

40kVA, 50kVA, 60kVA Frequency Converter



- IGBT PWM Rectifier or 6 Puls or 12 Pulse or 3 Level Inverter Technology
- 500 Real Time Event Log with 180 Detailed Parameters “Excel Output”
- User Friendly LCD Screen with Log Details and Real Time Records
- True On Line-Double Conversion Technology (Class VFI-SS-111)
- Easy Give Service and Updates and 15 Years Life Time Design
- Newest Technology High Efficient %96 & Eco Mode %99
- %30 Small Dimensions Footprint & Easy Maintenance
- Input 0.99PF and Output = 0.8 or 0.9 or 1.0PF Possible
- Perfect Sinus Output & Precisely Electrical Protection
- Wide Input Voltage Range & Optional Dual Input
- Perfect Generator Compatibility & Auto Soft-start
- Wide Input Voltage Range & Optional Dula Input
- Industrial & Commercial & Marine Application
- Optional 50Hz / 60Hz / 400Hz Input & Output
- Optional Project & Client Oriented New Designs
- Optional Controllable Output Voltage from Screen 208V till 520V
- Optional SNMP & Dry Contact & Modbus & GSM & Network Manager
- Optional N+1 easy to build various redundancy till 8+1 & Load Sharing
- Optional Battery Connection Possibility & Optional Isolation Transformer
- Optional IP20 till IP65, Indoor or with Airconditioner & Cabinet or Container



On Board Marine



Harbor Power Supply



Industrial Zone



Technical Advantages of FC-GER

◦ The FC-GER Series An Advanced Converter Technology

FC-GER Series is a true Online Double Conversion, new generation fully digital controlled converter. It is designed with high efficiency and robust comply high availability power needs of a wide variety of critical applications and delivers advanced power solution with low cost of ownership.

◦ High Performance Power Protection Designed for Maximum Efficiency and Flexibility

Equipped with its new IGBT rectifier or Pulse technology series keeps your critical loads protected while its space-saving compact design and front access for maintenance successfully reduce mean time to repair (MTTR). Thanks to the wide variety of accessories and options FC-GER Series presents maximum flexibility advantage to users and optimizes total cost of ownership.

◦ DSP Power Factor Corrected IGBT Rectifier

IGBT based power factor correction technology provides Input Power Factor close to 1 (≥ 0.99) and keeps Input Current Total Harmonic Distortion (THDi) less than 3%, that helps to avoid the disturbance.

◦ Low Input Current THD

(THDi) less than 3% avoids the disturbance to connected loads

◦ Digital Control System

All of the control functions for FC Industrial Series Converter including power-on, start-up control, input stage power factor control, If needed battery charging and boosting control, output stage ac voltage regulation and shut-down control, can be realized by using a single DSP control board.

◦ High Input Power Factor

0.99 Input power factor ensures clean and sinusoidal input current. The high input power leads to reduced electricity pay-out, minimizes cable, switchboard, fuse and generator requirements, thus reducing investment cost.

◦ High Efficiency & Low Total Cost of Ownership

With its high efficiency up to 95% FC Series Converter consumes less energy to supply the loads. Thanks to this high efficiency rate, the percentage of energy that is produced as heat is reduced to a minimum. As a result of decreased heat emission users can reduce their electricity usage and air conditioning requirements.

◦ Flexibility of The Converter

FC is compatible with wide range of application. Flexibility achieved through many choices, if needed battery, single or multi-unit configuration, accessories and options.

Isolation transformers to vary neutral connectivity in the event of separate power sources or for galvanic isolation between input and output

Customized dimensions if needed for your projects till IP66



Technical Advantages of FC-GER

Auto Restart

When Converter will reach its end of discharge or with-out energy, So the converter will shut down.

The Converter will automatically restart and enable output power:

- After utility power is restored
- After the "Auto Start Delay Time" is expired (the default delay is 5 minutes) .

EPO(Emergency Power Off)

EPO function is designed to switch off the converter in emergency conditions (fire, flood, etc.). The system will turn off the rectifier, inverter and will stop powering the load immediately (including the inverter and busbar).

Reverse Energy for Regenerative Loads

The FC-Industrial Converter can be used with regenerative loads, such as synchronous motors. The regenerative loads pump the energy back to mains, traditional systems burn this feedback energy and this causes lower efficiency. FC-GER Series with IGBT rectifier are able to absorb intermittent load generated power. Additionally, this reverse power tolerance permits execution of important system operations like closed transition transfers of the Converter load directly to an engine generator Source if connected.

Advanced User Interface

The Converter has Large and user-friendly 320x240 LCD display that provides operating information in four different languages. Thanks to this advanced LCD display all parameters of working device can be monitored and controlled. Converter Is capable of recording up to 500 events and 180 Parameters / event.

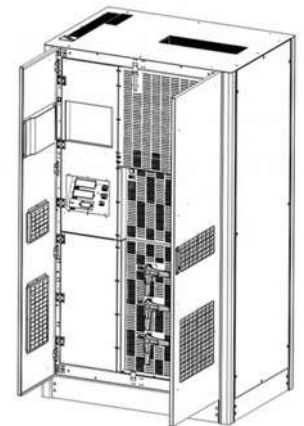
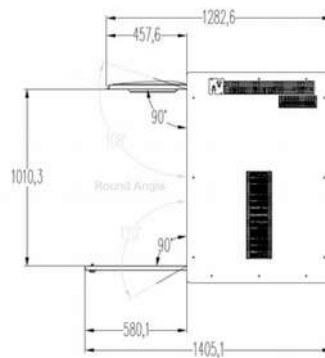
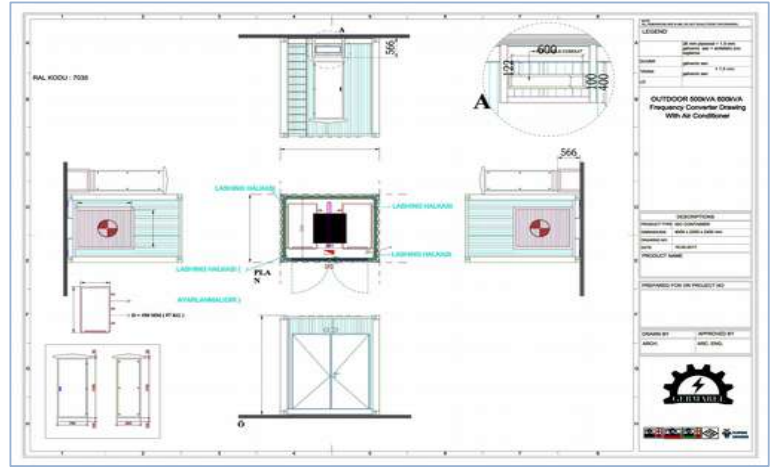
Optional Parallel Operation

FC-GER Frequency Converter industrial series features easy and simple scalability and redundancy. It is ready to grow with your business demands. Different power rated units and any Number of converters can be connected in parallel. Power Increase.

The converter's can be connected in parallel or one solution waits and the othe one to increase total capacity of the system. If one of the devices goes out of order, the other machine will take over the load immediately or as optional as well the critical loads are transferred to loads with contro to other converters.

Optional Parallel Operation Features :

- Internal standard parallel microprocessor for all models.
- Up to 16 units parallel able as customized.
- Parallel connection with ring cable
- Auto-sensing disconnected parallel cable
- Equal current share with DSP control
- Optional power upgrade with 30milisecond interruption or without any interruption
- All parallel systems can be controlled from the front panel of one unit
- Full synchronization of parallel units
- Isolated parallel operation card
- The power increasing solution with transfer contactors



Technical Advantages of FC-GER

Products	<input checked="" type="checkbox"/> FC- GER 50kVA	<input type="checkbox"/> FC- GER 400kVA	<input type="checkbox"/> FC- GER 500 kVA	<input type="checkbox"/> FC- GER 600 kVA
Usage Area	<input checked="" type="checkbox"/> Indoor	<input type="checkbox"/> Outdoor	<input type="checkbox"/> Marine	
Power Watt	<input checked="" type="checkbox"/> 0.8PF	<input type="checkbox"/> 0.9PF	<input type="checkbox"/> 1.0PF	
INPUT				
Input Voltage	<input checked="" type="checkbox"/> 208V	<input type="checkbox"/> 380V	<input checked="" type="checkbox"/> 400V	<input type="checkbox"/> 415V <input type="checkbox"/> 440V <input type="checkbox"/> 480V
Input Voltage Range	<input checked="" type="checkbox"/> -%12 / +%5 (%100Load)	<input type="checkbox"/> -%15 / +%10 (%90Load)	<input type="checkbox"/> -%20 / +%10 (%85Load)	<input type="checkbox"/> -%30 / +%30 (%75Load)
Input Isolation Transformer	<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No	
Input P.F. & Cable Connection	At Full Load >0.99 & &	<input checked="" type="checkbox"/> Bottom Cable Connection	<input type="checkbox"/> Top Cable Connection	<input type="checkbox"/> Backside Cable Connection
Input Frequency	<input type="checkbox"/> 50 HZ 44-66Hz		<input checked="" type="checkbox"/> 60 HZ "40Hz - 70Hz"	
Input Connection	<input checked="" type="checkbox"/> STAR 3P+N+PE		<input type="checkbox"/> Delta 3P+PE	
Input Connection	<input type="checkbox"/> Dual Input		<input checked="" type="checkbox"/> Single Input	
Input Frequency Range	Wide Input Frequency Range "45Hz - 66Hz"			
Technology	<input type="checkbox"/> Transformer Free 2L	<input type="checkbox"/> Transformer Free 3L	<input checked="" type="checkbox"/> With Transformer Pulse Technology	
Rectifier & Harmonic Distortion THD1	<input type="checkbox"/> %1	<input checked="" type="checkbox"/> %3	<input type="checkbox"/> %7	<input type="checkbox"/> %11 <input type="checkbox"/> %30
OUTPUT				
Output Voltage	<input checked="" type="checkbox"/> 208V	<input type="checkbox"/> 380V	<input type="checkbox"/> 400V	<input type="checkbox"/> 415V <input type="checkbox"/> 440V <input type="checkbox"/> 480V
Output Cable Connection	<input checked="" type="checkbox"/> Bottom Cable Connection	<input type="checkbox"/> Top Cable Connection	<input type="checkbox"/> Backside Cable Connection	
Output Isolation Transformer	<input type="checkbox"/> Yes		<input type="checkbox"/> No	
Output Frequency	<input type="checkbox"/> 50 HZ	<input type="checkbox"/> 60 HZ	<input checked="" type="checkbox"/> 400 HZ	
Output Connection	Both	<input checked="" type="checkbox"/> STAR 3P+N+PE	<input type="checkbox"/> Delta 3P+PE	
Output Frequency Range	50Hz & Max ±0.1%			
Recovery & Auto Start	1% Back to Band <40ms "410V – 420V" & Auto Start Adjustable From Screen			
Efficiency	<input type="checkbox"/> Till %89 for Pulse Solutions	<input type="checkbox"/> Till %93	<input checked="" type="checkbox"/> >%93 for %50Load & >%95 for %100 Load	
THD (THDv) & Crest Factor (CF)	Linear Load Standard %1 max <2% & Non-Linear Load <5% & 3:1			
Overload Capacity & Output Side	At 125% Load 10min, at 150% Load 1min at >%150 300ms & %170 Direct Off/ 0.7PF Lagging – 0.8 Leading			
COMMUNICATION				
Options	<input checked="" type="checkbox"/> RS232 Standard	<input checked="" type="checkbox"/> RS485/ Modbus	<input type="checkbox"/> SNMP	<input checked="" type="checkbox"/> Dry Contact Card <input checked="" type="checkbox"/> External Screen <input type="checkbox"/> GPRS- GSM Control
Protocol	SEC, TELNET			
Communication Alerts & Logging	500 Event Logs & 180 Parameters for Each Log "As Excel Sheet" "Optional Parallel"			
STANDARDS				
Quality & Used Electrical Parts	ISO 9001 - ISO 14001 - ISO 18001 & IGBT Infenion or Mitsubishi & Electrical parts are made in Korea, Europe & Turkey			
Performance	EN62040 -3 (VFI-SS-111)			
EMC/LVD	EN62040 - 2 / EN62040 -1 EN60950			
GENERAL				
Storage & Running Temperature	Standard +5°C~35°C &	<input type="checkbox"/> 0°C~40°C	<input checked="" type="checkbox"/> 0°C~45°C	<input type="checkbox"/> -5°C~55°C <input type="checkbox"/> -10°C~40°C
Electrical Protection	Over & Low Frequency / Over & Low Voltage / Over Current / Over Temperature Protection Degradation			
Protection Class	<input checked="" type="checkbox"/> IP20		<input type="checkbox"/> IP21	<input type="checkbox"/> IP23 <input type="checkbox"/> IP33 <input type="checkbox"/> IP44 <input type="checkbox"/> IP55 <input type="checkbox"/> IP65
Chassis & Humidity & Noise	Anti-Static Anti Rust Coated Painting Protection & 0-95% & 65 Db Maximum			
Screen	Mimic Diagram Languages English, German	<input type="checkbox"/> 2x16	<input type="checkbox"/> 4x20	<input checked="" type="checkbox"/> 320mmx240mm(Touchscreen) <input type="checkbox"/> Outdoor screen
Altitude	@40°C & after 1000Meter for each hundred meter %1 Loss	<input checked="" type="checkbox"/> Till 1000m	<input type="checkbox"/> Till 1500m	<input type="checkbox"/> Till 2000m <input type="checkbox"/> > 2000m
Cabinet Color	<input type="checkbox"/> Ral 7060	<input checked="" type="checkbox"/> Ral 7035	<input type="checkbox"/> Ral 7032	<input type="checkbox"/> Ral 7016 <input type="checkbox"/> Ral 1014 <input type="checkbox"/> Black
Parallel Operation	<input checked="" type="checkbox"/> Single	<input type="checkbox"/> Redundant till 3s transfer time	Hot Paralleling Sycn. Tech. => <input type="checkbox"/> 2pcs <input type="checkbox"/> 3pcs <input type="checkbox"/> 4pcs <input type="checkbox"/> 6pcs <input type="checkbox"/> 8pcs	
EPO (Emergency Power Off)	<input checked="" type="checkbox"/> Standard for IP20		<input type="checkbox"/> Optional for Outdoor with external screen	
Certification	<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> SGS	<input type="checkbox"/> SASO	<input checked="" type="checkbox"/> IEC <input type="checkbox"/> BV Marine <input checked="" type="checkbox"/> BV General <input type="checkbox"/> Soncap
Vibration & Earthquake design	<input checked="" type="checkbox"/> Standard		<input type="checkbox"/> Vibration Reduce	<input type="checkbox"/> Seismic Standard <input type="checkbox"/> Seismic Customized
Dimensions (WxDxH) (cm) FC	<input type="checkbox"/> 40X40x160 / (520kg)	<input checked="" type="checkbox"/> 120 X 100 x 180 / (610kg)	<input type="checkbox"/> 420x220x240 / (4880kg)	
Dimensions (WxDxH) (cm) FC Nema-3S	-200X160x210 / (870kg)-		-TOTAL DIMENSION & WEIGHT W220xD160xH200CM / (1480kg)-	

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NOTE: CUSTOMIZED SOLUTIONS ARE POSSIBLE, PLEASE ASK FOR THE NEEDED SOLUTION