



an EnerSys® company

XM3.1-HP Broadband UPS

Next-Generation Uninterruptible Power Supply

- 1 Advanced Ferro Technology**
Maximum power efficiency under all modes of operation
- 2 Integrated DOCSIS® 3.1 Communications**
Intelligent power management, RF network diagnostics and high speed backhaul
- 3 SFP Optical**
Optical power supply status monitoring for fiber deep architectures
- 4 AlphaGuard Embedded Battery Balancing**
Maximize battery life and optimize performance
- 5 Advanced Battery Management**
Dynamic 5-stage charger technology maximizes AlphaCell® battery life
- 6 AlphaApps+ Option**
Intelligent diagnostics for remote battery maintenance and power train—advanced power monitoring and data logging



- 7 Alpha Smart-Display**
Four-line display with intelligent, virtual keypad for optimal provisioning and diagnostics
- 8 Alpha DOC Option**
Dual output controller manages two isolated outputs for advanced network power designs
- 9 Remote Firmware Upgrades**
Latest features and firmware enhancements
- 10 Digital Step Attenuator**
Automatically or manually adjusts the RF receive power level, simplifies product installation, eliminating the need for external attenuators

The Alpha® XM3.1HP platform continues to incorporate the ground-breaking transformer design of our award winning XM3-HP power supply with significant technological advancements across the entire power technology platform. These advancements focus on delivering DOCSIS® 3.1 status monitoring and data backhaul, SFP optical monitoring for new fiber deep architectures and AlphaApps+ for enhanced advanced battery and power supply performance metrics. The enhanced XM3.1-HP platform also continues to leverage remote firmware upgrades for the latest power supply features and enhancements. All of these advancements continue to focus on providing the industry maximum value centered around three primary benefits—improved efficiency, optimized performance and reduced operating costs.

XM3.1-HP Broadband UPS Specifications

08/2020

Model:	908HP	910HP	915HP	918HP
Fine Mode Parameters				
Nominal AC Input Voltage:	120VAC	120VAC	120VAC, 240VAC (factory ordered)	120VAC, 240VAC (factory ordered)
Nominal Input Frequency:	60Hz	60Hz	60Hz	60Hz
Input Frequency Tolerance:	±3%	±3%	±3%	±3%
Input Voltage Operating Range Tolerance:	-25 / +15%	-25 / +15%	-25 / +15%	-25 / +15%
Input Voltage Range (VAC):	90 to 138	90 to 138	90 to 138, 173 to 276	90 to 138, 173 to 276
Output Voltage (VAC - Quasi-square wave):	63 / 89	63 / 89	63 / 89	63 / 89
Output Voltage Regulation:	-2.5 / +1%	-2.5 / +1%	-2.5 / +1%	-2.5 / +1%
Maximum Rated Output Current:	8A	10A	15A	18A
Maximum Output Power (VA):	720	900	1350	1620
Line Mode Efficiency:	Up to 94%	Up to 94%	Up to 94%	Up to 94%
Standby Efficiency:	Up to 91%	Up to 91%	Up to 91%	Up to 91%
Output Waveform:	Quasi-square wave	Quasi-square wave	Quasi-square wave	Quasi-square wave
Short Circuit Protection:	<150% of maximum current rating	<150% of maximum current rating	<150% of maximum current rating	<150% of maximum current rating
Transfer Characteristics:	Uninterrupted output	Uninterrupted output	Uninterrupted output	Uninterrupted output
Battery Voltage (VDC):	36	36	36	36
Battery Charger				
Temperature Compensation:	Programmable (0 to 5mV / Cell / °C)	Programmable (0 to 5mV / Cell / °C)	Programmable (0 to 5mV / Cell / °C)	Programmable (0 to 5mV / Cell / °C)
Bulk Charger Current:	10A	10A	10A	10A
5 Stages:	Refresh, bulk, accept, float, rest	Refresh, bulk, accept, float, rest	Refresh, bulk, accept, float, rest	Refresh, bulk, accept, float, rest
Mechanical				
Inverter Module:	Front plug in, hot swappable inverter module	Front plug in, hot swappable inverter module	Front plug in, hot swappable inverter module	Front plug in, hot swappable inverter module
Dimensions W × D × H (in/mm): (Handle Folded)	16.43 × 10.57 × 7.76 / 417 × 268 × 197	16.43 × 10.57 × 7.76 / 417 × 268 × 197	16.43 × 10.57 × 7.76 / 417 × 268 × 197	16.43 × 10.57 × 7.76 / 417 × 268 × 197
Weight (lb/kg):	49 / 22.3	49 / 22.3	61 / 27.6	61 / 27.6
Input Power Connector (IEC 320/C20):	NEMA 5-15P plug	NEMA 5-15P plug	NEMA 5-20P / NEMA 6-15P plug	NEMA 5-20P / NEMA 6-15P plug
Battery Connector:	Anderson style 75A	Anderson style 75A	Anderson style 75A	Anderson style 75A
Display:	4 line x 20 character white LCD with soft-key menu controls			
Indicators:	LEDs for output status and major/minor alarm status			
Self Test Mode:	Push-to-test switch to initiate local self-test mode			
Tamper Connector:	2-position MTA-100 connector	2-position MTA-100 connector	2-position MTA-100 connector	2-position MTA-100 connector
LRI Connector:	2-position Anderson style connector	2-position Anderson style connector	2-position Anderson style connector	2-position Anderson style connector
Local Ethernet Port:	1 port, auto-MDX, RJ-45, 10/100/1000Mbps, data backhaul: complies with DOCSIS® 3.1 CPE interface operations			
SFP Optical Module Slot:	SFP optical module (small form-factor pluggable) may be installed. Optional/supplied by customer for status monitoring purposes.			
Battery Temperature Sensor:	Ring lug fastens to negative terminal on battery	Ring lug fastens to negative terminal on battery	Ring lug fastens to negative terminal on battery	Ring lug fastens to negative terminal on battery
Lifting Handle:	Foldable handle	Foldable handle	Foldable handle	Foldable handle

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Model:	908HP	910HP	915HP	918HP	
Advanced Functions					
Advanced Analytics (AlphaApps):	Battery health, battery remaining runtime, utility event log, PS event log, active drop alarming, system downtime				
User Inputs:	Battery model, battery manufacturing date, battery siemens values, technician code/ID				
Firmware:	Local or remote power supply firmware upgrade capable				
Environment					
Operating Temperature:	-40 to 60°C / -40 to 140°F (derate by 2°C / 3.6°F per 1000ft above 3000ft)				
Relative Humidity:	0 to 95% non-condensing				
Agency Compliance					
Safety:	UL/CSA 60950-1 (2 nd)				
EMC:	FCC Part 15 Class B				
Cable Modem Specifications					
Hardware					
CPU:	Single chip Intel Puma 7 CE2753i, industrial temperature rated				
Memory:	FLASH: 8Gb (NAND) DRAM: 8Gb (DDR3L)				
LAN Port:	1Gb/s (2.5Gb/s optional) MDI/MDIX				
Diplexer Options*:	Modem Model	Upstream Range 1	Downstream Range 1	Upstream Range 2	Downstream Range 2
	CMOA-4285	5 to 42MHz	54 to 1002MHz	5 to 85MHz	108 to 102MHz**
	CMOA-45204	5 to 45MHz	258 to 1218MHz	5 to 204MHz	258 to 1218MHz
WAN Port:	F connector, 75 Ohm (DOCSIS® 3.0, 3.1 compliant)				
LEDs:	Upstream ranging and registration lock, downstream RF carrier detection and lock, CPE link, CPE activity				
Standards					
Regulatory/Standards (Verified with CMOA installed in application product):	<ul style="list-style-type: none">• UL 60950-1: Information Technology Equipment - Safety - Part 1• UL/CSA 1778 (5th): Uninterruptable Power Systems as a guide for backfeed• IEC 60728-11 (4th): 2016 CATV Networks - Part 11 - Safety (applicable parts)• EN 50083 2:2006: EMC requirements for CATV equipment• EN 62040 2:2006: Uninterruptable Power Systems (UPS) - Electromagnetic Compatibility (EMC) Requirements - Category C2• FCC Part 15 - Class B• CISPR24/EN55024: 10V/m radiated susceptibility• IEEE 587 - Category B3: Surge, test method: 10 positive cycles/10 negative cycles, alternating• IEEE C62.41: RF surge, 6,000V peak, combination wave., ten events, alternating positive and negative, using a 2 Ohm source impedance with “Outcome 1” per IEEE 62.45• IEC/EN 61000-4-2: Direct electrostatic contact discharge at 8kV at the RF connector shield without data loss• RoHS Compliant/Directive 2002/95/EC				
Advanced Diagnostics					
RF Network:	<ul style="list-style-type: none">• Full band capture data available through CableLabs® MIB and internal web server• Micro-reflection diagram available via internal web server				
Power Supply Display:	Power supply display will show advanced network diagnostics including: Upstream and downstream frequencies and RF levels, IPv4 or IPv6 address assigned by network DHCP server, MAC address, DOCSIS timeout error codes and firmware versions				
Utility Power Diagnostics:	With XM3.1 app card, utility performance status including outages, sags, surges and out-of-frequency events				
Battery Diagnostics:	With XM3.1 app card, power supply diagnostics report when batteries should be serviced including battery string runtime remaining and battery life remaining				
Event Logging:	With XM3.1 app card, logs include power supply events, power supply configurations and battery events				

* Dual hardware diplexers per model. Range 1 and Range 2 are software selectable within each model. (Factory default: Range 1)

** A downstream upper limit frequency of 1218MHz available with firmware upgrade.

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Cable Modem Specifications	
Status Monitoring	
Standards:	ANSI/SCTE 38-4: Hybrid fiber/coax outside plant status monitoring SCTE-HMS-PS-MIB management information base ANSI/SCTE 38-6: Hybrid fiber/coax outside plant status monitoring <ul style="list-style-type: none"> Alpha proprietary, portable generator management information base Cheetah proprietary, KPI management information base
Power Supply Monitored Parameters (ANSI-HMS):	Major alarm, minor alarm, input voltage, output voltage, output current, output power, input current, input power, UPS status, charger current, battery discharge current, battery voltage, battery temperature, remote test control, enclosure door
Portable Generators:	Models: AlphaGen DCX2000, AlphaGen DCX3000 Monitored Parameters: Generator connected, generator running, generator runtime
Features	
DOCSIS® 3.0 Bonded Channels:	<ul style="list-style-type: none"> Up to 32 downstream, 1,216Mbit/s*** Up to 8 upstream, 216Mbit/s***
DOCSIS 3.1 OFDM Channels (Receiver):	<ul style="list-style-type: none"> 24 to 192MHz OFDM channels downstream, 10Gbit/s*** Supports (2) OFDM channels and 24 SC-QAM channels SC channel modulation up to 4096 QAM
DOCSIS 3.1 OFDMA Channels (Transmitter):	<ul style="list-style-type: none"> 96MHz maximum OFDMA channel bandwidth upstream, 2Gbit/s*** Supports (2) OFDMA channels (requires 204MHz upstream split, future version)
WAN/LAN Bridging and Routing:	802.1d transparent bridging OR routing modes configurable
LAN Services over Ethernet:	<ul style="list-style-type: none"> IPv4, IPv6, UDP, TCP, DHCP Server, NAT, RIPv2 DNS address resolution (WAN pass through DNSSEC & EDNSO requests and responses, dynamic DNS support, SRV & A records supported) Static IPv4, IPv6 configurable
WAN Services over DOCSIS:	<ul style="list-style-type: none"> IPv4, IPv6, UDP, TCP, DHCP, TOD, TFTP, NAT, BPI, RIPv2, SNMPv1, SNMPv2c, SNMPv3, SSH, HTTP TR 181 parameters over TR 069 and SNMP BSaD (Business Services over DOCSIS) supports L2VPN encrypted traffic DNS address resolution WAN LAN pass through modes supported, see LAN DNS Static IPv4, IPv6 configurable Full spectrum capture (Cable Labs MIBs and HTML) Full spectrum diagnostics (proprietary MIB) Micro reflections (HTML)
Web Page:	<ul style="list-style-type: none"> Web interface accessible through WAN interface (Port 80 enabled via TLV) and local IP address LAN port Write access password controlled (can be disabled using TLV in configuration file) Web interface displays operating parameters including: DOCSIS parameters, Ethernet diagnostics (e.g., RFC 2544, latency, jitter, frame loss), full band capture statistics, micro reflection statistics, application specific parameters
Password of the Day (PoTD) Option:	Operator provided date and seed; PoTD encryption from 3DES/AES algorithm
Software Implementation:	Modem uses RDK-M/RDK-B (reference design kit modem/broadband)
CableLabs® Compliance:	DOCSIS 3.1 cable modem, DOCSIS 3.0 cable modem, IPv4, IPv6 eRouter specifications

***Maximum theoretical DOCSIS payload throughput

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Worldwide Coporate Offices

Headquarter Germany

Hansastraße 8
D-91126 Schwabach
Tel: +49 9122 79889 0

Mail: info@alpha-outback-energy.com

Eastern Europe

ee@alpha-outback-energy.com

Middle East

me@alpha-outback-energy.com

France and Benelux

fbl@alpha-outback-energy.com

Spain

spain@alpha-outback-energy.com

Africa

africa@alpha-outback-energy.com

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