

System Features

- High power density — small footprint
- Parallel capability for up to 8 flywheels
- Onboard DC disconnect
- Fast recharge (under 150 seconds)
- ~99% efficient
- Compatibility tested with multiple UPS brands
- No special facilities requirements
- Self diagnostics
- Low maintenance
- Long useful life
- Remote notification (e-mail and/or paging)
- Remote monitoring (network and/or modem)
- LCD monitor/control panel
- Simple installation
- N + 1 configurable
- Microprocessor-based monitoring system
- Soft-start UPS integration
- Alarm status contacts
- Quiet operation
- Log file stores up to 2000 events
- Adjustable voltage settings
- Battery hardening capability

DC Flywheel Energy Storage System

Ultimate Backup Power for UPS Systems

From industrial plants where maximum productivity is crucial, to the worldwide build-out of advanced data centers, power quality is essential to keep businesses online and fully operational. Active Power's CleanSource[®] DC battery-free technology is an integrated motor-generator-flywheel that stores kinetic energy in its constantly spinning, quiet, low friction steel disc. Stored energy from the flywheel is instantly converted to electricity that bridges the power for critical loads during utility disturbances, and acts as an effective supplement or replacement for chemical energy storage with UPS systems. Compared to batteries, CleanSource² dramatically reduces space requirements, temperature restrictions, replacement cycles and maintenance while improving UPS system reliability and operational integrity.



CleanSource² offers a number of benefits for improving your power quality over conventional energy storage:

- Only two terminal connections
- Flexible siting
- 1/4 the maintenance cost
- 20+ year life
- 1/5 - 1/3 the footprint (50kW / sq.ft.)
- Non-toxic and non-corrosive
- Sophisticated real-time monitoring of over 25 system parameters

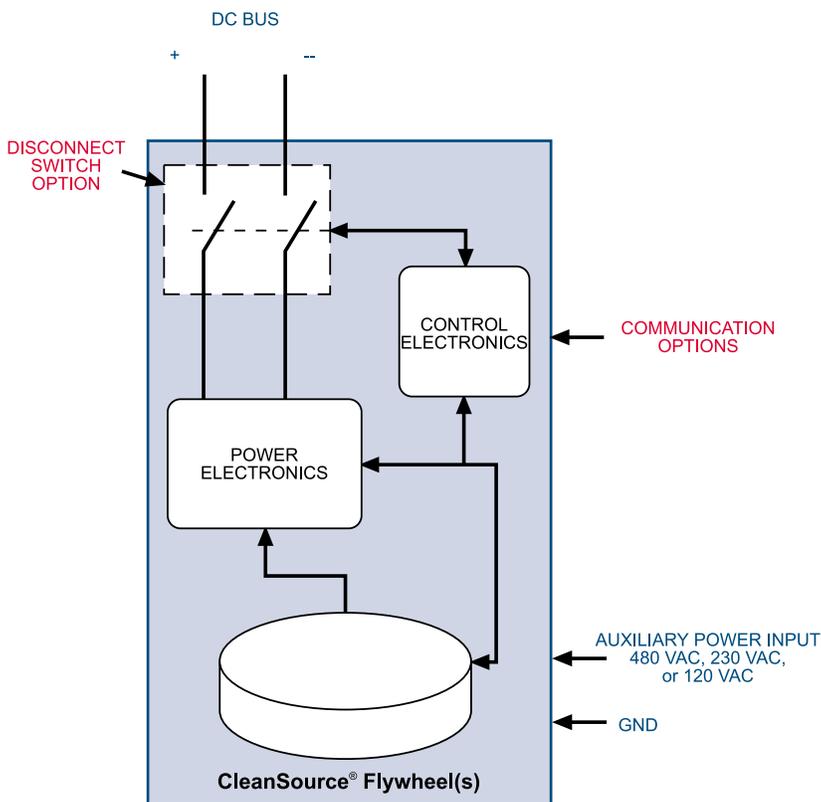


RIDE-THROUGH TIME IN SECONDS

CleanSource² delivers the following power for these ride-through times.

Model/Power	50kW	100kW	150kW	250kW	300kW	400kW	500kW
CS2-250	65	32	21	13	---	---	---
CS2-500	120	64	42	26	21	16	13

¹Rated power reduces linearly from 250kW to 187kW for CS2-250 and 500kW to 375kW for CS2-500 for nominal voltages between 480 and 360 volts DC. Total energy remains constant. Higher power and longer ride-through time by paralleling CleanSource² systems.



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Configuration:

2 terminal DC energy storage

System Dimensions:

42" w x 34" d x 78" h

Footprint:

Cabinet: 10 ft²

No rear or side access required

Weight:

3800 lbs (CS2-250)

6000 lbs (CS2-500)

Input:

Float voltage range: 400 to 600 volts DC

Minimum charging current required:

15 ADC (CS2-250)

30 ADC (CS2-500)

Average standby current:

2-3 ADC (CS2-250)

4-6 ADC (CS2-500)

Output:

Adjustable nominal discharge voltage range: 360 to 550 volts DC.

Maximum rated power between 480 and 550 VDC¹. DC voltage regulation ±1% steady state.

DC ripple <2%.

Recharge time (current dependent):

From complete discharge: <2.5 minutes

Upon initial start-up: <7.5 minutes

Environmental:

Operating temperature range: -20°C to 40°C

Non-operating temperature range: 0°C to 70°C

Humidity: <95% without condensation

Operating altitude: Up to 4,000 ft with no derating

Operating noise level:

72 dBA at 1 meter

Typical heat dissipation:

<3 kW or 10250 BTU (CS2-250)

<5 kW or 17050 BTU (CS2-500)

Standard:

LCD monitor/control panel

RS-232/485 communications interface

Self diagnostics

Alarm status contacts

Parallel capabilities

Soft-start precharge from DC bus

Push-button shutdown

UL listed

CE Mark

Options:

DC disconnect - no increase in footprint

CSView™— real-time monitoring software

Remote notification and monitoring

- pager and/or e-mail

- modem and/or ethernet

Modbus interface

SNMP

