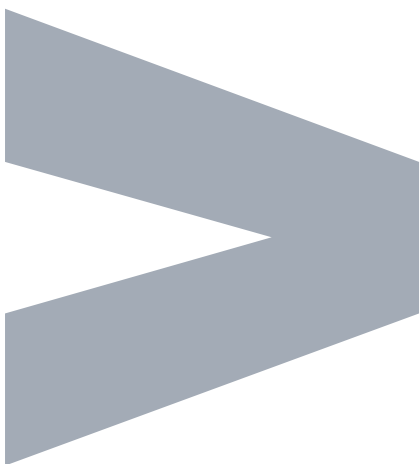


# UPS Maintenance

Setting New Standards





## WHY DOES UPS MAINTENANCE MATTER?

Your uninterruptible power supply is a highly complex piece of electrical equipment, made using parts, components, and consumables that will age over time and potentially require replacing.

And even the most reliable UPS isn't completely infallible – faults and failures can and do happen.

It's at critical moments like this where you need rapid, reliable, and expert support to get you back online as quickly as possible.

A proactive approach to maintaining your UPS offers much more than simply reducing your risk of downtime though.

It helps to make sure your unit is running at its most efficient, reducing both your power consumption and energy costs.

And it ensures you maximise your UPS's service life, which lowers the total cost of ownership (TCO) and aids with budgeting.

## SERVICE LEVEL AGREEMENTS WITH SUBSTANCE

Riello UPS sets the industry standard for superior UPS maintenance and aftercare. We offer a range of bespoke plans tailored to your specific needs.

All our UPS maintenance plans follow these core principles:

- **Clarity:** 100% guaranteed response and fix times, no hidden charges or auto renewals.
- **Custom:** bespoke support and UPS maintenance contracts tailored to the customer's needs.
- **Competence:** expert technical support, all service engineers are fully-trained and certified.
- **Coverage:** 24/7 availability, nationwide stock of spare parts, thermal imaging, replacement fans, remote monitoring, on-site crash kits.

We cover equipment that's both inside and outside of its warranty period. And as well as supporting the full range of Riello UPS units, we can also support products from third-party manufacturers too.





## EMERGENCY RESPONSE TIMES YOU CAN COUNT ON

When downtime strikes and you've got a fault that needs fixing, we offer a range of emergency response times to best suit your needs.

Our range of UPS maintenance plans commit to 100% guaranteed response times with a certified engineer on site, rather than simply the 'best endeavours' you'll get under the coverage of a standard warranty.

## TAILORED TO MEET YOUR SPECIFIC NEEDS

Response times categorised as **Working Hours** revolve around the typical working day (8:30 am to 5 pm Monday to Friday), with any incident requiring a response outside of those times, such as during the weekend, likely to incur additional charges.

For mission-critical sites, support is available on a 24/7/365 basis, with a response inside 4 **Clock Hours** the norm. Even faster response times (i.e. 1 or 2 hours) are achievable, particularly if special crash kits of spare parts and components are held onsite.

A dark blue horizontal bar containing four circular icons representing different service levels. Each icon contains text about response time and coverage, and is labeled with a tier name below it.

Tier	Response Time	Coverage
Diamond	4hr	24/7/365, 8hr fix
Platinum	4hr	24/7/365
Gold	8	working hours
Silver	12	working hours





## DIAMOND MAINTENANCE - YOUR ULTIMATE INSURANCE

When downtime simply isn't an option, our Diamond UPS maintenance coverage guarantees your peace of mind. It provides unparalleled protection for your mission-critical equipment.

The pioneering plan is the first to combine a rapid 4 clock hours Emergency Response Time with a promise to fix the fault within a further 8 hours of arriving on site. No ifs, no buts.

And if we fail to live up to those pledges, we'll put our money where our mouth is and give you a refund\*.

Diamond coverage goes above and beyond even the supreme support you receive with any of Riello UPS's other industry-leading maintenance contracts.

## WHAT DO I GET WITH DIAMOND UPS MAINTENANCE COVERAGE?

- A fully-certified engineer onsite within 4 hours of you first reporting the fault. 100% guaranteed.
- We'll fix the fault within 8 hours of us being on site.
- If the UPS is beyond repair, we'll replace it. And you'll get a refund if it takes longer than 8 hours, no questions asked.
- Receive round the clock protection from our Riello Connect remote monitoring service.

*\* 10% refund of the agreement value, plus a further 10% for each 24 hour period after the initial 8 hours until the UPS is either repaired and fully working, or replaced with a temporary UPS. Maximum refund amount limited to the total value of the agreement. T&Cs apply.*





## UPS SERVICE VISITS & HEALTH CHECKS

A UPS is like any other piece of equipment. Wear and tear over time is inevitable and without regular check-ups your unit's performance can easily become compromised, increasing the likelihood of failure and damaging downtime.

That's why it's crucial to have your UPS serviced regularly by a fully trained and certified engineer. Ideally, we'd advise at least 1 service visit a year.

Preventive Maintenance Visits (PMVs) are a key element of all ongoing Riello UPS maintenance agreements. But for customers not covered by a contract, we can also provide such service visits on an ad-hoc basis too.

Fully-certified UPS engineers will conduct a thorough inspection of your entire system, check all components, install the latest firmware updates, and advise you of any remedial actions to make sure your UPS is in its best possible condition.

## WHAT'S INCLUDED IN A TYPICAL PMV?

- Visual test: a thorough inspection of the installed UPS system and battery set.
- Physical tests: a full review of electrical connections. Thermal imaging included as standard to detect heat-related issues.
- Mechanical tests: series of functional checks including recording electrical measurements and the system's operational state.
- Environmental tests and a complete check of the surroundings for potential problems such as dust or humidity.
- Download and comprehensive review of the UPS history logs.
- Installing any necessary firmware upgrades or software updates.
- Full reporting of any major or minor faults found during the PMV.
- Completion of the maintenance register.
- Our recommendations to improve operational reliability.





## GETTING THE BEST FROM YOUR UPS BATTERIES

The batteries connected to your UPS system are crucial to its ongoing operation. Any battery failure puts your vital power continuity in jeopardy.

Most UPS batteries have a 5 or 10-year design life, but performance starts to deteriorate from the very moment dioxide paste is applied to its grids in the factory.

Each battery cell and string behaves slightly differently and has its own unique deterioration rate. This is affected by several factors such as ambient temperature, the frequency and depth of discharge, and how they are stored.

The best way to reduce your risk of premature battery failure is a proactive regime of regular battery monitoring, maintenance, and testing.

## MAKING SURE YOU AREN'T LEFT DRAINED

- Replace 10-year design life batteries in year 7-8. With 5-year design life, we recommend year 3-4.
- Keep your batteries at an optimum temperature of 20-25°C. Every 10°C increase reduces their service life by 50%.
- Overcharging causes dry out and thermal runaway. Undercharging leads to sulphation that reduces capacity.
- Storing unused batteries at 10°C or below will prolong their life. Remember to top-up charge them every 3-4 months too.





## UPS BATTERY TESTING

Riello UPS's on-site battery testing examines the performance and suitability of your UPS battery set.

Our inspections assess individual battery cell condition, total battery capacity, and remaining operational life.

Inspections are meticulous and can include **impedance testing** and **load bank testing**.

**Impedance testing** is a non-intrusive test designed to build up a history of each battery cell. Undertaken annually, it allows battery condition to be benchmarked over time.

Also known as discharge testing, **load bank testing** examines the batteries under normal and peak load conditions, demonstrating which cells hold their charge as well as identifying which are near the end of service life.

UPS battery testing is offered as a one-off service or as part of our ongoing battery maintenance plans.

## BATTERY REMOVAL & DISPOSAL

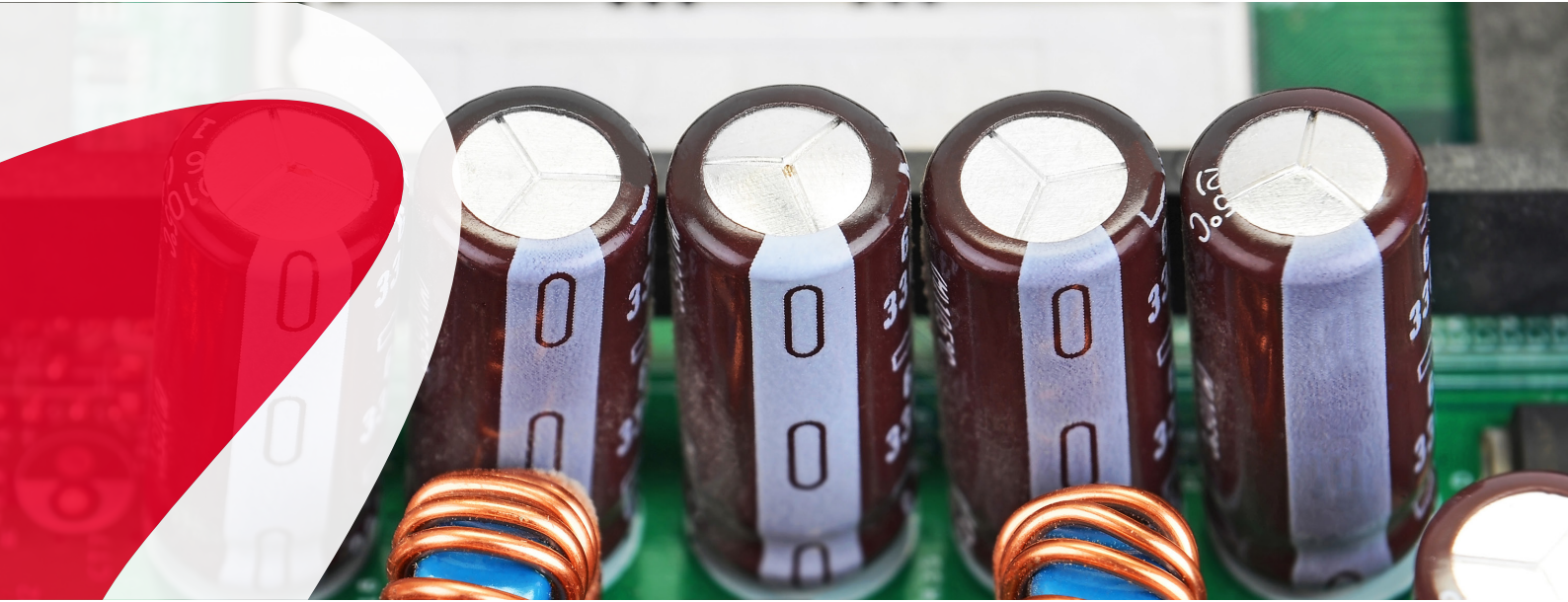
Where possible, UPS battery replacement should be planned in advance at the appropriate point in their design life.

This approach is far more cost-effective than having to replace an entire string unexpectedly which risks the possibility of damaging failure.

Riello UPS partners with all major battery manufacturers and can source virtually any replacement cells.

We are registered with the Environment Agency so you can be assured that we will remove, transport, and dispose of your old batteries in a safe and fully-compliant way.





## CARING FOR YOUR UPS CAPACITORS

Capacitors improve your UPS's power quality. But over time they age, the chemicals degrade, and they lose their ability to perform.

Even if only 1 or 2 are nearing their end of life, it places unnecessary stress on your system.

Capacitor failure is either 'open' – where they stop working but there's little visible evidence something has gone wrong – or 'short' – where there's an obvious leak, sometimes accompanied by a loud popping sound.

The electrolyte in a capacitor is conductive, so when it leaks it can create harmful unintended connections inside the UPS. It's corrosive too, so can damage surrounding components.

When a capacitor fails the rest must pick up the slack, which in turn will shorten their lifespan and increase the possibility of a serious failure.

## WHAT DO YOU NEED TO LOOK OUT FOR?

- The 3 main factors that shorten UPS capacitor lifespan are excessively high currents, heat, and high workload.
- Visual signs of imminent capacitor failure include oil leakage, deformation, scorched wires, and burnt valve caps.
- Failed capacitors damage batteries, increase harmonics, and can even force your UPS in to bypass mode.
- We recommend you proactively replace capacitor banks around year 7 or 8 of service to reduce your risk of serious failure.







## BREATHE NEW LIFE WITH A UPS OVERHAUL

An overhaul extends the lifespan of your UPS and gives it a performance boost by proactively replacing aging fans and capacitors.

UPS capacitors age over time and can cause problems such as harmonics and damage your battery strings.

While fans keep your rectifier and inverter cool enough to operate safely. But they're prone to failure, which exposes key components to higher temperatures and speeds up deterioration.

Proactively replacing old fans and capacitors with new lengthens the service life of your UPS, reduces your risk of failure, and puts off a far more expensive full replacement.

## WHAT ARE THE BENEFITS OF AN OVERHAUL?

- Improved resilience reduces your risk of downtime through a damaging system failure.
- New components improve your UPS's efficiency, cutting needless energy waste.
- Extending your UPS's overall life optimises your total cost of ownership (TCO).
- Better future-planning and budgeting by proactively scheduling works, rather than wait for the UPS to fail and need replacing with new.



## DOING THINGS DIFFERENTLY



**24-7 Technical Support:** our experienced team is just a phone call away through a single dedicated hotline.



**Rapid Response:** 100% guaranteed emergency response (and even fix) times to suit your specific needs.



**Fully-Certified UPS Engineers:** all engineers (in-house and authorised service partners) must successfully pass a Certified Engineer training programme to prove their competence.



**Speedy Spare Parts:** we store replacement parts in several locations across Ireland so they're with you as quickly as possible, often within hours of a fault first being reported.



**Onsite Crash Kits:** flight cases full of key components and spares available for the most business-critical locations.



**Clarity Over Consumables:** apart from batteries and capacitors, all replacement parts and components are covered, including replacement fans.



**No Hidden Costs:** labour costs are included provided the job takes place during normal working hours (NB not applicable for Lite plans).



**UPS Health-Checks:** annual Preventive Maintenance Visit (PMV) by one of our fully-certified UPS engineers.



**Free Software Updates:** firmware upgrades automatically installed during every PMV so your system is up-to-date.



**Thermal Imaging:** cutting-edge thermal imaging technology included as standard during PMVs to accurately identify heat-related faults.



**Remote Monitoring:** our cloud-based Riello Connect service gives you the added peace of mind of having a team of trained technicians monitoring your UPS system round-the-clock.



**Optional Extras:** our expert team offers a range of added-value services including load bank testing, impedance testing, and battery testing.



**Contract Control:** unlike other providers, there are no automatic contract renewals – the choice is entirely yours.

*Please note while many of these features are included as standard, some are optional or only available with specific maintenance plans. Check with our Riello UPS service team for further details.*



## WHAT'S COVERED IN YOUR UPS MAINTENANCE PLAN?

	Lite	Standard	Plus	Premium	Diamond
Preventive Maintenance Visit	✓	✓	✓	✓	✓
Firmware Upgrades	✓	✓	✓	✓	✓
Emergency Response	✓	✓	✓	✓	✓
Labour	✗	✓	✓	✓	✓
Battery Replacement Labour	POA	POA	POA	POA	POA
Replacement Parts (excluding Batteries & Capacitors)	✗	✗	✓	✓	✓
On-Site Crash Kit	✗	✗	✗	✓	POA
Thermal Imaging	✓	✓	✓	✓	✓
Riello Connect Remote Monitoring	POA	POA	POA	POA	✓
Load Bank Testing	POA	POA	POA	POA	POA
Impedance Testing	POA	POA	POA	POA	POA

