



CHLORIDE

Secure Power Always

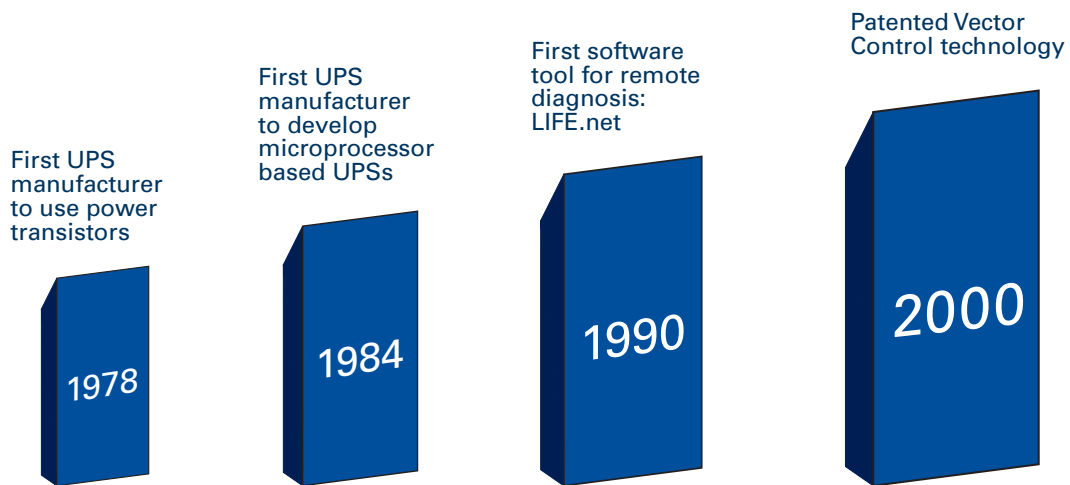
Digital Online Technology



Innovative technology



Chloride has a proud heritage of innovation. Our exceptional research and design capabilities have been at the forefront of technological innovations that have defined the evolution of products within the UPS industry.



As a continuation of this level of technological excellence, Chloride has developed **Digital Online technology, which is a unique technology for the single-phase UPS market, exclusive to Chloride.**

Digital Online technology is the successful end result of an intensive R&D programme to devise a technology that

combines the most desirable features of both Double Conversion and Line Interactive technologies. It combines **online performance** (zero transfer time, pure sinusoidal output and optimum voltage regulation) with **high efficiency** (>95%) and **flexibility** (optional isolation transformer and customisable design).

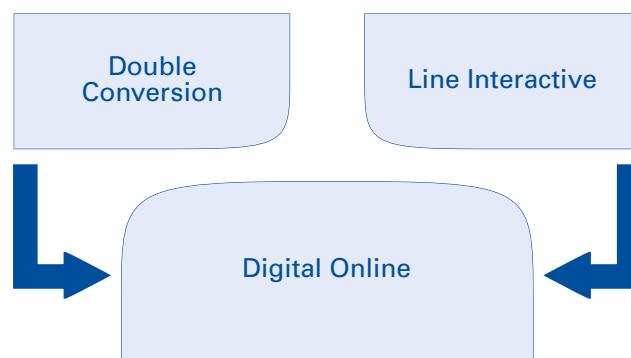
This high performance technology is both robust and reliable. Operating with high efficiency, Digital Online is a green technology that reduces your total cost of ownership and gives you peace of mind.

You can rely on this technology to provide the highest level of protection for your critical loads.



The digital online era

Where other UPS manufacturers are only able to propose a Line Interactive or Double Conversion UPS, Chloride is able to present a unique technology which combines the most outstanding features of both technologies: Digital Online.



The time for this technology has come. This is a technology which combines online performance with high efficiency offering the highest level of protection and minimising the impact on the environment.

What is the difference between products using Digital Online and a Line Interactive technology?

Digital Online is a **superior technology** with the following improvements:

- Total continuity for the loads: zero transfer time (6 ms. typically for Line Interactive products)
- Precision, stability; improved load care: better output voltage regulation.
- Better protection: galvanic isolation between batteries and the load.
- Better reliability: Line Interactive units normally use electromechanical devices for switching.
- Extra security: availability of internal automatic/static bypass to keep the load fed in case of UPS failure.

What is the difference between products using Digital Online and a Double Conversion technology?

Digital Online adopts the most outstanding features of Double Conversion technology, with respect to online performance (zero transfer time, pure sinusoidal output and precise output voltage regulation), but with several improvements:

- Better efficiency in mains mode: green energy usage, reduced electricity bills, reduced cost of ownership.
- Better availability: higher MTBF.
- Better protection: Galvanic isolation between batteries and output and, optionally, between input and output without adding an external cabinet
- Better high-frequency noise filtering: integral use of transformer.
- Improved continuity for the loads: Static bypass with zero transfer time to bypass mode.



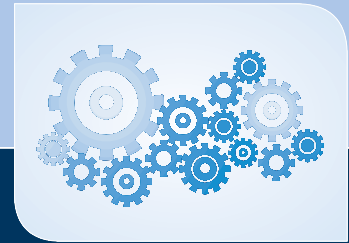


Technical features and benefits

Digital Online incorporates a unique design to achieve the following benefits, ensuring business continuity.

Premium protection for critical loads.

Feature	Benefit	Detailed description
Zero transfer time when switching to battery mode.	Stability and continuity for the business: There are no interruptions to the load.	A unique combination of hardware elements (for example, static switches) and advanced control algorithms ensure that the RMS value of the output voltage in one cycle can be kept within the nominal values if there is a mains failure.
Precise output voltage regulation (down to +/-5%).	Stability: No matter what happens with the AC mains supply. The load will always have a stable output voltage reducing the chance for a possible malfunction.	A microprocessor constantly checks the voltage so that when a deviation is detected, it activates the adequate step selection static switch which selects the right transformer tap.
Pure sinusoidal output in battery mode.	Continuity: The load doesn't notice that there has been a mains failure.	The UPS can fabricate an almost pure sinusoidal output as a result of the top-featured PWM-based inverter used internally.
Static/Automatic bypass	No downtime: The load is fed continuously, even if there is an internal UPS failure.	In case of an UPS internal failure or if manually forced by the operator, the UPS switches to bypass feeding the load from the AC input. The transfer to bypass mode is made by means of a semiconductor, not a relay. This implies zero transfer time when switching to bypass.
Galvanic isolation between batteries and load.	Extra protection. In the unlikely event of an inverter failure, there is no risk of damaging the load with the batteries' DC voltage.	The topology inherent to this technology implies that the batteries and inverter transformer windings are galvanically separated.



Technical features and benefits

Green energy usage - environmentally friendly technology.

Feature	Benefit	Detailed description
Very high AC/AC efficiency.	Less energy wasted and, as a result, reduced electricity bills and lower total cost of ownership. Moreover, less energy (heat) wasted means the UPS sustains less thermal stress and, consequently, its lifetime is increased.	This is due to the use of a high performance transformer and the most advanced power electronic devices, AC/AC efficiency is >95%.

Flexibility of use, wide applicability.

Feature	Benefit	Detailed description
Input voltage range configurable via software.	This value can be configured for applications requiring a wide input voltage range, thus avoiding frequent switches to battery mode and prolonging the batteries' life.	Our service teams can configure this value to suit the application requirements.
Customising capability	The products can be customised to meet the exact application or project requirements.	Since Digital Online technology has been designed by our R&D team, we have the know-how and the expertise to customise the products and provide solutions for large projects and complex projects.
Optional galvanic isolation between input and output without adding an external cabinet.	It is possible to have this valuable feature without affecting the footprint.	It is possible to have galvanic isolation input-output simply by replacing the internal autotransformer with an isolation transformer.

Robust and reliable solution.

Feature	Benefit	Detailed description
High MTBF	Less maintenance required and the load is always guaranteed to be well protected.	Digital Online technology is intrinsically very reliable, achieving MTBF values of >300.000 hours in the <3kVA models according to MIL-HDBK-217F.



Sectors and applications

Chloride has a large installed base of Digital Online products, demonstrating the technology's suitability for the most demanding applications within a wide range of market sectors.

Chloride is proud to have major international customers who rely on Digital Online technology to protect their critical loads and ensure business continuity. It has proven to be robust and reliable across a wide variety of applications.

- Protection of control equipment in wind turbines.
- IT applications (servers, networking devices).
- Variable messaging systems on motorways.
- Protection of automatic teller machines (ATMs).
- Medical applications requiring galvanic isolation.
- VoIP equipment.



Some examples of projects and applications involving Digital Online products:



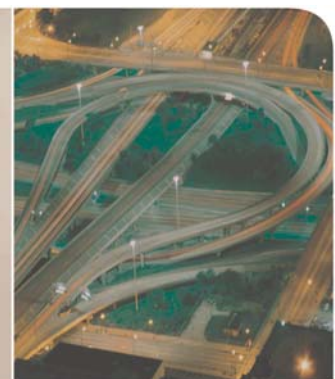
A large number of UPS have been distributed across a wide territory to protect automatic teller machines, ensuring that all financial transactions are completed properly without interruption.



Power Lan Plus UPS have been installed in 4,000 petrol stations to protect cash registers. The low failure rate of the product was a key factor for the customer.



Galvanic isolation provides the best protection for sensitive medical diagnostic equipment.



UPS operate in adverse environmental conditions to ensure the operational continuity of the PLCs which control traffic cameras.



Chloride's unique Digital Online technology combines **online performance** with **high efficiency** to provide the highest levels of power protection while minimising the impact on the environment.

This implies that we can provide the best level of protection for the loads and, at the same time, optimize electricity bills, reduce the need for air conditioning, minimize thermal stress for the components...

