

Description

Power and backup power supply BNH-Cordex is designed for uninterrupted power supply of industrial, control, telecommunication or security equipment. The main parts of the power supply are 19" cabinet, control unit, rectifier modules and distribution panel. Optionally, the cabinet can be equipped with shelves for battery placement as well as a DC/DC converter for power supply of DC devices with different input voltages or inverter for continuous power supply of AC devices.

System properties are determined by the selection of components in system configuration. Depending on the required output voltage of the system rectifier modules are available for different system voltages:

- 12 V DC – 250W module with natural cooling
- 24 V DC – 400W module with natural cooling
- 24 V DC – 3100W module and forced cooling
- 48 V DC – 650W power module and natural cooling
- 110 V DC – 1100W power module and natural cooling
- 110 V DC – 4400W module and forced cooling
- 220 V DC – 1100W power module and natural cooling
- 220 V DC – 4400W module and forced cooling

Applications

- Power supply of industrial, control, telecommunication and security equipment



illustrative photo

General features

- Wide input voltage range
- Power factor ~ 1
- Low harmonic distortion of input current THDi < 5%
- System start delay, Soft start of rectifiers
- Rated output voltage: 12 to 220 V DC
- Designed to use Cordex rectifier modules
- Control unit with touch screen LCD with display of measured and set parameters
- Remote signalling with potential-free relay contacts
- Remote supervision via LAN (Ethernet)
- Temperature compensation of battery charging voltage
- Charging current limitation
- Optional protection against deep discharge batteries (LVD) and partial load disconnect (PLD)
- Number of outputs for technology connection and battery sets according to customer requirements
- Possibility to monitor the state of the protection devices
- Possible parallel cooperation with diode isolation
- Possibility to create integrated solution with DC/DC converters and/or inverters to ensure continuous power supply of DC and AC devices



WEB interface screens

CXC Supervisory, Burnaby, B.C.

Battery Voltage **110.4V**
Load Current **10.6A**

System > View Live Status

Mains	Rectifiers	Load
Avg AC Voltage: 0V	Output Current: 0.00A	Load Voltage: 0.00V
Avg AC Phase R: 0V	Mode: FL+TC	Load Current: 10.6A
Avg AC Phase S: ---	# Acquired Rectifiers: 2	
Avg AC Phase T: ---	# Power Saving Rectifiers: 0	

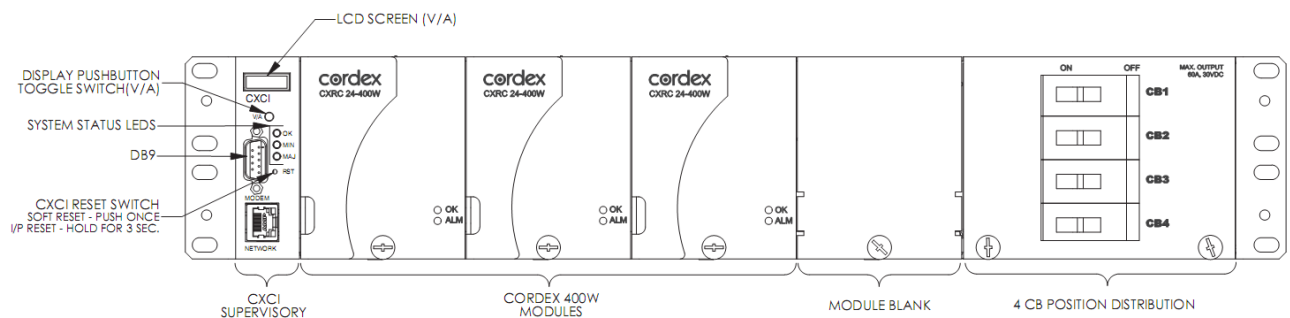
Converters	LVD	Batteries
Device Name: ---	Activated LVDs: 0	Battery Voltage: 110.4V
Output Current: ---	Enabled LVDs: 1	Battery Current: -10.6A
Output Voltage: ---		Battery Temperature: 25.50°C
# Acquired Conv.: ---		Battery Runtime: 3.25h
		Battery Capacity: 100.0%
		Battery DOD: 1.1%

Retrieve Logs

Signal Name	Max value	Max Time	Min Value	Min Time	Average
2010/01/21					
Load Voltage	0.27	11:55	-0.34	09:11	0.00
Load Current	12.89	12:09	0.00	08:26	0.15
Battery Voltage	133.70	12:09	122.42	12:04	122.81
Battery Current	14.63	12:04	-11.97	12:05	0.01
AC Mains	249.98	11:52	242.61	12:09	247.79
Battery Temperature	25.00	10:47	23.50	08:26	24.44
Total Rectifier Current	14.73	12:04	0.02	08:41	0.17
Avg DC Voltage	133.74	12:09	122.46	12:04	122.89
Avg AC Voltage	249.98	11:52	242.61	12:09	247.79
# Acquired Rectifiers	2	08:26	2	08:26	2
# Sourcing Rectifiers	2	08:26	1	08:26	2
Avg. AC Phase R	249.98	11:52	242.61	12:09	247.79
Avg. AC Phase S					
Avg. AC Phase T					
Custom Signal 1	0.00	08:26	0.00	08:26	0.00
Custom Signal 2	0.00	08:26	0.00	08:26	0.00
Custom Signal 3	0.00	08:26	0.00	08:26	0.00
Custom Signal 4	0.00	08:26	0.00	08:26	0.00
Custom Signal 5	0.00	08:26	0.00	08:26	0.00
Custom Signal 6	0.00	08:26	0.00	08:26	0.00
Custom Signal 7	0.00	08:26	0.00	08:26	0.00
Custom Signal 8	0.00	08:26	0.00	08:26	0.00
Custom Signal 9	0.00	08:26	0.00	08:26	0.00
Custom Signal 10	0.00	08:26	0.00	08:26	0.00

Technical specification

BNH-Cordex	19" systems with module power up to 1kW / voltage 12V DC / 24V DC / 48V DC		
Input			
Connection	3L+N+PE / L+N+PE / 2 x L+N+PE		
Rated voltage	3 x 230/400 V AC / 230V AC / 2 x 230 V AC		
Frequency	45 ÷ 70 Hz		
THDi	< 5 %		
Power factor	> 0,99		
Other features	Start delay of system / rectifier modules, soft start of rectifiers		
Output			
	12 V	24 V	48 V
Rated voltage	12 V _{DC}	24 V _{DC}	48 V _{DC}
Voltage range (Adjustable)	10,5 ÷ 14,5 V _{DC}	20 ÷ 29 V _{DC}	42 ÷ 58 V _{DC}
Output current of 1 rectifier module, limitation	250W ... 20 A @ 12 V _{DC}	400W ... 14 A @ 24 V _{DC}	650W ... 13,5 A @ 48 V _{DC}
Other parameters			
Dimensions (H x W x D)	15 to 45U x 600 x 600 mm or as unit for 19" cabinet		
Operating temperature	- 40 °C to + 50 °C		
Degree of protection	IP 20 (other degree of protection possible, e.g. IP40)		
Cabinet cooling	Forced (fans)		
Communication			
Visual and acoustic	LCD display + buzzer + LEDs		
Control and monitor of states	http		
Remote signalling	LAN Ethernet, potential-free relay contacts		



Illustrative photo - 19" system



Illustrative photo - micro system for wall mounting / DIN rail



Technical specification

BNH-Cordex	Systems with module power over 1kW / voltage 24V DC / 110V DC / 220V DC		
Input			
Connection	3NPE or 1NPE		
Rated voltage	3 x 230/400 V AC or 230V AC		
Frequency	45 ÷ 70 Hz		
THDi	< 5 %		
Power factor	> 0,99		
Other features	Start delay of system / rectifier modules, soft start of rectifiers		
Output			
	24 V	110 V	220 V
Rated voltage	24 V _{DC}	110 (125) V _{DC}	220 V _{DC}
Voltage range (Adjustable)	21 ÷ 29 V _{DC}	90 ÷ 160 V _{DC}	180 ÷ 320 V _{DC}
Output current of 1 rectifier module, limitation	3,1kW ... 130 A @ 24 V _{DC}	1,1kW ... 10 A @ 110 V _{DC} 4,4kW ... 40 A @ 110 V _{DC}	1,1kW ... 5 A @ 220 V _{DC} 4,4kW ... 20 A @ 110 V _{DC}
Other parameters			
Dimensions (H x W x D)	15 to 45U x 600 x 600 mm or 15 to 45U x 600 x 800 mm		
Operating temperature	- 40 °C to + 65 °C		
Degree of protection	IP 20 (other degree of protection possible, e.g. IP40)		
Cooling	Forced (fans)		
Communication			
Visual and acoustic	LCD display (160 x 160 pixels) + buzzer + LEDs		
Control and monitor of states	Control panel with LCD touch screen		
Remote signalling	LAN Ethernet, potential-free relay contacts		



Illustrative photo

Technical specification

BNH-Cordex	Cordex rectifier modules			
Electrical parameters	CXRC 12-250W	CXRC 24-400W	CXRC 48-650W	CXRF 24-3.1kW
Input Voltage - full power	90 ÷ 320 VAC		176 ÷ 320 VAC	176 ÷ 312 VAC
Input voltage - reduced power	--		90 ÷ 176 VAC	
Input frequency	45 ÷ 70 Hz			
Continuous power of module	250 W	400W	650 W	3100 W
Power factor	> 0,99			
THDi	< 5 %			
Efficiency	> 90 %	> 90 %	> 91 %	> 90 %
Output voltage	10,5 ÷ 14,5 V DC	20 ÷ 29 V DC	42 ÷ 58 V DC	21 ÷ 29 V DC
Output current	20 A @ 12 V DC	14 A @ 24 V DC	13,5 A @ 48 V DC	130 A @ 24 V DC
Features	CXRC 12-250W	CXRC 24-400W	CXRC 48-650W	CXRF 24-3.1kW
Status indication	2 x LED - input mains O.K. / module failure (3.1kW .. 3 x LED)			
Communication / control Interface	CAN - communication with control CXCI or CXCR 24/48V			
Adjustable parameters (via control unit)	Float and boost voltage, low/high voltage alarm, module shutdown at high voltage, current limit, soft start, start delay			
Protection	Current / short-circuit limitation, start delay, input / output fuses, shutdown at high input voltage, power limitation, protection against overheating			
Other parameters	CXRC 12-250W	CXRC 24-400W	CXRC 48-650W	CXRF 24-3.1kW
19" rack mounting	max. 4 modules / rack		max. 5 modules / rack	
Module dimensions (H x W x D)	88,4 x 71,6 x 242 mm		160 x 87 x 300 mm	
Module weight	1,4 kg		4,6 kg	
19" rack dimensions (H x W x D)	88,9 x 444 x 279,4 mm		177 x 442 x 389 mm	
Weight 19" rack	8,5 kg		12,7 kg	
Cooling	natural		forced	
Temperature range - full power	- 40 to 50 °C		- 40 to 65 °C	
Temperature range - reduced power	50 to 70 °C		65 to 75 °C	
Relative humidity	0 up to 95 % (non-condensing)			
Safety	CSA C22.2 No 60950-1-03, UL 60950-1 1st Edition, CE, IEC/EN 60951-1			
EMC radiation	CFR47 (FCC) Part 15 Class A, FCC part 68, ICES-03 Class A, EN55022 (CISPR 22) Class A, EN 61000-3-2, EN 61000-3-3			
EMC immunity	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11, ANSI/IEEE C62.41 Cat B3			



Illustrative photo

Technical specification

BNH-Cordex	Cordex rectifier modules			
Electrical parameters	CXRC 125-1.1kW	CXRC 220-1.1kW	CXRF 125-4.4kW	CXRF 220-4.4kW
Input Voltage - full power	176 ÷ 320 VAC		176 ÷ 312 VAC	
Input voltage - reduced power	150 ÷ 176 VAC		90 ÷ 176 VAC	
Input frequency	45 ÷ 70 Hz			
Continuous power of module	1,1 kW		4,4 kW	
Power factor	> 0,99			
THDi	< 5 %			
Efficiency	> 92 %			
Output voltage	90 ÷ 160 V DC	180 ÷ 320 V DC	90 ÷ 160 V DC	180 ÷ 320 V DC
Output current	10 A @ 110 V DC	5 A @ 220 V DC	40 A @ 110 V DC	20 A @ 220 V DC
Features	CXRC 125-1.1	CXRC 220-1.1	CXRF 125-4.4	CXRF 220-4.4
Status indication	3 x LED - Input mains O.K. / module O.K. / module failure			
Communication / control Interface	CAN - communication with control CXCR 125/220V			
Adjustable parameters (via control CXCR 125 / 220V)	Float and boost voltage, low/high voltage alarm, module shutdown at high voltage, current limit, soft start, start delay			
Protection	Current / short-circuit limitation, start delay, input / output fuses, shutdown at high input voltage, power limitation, protection against overheating			
Other parameters	CXRC 125-1.1	CXRC 220-1.1	CXRF 125-4.4	CXRF 220-4.4
Mounting	To 19" rack - max. 6 modules / rack		To 19" rack - max. 5 modules / rack	
Module dimensions (H x W x D)	177 x 71 x 250 mm		160 x 87 x 300 mm	
Module weight	3,2 kg		4,4 kg	
19" rack dimensions (H x W x D)	177 x 444 x 303 mm		177 x 442 x 389 mm	
Weight 19" rack	7,3 kg		8,5 kg	
Cooling	natural		forced (2 x fan / module)	
Temperature range - full power	- 40 to 50 °C		- 40 to 50 °C	
Temperature range -reduced power	50 to 70 °C		50 to 75 °C	
Relative humidity	0 up to 95 % (non-condensing)			
Safety	CSA C22.2 No 60950-1-03, UL 60950-1 1st Edition, CE, IEC/EN 60951-1			
EMC radiation	CFR47 (FCC) Part 15 Class A, FCC part 68, ICES-03 Class A, EN55022 (CISPR 22) Class A, EN 61000-3-2, EN 61000-3-3			
EMC immunity	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11, ANSI/IEEE C62.41 Cat B3			