



Bulletin 1609-U — Industrial Uninterruptible Power Supply

- Rugged industrial design
- DIN Rail mountable or back-of-panel mountable
- Elevated temperature performance (up to 50 °C)
- Comprehensive network management
- Remote monitoring/configuration
- "Dry Contact" I/O
- Line interactive
- Pure sine wave output

Standards Compliance

UL 1778
CE
CSA C22.2, No. 107
FCC

Certifications

UL Listed (File No. E190749,
Guide YEDU)
CSA Certified (File LR1234)

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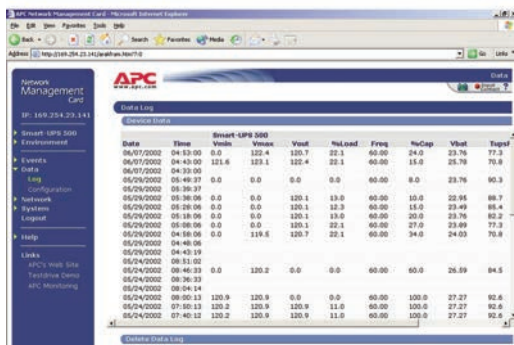
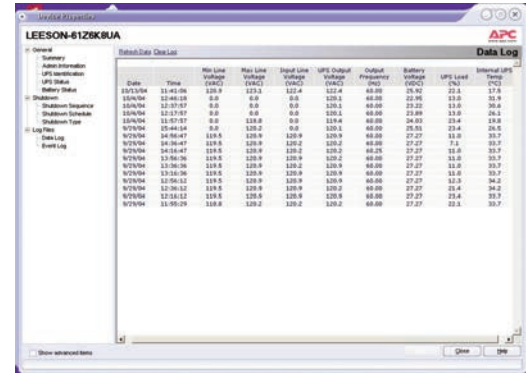
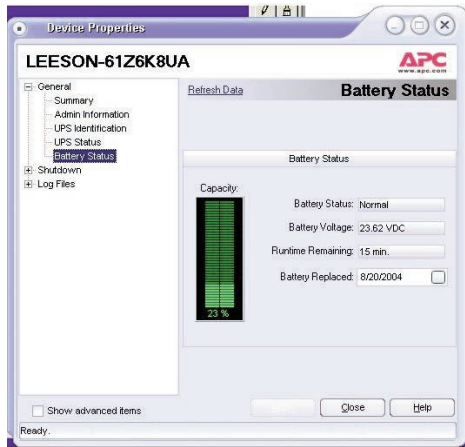
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Overview

The Bulletin 1609-U has multiple options for remote management. The device is shipped with a DB9 serial cable for serial communication. The product can be configured with the optional 1609-NMC Network Management Card for Ethernet communications. The serial connection utilizes the APC PowerChute® software, the 1609-NMC has an integrated web browser tool. The Network Management Tools allow the user to:

- Log data
- Fault notification
- Customize output relays
- Remote device management
- Log events
- Customize input contacts
- Monitor temperature
- Operating system shutdown
- Can be viewed through RSVIEW® with generic SNMP/OPC server

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Industrial Uninterruptible Power Supply

Catalog Number Explanation/ Product Selection/ Accessories

Catalog Number Explanation

1609 – U 500 N H C
 a *b* *c* *d* *e*

a

Power Supply Type	
Code	Description
U	Uninterruptible Power Supply

b

Rated Output Power	
Code	Description
500	500VA (325 W)

c

Input/Output Voltage	
Code	Description
N	115V AC
E	208/230V AC

d

Special Functions	
Code	Description
S	Standard Battery
H	High Temp. Battery
H	Can be left blank

e

Network Management	
Code	Description
C	NMC included
	Can be left blank

Product Selection

Output Power	Input Voltage	Operating Temperature	Cat. No.	
			Without Network Management Card	With Network Management Card
500VA (325 W)	120V AC	0...40 °C	1609-U500NS	1609-U500NSC
		0...50 °C	1609-U500NH	1609-U500NHC
	208/230V AC	0...40 °C	1609-U500ES	1609-U500ESC
		0...50 °C	1609-U500EH	1609-U500EHC

Accessories

Description	Output Power	Cat. No.
40 °C replacement battery	500VA (325 W)	1609-500SBAT
50 °C replacement battery	500VA (325 W)	1609-500HBAT
Network management card		1609-NMC
Remote start cable		1609-RSC

Electrical Ratings		1609-U500N . . .	1609-U500E . . .	Notes
Input	V nom.	120V	230V	—
	Capacity	500VA (325 W)		Transfer points adjustable via software. Low transfer points for the 120V/230V are: 106V, 103V, 100V, 97V and 208V, 200V, 192V respectively. High transfer points for the 120V/230V are: 127V, 130V, 133V, 136V and 253V, 257V, 261V, 265V respectively.
	Voltage Range, default	81...143V	160...287V	Transfer points adjustable via software.
	Voltage Range, widest, on line	75...153V	150...300V	—
	Current nom.	4.12 A	2.20 A	—
	Capacity Frequency	47...63 Hz		Auto-adjusting
Output	PFC	Load power factor is reflected in the input line current		—
	V nom.	120V	208/230V	—
On Line	Capacity	500VA (325 W)		—
	Output Range, default	106...127V	208...253V	This voltage range is the default, controlled by transfer points coded in the UPS
	Output Voltage Range, widest	97...136V	196...265V	By setting the highest, high transfer point and the lowest, low transfer point with software
On Battery	Transfer Point Accuracy	+/- (2% of the transfer voltage + 1.3)	+/- (2% of the transfer voltage + 2.6)	In volts AC
	Frequency	Nominal +/- 3 Hz (Locked), Nominal +/- 0.5 Hz (Free-running) +/- 2%		Typical
	THD	<5% at full (linear) load +/- 2%		Typical
Efficiency	Crest Factor	3:1		—
	On Battery	77%		Typical with resistive load
Protection	On Line	96%		Typical with resistive load
	Surge	EN50091-2		—
	Overload	On Line: alarm at 107%, limited by breakers On Battery: shutdown at 107%		—
	Output Short On Line	Input circuit breakers and/or premises branch protection		—
	Output Short On Battery	Electric current limit, shutdown outputs, and latch off		—
	Thermal Protection	None		—
Regulatory	Bypass	N/A		—
	Safety	UL 1778, CSA, IEC 60950	UL 1778, CSA, IEC 60950-1, EN50091-1-1	—
	EMC	FCC (Class A)	EN50091-2 (Class A)	—
Battery Pack	Markings	UL, CSA, FCC, CE	UL, CSA, FCC, CE	—
	Run Time	9.0 minutes (0.67 p.f.) 18 minutes (0.67 p.f.)		325 W full load 163 W half load
	Type	Standard: Sealed Lead Acid, valve regulated High Temp.: Sealed Lead Battery		Hot swappable, user replaceable
	Voltage	24V		—
	Charger	Temperature compensated current limited, float charger		—
	Recharge Time	Less than 3 hours to 90% capacity		—
Environment	Lifetime	2...4 years @ 25 °C ambient		—
	Temperature	0...40 °C (operating), 0...50 °C (operating - high temp. option) -20...60 °C (short-term storage)		—
	Altitude	10 000 ft (operating)		Maximum power is derated at higher altitudes
	Humidity	0...95% non-condensing (operating)		—
	Heat Output	On Line, Full Load: 137 BTU per hour On Line, Full Load, Charging: 190 BTU per hour On Battery, Full Load: 1706 BTU per hour		—
Communication	Audible Noise	<45 dB @ 1 meter (full load)		Typical
	DB9	Serial and Contact Closures		Serial communication only when USB is unused
	Dry Contact	Low battery, on battery		N.O., N.C. options for both
	EPO	Via Dry Contact Closure		—
Network	Via optional Smart-Slot Card (1609-NMC)		—	

Notes

208V AC applications: The 1609-U500E ships ready for 230V AC sources. When operating the UPS in 208V AC applications, the UPS low transfer voltage settings are adjusted through the PowerChute® software or the Network Management Card.

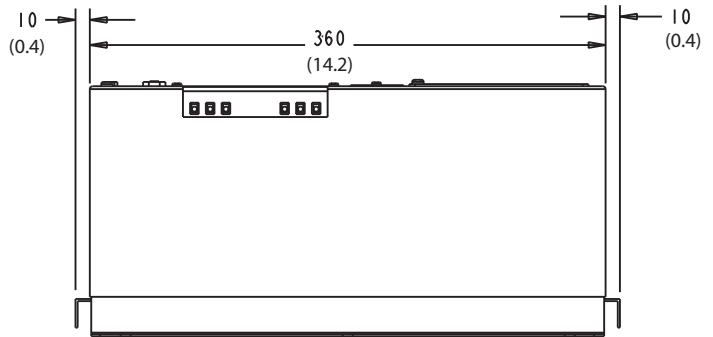
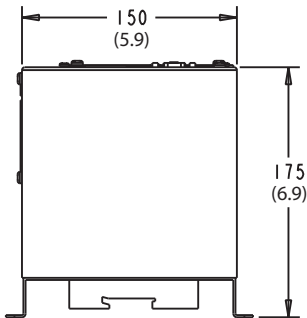
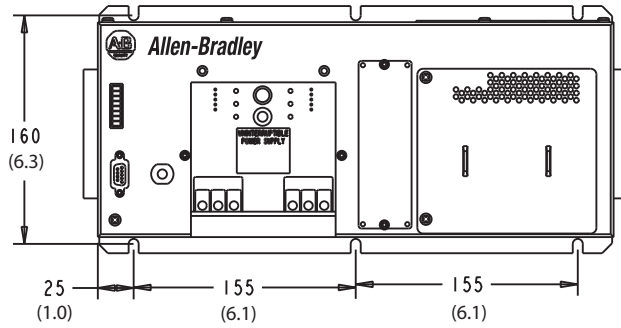
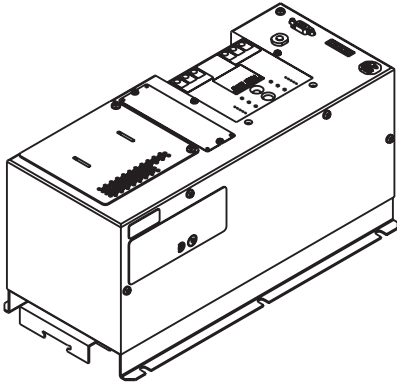
Refer to the PowerChute® User Guide or the Network Management Card instructions for details.

ATTENTION

- Wiring of the UPS should be performed by a qualified electrician. Use appropriate size wires.
- In 230V AC applications, the UPS must be protected with a circuit breaker that complies with European standards for branch rated protection per the country of installation.
- In 208V AC applications, the UPS must be protected by a dual-pole, 10 A branch rated, UL 489 circuit breaker.
- The 120V AC 1609-U500N has supplementary circuit breaker protection. The unit should be protected by a single-pole, 15 A branch rated, UL 489 circuit breaker. Allen-Bradley part number 1492-MCAA115 is suggested.
- **The branch circuit breaker must be off prior to wiring the unit.**

Approximate Dimensions

Approximate dimensions are shown in millimeters (in.) unless otherwise indicated. Dimensions are not to be used for manufacturing purposes.



Approximate Shipping Weights

Output Power	Input Voltage	Cat. No.	Approx. Shipping Weight [kg (lb)]	Cat. No.	Approx. Shipping Weight [kg (lb)]
		Without Network Management Card		With Network Management Card	
500VA (325 W)	120V AC	1609-U500NS	14.5 (31.9)	1609-U500NSC	15 (33)
		1609-U500NH	13.4 (29.5)	1609-U500NHC	13.9 (30.6)
	208/230V AC	1609-U500ES	14.5 (31.9)	1609-U500ESC	15 (33)
		1609-U500EH	13.4 (29.5)	1609-U500EHC	13.9 (30.6)

Industrial Uninterruptible Power Supply

Catalog Number Explanation/Product Selection/Accessories



Bulletin 1609-P Series — Industrial Uninterruptible Power Supply

- Rugged industrial design
- Tower/rack compatible
- Extended runtime
- Battery management system
- Hot-swappable batteries
- Comprehensive network management
- Remote monitoring/configuration
- Double conversion online
- Pure sine wave output
- Frequency and voltage regulation
- Automatic internal bypass

Certifications

UL Listed (File No. E190749, Guide YEDU)
CSA Certified (File LR1234)

Standards Compliance

UL 1778
CE
CSA C22.2, No. 107
FCC

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The Bulletin 1609-P has multiple options for remote management. Please see page 8-28 for details.

Catalog Number Explanation

1609 – P 3000 N
 a b c

a

Power Supply Type	
Code	Description
P	Double Conversion Online Uninterruptible Power Supply

b

Rated Output Power	
Code	Description
3000	3000VA (2100 W)
5000	5000VA (3500 W)
8000	8000VA (6400 W)
10000	10000VA (8000 W)

c

Input/Output Voltage	
Code	Description
N	120V AC
E	208/230V AC
A	230V AC

Product Selection

Output Power	Input Voltage	Cat. No.
3000VA (2100 W)	120V AC	1609-P3000N
3000VA (2100 W)	230V AC	1609-P3000A
5000VA (3500 W)	208/230V AC	1609-P5000E
8000VA (6400 W)	208/230V AC	1609-P8000E
10000VA (8000 W)	208/230V AC	1609-P10000E

Accessories

Description	Cat. No.
Network management card (Standard on units 5 kVA and larger)	1609-NMC
Remote start cable	1609-RSC
Replacement battery	1609-PBAT
External battery pack	1609-PXBP
5000VA CCT (120V step down transformer)	1609-5000CCT
Rail kit	1609-PRK1
Hardwire kit (for 3 and 5 kVA units)	1609-HDK1
Service bypass switch (16 kVA)	1609-PSB1



Bulletin 1609-P
Industrial Uninterruptible Power Supply
Specifications

Electrical Ratings		1609-P3000N	1609-P3000A	1609-P5000E	1609-P8000E	1609-P10000E
Input	V nom. (V AC)	120	230	208/230	208/230	208/230
	Voltage Range, default (V AC)	90...150V	160...280V			
	Current (A)	20 nom., 28 max.	11 nom., 14 max.	19 nom., 24 max.	30 nom., 40 max.	39 nom., 48 max.
	Capacity	3000VA (2100 W)		5000VA (3500 W)	8000VA (6400 W)	10 000VA (8000 W)
	Frequency	45...65 Hz (self sensing)				
	PFC	> 0.95				
	Protection	N/A	N/A	N/A	70 A input circuit breaker	
Output	V nom.	120V	208V			
	Capacity	3000VA (2100 W)		5000VA (3500 W)	8000VA (6400 W)	10 000VA (8000 W)
	Protection	3...15 A circuit breaker			N/A	N/A
On Battery	Frequency	Nominal +/- 3 Hz				
	Reg.	+/- 2% static +/- 5% dynamic	+/- 1% static, +/- 5% dynamic			
	THD	<5% at full load				
	Crest Factor	3:01				
Efficiency	On Battery	86%				
	On Line	88%				
Protection	Surge	IEC 1000-4-4				
	Overload	125% : 1 minute, 150% : 30 seconds				
	Output Short	Input circuit breakers and/or premises branch protection				
	Thermal Protection	Yes				
Regulatory	Bypass	N/A			70 A input circuit breaker	
	Safety	UL 1778, cULus, IEC 60950	EN 61000-3-2	UL 1778, cULus, IEC 60950		
	EMC	FCC (Class A)	EN50091-2	FCC (Class A), EN50091-2		
	Markings	cULus, CSA	CE	cULus, CSA, CE		
Battery Pack	Run Time	14 minutes @ full load, 34 minutes @ half load		5...7 minutes @ full load, 13...18 minutes @ half load		
	Type	Sealed Lead Acid, valve regulated, hot swappable, user replaceable				
	Voltage	192V				
	Charger	Temperature compensated current limited, float charger				
	Recharge Time	Less than 3 hours to 90% capacity	Less than 3 hours to 85% capacity			
	Lifetime	2...4 years @ 25 °C ambient				
Environment	Temperature	0...40 °C (operating), -20...60 °C (short term storage)				
	Altitude	10 000 ft (operating)				
	Humidity	0...95% non-condensing (operating)				
	Heat Output (Full Load)	655 BTU/hour		1040 BTU/hour	1536 BTU/hour	2216 BTU/hour
	Audible Noise	<50 dB @ 1 meter (full load)	<55 dB @ 1 meter (full load)			
Rear Panel	AC Outlets	(6) NEMA 5...15 (2) NEMA 5...20	(8) IEC C13 (2) IEC C19	(12) IEC C13 (2) IEC C19		
	AC Inlets	NEMA L5...30	IEC C14	IEC C20	3 position terminal blocks	
Communication	DB9	Serial and Contact Closures				
	EPO	Via Contact Closure				
	Network	Via Network Management Card (1609-NMC, provided as standard with units >3 KVA)				
Indicators and Controls	LED Status	On-line, In Bypass Mode, On Battery, Overload and Replace Battery, Fault, Bar graph for Load, Bar graph for Battery Fuel Gauge, Bar graph for Measured Input Voltage when recessed switch is held				
	Control	(Front panel) On/self-test/alarm silence/cold start/load off				
	Audible	On Battery: 4 short beeps repeats about 20 seconds (mutable), Low Battery: persistent 0.5 second beep every 1 second (mutable), In Bypass: continuous beeping, Failure: continuous tone, Replace Battery: occasional on/off change - single beep				

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ATTENTION



- Wiring of the UPS should be performed by a qualified electrician. Use appropriate size wires.
- In 230V AC applications, the UPS must be protected with a circuit breaker that complies with European standards for branch rated protection per the country of installation.
- In 208V AC applications, the UPS must be protected by a dual-pole, 10 A branch rated, UL 489 circuit breaker.
- The 120V AC 1609-P3000N has supplementary circuit breaker protection. The unit should be protected by a single-pole, 15 A branch rated, UL 489 circuit breaker. Allen-Bradley part number 1492-MCAA115 is suggested.
- **The branch circuit breaker must be off prior to wiring the unit.**

Industrial Uninterruptible Power Supply

Approximate Dimensions

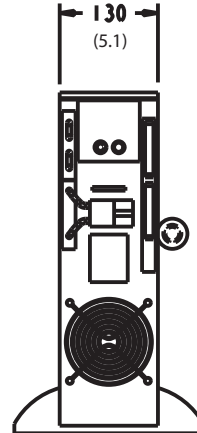
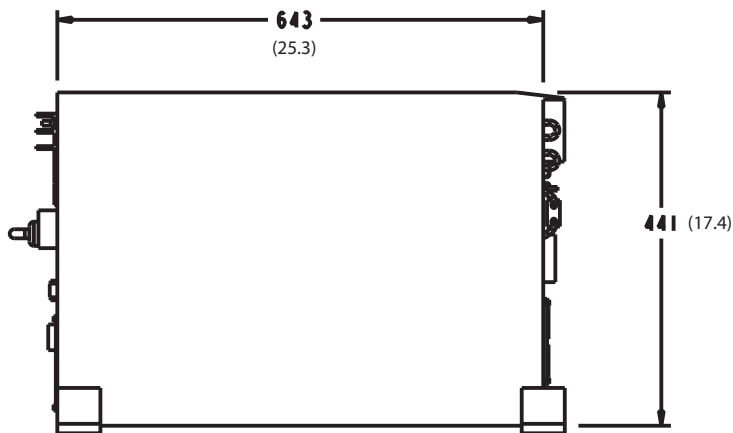
Notes

208V AC applications: The 1609-P5000E, 1609-P8000E, and 1609-P10000E, ship ready for 230V AC sources. When operating one of these in 208V AC applications, the UPS low transfer voltage settings are adjusted through the PowerChute® software or the Network Management Card.

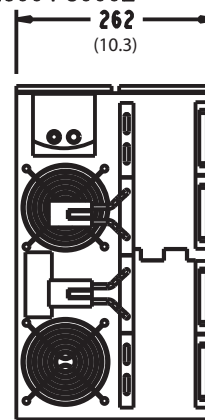
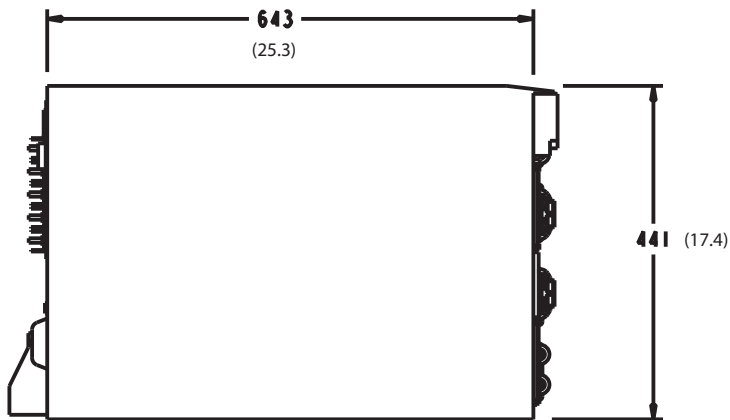
Refer to the PowerChute® User Guide or the Network Management Card instructions for details.

Approximate Dimensions

Approximate dimensions are shown in millimeters (in.) unless otherwise indicated. Dimensions are not to be used for manufacturing purposes.



1609-P3000N
1609-P3000H
1609-P3000A
1609-P5000E



1609-P8000E
1609-P10000E

Approximate Shipping Weights

Output Power	Input Voltage	Cat. No.	Approx. Shipping Weight [kg (lb)]
3000VA (2100 W)	120V AC	1609-P3000N	63.5 (140)
3000VA (2100 W)	230V AC	1609-P3000A	63.5 (140)
5000VA (3500 W)	208/230V AC	1609-P5000E	63.5 (140)
8000VA (6400 W)	208/230V AC	1609-P8000E	128.8 (284)
10000VA (8000 W)	208/230V AC	1609-P10000E	128.8 (284)

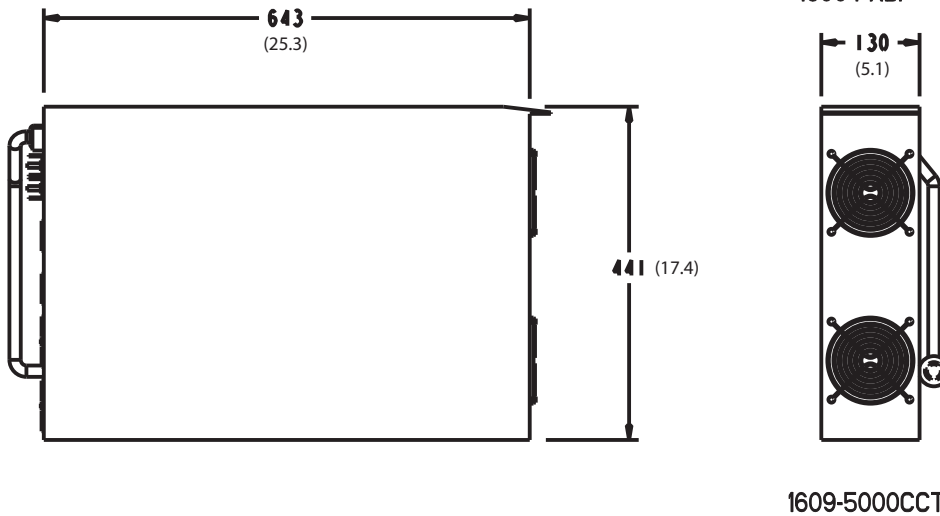
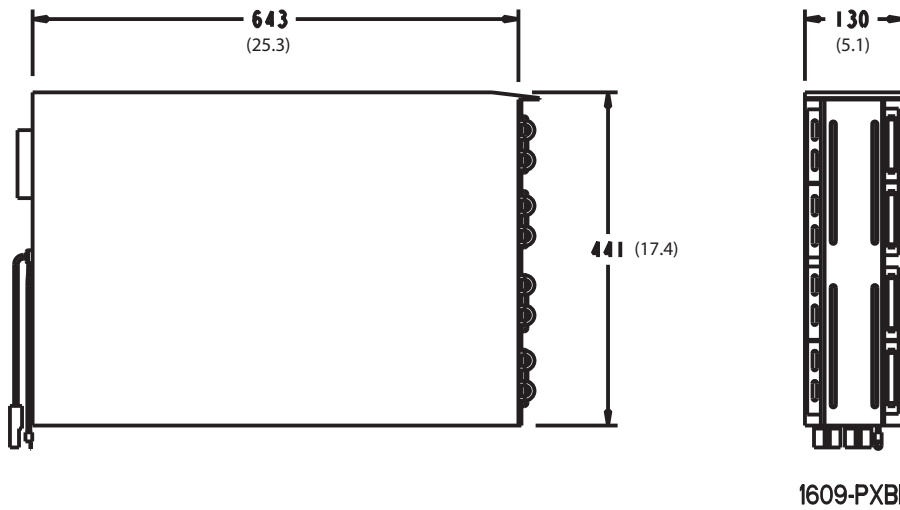
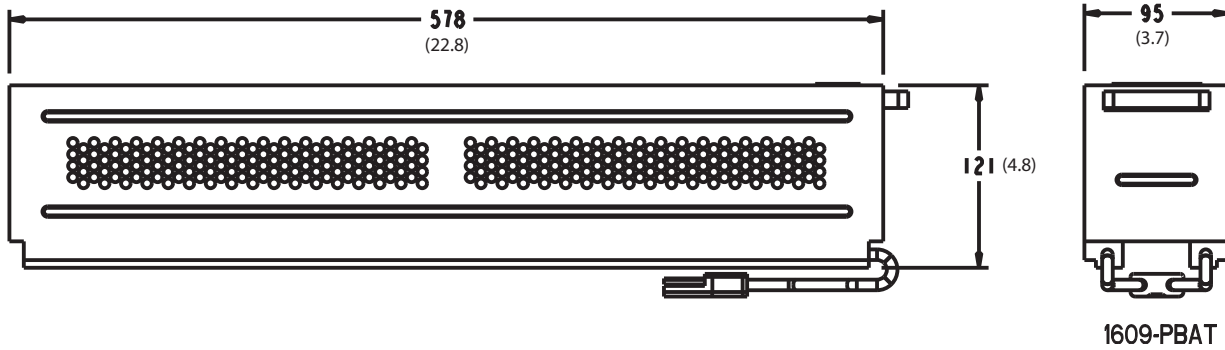
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Industrial Uninterruptible Power Supply

Approximate Dimensions

Approximate dimensions are shown in millimeters (in.) unless otherwise indicated. Dimensions are not to be used for manufacturing purposes.



Approximate Shipping Weights

Description	Cat. No.	Approx. Shipping Weight [kg (lb)]
Replacement battery	1609-PBAT	37.2 (82)
External battery pack	1609-PXBP	101.2 (223)
5000VA CCT (120V step down transformer)	1609-5000CCT	63.5 (140)
Rail kit	1609-PRK1	3.6 (8)

Industrial Uninterruptible Power Supply

Overview/Product Selection/Specifications



Bulletin 1609-U — Uninterruptible Power Supply

- Pure sine wave output
- Boost and trim automatic voltage regulation (AVR) provides consistent, clean power by correcting low and high voltage conditions without using the battery
- Intelligent battery management
- USB connectivity and SmartSlot interface
- Comprehensive network management
- Front-access servicing
- Includes:
 - CD with software
 - Smart UPS signalling
 - RS-232 cable
 - USB cable

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Standards Compliance

UL 1778
 BSMI
 CSA C22.2, No. 107
 FCC Part 15 Class A

Certifications

UL Listed (File No. E190749, Guide YEDU)
 CSA Certified (File LR1234)

Product Selection

Input Voltage	Operating Temperature	Output Power	Cat. No.
120V AC	0...40 °C	750VA (500 W)	1609-U750N
		1000VA (670 W)	1609-U1000N
		1500VA (980 W)	1609-U1500N

Accessories

Description	Cat. No.
Network management card	1609-NMC
Remote start cable	1609-RSC

* The 750, 1000, and 1500 W selections are only available in the 115V AC size (N) with a standard battery (S). Also if a network management card is desired, it can not be ordered with the product and must be ordered separately. Contact your local Rockwell Automation sales office or Allen-Bradley distributor.

Specifications

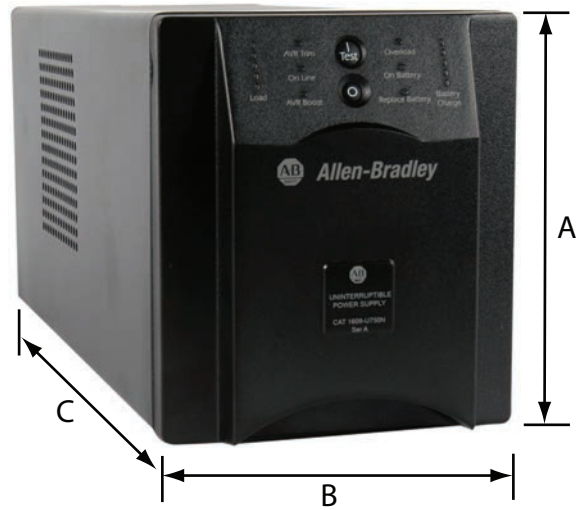
Electrical Ratings		1609-U750N	1609-U1000N	1609-U1500N
Input	V nom.	120V		
	Voltage Range, default	82...144V		
	Voltage Range, widest, on line	75...154V		
	Capacity Frequency	50/60 Hz +/- 3 Hz (auto sensing)		
Output	V nom.	120V		
	Capacity	750VA (500 W)	1000VA (670 W)	1500VA (980 W)
	Frequency	47...53 Hz for 50 Hz, nominal 57...63 Hz for 60 Hz, nominal		
	THD	<5% at full load		
	Crest Factor	up to 5:1		
Protection	Output Connections	(6) NEMA 5-15R	(8) NEMA 5-15R	(8) NEMA 5-15R
	Surge Rating	540 J	459 J	459 J
Regulatory	Filtering	Full time multi-pole noise filtering: 0.3% IEEE surge let-through, zero clamping response time, meets UL 1449		
		UL 1778, CSA, BSMI, FCC Part 15 Class A, UL Listed, VCCI	UL 1778, CSA, BSMI, FCC Part 15 Class A	UL 1778, CSA, BSMI, FCC Part 15 Class A
Battery Pack	Typical Run Time, full load	4.6 minutes (500 W)	6.1 minutes (670 W)	6.7 minutes (980 W)
	Typical Run Time, half load	15.9 minutes (250 W)	20.6 minutes (335 W)	23.9 minutes (490 W)
	Type	Maintenance-free, sealed Lead Acid with suspended electrolyte, leakproof		
	Typical Recharge Time	3 hours		
Environment	Temperature	0...40 °C (32...104 °F), operating -15...45 °C (5...113 °F), storage		
	Altitude	0...3000 m (0...10 000 ft), operating		
	Humidity	0...95%, operating		
	Heat Output	90 BTU per hour	100 BTU per hour	135 BTU per hour
	Audible Noise	55 dB @ 1 meter	41 dB @ 1 meter	45 dB @ 1 meter
Communication	Interface Ports	DB9 RS-232, SmartSlot, USB		
	Control Panel	LED status display with load and battery bar graphs and On Line, On Battery, Replace Battery, and Overload indicators		
	EPO	optional		
	Audible Alarm	Alarm when: on battery, distinctive low battery, and configurable delays		



Industrial Uninterruptible Power Supply

Approximate Dimensions

Approximate dimensions are in millimeters (in.) unless otherwise indicated. Dimensions are not to be used for manufacturing purposes.



Output Power [VA (W)]	Height (A)	Width (B)	Depth (C)	Approx. Shipping Weight [kg (lb)]
750 (500)	157 (6.2)	137 (5.4)	358 (14.1)	14.55 (32)
1000 (670)	216 (8.5)	170 (6.7)	439 (17.3)	22 (48.4)
1500 (980)	216 (8.5)	170 (6.7)	439 (17.3)	27 (59.4)