

GROUND-BREAKING GRID IMPROVEMENT TECHNOLOGY
FOR A LOW CARBON FUTURE



TURBO POWER SYSTEMS
Powering Intelligent Solutions



DISTRIBUTION GRID INVERTERS

Supporting DNOs and Private Business with their Low Carbon Initiatives

Turbo Power Systems offer a unique range of inverters that enable both Distribution Network Operators and Private Businesses to maximise the available capacity from their existing electricity networks and supplies.

BENEFITS

- ✓ Maximises the capacity of existing electricity supplies
 - Balancing of phase Power & Voltages
 - Elimination of network harmonics
 - Correction of Power Factor
- ✓ Reduced network disruption for network operators
- ✓ Faster Electric Vehicle charging connection offers
- ✓ Avoid prohibitive distribution network upgrades
- ✓ Reduced electricity use age and cost.

APPLICATIONS

- ✓ Electricity Distribution Network Optimisation
 - Soft Open Points
 - Resilience Converters
 - STATCOM & Voltage Regulator
- ✓ Uninterruptible Power Supplies
- ✓ Micro Grid Creation & Management
- ✓ Electric Vehicle Charging – Road, Rail and Marine
- ✓ Distributed Generation



2015 UK Energy Innovation Centre award winner for
“Best Electricity Network Improvement”



Distribution Grid Inverters (DGI) from TPS are unique inverters that can be used in numerous applications due to their ability to maximise capacity from the incoming electricity supply and, if required, form and manage micro grids for creation of additional localised capacity. Distribution Network Operators can use the DGIs to create a smarter grid, deploying it for Soft Open Points, Resilience schemes and Voltage Regulations devices, such as STATCOM, to dynamically maximise network capacity and power quality. Private Business can use DGIs for connection of Distributed Generation, creation of Uninterruptible Power Supplies and even to facilitate Electric Vehicle charging where otherwise expensive network upgrades would be required. The DGI enables EV installers and operators to create localised capacity through the creation of a DC micro grid to support chargers, storage and on-site generation. Additionally, or even where installed in isolation, the DGI optimises the existing AC supply capacity by improving power quality and balance of phases that can otherwise be unbalanced where using grid supplied fast chargers hence, enabling the EV charge point operator to deploy more chargers for a given electricity supply capacity and availability. Using latest Silicon Carbide power semiconductor device technology, the DGI is totally silent and achieves outstanding efficiency whilst being only air cooled to maximise reliability and ease of installation.

This exceptionally flexible piece of equipment is compatible with TPS' DC supplied, ultra-fast **VELOX** rapid chargers and **PONTIS** battery storage and distributed generation converters. This enables the configuration of truly optimised systems for your application that will maximise your return on investment.

Model	DGI-80	DGI-240	DGI-400
Installation & IP Rating	Indoor – IP 54	Outdoor – IP 56	Indoor – IP 32
Power Rating	80 kVA	240 kVA	400 kVA
Efficiency	98.5%	~98.5%	~98%
Dimensions			
Without neutral cabinet option	800 (w) x 600 (d) x 1900 (h)	<2560 (w) x 532 (d) x 1710 (h)	700 (w) x 665 (d) x 2040 (h)
With neutral cabinet option*	N/A	<2560 (w) x 532 (d) x 1710 (h)	1400 (w) x 665 (d) x 2040 (h)
Phase Balancing capability*	N/A	Operation at up to 100% phase-rating imbalance possible	
Switching Frequency	20 kHz		
Noise	<56 dBA		
Ambient Temperature	-20 to +40 °C		
Connection Voltage	400 V / 3 Phase		
Total Harmonic Distortion	To Engineering Recommendation G5/5-1 with harmonic cancellation possible up to 9 th harmonic		
Electrical Safety	CE conformity according to EMC and LV directives		
EMC Compliance	To EN 61000-4 parts 2,4,5,6 and 11 & EN 61000-6-4		

*NOTE: Addition of 'neutral cabinet' enables phase power balancing



DGI-240 Outdoor Installation



Installation with 3 off DGI-400 and neutral cabinet for Soft Open Point



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