

Chloride® CP Range

Customized to user specification
Full portfolio of industrial options



Benefits

Strengthened reliability:

- Streamlined cooling design for airflow optimization
- Reduced operation temperature of critical components
- Enhanced protection / robustness of all electronic boards with conformal coating

Improved maintainability:

- "True" front access to all replaceable components to reduce MTTR
- Simplified design of major subassemblies to allow complete replacement in minutes
- Easier maintenance of paralleled systems thanks to unique Chloride Smart Parallel Switching function.

Increased availability:

- Multiplied redundancy with Chloride Smart Parallel Switching function that dynamically controls paralleled systems
- Improved safety for the load thanks to the assistance to the AC bus-tie management
- Remote support from experts to efficiently update settings as required

Chloride® CP70Z is an industry-leading uninterruptible power supply (UPS) system range that offers maximized power availability for critical process applications. It makes it a system of choice to guarantee the safety of personnel and assets in the most demanding environmental and electrical conditions.

Range Overview

Chloride® CP70Z is a system range based on SCR/IGBT technology with proven digital control. It is available from 2.5 to 250 kVA in single-phase output version and from 5 to 500 kVA in three-phase output version. It is configurable with a set of industrial options such as custom protection devices, bypass transformer and/or stabilizer, various communication solutions, etc.

Designed as an industrial system, it includes most frequently specified features as default, for example dual cooling channel, input and output transformers, conformal coating of all printed circuit boards, halogenfree flame retardant internal cables.

The architecture of the system allows the segregation of different pre-defined functions that help to increase personnel safety on site as well as improve overall system availability.

As part of Chloride® CP70Z solution, we offer the calculation and set up of a system with various industrial style batteries (VRLA, sealed, NiCd, Li-Ion, Sodium) as well as low-voltage electrical distribution systems.

Applications

- Oil and Gas industries, offshore and onshore
- Refining and petrochemical plants
- Power generation plants
- Rail transport
- Process industries



Example of Chloride® CP70Z-40kVA-12P-220Vdc-230Vac 1ph

Key Features

- 6- or 12-pulse thyristor rectifier at the core of the **best-in-class** reliability
- **Reduced inrush current $\leq 10 \times I_n$** to avoid oversizing upstream protection and 2-step start-up
- **<10% THDI in 12-pulse** SCR system is possible without additional harmonic filters
- **Smart access to UPS data** via a large color touchscreen with 2000-event exportable log.
- Unmatched overload and **short-circuit capacity** at 315% for 100ms*

Technical Data

Input	
AC voltage	3 x 400 V (380, 415) ⁽⁴⁾
Voltage tolerance	+/- 10 %
Frequency	50 Hz (60 Hz)
Frequency tolerance	+/- 5 %
Inrush current	$\leq 10 \times I_n$ ⁽⁴⁾

Output	
Available ratings	See table (at PF 0.8 lagging)
AC Voltage	
• Single phase	1 x 230 V (220, 240) ; 1 x 110 V (115, 120) ⁽⁴⁾
• Three phase	3 x 400 V (380, 415) ; 3 x 220 V (200, 208, 230) ⁽⁴⁾
Frequency	50 Hz (60 Hz)
Frequency stability	
• With internal oscillator	+/- 0.05 %
• With reserve synchronism	+/- 3 % (from 1 to 5 % adjustable)
Voltage stability (for 0 to 100 % load variation)	
• Static	+/- 1 % (+/- 2 % for parallel systems)
• Dynamic	VFI SS 111 as per IEC/EN 62040-3, class 1
Inverter overload capability	
• 1 minute	150 % of nominal power
• 10 minutes	125 % of nominal power
Short circuit clearance (in % of nominal current)	
• 1-ph output	250 % / 100ms - 175 % / 5s
• 3-ph output Ph-N:	315 % / 100 ms - 220 % / 5 s
• 3-ph output Ph-Ph:	190 % / 100 ms - 135 % / 5 s
Harmonic voltage distortion	
• With 100 % linear load	< 3 %
• With 100 % non-linear load	SS as per IEC/EN 62040-3
Allowable power factor	0.5 lagging to 0.5 leading ⁽⁵⁾
Allowable crest factor	up to 3/1
Transfer time	Transfer time from inverter to by-pass or by-pass to inverter when synchronized = 0 ms

Battery	
Type	Lead acid or nickel cadmium, vented or recombination, Sodium Metal Chloride (SMC)
Autonomy	From few minutes to several hours, on request
Battery current limitation (typical, float & boost modes)	0.1 C (lead-acid battery) 0.2 C (nickel-cadmium battery) 0.2 C (SMC)

Ratings

Output Power ⁽¹⁾ (kVA) vs DC Intermediate Voltage (Vdc)															
110-120 Vdc	5	10	20	30	40	50	60 ⁽²⁾	-	-	-					
220-240 Vdc	-	10 ⁽²⁾	20	30	40	50	60	80	100	120 ⁽²⁾	160	200	250	320	
400 Vdc ⁽³⁾	-	-	-	-	40	50	60	80	100	120	160	200	250	320	500

General Data

Title	
Operating temperature	0 to 40 °C ⁽⁴⁾
Storage temperature	-20 to +70 °C
Relative humidity	< 95 % non condensing
Operating altitude	1000 m max without derating ⁽⁴⁾
Cooling	Forced ventilation
Efficiency	Up to 90 % according to rating
External protection	IP 20 ⁽⁴⁾ according to IEC 60529
Internal protection	Protection against unintentional direct contacts, as per IEC 60950-1/62477-1
Noise (at 1m in front of the unit)	60 – 75 dB according to rating
Cabinet colour	Grey RAL 7032 ⁽⁴⁾
Dimensions	Varying according to ratings and options

Standards

Standards	
IEC62040-1:2017	Uninterruptible power systems (UPS) - Part 1: Safety requirements
IEC62040-2:2016	Uninterruptible power systems (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements
IEC62040-3:2011	Uninterruptible power systems (UPS) - Part 3: Method of specifying the performance and test requirements
IEC60529:1989 +AMD1:1999	Degrees of protection provided by enclosures (IP Code)
IEC60076-11:2004	Power transformers - Part 11: Dry type transformers
IEC 60146-1-1	Semiconductor converters - Part1- 1

Conformity	
Low voltage directive	2006/95/EC and 2014/35/EU
EMC directive	2004/108/EC and 2014/30/EU
CE Mark	

- * 3-ph output only
(1) at power factor 0.8 lagging
(2) 1-ph output only
(3) Up to 250 kVA 1-ph output or up to 500kVA 3-ph output on request
(4) other available on request
(5) derating may apply

Options

Consult us for any other requirements, subject to feasibility

Rectifier-charger

- 12-pulse rectifier
- Harmonic filter on 12P for THDi $\approx 5\%$ (+/- 1pt)
- Voltage ripple filter
- Blocking diode
- Other input voltage (3 x 190 to 3 x 690 VAC)
- Surge and/or lightning protections
- Rectifier output switch

Battery line

- Battery circuit protection box
- Battery reversed polarity detection
- Battery low-voltage disconnection
- DC earth fault detection
- Battery black start
- Battery room temperature sensor
- Battery monitoring system (Chloride® BMS)
- Battery cabinet / rack

Inverter

- Other output voltage (1 x 110 to 3 x 690 VAC)
- Manual or automatic precharge of inverter capacitors
- Inverter input switch

Bypass line

- Bypass isolator(s)
- Bypass transformer (H class)
- Bypass stabilizer (servo-controlled)
- Backfeed protection
- Surge and/or lightning protections

System

- Dual distributed parallel configuration with one or two reserve lines
- Input / output isolators
- AC distribution
- AC earth fault detection or monitoring
- Internal cabinet lighting
- Anti-condensation heater
- UPS cabinet temperature monitor

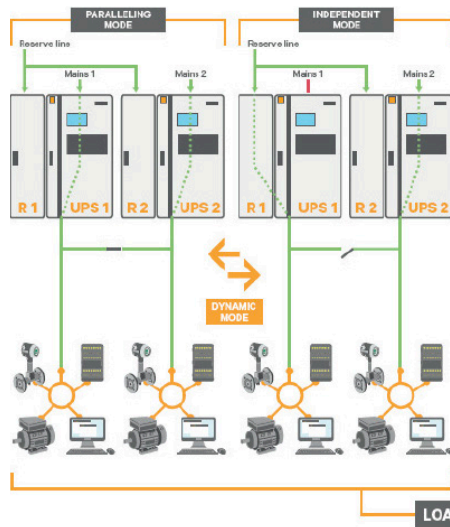
Mechanical

- External ingress protection up to IP42
- Top cable entry
- Specified color of panels
- Special feet height (200mm or 300mm)
- Special keylock
- Non-magnetic gland plate (brass or aluminum)
- 2 mm side panels thickness
- Specified cabinet identification (tag, nameplate)

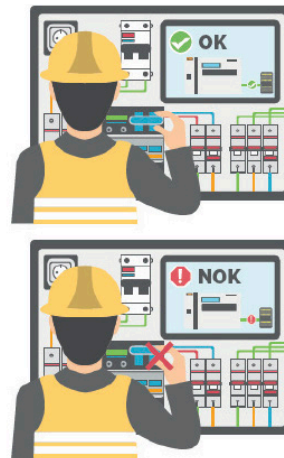
Communication

- Front panel analogue meters (72x72, class 1.5)
- Transducers 4-20mA
- Additional volt-free contacts
- Modbus RTU (RS232 or RS485)
- Modbus / TCP
- Profibus
- IEC61850 protocol
- PPVis monitoring software
- Mimic panel:
 - Passive mimic of the system
 - Active mimic with integrated LEDs
- Lamp indicator on front panel (22 mm diameter)

Chloride Smart Parallel Switching



Advanced AC Bus-Tie Management



Benefits



**DRASTIC REDUCTION
OF RISKS OF LOAD
INTERRUPTION**



**SIMPLIFIED
MAINTENANCE
PROCEDURES**



**NO ERRORS DUE
TO THE HUMAN
INTERVENTION**



**HIGHER LEVEL
OF REDUNDANCY**



**NEW ADDITIONAL
BACK-UP SCENARIOS
FOR THE LOADS**

LYNX by Chloride® (HMI)

The front panel of the system includes a large, colour touchscreen LYNX with intuitive graphical interface that simplifies system setup, operation, and troubleshooting.



Lynx by Chloride® - Human-machine interface (HMI)

System Set-up

- Selection of the language
- Set-up of the date and time
- Adjustment of the brightness
- Configuration of the main screen: the user can choose between displaying the block diagram only or the block diagram with the input and/or output measurements
- Configuration of the Modbus (optional)
- Adjustment of system parameters in a password protected area (e.g. battery voltage level, number of cells)

System Operation

- View of the single line diagram with color-coded blocks and power flow
- Check the position of the system main isolators (open/close status)
- Access to blocks information and measurements via a simple touch
- Change of the battery charging mode (float, boost, initial charge)
- Launch of a battery test

System troubleshooting

- Color-coding of each block for immediate identification of possible alarm
- Memorization of some critical fault messages with a mandatory fault acknowledgement
- Checking of all the triggered status, warning and fault messages with detailed description via a simple touch
- Event logger that records up to 2000 events with date and time stamp
- Export of all the recorded events using USB flash drive. The extracted HTML file allows root cause analysis.



With complete service portfolio and extensive field service network, we ensure system lifelong reliability.

- Project services and commissioning
- Maintenance services and plans
- Performance improvement and upgrades

At Chloride we design, manufacture and service custom-made Uninterruptible Power Systems to protect your mission-critical industrial applications.