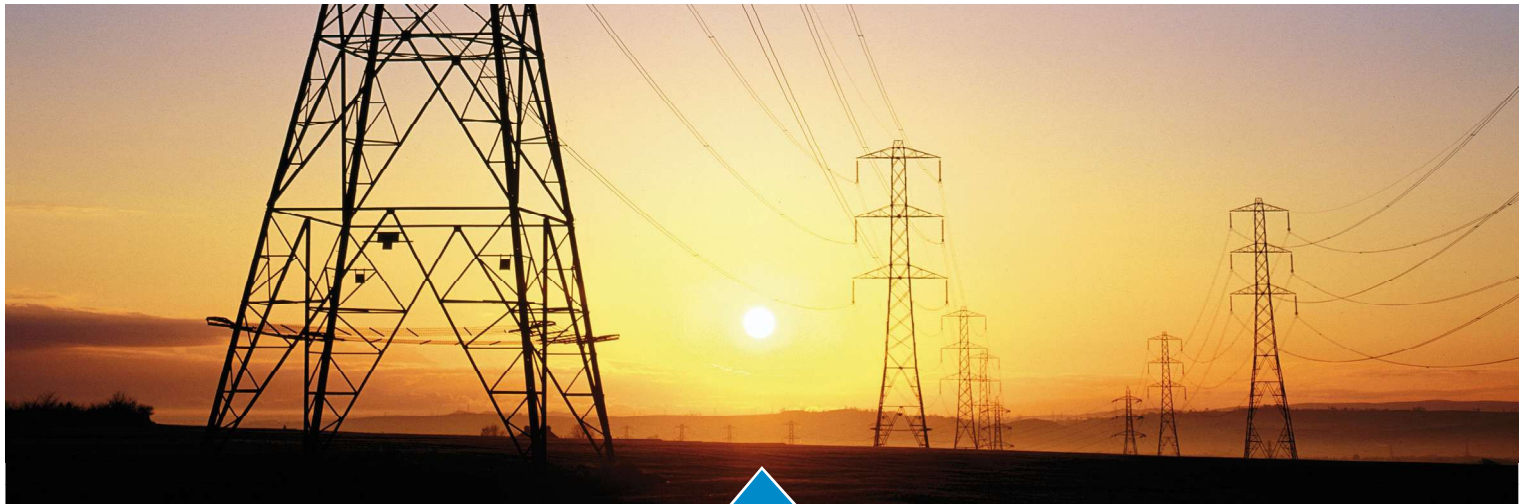


Transmission/Distribution



PQ Secure - UP-2210

- Voltage and current
- Power and demand
- Unbalance & frequency
- Flicker and harmonics
- 3 sec max harmonics
- Slowscan recording
- Sags/swells
- Transients
- Rapid voltage changes
- Fault recording
- Rate of change
- IEC 61000-4-30 Class A

Power Quality

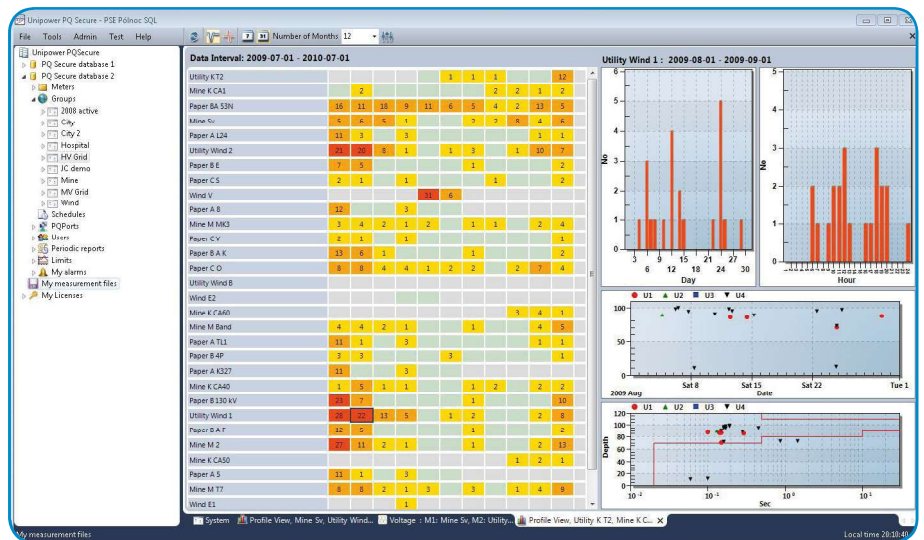
Prevent - Analyse - Follow up

System PQ Secure

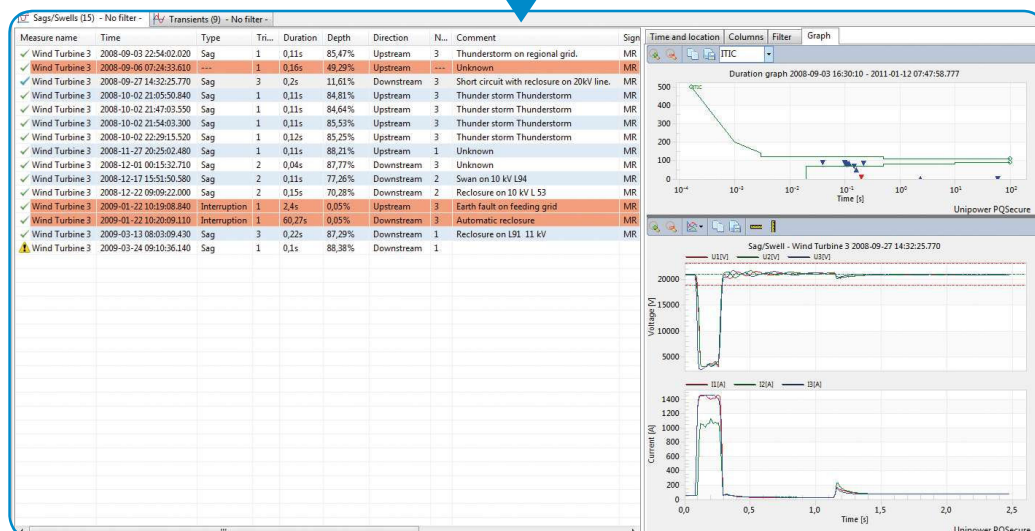
Unipower's PQ Secure system puts the network owner in full control of power quality and disturbances. The system measures thousands of parameters in accordance with IEC 61000-4-30 Class A. The System brings great value to transmission as well as distribution companies.

We have through experience and technical knowledge developed a high performing Power Quality Management system that automatically alerts you to changes in the grid. With the system you will improve your preventive work and it will help you investigate and follow up on changes and events in the network. Let us show you a couple of examples:

To do follow up work on changes in the grid is often time consuming. The statistical **Profile View** is a powerful tool that shows the power quality situation for one or several sites simultaneously. The example shows sags for different sites month by month. For the selected month sag statistics are shown and sag severity according to different international standards, in this case ITIC.



A unique event list gives important event information and allows for deeper analysis. Classifying disturbances helps analysis and the preventive and mitigating work can be documented in an easy way.



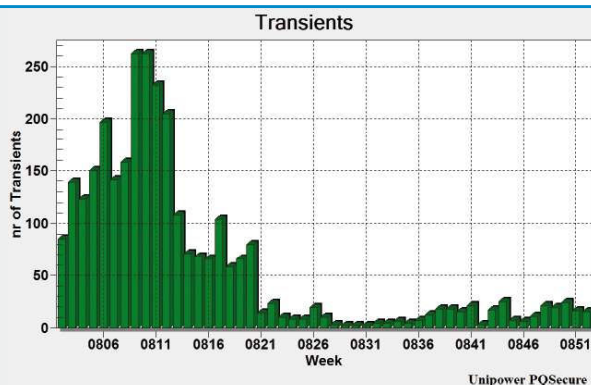
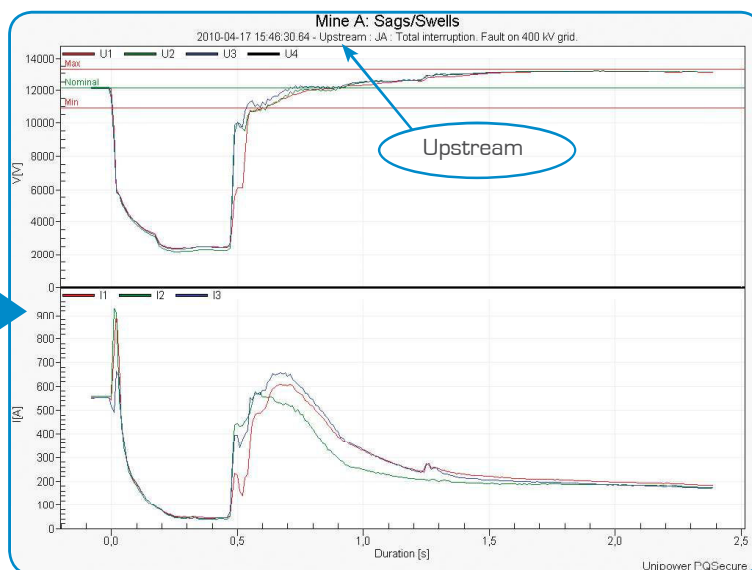
PQ Secure monitors the power quality continuously. It logs all critical parameters and automatically informs you of the results giving you a complete picture of the status in the power network. You don't have to go into the system and look for answers, the user friendly reports, for example, give you the overview you need. With PQ Secure you have the tool to prevent, analyse and follow up on any power quality problem. All measurements are easily compared and analysed in accordance with existing international power quality standards and grid codes. In the example below harmonics exceeding the IEC 61000-2-12 limits are marked red.

Individual failing harmonics:

U1

2: Ok (Max 0,044%)	15: Ok (Max 0,241%)	28: Ok (Max 0,022%)	41: Ok (Max 0,217%)
3: Ok (Max 0,366%)	16: Ok (Max 0,022%)	29: Ok (Max 0,259%)	42: Ok (Max 0,022%)
4: Ok (Max 0,086%)	17: Ok (Max 0,153%)	30: Ok (Max 0,022%)	43: Ok (Max 0,172%)
5: Ok (Max 5,213%)	18: Ok (Max 0,022%)	31: Ok (Max 0,259%)	44: Ok (Max 0,022%)
6: Ok (Max 0,388%)	19: Ok (Max 0,172%)	32: Ok (Max 0,022%)	45: Ok (Max 0,044%)
7: Failed (Max 5,817%)	20: Ok (Max 0%)	33: Ok (Max 0,022%)	46: Ok (Max 0,022%)
8: Ok (Max 0,086%)	21: Ok (Max 0,022%)	34: Ok (Max 0,022%)	47: Ok (Max 0,237%)
9: Ok (Max 0,044%)	22: Ok (Max 0,022%)	35: Ok (Max 0,282%)	48: Ok (Max 0,022%)
10: Ok (Max 0,022%)	23: Ok (Max 0,298%)	36: Ok (Max 0,022%)	49: Ok (Max 0,216%)
11: Ok (Max 0,24%)	24: Ok (Max 0,022%)	37: Ok (Max 0,196%)	50: Ok (Max 0,022%)
12: Ok (Max 0%)	25: Ok (Max 0,26%)	38: Ok (Max 0,022%)	
13: Ok (Max 0,022%)	26: Ok (Max 0,022%)	39: Ok (Max 0,022%)	
14: Ok (Max 0,022%)	27: Ok (Max 0,022%)	40: Ok (Max 0,022%)	

Direction detection on all disturbances. When a disturbance occurs the system will tell you from what direction it originated.



When improvements in the grid have been made, PQ Secure helps **follow up** and evaluate if the investments have had the desired effect and the number of disturbances has really decreased.

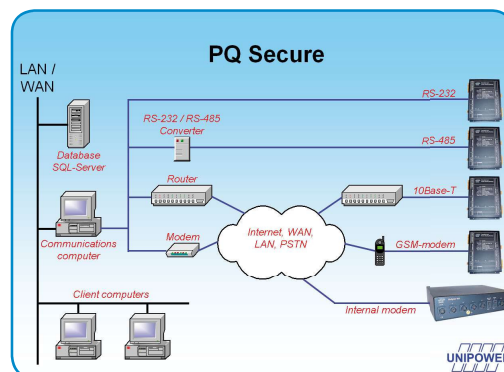
Unipower

– Your Power Quality Partner

Unipower is known for its high performance products but Unipower is much more than just products. Behind our system lies years of research and experience. As our customer you will also benefit from leading edge competence.

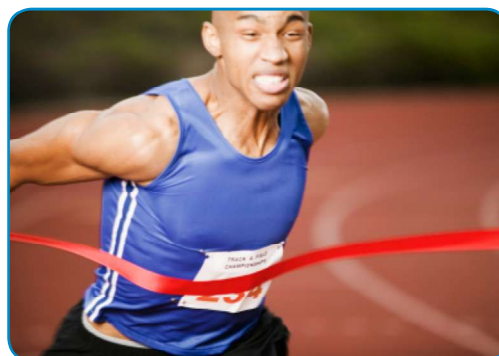
1. Leading technology

Measuring generates large quantities of data that may be complex to administer, especially with several measurement objects. Sending large data files via communication lines of varying quality could be time consuming. Unipower's solution to this is advanced data compression in combination with reliable communication and a modern database system. This offers a flexible solution that can be automated in an architecture from one to thousands of meters. Important hallmarks of our PQ Management System are scalability, accuracy, efficiency, reliability and adaptability.



2. Key competence

Unipower aims to exceed customers expectations. Unipower has a long experience on the world market. Our organization originates in ABB and has 25 years of experience and competence. We are also represented in International Standard Committees.

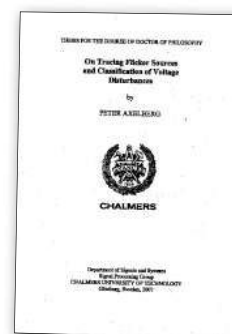


3. Research

University Research secures future products. Unipower is well connected to the leading edge of research in the area and this continuously benefit our customers by adding new research results to our system solutions. Unipower has an attractive upgrade policy.

4. Our references

Unipower has many interesting references, many lines of industry and utilities. Contact us and we will tell you more!



Your power quality partner