Cable Power Supplies

Alpha has provided specialized uninterruptible power supplies (UPS) for more than 30 years. With impressive backup power capabilities, integrated generators, dual power grid switching and enhanced battery thermal management, an Alpha CableUPS® ensures improvement in the overall efficiency and reliability of a broadband network.

XM2-HP

Alpha's XM2-HP CableUPS® is the answer to the higher energy costs associated with running today's cable networks. The XM2-HP power supply features a high efficiency transformer with lower power consumption and lower life cycle costs. This "green" power supply can greatly reduce the carbon footprint of the entire cable plant by running more efficiently 24/7. Additional features include an enhanced Smart Display with improved menus and a dedicated Communications menu with DOCSIS® parameters. The XM2-HP is available in three convenient power ratings for load matching to operate at optimal efficiency.

XM2

Alpha's XM2 CableUPS is the industry's leading power technology. A variety of power ratings make it an ideal match for network architectures worldwide. Advanced product design features include hot-swappable modular inverter and smart display. Optional independent dual outputs and N+1 redundant capability provide additional protection and enhanced system reliability. AC or DC generator compatibility, flexible system control and advanced status monitoring options support easy migration to clustered or centralized powering.

GMX

Alpha's GMX is a cost-effective CableUPS designed for cable operators who need a reliable, basic uninterruptible power supply. Features of the GMX include an embedded status monitoring card slot, smart display, terminal block output connections, 63 and 87V output taps, external battery temperature probe, built-in chassis handle and removable MOV's.

XM2-300HP

The XM2-300HP is the ideal CableUPS powering solution for rapidly expanding cable broadband networks and services. When used in applications requiring less power than traditional outside plant powering, service operators will experience increased efficiency and reduced operating costs. This low power system features a much smaller footprint and is engineered for use in multiple dwelling units (MDU), business parks and node segmentations, as well as Fiber Deep, N+0 and N+1 plant extensions. Rated at 300 Watts, with a 12V inverter, this power supply features an XM2 smart display and a DOCSIS-based status monitoring card.

APX

Alpha's APX is designed for communication networks that require compact, non-standby power supplies. The APX's ferroresonant design provides fully regulated output voltage, surge and short-circuit protection. The APX can be easily upgraded by adding modular plug-in options such as a Lightning Arrestor, Time Delay Relay, Ammeter, Status Indicator LED or AmpClamp™ Surge Suppressor.

APP

The APP is a portable non-standby power supply used to provide conditioned AC power to the load when the main power supply is being serviced. Used in conjunction with the "Alternate" connector and the "ALT/ON" switch located on the enclosure's service power inserter, power can be transferred from the main power module to the APP without interrupting the connected load.

XM2
CableUPS® Power Supply

- Proven CableUPS® uninterruptible power supply
- Programmable LCD Smart Display
- 6, 15 and 22A models available
- Modular design with hot-swappable inverter
- Programmable, temperature-compensated battery charger
- Integrated and External DOCSIS® Transponders
- Integrated and External Proprietary Transponders

XM2

XM2

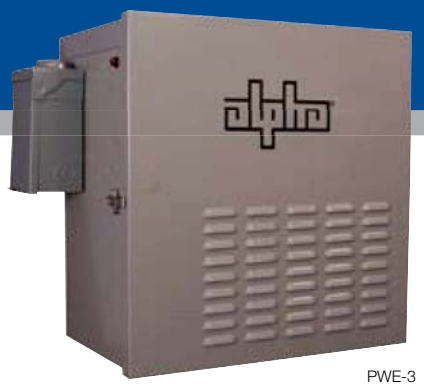
Models:	XM2-910	XM2-915	XM2-915 HV	XM2-1350-48	XM2-922	XM2-922 HV
Electrical						
Input Voltage (Vac):	120 / 240	120 / 240	120 / 240	120 / 240	200 / 240	200 / 240
Input Voltage Tolerance:	±15%	±15%	-25% to +15%	±15%	±15%	-25% to +15%
Input Frequency:	60Hz	60Hz	60Hz	60Hz	60Hz	60Hz
Frequency Tolerance:	±3%	±3%	±3%	±3%	±3%	±3%
Output Voltage (Vac):	63 / 75 / 87	63 / 75 / 87	63 / 75 / 89	63 / 75 / 87	63 / 75 / 87	63 / 75 / 89
Output Current (A):	10	22.5 / 18 / 15	22.5 / 18 / 15	22.5 / 18 / 15	22.5	22.2
Max Output Power (VA):	900	1350	1350	1350	2025	2025
Waveform:	Quasi-square wave					
Voltage Regulation:	±5%					
Output Frequency Stability:	±0.05% inverter mode, ±1% normal mode					
Short Circuit Current:	150% of maximum current rating					
Transformer Efficiency:	90% typical line mode, 84% typical standby mode					
Transfer Characteristics:	Uninterrupted output					
Battery Voltage (Vdc):	36	36	36	48	48	48
Battery Charger						
Temperature Compensation:	Programmable (0 to 5mV/Cell/°C)					
Charger Current:	10A at 80% load and nominal input (bulk charge mode)					
Three Stage:	Bulk, accept, float					
Mechanical						
Status Display:	Smart Display 2 x 20 LCD with backlight					
Dimensions H x W x D (in/mm):	8.8 x 15 x 13 / 222 x 381 x 330					
Approx. Weight (lb/kg):	62 / 28	70 / 32	64 / 29	70 / 32	92 / 42	92 / 42
Finish:	Black, epoxy powdercoat					
Environment						
Operating Temperature:	-40 to 55°C / -40 to 131°F					
Humidity:	0 to 95% non-condensing					
Agency Compliance:	FCC Part 15 Class A, UL1778, CSA 22.2 No. 107.1-M95					
Smart Display Features:	Output current, Input frequency, Battery voltage, Battery temperature, Output VA, Standby time, Built-in diagnostics, Output power (W), Output voltage, % load, Input voltage, Charger current					

Note: General Specifications reference most commonly used models. For model-specific information, consult product manual. Other voltages and configurations may be available. For more information, contact your sales representative.

Optional Features

PIM/N+1 Protective Interface Module: Provides two programmable outputs from a single XM Series 2 power supply. The PIM protects system components and provides isolation between distribution legs by shutting down the individual load during over-current conditions. The PIM has a user-programmable over-current threshold, as well as a programmable over-current tolerance period to specify the time in seconds (1 to 10) that an over-current condition is allowed on the XM Series 2 output before the individual output channel is shut down. A user programmable retry limit allows the user to select how many times (1 to 40) the PIM will attempt to reconnect an output that was shut down for an over-current condition. The PIM also provides redundant power supply capability (N+1) for multiple power supply configurations.

PWE Enclosure
Outdoor Pole Mount Enclosure


PWE-3

- Engineered for broadband powering applications
- Aluminum welded construction and durable powdercoated exterior
- Agency certified to meet applicable industry standards
- Internal or external SUSE rated service entrance options
- Optional Battery Integration Tray (BIT)
- Portable generator cabling access door
- Optional Northern Enclosure available for colder climates

PWE Enclosures

Models:	PWE-3	PWE-3 Northern Enclosure	PWE-4	PWE-6	PWE-6 Northern Enclosure
Mechanical					
Dimensions H x W x D (in/mm):	24.5 x 24.3 x 14 / 622 x 615 x 355	25.4 x 24.8 x 14.1 / 645 x 628 x 359	24.8 x 30.3 x 16 / 629 x 768 x 406	36.8 x 24.3 x 14 / 933 x 615 x 355	37.7 x 24.8 x 14.1 / 958 x 628 x 359
Weight (lb/kg):	39 / 18 (without batteries)	42 / 19.1 (without batteries)	57 / 26 (without batteries)	68 / 31 (without batteries)	73 / 33.1 (without batteries)
PWE Enclosure Configuraions					

PWE Enclosures (cont.)

Models:	PWE-6FT	PWE-8	PWE-9	PWE-D36
Mechanical				
Dimensions H x W x D (in/mm):	27.5 x 29.3 x 17.5 / 698 x 753 x 445	36.9 x 30.3 x 16 / 937 x 768 x 406	47 x 24.3 x 14 / 1194 x 615 x 355	47 x 24.3 x 14 / 1194 x 615 x 355
Weight (lb/kg):	57 / 26 (without batteries)	121 / 55 (without batteries)	85 / 38.5 (without batteries)	75 / 34 (without batteries)
PWE Enclosure Configuraions				

Specifications	
Material:	Exterior powdercoated aluminum
Door and Lid Seal:	Poron gasketing
Color:	Gray (custom colors available)
Lid:	Removable
Door:	Hinged removable
Pole Mount:	Galvanized steel brackets for wood, and concrete pole mount and wall mount
Tamper Switch:	Optional
Battery Side Tray:	Optional

Northern Enclosure Hood and Door for Colder Climates


Northern Enclosures feature Z-bracket, vented hood and doors with no batting required.

Surge Protection

- UL 1449 3rd Edition Approved
- UL 1449 is required for installing surge protection devices in cable enclosures
- SM Series has Status Monitoring failure alarm via DSM3 cable harness


LA-P+


LA-P-120T


LA-P SM


ISA-120/240

Surge Protection

Operating Voltage:	120V Models				240V Models			120/240V Models
Model Selection:	**Good**	**Better**	**Best**	**Best**	**Good**	**Best**	**Best**	**Best**
Series Model:	LA-P+120	LA-P-120T	LA-P-120S	LA-P-120SM	LA-P+240	LA-P-240S	LA-P-240SM	ISA 120/240[1]
Part Number:	020-098-24	162-046-10	021-077-22	021-077-20	020-098-25	021-077-23	021-077-21	162-041-10
Outlet Type / Pass Thru:	/ No	/ Yes	/ Yes	/ Yes	/ No	/ Yes	/ Yes	Hardwired / NA
Status Monitor Harness:	No	No	No	Yes	No	No	Yes	No
Protection:	L/N/G	L/N/G	L/N/G	L/N/G	L1/L2/G	L1/L2/G	L1/L2/G	L/N/G
Operating Temperature:	-40 to 55°C / -40 to 131°F	-40 to 55°C / -40 to 131°F	-40 to 55°C / -40 to 131°F	-40 to 55°C / -40 to 131°F	-40 to 55°C / -40 to 131°F	-40 to 55°C / -40 to 131°F	-40 to 55°C / -40 to 131°F	-40 to 55°C / -40 to 131°F
LED Indicator:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Energy Absorption (Joules):	210	360	735	735	112	1170	1170	680
UL 1449 3rd Edition Specifications								
Voltage Let Through Protection Rating:	700Vp	660Vp[2]	600Vp	600Vp	1200Vp	900Vp	900Vp	600Vp[2]/ 900Vp[2]
Nominal Discharge Current Rating:	3kA	3kA	5kA	5kA	3kA	5kA	5kA	10kA[2]
Maximum Continuous Operating Voltage (MCOV):	150Vac	130Vac	175Vac	175Vac	320Vac	300Vac	300Vac	150Vac/300Vac

Notes:
[1] The ISA surge protection devices are factory wired on the load side of the service entrance and are available for field replacement. These arrestors should be installed by a licensed electrician.
[2] Pending UL 1449 3rd edition certification.

COAX Protectors

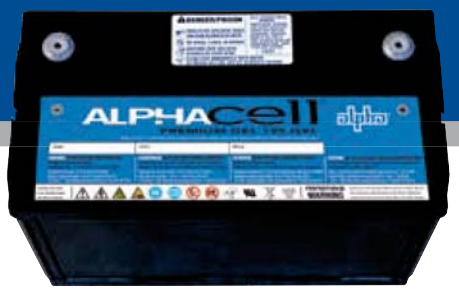
Ideally suited to protect costly status-monitoring transponders, digital set top boxes, cable modems and satellite receivers in the headend as well as high-end HDTV sets from potentially damaging surges. The patented coaxial gas tube surge protector is equipped with an integral fail-safe mechanism. Listed to UL 497, CSA Listed Certified and Complies with 1999 National Electric Code.

Part Number	Description
162-029-10:	Female/Female connector configuration, “F” type connector
162-027-10:	Male/Female connector configuration, “F” type connector
162-028-10:	Female/Female connector configuration, “F” type connector with integral ground block


COAX Protectors

COAX Protector Specifications		
Part Number:	162-029-10/162-027-10	162-028-10
RF Performance:	DC – 1GHz	1GHz – 1.5GHz
Characteristic Impedance:	75Ohms	75Ohms
Insertion Loss (includes flatness):	<0.1dB	<0.2dB
Return Loss:	>30dB	>20dB
Protection		
DC Breakdown @ 2000V/s:	150V to 300V	
Impulse Breakdown @ 100V/µs:	<450V	
Insulation Resistance:	>100 MegOhms	
Surge Life		
10A, 10/1000µs:	>1500 Surges	
100A, 10/1000µs:	>100 Surges	
1000A, 10/1000µs:	>10 Surges	
5000A, 8/20µs:	>10 Surges	
AC Life		
5A, 1000Vac, 1s:	>5 Operations	
1A, 1000Vac, 1s:	>60 Operations	
Failshort		
30A, 1000Vac:	>15min	
Operating Temperature:	-40 to 65°C / -40 to 149°F	

AlphaCell™
Broadband Batteries



AlphaCell 195 GXL

- Provides maximum runtime over the life expectancy of the battery
- True Gel Silver Alloy minimizes grid corrosion
- 100% out-of-box runtime capacity-no cycling required
- Industry leading runtime for Voice Over IP networks
- Maintenance-free threaded inserts — no periodic retorquing
- Full-replacement, non-prorated warranty

AlphaCell Broadband Batteries

Models:	220 GOLD-HP 220 GXL	195 GOLD-HP 195 GXL	165 GXL	85 GXL-HP	195 GXL-FT	70 HPL-FT	115 HPL-FT	220 HPL-FT
Warranty[1]:	4 to 6 years	4 to 6 years	4 to 5 years	5 years	2 to 3 years	3 years	3 years	3 years
Service Life:	Extended	Extended	Extended	Extended	Long	Long	Long	Long
Runtime (minutes)[2]:	221	196	165	85	195	70	115	220
VLRA Battery Type:	Gel Silver Alloy				Gel	High Performance Lead Alloy		
Heat Resistant:	Extreme	Extreme	Extreme	Extreme	High	High	High	High
Hydrogen Emission:	Low	Low	Low	Low	Low	Low	Low	Low
Terminals:	Threaded insert 1/4" - 20 UNC			Threaded insert 10 - 32 UNF	16mm insert M6 thread	14mm insert M8 x 1.25 thread	14mm insert M8 x 1.25 thread	14mm insert M8 x 1.25 thread
Cells Per Unit:	6	6	6	6	6	6	6	6
Voltage Per Unit:	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
Conductance Value:	1175	1100	1000	600	1200	1050	1200	1600
Max. Discharge Current (A):	900	900	800	600	400	1000	1000	1000
Short Circuit Current (A):	2800	2600	2500	2200	3000	1400	2000	3500
10 Second Volts @ 100A:	11.4	11.3	11.2	10.8	10.8	11.3	11.5	11.7
Ohms Impedance 60Hz:	0.0050	0.0050	0.0055	0.0065	.0041	0.0065	.0041	.0025
Capacity at 20hrs (to 1.75VPC):	109AH	100AH	86AH	50AH	110AH	42AH	62AH	107AH
BCI Group Size:	31	31	27	22	N/A	N/A	N/A	N/A
Weight (lb/kg):	73 / 33.2	67 / 30.5	63 / 28.6	39.6 / 18	76.3 / 34.5	27.9/15.3	46.2/22.2	78.5/36
Dimensions H x W[3] x D[3] (in/mm):	8.5 x 13.4 x 6.8 / 215 x 341 x 173		8.1 x 12.5 x 6.8 / 205 x 318 x 173	8.1 x 9 x 5.5 / 206 x 228 x 139	11.2 x 4.3 x 15.6 / 285 x 110 x 395	8.2 x 3.8 x 9.8 / 209 x 97 x 249	10.3 x 4.2 x 11.3 / 263 x 108 x 287	11.3 x 4.2 x 15.6 / 287 x 108 x 396
Operating Temperature Range								
Discharge:	-40 to 71°C / -40 to 160°F	-40 to 71°C / -40 to 160°F	-40 to 71°C / -40 to 160°F	-40 to 71°C / -40 to 160°F	-40 to 71°C / -40 to 160°F	-40 to 60°C / -40 to 140°F	-40 to 60°C / -40 to 140°F	-40 to 60°C / -40 to 140°F
Charge (with temp compensation):	-23 to 60°C / -9.4 to 140°F	-23 to 60°C / -9.4 to 140°F	-23 to 60°C / -9.4 to 140°F	-23 to 60°C / -9.4 to 140°F	-20 to 50°C / -4 to 122°F	-40 to 60°C / -40 to 140°F	-40 to 60°C / -40 to 140°F	-40 to 60°C / -40 to 140°F
Float Charging Voltage @ 25°C / 77°F (Vdc):	13.5 to 13.8	13.5 to 13.8	13.5 to 13.8	13.5 to 13.8	13.6 to 13.8	13.5 to 13.6	13.5 to 13.6	13.5 to 13.6
AC Ripple Charger:	0.5% RMS or 1.5% of float charge voltage recommended for best results. Max. allowed = 4%V pk to pk							
	 220 Gold-HP	 195 GXL	 165 GXL	 85 GXL-HP	 195 GXL-FT	 70 HPL-FT	 115 HPL-FT	 220 HPL-FT

Notes:
[1] Warranty varies by country and region. Consult your sales person for details.
[2] Runtimes calculated using a 25A DC constant current load with voltage discharge to 1.75V/cell @ 25°C / 77°F. 195GXL-FT runtime at 25A to 1.75VPC @ 25°C / 77°F. 10 cycles required to obtain maximum runtime charge.
[3] Dimensions at top of battery except for 195GXL-FT dimensions at battery base.
[4] In Canada, the Gold warranty is 6 years when AlphaGuard™ Charge Management is used in the battery string, and 5 years if AlphaGuard Charge Management is not used.