

Power-Conditioning **Online UPS** for **Industrial Applications**



For CNC, Laser, EDMs machines Process Automation...



PFC-IG303 15KVA-200KVA

Regenerative load handling

Advanced Active Power PFC UPS
with Predictive Analysis Technology

Optimise production process to improve Productivity and profitability...

Galvanic isolation offers **Comprehensive Protection and High Availability.**

Mains grade raw power contains impurities and large percentages of harmonics injected into the line by various non-linear loads. The common problem of neutral drift can produce considerable increase in output voltage and permanently destroy your critical loads and data.

Isolation transformers increase load protection and ensure human safety by isolating the AC leakage current from developing a potential between the input and ground. Isolated output enhances the attenuation of common mode noise by increasing the impedance between the input and output.

Provides protection of loads against lightning. Galvanic isolation via transformer is the only way to safely protect loads from lightning. It provides protection from high energy transients, which are clamped at the AC input from propagating to the output.



Galvanic Isolation for Comprehensive Power Protection

Advanced Active Power PFC-IG303 Online UPS

Features

- Power Factor Corrected
- Digital Signal Processor
- Isolation Transformer
- SNMP
- Autobypass

Power Factor Corrections

- Reduces the running cost in terms of electricity bill
- Prevent the overrating of electrical wire
- Reduce reflected harmonics back to the source
- Savings in sizing of utility transformer & generator

Technology

- DSP technology IGBT inverter - IGBT converter

Topology

- Bifilar PWM switching

Interface

- SNMP compatible
- User-friendly LCD display
- True RMS reading
- Fault condition
- Status display
- Event logging

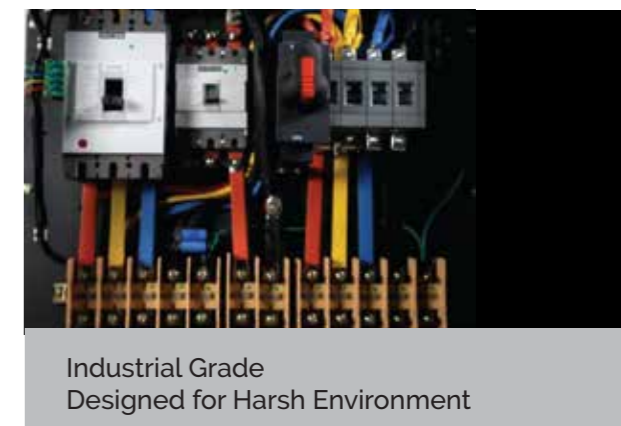
Ideal Power-conditioner

- Constant Frequency source
- Premium Quality Galvaically isolated Power
- Power Factor Corrector

100% Indigenous design



IGBT based PFC rectifier



Industrial Grade Designed for Harsh Environment

100% Indigenous Factory - With In-House R&D.

- CNC, laser cutting, wire EDM cutting etc
- Process and Automation application
- Data centres, IT, servers
- Office, Hospitals, Educational institutes

- MRI & CT scanners
- Digital & offset printing
- Analytical & research labs

Uninterrupted Premium Quality Power using Power-Conditioning topology

The factors contributing to the pre-mature failure of electrical gadgets and eventually the system failure is not limited only to voltage fluctuations but also the poor quality of power. Hence, importance should not only be given for power availability but also for quality power availability.

PFC-IG303 is a complete Power-conditioner & Power Factor Corrector

Optimises the product life & process uptime by 35%-40%.

- Constant voltage, frequency, High Grade Premium quality power.
- Galvanic isolation at the output.
- Operating ambient temperature 0-45 degrees.
- Overload handling capability of 150% for 1 minute.
- High surge handling capability.



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Predictive self analysis

The uptime is significantly enhanced using the intelligent DSP based Predictive Self Analysis built-in in the UPS. Using 16 sensors, the UPS periodically carries-out Self Analysis of various parameters and initiates alarm for preventive and corrective action well in advance and facilitates high uptime of machines and process.

SNMP-simple network monitoring protocol



Remote ups monitoring software interface

Monitor the UPS mains input voltage, output voltage, battery voltage, load percentage etc from a remote location.

SNMP feature facilitates the user to **carry-out preventive action remotely** without physically reaching the UPS. Pre-trip alarm pops on the monitoring screen prompting the user/system admin/maintenance engineer to initiate preventive action. Without the SNMP feature, the pre-trip alarms are often unnoticed as the UPS is located away from the users and can cause ungraceful shutdown of machines/servers/process.

Regenerative energy (4-quadrant load) handling capability.

All the 3PH-3PH Online UPS of Arvi are capable of handling regenerative energy and PFC303 is no exception. PFC303 senses the regenerative back feed voltage (AC voltage) and clamps the same using resistive load bank.

The re-regenerative braking energy is produced in the following conditions... Quickly decelerating a high inertia (mechanical arm, flywheel), controlling the speed of a load moving downwards (Milling, cutting, declining conveyor), sudden drop in load torque (Drilling operation, industrial saw), repetitive acceleration and retardation to stop etc.

The conventional Online UPS cannot absorb this energy and the DC bus voltage starts increasing and leads to failure of DC capacitor and switching device.

Technical Specifications

5KVA - 200KVA PFC-IG303 - Series Online UPS

TECHNOLOGY	DSP based, IGBT inverter-IGBT converter Online UPS.	
RATING	15KVA - 200KVA	
DC BUS	192VDC - 360VDC	
INPUT		
Input Voltage	415VAC, 3Ø & N	
Input Voltage Window	330VAC - 470VAC	
Input Frequency	45-55Hz	
Input PFC	100% load	> 0.95
Power walk in	Soft start for 0-20 seconds power walk-in.	
RECTIFIER		
Type	IGBT based full bridge	
Voltage Regulation	(±) 1%	
Ripple Voltage	< 2%	
Converter Protection	Advanced Electronic Protection for device safety backed up, with MCB's/ MCCBs & fast acting fuses	
INVERTER		
Inverter Type	IGBT based MPWM with instantaneous Sinewave Control	
Output PF	0.8 lagging to Unity	
Nominal Voltage	415VAC, 3Ø, P-P / 230VAC, 1Ø, P-N	
Regulation	(±) 1%	
Frequency	50 Hz ± 0.1Hz	
Waveform	True Sinewave	
Total Harmonic Distortion	Linear Load	< 2%
	Non Linear Load	< 5%
Transient Response	Remains within +/- 5% & recover to normal within 20 msec	
Over Load	100%	Continuous
Capacity	110%	10 Minutes
	150%	1 Minute
Crest Factor	3:1	
Mode of Operation	Designed for Continuous operation	
ISOLATION	True Online with complete galvanic isolation.	
Inverter Protection	Advanced Electronic Protection for device safety backed up with MCB's/ MCCBs & fast acting fuses, high speed pulse by pulse electronic device protection over voltage / under voltage protection, Electronic over current trip.	
BYPASS		
Manual Bypass	Provided	
ALARMS		
	• Input / Low / Fail • Output overload • Over temperature • Battery low	
LED Indications (Single LED with multi function)		
	• Mains on • UPS on • Battery Low • Overload	
	• Input Voltage • Output Voltage • Load current • Output Frequency • Battery Voltage	