



an EnerSys® company

# XM3.1-HP™ Broadband UPS

Next-Generation Uninterruptible Power Supply



- **Advanced Ferro Technology:** Maximum power efficiency under all modes of operation
- **Compact 5A Models Available:** Optimized for lower power MDU and fiber-deep applications
- **Advanced Battery Management:** Dynamic 5-stage charger technology maximizes AlphaCell® and PowerSafe® battery life
- **SFP Optical:** Optical power supply status monitoring for fiber deep architectures
- **Remote Firmware Upgrades:** Latest features and firmware enhancements
- **Smart-Display:** Four-line display with intelligent, virtual keypad for optimal provisioning and diagnostics
- **Integrated DOCSIS® 3.1 Communications:** Intelligent power management, RF network diagnostics and high speed backhaul
- **AlphaApps+:** Intelligent diagnostics for remote battery maintenance and power train—advanced power monitoring and data logging
- **Digital Step Attenuator:** Automatically or manually adjusts the RF receiver power level, simplifies product installation—eliminating the need for external attenuators

**The Alpha® XM3.1-HP™ Small Form-factor Pluggable (SFP) UPS 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 advanced battery and power supply performance metrics. The enhanced XM3.1-HP™ UPS platform also continues to leverage remote firmware upgrades for the latest power supply features. All of these advancements 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 International Specifications

<b>Model:</b>	<b>905E-HP</b>
<b>Fine Mode Parameters</b>	
<b>Nominal AC Input Voltage:</b>	200 to 240VAC
<b>Nominal Input Frequency:</b>	50Hz
<b>Input Frequency Tolerance:</b>	±3%
<b>Input Voltage Operating Range Tolerance:</b>	−30 to +25%
<b>Input Voltage Range:</b>	161 to 288VAC
<b>Output Voltage:</b>	63/89VAC (field selectable)
<b>Output Voltage Regulation</b> (Based on Nominal Input Voltage at 50% Load, 25°C):	−5 to +1%
<b>Maximum Rated Output Current:</b>	5A
<b>Maximum Output Power:</b>	450VA
<b>Line Mode Efficiency:</b>	Up to 90%
<b>Standby Efficiency:</b>	Up to 88%
<b>Output Waveform:</b>	Quasi-square wave
<b>Short Circuit Protection:</b>	<150% of max current rating
<b>Transfer Characteristics:</b>	Uninterrupted output
<b>Auxiliary Output Voltage:</b>	220VAC
<b>Auxiliary Output Current:</b>	0.2AAC maximum
<b>Battery Voltage:</b>	12VDC single battery or parallel battery configurations
<b>Mechanical</b>	
<b>Inverter Module:</b>	Integrated
<b>Dimensions W × D × H (in/mm):</b> (Handle Folded)	8 × 11.63 × 8.84 / 203.2 × 295.5 × 224.6
<b>Net Weight (lb/kg):</b>	31 / 14.1
<b>Input Power Interface:</b>	IEC® 320/C14 inlet connection accepts a variety of detachable cord sets to match country-specific wall receptacles
<b>Output 1 &amp; 2 Interface:</b>	2-position terminal block
<b>Auxiliary Output Interface:</b>	2-position terminal block
<b>Vout Selector:</b>	2-position terminal block
<b>Battery Connector:</b>	2-position red 50A Anderson™ style
<b>Status Display:</b>	4 line × 20 character white LCD with soft-key menu controls
<b>Indicators:</b>	LEDs for output status and major/minor alarm status
<b>Self Test Mode:</b>	Push-to-test switch to initiate local self-test mode
<b>Tamper Connector:</b>	2-position MTA-100 connector
<b>Environmental Control Connector (ENV):</b>	10 position connector - input/output sense control
<b>LRI Connector:</b>	2-position Anderson style connector
<b>Local Ethernet Port:</b>	1 port, auto-MDX, RJ-45, 10/100/1000Mbps, data backhaul: complies with DOCSIS® 3.1 CPE interface operations
<b>SFP Optical Module Slot:</b>	SFP optical module (small form-factor pluggable) may be installed. Optional/supplied by customer for status monitoring purposes.
<b>Battery Temperature Sensor:</b>	Ring lug fastens to negative terminal on battery
<b>Finish:</b>	TGIC free polyester powder coat
<b>Lifting Handle:</b>	Foldable handle

# XM3.1-HP™ Broadband UPS International Specifications

Environment					
Operating Temperature:	−40 to 60°C / −40 to 140°F (derate by 2°C / 3.6°F per 1000ft above 3000ft)				
Storage Temperature:	−40 to 70°C / −40 to 158°F (derate by 2°C / 3.6°F per 1000ft above 3000ft)				
Relative Humidity:	0 to 95% non-condensing				
Battery Charger					
Temperature Compensation:	Programmable (0 to 5mV / Cell / °C)				
Bulk Charger Current:	10A				
Charger Stages:	3 to 5 stages (refresh, bulk, accept, float, rest)				
Charger Profiles:	Selectable, AlphaCell® models or other (customized settings)				
Advanced Functions					
Advanced Analytics (AlphaApps+) Option (All Models)					
Advanced Analytics:	Battery health, battery remaining run time, 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:	Remote firmware upgrade capable				
Agency Compliance					
Safety:	CB, CE, IEC 62368-1-18, IEC/EN 60950-1: ED 2, EN 60728-11				
EMC:	CISPR 32 (55032) Class B, CISPR 24/35 (55024/55035), EN62040-2 (UPS) Category C2, EN50083-2 (CATV) (Class B Conducted Limits)				
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 1002MHz**
	CMOA-45204	5 to 45MHz	258 to 1218MHz	5 to 204MHz	258 to 1218MHz
	CMOA-85204 (Euro)	5 to 85MHz	108 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"><li>• <b>UL® 60950-1:</b> Information Technology Equipment - Safety - Part 1</li><li>• <b>UL/CSA® 1778 (5<sup>th</sup>):</b> Uninterruptible Power Systems as a guide for backfeed</li><li>• <b>IEC® 60728-11 (4<sup>th</sup>):</b> 2016 CATV Networks - Part 11 - Safety (applicable parts)</li><li>• <b>EN 50083 2:2006:</b> EMC requirements for CATV equipment</li><li>• <b>EN 62040 2:2006:</b> Uninterruptible Power Systems (UPS) - Electromagnetic Compatibility (EMC) Requirements - Category C2</li><li>• <b>FCC Part 15 - Class B</b></li><li>• <b>CISPR24/EN55024:</b> 10V/m radiated susceptibility</li><li>• <b>IEEE® 587 - Category B3:</b> Surge, test method: 10 positive cycles/10 negative cycles, alternating</li><li>• <b>IEEE C62.41:</b> 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</li><li>• <b>IEC/EN 61000-4-2:</b> Direct electrostatic contact discharge at 8kV at the RF connector shield without data loss</li><li>• <b>RoHS® Compliant/Directive 2002/95/EC</b></li></ul>				

\* 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.

# XM3.1-HP™ Broadband UPS International Specifications

Cable Modem Specifications (Continued)	
Advanced Diagnostics	
<b>RF Network:</b>	<ul style="list-style-type: none"> <li>Full band capture data available through CableLabs® MIB and internal web server</li> <li>Micro-reflection diagram available via internal web server</li> </ul>
<b>Power Supply Display:</b>	<b>Power supply display will show advanced network diagnostics including:</b> 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
<b>Utility Power Diagnostics:</b>	With XM3.1-HP app card, utility performance status including outages, sags, surges and out-of-frequency events
<b>Battery Diagnostics:</b>	With XM3.1-HP app card, power supply diagnostics report when batteries should be serviced including battery string run time remaining and battery life remaining
<b>Event Logging:</b>	With XM3.1-HP app card, logs include power supply events, power supply configurations and battery events
Status Monitoring	
<b>Standards:</b>	<b>ANSI®/SCTE® 38-4:</b> Hybrid fiber/coax outside plant status monitoring SCTE-HMS-PS-MIB management information base <b>ANSI/SCTE 38-6:</b> Hybrid fiber/coax outside plant status monitoring <ul style="list-style-type: none"> <li>Alpha proprietary, portable generator management information base</li> <li>Cheetah proprietary, KPI management information base</li> </ul>
<b>Power Supply Monitored Parameters (ANSI-HMS):</b>	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
Features	
<b>DOCSIS® 3.0 Bonded Channels:</b>	<ul style="list-style-type: none"> <li>Up to 32 downstream, 1,216Mbit/s***</li> <li>Up to 8 upstream, 216Mbit/s***</li> </ul>
<b>DOCSIS 3.1 OFDM Channels (Receiver):</b>	<ul style="list-style-type: none"> <li>24 to 192MHz OFDM channels downstream, 10Gbit/s***</li> <li>Supports (2) OFDM channels and 24 SC-QAM channels</li> <li>SC channel modulation up to 4096 QAM</li> </ul>
<b>DOCSIS 3.1 OFDMA Channels (Transmitter):</b>	<ul style="list-style-type: none"> <li>96MHz maximum OFDMA channel bandwidth upstream, 2Gbit/s***</li> <li>Supports (2) OFDMA channels (requires 204MHz upstream split, future version)</li> </ul>
<b>WAN/LAN Bridging and Routing:</b>	802.1d transparent bridging OR routing modes configurable
<b>LAN Services over Ethernet:</b>	<ul style="list-style-type: none"> <li>IPv4, IPv6, UDP, TCP, DHCP Server, NAT, RIPv2</li> <li>DNS address resolution (WAN pass through DNSSEC &amp; EDNSO requests and responses, dynamic DNS support, SRV &amp; A records supported)</li> <li>Static IPv4, IPv6 configurable</li> </ul>
<b>WAN Services over DOCSIS:</b>	<ul style="list-style-type: none"> <li>IPv4, IPv6, UDP, TCP, DHCP, TOD, TFTP, NAT, BPI, RIPv2, SNMPv1, SNMPv2c, SNMPv3, SSH, HTTP</li> <li>TR 181 parameters over TR 069 and SNMP</li> <li>BSoD (Business Services over DOCSIS) supports L2VPN encrypted traffic</li> <li>DNS address resolution WAN LAN pass through modes supported, see LAN DNS</li> <li>Static IPv4, IPv6 configurable</li> <li>Full spectrum capture (CableLabs MIBs and HTML)</li> <li>Full spectrum diagnostics (proprietary MIB)</li> <li>Micro reflections (HTML)</li> </ul>
<b>Web Page:</b>	<ul style="list-style-type: none"> <li>Web interface accessible through WAN interface (Port 80 enabled via TLV) and local IP address LAN port</li> <li>Write access password controlled (can be disabled using TLV in configuration file)</li> <li><b>Web interface displays operating parameters including:</b> DOCSIS parameters, Ethernet diagnostics (e.g., RFC 2544, latency, jitter, frame loss), full band capture statistics, micro reflection statistics, application specific parameters</li> </ul>
<b>Password of the Day (PoD) Option:</b>	Operator provided date and seed; PoD encryption from 3DES/AES algorithm
<b>Software Implementation:</b>	Modem uses RDK-M/RDK-B (reference design kit modem/broadband)
<b>CableLabs® Compliance:</b>	DOCSIS 3.1 cable modem, DOCSIS 3.0 cable modem, IPv4, IPv6 eRouter specifications

\*\*\*Maximum theoretical DOCSIS payload throughput



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