

UPS Solutions

Uninterruptable Power Supply

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Siemens Uninterruptable Power Supply (UPS) solutions provide reliable backup power for Intersections where Siemens traffic controllers are installed, ensuring that full traffic control is maintained during mains power failures.

Power failures at critical intersections can result in traffic chaos and increased accident risk as the control exercised by the traffic signals is no longer operational.

The Siemens range of UPS solutions provide back up power to such intersections in the event of a supply failure.

Scalable solutions

The capacity of the backup power supply has a large influence on the overall UPS cost. With Siemens UPS solutions the load capacity and support times required are scalable to suit individual site requirements. For small to medium sized intersections the UPS can be accommodated in a single ST950 style cabinet. For large sites a second cabinet may be used to hold additional batteries.

Each cabinet is suitably vented and to ensure maximum capacity and for very cold conditions a heater may be provided to maintain cabinet temperatures within pre-set limits, helping to maintain support times.

Automatic switching from mains to backup power

When mains power is present the UPS system maintains the charge in the batteries at an optimum level, helping to maximise battery life.

In the event of a power failure the system switches transparently to the backup batteries without interrupting the power to the traffic controller, ensuring there is no disruption to normal traffic control. On restoration of the site power the system automatically (and transparently) switches back to mains power and begins to re-charge the batteries.

Supports auxiliary power sources

Where required the UPS system can be equipped with an industry standard power connector to allow auxiliary power sources (such as standby generators) to be used to augment the support time in the event of extended power failures.

When operational the auxiliary power source both powers the junction and recharges the batteries.

- Scalable capacity to suit intersection loads of up to 1.7KW
- Ideally suited to LED sites
- Automatic and transparent switching from mains to backup power with no interruption to intersection operation
- Supports easy connection of auxiliary power sources for extended hold up performance
- Housed in standard ST950 style controller cabinet
- UPS fault and status reporting via Siemens RMS and UTC
- Optional enhanced management of the UPS system via dedicated IP connected management system



Fault and status reporting

When installed on sites together with Siemens RMS or UTC fault and monitoring information is available via those systems.

Fault and status information includes:-

- Operational status. A fault is flagged if the UPS system detects any internal problems, including failure of the batteries to charge properly.
- Power status (whether in standby or providing power).
- Batteries low, warning when the batteries are supplying power and are down to approximately 40% of full capacity and when batteries are exhausted and system has shut down.

For RMS sites faults and status (such as 'providing power') may be configured as urgent faults, allowing immediate notification to the instation, should this be required. These will be automatically cleared once the fault or status event is no longer present.

For UTC the fault bits may be sent back to the instation via an associated OTU and used to trigger fault indications within the instation system

Where an IP connection is available, for example in a UTMC connected system, an optional fully featured central office based UPS management system is also available.

Extended operational time

If required the UPS operational status information may be fed directly into the associated traffic controller to allow part time mode to be selected at certain times of the day, if the site is being powered by the UPS system.

This allows, for example, the UPS to support the intersection during peak periods but save power during the off peak periods, significantly extending the operational support time.

Technical specification

Siemens controller types supported

- ST700, ST750, ST750ELV, ST800, ST900, ST900 LED, ST900ELV, ST950, ST950 LED, ST950ELV

Cabinet

- ST950 style – (H) 1160mm, (W) 725mm, (D) 420mm
- Grey
- Full provision and interconnection system to support second cabinet for large battery capacity if required.
- Optional industry standard external connection for auxiliary power sources.

Electrical

- Input power supply 230V AC RMS $\pm 20\%$:
- Supply frequency: 50Hz $\pm 4\%$
- Switching to battery support, mains supply or auxiliary power source is transparent to traffic controller system.

Environmental

- Operating temperature range: -25°C to $+65^{\circ}\text{C}$ (including solar radiation).
Internal cabinet heater option to allow operation at extended cold temperatures.
- EMC to EN50293.

Ratings

- Options for operation with intersection total loads up to 1.7KW.
- Battery set options offering variable support times tailored to application requirements.
- Automatic system shutdown once batteries are exhausted to maximise battery life.

Battery type

- High performance, low maintenance sealed, Lead Crystal batteries

Battery life

- Up to 10 years, warranted for 5 years, (maintaining a minimum of 75% of operational support time).
- Replacement battery kits for all battery capacities

Standards

- EN 62040 Uninterruptable Power Systems
- EN 50556 Road traffic signal systems

Siemens Infrastructure & Cities

Traffic Solutions

Sopers Lane, Poole, Dorset, BH17 7ER

Tel: +44 (0) 1202 782000 Email: sales.stc@siemens.com

siemens.co.uk/traffic

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