

# Chloride CP-70R

## Rectifier-Battery Charger

### 25 to 250 A (1-ph input) / up to 2500 A (3-ph input)

The Chloride CP-70R industrial rectifier-battery charger is the flagship rectifier of Chloride Industrial Power. It combines conservative design topology with proven digital control technology to offer the best performances in any electrical and environmental condition.

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-70R Rectifier-Charger range suits all DC applications requiring a large battery back-up:

- Transmission and Distribution
- Continuous process industries
- Oil & Gas and Petrochemical
- Transportation (rail, metro, tramway)

#### Benefits

- **Made to order** DC back-up power solutions to exactly fit the industrial application requirements
- **Complete power protection solution**, including switchgear, DC distribution, monitoring suite
- **Ruggedized solutions** for demanding environments: high temperatures, vibrations, dust, elevation, dripping water and moisture

#### Key Features

- **Reliability:** Unique design which allows the rectifier to continuously operate at full load at 40°C
- **High MTBF:** Natural cooling available on most of the range
- **Reduced MTTR:** Direct access to components from the front of the equipment.
- **Robustness:** Mechanical design to withstand vertical and horizontal acceleration stress 0.5g as standard
- **20 years + life span:** Designed to meet industrial requirements, with appropriate maintenance
- **Isolation transformer**
- **Multilingual digital graphic display** with embedded event log
- **Remote monitoring capabilities:** Modbus, Profibus, Ethernet, IEC61850, volt-free contacts, monitoring software
- **Full compatibility** with Lead-acid and Nickel-Cadmium batteries, sealed or vented

#### Custom-designed DC UPS systems to secure critical industrial processes

Associated with an industrial stand-by battery, the Chloride CP-70R rectifier-charger protects DC critical industrial equipments and processes from the damaging effects of power interruptions and losses. It features a microprocessor control which offers exceptional output stability and allows adaptability for different application requirements.

The CP-70R is a range of rectifiers-chargers available from 16A to 2500A with three-phase input, and from 25A to 250A with single-phase input. It offers several output voltages, from 24Vdc to 240Vdc.

The CP-70R three-phase input version is also available with 400Vdc output. This configuration can be combined with a CP-70i inverter in order to design specific high ratings double conversion AC UPS systems (up to 500kVA).

To further improve load availability and process reliability, the CP-70R is able to operate in dual or trial parallel configuration, with single or dual batteries, and can include a DC bus-tie.



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### Ratings - Output Current (A) vs Voltage (VDC)

24Vdc	48Vdc	125Vdc	220Vdc	400Vdc
25 <sup>(1)</sup>	25 <sup>(1)</sup>	25	25 <sup>(2)</sup>	-
60 <sup>(1)</sup>	60	60	60 <sup>(2)</sup>	-
100	100	100	100 <sup>(2)</sup>	-
-	-	-	125 <sup>(2)</sup>	-
160	160	160	160 <sup>(2)</sup>	-
-	-	-	200 <sup>(2)</sup>	-
250	250	250	250 <sup>(2)</sup>	-
-	-	320 <sup>(2)</sup>	320 <sup>(2)</sup>	-
400 <sup>(2)</sup>	400 <sup>(2)</sup>	400 <sup>(2)</sup>	400 <sup>(2)</sup>	400 <sup>(2)</sup>
-	500 <sup>(2)</sup>	500 <sup>(2)</sup>	500 <sup>(2)</sup>	500 <sup>(2)</sup>
600 <sup>(2)</sup>	600 <sup>(2)</sup>	600 <sup>(2)</sup>	600 <sup>(2)</sup>	600 <sup>(2)</sup>
800 <sup>(2)</sup>	800 <sup>(2)</sup>	800 <sup>(2)</sup>	800 <sup>(2)</sup>	800 <sup>(2)</sup>
1000 <sup>(2)</sup>	1000 <sup>(2)</sup>	1000 <sup>(2)</sup>	1000 <sup>(2)</sup>	1000 <sup>(3)</sup>
1250 <sup>(2)</sup>	1200 <sup>(2)</sup>	1200 <sup>(2)</sup>	1250 <sup>(3)</sup>	1250 <sup>(3)</sup>
1500 <sup>(2)</sup>	1600 <sup>(3)</sup>	1600 <sup>(3)</sup>	1600 <sup>(3)</sup>	-
2000 <sup>(2)</sup>	2000 <sup>(3)</sup>	2000 <sup>(3)</sup>	2000 <sup>(3)</sup>	2000 <sup>(3)</sup>
2500 <sup>(2)</sup>	2400 <sup>(3)</sup>	2400 <sup>(3)</sup>	-	-

<sup>(1)</sup> 1-ph input only

<sup>(2)</sup> 3-ph input only

<sup>(3)</sup> Rating with 12-pulse Rectifier only

### Technical Data

<b>Input</b>	
AC voltage	1 x 230V (220, 240) <sup>(4)</sup> 3 x 400V (380, 415) <sup>(4)</sup>
Voltage tolerance	+/- 10%
Frequency	50Hz (60Hz)
Frequency tolerance	+/- 5%
<b>DC Output</b>	
Nominal DC voltage	24 / 48 / 110-120 / 220-240 V
Voltage stability	+/- 1% in float mode, input within tolerance +/-1.5% for parallel rectifiers
Voltage ripple	1% RMS, in float, battery connected
Current limitation	I nominal
<b>Battery</b>	
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 & boost modes)	0.1C (Lead Acid battery) 0.2C (Nickel Cadmium battery)
Battery current limitation (typical, initial charge mode)	0.05C (Lead acid battery) 0.1C (Nickel Cadmium battery)
<b>General Data</b>	
Operating temperature	0 to 40°C <sup>(4)</sup>
Storage temperature	-20 to +70°C
Relative humidity	<90% non condensing
Operating altitude	1000 m max without derating <sup>(4)</sup>
Cooling	Natural convection on most of the range
Efficiency	Up to 96% according to rating
External protection	IP 20 <sup>(3)</sup> according to IEC 60529
Noise (at 1m in front of the unit)	55 – 65 dB according to rating
Frame colour	Grey RAL 7032 <sup>(4)</sup>
Dimensions	Varying according to ratings & options

<sup>(4)</sup> other available on request

### Standards

<b>Compliance</b>	IEC 60146-1-1:2009 - Semiconductor converters - Specification of basic requirements IEC 62040-1:2008+AMD1:2013 - Uninterruptible power systems (UPS) - Part 1-2: General and safety requirements for UPS in restricted access locations IEC 62040-2:2006 - Uninterruptible power systems (UPS) – Part 2: Electromagnetic compatibility (EMC) requirements IEC 61439-1:2011 - Low voltage switchgear and controlgear assemblies - Part 1: General rules IEC 60529:1989+AMD1:1999 - degrees of protection provided by enclosures (IP Code) IEC 60076-11:2004 - Power transformers – Part 11: Dry type transformers
<b>European Directives</b>	Low voltage directive: 2006/95/EC and 2014/35/EU EMC directive: 2004/108/EC and 2014/30/EU CE Mark

### Options

<b>Rectifier</b>	12-pulse rectifier Harmonic filter (THDi ≈ 5%) Ripple voltage filter Blocking diode Other input voltage (3x190 to 3x690VAC) Surge and Lightning protections
<b>Battery</b>	Battery circuit protection box Battery cabinet Low-voltage disconnect contactor Battery Management System Battery room temperature sensor
<b>System</b>	Parallel configurations (dual, trial) Input / output isolators Dropping diodes / DC/DC serial regulator isolated DC/DC converter DC distribution Earth fault monitoring Internal lighting Anti-condensation heater Enclosure temperature monitor Special cabinet identification
<b>Mechanical</b>	Up to IP42 external ingress protection Top cable entry Special frame colour Special feet height Special keylock Special gland plate Lifting eyes 2mm panels thickness Anti-seismic design
<b>Communication</b>	Front-panel analog meters (72x72 class 1.5) Transducers Additional Volt-free contacts Remote monitoring via Modbus Remote monitoring via other bus PPVIs monitoring software Passive or active (with LEDs) mimic panel

Consult us for any other requirements.

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