

Chloride CP-60Z

AC UPS System

5 to 60 kVA (1-ph or 3-ph output)

The Chloride CP-60Z industrial Uninterruptible Power Supply (UPS) system is the result of latest industrial requirements combined with R&D innovations to offer an improved efficiency and reduced operating costs industrial UPS.

The Chloride CP range is designed to meet the stringent electrical and mechanical requirements in industrial environments. Each Chloride CP system is based on interchangeable sub-assemblies to allow full customization, in compliance with client's technical specification and with project documentation requirements.

Applications

The Chloride CP-60Z is the best solution, both cost effective and environmentally friendly, to meet the industrial requirements of a wide range of sectors, such as:

- Oil & Gas, offshore and onshore
- Refining and Petrochemical industries
- Water infrastructures
- Mining
- Transportation (rail, metro, tramway)

Benefits

- **Energy savings** - Improved efficiency means reduced power consumption and smaller air conditioning system
- **Project savings** - Higher input power factor and lower inrush current allow smaller upstream transformer, switchgear and cables and reduce line current and losses in the cables.
- **Safe and easy maintenance** - Segregated manual bypass and front access to major components improve safety and reduce MTTR
- **Smart access to UPS data:**
 - Large graphical user interface with touch screen
 - Embedded event logger (up to 2000 events) and capability to export the recorded events via USB stick

Key Features

- **Low Ripple Voltage** to reduce battery stress and optimize its lifetime
- **Low inrush current** < 4In (12-pulse) to not oversize mains power supply
- **SCR-based rectifier, 6 or 12 pulses**, with improved operation to significantly reduce the mains' pollution (THDi) and the input RMS current
- **Proven reliability:** The unique design allows the UPS to continuously operate at full load at 40°C
- **Galvanic isolation:** input and output transformers are standard on the complete range
- **Ingress protection IP42** is provided as standard to operate in the most demanding environments
- **Full compatibility:** with lead-acid and nickel-cadmium batteries, sealed or vented

Custom-designed AC UPS systems to secure critical industrial processes

The Chloride CP-60Z is available from 5 to 60kVA in single-phase or three-phase output configuration (from 1x110 V to 3x415V) and offers 110Vdc, 220Vdc, and 400Vdc battery voltages.

The UPS uses patented digital Vector Control technology which increases the UPS performances, enables active conditioning of the load and allows personalised system settings.

The Chloride CP-60Z can be adapted for project-specific requirements. A wide choice of industrialized extras allows system customization according to the most demanding technical specifications.

To further improve load availability and process reliability, the system is able to operate in dual parallel configuration, centralized or distributed, with single or dual batteries, and can include AC bus-tie.



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Ratings - Output power⁽¹⁾ (kVA) vs DC intermediate voltage (Vdc)

Output Voltage (Vdc)	5 kVA	10 kVA	20 kVA	30 kVA	40 kVA	50 kVA	60 kVA
110-120Vdc	5	10	20	30	-	-	-
220-240Vdc	5	10	20	30	40	50	60
400Vdc	-	-	-	-	40	50	60

⁽¹⁾ at power factor 0.8 lagging

Technical Data

Input	
AC voltage	3 x 400V (380, 415) ⁽²⁾
Voltage tolerance	+/- 10%
Frequency	50Hz (60Hz)
Frequency tolerance	+/- 5%
Inrush current	< 8 x In (6-pulse version) < 4 x In (12-pulse version)
Power factor	up to 0.94
Battery DC Circuit	
Nominal DC voltage	110 / 120 / 220 / 240 / 400 V
Voltage stability (Input within tolerance)	+/- 1% in float mode +/- 1.5% for parallel rectifiers
Voltage ripple	0.25% RMS, in float mode, battery connected
Current limitation	1 nominal
Charging characteristic	IU according to DIN 41773
Output	
Available ratings	see table (at PF 0.8 lagging)
AC Voltage:	
• single phase	1 x 230V (220, 240) ; 1 x 110V (115, 120)
• three phase	3 x 400 VAC (380, 415) ; 3 x 220 VAC (190, 208)
Frequency	50Hz (60Hz)
Frequency stability:	
• with internal oscillator	+/- 0.05%
• with reserve synchronism	+/- 3% (from 0.2 to 6% adjustable)
Voltage stability (for 0-100% load variation):	
• static	+/- 1% (+/- 2% for parallel systems)
• dynamic	VFI SS 111 as per IEC/EN 62040-3, class 1
Overload inverter:	
• 1 minute	150% of nominal power
• 10 minutes	125% of nominal power
Short circuit clearance:	
• 1-ph output (in % of nominal current)	250%/100 ms - 175%/5 s
• 3-ph output (in % of nominal current)	315%/100 ms - 220%/5 s (Ph-N)
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
Allowable crest factor	up to 3/1
Battery	
Type	Lead Acid or Nickel Cadmium vented or recombination
Autonomy	From few minutes to several hours, as per customer's requirement
Battery current limitation (typical, float & charge modes)	0.1C (Lead Acid battery) 0.2C (Nickel Cadmium battery)
Battery current limitation (typical, boost mode)	0.05C (Lead acid battery) 0.1C (Nickel Cadmium battery)
General Data	
Operating temperature	0 to 40°C ⁽²⁾
Storage temperature	-20 to +70°C
Relative humidity	<90% non condensing
Operating altitude	1000 m max without derating ⁽²⁾
Cooling	Fan-assisted with redundant monitored fans
Efficiency	Up to 90% according to rating and configuration
External ingress protection	IP 42 according to IEC 60529
Noise (at 1m in front of the unit)	less than 66 dB
Frame colour	Grey RAL 7032 ⁽²⁾
Dimensions	Varying according to ratings & options

⁽²⁾ other available on request

Standards

Compliance	IEC 62040-1:2008+AMD:2013 - Uninterruptible power systems (UPS) – Part 1: General and safety requirements for UPS IEC 62040-2:2006 – Uninterruptible power systems (UPS) – Part 2: Electromagnetic compatibility (EMC) requirements IEC 62040-3:2011 - Uninterruptible power systems (UPS) - Part 3: Method of specifying the performance and test requirements IEC 60529:1989+AMD1: 1999 – Degrees of protection provided by enclosures (IP Code) IEC 61439-1:2011 – Low voltage switchgear and controlgear assemblies – Part 1: General rules IEC 60076-11:2004 – Power transformers – Part 11: Dry type transformers
Conformity	Low voltage directive: 2006/95/EC and 2014/35/EU EMC directive: 2004/108/EC and 2014/30/EU CE Mark

Options

Rectifier	12-pulse SCR rectifier Special 3-ph input voltage (up to 3x690Vac) Surge and/or lightning protections Input circuit breaker
Battery	Battery circuit protection box (Fuse or circuit breaker) Battery reversed polarity detection Battery Low Voltage Disconnection (LVD) Battery black start Battery room temperature sensor for battery charge compensation DC earth fault detection
Output	AC earth fault detection Output fuse switch or circuit breaker
Reserve	Reserve input circuit breaker Reserve transformer (H class) Reserve stabilizer (servo-controlled) Stabilizer output isolator
System	Dual configurations AC distribution (circuit breakers) Backfeed protection Internal cabinet lighting Auxiliary power socket Anti-condensation heater UPS cabinet temperature monitor Special cabinet identification (Tag, nameplate)
Mechanical	Top cable entry Special frame colour Special feet height Special keylock Special gland plate Lifting eyes 2mm panels thickness
Communication	Front panel analogue meters (72x72, class 1 or class 1.5) Transducers 4-20mA Additional volt-free contacts Modbus RTU (RS232 or RS485) Modbus / TCP Profibus IEC61850 protocol PPVis monitoring software AMS compatibility kit Passive mimic panel Active mimic panel with integrated LEDs Special lamp indicator on front panel (22mm diameter)

Emerson Network Power IS S.A.S
30 Avenue Montgolfier - BP90
69684 Chassieu Cedex France
T: +33 (0)4 78 40 13 56
Industrial.Power@Emerson.com

EmersonNetworkPower.com

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