

# Air Control Backup Power

UPS System Case Study



**Upperton Pharma Solutions is a Pharmaceutical Contract Development and Manufacturing Organisation which produces critical medicines. They contacted UPS Systems PLC with a requirement for a UPS that would support their Air Handling Unit in its HVAC (heating, ventilation, and air conditioning) system.**

The Air Handling Unit is responsible for maintaining air quality and temperature for the company's pharmaceutical products and any downtime or product damage caused by power outages would result in a large loss of productivity and revenue.

The building's engineer advised that the UPS must provide 30 minutes of backup power to the Air Handling Unit with an advised load of 31 amps across the three phases. To meet the customers' requirements, we offered Riello's 10kVA Three Phase online double-conversion Sentryum UPS system alongside a battery cabinet that houses two strings of 40 x 9Ah batteries.

This UPS system was selected for its ability to provide clean and stable power output to the Air Handling Unit, while the external battery bank will provide the required energy to support the load during a power outage for at least the specified amount of time.

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*“A UPS isn’t just a convenience for air controlled environments, it’s an essential component that safeguards the integrity of the products.”*

**Jack Ogden, Commercial Director |  
UPS Systems PLC**

The UPS was also supplied with an External Maintenance Bypass Switch which is an essential part of switchgear. This EMBS allows the UPS to be completely isolated with no interruption to the load. This in turn allows comprehensive maintenance visits to be carried out. It also means the UPS can be removed and replaced with no interruption to the load, ensuring the system is easy to maintain and update in the future.

The UPS is equipped with an LCD display panel that provides real-time monitoring of the system’s status, including input voltage, output voltage, frequency, load percentage, battery status, and runtime remaining. It also has an integrated network management card that allows for remote monitoring and control of the UPS through a web browser or SNMP-based software. To ensure the Air Handling Unit can continue operating for 30 minutes during a power outage, the runtime was calculated based on the load, in this case, 31 amps across three phases, and the capacity of the batteries.

To achieve the desired 30-minute runtime, the battery backup was sized appropriately.

The battery cabinet was installed externally to the UPS, and a battery management system is used to monitor the battery’s health and performance. The system is set up so that the UPS will automatically switch to battery power when the input power is lost, and the Air Handling Unit will continue to operate seamlessly for 30 minutes until power is restored.

By installing a 10kVA UPS with an external battery bank, the commercial building has ensured that its Air Handling Unit can continue to operate for 30 minutes during a power outage. The real-time monitoring and remote management features of the UPS provide peace of mind for the building’s engineers and facilities team, allowing them to quickly identify and resolve any issues that may arise.



UPS Systems PLC specialise in the specification, supply and maintenance of uninterruptible power supplies (UPS) and generators to create best fit bespoke standby power solutions for our clients and customers.

In addition UPS Systems have access to the widest selection of products on the market today and a completely ‘independent’ vendor-neutral ethos, allowing us to create truly best fit, bespoke uninterruptible power systems.