

Chloride FP-60Z

AC UPS System

From 5 to 250kVA - 1 -ph or 3-ph output

The Chloride FP-60Z Uninterruptible Power Supply (UPS) is a true industrial UPS system offering a full-IGBT innovative design and embedding all the latest technologies.

The Chloride FP-60Z is part of the Chloride FP range, which is designed to meet the most demanding schedules of industrial projects. Each Chloride FP product includes a wide choice of ratings and a selection of industrialized and pre-configured options to allow the product to be quickly configured and delivered.

Applications

The Chloride FP-60Z is designed for use in the following sectors:

- Petrochemical and Chemical
- Water and Wastewater
- Continuous manufacturing processes

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 colour LCD touch-pad for user interface
 - Embedded event logger (up to 2000 events) and capability to export recorded events via 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

Key features

In addition to the above, the Chloride FP-60Z features:

- **Bi-directional 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

Flexibility for a wide scope of industrial requirements

The Chloride FP-60Z 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 250kVA output power. It offers a wide choice of DC battery voltages (110V, 220V or 400V) and of output voltages (from 1x110 V to 3x415V).

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.

The Chloride FP-60Z 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, the Chloride FP-60Z 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.



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Ratings - Output Power at cos phi 0.8 (kVA) vs battery voltage (Vdc)

	110 Vdc	220 Vdc	400 Vdc
	5	-	-
	10	10	-
	20	20	-
	-	30	-
	-	40	40
	-	60	60
			80
			100
			120
			160
			250

Options

Rectifier	Input isolation transformer Special 3-ph input voltage (up to 3x690Vac) Lightning protections Input switch / input circuit breaker with aux. contact
Battery	Internal battery protection (switch/circuit breaker) Battery circuit protection box (circuit breaker) Battery reversed polarity protection and indication Battery Low Voltage Disconnection (LVD) Battery black start Battery room temperature sensor for battery charge compensation DC earth fault detection Battery matching cabinet (for limited autonomies)
Output	Output switch / circuit breaker with pos. contact
Reserve	Reserve input switch / circuit breaker with aux. contact Reserve isolation transformer (H class) Reserve voltage stabilizer (servo-controlled) Stabilizer output isolator
System	Parallel configurations (distributed parallel) Operating temperature up to 50°C with system derating AC distribution - Backfeed protection tripping device Internal cabinet lighting Anti-condensation heater with thermostat Auxiliary power socket Redundant monitored fans Special cabinet identification (Tag number, nameplate)
Mechanical	Top cable entry Special frame color (RAL paint standards) Special feet height 200mm Special gland plate (2mm, 5mm thickness) Antivibration pads _ Lifting eyes G3 conformal coating on electronic cards against dust and humidity
Communication	Additional volt-free contacts (up to 20 relays) Modbus RTU (RS232 or RS485) Modbus / TCP-IP / Profibus / SNMP
Standards	
Compliance	IEC 62040 (-1, -2, -3) / 60146 / IEC 60950 IEC 60529 / IEC 60439 / IEC 60076 / IEC 60332-1-2
Conformity	EMC Directive 2004/108/CE Low Voltage Directive (LVD) 2006/95/CE - CE Mark

Technical Data

Input	Input voltage (other voltage on request) 3ph+N x 400 VAC (380; 415) ±10% Inrush current ≤ I _n (without input transformer) ≤ 8 x I _n (with input transformer) Power factor up to 0.98 Frequency range 50 Hz (60 Hz factory setting) ±5%												
Intermediate DC circuit	Nominal DC voltage 110 / 220 / 400 VDC Voltage stability ±1% in float mode, input within tolerance Voltage ripple -battery connected) ≤1% RMS, in float mode Current limitation I nominal Charging characteristic IU according to DIN 41773 Available ratings (see table above) from 5 to 160 kVA (at PF 0.8 lagging)												
AC voltage:	Single phase 230 VAC (220, 240); 110 VAC (115, 120) Three phase 400 VAC (380, 415); 220 VAC (190, 210) Frequency 50 Hz (60 Hz factory setting)												
Frequency stability:	with internal oscillator ±0.1% with reserve synchronism ±1% (from 1 to 4% factory setting)												
Voltage stability (0-100% load variation):	Static ±1% Dynamic VFI SS 111 - complies to IEC62040-3, class 1 Overload inverter (in % of nominal power) 150%/1 min - 125%/10 min												
Short-circuit clearance:	1-ph output (in % of nominal current) 250%/100 ms - 150%/5 s 3-ph output (in % of nominal current) 250%/100 ms - 150%/5 s												
Voltage distortion:	with 100% linear load <2% with 100% non linear load ≤5% (complies with IEC 62040-3) Allowable power factor 0.5 lagging to 0.5 leading Allowable crest factor 3/1												
Battery	Type Lead Acid or Nickel Cadmium, vented or recombination												
Recommended number of cells:	<table border="1"> <thead> <tr> <th></th> <th>110 Vdc</th> <th>220 Vdc</th> <th>400 Vdc</th> </tr> </thead> <tbody> <tr> <td>• Lead Acid</td> <td>54 to 72</td> <td>108 to 144</td> <td>192 to 228</td> </tr> <tr> <td>• Nickel Cadmium</td> <td>88 to 98</td> <td>176 to 200</td> <td>320 to 323</td> </tr> </tbody> </table>		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
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	Battery current limitation 0.1C (lead acid) / 0.2C (Nickel Cadmium)												
General Data	Efficiency up to 92% (in online mode and according to rating and config.) Operating temperature from 0 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 External ingress Protection IP 42 Noise 62 to 72 dB (according to rating) (at 1m in front of the unit) Input / output isolation 2500 VAC / 1 minute Feet 100mm height Gland plate thickness 3mm aluminium non-magnetic Dimensions Varying according to ratings and options from 1x800mm to 2x1000mm width												

Emerson Network Power IS SAS
30, Avenue des frères Montgolfier - BP90
69684 Chassieu Cedex France
T +33 (0) 4 72 47 63 77 / F +33 (0) 4 78 40 13 94
Industrial.Power@Emerson.com
EmersonNetworkPower.com

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