



Eaton's Unalloyed Power Packed Performance in Madhav Alloy

Product

Eaton® Power Xpert 9395 UPS, 550 kVA

Locations

Akalgarh, Patiala
Punjab

Market Served

Manufacturing / Steel

Application

Steel Industry
(Induction Furnace – Continuous
Casting Machine)

Products

TMT Bars / Angles / Beams / Channels
/ Billets



Mr. Munish Goyal
Managing Director

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Background

Madhav Alloy is one of the leading manufacturers in secondary steel market in North India, with a turnover of INR 700 crores.

The group's name is synonymous with distinct quality and enhanced customer satisfaction. It has created a unique differentiation in the steel sector. Established in the year 2002, it has been progressing at a fast pace.

The group also manufactures and supplies various industrial products like mild steel angles and mild steel beams. Madhav Udyog Pvt. Ltd. and Madhav Alloy Pvt. Ltd. are companies within the Madhav Group.

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Mr. Munish Goyal
Managing Director

Challenge

Utility Power Supply Challenges

In the city of Ludhiana, there are many unscheduled and untimely power failures and tripping for variable periods of time. These unannounced power failures negatively impact the engineering industry in the city. Many furnace units have been forced to close down their production activities which directly hit the price structure of the iron and steel products used as basic raw material in the engineering industry.

In such a dire power supply scenario, there are significant losses in the form of downtime, man-hours lost, productivity process

break ups and monetary losses in the manufacturing processes. Apart from power losses there are frequent power incidents.

A power incident can be a power failure, power tripping, power sag, power surge to under voltage, over voltage and onwards to switching transients, line noise, frequency variation and harmonic distortion. These power incidents can also lead to material wastage and productivity loss leading to a loss of business and loss of reputation.

Intrinsic Challenges

Steel manufacturing units like Madhav Alloy utilise a critical process called 'continuous casting' to manufacture TMT bars etc.

Continuous casting, also called strand casting, is the process whereby molten metal is given shape and solidified into a "semi finished" billet, bloom, or slab for subsequent rolling in the finishing mills. It allows lower-cost production of metal sections with better quality, due to the inherently lower costs of continuous, standardised production of a product, as well as providing increased control over the process through automation. The continuous casting machine (CCM) is installed in the induction furnace project.

It is extremely critical for the company to keep the CCM running during the tripping caused due to intermittent power failures. A continuous and conditioned power backup is required for CCM, so that there are no process breakages, which result in man-hours loss, productivity loss and material loss; whereby the entire process has to be restarted.

A 'CCM machine' needs a lot of motors to keep in a continuous running mode. During power tripping, if even one motor trips, the whole process breaks entailing huge losses for the company.

Therefore, during steel manufacturing, steel units spend a lot of money to set up overhead water tanks. These are used in induction furnaces for a continuous supply of cooling water to keep motors running smoothly, for at least 30 minutes despite power supply failures.

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Powering Business Worldwide

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Mr. Munish Goyal, Managing Director, Madhav Alloy says, "Our plants run on full capacity approx. 500 TPD. We needed a power quality solution which could help us to cope with a hugely unpredictable power tripping situation. The downtime translates into enormous productivity and monetary losses due to process breakage in the CCM machine functioning. Continuous and quality power is really vital for Madhav Alloy"

Eaton's Power Xpert 9395 UPS offers the highest reliability and availability with Hot Sync® paralleling, superior battery management, inherent redundancy and a scalable architecture that adapts to increasing power requirements.

Solution

Madhav Alloy decided to look for an efficient, cost effective UPS with over 90% availability which could prevent the massive production losses, due to daily power failures and tripping.

"A genset solution coupled with utility power is not viable for the highly frequent power tripping that we face in our city," said Mr. Goyal. "We needed a unique solution which could tide over the time lag during the power tripping – from utility power supply to UPS; and from UPS to DG Set, without stopping any motor from tripping."

When Madhav Alloy started the sourcing process for a UPS suitable to their unique requirements, Eaton was one of the front runners in the process. The customer was looking for a smooth process flow through power continuity, with minimum downtime and qualitative power, to minimise losses and improve productivity.

Choosing Eaton

The UPSs were evaluated on various parameters of price, product, performance, past experience, track record, service support and overall organisational capability.

The Eaton team took Madhav Alloy management to another of Eaton's customer sites at Pathankot, where they were impressed with the quality and performance of the 9395 UPS.

Moreover the partner, PGS Energy Services' relationship, Eaton's infrastructure, capability and technological superiority, low TCO (Total Cost of Ownership) product and company backed service support made it a much superior solution vis-à-vis other brands.

The energy-efficient 9395 UPS provides backup power and scalable battery runtimes in a small footprint for critical manufacturing applications.

After careful evaluation, Madhav Alloy decided to go for Eaton's 9395 UPS with one 550 kVA unit initially.

Mr. Goyal further says, "We were impressed with the 9395's features like ESS, its efficiency and modular solution."

The 9395's Energy Saver System (ESS) dramatically increases UPS efficiency without sacrificing protection, all the while reducing energy costs. ESS technology enables the UPS efficiency to reach an impressive 99%.

Eaton performed a power audit and load study of the customer's facility before suggesting the appropriate power solution.

The 9395 550 kVA UPS is now powering Madhav Alloy's machines at Patiala.

The UPS has also helped Madhav Alloy eliminate the necessity of creating a huge overhead water tank for cooling its components and processes, which has resulted in good savings for the company. As the UPS

ensures the power supply is always available, the cooling process is therefore continuous.

Installation

The installation process was also smooth. Eaton's 9395 not only reduces installation time, it also reduces costs with a small footprint and the flexibility to install up against walls, using top or bottom cable entry. Moreover, front-panel access for all services and operation increases serviceability and reduces repair time.

"We were happy with the fast and smooth installation completed in good time, and with minimum disruption in our running operations," says Mr. Munish Goyal.

Operation

Since installing the Eaton 9395, there have been frequent power tripping incidents. However the company has managed to overcome them without any productivity or monetary losses.

The Eaton UPS installed in its facility carries the machinery faultlessly.

"Eaton UPS has completely minimised our downtime, monetary and productivity losses and we feel absolutely vindicated in our decision to choose an Eaton UPS for our facility," according to Mr. Goyal.

After Sales Service

One of the main parameters involved in choosing Eaton was the service promise.

"Eaton has delivered seamless proactive support with a high degree of flexibility," says Mr. Goyal.



Conclusion

- Madhav Alloy's CCM machinery is safe from utility power damage. The Eaton Power Xpert 9395 provides the highest level of availability for their manufacturing setup at all times
- Benefit from cutting-edge technology, with the UPS's advanced design
- Energy Saver System (ESS) dramatically increases the UPS efficiency without sacrificing protection, all the while reducing energy costs.
- Achieve inherent redundancy for enhanced reliability
- Easily maintain and service its UPS solution

Note on the Steel Manufacturing Industry

Steel plays a significant role in the construction of various buildings and infrastructure like ports, roads, railways, bridges, factories, power transmission, stadia, military equipment and automobiles etc.

Areas where Continuous Power is required in this industry:

- For Automation of Rolling Mill
- For various drives & motors along the path
- SCADA System
- If the steel mill is stopped, the furnace (usually Induction type) has to be stopped and stopping and restarting a furnace is a very costly process as (a) it requires a lot of fuel to attain desired temperature (b) it also takes quite long, about 6-7 hours, to reach that temperature
- Most critical are the water pumps for cooling 'Take Up Area' because any breakdown in this area means either accident or breakdown for 6-8 hours. Moreover, the barrel may get damaged. To prevent any accident, steel mills usually install an overhead water tank that can supply water for at least 30 minutes after the power supply fails