

BiDirectional Converter

Enable autonomous bidirectional AC / DC conversion with regulated DC bus



www.onecyclecontrol.com

BENEFITS

- Hardware enabled control
 - Ultrafast, precise, and stable
- High efficiency
 - Energy saving
- Simple user interface
 - Low maintenance & low service
- Modular plug & play architecture
 - Scalable
- Long life design
 - Low logistics & installation cost
- Light weight minimum raw material usage
 - Environmentally friendly
- Small size
 - Space saving
- ETL listed
 - Safe and high quality
- Department of Energy sponsored and award winning
 - Highly competitive

FEATURES

- One-cycle Control Technology
- Power factor > 0.99
- Current harmonics < 3%
- Efficiency > 97%
- Stable zero load operation
- Leading response speed (100s of microsec)
- Leading light weight < 29 kg (65 lbs)
- Leading power density ~20 W/inch³ to 30 W/inch³
- 400Hz or variable frequency by custom order
- Single unit 40kW to 60kW, scalable to MW

OVERVIEW

OCC-BDC leverages unique patented technology invented at Caltech & University of California and developed by the world leading power electronic experts under partial sponsorship of U.S. Department of Energy. OCC-BDC is the first hardware-enabled 3-phase Bidirectional Converter with high reliability, ultrafast dynamics, and simple user interface, enabling autonomous bidirectional AC/DC conversion with regulated DC bus and unity power factor AC power.

APPLICATIONS

- Regenerative PFC frontend for motor drives
- Regenerative PFC for elevator AC/DC/conversion
- Regenerative PFC for crane AC/DC conversion
- Dynamically adjustable electronic load with energy recycling capability
- Create DC grid for DC building
- Create DC grid for microgrid/hybrid grid/mobile grid
- Create DC grid for regenerative personal rapid transit systems
- Wind power generation inverter
- Microhydro power generation inverter
- Solar power generation inverter
- Flywheel energy storage bidirectional inverter
- Pumped-hydro energy storage bidirectional inverter
- Rock power energy storage bidirectional inverter



	BDC3050A6480/8001IR	BDC3050A5380/6351IR	BDC3100A6208/3651IR
	BDC3075A6480/8001IR	BDC3075A5380/6351IR	
Electrical Specification			
AC Phase / Wires	3 phase / 3 wires		
AC Freq Range (Hz)	57 - 63	47 - 53	57 - 63
AC Voltage Range (V, rms) Line-to-Line	400 - 552	320 - 440	175 - 240
Max AC Current (A, rms)	75 / 50		100
DC Bus Voltage (V), Nominal	800	635	365
Efficiency @ Full Power	>98.3% / >97%		
AC Current THD @ Full Power	< 3%		
Power Factor @ Full Power	> 0.99		
Mechanical Specifications			
Weight kg (lb)	29 (65)		
Size (L x W x H) cm (inch)	58 x 45 x 13 (23 x 17.5 x 5.25)		
Environment Specifications			
Operating Temp. (°C)	0 to 40		
Operating Relative Humidity w/o Condensation	0 - 95%		
Storage Temp. (°C)	-10 to 55		
Audible Noise (dBA) @ 1m (3ft)	< 80		
Safety			
UL 508C	ETL Listed		

