Chloride® FP60Z

AC UPS System
From 1 to 20 kVA, 1-ph input, 1-ph output
From 5 to 250 kVA, 3-ph input, 1-ph or 3-ph output

CHLORIDE® FP RANGE

Configured to order with industrial options

Pre-defined blocks for shorter lead time

Chloride® FP60Z Uninterruptible Power Supply (UPS) is a true industrial UPS system offering a full-IGBT innovative design and embedding all the latest technologies in power protection.

BENEFITS

Best-in-class performance to optimize expenses:

- Reduced CAPEX - Upstream transformer, switchgear and cables are downsized thanks to high input power factor, low THDi rejection and low inrush current
- Controlled OPEX - Lower power consumption thanks to high efficiency
- Proven digital Vector Control technology to control the output waveform in real time, even on non linear loads

Industrial-grade maintainability:

- Innovative design without heavy power modules and allowing an easy front access to all components
- Removable ID Cards which safeguard the UPS parameters and facilitate control board replacement

Smart access to UPS data:

- Large color LCD touch-pad for user interface
- Configurable active mimic diagram
- Embedded event logger (up to 2000 events) and capability to export recorded events via USB memory stick

Industrial flexibility:

- Fit-for-purpose battery selection
- Galvanic isolation: either output or input and output transformers
- Wide range of electrical and mechanical options

FEATURES

Bidirectional rectifier to perform battery deep discharging tests into the mains

Ingress Protection IP42 as standard for harsh environmental conditions

Robust design to continuously operate at full load at 40 °C

Continuous operation on input phase failure as optional feature

Range Overview

Chloride® FP60Z is available in standard range from 5 to 160 kVA in single-phase or three-phase output configurations and can be adapted to reach up to 250 kVA output power. It offers a wide choice of DC battery voltages (110 V, 220 V or 400 V) and of output voltages (from 1 x 110 V to 3 x 415 V).

The UPS uses patented digital Vector Control technology which increases the UPS performances, enables active conditioning of the load and allows adaptability to different application needs. Chloride® FP60Z features a wide input voltage tolerance, which makes the system compatible with the harshest industrial power grids.

To further improve load availability and process reliability, Chloride® FP60Z is able to operate in dual distributed parallel configuration, with one or two reserve supplies, with single or dual batteries, and can include an AC bus-tie.

Applications

- Petrochemical and Chemical
- Minings/Metals
- Power generation plants
- Oil & Gas
- Water and Wastewater
- Transportation (rail, metro, tramway)
- Continuous manufacturing processes

Example of Chloride® FP60Z - 800 mm width

Chloride® FP60Z

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VERTIV.

Technical Data

OUTPUT POWER AT COS PHI 0.8 (kVA) VS BATTERY VOLTAGE (Vdc)	1-ph and 3-ph input			3-ph input only							
110 Vdc	5	10	20	-	-	-	-	-	-	-	-
220 Vdc	-	10	20	30	40	60	-	-	-	-	-
400 Vdc	-	-	-	-	40	60	80	100	120	160	250

INPUT	
Input Voltage	1-ph x 230 Vac (220, 240) 3-ph+N x 400 Vac (380, 415) ± 10 % (other voltages and tolerances on request)
Inrush Current	≤ 1 In (without input transformer) ≤ 8 In (with input transformer)
Power Factor	Up to 0.98
Frequency Range	50 Hz (60 Hz factory setting) ± 5 %
Embedded input features	• AC input isolator switch • Surge protection with MOV lightning arrestors

INTERMEDIATE DC CIRCUIT	
Nominal DC voltage	110 / 220 / 400 Vdc
Voltage stability in steady state	≤ 1 % in float mode (input within tolerance)
Voltage ripple	≤ 1 % RMS (with and without battery connected)
Current limitation	I nominal
Charging characteristic	IU according to DIN 41773

OUTPUT	
AC voltage	1-ph: 230 Vac (208, 220, 240) ; 110 Vac (115, 120, 127) 3-ph: 400 Vac (380, 415) ; 208 Vac (190, 200, 220)
Frequency stability	With internal oscillator ± 0.1 % With reserve synchronism ± 1 % (1 to 4 % adjustable)
Voltage stability (0-100% load variation)	Static ± 1 % Dynamic VFI SS 111 as per IEC62040-3, class 1
Overload inverter (in % of nominal power)	150 %/1 min - 125 %/10 min at nominal output voltage
Short-circuit clearance (in % of nominal current)	1-ph and 3-ph: 250 %/100 ms - 150 %/5 s
Voltage distortion	With 100 % linear load < 2 % With 100 % non linear load < 5 % as per IEC62040-3
Allowable power factor	0.5 lagging to 0.5 leading
Allowable crest factor	3/1
Embedded output features	• Output switch • Output isolation transformer class H

RESERVE LINE	
Embedded reserve line features	• Integrated manual bypass switch • Inbuilt input reserve line switch

BATTERY			
Type	Type Lead Acid or Nickel Cadmium, vented or recombination		
Recommended number of cells:	**110 Vdc**	**220 Vdc**	**400 Vdc**
• Lead Acid	54 to 72	108 to 144	192 to 228
• Nickel Cadmium	88 to 98	176 to 200	320 to 323
Battery current limitation	0.1 C (Lead Acid) / 0.2 C (Nickel Cadmium)		
Embedded battery features	• Inbuilt battery circuit breaker with aux. contact • Battery reverse polarity protection and indication • Battery Low Voltage Disconnection (LVD) • Battery test, automatic or manual mode • Battery room temperature sensor for battery charge compensation		

GENERAL DATA	
Efficiency	Up to 92 % (according to rating and config.)
Operating temperature	From 0 °C to 40 °C (without system derating)
Storage temperature	From - 20 °C to + 70 °C (battery excluded)
Relative humidity	< 95 % non condensing at 20 °C
Operating altitude	1000 m (without system derating)
Cooling	Fan-assisted
Ingress Protection	Internal IP20 - external IP42
Noise (at 1 m in front of the unit)	62 to 72 dB (according to rating)
Input/output isolation	2500 Vac / 1 minute
Frame color	RAL 7035
Feet	100 mm height with feet cover
Gland plate	Aluminum non-magnetic, 3 mm thickness
Dimensions	From 1 x 800 mm to 2 x 1200 mm width
Embedded system features	• Internal cabinet lighting • Auxiliary power socket • Lifting Eyes • Display language: English, French, Spanish, Russian, Turkish (factory setting)

OPTIONS	
Rectifier	• Input isolation transformer • Special 1-ph or 3-ph input voltage (up to 3 x 690 Vac) • Input voltage tolerance from - 20 % to + 15 % • Input circuit breaker with aux. contact and breaking capacity up to 70 kA • Automatic reverse phase sequence correction • Automatic input phase failure adaptation
Battery	• Battery protection box (circuit breaker) • Battery black start, automatic or manual mode • DC earth fault detection
Output	• Circuit breaker with aux. contact • Emergency Power Off
Reserve	• Circuit breaker with aux contact • Reserve isolation transformer (H class) • Reserve voltage stabilizer (servo-controlled) • Stabilizer output isolator
System	• Parallel configuration (distributed parallel) • Operating temperature up to 50 °C with derating • Operating altitude up to 3000 m with derating • Redundant monitored fans • G3 conformal coating on electronic cards against dust and humidity • Space heater with thermostat or hygrostat • Halogen free cabling
Mechanical	• Top cable entry • Special frame color (RAL paint standards) • Special feet height 200 mm or base frame • Antivibration pads
Communication	• Additional volt-free contacts (up to 20 relays) • Modbus RTU (RS232 or RS485) • Modbus to TCP-IP / Profibus / SNMP • PPVIS monitoring software

Compliance

STANDARDS	
IEC/EN 62040-1: 2008	Uninterruptible power systems (UPS) - Part 1: General and safety requirements for UPS
IEC/EN 62040-2: 2006	Part 2: Electromagnetic compatibility (EMC) requirements
IEC/EN 62040-3: 2011	Part 3: Method of specifying the performance and test requirements
IEC/EN 60950-1: 2013 AMD2: 2014	Information technology equipment - Safety - Part 1: General requirements
Other	IEC 60529: 2013 / IEC 61439 / IEC 60076: 2015 / IEC 60332-1-2: 2015

CONFORMITY	
Low Voltage Directive (LVD)	2006/95/EC (before April 2016) 2014/35/EU (after April 2016)
EMC Directive	2004/108/EC (before April 2016) 2014/30/EU (after April 2016)
CE Mark	

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