

DUAL CONVERSION ON-LINE UPS

Industrial/Commercial/Critical Loads



“N” & “TN11” Series

Single Ø or Multi Ø Input

Single Ø or Multi Ø Output

Rackmount

NEMA 12

Side Mount



DESCRIPTION: This dual conversion UPS system converts the incoming AC supply to DC. 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 wide input power variations on both frequency and voltage. Systems in single phase output configurations range from 700VA to 20kVA.

APPLICATIONS: Among other applications, the N and TN11 Series can be applied to LAN file servers, personal computers, networks and workstations, Automatic Teller Machines, telecommunications, laboratory and medical equipment, test equipment, POS equipment, robotics, PLC's, security and emergency systems and military & government applications.

ADVANCED FEATURES: Features include utility input power factor correction, self-diagnosis, an LCD display, a static bypass, smart power source monitoring and battery management, lightning, noise and surge protection, spike and transient protection, cold start/auto restart, a user selectable frequency, a generator mode and intelligent communications interface. SNMP and AS-400 adapters are available for network management. User replaceable batteries, emergency power off control, an isolation transformer and maintenance bypass switches are standard on the TN11 and TN31 Series.

COMPLETE PROTECTION: The N and TN11 Series UPS's are designed with comprehensive Spike, Transient and Surge protection, which prevents destructive hardware damage and extends system life. The high end EMI/RFI filtering design prevents electrical Common and Normal Mode noise from affecting computer operation, data or files, including when the UPS is in Bypass Mode.

OPERATING VOLTAGES AND FREQUENCIES: The N and TN11 Series UPS's are designed to function at wide voltage and frequency variations. This wide input range makes the systems ideal for generator and problematic area applications. Also available is a frequency converter option allowing the user to select the output frequency at 50 or 60Hz.

COLD START: This feature allows the N and TN11 Series UPS's to be powered up when the utility is not present.

AUTO RESTART: This user selectable feature allows the UPS to restart automatically when utility becomes available, provided it has been shutdown due to an extended blackout.

SELF-DIAGNOSIS AND INFORMATION INDICATORS: Each N and TN11 Series UPS is equipped with a microprocessor that performs a self-diagnosis once a month to ensure continuous runtime. The microprocessor is able to identify failures, display the failure on the LCD display and send audio and visual alarms (off site monitoring).

SMART POWER SOURCE MONITORING AND BATTERY MANAGEMENT: Via microprocessor-based electronics, the N and TN11 Series UPS's produce a strict true sine wave output regardless of the input. It also controls the on-battery and low battery shutdown, which prevents full discharge, thereby extending the battery performance and battery life.

INTELLIGENT COMMUNICATION INTERFACE: Each N and TN11 Series UPS is equipped with a RS232 and dry contact interface port, for which we provide various powerful management software programs. For the more complex network environment, we support Simple Network Management Protocol (SNMP), AS400 and others.

REMOTE SHUTDOWN AND EMERGENCY STOP: Features include remote shutdown via communication port, emergency stop via contacts. An optional push button control is available.

OPTIONAL EXTENDED RUNTIMES: To meet your back-up time requirements, we offer increased back-up time by simply adding additional hot pluggable battery cabinet(s).

OPTIONAL USB: Available at time of order.



DUAL CONVERSION ON-LINE UPS

"N" Series

Single \emptyset Input & Output

TRUE SINE WAVE ON-LINE UPS

700VA - 3kVA

N-SERIES	MODEL NO.	GES-701N	GES-102N	GES-152N	GES-202N	GES-302N
GENERAL	Maximum Capacity	700VA/490W	1000VA/700W	1500VA/1050W	2000VA/1400W	3000VA/2100W
	UPC Order Code	825433 30100	825433 30200	825433 30300	825433 30400	825433 30500
INPUT	Nominal Voltage	120VAC (OPTIONAL 220VAC AVAILABLE)				
	Voltage Range	60VAC/40% Load, 70VAC/70% Load, 80VAC - 144VAC/100% Load				
	Bypass Voltage	+/-10%, +10/-15%, +15/-20% (User Selectable)				
	Phase	Single Phase (L-N-G)				
	Frequency Window	45-65Hz (+/-2%, +/-5%, +/-7% - User Selectable)				
	Synchronization Window	+/- 3Hz				
	Power Factor	0.97				
OUTPUT	Output Voltage	100/110/115/120/127VAC (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
	Transient Response	4% (100% Load Change)				
	Overload Capacity	125% for 1 min. / 150% for 10 sec.				
	Crest Factor	3:1				
	Efficiency	86% normally, > 98% (High efficiency mode)				
	Transfer Time	Zero				
	Outlets	6-(5-15R)			10-(5-20R-US), 1-(L5-20R)	10-(5-15R), 1-(L5-30R)
BATTERY	Battery Type	Sealed Lead Acid, Maintenance Free - Hot Swappable Cartridge				
	Quantity	2	3	3	6	6
	Voltage	24VDC	36VDC	36VDC	72VDC	72VDC
	Recharge Time	<4 Hrs to 90% Recovery				
	Advanced Battery Management	Auto Self-test, Temperature Compensated 3-Stage Charging, Load Dependent Discharge				
	Backup Time - Full Load	9 min	10 min	8 min	12 min	8 min
	Extended Runtime	Available				
PROTECTION	Output Short	YES				
	Abnormal Voltage	YES				
	Abnormal Frequency	YES				
	I/O Noise Protection	Common & Normal Noise Suppression				
	I/O Spike and Transient	YES				
	Telephone/Network	RJ11/RJ45				
INTERFACE	Display	LCD / LED - Status, Readings and Setup Parameters				
	Audible Alarms	On Battery, Low Battery, Overload, Fault				
	Communications	RS232 / Dry Contact / (Optional: USB, SNMP, AS400)				
	Emergency Power OFF	YES - Via Normally Closed Contact				
ENVIRONMENT	Operating Temperature	0 - 40 °C (32 - 104 °F)				
	Humidity	0 - 95% (Non-condensing)				
	Audible Noise	<40 dBA at 1 Meter				
CONFORMANCE	Safety	UL1778, CSA C22.2				
	Approval	UL, cUL, (Optional ABS [American Bureau of Shipping] 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	W x D x H mm (in.)	155x410x238 (6.0"x16.5"x9.4")			225x425x360 (8.9"x16.7"x14.2")	
	Weight in kg (lbs.)	13.5 (29.7)	16.2 (35.6)	17.0 (37.4)	31.6 (68.4)	32.5 (71.5)
	MODEL NO.	GES-701NR	GES-102NR	GES-152NR	GES-202NR	GES-302NR
RACK-MOUNT MODELS	UPC Order Code	825433 30111	825433 30202	825433 30301	825433 30403	825433 30501
	WxDxH mm (in.)	428x425x84 (16.9"x16.7"x 3.3") [2U]			428x635x84 (16.9"x25.0"x3.3") [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 NO.	GES-701N-ABS	GES-102N-ABS	GES-152N-ABS	GES-202N-ABS	GES-302N-ABS
	UPC Order Code	825433 30112	825433 30231	825433 30232	825433 30233	825433 30234
	WxDxH mm (in.)	155x410x238 (6.0"x16.5"x9.4")			260x555x700 (10.2x21.9x27.6)	
	Weight in kg (lbs.)	20 (44.1)	30.5 (67.2)		42 (92.2)	47 (103.5)
	Approval	ABS(American Bureau of Shipping), UL, cUL				

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

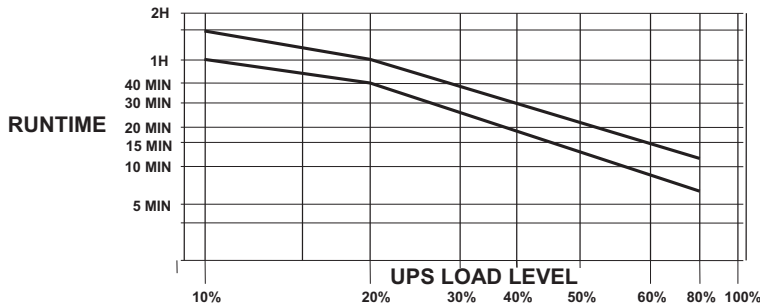
INDUSTRIAL CONTAINERS ARE AVAILABLE (NEMA 12, NEMA 4, ETC.); CONSULT MANUFACTURER.

EXTERNAL WRAP-AROUND BYPASS MODULES ARE AVAILABLE FOR ALL MODELS, PERMITTING UPS MAINTENANCE WITHOUT POWER INTERRUPTION TO THE LOAD.



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N SERIES BATTERY BANKS



For 300VA to 3kVA UPS

This graph is designed to aid in sizing the UPS system based on load and runtime and is suitable for small loads only (i.e. 50VA to 1kVA). The horizontal axis is the percent load of a UPS system and the vertical axis is the runtime. For runtimes exceeding chart scale, please contact our factory.

Example: 30 minutes of back-up time are required to power a 200VA load. Using the chart, find the back-up time required (i.e. 30 MIN) and move along the horizontal axis until you are placed between the slanted lines. At this point, follow down the vertical lines to identify the UPS Load Level % (i.e. 30%). Divide the load (i.e. 200VA) by the UPS Load Level % to identify the size of UPS required. Once calculated, round-up the calculated number to the nearest UPS rating (i.e. $200 / 0.3 = 667$). The minimum VA requirement is 667VA, so you round-up to a 700VA UPS system (GES-701N). The GES-701N will supply a minimum of 30 minutes to a 200VA load.

Additional Back-up Times (Battery Banks) for N Series

Model	UPC Order Code	Load					
		350W 500VA	490W 700VA	700W 1,000VA	1,050W 1,500VA	1,400W 2,000VA	2,100W 3,000VA
BBU-701NA	825433 60300	28 mins	17 mins				
BBU-701NB	825433 60325	48 mins	33 mins				
BBU-102NA	825433 62600	30 mins	25 mins	17 mins			
BBU-102NB	825433 62610		50 mins	33 mins			
BBU-152NA	825433 62700	30 mins	25 mins	17 mins	13 mins		
BBU-152NB	825433 62710		50 mins	33 mins	25 mins		
BBU-152NC	825433 62730		100 mins	60 mins	40 mins		
BBU-202NA	825433 62800			30 mins	25 mins	18 mins	
BBU-202NB	825433 62810			150 mins	100 mins	60 mins	
BBU-202NC	825433 60365					100 mins	
BBU-302NA	825433 62900			30 mins	25 mins	18 mins	14 mins
BBU-302NB	825433 62910			150 mins	100 mins	60 mins	40 mins
BBU-302NC	825433 62920					100 mins	60 mins

Model	Cabinet Style	Dimensions (mm)	Dimensions (in)	Weight
BBU-701NA	S cab	170W x 450D x 225H	6.75" x 17.7" x 9"	20 kg (44 lbs)
BBU-701NB	S cab	170W x 450D x 225H	6.75" x 17.7" x 9"	26.5 kg (58 lbs)
BBU-102NA	S cab	170W x 450D x 225H	6.75" x 17.7" x 9"	23 kg (51 lbs)
BBU-102NB	S cab	170W x 450D x 225H	6.75" x 17.7" x 9"	33 kg (73 lbs)
BBU-152NA	S cab	170W x 450D x 225H	6.75" x 17.7" x 9"	23 kg (51 lbs)
BBU-152NB	S cab	170W x 450D x 225H	6.75" x 17.7" x 9"	33 kg (73 lbs)
BBU-152NC	B cab	260W x 540D x 740H	10.5" x 21.25" x 29"	49 kg (108 lbs)
BBU-202NA	S cab	170W x 450D x 225H	6.75" x 17.7" x 9"	33 kg (73 lbs)
BBU-202NB	B cab	260W x 540D x 740H	10.5" x 21.25" x 29"	84 kg (185 lbs)
BBU-202NC	B cab	260W x 540D x 740H	10.5" x 21.25" x 29"	120 kg (264 lbs)
BBU-302NA	S cab	170W x 450D x 225H	6.75" x 17.7" x 9"	33 kg (73 lbs)
BBU-302NB	B cab	260W x 540D x 740H	10.5" x 21.25" x 29"	84 kg (185 lbs)
BBU-302NC	B cab	260W x 540D x 740H	10.5" x 21.25" x 29"	120 kg (264 lbs)

To meet your back-up time requirements, we offer increased back-up time by simply adding additional battery cabinets. To determine the battery bank part number, locate the UPS model number and runtime you want in the tables below. For additional runtime or for runtime calculations, please contact our factory.



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For more information or different runtimes, please contact CUSTOMER SERVICE toll-free at 1-877-259-2976, Ext. 451.

Standard 5-year pro rated warranty with 1-year replacement. Extended warranties available.

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