



Industrial Corporation U.S.A.

INDUSTRIAL FREQUENCY CONVERTER 1- 200 KVA

INTRODUCTION

These range of frequency converters are primarily used in Defense and Avionics applications for providing ground power for the instruments and related loads. Powertech offers Industrial Frequency Converter wide range of products to meet such application needs with specified input or output voltage and phases. The systems can be built to comply with specific customer requirements of dimensions, operating conditions and standard compliance. The IFC modular microprocessor based design makes it incredibly flexible and thus easy to meet almost any build requirement.

PRINCIPLE

A frequency converter converts one alternating current with a certain frequency and voltage (eg. 415VAC/50Hz) into another alternating current with another frequency and voltage (eg. 115VAC/400Hz). With the converted voltage and frequency the consumer is supplied.

The Power Factor Corrected rectifier converts the single or three phase mains supply into DC, the PWM inverter then switches the DC back to AC at the desired frequency and voltage, the output transformer provides Galvanic Isolation which isolates the input and output from each other.

APPLICATION

- Naval applications
- Industrial Test set up
- Standards Laboratories
- Automatic Test set up
- Air conditioning equipment
- Medical equipment CAD/CAM
- Transportation system
- Telecommunications satellite system (specially 400 Hz)
- Air navigation, water-borne carrier and missile system (specially 400 Hz)
- National defense, military research institutes. (specially 400 Hz)
- Electrical Motor

MAIN FEATURES

- Green environmental protection design
- Galvanic isolation with grounded neutral
- High efficiency, reliable, proven design
- High Frequency microprocessor controlled pulse width modulation (PWM) IGBT inverter
- Built in active input power factor controller
- Low distortion rate, high stability, well noise filtering function
- Pure sinusoidal output waveform and excellent transient characteristics thanks to advanced predictive waveform control.
- Reliable performance even on highly unbalanced load and line conditions.
- Excellent diagnostics (processor based) and remote monitoring facility.
- With overload capability
- All redundancy for critical applications.

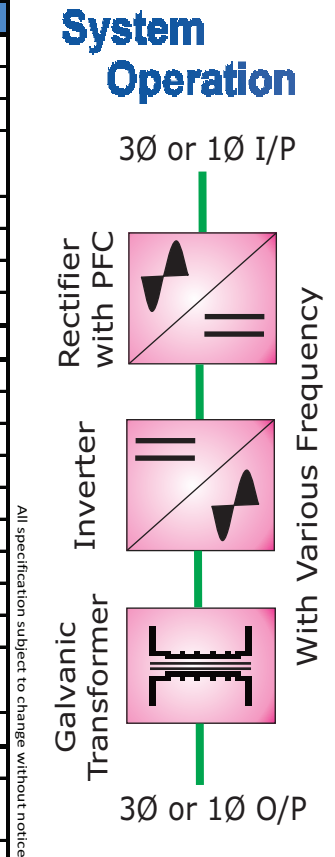
OPTIONAL FEATURES

- Extreme environment / operating condition compliance
- Single or double pole output circuit breakers can be fitted internally to eliminate the need for an external distribution board.
- An impact printer is available for hard copy printout of Data logger
- RS232 Port for remote monitoring Software
- SNMP Adapter for remote monitoring via LAN
- AC output Earth Leakage protection can be set to 30/100/300mA depending on application
- Battery backup (IFC+UPS): VRLA, 10 Year life at 20 Degrees C and complies with BS EN60896-2
- Display displayed in Amps / KVA / % Load
- High IP rating available(Maximum Ip55)
- Also provides a remote EPO (Emergency Power Off) which turns the inverter off
- Ground Fault Monitor
- Remote alarm panel which can be connected up to 100 meters away by 4 core cable for remote monitoring of system. Consists of LED display with audible alarm and silence button.

TECHNICAL SPECIFICATION

Nominal Capacity of Apparent Power(kVA)		1 kVA to 200kVA
Input / Rectifier	Nominal Input voltage	220/380 VAC, 230/400 VAC, 240/415 VAC
	Range	-10% ;+15 %(>±15 % is available upon request)
	Phase	3 Phase+N+G / 1 Phase+N+G
	Type	Full wave controlled thyristor / diode bridge with IGBT power factor correction – microprocessor controlled
	Nominal Input frequency	50Hz±5 %; 60Hz±5 %
	Inrush Current	No greater than 100% of full load current
	Power Factor	0.99 at full load
	Phase Rotation	Any
	Inverter	Type
Nominal Output Voltage		220/380 VAC, 230/400 VAC, 240/415 VAC
Voltage Stability		Static +-1%, Dynamic +-6%
Phase		3 Phase+N+G / 1 Phase+N+G
Load Power Factor		0.3 lag to 0.3 lead
Frequency stability		50, 60 or 400Hz +-0.1% (other frequencies available on request - 16-850Hz)
Crest Factor		>3:1
Waveform Distortion		Sine wave, Linear load<3%; Non-linear load<5%
Dynamic response		Instant voltage<±5%(From 0 to 100 %), Instant recover time < 10mS
Unbalanced Load Voltage		<±5 %
Overload Protection		120% continuous; 121% for 2 minutes; 160% for 5 seconds without reduction in output voltage
Efficiency	90-93% depending on system	
Protection *	Input protection	DC over-voltage protection; mains low protection; input surge protection
	Output protection	Electronic overload; short circuit; over-temperature; inverter over voltage; inverter under-voltage; low voltage shutdown
	Temperature protection	Ambient over temperature & Inverter over temperature protection
	Hardware Failure protection	Breaker cut off; Breaker overload; Power component over current/over voltage protection
Standard	Compliance	BS EN 50091-1 (Safety);BS EN 50091-2 (EMC);BS EN 61000-3-4 (Harmonics)
	US standard	Manufacturing following UL, ANSI, NEMA, IEEE standards is available upon demand
	Quality	ISO9001:2000
General Parameter	Max/Min Temperature	0-40 Degree C
	Altitude	1000m Above sea level before de-rating
	Relative humidity	90%, non-condensing
	Enclosure	Floor standing on castors/plinth,Textured, epoxy/polyester powder paint, DIN Rail mounted or direct into EMC filter, screw clamp type
	Protection Level	IP 21/23; RAL 7032 (other IP available upon request)
	Safety Performance	Vin-n Vout-n 3000Vac; creepage<3.5mA; Isolation resistance > 3M(500VDC)
	Noise(dB) at 1 meter	55-65 dBA

*Other type of protection available upon request.



Customer-made specification are acceptable



1 to 200 KVA

Powertech Industrial Corporation U.S.A.

9777 H -Drive, Suite 320, Houston, TX 7703C, USA
Tel + (832) 603 4699 Fax + (800) 737 3601
E-Mail ID : info@powertech-ups.com
Website : www.powertech-ups.com

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