Always On™

UPS Systems Canada Inc.

Uninterruptible Power Supplies & Power Conditioning Equipment

www.AlwaysOn.com

About Always On

We are an uninterruptible power systems design and manufacturing company specializing in engineering industrial uninterruptible power systems for all applications. We take the details of your project including required backup time, type of environment that your UPS will be in, and the space you have to house the system. Then our engineers design a reliable, high quality uninterruptible power system to meet your needs. After the design of the system, our technicians build, test, and certify your system exactly to specification right here in our factory.

Our Mission



Always On is dedicated to maintaining the highest standard of quality, safety, and sustainability while providing products and services that are unparalleled within our industry and deliver premium value to our customers. This commitment provides a clear pathway for the continued success and growth of our company.

What is a UPS?

An uninterruptible power system is a system that provides emergency power to a load when the main input power source fails. The main input source can fail due to issues such as utility power outages, or generator failures. The UPS kicks on with no interruption and keeps your load up and running for a set period of time so you can set up an alternate source of power, shut down your devices correctly, or repair your main power source. We strive for our systems to always provide perfect power in all situations to protect all types of loads.

Which industries do we work with?

Industries we work with include government, oil, gas, and mining, rail and marine transportation, public transit facilities, airports and airplane manufacturing, hospitals and operating rooms, schools, data centers, army, navy, marines, and air force, nuclear and other power generating plants, public utilities, and residential and commercial building.

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NX Series

The Always On NX Series Industrial UPS is designed to provide reliable, clean, consistent power to critical loads in all emergency applications.

The NX Series is a dual conversion, online system made for use as centralized power protection and distribution. It has a 3 phase input with 3 or 1 phase output, 5-250kVA power capacity range, internal maintenance bypass, and full galvanic isolation. The wide operating range of the system allows it to remain online without discharging or depleting the battery capacity. This makes it fully compatible with poor quality industrial electrical environments and unstable generators.

Features & Benefits

Modular Design

Major components are installed on slide-out modules to allow for *quick repair* and *easy field upgradability*.

Multi-MCU Design

Increased reliability of all major subsystems.

Full Galvanic Isolation

Proven solution to problems created by induced voltages affecting critical loads. This protection increases the lifespan of the equipment by reducing component wear caused by noise.

Automatic Battery Test & Boost Charging

Equalizes the recharging of batteries and extends battery life.

Remote Connection

SNMP Module gives the convenience of real-time graphical display and allows for variability in method for viewing UPS data.

Short-Circuit, Over-Temp, & Over-Voltage Protection

Protects your UPS against any form of misuse that may occur.

Convenient Front Panel Design

LCD display and control switches are accessible through the up, down, and enter switches below the front panel window and all viewable parameters can be read without opening the front door!

Available Options

Remote LCD Display/Control Panel for full monitoring and control of multiple UPSs.

Optional External Bypass allows the UPS to be completely shut down or removed for maintenance safely with no downtime

Remote or Local Emergency Power Off Switch Options

Harsh Environment Protection options available

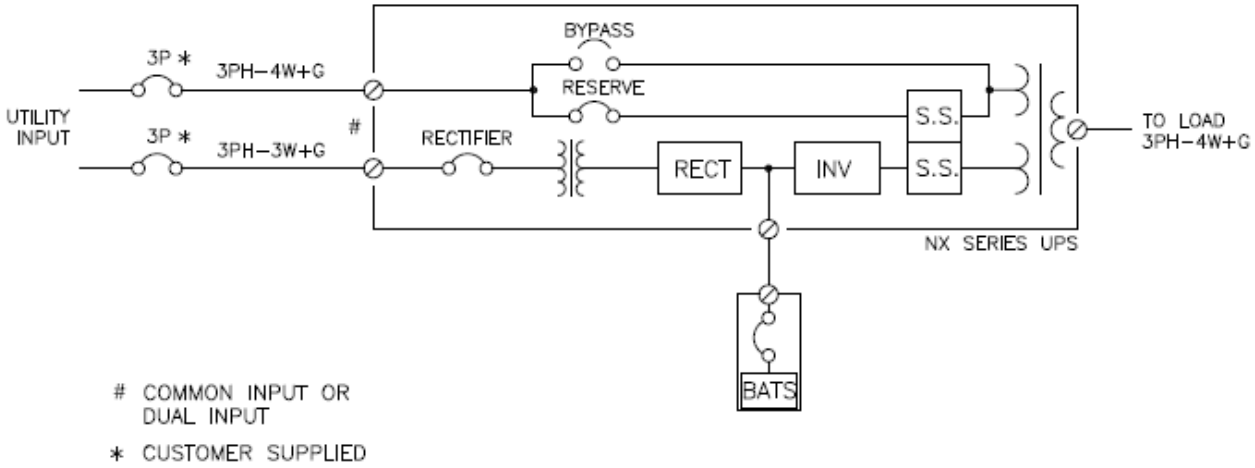
Parallel Redundant Operation—for the highest standard of reliability in mission critical applications

Modbus RTU Interface —for SCADA or other industrial data transmitting applications!

Top Cable Entry—Module attached to the rear of the UPS cabinet for convenience!

PDUs—Power distribution panels

Single Line Drawing



NX Series Specifications

Specifications are subject to change without notice to reflect upgrades and improvement in technology.

True Sine Wave On-Line UPS 10kVA-250kVA

General Data															
Topology			True On-Line, Dual Conversion												
Nominal output at PF=0.8		**kVA**	5	10	15	20	30	40	50	60	80	100	120	160	250
Overall Efficiency	**100% load, 0.8 PF**	**%**	90	90	90	90	90	90	90	90	90	90	90	90	90
True galvanic isolation from input to output			Yes												
Operating temperature range	**UPS**		0°C to 40°C (32°F to 104°F)												
	Battery		Optimal 20°C to 25°C (68°F to 77°F); higher temps reduce battery life expectancy.												
Relative humidity			0% to 95%, non-condensing												
Enclosure	**Type**		Indoor (NEMA 1 or 12 available); drip shield and skirting included.												
	Safety		Internal dead front construction												
	Cooling		Forced air—variable speed												
Installation	**Rigging**		Suitable for handling by forklift or overhead crane; eye hooks available												
	Mounting		Casters and levelling feet; optional seismic rated mounting available												
	Installation & maintenance access		Front and right-hand side access required for normal maintenance												
	Conduit access		Bottom entry standard; optional top entry												
Standards			UL 1778, CSA 107.3 listed, FCC Class A, Optional CSA 141, UL924, & ABS												

Rectifier		
Configuration		12 pulse rectifier
Input	**Voltage**	208/480/600, L-L Vac, 3 Phase, 4 (or 3) wire + ground (-20% to 15% without battery discharge)
	Frequency	45-65 Hz
	Power factor	0.8 at full load
Output	**Inrush current**	Limited by soft-start circuit
	Power walk-in	20 seconds

Battery														
Nominal output at PF=0.8	**kVA**	**5**	**10**	**15**	**20**	**30**	**40**	**50**	**60**	**80**	**100**	**120**	**160**	**250**
Battery		Sealed lead-acid												
Voltage range		295-410 Vdc												
Float voltage at 20°C (68°F)		392 Vdc												
Boost charge voltage		410 Vdc												
Recharge time for 30min battery to 95% capacity		10 times the discharge time												
Auto and manual battery test		Standard												

External Interface	
Alarm contacts	8 pre-defined contacts (COM, BATL, BACKUP, BYPASS, SS, FAULT, OVL, INVON)
Communications	SNMP adapter, RS-232 & RS-485
Input signals	Emergency power off contacts provided (optional switch available)

NX Series Specifications Cont.

Specifications are subject to change without notice to reflect upgrades and improvement in technology.

Inverter													
Nominal output at PF=0.8	**kVA**	10	15	20	30	40	50	60	80	100	120	160	250
Nominal output voltage		208/120 or 480/277 or 600/347, 3ph, 4 wire + ground											
Inverter		True Sine Wave											
Output Isolation Transformer		Standard											
Output power factor		0.8											
Frequency lock range		50/60 Hz, ±7%											
Output voltage tolerance	**Static**	±1%											
Output voltage distortion	**100% linear load**	<2% THD maximum											
	100% non-linear load	<3% THD maximum											
Crest factor capability		Greater than 3:1											
Output Freq	**Free running**	50/60 Hz, ±0.1% synchronized with utility											
Overload capability (on inverter)	**<110%**	Continuous											
	110-125%	15 minutes											
	125-150%	5 minutes											
	>150%	30 seconds											
Efficiency (100% load)		92%											
By-Pass													
Input configuration		Common to rectifier [optional dual input]											
Voltage range		±20% of input voltage											
Frequency range		45-55 Hz / 55-65 Hz											
Transfer time	**Inverter to bypass**	0 ms											
	Bypass to inverter	0 ms											
Overload capacity	**200% of UPS rating**	30 seconds											
	400% of UPS rating	1 second											
Isolation transformer		Yes											

Module Interior Layout

Plugin Rectifier Module

Plugin Inverter Module

Battery Bank Backup Times

Load	4000W	8000W	12000W	16000W	24000W	32000W
	5000VA	10000VA	15000VA	20000VA	30000VA	40000VA
Model						
BBU-NX33E	79 min	34 min	18 min	13 min	6 min	
BBU-NX33KF	100 min	44 min	23 min	18 min	10 min	5 min
BBU-NX33KG	181 min	80 min	48 min	32 min	17 min	10 min
BBU-NX33KH		120 min	76 min	46 min	28 min	19 min
BBU-NX33KI		185 min	116 min	81 min	50 min	24 min
BBU-NX33KJ			189 min	130 min	80 min	46 min

Load	40000W	48000W	64000W	80000W	96000W	128000W
	50000VA	60000VA	80000VA	100000VA	120000VA	160000VA
Model						
BBU-NX33KG	6 min					
BBU-NX33KH	12 min	10 min				
BBU-NX33KI	21 min	18 min	12 min	6 min		
BBU-NX33KJ	33 min	30 min	18 min	10 min	6 min	
BBU-NX33KI X2	64 min	50 min	24 min	21 min	18 min	
BBU-NX33KJ X2	92 min	80 min	60 min	33 min	30 min	17 min

System Dimensions

	5-50 KVA UPS System	60-160 KVA UPS System	250-320 KVA UPS System	E Battery Cabinet	K Series Battery Cabinet
Width	550mm (21.7")	1100mm (44")	2240mm (88.2")	400mm (15.75")	1314mm (51.5")
Depth	812mm (32")	812mm (32")	812mm (32")	666mm (26.25")	850mm (33.5")
Height	1600mm (63")	1600mm (63")	1600mm (63")	1008mm (39.75")	1945mm (76.5")
Weight	380-850 kg	920-1600 kg	2700-3050 kg	511 kg	814-1764 kg

N & TN11 Series

The Always On N & TN Series UPSs are designed to provide compact, reliable, dual conversion backup power for all of your important equipment!

The N and TN11 Series are dual conversion UPS systems that convert incoming AC supply to DC power. The DC power is used to charge the batteries and supply the inverter. The inverter then inverts the DC power into AC power, that in turn is supplied to the load. This dual conversion isolates the line from AC supply and allows for a wide input power variation on both frequency and voltage. Systems in single phase output configurations range from 700VA to 20kVA.

Features & Benefits

Wide Input Range

These systems are designed to function at wide voltage and frequency variations. This makes our systems ideal for generator and problematic area applications.

Self-Management Using Microprocessor

These systems perform self-diagnosis to ensure continuous runtime, identify and report failures, and prevent full discharge of the batteries to extend battery performance and life.

High Efficiency Mode

Adds cost effectiveness by reducing power consumption and detecting irregularities in less than a millisecond.

Auto Restart Function

This feature allows the UPS to restart automatically when utility becomes available, provided it has been shutdown due to and extended black-out.

Intelligent Communication Interface

These UPSs are equipped with a RS232 and dry contact interface port for which we provide various powerful management software programs!

Available Options

Extended Runtime to meet your backup time requirements.

External Bypass allows the UPS to be completely shut down or removed for maintenance safely with no downtime

Hardwire Connections For installation flexibility!

Remote or Local Emergency Power Off Switch options

Side-mount for more flexibility in storing your unit. (shown)

Rackmount for more flexibility in mounting your unit. (up to 3KVA)

Remote LCD to give you more options for system monitoring!

Generator and frequency converter modes!

SNMP or AS400 to give you more options for remote system monitoring!

N Series Specifications

Specifications are subject to change without notice to reflect upgrades and improvement in technology.

True Sine Wave On-Line UPS 700VA-3kVA

N Series Model Number :		GES-701N	GES-102N	GES-152N	GES-202N	GES-302N
General	Maximum Capacity	700VA/490W	1000VA/700W	1500BA/1050W	2000VA/1400W	3000VA/2100W
	UPC Order Code	30100	30200	30300	30400	30500
Input	Nominal Voltage	120Vac (optional 220Vac available)				
	Voltage Range	60Vac/40% load, 70Vac/70% load, 80 Vac/100% load—144Vac				
	Bypass Voltage	±10%,+10/-15%, +15/-20% (user selectable)				
	Frequency Window	45-65Hz (±2%,±5%, ±7% - user selectable)				
	Synchronization Window	±3Hz				
	Power Factor	0.99				
Output	Output Voltage	100/110/115/120/127Vac (user selectable) or 208/220/230/240Vac (user selectable)				
	Voltage Regulation	±2%				
	Frequency Regulation	±0.25Hz (battery or free run mode)				
	Voltage Distortion—THD	<3% linear load, <5% non-linear load				
	Max Current @ 120Vac	5.8A	8.2A	12.4A	16.5A	24.7A
	Overload Capacity	125% for 1 min, 150% for 10 sec				
	Crest Factor	3:1				
	Efficiency	>98% (high efficiency mode)				
	Transfer Time	Zero				
	Outlets	6x5-15R			8x5-15R 2x5-20R 1xL5-20R	8x5-15R 2x5-20R 1xL5-30R
Battery	Battery Type	Sealed lead acid, maintenance free, swappable cartridge				
	Quantity	2	3	3	6	6
	Voltage	24Vdc	36Vdc	36Vdc	72vdc	72Vdc
	Recharge Time	<4 hours to 90% recovery				
	Advanced Battery Management	Auto self-test, temp compensated 3 stage charging, load dependent discharge				
	Backup Time—full load	9min	10min	8min	12min	8min
	Extended Runtime	Available				
Protection	Output Short	Yes				
	Abnormal Voltage	Yes				
	Abnormal Frequency	Yes				
	I/O Noise Protection	Common and normal noise suppression				
	Spike and Transient	Yes				
	Telephone/Network	RJ11/RJ45				
	Display	LCD/LED—Status, readings, and setup parameters				
	Audible Alarms	On battery, low battery, overload, fault				
	Communications	Options: USB, RS232, Dry contact, SNMP, AS400				
	Emergency Power Off	Yes, via normally closed contact				

True Sine Wave On-Line UPS 700VA-3kVA						
N Series Model Number :		**GES-701N**	**GES-102N**	**GES-152N**	**GES-202N**	**GES-302N**
Environment	**Operating Temperature**	0°C to 40°C (32°F to 104°F)				
	Humidity	0-95% (non-condensing)				
	Audible Noise	<40dBA at 1 meter				
Conformance	**Approvals**	UL1778, CSA107.3 , UL listed, cUL listed, (optional ABS—see below)				
	Surge/Transient	IEEE C62.41 CAT.A				
	EMI/RFI	FCC Part 15				
	Warranty	Two year factory warranty (optional extendable warranties available)				
Physical Data	**WxDxH mm (in)**	152x413x238 (6x16.3x9.4)			225x410x358 (8.9x16.1x14.1)	
	Weight in kg (lbs)	13.5 (29.7)	16.2 (35.6)	17 (37.4)	31.6 (68.4)	32.5 (71.5)
Rack Mount Models	**Model #**	**GES 102NR**		**GES 152NR**	**GES 202NR**	**GES 302NR**
	UPC Order Code	30202		30301	30403	30501
	WxDxH mm (in)	482x635x84 (19x25x3.3) [2U]				
	Weight in kg (lbs)	18 (35.3)	20 (44.1)	25 (55)	31.6 (68.4)	32.5 (71.5)
Marine Grade Models	**Model #**	**GES 701N ABS**	**GES 102N ABS**	**GES 152N ABS**	**GES 202N ABS**	**GES 302N ABS**
	UPC Order Code	30112	30231	30318	30401	30509
	WxDxH mm	254x413x256	254x413x256	254x413x256	330x406x381	330x406x381
	Weight in kg (lbs)	15 (33)	20 (44)	21 (46)	37 (82)	38 (84)
	Approval	ABS (American Bureau of Shipping), UL and cUL listed				

Battery Bank Backup Times

Load	**490W**	**700W**	**1050W**	**1400W**	**2100W**
	700VA	**1000VA**	**1500VA**	**2000VA**	**3000VA**
Model					
BBU 701NA	17 min				
BBU 701NB	33 min				
BBU 102NA	25 min	17 min			
BBU 102NB	50 min	33 min			
BBU 102NC	100 min	60 min			
BBU 152NA	25 min	17 min	13 min		
BBU 152NB	50 min	33 min	20 min		
BBU 152NC	100 min	60 min	40 min		
BBU 202NA				18 min	
BBU 202NB				60 min	
BBU 202NC				90 min	
BBU 302NA				18 min	14 min
BBU 302NB				60 min	40 min
BBU 302NC				90 min	60 min

N Series Specifications Cont.

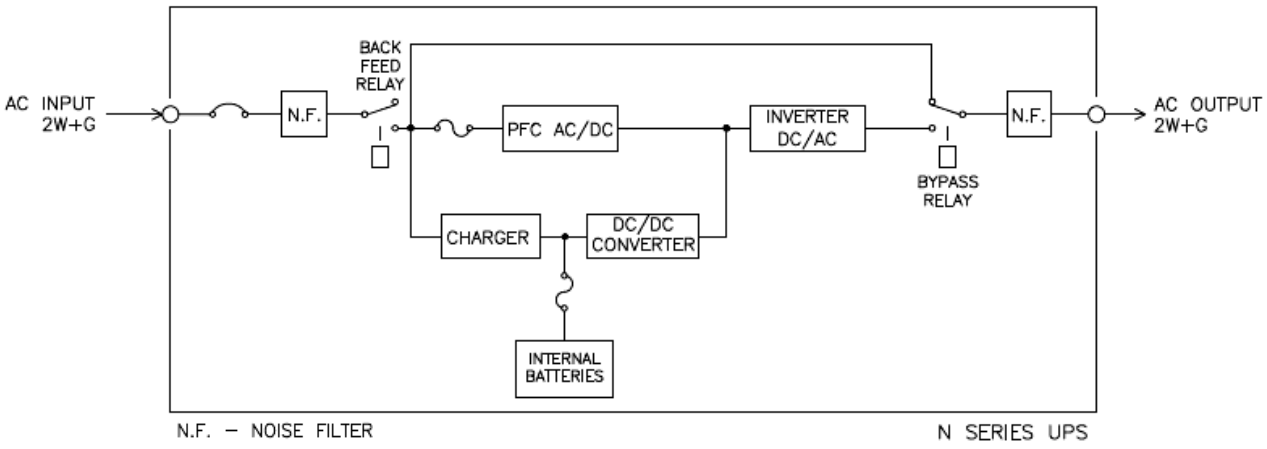
Specifications are subject to change without notice to reflect upgrades and improvement in technology.

Battery Bank System Dimensions					
Model	**BBU 701NA**	**BBU 701NB**	**BBU 102NA**	**BBU 102NB**	**BBU 102NC**
Cabinet Style	S	S	S	S	B
WxDxH mm (in)	170x450x225 (6.75x17.75x9)	170x450x225 (6.75x17.75x9)	170x450x225 (6.75x17.75x9)	170x450x225 (6.75x17.75x9)	260x540x740 (10.25x21.25x29)
Weight kg (lb)	20 (44)	33 (73)	23 (51)	33 (73)	67 (148)

Model	**BBU 152NA**	**BBU 152NB**	**BBU 152NC**	**BBU 202NA**	**BBU 202NB**
Cabinet Style	S	S	B	S	B
WxDxH mm (in)	170x450x225 (6.75x17.75x9)	170x450x225 (6.75x17.75x9)	260x540x740 (10.25x21.25x29)	170x450x225 (6.75x17.75x9)	260x540x740 (10.25x21.25x29)
Weight kg (lb)	23 (51)	33 (73)	67 (148)	33 (73)	102 (225)

Model	**BBU 202NC**	**BBU 302NA**	**BBU 302NB**	**BBU 302NC**
Cabinet Style	C	S	B	C
WxDxH mm (in)	400x648x662 (15.75x25.5x26)	170x450x225 (6.75x17.75x9)	260x540x740 (10.25x21.25x29)	400x648x662 (15.75x25.5x26)
Weight kg (lb)	230 (507)	33 (73)	102 (225)	230 (507)

Single Line Drawing



TN11 Series Specifications

Specifications are subject to change without notice to reflect upgrades and improvement in technology.

TN11 Series Model Number:		GES-602TN11	GES-103TN11	GES-153TN11	GES-203TN11
General	Maximum Capacity	6kVA/4.2kW	10kVA/7kW	15kVA/10.5kW	20kVA/14kW
	UPC Order Code	40030	40200	40400	40500
Input	Nominal Voltage	208Vac or 240Vac			
	Voltage Range	160-276 Vac			
	Phase	1 Ø (2 wire+ground)			
	Frequency Range	45-65Hz			
	Power Factor	≤0.98			
Output	Output Voltage	120, 120/240, 110/220Vac (other configurations available)			
	Voltage Regulation	±2%			
	Phase	1 Ø (3 wire+ground) (other configurations available)			
	Max Current @ 240Vac	25A	41.7A	62.5A	83.3A
	Frequency Accuracy	50Hz / 60Hz ±0.5Hz (auto-sensing)			
	THD	<3% linear load, <5% rectified load			
	Overload Capacity	105%-150% for 10 seconds			
	Crest Factor	3:1			
	Efficiency (AC-AC)	>85%			
	Transfer Time	0ms			
	Outlets	Hard-wired (other configurations available)			
Battery	Type	Sealed lead acid—maintenance free			
	Voltage	240Vdc			
	Recharge Time	5-8 hours; recover=90% typically			
Backup Power Time	Full Load	>10min	>4min	>8min	>4min
	Half Load	>25min	>13min	>19min	>13min
Extended Run Time		Available, consult “battery banks” section			
Protection	Output Short	Yes			
	Abnormal Voltage	Yes			
	I/O Noise Protection	Common and Normal mode noise suppression			
	I/O Spike and Transient	Yes			
Interface	Communication	RS232/ dry contact/ options SNMP or AS400			
	Display	LEDs and LCD status display			
	Audible Alarms	On battery, low battery, overload, fault			
Environment	Operating Temp	0°C to 40°C (32°F to 104°F)			
	Humidity	0-90% (non-condensing)			
	Audible Noise	55dBA at 1 meter			
Safety Approval	Safety/Approvals	UL1778, CSA C22.2, UL and cUL listed, ABS			
	EMI/RFI	FCC Class A			
	Surge/Transient	IEEE C62.41 CAT.A			
Physical Data	WxDxH mm (in)	257x644x700 (10.1x25.4x27.6)	342x679x715 (13.5x26.7x28.2)	342x800x900 (13.5x31.5x35.4)	342x800x900 (13.5x31.5x35.4)
	Weight kg (lb)	114 (251)	250 (551)	255 (562)	265 (584)

TN11 Series Specifications Cont.

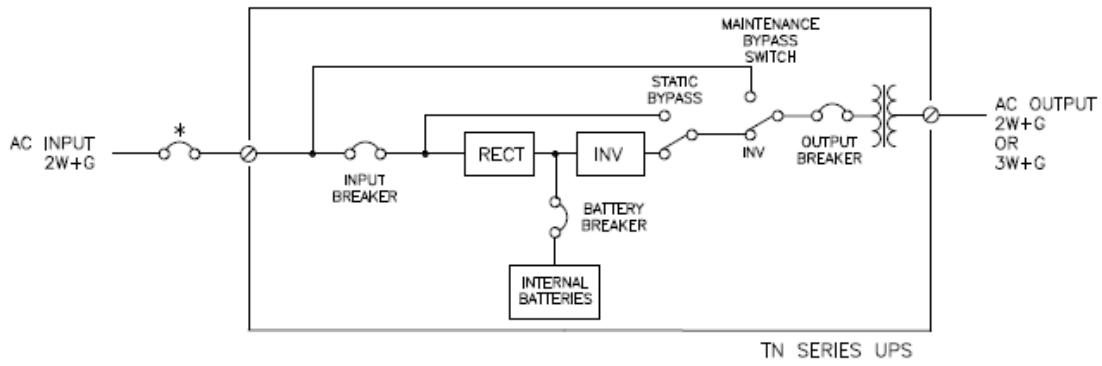
Specifications are subject to change without notice to reflect upgrades and improvement in technology.

Battery Bank Backup Times						
Load	6000VA	8000VA	10000VA	12000VA	15000VA	20000VA
	4200W	5600W	7000W	8400W	10500W	14000W
Cabinet						
D	20 min	16 min	13 min	11 min		
E	45 min	32 min	24 min	18 min	12 min	7 min
KA	55 min	40 min	30 min	25 min	15 min	10 min
KB	105 min	75 min	58 min	45 min	33 min	20 min
KC	155 min	112 min	88 min	70 min	50 min	35 min
KD	235 min	170 min	132 min	105 min	82 min	60 min
KE	385 min	278 min	214 min	174 min	130 min	100 min

Battery Bank System Dimensions				
Cabinet Style	D	E	KA	KB
WxDxH mm (in)	238x545x550 (9.375x21.5x21.625)	400x666x1008 (15.75x26.25x39.75)	813x864x1947 (32x34x76.625)	813x864x1947 (32x34x76.625)
Weight kg (lb)	80 (177)	353 (777)	611 (1347)	740 (1632)

Cabinet Style	KC	KD	KE
WxDxH mm (in)	813x864x1947 (32x34x76.625)	813x864x1947 (32x34x76.625)	813x864x1947 (32x34x76.625)
Weight kg (lb)	867 (1912)	1004 (2214)	1259 (2776)

Single Line Drawing



NX, N, TN Series

External Bypass Systems

A separate cabinet to allow for complete removal of the UPS system from the load. Always On offers various systems which include isolation transformers for different voltage configurations, distribution panels, electro-mechanical interlock protection to ensure proper operation, and rotary switch operation.

Systems are supplied in a matching cabinet or wall-mounted cabinet. These systems are recommended for maintenance purposes to prevent accidental removal of power from the loads and to allow for complete power removal from the UPS system for safe maintenance.

Automatic Transfer Switch

Always On also offers an external ATS that will automatically switch to bypass in the event of loss of power from the UPS system for any reason.

ABS Marine Approved Units

Always On has a full compliment line of ABS approved systems ranging from 700VA to 250kVA. We have installations on BC Ferries, Canadian Coast Guard Vessels across the country, transport vessels, US Navy vessels, and drilling platforms. We also offer bypass systems and extended runtime modules for these systems. Our systems provide complete power conditioning to increase product reliability for marine equipment!

Available Models

ABS TYPE APPROVAL PROGRAM

ABS flexible approval program allows us to meet certification for all required ratings globally!

ABS approval is available on these UPS systems:

- NX31 & NX33 Series: Three Phase In/ Single or Three Phase Out, 5kVA-250kVA
- TN11 Series: Single Phase Input & Output, 6kVA-20kVA
- N-Series: Single Phase Input & Output, 700VA-3kVA

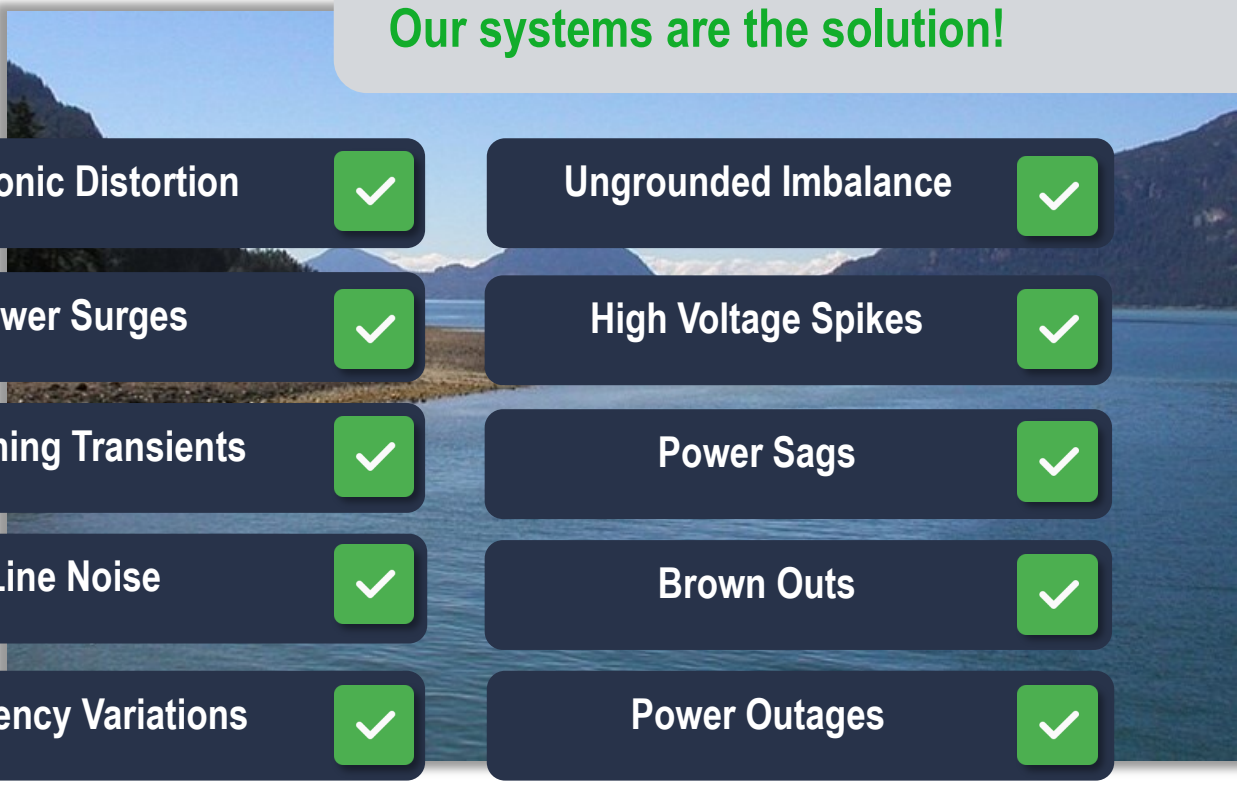
Superior Marine Power!

Complete solutions for ALL of your common marine power problems!

All of our Always On Marine-Classed UPSs are **on-line dual conversion design.** According to marine standards, an off-line UPS unit, a line-interactive UPS unit, or an on-line UPS unit can be used as needed for your backup power needs onboard; however, **it is ONLY an on-line dual conversion UPS unit that will solve ALL of the problems commonly caused by systems used in marine application.**

Additionally, on all of our marine classed systems we use a **high grade conformal coating on all circuit boards, and an enclosure designed specifically for shipboard applications.** Our Marine UPSs have options for customization and are designed with your requirements completely fulfilled and your expectations exceeded. They're class approved systems that are versatile worldwide for any rating, fully compatible with ungrounded systems, and we include everything required for all locations onboard ships (including bridge equipment)!

Common Problems?
Our systems are the solution!



- Harmonic Distortion ✓
- Ungrounded Imbalance ✓
- Power Surges ✓
- High Voltage Spikes ✓
- Switching Transients ✓
- Power Sags ✓
- Line Noise ✓
- Brown Outs ✓
- Frequency Variations ✓
- Power Outages ✓

Borealis Series

The Borealis Series Emergency Lighting Inverters are dual-conversion, on-line, intelligent systems that offer full coverage for your emergency lighting back up power needs.

Available Options

Output Circuit Breakers, Run Times of 30, 60, 90, or 120 minutes, External Maintenance Bypass, Remote Control & Monitoring Panel, Top Cable Termination, Remote Emergency Power Off Switch, Normally OFF O/P, PDUs

Our use of dual conversion technology allows you to get the best emergency lighting inverter option without compromising on cost, maintenance, or life of your system and its components. Dual conversion allows the UPS to filter utility power before it goes to your systems. It does this by converting the ac power into dc power which is used to charge the batteries and supply power to the inverter. Then the inverter converts the dc power back into a high quality, regulated and isolated ac power source. This power filtration method eliminates power ripple, static, line noise, frequency variation, switching transients, and harmonic distortion, ensuring that sensitive equipment does not become damaged as a result of poor quality utility power.

Features & Benefits

Full Galvanic Isolation

Proven solution to problems created by induced voltages affecting critical loads. This protection increases the lifespan of the equipment by reducing component wear caused by noise.

Entirely Customizable

The Borealis Series offers tailor-made power protection to comply with your individual installation requirements. With many options to choose from, you're going to get the best system for your application.

Over-Temp, & Over-Voltage Protection

Always On rugged, high quality, custom-engineered design protects your UPS against any issues that might be caused by misuse. Components and batteries are placed on trays designed for maximum airflow. Fans are strategically placed throughout the system and run on a long cycling, variable speed cycle; as an added bonus, this also extends the life of the fan motors.

High Frequency Design

Design of these systems incorporates three of single phase full bridge inverters with 120 degrees phase displacement between each other. This unique design makes the Borealis Series stand out in offering absolute top level performance when an unbalanced load is connected.

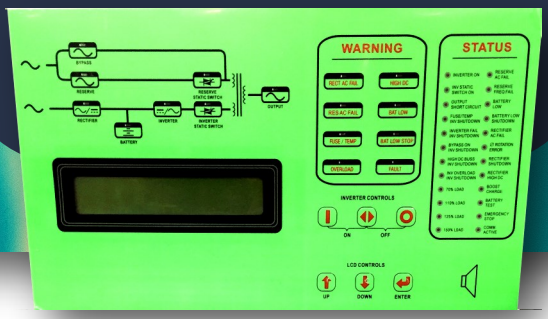
Automatic Battery Test & Boost Charging

The Borealis Series is an entirely low maintenance system. It performs its own automatic battery boost charge and battery test monthly so you don't have to. This ensures the prevention of overcharge and deep-discharge, extending battery life, and gives early notification of bad batteries to avoid unexpected battery backup failure.

Convenient Front Panel Design

The LCD displays real time status, data, and historical events. It is designed to be user-friendly and easy to read. The parameters, real time clock, inverter, and buzzer can also be set through this LCD.

Any faults or issues that come up are displayed clearly right up front where you can see them, no digging through menus, and the option for audible alerts makes it even more convenient to check the ELI status.



Easy to Repair— Modular Design

Our systems are reliable and durable with annual maintenance, but if your system does end up needing a repair we make it as easy as possible to get done. Components are installed on slide-out trays for ease of access and all Borealis Series systems come with an internal maintenance bypass switch. This means reduced hours spent on troubleshooting and repairing your unit, saving you money.

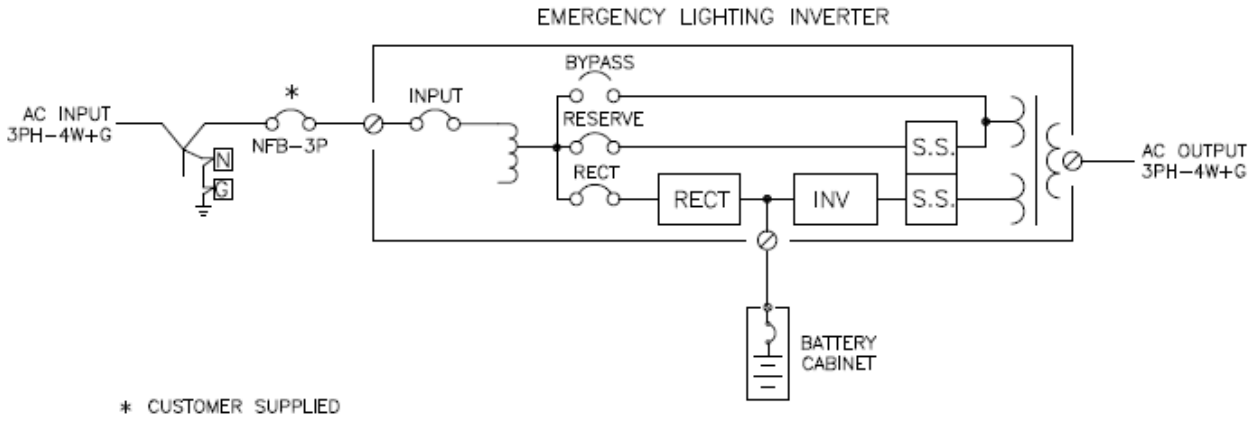
Borealis Series Specifications

Specifications are subject to change without notice to reflect upgrades and improvement in technology.

8KW to 48KW

Rectifier		8KW	12KW	16KW	24KW	32KW	40KW	48KW
Input Voltage		120/208V 277/480V 347/600V 3 Phase, 4 wire + ground						
Input Range		±15%						
Input Frequency		45-65Hz						
Input Power Factor		0.8						
Power walk-in		0%-100%: 20 seconds						
Efficiency		98%						
Battery		**8KW**	**12KW**	**16KW**	**24KW**	**32KW**	**40KW**	**48KW**
Battery Type		Maintenance free sealed lead acid						
Number of cells		174						
Voltage Range		295-410Vdc						
Maximum charge current (ADC)		5	7.5	10	15	20	25	30
Inverter		**8KW**	**12KW**	**16KW**	**24KW**	**32KW**	**40KW**	**48KW**
DC Input Range		295-415Vdc						
Wave form		True sine wave						
Output voltage (adjustable)		120/208V 277/480V 347/600V, 3 Phase, 4 wire + ground, or 1 phase						
Crest factor		3:1						
Output power factor		0.8						
Voltage regulation 100% unbalance load		±1%						
Frequency lock range		50/60Hz, ±7%						
Output frequency (free running)		50/60Hz, ±0.1Hz						
Output voltage tolerance	Static	±1%						
	Load step 0%-100%-0%	Recovering to within ±1% in 4 cycles						
THD (linear load)		<2%						
Overload	<110%	**Continuous**						
	110-125%	**15 minutes**						
	125-150%	**5 minutes**						
	150-170%	**30 seconds**						
	>170%	**10 seconds**						
Efficiency (100% load)		92%						
Maximum output wattage (kW)		8	12	16	24	32	40	48
Static Switch		**8KW**	**12KW**	**16KW**	**24KW**	**32KW**	**40KW**	**48KW**
Voltage Range		±20% of input voltage (line to neutral)						
Frequency Range		45-55Hz/55-65Hz						
Efficiency Voltage regulation	Mains —> Inverter	0ms						
	Inverter —> Mains	0ms						
Isolation with output		Yes						

Overall Characteristics		8KW	12KW	16KW	24KW	32KW	40KW	48KW
Overall Efficiency		90%						
Maximum Heat Dissipation (kW)		0.89	1.32	1.76	2.64	3.52	4.40	5.28
Operating Environment	Temperature	0-40°C (32-104°F)						
	Humidity	0-90% (non-condensing)						
	Altitude	<1500 above sea level						
Protections	Short Circuit	Yes						
	Lightning	MOV						
	EMC Filter	Input & Output						
	Galvanic Isolation	Between input & output						
Indications and alarms		LED, LCD, Buzzer						
Dry contact		Yes						
Battery start		Yes						
Data display by LCD		Yes						
Audible noise		<65dBA (at 1m)						
Standards		UL 924, UL 1778, NFPA 111, CSA 107.3, CCMC, BMEC, CSA 22.2 60950, CSA 141 available						
Physical Data	W x D x H (mm)	550 x 812 x 1600						
	Weight (kg)	380	415	450	580	650	710	850



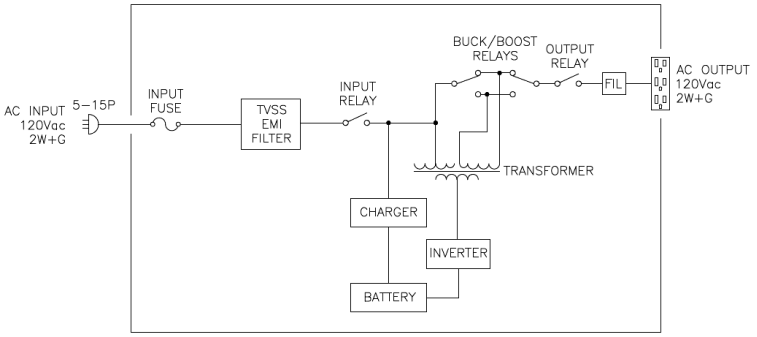
Limousin II

The Limousin II is a transformer-based UPS that provides lightning, surge, transient, and noise protection, as well as voltage regulation and blackout protection for home, office, and commercial applications!

Limousin II Specifications		
General	Capacity	600VA/360W
	UPC	00111
Input	Voltage	120V nominal, ±25%
	Frequency	50 or 60Hz ±10%
	Input Socket	(1) IEC 320
Output	Voltage (on battery)	120Vac nominal, simulated sine wave
	Frequency (on battery)	50 or 60Hz, ±0.5Hz (auto sensing)
	Auto Voltage Regulation	±10% of nominal
	Waveform (on battery)	Simulated sine wave
	Transfer Time	4ms, including detection
	Receptacles	(3) NEMA 5-15R (120V)
Protection & Filtering	Spike Protection	480 joules, 2ms
	Overload Protection	110% for 60 seconds, 130% for 30 seconds
	Short Circuit	Fuse protection or immediate shutdown
Battery	Type	Sealed lead acid, maintenance free
	Recharge Time	6 hours (to 90% of full capacity)
	Backup (full load)	5-10 minutes
Interface	Communications	Serial Port
	LED Display	Normal/Backup/Overload
	Audible Alarms	On Battery, Low Battery, Overload
Environment	Temperature Range	0°C to 40°C (32°F to 104°F)
	Humidity	0-95% (non-condensing)
	Audible Noise	<40dBA (1 meter from surface)
Safety Approvals	Safety	cUL, UL1778
	EMI / RF	FCC Part 15 Class B
Physical Data	Net Weight kg (lb)	6.2 (13.6)
	Ship Weight kg (lb)	6.7 (14.9)
	WxDxH mm	97x320x135

Shutdown/Control Software package, communication cable, and telephone/ network protection are all available with the Limousin II.

Single Line Drawing



NFC Series

Three Phase In/Out Frequency Converters & Voltage Regulators

The NFC Series, based on the NX Series, are intelligent, dual conversion, on-line, three phase systems for centralized frequency conversion, power protection, and power distribution in commercial and industrial applications. They provide clean, regulated, and controlled power at the customer specified voltage and frequency for all specific and critical loads. 50 or 60Hz input frequency 50, 60, or 400Hz user defined output frequency. Contact Sales for more info!

NFC Specifications

General Data												
Topology			True On-Line, Dual Conversion									
Nominal output at PF=0.8		kVA	10	15	20	30	40	50	60	80	100	160	250
Overall Efficiency	100% load, 0.8 PF	%	90	90	90	90	90	90	90	90	90	90	90
Operating temperature range	UPS		0°C to 40°C (32°F to 104°F)										
	Battery		Optimal 20°C to 25°C (68°F to 77°F); higher temps reduce battery life expectancy.										
Relative humidity			0% to 90%, non-condensing										
Enclosure	Type		Indoor (NEMA 1 or 12 available); drip shield & additional configurations available.										
	Safety		Internal dead front construction										
	Cooling		Forced air—variable speed										
Installation	Rigging		Suitable for handling by forklift or overhead crane; eye hooks available.										
	Mounting		Casters and levelling feet; optional seismic rated mounting available.										
	Installation & maintenance access		Front and right-hand side access required for normal maintenance										
	Conduit access		Bottom entry standard; optional top entry										
Standards			UL 1778, IEC 62040, FCC CLASS A, EN50091-1,-2 , CSA 107.3, Optional ABS										
Electrostatic discharge immunity			6kVA										

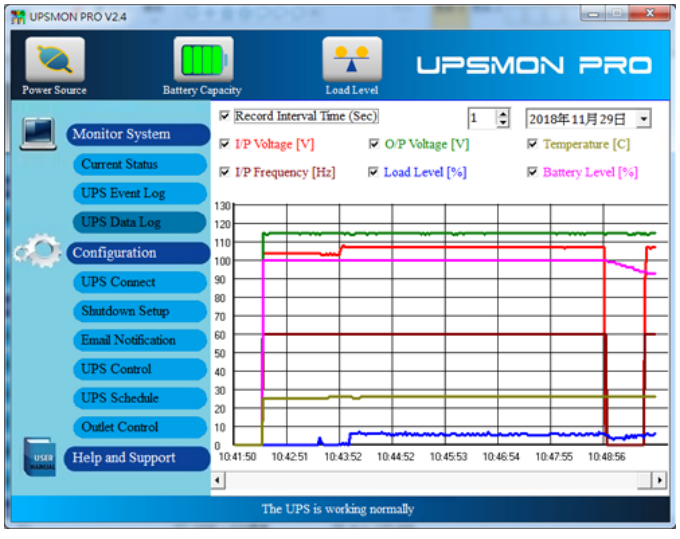
Power Management/Shutdown Software

Always On has high quality power management and shutdown software to meet your remote management needs.

UPSMON Pro

Complete power management software bundled together in a user-friendly format to make monitoring your UPS systems easy and stress-free.

UPSMON PRO Specs	
Operating System Compatibility	(32 & 64 bits) Windows XP, Vista, 7, 8, 10, Server 2000~2016 and Hyper-V, VMWare ESXI, Linux, Manager, and Android
Interface	USB, SNMP Card
Monitoring	Utility, Voltage, Frequency, Battery Status Temperature
Languages	English, Russian, Japanese, Traditional Chinese, Simplified Chinese
Auto Shutdown	Power Failure Occures
Log	UPS events, Voltage, Battery, UPS Load, Temperature
Battery Test	Quick Test, Deep Test, Self-Test Scheduled, Self-Test to Specific Load
UPS Control	Outlets Power Control, Bypass Control, Switch UPS Power, High Efficiency Control
Schedule	Battery Test, Auto Shutdown and Startup



NetAgent SNMP

NetAgent SNMP integrates multi-network communication protocols to enable a comprehensive easy-to-understand and secure remote monitoring and management system for your three phase or single phase UPSs!

Among its many functions, the NetAgent SNMP features multi-monitoring functionality for the monitoring of multiple UPSs on one screen, auto-set alerting system, SNMP unattended shutdown application, broadcasting message functionality, and internet time-sync capability. It supports TRAP notification, SMTP, Email notification without a PC required, and Android support.

TTF/ILF-12015

Isolating Line Filter

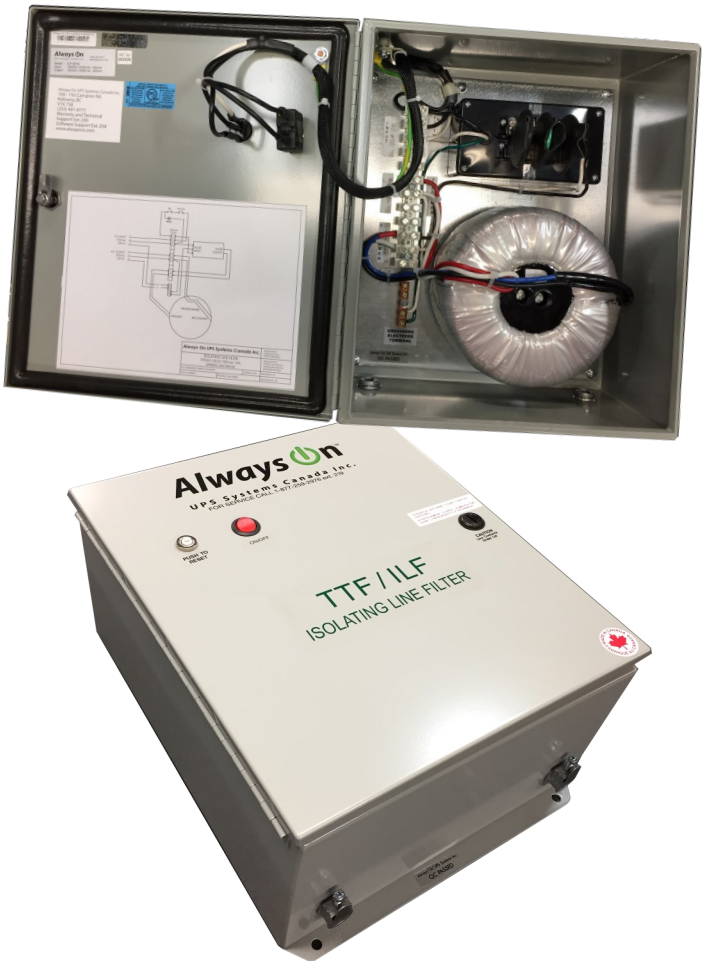
The Always On TTF/ILF combines a low-pass series filter with toroidal isolation transformer. The TTF/ILF provides for total protection against all power aberrations and eliminates any troublesome constant voltages which may exist between neutral and ground in some electrical configurations. It is totally compatible with all operating loads including high frequency switching power supplies.

Applications:

Computers, Printers, Copiers, Point of Sale Terminals, Medical Instruments, PLCs, Process Instruments, CAD/CAM/CIM, and Robotics

Protects From:

Reverse Polarity, Spikes, Surges, Transients, RFI/EMI Interference, Common/Normal Mode Noise, Direct/Indirect Lightning Effects, and Neutral Ground Voltage



TTF/ILF-12015 Specifications	
Frequency	50/60 Hz
Voltage	120v
Amperage	15A @120V
VA Rating	1800VA max
Protection Modes	Normal Mode (L-N), Common Mode (L-G,N-G)
Technology	Dual Hybrid Series Filter/ Toroidal Isolation Transformer
Insertion Loss	Nominal 75dB, Mil-Std-220A @ 100kHz; Common Mode 120dB
Bandwidth	Normal Mode: 10-11kHz; Common Mode: DC to 100mHz
Response Time	Instantaneous
Total Peak Surge Current	26000A
Joules	Up to 600 Joules
Leakage Current	Nominal <250mA
Operating Humidity	0-97% (non-condensing)
Operating Temperature	0°C to 40°C (32°F to 104°F)
Warranty	5 years
Dimensions WxDxH mm (in)	300x355x153 (12x14x6)
Weight kg (lb)	20 (44)
Available Options	Wall Mount Standard

ALW Batteries & Battery Bank Units

Our tough standards during manufacturing, quality control, and testing ensure that only batteries meeting the tight specifications of the product are integrated into the rest of our system designs.

Always On Batteries					
ALW Batteries	ALW36-12UPS	ALW56-12UPS	ALW85-12UPS	ALW110-12UPS	ALW160-12UPS
Capacity (25°C/77°F)	36Ah	56Ah	85Ah	110Ah	160Ah
Voltage	12V				
Weight kg (lb)	12.6 (27.7)	17.5 (38.5)	26.0 (57.2)	32.0 (70.4)	45.5 (100.1)

As a part of our certification by CSA and UL listing, each battery, charger, and inverter of a fully assembled system is accurately calibrated and vigorously tested through each mode of operation, including battery discharge and recharge cycles to ensure the complete system is in compliance with the required safety standards.

Always On Battery Cabinets come in a variety of sizes to suit your backup time needs. For even longer run-times, multiple cabinets can be used to increase storage capacity. The cabinets are equipped with heavy duty casters, convenient battery cable with Anderson quick connects, and retractable battery trays to make battery testing and replacement easy.

Always On Battery Cabinets Dimensions		
Style:	**KA, KB, KC, KD, KE**	**KF, KG, KH, KI, KJ**
WxDxH mm	812x863x1945	1314x850x1945
WxDxH in	32x34x76.6	51.7x33.5x76.6

Preventative Maintenance Programs

Always On systems are designed for maximum reliability and peak performance. Even so, a regular maintenance program is necessary to identify and correct potential problems before they can occur. This helps prevent unplanned and inopportune downtime and outages of critical systems, more rapidly addresses problems that can occur, and extends battery lifespan. Always On offers a number of custom annual and/or semi-annual preventative maintenance service programs to keep your systems in their absolute best shape.

Always On Major Preventative Maintenance Program Includes:

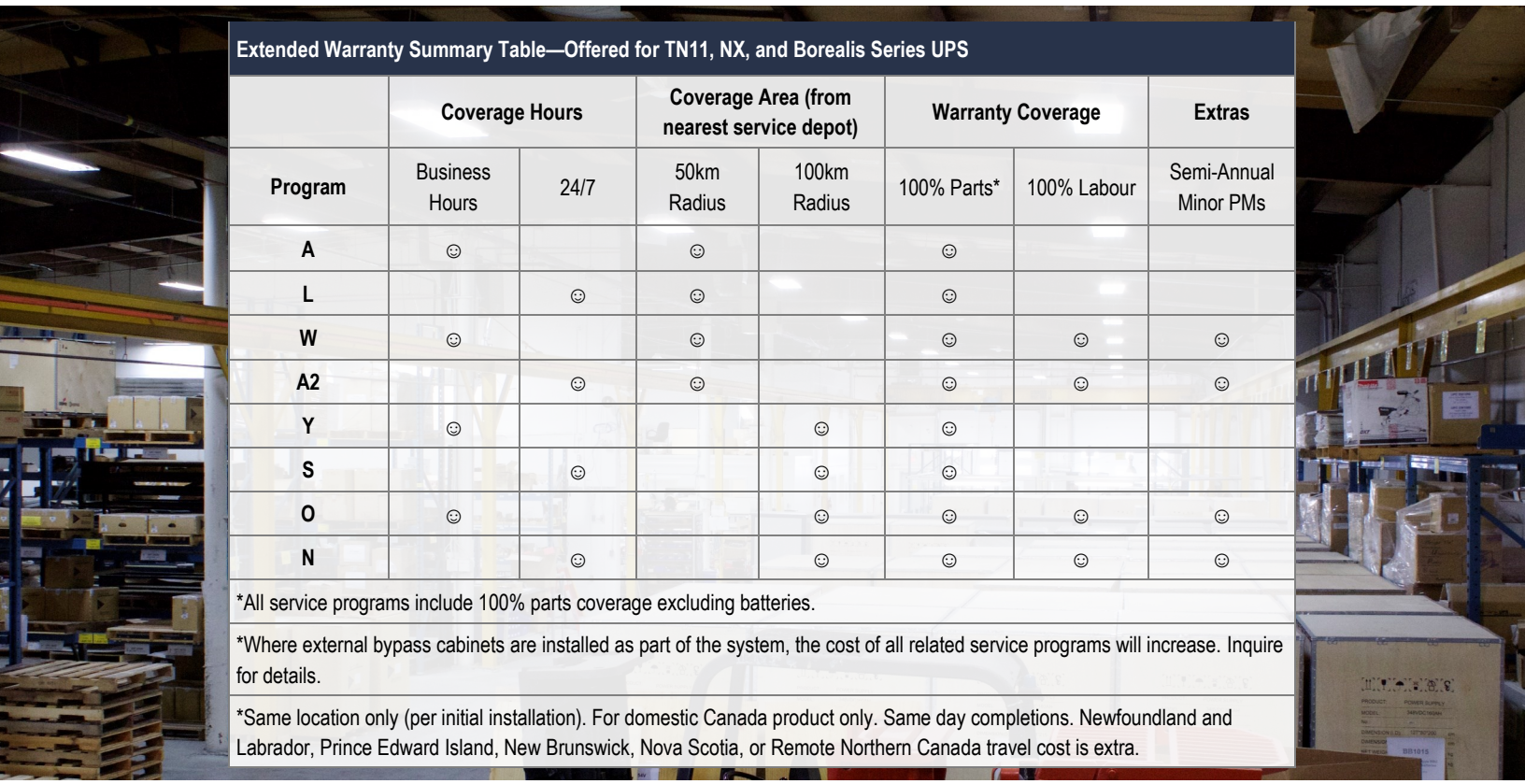
- Check site environment conditions to ensure suitability for UPS.
- Re-torque all battery connections to all their proper specifications.
- Clean and vacuum interior and exterior of enclosures.
- Record front panel meter reading and status.
- Record history logs for further review of UPS performance.
- Disassemble system to conduct visual inspection of internal assemblies, major components, and mechanical connections and modules to ensure they are tight and not generating heat.
- Perform any necessary factory upgrades.
- Perform a complete operational test of the system, including battery discharge test. Measure and record charging voltages of each battery.

For more information on the programs available for your system(s) please contact our Service team at service@alwayson.com or 1-877-259-2976 ext. 234, or visit www.AlwaysOn.com

Extended Warranty Packages

Extended warranty programs are offered at time of purchase or at any time while the unit is under factory warranty. Factory warranty for TN/NX/Borealis units is one year onsite 100% parts and labour.

Always On offers greater flexibility in providing service programs that are tailored to fit the specific needs of your site. We have a wide range of programs as shown below. The services described below are available in program options A (most basic) to N (most enhanced). We'll work with you to choose a program that fits your needs, including creating a custom program if the ones below aren't quite the right fit.



Extended Warranty Summary Table—Offered for TN11, NX, and Borealis Series UPS

	Coverage Hours		Coverage Area (from nearest service depot)		Warranty Coverage		Extras
Program	Business Hours	24/7	50km Radius	100km Radius	100% Parts*	100% Labour	Semi-Annual Minor PMs
A	☺		☺		☺		
L		☺	☺		☺		
W	☺		☺		☺	☺	☺
A2		☺	☺		☺	☺	☺
Y	☺			☺	☺		
S		☺		☺	☺		
O	☺			☺	☺	☺	☺
N		☺		☺	☺	☺	☺

*All service programs include 100% parts coverage excluding batteries.

*Where external bypass cabinets are installed as part of the system, the cost of all related service programs will increase. Inquire for details.

*Same location only (per initial installation). For domestic Canada product only. Same day completions. Newfoundland and Labrador, Prince Edward Island, New Brunswick, Nova Scotia, or Remote Northern Canada travel cost is extra.

To find the right program for you, please contact either our Service team at service@alwayson.com or 1-877-259-2976 ext. 234
Or go to www.AlwaysOn.com to fill out a service request form.

Always On Quality Policy

Every Always On design incorporates the most efficient and robust devices and system components to provide the highest degree of protection possible for all critical and emergency equipment installations. Extensive experience working on high profile projects, combined with industry leading expertise allows Always On UPS Systems Canada Inc. to custom engineer solutions and manufacture the highest quality uninterruptable power supply and power conditioning products.

Always On is pleased to provide complete solutions. These include all modes and levels of protection being designed into each system we build, eliminating the need for additional equipment to be added. We provide a custom-engineered solution to meet our customer's needs. Ensuring protection and power quality through every mode of operation requires coordination between all system components. These include surge protection devices, inverters, batteries, battery chargers, bypass systems, transfer switches and power distribution units.

Always On products are put into service by many world renowned companies who rely on our expertise and the high reliability of our systems to protect their critical installations. These include industries such as the oil, gas, and mining industries, airplane and other manufacturing plants, hospitals and operating rooms, rail and marine transportation systems, data centers, army, navy, marines, and air force military divisions, nuclear and other power generating plants, public utilities, and emergency systems for buildings.

It is the objective of Always On to provide our customers with the most cost effective, reliable, state of the art UPS and power conditioning products while continuing quality service to the highest degree. We strictly adhere to an ISO 9001 Quality Management System and we work closely with our suppliers to keep them informed of the specific controls we have implemented to ensure the quality of the supplied materials never compromises the performance or functionality of our products. Every employee and manager at Always On takes great pride and personal interest to ensure that all stages of each product are carefully completed to the highest degree of quality within our ISO 9001:2015 certified facility. This QMS certification, along with our numerous safety approvals, gives us the confidence to present Always On as one of the leading UPS manufacturers in the industry.

Deborah Bannister

General Manager,

Always On UPS Systems Canada Inc.

Contact Us

We'd love to hear from you! Please give us a call or send us an email!

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