

## Frequency Converters

Dubas is a leader in building Frequency converters to the customer's demand. Normally, these frequency converters are for providing 400Hz or 800 Hz or Variable frequency applications. Some of the types of frequency Converters supplied by Dubas include-

- 100KW rated 300-800 Hz, variable voltage Frequency Converter for Avionics test labs and ground power applications for avionics.
- 60KVA frequency Converters on Trolleys for Airport mobile ground power applications.
- Modular, 19" rack 3KVA frequency converters for Aeronautical lab applications.
- 2000 Hz frequency converter for Machine load application.
- Frequency Converters for Naval applications.
- 400 Hz Frequency Converters for Radar Applications.
- 160KVA 400Hz system for Airborne Testing Centre.



## Universal Frequency Converter

Dubas Universal Frequency Converter is a top-of-the-line product for specific application. This system provides power conversion from 50 Hz to 400 Hz or from 400 Hz to 50 Hz conversion in the same unit. This is a bi-directional system with input and output being made interchangeable. The product is one of the very High density power system, providing 45KVA of power within a weight of 75 kgs. the system is a water-cooled system, with all standard Dubas features included.

- 45 KVA rating achieved in a dimension Of 600 x 700 x 1200 mm (W x D x H) weighing 75Kgs.
- Load and source are interchangeable, with 50 to 400 Hz or 400 to 50 Hz conversion from same converter.
- DSP based digitally controlled system.
- System with near unity power factor and current harmonics limited to 5% on either side of input operation.
- Water cooled model.



## Clients & Approvals

• AERONAUTICAL DEVELOPMENT AGENCY (ADA) • AERONAUTICAL DEVELOPMENT ESTABLISHMENT (ADE) • BHARAT ELECTRONICS LIMITED • BRAHMOS AEROSPACE PVT LTD • CENTER FOR AIRBORNE SYSTEMS • CUMMINS GENERATOR TECHNOLOGIES • DEFENCE RESEARCH DEVELOPMENT ORGANIZATION • ECIL • ELECTRONICS AND RADAR DEVELOPMENT ESTABLISHMENT (LRDE) • GODREJ & BOYCE LTD • HONEYWELL • HAL • LARSEN & TOURBO LTD (HED) • NAL • RESEARCH & DEVELOPMENT ENGINEERS • TATA POWER LTD (SED)

## Service Support

Dubas provides pan India service support through 24 regional service centers. All the regional service centers are handled by trained Dubas personnel. Essential spares are made available through local stock of spares. Dubas provides product services its international customers by customer training as well by deputation of its service personnel to such sites.

• Ahmedabad • Bangalore • Bellary • Bhopal • Bhubaneshwar • Cochin • Coimbatore • Chennai • Gulbarga • Goa • Guwahati • Hyderabad • Jaipur • Karwar • Kolkata • Lucknow • Mangalore • Mumbai • Mysore • Nagpur • New Delhi • Pune • Surat • Visakhapatnam



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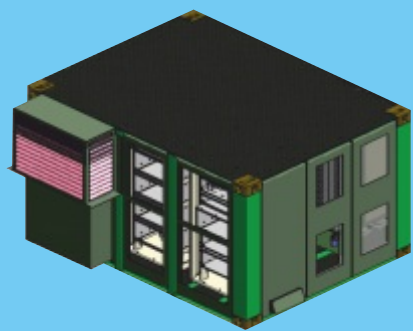
## The Power To Go On

Defence Power Systems



DUBAS has been a leader in power electronics products and systems catering to most of the applications of Industry, Commerce, Defence and Railways. Dubas provides one of the largest range of options for the Defence power electronics system needs. Dubas started its foray into Defence Electronics in the year 1997 and has developed wide range of solutions to the demanding needs of Indian Defence, specially in the Missile launching Power Systems and allied moving vehicle applications.

## Performance by Design - Qualification by Testing



CONTAINERIZED POWER SYSTEM

DUBAS specializes in building power electronics systems for Army, Navy, Air force or any of the stringent application needs of the customers. The company has the expertise to build systems from small power conversion to large 300KW power containers, complying to military grade. Dubas has been involved in various of the defence programs like BrahMos Missile, Akash Missile, MRSAM programs etc., to develop critical power system. Dubas brings tremendous advantage to its clients with its knowledge and experience of having designed and executed several kinds of power electronics systems for Indian Defence establishments.

### AC-DC CONVERTER MODULE



### DC-AC CONVERTER MODULE



### DC-DC CONVERTER MODULE



- Dubas has developed several breakthrough technology products for providing solutions to the challenging defence application requirements.
- Ruggedized constructions complying to 9G vibration standards, tested module wise and system wise.
- Systems have undergone EMI / EMC compliance's, meeting 461-E levels at considerable higher ratings for ground power system applications for Missile Launchers.
- Systems and system modules have undergone tests for extreme operating condition at -30° C and +55°C and storage conditions at -40° C and +70°C.
- Systems have undergone altitude and tropical tests to ensure the operation capability of the system in the high altitude areas and in difficult tropical conditions.
- Modular construction is provided for ease of maintenance and spares management from base camps.
- The dimensions can be matched to meet the customer applications. Power blocks can be realigned to accommodate small form factor.
- The VSG technology from Dubas has provided a great capability "POWER ON THE MOVE" for powering Defence Systems in moving vehicles.
- Dubas provides end to end solutions to defence requirement covering conceptualization, design, manufacturing, quality tests and documentation. Further Dubas provides continuous field trial test support, sometime extending to year long programs to achieve overall defence acceptance. Dubas provides prompt product support through strategically located 24 service centers across India.

## VSG Technology – POWER ON THE MOVE

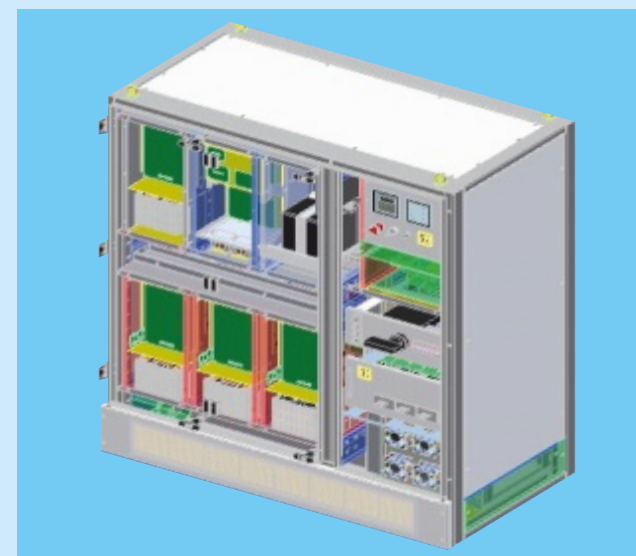
Dubas is a pioneer of VSG (Variable Speed Generator) based power technology in India. VSG based system draws the power from the vehicle engine from a Power Take Off (PTO) point of moving vehicle (TATRA truck) through a permanent magnet alternator and converts this into a useable power at specified voltage and frequency to feed missile operation and launching systems. This can be further converted to other AC and DC power blocks as desired to support other auxiliary loads. The system can also be configured for redundancy. Battery block is also added as a back up source. It can also operate on mains utility whenever available (at the vehicle maintenance locations). The whole system is containerized and has passed all the defence standards including EMI / EMC and road-ability tests. All the sub modules are compliant to standards.



## SYSTEMS OFFERED

- Containerized VSG based power supply system. This is a complete system with engine, permanent magnet alternator, power rack, battery systems, remote operation interfaces and all accessories compliant to JSS 55555 / MIL standards.
- Power Rack: Dubas offers customized power racks with provisions for AC, DC power as required for the application. Systems are modular, ruggedized and built to military grade.
- Frequency Converter: Dubas frequency converters are built to meet defence standards such as MIL and JSS 55555 and are built to one of the most challenging form factors.
- UPS Systems: Dubas UPS systems are built on modular format, with form factors meeting the application demand. Systems are compliant to MIL / JSS 55555 standards. NEMP Compliant Systems are also offered. Systems are offered from 2 KVA to 300 KVA rating in customer specified configuration.
- Dubas offers equipments to meet any non standard requirement of power electronics systems with ruggedization, standards compliance, form factor restrictions and extreme operating conditions.

## Ruggedized UPS Systems



Dubas being a large supplier of Industrial UPS Systems has ruggedized the UPS Systems for the Military applications. The UPS Systems are available in modular constructions as well full built configurations.

The systems have gone through full qualification tests including MIL compliance tests for the EMI / EMC standards. The systems are completely ruggedized for installations in Military vehicles. IP rating can be complied to desired levels.

Systems are available for full range from 3KVA to 300 KVA and can be built to meet the NEMP compliance. Systems can be built in various configurations for meeting the desired levels of redundancy. System interface for remote monitoring and control can be configured to meet the application requirements.