

Power

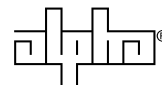
CFR Series

Controlled Ferroresonant UPS



- Maximum protection—highest MTBF in the UPS industry
- Complete input to output isolation provides the industry's best surge and lightning protection
- The CFR's microprocessor design provides efficiency ratings up to 92%
- Features a RS-232 communication port and is SNMP and modem compatible
- Optional External Battery Packs greatly extend available backup time
- 24 month limited warranty

Uninterruptible Power Supplies Designed to meet or exceed the safety standards established by UL, CSA, CE and VDE. The Alpha CFR UPS is one of the safest, most reliable and versatile Uninterruptible Power Systems available. Input current waveform correction eliminates overheating effects of non-linear load current harmonics. Input power-factor correction brings low power-factor loads to near unity, reducing electric utility costs. The CFR Series sets the standard for the effective powering of non-linear or actively regulated loads, while providing superior surge and noise rejection. Power ratings of 600VA to 15KVA available.



CFR

Nominal Specifications

Model Number:	CFR 600 XT CFR 600 XTE	CFR 1000 CFR 1000 E	CFR 1500 C	CFR 1500 CFR 1500 E CFR 1500 NT CFR 1500 MED	CFR 2000 CFR 2000 E CFR 2000 NT CFR 2000 MED	CFR 2500 CFR 2500 E CFR 2500 NT CFR 2500 MED
Output Power Rating:	600VA 450W	1000VA 750W	1500VA 1125W	1500VA 1000W	2000VA 1334W	2500VA 1667W
60Hz Models (CFR, CFR-NT & CFR-M)						
Input Voltage (VAC) Nominal:	120	120	120	120/208/240	120/208/240	120/208/240
Output Voltage (VAC) Nominal:	120	120	120	120/208/240	120/208/240	120/208/240
50Hz Models (CFR-E)						
Input/Output Voltage (VAC) Nominal:	230	230	N/A	230	230	230
Typical Efficiency - AC/AC 100% Load:	88%	90%	90%	90%	90%	90%
Typical Heat Output - Line Mode:	209 BTU/h	284 BTU/h	427 BTU/h	427 BTU/h	398 BTU/h	636 BTU/h
Mechanical						
Width (in/mm):	8.5/216	8.5/216	8.5/216	8.5/216	8.5/216	8.5/216
Height (in/mm):	10/254	10/254	15.5/394	21/533	21/533	21/533
Depth (in/mm):	20/508	20/508	21/533	22.5/57	22.5/571	22.5/571
60Hz Weight (lb/kg):	70/32	92/42	147/67	151/69	171/78	185/84
60Hz Ship Weight (lb/kg):	81/37	97/44	172	162/73	182/83	200/91
50Hz Weight (lb/kg):	76/34	93.42	N/A	163/74	181/82	190/86
50Hz Ship Weight (lb/kg):	87/39	98/44	N/A	174/79	192/87	205/93
Internal Battery Runtime @100%*:	25min	12min	18min	18min	15min	10min
Internal Battery Recharge Time: (To 80% of Capacity)	5hrs typical	5hrs typical	5hrs typical	5hrs typical	5hrs typical	5hrs typical
Extended Battery Runtime Options*						
A. External Battery Pack (EBP): Total Runtime**:	EBP 24A 1hr	EBP 24A 32min	EBP 48A 1hr 39min	EBP 48A 1hr 39min	EBP 48A 1hr 10min	EBP 48A 52min
B. External Battery Pack (EBP): Total Runtime**:	EBP 24C 5hrs	EBP 24C 2hrs 12min	EBP 48E 3hrs 45min	EBP 48E 3hrs 45min	EBP 48E 2hrs 48min	EBP 48E 2hrs 10min
C. External Battery Pack (EBP): Total Runtime**:	EBP 24E 9hrs 25min	EBP 24E 5hrs 12min				
60Hz Power Connector Options†						
Input: CFR, CFR-C, CFR-M, CFR-RM Models:	5-15P	5-15P	5-15P	5-15P L5-15P T. B.	5-20P L5-20P T. B.	5-30P L5-30P L6-30P T. B.
CFR-NT Models:	N/A	N/A	N/A	L6-30R	L6-30R	L6-30R
Output: CFR, CFR-C, CFR-M, CFR-RM Models:	5-15R L5-15R	5-15R L5-15R	5-15R	5-15R 5-20R 6-20R L5-15R L5-20R L5-30R L6-20R 5-30R L6-30R T. B.	5-15R 5-20R 6-20R L5-15R L5-20R L5-30R L6-20R 5-30R L6-30R T. B.	5-15R 5-20R 6-20R L5-15R L5-20R L5-30R L6-20R 5-30R L6-30R T. B.
CFR-NT Models:	N/A	N/A	N/A	5-15R 2-L6-30R	5-15R 2-L6-30R	5-15R 2-L6-30R
50Hz Power Connector Options†						
Input /Output: CFR-E Models:	British Schuko Australian	British Schuko Australian	N/A	British Schuko Australian	British Schuko Australian	British Schuko Australian T.B.

Output Power Connector

Configuration Options:

1) Any 2 single or 2 duplex receptacles

1) Any combination of 3 or less duplex receptacles
 2) Any combination of 2 or less single receptacles
 3) Any duplex receptacle with any single receptacle
 4) Single terminal block

UPS Warranty:

24 month limited warranty

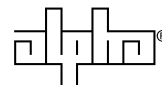
Battery:

24 month limited warranty

* Battery runtimes are calculated at 100% rated loads and will vary according to battery age, loads, temperature and other factors.

** Total runtime include the internal batteries and the External Battery Pack (EBP) at 100% load.

† Refer to Plug and Receptacle Diagram on last page.



CFR

Nominal Specifications

Model Number:	CFR 3000 CFR 3000 E CFR 3000 NT CFR 3000 MED	CFR 5000 CFR 5000 NT	CFR 7500 CFR 7500 NT	CFR 10K CFR 10K NT	CFR 15K CFR 15K NT
Output Power Rating:	3000VA 2000W	5000VA 3750W	7500VA 5000W	10kVA 6700W	15kVA 10kW
60Hz Models (CFR, CFR-NT & CFR-M)					
Input Voltage (VAC) Nominal:	120/208/240	120/208/240	208/240	208/240	208/240
Output Voltage (VAC) Nominal:	120/208/240	120/208/240	120/208/240	120/208/240	120/208/240
50Hz Models (CFR-E)					
Input/Output Voltage (VAC) Nominal:	230	230	230	230	230
Typical Efficiency - AC/AC 100% Load:	90%	90%	92%	92%	92%
Typical Heat Output - Line Mode:	758 BTU/h	1425 BTU/h	1487 BTU/h	1988 BTU/h	2967 BTU/h
Mechanical					
Width (in/mm):	8.5/216	12/305	22/559	22/559	22/559
Height (in/mm):	21/533	22.5 /569	30/762	30/762	30/762
Depth (in/mm):	29.5/749	29.4/747	32/813	32/813	813/32
60Hz Weight (lb/kg):	283/128	375/170	638/289	673/305	650/295
60Hz Ship Weight (lb/kg):	312/142	453/206	730/331	735/333	712/323
50Hz Weight (lb/kg):	313/142	381/173	644/293	710/323	688/313
50Hz Ship Weight (lb/kg):	332/151	477/216	744/338	747/339	750/340
Internal Battery Runtime @100%*:	27min	12min	10min	6min	EBP Required
Internal Battery Recharge Time: (To 80% of Capacity)	5hrs typical	5hrs typical	5hrs typical	5hrs typical	5hrs typical
Extended Battery Runtime Options*					
A. External Battery Pack (EBP): Total Runtime**:	EBP 48A 1hr 15min	EBP 48M 1hr 15min	EBP 1233-144 1hr	EBP 1233-144 45min	EBP 1233-144 15min
B. External Battery Pack (EBP): Total Runtime**:	EBP 48E 2hrs 30min	EBP 1275-48B 3hrs 44min	EBP 144E 2hrs 16min	EBP 144E 1hr 36min	EBP 144E 50min
60Hz Power Connector Options					
Input: CFR, CFR-C, CFR-M, CFR-RM Models†:	5-30P L5-30P L6-30P Terminal Block	5-50P CS6361 L6-30P*** Terminal Block	Terminal Block	Terminal Block	Terminal Block
CFR-NT Models: Output: CFR, CFR-C, CFR-M, CFR-RM Models†:	L6-30	L6-30	Terminal Block	Terminal Block	Terminal Block
	5-15R 5-20R 6-20R L5-15R L5-20R L5-30R L6-20R 5-30R L6-30R Terminal Block	5-15R 5-20R 6-20R L5-15R L5-20R L5-30R L6-20R 5-30R L6-30R Terminal Block	5-15R 5-20R 6-20R L5-20R L5-30R L5-20R 5-30R L6-30R Terminal Block	5-15R 5-20R 6-20R L5-20R L5-30R L5-20R 5-30R L6-30R Terminal Block	5-15R 5-20R 6-20R L5-20R L5-30R L5-20R 5-30R L6-30R Terminal Block
CFR-NT Models:	5-15R 2-L6-30R	5-15R 3-L6-30R	5-15R 2-L6-30R Terminal Block	5-15R 2-L6-30R Terminal Block	5-15R 2-L6-30R Terminal Block
50Hz Power Connector Options†					
Input/Output: CFR-E Models:	British Schuko Australian Terminal Block	British Schuko Australian Terminal Block	British Schuko Australian Terminal Block	British Schuko Australian Terminal Block	British Schuko Australian Terminal Block

Output Power Connector

Configuration Options:

- 1) Any combination of single or duplex receptacles, up to 3 on CFR 3000, 4 on the CFR 5000
- 2) Any combination of 2 or less single receptacles
- 3) Single terminal block with any combination of 2 or less single or duplex receptacles on CFR 5000

- 1) Any combination of 3 or less duplex receptacles
- 2) Single terminal block on CFR 3000

* Battery runtimes are calculated at 100% rated loads and will vary according to battery age, loads, temperature and other factors.

** Total runtime includes the internal batteries and the External Battery Pack (EBP) at 100% load.

*** 208 or 240 input only

† Refer to Plug and Receptacle Diagram on last page.

CFR

Common Specifications

Operating Input Voltage Range:	-23 to 10%
Input Frequency Operating Range:	±1.4Hz
Input Power Factor:	0.95 to 0.99
Input Current THD:	5% Typical
Output Waveform:	Pure sine wave
Output Voltage Regulation:	±1%
Typical Output Voltage THD:	<5% 600VA to 5kVA <3% 7.5 to 15kVA
Inverter Frequency Stability:	±0.1%
Spike Attenuation:	2000 to 1
Lightning & Surge Protection:	ANSI C62.41-1980 (IEEE 587)
Operating Temperature:	0 to 40°C (32 to 104°F)
Audible Noise:	40dBA Typical

Application Specific Models

CFR-NT:	Specifically designed to be compatible with Northern Telecom Meridian telephone switches and other telephony products
CFR-MED:	Designed for medical or dental equipment power protection. Meets or exceeds the requirements of UL 544 and CSA 22.2 #125
CFR-E:	50Hz configuration

Plug and Receptacle Diagram

5-15P		5-15R		CS6361	
5-30P		5-30R		Terminal Block	
5-20P		5-20R		British	
5-50P		L5-15R		Schuko	
L5-15P		L5-20R		Australian	
L5-30P		L5-30R			
L6-30P		L6-20R			
		L6-30R			

Communications

All Alpha CFR products feature RS-232 communication ports and are SNMP and modem compatible. The following is a list of optional communication, monitoring and control products:

SNMP Agent Furnishes real time UPS/power status to the Network Power Management Software.

Intelligent Interface Device (I²D) Front panel LCD readout provides vital UPS system information at the touch of a key.

EBP Options

Alpha's plug-in External Battery Packs provide extended backup for all CFR models. All battery packs are shipped fully assembled and include interconnecting cables. Longer runtimes are obtained by cascading additional battery cabinets.

Available for:
CFR 600, 1000

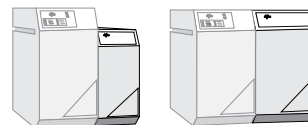


Battery Pack 24V

Width (in/mm):	8.5/216
Height (in/mm):	4.5/114
Depth (in/mm):	15.5/394
Weight (lb/kg):	39/18
Capacity (Ah):	17

EBP 24A	EPB 24C	EBP 24E
Width (in/mm):	8.5/216	8.5/216
Height (in/mm):	10.5/267	21.5/546
Depth (in/mm):	24.0/610	28.0/711
Weight (lb/kg):	127/58	312/141
Capacity (Ah):	66	176

Available for:
CFR 5000

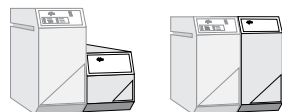


Battery Pack 48V

Width (in/mm):	8.5/216
Height (in/mm):	21.5/546
Depth (in/mm):	28.0/711
Weight (lb/kg):	312/141
Capacity (Ah):	88

EBP 48M	EBP 1275-48B
Width (in/mm):	22.0/660
Height (in/mm):	30.3/770
Depth (in/mm):	31.5/800
Weight (lb/kg):	905/411
Capacity (Ah):	264

Available for:
CFR 1500, 2500, 3000

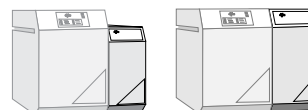


Battery Pack 48V

Width (in/mm):	8.5/216
Height (in/mm):	10.5/267
Depth (in/mm):	10.5/267
Weight (lb/kg):	127/58
Capacity (Ah):	33

EBP 48A	EBP 48E
Width (in/mm):	8.5/216
Height (in/mm):	21.5/546
Depth (in/mm):	21.5/546
Weight (lb/kg):	312/141
Capacity (Ah):	88

Available for:
CFR 7500, 10K, 15K



Battery Pack 144V

Width (in/mm):	8.5/216
Height (in/mm):	21.5/546
Depth (in/mm):	34.0/864
Weight (lb/kg):	350/159
Capacity (Ah):	33

EBP 1233-144	EBP 144E
Width (in/mm):	22.0/660
Height (in/mm):	30.3/770
Depth (in/mm):	31.5/800
Weight (lb/kg):	905/411
Capacity (Ah):	88