

# HITACHI INDUSTRIAL UPS SYSTEM FOR MACHINE TOOL INDUSTRY / APPLICATIONS

## ABOUT HITACHI INDUSTRIAL UPS SYSTEM

With a vision of “To be recognized as the most trusted Power Electronics Company by supplying superior products and services”, Hitachi Hi-Rel Power Electronics Private Limited has garnered a significant level of trust in Indian power electronics market segment wherein it serves the entire gamut of Industries.

UPS, an Uninterruptible Power Supply, also Uninterruptible Power Source, is an Electrical Apparatus that provides Emergency Power to a load when the Input Power Source, typically mains power, fails.

Hitachi Industrial UPS System, the flagship product, is regarded as the ultimate solution to power problems by providing both Uninterrupted Power Backup and Power Conditioning. It works as an exceptional safeguard against power disruption and reflects the industry's ultimate in advanced technology with proven track record in mission critical applications.

## ABOUT MACHINE TOOLS INDUSTRY / APPLICATIONS

The machine tool industry produces items for all sectors of the national economy. Its products include metalworking and woodworking machine tools, automatic and semiautomatic transfer machines, and fully automated production facilities for the manufacture of machines, equipment, and parts made from metal and other industrial materials, as well as forge, press, casting, and woodworking equipment.

Machine tools employ some sort of tool that does the cutting or shaping. All machine tools have some means of constraining the workpiece and provide a guided movement of the parts of the machine. Thus, the relative movement between the workpiece and the cutting tool is controlled or constrained by the machine to at least some extent, rather than being entirely freehand. It is a power-driven metal cutting machine which assists in managing the needed relative motion between cutting tool and the job that changes the size and shape of the job material.

There are many machines falls under the Machine Tool category, whereas important and more commonly used advanced machines are CNC (Computer Numerical Control) which has two machining centres i.e., Vertical Machining Centre (VMC) and Horizontal Machining Centre (HMC).

Due to modernization of Industries, customers who were using several conventional machines like lathes, milling machines, boring machines, drill presses where been replaced by VMC & HMC.

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## CHALLENGE/ISSUES (What are the issues the customer used to face?)

The failures and the breakdown of these CNC machines bring the production lines to a direct standstill without any alternative to run the process and put the things back on the rails.

Traditional machines were not that sensitive to the power quality as the present days CNC machines are. Their controllers or the brains comprise of complex electronic systems and microcontrollers. To run them properly, they demand quality electrical power against when compared to the traditional machines, which were rough and robust to handle the ups and downs of the incoming power supply.

Whereas, the CNC machines require a specific voltage at the right frequency as per the standard specifications mentioned by the manufacturer with zero tolerance. In case of even a slight deviation from the prescribed norms, the results are devastating, making CNC machines to behave erratically, resulting in erroneous output or merely resulting in a breakdown.

### Negative Business Consequences;

- Poor quality output
- Machine frailer / damage
- High maintenance cost
- Production losses
- Ideal manpower
- Delay in commitment
- Customer losses
- Opportunity cost

## NEED FOR THE SOLUTION (What is the need for utilizing Hitachi Product?)

- To stop the damage of the machine's sensors and drives which cause due to power fluctuation issues
- To stop manufacturing process interruption
- To stop losses of production, material and valuable time
- To stop losses the machine's program data due to power failure issues

## HITACHI SOLUTION (How it helps in solving the Challenges/Issues?)

It's highly important to have uninterruptible power supply solution for the CNC based machine tools which normally provides the total protection to machine by providing constant and stable power with backup time to critical load. This type of CNC machines are expensive and cause financial losses if it's failed due to power problems. Here, Hitachi Industrial UPS System play the vital role to get the maximum out of these CNC machines and reduce the payback period or bring down the cost of the operations by keeping the plant running and breakdown expenses.

### Industrial UPS System offers;

- Continuous and stable power to critical load against input voltage fluctuations without any interruptions, as long as the backup is required
- Stable voltage and frequency as per the requirement of machine, to protect its processors, PCBs and critical electrical components.
- Isolation between main supply and load
- Lesser machine repair cost
- Production growth and smoother operation
- Effective return on investment

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## BENEFITS OF USING HITACHI INDUSTRIAL UPS SYSTEM IN MACHINE TOOLS APPLICATIONS

- Suitable for rugged usage
- Increase production efficiency
- Protect machine against the power fluctuation
- Low maintenance cost
- No more losses of programmed data
- No more raw material losses
- No more production losses
- No more ideal manpower
- Timely fulfilment of commitments
- Customer loyalty

## HITACHI INDUSTRIAL UPS SYSTEMS FOR EXTRUDER MACHINE APPLICATIONS

### i6s UPS – Three Phase Output

Range: 10 kVA to 500 kVA

- Suitable for non AC environment (dust free)
- Digital Signal Processor (DSP) based control
- Input phase reversal protection
- In-built double wound isolation transformer
- Capable to withstand 100% unbalance load
- LCD display with keypad for fault diagnostic
- Bi-directional, 100% electronic static switch



### i6et UPS – Three Phase Output

Range: 30 kVA to 500 kVA

- Highly efficient IGBT based rectifier and inverter
- High energy efficient product with in-built double wound isolation transformer
- 200% overload for 7 sec. (Specially design for motorised applications)
- Suitable for regenerative power
- Capacity enhancement possible up to 6 units
- Bi-directional, 100% electronic static switch
- User friendly HMI interface



## ABOUT HITACHI HI-REL POWER ELECTRONICS PRIVATE LIMITED

Founded & established in 1983 as Hi-Rel Electronics Pvt. Ltd., which later on in year 2015 had become the 100% subsidiary company of Hitachi, Japan which is one of the Global fortune 500 companies with a new name as Hitachi Hi-Rel Power Electronics Private Limited, which is being recognized as one of the pioneers in power electronics domain. Hitachi Hi-Rel, today, is a leading manufacturer of Industrial UPS, IT & Infra UPS, Medium & Low Voltage Variable Frequency Drives, Grid Tied Solar Inverters, Air Compressors and Railway Inverters.

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Hitachi Hi-Rel has state-of-the art manufacturing facility at Sanand near Ahmedabad in Gujarat-India. Hitachi Hi-Rel is helping a wide array of industries and organizations to meet the mission critical demands through technologically superior, low polluting and innovative products Solutions and continue to offer world class power electronics products, value added services & customized solutions.

With a vision of “To be recognized as the most trusted Power Electronics Company by supplying superior products and services”, Hitachi Hi-Rel has garnered a significant level of trust in Indian power electronics market segment wherein it serves the entire gamut of Industries, particularly in mission critical applications for Refineries, Petro-Chemicals, Power Generation, Steel & Metals, and Process Industries as well as Critical Data Processing Applications. Besides offering greater energy efficiency & lower carbon footprint, each of the company product streams bears the hallmark of excellence with company accreditations. Hitachi Hi-Rel is an ISO 9001:2015, ISO 14001:2015 & ISO 45001:2008 certified company having export house status. Hitachi Hi-Rel sales network & service infrastructure expands out to the world & with this network, we have made strong inroad in Global markets like South East Asia, Middle East, Africa and Brazil. Also, with a presence of strategically located skilled service engineers in India helps us to score high in terms of customer expectations on service deliverables & uptime of the product.

With expertise, experience and an efficient product line, Hitachi Hi-Rel will always try to be your power electronics partner. When you choose to do business with Hitachi Hi-Rel, you are partnering with a company who cares.

## FOR MORE INFORMATION

To know more about Hitachi Hi-Rel Power Electronics Private Limited and its offered products and solutions, please visit [www.hitachi-hirel.com](http://www.hitachi-hirel.com)

You may also share your requirements at <https://www.hitachi-hirel.com/inquiry> to receive the phone call or Hitachi product information email from our authorized sales representative of your region.

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