



Regressive topology Online UPS specially designed

for 5-axis milling machines



PFC-IG303RL 20KVA - 400KVA

- IGBT converter
- IGBT inverter
- Fully DSP controlled
- Event log & SNMP
- Solar compatible
- Galvanic isolation
- Power-conditioning
- Regenerative load handling

Regressive topology Online

UPS - designed to handle back-feed regenerative power by vertical and horizontal milling machines.



Regenerative Energy (4-Quadrant load) handling capability.

Applications

- Vertical 5axis milling machines
- Horizontal milling machines
- CNC cutting machine
- CNC bending machine
- Industrial saw
- Lifts and conveyors

The reverse back-feed voltage generated by the regenerative load is always dangerously higher than the UPS output voltage and starts feedingt back to the UPS, resulting in failure of switching devices, DC Capacitor and overcharging the batteries and in most cases permenantly damaging them in the case of a conventional Online UPS.

More importantly real time regression of the high voltage generated by the regenerative load is of prime importance as it causes premature failure of electrical and electronic components inside the CNC machine.



Retract source -sink iac load

Protection against back-feed regenerative power by the load

Real time sensing and regressing at AC side.

Arvi PFC-IG303RL Regressive Dual polarity topology Online UPS can source and sink back and forth to the load and from the load using Retract source-sink iac load. Employs real-time regenerative load sensing and load banking at the input side (AC side); offering dynamic load protection - ensuring faster clamping than the conventional DC side sensing and load banking.

It also offers comprehensive protection during non-linear, complex regenerative loads. Arvi PFC-IG303RL can handle 30% - 50% of the rated power regenerative energy.

100% Indigenous design



IGBT based PFC rectifier



Industrial Grade Designed for Harsh Environment

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

Compatible with

- DMG-MORI
- MAG JYOTI
- HAAS

Brother

FANUC

- Mazak
 - ETHEREA
 - Okuma
- Makino
- ACE
- AMADA
- TRUMPF
- EMAG

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 onlyway 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

Uninterupted Premium Quality Power using Power-Conditioning topology

The factors contributing to the pre-mature failure of electrical gadgets and evantually 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-IG303RL 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.

Advanced Active Power PFC Online UPS

Features

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

Power Factor Correction

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

Technology

 DSP technology IGBT inverter - IGBT converter

Toplogy

Bifilar PWM switching

Interface

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

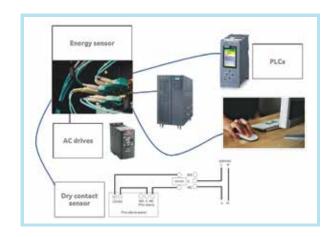
Ideal Power-conditioner

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

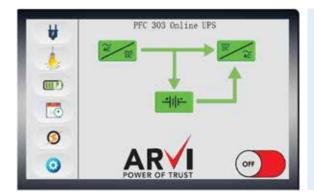
MODBUS-BMS Interface

BMS - Building management system / BAS -Building automation system / IAS - Industrial system automation System, is a computer-based control system installed in buildings that controls and monitors the building's energy usage, lighting, saftey, Heating/cooling, power systems, security and surveyellence etc.

FC-400 is compatibility to communicate with other equipment, notify faults or power outage to carry-out preventive / corrective action are some of the unique benefits of BMS.



TFT, touch screen, color display



Graphical display of UPS status, load percentag and battery levels

- Input voltage
- Output voltage
- Battery voltage
- Output power in KW
- Output PF
- Output frequency
- Load percentage
- Output power in KVA
 Over-temperature warning

Remote UPS monitoring software interface

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

SNMP feature facilitaes 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 initiate preventive action.

Without the SNMP feature, the pre-trip larms often unnoticed as the UPS is located away from the users and can cause ngraceful hutdown of the machines/Servers/process.





National award winner from SoftDisk "Most innovative power solution of the year 2016."

TECHNICAL SPECIFICATIONS

PFC-IG303RL | 20KVA - 400KVA

DESCRIPTION

TECHNOLOGY	DSP controlled, regenerative load handling Online UPS
INPUT	
Operating voltage range	330VAC - 470VAC
Operating frequency range	47Hz - 53Hz
Power factor	<0.95, generator compatible.
Convertor / rectifier type	Power Factor Corrected (PFC), Full bridge using IGBT
Convertor topology	Interleaved bifilar switching topology.
OUTPUT	
Invertor type	MPWM using IGBT
Invertor topology	VFI, Power-conditioning topology with Galvanic isolation at the output for
	comprehensive power protection.
Output PF	0.8
Output voltage	400VAC, 3Ø- 3Ø
Voltage regulation	±1% on balanced and unbalanced load.
Output frequency	50 Hz ± 0.1Hz
Unbalanced Load Phase Shift	120°± 0.5°
Harmonic distortion	Linear Load < 2%, Non Linear Load < 5%
Crest factor	3:1 without derating in power waveform
Transient response	Remains within $\pm 5\%$ & recover to normal within 20 msec
Galvanic isolation	Built-in 1:1 Galvanic isolation at the output of inverter
PROTECTIONS	Overload, shortcircuit, over temperature, battery low.
Efficiency	92% - 94% (including the output transformer) on full load
	Regenerative energy clamping
Methodology	Real time regenerative load monitoring and banking using low inductance, highly
	durable load.
	Instantaneous load monitoring using high-speed DSP and fast acting semi-conductors
	at the load side (AC side sensing & clamping)
Regenerative energy	Customised as per load study.
UPS protection from	Load getts disconnected from the UPS if the regenerative load
excess regenerative load	is in excess than the rated capacity.
BATTERY	
Battery voltage	240VDC - 384VDC
Charger type	CVCF
SYSTEM FEATURES	
Overload capacity	100% - Continous, 125% - 1min, 150% - 5secs
LED display	Mains ON, UPS ON, Battery low, UPS Trip
LCD DISPLAY	
	Input voltage, Output voltage, Battery voltage, output frequency,
	Load percentage, over tempearture warning, UPS On - load on mains / battery
ALARMS	
	Input / Low / Fail, Overload, Overtemperature, Battery low
	Potential free contact for activating hooter.

A FEW OF APPROVED VENDOR FOR

Our esteemed customers have been using PFC-IG303RL for various applications across the country from past 6yrs and have certified the performance of the same.















































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