack the Potenza LV DGI, perform a check of the transport indicators. There are 2 types of indicators fitted; one to record shock, the other to record tilt. If either of these has been triggered, they will show a **RED** signal.

If either indicator is showing a red signal, a record of this must be made on the delivery paperwork. Next, inspect the packaging fully. If there is any visible damage, pause the unpacking process until the carrier can attend to make a full inspection and witness the rest of the unpacking process.



The packing crate is shown above. To help with removal, the main screws are circled with a **RED** marker pen as shown. For details of the construction of the packing crate, please refer to **Error! Reference source not found.** Disassembly is the opposite of assembly. Always remove the top panel first. If there is a protective foil bag surrounding the DGI is sealed during packing to protect it from moisture. This should still be intact. Carefully cut the foil bag open and remove it.

If the DGI is found to be damaged in any way following removal of the external packaging, **STOP** immediately. Inform the customer and TPS urgently, taking and sharing photographs to indicate the areas and severity of any damage. See section 1.1 for contact details. You will be informed of the next steps.

If there is no visible damage, proceed as below.

#### 4.4. Lifting and positioning the Potenza LV/DGI (Stand Alone, no combinations)



The DGI must be lifted from the top with a Fork Lift Truck. Lifting eyes and slings suitable for a SWL of 300 kg / 662 lbs must be used. It is the responsibility of the OWNER to ensure that all lifting and handling operations are carried out in a safe manner and are compliant with any local regulations.

Please refer to the following steps for information on lifting. Please also pay particular attention to any Health and Safety requirements which may apply (e.g. working at height, selection and use of appropriate lifting equipment, use of appropriate PPE etc).

1. Lift the DGI into position locating the unit in relation to the AC cables.
2. Fix the DGI directly to the concrete foundation using suitable fixings.
3. Align the DGI, tightening all fixings to recommended torques.

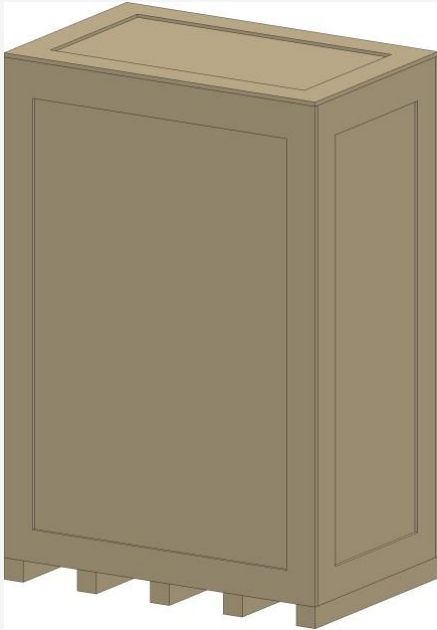
See Appendix A Potenza LV DGI - OUTLINE for the latest information relating the installation.

#### 4.5. Unpacking the Potenza LV DGI and integrated DC Interface Unit



Before attempting to unpack the Potenza LV DGI and integrated DC Interface Unit, perform a check of the transport indicators. There are 2 types of indicators fitted; one to record shock, the other to record tilt. If either of these has been triggered, they will show a **RED** signal.

If either indicator is showing a red signal, a record of this must be made on the delivery paperwork. Next, inspect the packaging fully. If there is any visible damage, pause the unpacking process until the carrier can attend to make a full inspection and witness the rest of the unpacking process.



The packing crate is shown above. To help with removal, the main screws are circled with a **RED** marker pen as shown. For details of the construction of the packing crate, please refer to **Error! Reference source not found.** Disassembly is the opposite of assembly. Always remove the top panel first. If there is a protective foil bag surrounding the DGI and DC interface Unit is sealed during packing to protect it from moisture. This should still be intact. Carefully cut the foil bag open and remove it.

If the DGI and DC Interface Unit is found to be damaged in any way following removal of the external packaging, **STOP** immediately. Inform the customer and TPS urgently, taking and sharing photographs to indicate the areas and severity of any damage. See section 1.1 for contact details. You will be informed of the next steps.

If there is no visible damage, proceed as below.

#### 4.6. Lifting and positioning the Potenza LV DGI and Integrated DC Interface Unit



The DGI and Integrated DC Interface Unit must be lifted from its transport base with a Fork Lift Truck suitable for a SWL of 850 kg / 1874 lbs. Fork Lift channels are provided in the mounting plinth. It is the responsibility of the OWNER to ensure that all lifting and handling operations are carried out in a safe manner and are compliant with any local regulations.





Please refer to the following steps for information on lifting the DGI and Integrated DC Interface Unit. Please also pay particular attention to any Health and Safety requirements which may apply (e.g. working at height, selection and use of appropriate lifting equipment, use of appropriate PPE etc).

1. Fork Lift DGI and Integrated DC Interface Unit into position locating the DC and AC cables in relation to the unit.
2. Fix the DGI and Integrated DC Interface Unit directly to the concrete foundation using suitable fixings.
3. Connect and align the DGI and Integrated DC Interface Unit, tightening all fixings to recommended torques.

See Appendix A Potenza LV DGI - OUTLINE for the latest information relating the installation.

#### 4.7. Electrical Installation of the Potenza LV DGI (stand alone no combinations)

The information provided in this section is for guidance only, for the latest details on the Electrical installation please refer to TPS drawing number 002792-outline 'Potenza LV DGI Unit Outline'. This drawing contains dimensions and details relating to this installation. It can be found here: Appendix A Potenza LV DGI - OUTLINE. The Potenza LV DGI electrical supply must be delivered via a suitable, lockable isolation box supplied by the Owner.

##### 4.7.1. Cable Entry Points

The DGI 3P input cables connect externally to it as shown in Figure 5 - DGI Power and Communication inputs

##### 4.7.2. Internal Termination Details

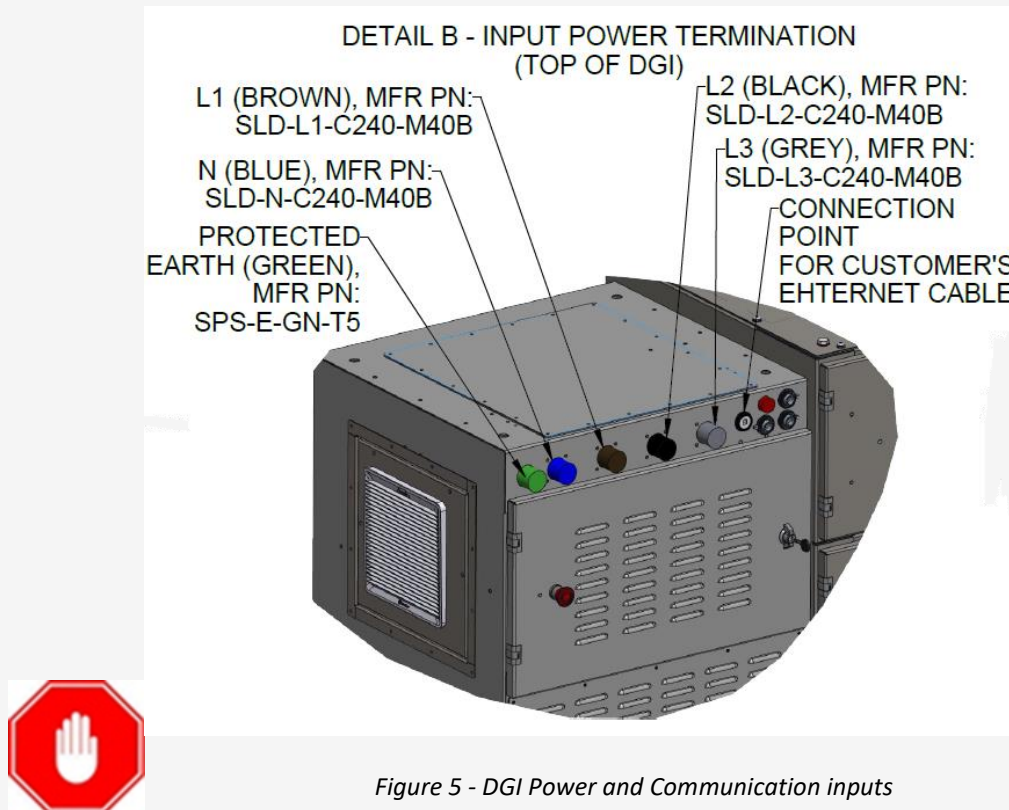
To make the internal electrical connections, the DC output gland plate will have to be removed. The location of the DC Output gland plate is shown in Figure 4 - Gland plate for DC output cables. Prior to undertaking any connection work, ensure the DGI is fully electrically isolated.

All power cables must be cut to a suitable length and terminated in an approved manner using the correct tooling. Use the following information as a guide.

Figure 4 - Gland plate for DC output cables

Gland Plate for DC output cables

### 4.7.3. Connection of 3P 415VAC Cables and PE to the Potenza LV/DGI



The connectors used for the 3P 415VAC inputs are manufactured by Phase 3 Connectors and are of the 'Powersafe type', 500 Amp rating. A 5mm allen key driver will be required. Torque fixings to 10.5 Nm.

Information on how to terminate the connectors can be found here:-  
<https://www.distributionzone.com/getattachment/b15efbd0-d570-4a8c-bd12-497bc897db46/Powersafe-Connector-Assembly-Guide.pdf.aspx>

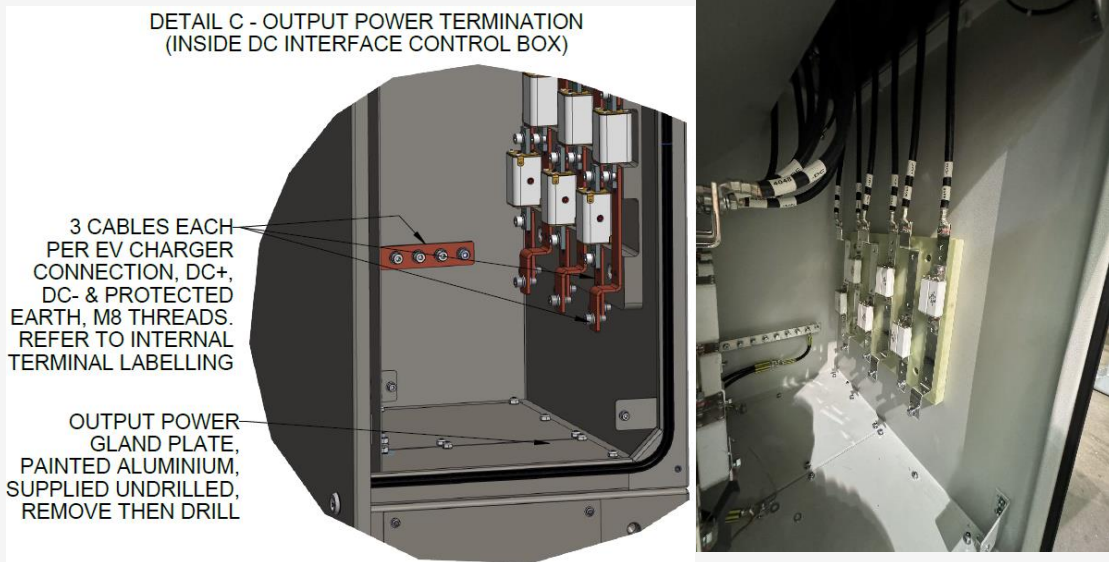
## 4.8. Electrical Installation of the Potenza LV/DGI and DC Interface Unit

### 4.8.1. Cable Entry Points

The DGI 3P input cables connect externally to it as shown in Figure 5 - DGI Power and Communication inputs

The DC Interface Unit output cables connect into it from below through a gland plate as shown in Figure 6

#### 4.8.2. Internal Termination Details



*Figure 6 - 800VDC Positive (+) and Negative (-) terminals for output cables*

To make the internal electrical connections, the DC Interface Unit doors will have to be opened.

Prior to undertaking any connection work, ensure both the DGI and DC Interface Unit are fully electrically isolated.

All power cables must be cut to a suitable length and terminated in an approved manner using the correct tooling. Use the following information as a guide, and reference to the suggested fixing torques.

#### 4.8.3. Connection of 3P 415VAC Cables and PE to the Potenza LV/DGI

Follow the instructions in section 4.7.3



#### 4.8.4. Connection of the DC supply cables out of the Potenza LV DGI DC Interface Unit

The required fixings will be fitted to the attachment points. M8 Lug crimps to suit the DC and PE conductors will be required. Using a 6mm Allen Key driver and torque wrench, tighten the fixings to 10.5Nm. **DO NOT OVERTIGHTEN!**

#### 4.8.5. Connection of Communications

Depending upon specification, there may be a requirement to connect an ethernet communications and a Can-Bus cable to the Potenza LV DGI. These should be connected to the connection points shown above in Figure 5 - DGI Power and Communication inputs. Refer to specific installation drawing for details of cable types.

## 5. Commissioning and Operation

Please note: Commissioning can only take place once the installation stage has been completed correctly and in full.

The commissioning of the Potenza LV DGI is a detailed and complex process which must only be undertaken by either Turbo Power Systems or an approved / trained person.

To arrange commissioning, or in the event that your Potenza LV DGI needs to be relocated or decommissioned, please contact your TPS Product Support Team. Details are provided in section 1.1.

### 5.1. Potenza LV DGI Operation

The stand alone Potenza LV DGI is simple to operate. It is switched on by energising the main isolator for the 3P 415V incoming supply after first ensuring that the internal MCB's are not tripped and the E Stops are unlocked. The RED STATUS LED on the DGI will illuminate to indicate that mains power is present.

If an integrated DC Interface Unit is fitted to the DGI, follow 0 above, firstly ensuring that the DC isolators within this unit are in the OFF position. The RED STATUS LED on the DGI will illuminate to indicate that mains power is present.

The HMI on the lower door of the DC Interface Unit is for TPS diagnostic use only. It is not required for the operation of the DGI.

When the DC ring main has been established, the DC loads can be switched on using the isolators inside the DC Interface Unit. See Figure 8 - DC Isolators **Error! Reference source not found.** for location and information.

If there are any problems with operation, please contact your TPS Product Support Team. Details are provided in section 1.1.



DC Emergency Stop  
HMI Screen

Figure 7 - Detail of DC Isolation Box lower door

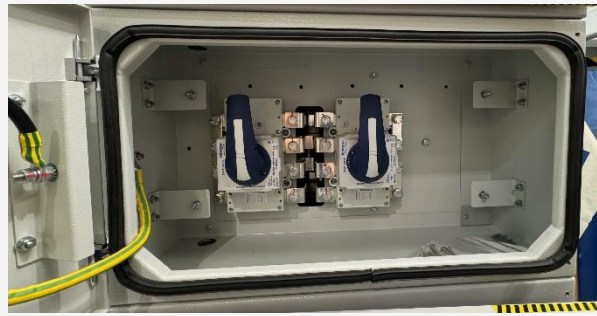


Figure 8 - DC Isolators

## 6. Preventative Maintenance and Inspection Information

**PLEASE NOTE:** the Potenza LV/DGI contains no USER serviceable components. All repairs and maintenance can only be carried out by either Turbo Power Systems or an approved / trained representative. Please refer to customer contractual agreements for specific details.

However, there are preventative maintenance and inspection activities which can be carried out by the USER.

TPS recommends that all preventative maintenance and inspection activities should be recorded with a date using the form provided in Appendix B Installation Checklist Document.

The schedule of activities and frequency is shown below. Please use this for reference before completing the record form in Appendix C Maintenance & Inspection Record

Ref No.	Equipment Part No. / Description	Interval (Months)	Type of Inspection
6.1	Cleaning the Exterior of the Potenza LV/DGI	3	Visual and clean
6.2	Air Ducts	3	Visual / clean as required
6.3	Enclosure and Doors	6	Visual
6.4	LED	12	Visual
6.5	HMI	12	Visual

## 6.1. Cleaning the Exterior of the Potenza LV/DGI



When cleaning the exterior, do not use high pressure water jets (pressure washer or steam cleaner) as there is a risk water can leak into the interior and cause serious damage to internal components and / or potentially electrocution to persons.

1. Rinse with low pressure tap water to remove rough or loose dirt.
2. Apply a mild detergent-based cleaning solution if required and let it soak.
3. Manually remove dirt with a non-abrasive tool such as a sponge or brush.
4. Rinse with low pressure tap water.

If there are any visible defects, corrosion, or damage; this should be reported to the OWNER of the Potenza LV/DGI.

## 6.2. Air Ducts and Vents

Locate all ducts using the image below as a guide. Ensure that all vents are free from debris such as leaves or rubbish.



### 6.3. Enclosure and Doors

Locate all doors using the image below as a guide. Ensure that all doors are free to move and that the locks work. Doors should be kept locked at all times!



### 6.4. LEDs

Locate Status LED... make sure it is clean and damage free.

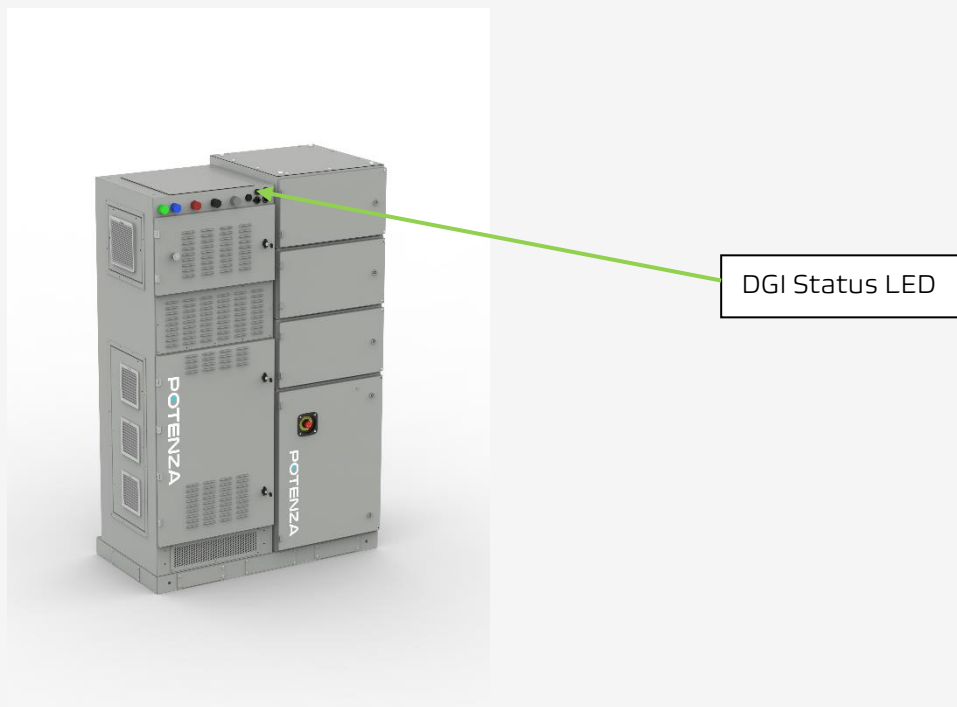


Figure 9 - DGI Status LED location



## 6.5. HMI (If fitted)

Locate the HMI. If fitted it will be in the lower door of the DC Interface Unit.

Ensure the display is working, it will be displaying the status of the DGI.



## 7. Trouble shooting

The table below shows a list of faults that may arise and actions that will help with troubleshooting. If they do not, please contact TPS for support. Refer to section 1.1 for details on how to do this.

### 7.1. Fault codes and actions

1	Status LED not illuminated	Check that the DGI power supply is good. If yes, call TPS
2	No DC output	Call TPS
3	HMI no display	Call TPS

## 8. End of Life Disposal of the DGI or component parts of the DGI



Incorrect waste handling can have a negative effect on the environment and human health due to potential hazardous substances. With the correct disposal of this product, you contribute to reuse and recycling of materials and protection of the environment.

- Obey the local law and rules when you discard parts, packaging material or the DGI.
- Discard electrical and electronic equipment separately in compliance with the WEEE - 2012/19/EU Directive on waste of electrical and electronic equipment.
- As the symbol of the crossed out wheeled-bin on your DGI indicates, do not mix or dispose the DGI with your household or commercial waste, at the end of use. Instead, hand the DGI over to your local community waste collection point for recycling.
- For more information, contact the Government Waste-Disposal department in your country.



## 9. Document History

Revision number	Revision date	Summary of changes	Changed by
1	12/07/2024	New document	A Lister



## 10. Appendix A Potenza LV DGI - OUTLINE

Indicative information only. Dimensions may be subject to change. Latest version can be found here:



## 11. Appendix B Installation Checklist Document

Link to latest version:-

Checklist items	Completed?
Do you have all necessary tools as set out in section <b>Error! Reference source not found.</b> ?	
Have you unpacked the Potenza LV DGI as set out in section <b>Error! Reference source not found.</b> / 4.6?	
Have you lifted the Potenza LV DGI in location as set out in section 5 / 4.7?	
Have you mechanically installed the Potenza LV DGI as set out in section <b>Error! Reference source not found.</b> ?	
Have you electrically installed the Potenza LV DGI as set out in section <b>Error! Reference source not found.</b> 8 / 4.9?	

Completed By	Date



## 12. Appendix C Maintenance & Inspection Record

Link to the latest version:-

Ref No.	Equipment Part No. / Description	Interval (Months)	Type of Inspection
6.1	Cleaning the Exterior of the Potenza LV/DGI	3	Visual and clean
6.2	Air Ducts	3	Visual / clean as required
6.3	Enclosure and Doors	6	Visual
6.4	LED	12	Visual
6.5	HMI	12	Visual



### 13. Appendix D – Packing

Link to the latest version:-



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