

# 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

## "TN11" Series

Single Ø Input (2 wire) & Single Ø Output (2 or 3 wire)

TRUE SINE WAVE ON-LINE UPS

5kVA - 20kVA

TN11 SERIES	Model No.	GES-502TN11	GES-602TN11	GES-802TN11	GES-103TN11	GES-123TN11	GES-153TN11	GES-203TN11
GENERAL	Maximum Capacity	5kVA / 3.5kW	6kVA / 4.2kW	8kVA / 5.6kW	10kVA / 7kW	12kVA / 8.4kW	15kVA / 10.5kW	20kVA / 14kW
	UPC Order Code	825433 40000	825433 40030	825433 40100	825433 40200	825433 40300	825433 40400	825433 40500
INPUT	Rated Voltage (Nominal)	208 (or 240VAC)						
	Voltage Range	160 - 276VAC						
	Bypass Voltage	+/-10%, +10/-15%, +15/-20% (User Selectable)						
	Phase	1 Ø (2 WIRE + GND)						
	Frequency Range	45-65Hz (+/-2%, +/-5%, +/-7% - User Selectable)						
	Synchronization Window	+/- 3Hz						
	Power Factor	≤ 0.99						
OUTPUT	Voltage	120, 120/240, 110/220VAC (other configurations available)						
	Voltage Regulation	± 2%						
	Phase	1 Ø (3 wire + GND) [other configurations available]						
	Maximum Current @ 240VAC (120VAC)	20.8A (41.6A)	25A (50A)	33.3A (66.6A)	41.7A (83.4A)	50A (100A)	62.5A (121A)	83.3A
	Frequency Accuracy	50Hz / 60Hz ± 0.25Hz (Auto-Sensing or User Selectable)						
	THD	< 3% Linear Load; < 5% Rectified Load						
	Load Power Factor	0.7						
	Slew Rate	1Hz / second						
	Transient Response	± 4% (100% Load Change)						
	Overload Capacity	125% for 1 minute, 150% for 10 seconds						
	Crest Factor	3:1						
	Efficiency (AC-AC)	> 98% (High efficiency mode)						
	Transfer Time	0ms						
Outlets	Hard-Wired (other configurations available)							
BATTERY	Battery Type	Sealed lead acid - maintenance free						
	Voltage	240VDC	240VDC	240VDC	240VDC	240VDC	240VDC	240VDC
	Recharge Time	5 - 8 Hours; recovery = 90%, typically						
	Management	Auto Self-test, Temperature Compensated 3-Stage Charging, Load Dependent Discharge						
BACKUP POWER TIME	Full Load	> 15 Min.	> 12 Min.	> 12 Min.	> 15 Min.	> 12 Min.	> 8 Min.	> 8 Min.
	Half Load	> 45 Min.	> 40 Min.	> 40 Min.	> 47 Min.	> 37 Min.	> 23 Min.	> 28 Min.
EXTENDED RUN TIME	Available - Consult "Battery Banks"							
PROTECTION	Output Short	YES						
	Abnormal Voltage	YES						
	I/O Noise Protection	Common & Normal Mode Noise Suppression						
	I/O Spike & Transient Protection	YES						
INTERFACE	Communication	RS232 / Dry Contact / (Optional: USB, SNMP, AS400)						
	Display	LCD / LED - Status, Readings and Setup Parameters						
	Audible Alarms	On Battery, Low Battery, Overload, Fault						
	Emergency Power OFF	YES - Via Normally Closed Contact						
ENVIRONMENT	Operating Temperature	0 - 40°C (32 - 104°F)						
	Humidity	0% - 90% (Non-Condensing)						
	Audible Noise	< 55 dBA at 1 meter from unit						
SAFETY APPROVAL	Safety	UL1778, CSA C22.2						
	Approvals	UL, cUL, (Optional ABS [American Bureau of Shipping])						
	EMI / RFI	FCC Class A						
PHYSICAL DATA	WxDxH mm (in)	257x590x700 (10.1"x23.2"x27.6")		342x690x715 (13.4"x27.1"x28.1")		342x863x905 (13.5"x34.0"x34.2")		
	Weight in kg (lbs)	123 (270.6)	123 (270.6)	178 (391.6)	180 (396)	180 (396)	225 (495.0)	225 (495.0)

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

OTHER VOLTAGES AND CONFIGURATIONS ARE AVAILABLE; FOR ORDER CODES, CONSULT MANUFACTURER.

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

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



# TN11 SERIES BATTERY BANKS

## Additional Back-up Times (Battery Banks)

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 runtime calculations, please contact our factory.

Model	UPC Order Code	Cabinet Style	Load							
			3,500W 5,000VA	4,200W 6,000VA	5,600W 8,000VA	7,000W 10,000VA	8,400W 12,000VA	10,500W 15,000VA	14,000W 20,000VA	
BBU-502TN11A	825433 60560	D Cabinet	22 mins							
BBU-502TN11B	825433 60568	E Cabinet	60 mins							
BBU-602TN11A	825433 60592	D Cabinet	22 mins	20 mins						
BBU-602TN11B	825433 60600	E Cabinet	60 mins	50 mins						
BBU-802TN11A	825433 60624	D Cabinet	22 mins	20 mins	16 mins					
BBU-802TN11B	825433 60628	E Cabinet	60 mins	50 mins	40 mins					
BBU-103TN11A	825433 60652	D Cabinet	22 mins	20 mins	16 mins	15 mins				
BBU-103TN11B	825433 60656	E Cabinet	60 mins	50 mins	40 mins	30 mins				
BBU-123TN11A	825433 60680	D Cabinet	22 mins	20 mins	16 mins	15 mins	11 mins			
BBU-123TN11B	825433 60684	E Cabinet	60 mins	50 mins	40 mins	30 mins	18 mins			
BBU-153TN11A	825433 60708	D Cabinet	22 mins	20 mins	16 mins	15 mins	11 mins	9 mins		
BBU-153TN11B	825433 60712	E Cabinet	60 mins	50 mins	40 mins	30 mins	18 mins	12 mins		
BBU-203TN11A	825433 60736	E Cabinet	60 mins	50 mins	40 mins	30 mins	18 mins	12 mins	7 mins	

Cabinet Style	Dimensions (mm)	Dimensions (in)	Weight
D Cabinet	235W x 546D x 552H	9.25" x 21.5" x 21.75"	80 kg (177 lbs)
E Cabinet	400W x 650D x 1020H	15.7" x 25.5" x 40"	353 kg (777 lbs)

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

Batteries feature a standard 5-year pro rated warranty with 1-year replacement. Extended warranties available.

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FOR ALWAYS "ON"™ UPC ORDER CODES, VISIT [WWW.ALWAYSON.COM](http://WWW.ALWAYSON.COM).

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