

# Eaton EX UPS



Mini-tower



Rack/Tower 2U



Rack/Tower 3U

## High availability

- Eaton® EX UPS—online, double-conversion UPS with automatic bypass for fault-tolerance
- Continuous power with hot swappable batteries—the optional HotSwap Maintenance Bypass (MBP) module allows the UPS to be replaced without interrupting the power supply
- Load segments—load shedding capability and backup time maximization, as well as remote reboot and sequential startup
- Long backup times—add up to four EXB battery modules to the EX (1000 VA models and above)



HotSwap MBP 15A

## Total flexibility

The EX provides unmatched flexibility.

- Form factor—the EX is available in tower or convertible rack/tower models, optimized for telecom racks with short depth
- Connections—easily add more outlets with the FlexPDU and HotSwap MBP; these optional PDUs can be mounted behind, on the side or on top of the rack/tower UPS models
- Interfaces—USB, serial RS232, remote On/Off and a slot for an optional communications card (Ethernet, ModBus or status)



Adjustable multilingual display



Servers, data storage and network equipment



Telephony - VoIP



Medical equipment - industrial processes



Powering Business Worldwide

## Manageability

- Multilingual LCD provides access to a wide range of measurements and setup menus
- Remote supervision—the EX comes with a free five-node version of Enterprise Power Manager for network-based supervision and asset management
- Network-based modules for power management of servers (Windows, Linux, MacOS) or small blade servers (VMware ESX, Microsoft Hyper-V)
- NetWatch 5.0 software enables automatic shutdown of UPS-protected devices



Eaton NetWatch Client 5.0 has tested compatible with Cisco Unified Communications Manager 4.3. Go to [www.eaton.com/PQ/cisco](http://www.eaton.com/PQ/cisco) for disclaimer.

## Eaton customer service and support

- Two-year warranty, including batteries
- Standard exchange of product in case of failure, including batteries

### Associated services:

- Extended warranty contracts available to provide up to five years of warranty coverage
- Battery replacement program
- UPSgrade™ program for substitution of an old UPS (vendor neutral)

## Communications software and connectivity

- **Power management suite** (included) comes with network-based shutdown software (Windows, Linux, MacOS, VMware ESX, Microsoft Hyper-V) and local or remote supervision up to five nodes
- **Network Management Card (NMC)** connects the UPS to an Ethernet 10/100 network, raising SNMP or XML alarms and supervising the UPS using a simple browser interface
- **NMC environment sensor** monitors the temperature, humidity and two relay contacts via SNMP or HTML
- **Enterprise Power Manager** supervisor provides comprehensive management of multiple UPSs and PDUs using a Windows PC (vendor neutral)
- **NMS integration kits** include HP OpenView, IBM Tivoli Netview, CA Unicenter, etc.
- **Management card contacts/serial** provide UPS status outputs via relay contacts, emergency stop and a second serial port
- **NMC ModBus/JBus card** combines SNMP, HTML and ModBus/JBus supervision
- **UPS control remote display** monitors UPS status up to 82 feet from the unit



FlexPDU and HotSwap MBP can be mounted in many different positions



- 1 Multilingual LCD
  - Six languages
  - Displays measurements
  - Displays alarms
  - Access to control and set-up menus
- 2 Panel for replacing batteries without interrupting the output
- 3 (1) USB port, (1) serial port, remote On/Off and emergency stop contacts
- 4 EXB battery module connector
- 5 Automatic detection of EXB battery modules
- 6 (6) NEMA 5-20R receptacles, including (2) switched outlets and (1) locking NEMA receptacle
- 7 Communications card slot
- 8 Mountings for HotSwap MBP and FlexPDU



Network Management Card and Enterprise Power Manager Supervision

# Technical specifications<sup>1</sup>

## FORMAT

Form factor	700 VA: Mini-tower 1000–1500 VA: Mini-tower or rack/tower 2U 2200–3000 VA: Rack/tower 2U and rack/tower 3U
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## ELECTRICAL CHARACTERISTICS

Topology	Online with automatic bypass and power factor correction
Input voltage/frequency range (without batteries)	700–1500 VA: 100/120/140/160 <sup>2</sup> to 284V, 40–70 Hz 2200–3000 VA: 50 <sup>3</sup> –100V to 142V, 40–70 Hz
Output voltage/frequency	120V (adjustable to 100/110/127V), 50/60 Hz, auto-select or frequency converter mode <sup>4</sup>

## CONNECTIONS

Input	700–1500 VA: 5-15P 2200 VA: NEMA 5-20P 3000 VA: NEMA L5-30P
Outputs	700–1500 VA : (4) 5-15R tower, (6) 5-15R RT2U 2200 VA: (6) NEMA 5-20R + (1) NEMA L5-20R 3000 VA: (6) NEMA 5-20R + (1) NEMA L5-30R
Additional outputs with HotSwap MBP	700–1500 VA: (4) NEMA 5-15R 2200–3000 VA: (5) NEMA 5-15R or (5) NEMA 5-20R
Additional outputs with FlexPDU	NEMA L5-20R 2200–3000 VA: (10) NEMA 5-15R or (10) NEMA 5-20R or (8) NEMA L5-20R

## INTERFACES

Indicators and display	(3) LEDs + adjustable multilingual display: display of measurements, access to control and setup menus
Communication ports	(1) USB port, (1) RS232 serial port and relay contacts <sup>5</sup> , (1) mini terminal block for remote On/Off and emergency stop
Communications card slots	(1) slot for NMC Mini-Slot 2006 card, NMC ModBus/JBus or MC Contacts/Serial

## OPERATING CONDITIONS, STANDARDS AND APPROVALS

Operating temperature	32°F to 104°F (0°C to 40°C) continuous
Noise level	45 dBA
Performance/Safety/EMC	700–1500 VA: IEC 62 040-3 (VFI-SS-113), IEC 62 040-1-1, IEC 60 950-1 (RD), FCC Subpart B, class A 2200–3000 VA: IEC/EN 62 040-3 (VFI-SS-113), IEC/EN 62 040-1-1, IEC/EN 60 950-1 (RD), IEC/EN 62 040-2 C1, FCC Subpart B, Class A
Approvals	700–1500 VA: UL, cUL, CE, CB report 2200–3000 VA: CE, TÜV, CB Report, UL and CUL (CSA)

- Due to continuing product improvement programs, specifications are subject to change without notice
- Lower limits for <20%, <33%, <66%, >=66% of nominal power (VA); for active output power greater than 0.7 and 0.8 nominal rating, the lower limit is 180V and 190V respectively
- Lower limits for reduced load
- Derated by 15% when used as a frequency converter
- USB and RS232 serial ports cannot be used simultaneously

## EX BATTERY BACKUP TIMES (IN MINUTES)<sup>1</sup>

Load (VA/Watts)	Internal Batteries	+1 EBM	+2 EBMs	+3 EBMs	+4 EBMs
<b>EX 700</b>					
70/49	71	-	-	-	-
140/98	36	-	-	-	-
210/147	25	-	-	-	-
280/196	20	-	-	-	-
350/245	16	-	-	-	-
420/294	12	-	-	-	-
490/343	10	-	-	-	-
560/392	8	-	-	-	-
630/441	6	-	-	-	-
700/490	5	-	-	-	-
<b>EX 1000 / 1000 RT 2U</b>					
100/70	75	290	490	790	980
200/140	40	170	290	440	550
300/210	28	125	210	310	390
400/280	21	92	180	240	310
500/350	18	75	150	205	250
600/420	14	60	110	170	220
700/490	11	52	90	145	190
800/560	9	43	78	125	170
900/630	7	40	70	112	155
1000/700	6	35	60	95	135
<b>EX 1500 / 1500 RT 2U</b>					
150/105	60	212	360	475	700
200/210	32	110	220	380	380
450/315	21	78	155	210	260
600/420	16	60	115	160	200
750/525	13	47	83	140	180
900/630	10	40	71	110	140
1050/735	8	34	60	90	118
1200/840	7	30	52	76	100
1350/945	6	27	48	70	90
1500/1050	5	24	42	62	80
<b>EX 2200 RT 2U &amp; 3U<sup>2</sup></b>					
220/154	90	352	587	831	1216
440/308	48	200	340	470	650
660/462	30	130	225	320	450
880/616	22	100	170	260	350
1100/770	16	80	135	215	286
1320/924	13	62	110	180	240
1540/1078	10	50	95	150	200
1760/1232	8	42	80	125	170
1980/1386	7	36	65	110	152
2200/1540	6	30	51	83	134
<b>EX 3000 RT 2U &amp; 3U<sup>3</sup></b>					
300/210	79	254	454	628	847
600/420	40	130	255	330	445
900/630	25	80	160	230	290
1200/840	18	60	120	180	230
1500/1050	14	48	102	143	187
1800/1260	12	38	82	115	150
2100/1470	9	32	72	95	125
2400/1680	7	27	58	80	100
2700/1890	6	22	50	70	82
3000/2100	5	18	36	52	70
<b>EX 3000 RT 3U XL<sup>4</sup></b>					
300/210	-	175	375	549	768
600/420	-	90	215	290	405
900/630	-	55	135	205	265
1200/840	-	42	102	162	212
1500/1050	-	34	88	129	173
1800/1260	-	26	70	103	138
2100/1470	-	23	63	86	116
2400/1680	-	20	51	73	93
2700/1890	-	16	44	64	76
3000/2100	-	13	31	47	65

- Battery backup times are approximate and may vary with equipment, configuration, battery age, temperature, etc. The EX has a 0.9 power factor, but runtimes are shown here at 0.7 power factor for easy comparison against competitor's products, which have a 0.7 power factor. 2. Output power rating = 1650W. 3. Standard configuration power rating = 2550W, with EBM = 2100W. 4. Output power rating = 2150W; up to 12 EBMs can be added for extended runtime of 196-1909 minutes

## EX, NEMA 50/60 HZ MODELS: 120V

Catalog Number	Style Number	Form Factor	Rating (VA/Watts)	Input Connection	Output Receptacles	Dimensions (H x W x D, inches)
PULSL700T	86700	Tower	700/630	5-15P	(4) 5-15R	9.52 x 6.00 x 17.32
PULSL1000T	86701	Tower	1000/900 <sup>1</sup>	5-15P	(4) 5-15R	9.52 x 6.00 x 17.32
PULSL1500T	86703	Tower	1500/1350 <sup>2</sup>	5-15P	(4) 5-15R	9.52 x 6.00 x 19.29
PULSL1000R-XL2U	86702	Rack	1000/900	5-15P	(6) 5-15R	3.46 x 17.25 x 19.00
PULSL1500R-XL2U	86704	Rack	1500/1350	5-15P	(6) 5-15R	3.46 x 17.25 x 19.00
PULSML2200-XL2U	86722	Rack/Tower 2U	2100/1650	5-20P	(6) 5-20R, (1) L5-20R	3.40 (2U) x 17.30 x 25.20
PULSML2200-XL3U	86723	Rack/Tower 3U	2100/1650	5-20P	(6) 5-20R, (1) L5-20R	5.14 (3U) x 17.30 x 19.29
PULSML3000-XL2U	86732	Rack/Tower 2U	3000/2550	L5-30P	(6) 5-20R, (1) L5-30R	3.40 (2U) x 17.30 x 25.20
PULSML3000-XL3U	86733	Rack/Tower 3U	3000/2550 <sup>3</sup>	L5-30P	(6) 5-20R, (1) L5-30R	5.14 (3U) x 17.30 x 19.29
PULSML3000-XL3UXL	86735	Rack/Tower 3U XL	3000/2150	L5-30P	(6) 5-20R, (1) L5-30R	5.14 (3U) x 17.33 x 19.29

## EX, INTERNATIONAL MODELS: 230V

Catalog Number	Style Number	Form Factor	Rating (VA/Watts)	Input Connection	Output Receptacles	Dimensions (H x W x D, inches)
PULSI700T	68180	Tower	700/630	IEC C14 (10A Socket)	(6) IEC C13 (10A)	9.52 x 6.00 x 17.32
PULSI1000T	68181	Tower	1000/900	IEC C14 (10A Socket)	(6) IEC C13 (10A)	9.52 x 6.00 x 17.32
PULSI1500T	68183	Tower	1500/1350	IEC C14 (10A Socket)	(6) IEC C13 (10A)	9.52 x 6.00 x 19.29
PULSI1000R-XL2U	68182	Rack	1000/900	IEC C14 (10A Socket)	(6) IEC C13 (10A)	3.46 x 17.25 x 19.00
PULSI1500R-XL2U	68184	Rack	1500/1350	IEC C14 (10A Socket)	(6) IEC C13 (10A)	3.46 x 17.25 x 19.00
PULSMI2200-XL2U	68401	Rack/Tower 2U	2200/1980	IEC C20 (16A) or terminal block on Hot-swap MBP (HW)	(8) IEC C13 (10A) (1) IEC C19 (16A)	3.39 x 17.32 x 25.20
PULSMI2200-XL3U	68400	Rack/Tower 3U	2200/1980	IEC C20 (16A) or terminal block on Hot-swap MBP (HW)	(8) IEC C13 (10A) (1) IEC C19 (16A)	5.16 x 17.32 x 19.29
PULSMI3000-XL2U	68403	Rack/Tower 2U	3000/2700	IEC C20 (16A) or terminal block on Hot-swap MBP (HW)	(8) IEC C13 (10A) (1) IEC C19 (16A)	3.39 x 17.32 x 25.20
PULSMI3000-XL3U	68402	Rack/Tower 3U	3000/2700	IEC C20 (16A) or terminal block on Hot-swap MBP (HW)	(8) IEC C13 (10A) (1) IEC C19 (16A)	5.16 x 17.32 x 19.29
PULSMI3000-XL3UXL	68404	Rack/Tower 3U XL	3000/2400	IEC C20 (16A) or terminal block on Hot-swap MBP (HW)	(8) IEC C13 (10A) (1) IEC C19 (16A)	5.16 x 17.32 x 19.29

1. Max rating with EXB battery units = 800W.
2. Max rating with EXB battery units = 1200W.
3. Max rating with EXB battery units = 2400W.

## EX OPTIONS

Catalog Number	Style Number	Description	Dimensions (H x W x D, inches)
<b>Extended Battery Modules</b>			
PULSL1500T-EBM	86705	TWR EBM 1–1.5 kVA	9.52 x 6.00 x 17.32
PULSL1500R-EBM	86706	RK EBM 1–1.5 kVA	3.40 x 17.25 x 19.00
PULSI1500T-EBM	68185	TWR EBM 1–1.5 kVA	9.53 x 6.22 x 15.75
PULSI1500R-EBM	68186	RK EBM 1–1.5 kVA	3.41 x 17.32 x 18.9
PULSMI3000-EBM	68405	RT EBM 2–3 kVA	5.16 x 17.32 x 19.29
<b>Optional Mounting Hardware</b>			
PULSM-RAIL	68441	2U/3U RAIL KIT	-



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