Power dependency has increased dramatically in the new business environment based on e-commerce applications, mobile networks, corporate Internet sites, e-pay and networked IT structures. Near one-hundred percent system availability is mandatory in view of the financial and business consequences. Not only does the absence of power have catastrophic consequences, but also an unnoticed mains disturbance can affect your expensive equipment or critical processes. Power Quality Products are designed to reduce customer risks to power issues.

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Delivering Critical Power Reliability

Improved Reliability for the Entire Site
Facilities with critical power infrastructure need to maintain a constant supply of clean and reliable power that will keep business operating at all times.

To help protect your entire electrical infrastructure—from the utility meter and the UPS to the critical load—GE offers a comprehensive array of services that can ensure continuous operation of controls and equipment during a power loss. Without an effective diagnostics and maintenance program, critical power system components (such as battery systems) are prone to failure.

Uninterrupted Revenue Stream
To avoid potential loss of revenue streams from unplanned outages, GE designed a preventive maintenance program that can be customized to meet the specific needs of your site. The program also reduces long-term maintenance cost and capital expenditures.

Single Point of Contact with Worldwide Sourcing
Operating from a worldwide network of service centers with a large critical parts inventory, our highly trained repair specialists work at a schedule that accommodates your site needs. With extensive experience across multiple brands of equipment, they can free your plant personnel to focus on their core competencies. In order to ensure an effective and rapid response, GE provides a single point of contact to coordinate all of your service needs.

Expert Inspection and Maintenance Services
With an average of five years of in-depth experience on equipment across the industry, GE specialists have the required range of skills to protect your operation from power interruptions. Expert interpretation of inspection data allows our engineers to provide you with the preventive or corrective services that are most appropriate for your business, including:

—**Inspection Services** Review customer maintenance logs; perform safety checks; visually inspect power equipment, batteries and rectifiers; provide detailed reports with findings and recommendations.

—**Uninterruptible Power Supply (UPS) Preventive Maintenance Services** Verify equipment functionality and provide detailed reports with findings and recommendations for GE and multi-vendor systems.

—**Rectifier Preventive Maintenance Services** Verify operation of all rectifiers/chargers; read and record DC float voltage; read and record AC input voltage and current; and calibrate panel meters.

—**Remedial Services** Test and repair UPS, rectifier and related critical power equipment.

—**Remote Monitoring and Diagnostics (RM&D)** Advanced algorithms for data analysis and condition assessment; performance trending; diagnostics/problem assessment; rapid response for emergency troubleshooting and addressing technical questions.

—**Engineering Services** Design-build services for ISP facilities; technical and logistical support for multi-vendor equipment and site analysis for power problems (UPS, generator interfacing, harmonics or power fluctuations).

—**Site Monitoring** Moderate cost, high performance system incorporates monitoring logging, alarming and a multi-protocol notifying system. GE-monitored alarm management response program.

—**Complete Spare Parts Inventory** Worldwide sourcing capability provides UPS, batteries (VRLA and flooded), DC equipment, replacement boards and components for UPS and DC equipment.

—**Critical Power Equipment Operator Training** Hands-on classroom or on-site training to increase operator reliability and accuracy.

—**Battery Preventive Maintenance Services** Measure and record cell float voltage, the specific gravity on all flooded cells and cell conductance to determine the relative state of health for VRLA battery types. Adjust float and equalize voltage settings to manufacturer specific values. Record electrolyte temperature on flooded cells and record temperatures on the negative post (on VRLA battery types). Inspect terminals, cables, and hardware; cell elements; battery racks, cell covers and post seals.

Benefits

—Greater reliability
—Reduced outages and risk of lost revenues
—Lower capital expenditures and maintenance costs
—Single point of contact for all services

Reliability Services

—UPS commissioning and upgrades
—Battery installation and maintenance
—Battery replacement
—System stability and reliability consulting
—Remote monitoring and diagnostics (RM&D)
—Infrared thermal imaging
—Asset management services

Critical Parts Availability

—Worldwide critical spare parts inventory and servicing
—Continually updated database for most efficient sourcing
—Global emergency service with rapid response times to meet your critical needs
—Depot repair staff available to ensure reliability of your electrical infrastructure
—Operator training on a variety of multi-vendor power equipment (on-site or at a GE location)

Increased Reliability of Critical Power Systems

GE's expertise can help deliver critical power for continuous operations.

Our comprehensive array of services ensures the reliability of critical power battery and rectifier/charging systems when they are needed most. While battery systems are the most crucial components of a critical power system, they can be prone to failure—unless an effective diagnostics and maintenance program is in place.

Uninterrupted Revenue Stream
To prevent potential loss of revenue streams from unplanned outages, GE has designed a preventive maintenance program tailored to the Transmission and Distribution needs of Independent Power Providers, Investor Owned Utilities (IOUs), Non-Utility Generator (NUGs), and municipal and industrial power providers. In addition to providing reliable power in substations and generating plants, the program also reduces long-term maintenance cost and capital expenditures.

Single Point of Contact with Worldwide Sourcing
Operating from a worldwide network of service centers with a large critical parts inventory, our highly trained specialists work at a schedule that accommodates your site needs. With extensive experience across multiple brands of equipment, they can free your plant personnel to focus on core competencies. In order to ensure an effective and rapid response, GE provides a single point of contact to coordinate all of your service needs.

Expert Inspection and Maintenance Services
GE specialists have the required range of skills to protect your operation from power interruptions. Expert interpretation of inspection data allows our engineers to provide you with the preventive or corrective services that are most appropriate for your business, including:

—**Inspection Services** Review customer maintenance logs; perform safety checks; visually inspect power equipment, batteries and rectifiers; provide detailed reports with findings and recommendations.

—**Asset Management Services** Develop and maintain asset inventories.

—**Battery Preventive Maintenance Services** Measure and record cell float voltage; the specific gravity on all flooded cells and cell conductance to determine the "relative" state of health for VRLA battery types. Adjust float and equalize voltage settings to manufacturer specific values. Record electrolyte temperature on flooded cells and record temperatures on the negative post (on VRLA battery types). Inspect terminals, cables, and hardware; cell elements; battery racks; cell covers and post seals.

—**Rectifier Preventive Maintenance Services** Verify operation of all rectifiers/chargers; read and record DC float voltage; read and record AC input voltage and current and calibrate panel meters.

—**Remedial Services** Clean and correct all corroded connections; replenish low electrolyte fluid levels (flooded cells only) and apply single unit charge techniques to re-establish string balance.

—**Battery Replacement Services** Install, inspect, test clean and repair of battery systems as well as removal/replacement using EPA registered and approved recyclers.

Benefits

—Greater reliability
—Reduced outages and risk of lost revenues
—Single Point of Contact
—Lower capital expenditures and maintenance costs
—Reduced safety risk
—Single point of contact for all services
—EPA compliant battery recycling

Applicable Markets

—Commercial
—Healthcare
—Utility
—Information Technology
—Defense
—Industrial

Critical Parts Availability

—Worldwide critical parts inventory
—Rapid access database for most efficient sourcing
—Depot repair staff available to ensure reliability of Transmission and Distribution networks

For Emergency Service call: 1-800-637-1738

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Power Quality Products
Uninterruptible Power Supply
Digital Energy™ IT Series
600–2000 VA 19" Rackmount

Introduction

The GE Digital Energy™ IT series Rackmount UPS provides cost-effective, high quality power protection for a wide range of 19" rackmount applications. The IT series is a line interactive UPS that has pure sine wave output, which is designed to prevent down-time and equipment damage due to power outages, voltage fluctuations and transient surges. The IT series ups is micro-processor-controlled and equipped with AVR (Automatic Voltage Regulation), making it ideal for server, data storage, networking, telecommunications and point-of-sale applications.

The unit is equipped with RS-232 and USB ports and a communication slot (standard). The communication slot accepts an optional SNMP communication card to enhance the capabilities of the UPS. IT Series MONITORing management and monitoring software is included (standard). This software interfaces with today's major software operating system platforms. Front panel, multi-function audible alarms and a set of six (6) LEDs allow for quick visual notification of UPS and battery status.

The IT series UPS has hot swappable, user-replaceable batteries. The enclosure allows for front access, facilitating battery replacement.

IT series UPS units carry a standard two-year limited product warranty.[1]

Options

—SNMP communication cards are available and sold separately
—For replacement batteries, please contact the UPS parts Department: 800 637 1738
—Extended Limited Product Warranties Available[2]
  —1 Year
  —3 Year
  —5 Year
—4 Post Rackmount Rail Kit

Features and Benefits

—True sine wave, line interactive design
—AVR Buck and Boost voltage regulation
—Hot swappable, user-replaceable batteries
—Fully digitized, microprocessor-controlled
—USB and RS-232 communication ports
—Lightning and surge protection
—Short circuit and overload protection
—50/60Hz frequency auto-sensing
—Telephone/modem extension port
—IT Series MONITORing software
—Rack design provides application versatility
—Load and battery power meter display
—Overload, on-line, battery status leds
—Advanced Battery Management algorithm
—Energy saving (UPS sleep mode)
—Cold start (DC Power On)
—SNMP communication ready

Applications

—Personal Computers
—Workstations
—Servers
—Networking Equipment
—Telecommunications Equipment
—Data Storage Equipment
—Point-of-Sale Equipment

[1] See Digital Energy™ UPS Limited Warranty Rider, publication No. GETC2003-UPS
[2] Contact a factory representative: 800 637 1738

Power Quality Products
Uninterruptible Power Supply
Digital Energy™ IT Series
600–2000 VA 19" Rackmount

Technical Specifications

Model Number	UPS0600ITSIR	UPS1000ITSIR	UPS1500ITSIR	UPS2000ITSIR
Power Rating				
Output Capacity	600VA / 360W	1000VA / 600W	1500VA / 900W	2000VA / 1200W
Power Factor				
Output Power Factor	0.6 pf			
Input				
Voltage	120V +/- 10% at line input, single phase			
Frequency	50 or 60 Hz +/- 5Hz auto-sensing			
Input Power Connection	Detachable 5-15P	Detachable 5-15P	Hardwired 5-15P	Hardwired 5-20P
Output				
Voltage (on Battery)	Pure sine wave at +/- 5% of nominal, -10% of nominal after low battery warning			
Voltage (on Mains)	120V, -12%/+10%			
Voltage THD	< 5% @ 100% resistive load with 80% battery capacity			
Frequency (on Battery)	50 or 60 Hz +/- 5% auto-sensing			
Voltage Regulation (AVR)	AVR automatically increases (boost) output voltage 17% above input voltage if -9% to -25% of nominal. AVR decreases (buck) output voltage 14% below input voltage if +9% to +25% of nominal.			
Output Receptacles - Power Distribution	(6) 5-15R	(4) 5-15R	(4) 5-15R	(6) 5-15R
Protection & Filtering				
Spike Protection	780 Joules/6500A			
EMI/RF Filter	10dB @ 0.15MHz, 50 dB @ 30 MHz			
Overload Protection	UPS automatic shutdown if overload exceeds 110% of nominal @ 20 seconds and 125% @ 5 seconds			
Transfer Time	4/6 milliseconds (typical), including detection time			
Short Circuit	Active protection with automatic shutdown			
Battery				
System Type	Hot swappable, sealed Valve Regulated Lead Acid (VRLA)			
Battery	12V / 9.0 AH			
Typical Recharge Time	4 hours (to 90% of full capacity)			
Protection	Automatic self-test and discharge protection, Replace battery indicator			
Battery Quantity	2 pcs	2 pcs	3 pcs	4 pcs
Net Weight (lbs)	34.5 lbs	44.5 lbs	57.4 lbs	62.5 lbs
Dimensions W x D x H (Inches)	19" x 15" x 3.3"	19" x 15" x 3.3"	19" x 15" x 5.1"	19" x 15" x 5.1"
Communications				
RS-232	Standard (Detect battery low, schedule UPS on/off, AC Input/Output power status display)			
USB	Standard			
SNMP	Optional			
Operating System	Windows NT, Windows 2000/ME, Windows XP, Linux			
Environment				
Ambient operation	3,500 meters max. elevation, 0-95% RH non-condensing, 0-40° C			
Audible noise @ 1 meter	< 40 dBA		< 45 dBA	
Storage condition	15,000 meters max. elevation, 0-95% RH non-condensing, 0-40° C			
Certifications	UL, cUL, FCC Class A			

Battery Runtimes (minutes)[1]

	Standard Internal Battery System			
VA	**@ 25% Load**	**@ 50% Load**	**@ 75% Load**	**@ 100% Load**
600	84	35	20	14
1000	42	17	10	6
1500	42	17	10	6
2000	42	17	10	6

[1]Runtimes are estimated

IT Series 600-2000 VA 19" Rackmount

Description	Input Plug	Output Receptacles	Run time	Dimensions Width x Depth x Height (in)	Weight Lbs.	Product Number	List Price GO-AC31
600VA 120V	5-15P	(6) 5-15R	14	19 x 15 x 3.3	34.5	UPS0600ITSIR	**$ 499.00**
1000VA 120V	5-15P	(4) 5-15R	6	19 x 15 x 3.3	44.5	UPS1000ITSIR	**$ 579.00**
1500VA 120V	5-15P	(6) 5-15R	6	19 x 15 x 5.1	57.4	UPS1500ITSIR	**$ 749.00**
2000VA 120V	5-15P	(6) 5-15R	6	19 x 15 x 5.1	62.5	UPS2000ITSIR	**$1025.00**

IT Series Options & Accessories

Description	Product Number	List Price GO-AC21
SNMP interface plug-in card	UPSITSNMP	**$ 279.00**
SNMP CD	UPSITSNMPCD	**Incl.**
SNMP Manual	UPSITSNMPMAN	**Incl.**
IT Series Operating Manual	UPSITOPMANUAL	**$ 100.00**
19 inch Rail kit	UPS-19IN-RAILKIT	**$ 80.00**
IT Series Rack Mounting Ears 2U	UPSITRM2UE	**$ 60.00**
IT Series Rack Mounting Ears 3U	UPSITRM3UE	**$ 60.00**

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Digital Energy™ IT Series

600–2000 VA Tower

Introduction

The GE Digital Energy™ IT Series Tower UPS provides cost-effective, high quality power protection for a wide range of applications. The IT Series is a line interactive UPS that has pure sine wave output, which is designed to prevent downtime and equipment damage due to power outages, voltage fluctuations and transient surges. The IT Series UPS is microprocessor-controlled and equipped with AVR (Automatic Voltage Regulation), making it ideal for server, data storage, networking, telecommunications and point-of-sale applications.

The unit is equipped with RS-232 and USB ports and a communication slot (standard). The communication slot accepts an optional SNMP communication card to enhance the capabilities of the UPS. IT Series MONITORing management and monitoring software is included (standard). This software interfaces with today's major software operating system platforms. Front panel, multi-function audible alarms and a set of six (6) LEDs allow for quick visual notification of ups and battery status.

The IT Series UPS has hot swappable, user-replaceable batteries. The enclosure allows for front access, facilitating battery replacement.

IT series UPS units carry a standard two-year limited product warranty.[1]

Features and Benefits

—True sine wave output, line interactive design
—AVR buck and boost voltage regulation
—Hot swappable, user-replaceable batteries
—Fully digitized, microprocessor-controlled
—RS-232 and USB communication ports
—Lightning and surge protection
—Short circuit and overload protection
—50/60Hz frequency auto-sensing
—Telephone/modem extension port
—IT Series MONITORing software
—Load and battery power meter displays
—Overload, on-line, battery status LEDs
—Advanced Battery Management Algorithm
—Energy saving (UPS sleep mode)
—Cold start (DC Power On)
—SNMP communication ready

Options

—SNMP communication cards are available and sold separately
—For replacement batteries, please contact the UPS Parts Department: 800-637-1738
—Extended Limited Product Warranties Available[2]
  —1 Year
  —3 Year
  —5 Year

Applications

—Personal Computers
—Workstations
—Servers
—Networking Equipment
—Telecommunications Equipment
—Data Storage Equipment
—Point-of-Sale Equipment

[1]See Digital Energy™ UPS Limited Warranty Rider, Publicaion No. GETC2003-UPS
[2]Contact a factory representative: 800-637-1738

Power Quality Products
Uninterruptible Power Supply
Digital Energy™ IT Series
600–2000 VA Tower

Technical Specifications

Model Number	UPS0600ITSIT	UPS1000ITSIT	UPS1500ITSIT	UPS2000ITSIT
Power Rating				
Output Capacity	600VA / 360W	1000VA / 600W	1500VA / 900W	2000VA / 1200W
Power Factor				
Output Power Factor	0.6 pf			
Input				
Voltage	120 V +/- 10% at line input, single phase			
Frequency	50 or 60 Hz +/- 5Hz auto-sensing			
Input Power Connection	Detachable 5-15P	Detachable 5-15P	Hardwired 5-15P	Hardwired 5-20P
Output				
Voltage (on Battery)	Pure sine wave at +/- 5% of nominal, -10% of nominal after low battery warning			
Voltage (on Mains)	120V, -12%/+10%			
Voltage THD	< 5% @ 100% resistive load with 80% battery capacity			
Frequency (on Battery)	50 or 60 Hz +/- 5% auto-sensing			
Voltage Regulation (AVR)	AVR automatically increases (boost) output voltage 17% above input voltage if -9% to -25% of nominal. AVR decreases (buck) output voltage 14% below input voltage if +9% to +25% of nominal.			
Output Receptacles - Power Distribution	(4) 5-15R	(4) 5-15R	(6) 5-15R	(6) 5-15R
Protection & Filtering				
Spike Protection	780 Joules/6500A			
EMI/RF Filter	10dB @ 0.15MHz, 50 dB @ 30 MHz			
Overload Protection	UPS automatic shutdown if overload exceeds 110% of nominal @ 20 seconds and 125% @ 5 seconds			
Transfer Time	4/6 milliseconds (typical), including detection time			
Short Circuit	Active protection with automatic shutdown			
Battery				
System Type	Hot swappable, sealed Valve Regulated Lead Acid (VRLA)			
Battery	12V / 9.0 AH			
Typical Recharge Time	4 hours (to 90% of full capacity)			
Protection	Automatic self-test and discharge protection, Replace battery indicator			
Battery Quantity	2 pcs	2 pcs	3 pcs	4 pcs
Net Weight (lbs)	30.4 lbs	33.0 lbs	55.0 lbs	66.0 lbs
Dimensions W x D x H (Inches)	5.5" x 17.2" x 8.3"	5.5" x 17.2" x 8.3"	6.7" x 17.7" x 8.9"	6.7" x 17.7" x 8.9"
Communications				
RS-232	Standard (Detect battery low, schedule UPS on/off, AC Input/Output power status display)			
USB	Standard			
SNMP	Optional			
Operating System	Windows NT, Windows 2000/ME, Windows XP, Linux			
Environment				
Ambient operation	3,500 meters max. elevation, 0-95% RH non-condensing, 0-40° C			
Audible noise @ 1 meter	< 40 dBA		< 45 dBA	
Storage condition	15,000 meters max. elevation, 0-95% RH non-condensing, 0-40° C			
Certifications	UL, cUL, FCC Class A			

Battery Runtimes (minutes)[1]

	Standard Internal Battery System			
VA	**@ 25% Load**	**@ 50% Load**	**@ 75% Load**	**@ 100% Load**
600	84	35	20	14
1000	42	17	10	6
1500	42	17	10	6
2000	42	17	10	6

[1]Runtimes are estimated

IT Series 600–2000 VA Tower

Description	Input Plug	Output Receptacles	Run time	Dimensions Width x Depth x Height (in)	Weight Lbs.	Product Number	List Price GO-AC31
600VA 120V	5-15P	(6) 5-15R	14	5.5 x 17.2 x 8.3	30.4	UPS0600ITSIT	**$ 350.00**
1000VA 120V	5-15P	(4) 5-15R	6	5.5 x 17.2 x 8.4	33	UPS1000ITSIT	**$ 449.00**
1500VA 120V	5-15P	(6) 5-15R	6	6.7 x 17.7 x 8.9	55	UPS1500ITSIT	**$ 659.00**
2000VA 120V	5-15P	(6) 5-15R	6	6.7 x 17.7 x 8.9	66	UPS2000ITSIT	**$ 839.00**

IT Series Options & Accessories

Description	Product Number	List Price GO-AC21
SNMP interface plug-in card	UPSITSNMP	**$279.00**
SNMP CD	UPSITSNMPCD	**Incl.**
SNMP Manual	UPSITSNMPMAN	**Incl.**
IT Series Operating Manual	UPSITOPMANUAL	**$100.00**
19 inch Rail kit	UPS-19IN-RAILKIT	**$80.00**
IT Series Rack Mounting Ears 2U	UPSITRM2UE	**$60.00**
IT Series Rack Mounting Ears 3U	UPSITRM3UE	**$60.00**

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Digital Energy™ GT Series

1000-3000 VA Tower

Description

The Digital Energy™ GT Series Tower UPS provides high quality power protection in a cost effective package. The GT Series is a compact, true VFI (Voltage and Frequency Independent) on-line double conversion high performance device.

The UPS is designed to support and protect mission-critical applications, and the bypass mode provides high reliability against mains power disturbances. All GT Series UPSs are micro-processor controlled and equipped with RS232 communication and optional SNMP interfacing capabilities for all major operating systems, with optional battery pack extended runtime options also available.

—On line double conversion technology eliminates power reliability problems
—High visibility graphic display gives the user immediate view of UPS status
—Automatic internal bypass
—Programmable switch-off for less critical loads to maximize up-time of critical devices. (load shedding)
—Modern design fits well into an office environment

Applications

—Mission Critical Servers
—Medical Equipment
—ATM / Frame Relay Switches
—Banking Systems
—Telecoms / PABX

Features and Benefits

—High input power factor (>.97) and low input distortion prevents disturbances to other electrical equipment, thus eliminating the need for costly filters or over- sized feeders
—Compact footprint, easily transportable, robustly designed system with low audible noise suitable for both office and industrial environments
—Utilizes high-frequency PWM (Pulse Width Modulation) digital control technique resulting in extremely low output distortion and fast transient response eliminating the need for over-sizing the UPS
—Robustly designed to handle short-circuit, high overload and over-heating conditions, thus reducing maintenance and service costs
—GT Series High Crest Factor (3:1) capability makes it ideal for computer loads while eliminating the need to oversize the UPS
—Very wide AC-input voltage capability minimizes the need to switch to batteries which results in increased battery life
—Fully compliant with UL1778 and CSA 22.2-107 standards for VFI operation providing full power protection for demanding critical applications
—Every GE UPS can be monitored and managed via LAN and serial connection
—UPS management software facilitating operation and maintenance of the UPS
—Available slot for SNMP plug-in card, potential-free relay contacts, and RS232/contact interface providing maximum flexibility

Power Quality Products
Uninterruptible Power Supplies
Digital Energy™ GT Series
1000-3000 VA Tower

Technical Specifications–UL approved

Models	GT1000T	GT1500T	GT2000T	GT3000T	GT3000T208
Rating (VA/W)	1000 / 800	1500/1200	2000 / 1600	3000 / 2400	3000 / 2400
Battery (V/Ah)	36 / 7	48 / 7	72 / 7	72 / 9	72 / 9
Backup Time @ 50% load	21 min.	21 min.	21 min.	14 min.	14 min.
Option for Additional Batteries	Yes	Yes	Yes	Yes	Yes
Enclosure (see below)	A	B	B	B	B
Net Wgt Incl. Batteries (kg/lbs)	15 / 33	30 / 66	30 / 66	30 / 66	30 / 66
Input Voltage @ 100% load (VAC)	80-138	80-138	80-138	80-138	160-275
Input Frequency (Hz)[1]	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60
Output Voltage	100 / 110	100 / 110 / 120	100 / 110 / 120	100 / 110 / 120	160 / 208 / 275
Output Frequency (Hz)[1]	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60
Number of Outlets	4 NEMA 5-15R	3 NEMA 5-15R 3 NEMA 5-20R 1 NEMA L5-20R	6 NEMA 5-15R 1 NEMA L5-20R	6 NEMA 5-15/20R 1 NEMA L5-30R	4 NEMA 6-20R 1 NEMA L6-20R
SNMP Compatibility	Yes				
Core Voltage	120				
PWM	Yes				
Maintenance Bypass	Yes				
Internal Batteries	Yes				
Input Performance Range	Voltage (-33 to +17%); Frequency (55 to 65)				
Output Performance					
Output THD Load	Non-Linear (<6%); Linear (<3%)				
Voltage Regulation Load	Static (2%); 0-100% Step (8%)				
Overload Capability	150% – 30 Seconds				
Efficiency	>87%				
Communications Interface	RS232, Plug and Play, open collector alarm output				
Color	Front bezel: Aluminum Grey (RAL9006); Cabinet: Pure White (RAL9010)				
Operating Temperature	32° F – 104° F (0° C – 40° C)				
Relative Humidity	95% non-condensing				
Audible Noise	(see below)				
Safety	UL1778, CSA22.2-107				
EMC	FCC Class B (1kVA), FCC Class A (remaining)				
Enclosure	NEMA 1				

[1]Auto Selectable
Specifications subject to change without notice.

Dimensions (in/cm)

	Height	Width	Depth
Enclosure A	9.5 (24.1)	5.5 (14)	14.4 (36.6)
Enclosure B	14.7 (37.3)	5.5 (14)	16.7 (42.4)

Audible Noise at Unit Front

1 kVA	40dBA - 3.3 feet (1 meter)
1.5, 2 and 3kVA-T	42dBA - 3.3 feet (1 meter)

GT Series - 1.0kVA to 3.0kVA Single-Phase UPS

Description	Input Voltage	Output Voltage	Power (VA)	Standard Battery Run Time (mins.) 100% Load	Dimensions (H x W x D, inches)	Product Number	List Price GO-AC17
1000VA GT Series Tower 1-Phase UPS	100/110/120	100/110/120	1000	7	9.5 x 5.5 x 14.4	UPS16164	**$680.00**
1500VA GT Series Tower 1-Phase UPS	100/110/120	100/110/120	1500	5	14.7 x 5.5 x 16.7	UPS16170	**$1040.00**
2000VA GT Series Tower 1-Phase UPS with plug	100/110/120	100/110/120	2000	7	14.7 x 5.5 x 16.7	UPS16165	**$1260.00**
3000VA GT Series Tower 1-Phase UPS with plug	100/110/120	100/110/120	3000	5	14.7 x 5.5 x 16.7	UPS16166	**$1750.00**

Battery Packs For Extended Run Time[1]

Description	Power (VA)	Extended Battery Run Time (mins.) 100% Load	Dimensions (H x W x D, inches)	Product Number	List Price GO-AC18
Battery Pack For GT Series Tower 1000VA	1000	39	9.5 x 5.5 x 14.4	UPS16321	**$275.00**
Battery Pack For GT Series Tower 1500VA	1500	19	14.7 x 5.5 x 16.7	UPS16328	**$310.00**
Battery Pack For GT Series Tower 2000VA	2000	27	14.7 x 5.5 x 16.7	UPS16322	**$325.00**
Battery Pack For GT Series Tower 3000VA	3000	19	14.7 x 5.5 x 16.7	UPS16323	**$325.00**

[1]Up to 4 individual Extended Battery Packs can be interconnected for increased times.

Connectivity, Software and Monitoring

Description	Product Number	List Price GO-AC21
SNMP interface plug-in card	UPS16400	**$380.00**

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Digital Energy™ GT Series

1000-3000 VA 19" Rackmount

Description

The Digital Energy™ GT Series Rackmount UPS provides a high quality power protection in a cost effective manner. The GT Series is a true VFI (Voltage and Frequency Independent) On-line double conversion high performance device.

The UPS is designed to support and protect mission-critical applications, and the bypass mode provides high reliability against mains power disturbances. All GE Digital Energy™ GT UPSs are microprocessor controlled and equipped with RS232 communication and optional SNMP interfacing capabilities for all major operating systems, with extended optional battery pack runtime options available.

The GT Series is designed especially for typical rack mount demands, including long backup times and high ambient temperatures, but can be a stand-alone unit for increased versatility.

—Online double conversion technology eliminates power reliability problems
—Rack design provides application versatility
—Rack height maximizes rack space
—Online double conversion technology eliminates power reliability problems
—Easy plug-in connection of battery packs for extended runtime
—Simple to install and operate
—Automatic internal bypass
—Programmable switch-off for less critical loads to maximize uptime of critical devices (load shedding)

Applications

—PC and Server Networks
—EPOS
—Network Components (Routers, Hubs)
—Security Systems
—Process Control

Features and Benefits

—High input power factor (>.97) and low input distortion prevents disturbances to other electrical equipment, thus eliminating the need for costly filters or oversized feeders
—Compact footprint, easily transportable, robustly designed system with low audible noise suitable for both office and industrial environments
—Utilizes high-frequency PWM (Pulse Width Modulation) digital control technique resulting in extremely low output distortion and fast transient response eliminating the need for oversizing the UPS
—Robustly designed to handle short-circuit, high overload and over-heating conditions, thus reducing maintenance and service costs
—GT Series High Crest Factor (3:1) capability makes it ideal for computer loads while eliminating the need to oversize the UPS
—Very wide AC-input voltage capability minimizes the need to switch to batteries which results in increased battery life
—Fully compliant with international standards for VFI (IEC 62040-3) operation providing full power protection for demanding critical applications
—UPS management software facilitating operation and maintenance of the UPS
—Available slot for SNMP plug-in card, potential-free relay contacts, and RS232/contact interface providing maximum flexibility

Power Quality Products
Uninterruptible Power Supplies
Digital Energy™ GT Series
1000-3000 VA 19" Rackmount

Technical Specifications–UL approved

Models	GT1000R	GT1500R	GT2200R	GT3000R
Rating (VA/W)	1000 / 800	1500/1200	2200 / 1760	3000 / 2400
Battery (V/Ah)	36 / 7	48 / 7	48 / 9	72 / 9
Backup Time @ 50% load	14 min.	14 min.	14 min.	14 min.
Option for Additional Batteries	Yes	Yes	Yes	Yes
Enclosure (see below)	C	D	D	E
Net Wgt Incl. Batteries (kg/lbs)	19 / 42	24 / 52.8	24 / 52.8	34 / 74.9
Input Voltage @ 100% load (VAC)	80-138			
Input Frequency (Hz)[1]	50 / 60	50 / 60	50 / 60	50 / 60
Output Voltage	100 / 110 /120	100 / 110 /120	100 / 110 / 120	100 / 110 / 120
Output Frequency (Hz)[1]	50 / 60	50 / 60	50 / 60	50 / 60
Number of Outlets	6 NEMA 5-15R	6 NEMA 5-15R	4 NEMA 5-20R 1 NEMA L5-20R	4 NEMA 5-15R 4 NEMA 5-20R 1 NEMA 5-30R

SNMP Compatibility	Yes
Core Voltage	120
PWM	Yes
Maintenance Bypass	Yes
Internal Batteries	Yes
Input Performance Range	Voltage (-33 to +17%); Frequency (55 to 65)
Output Performance	
Output THD Load	Non-Linear (<6%); Linear (<3%)
Voltage Regulation Load	Static (2%); 0-100% Step (8%)
Overload Capability	150% - 30 Seconds
Efficiency	>87%
Communications Interface	RS232, Plug and Play, open collector alarm contacts
Color	Front bezel: Aluminum Grey (RAL9006); Cabinet: Pure White (RAL9010)
Operating Temperature	32° F – 104° F (0° C – 40° C)
Relative Humidity	95% non-condensing
Audible Noise	(see below)
Safety	UL1778, CSA22.2-107
EMC	FCC Class B (1kVA), FCC Class A (remaining)
Enclosure	NEMA 1

[1]Auto Selectable
Specifications subject to change without notice.

Dimensions (in/cm)

	Height	Width	Depth
Enclosure C	3.5 (8.9 cm)	17.3 (43.9 cm)	17.7 (45 cm)
Enclosure D	3.5 (8.9 cm)	17.3 (43.9 cm)	20.7 (52.6 cm)
Enclosure E	5.2 (13.2 cm)	17.3 (43.9 cm)	19.8 (50.3 cm)

Audible Noise at Unit Front

1 kVA	40dBA - 3.3 feet (1 meter)
1.5 and 2 kVA-R	45dBA - 3.3 feet (1 meter)
3 kVA-R	47dBA - 3.3 feet (1 meter)

GT Series - Single-Phase UPS Rackmount - 1.0kVA to 3.0kVA UPS

Description	Input Voltage	Output Voltage	Power (VA)	Standard Battery Run Time (mins.) 100% Load	Dimensions (H x W x D, inches)	Product Number	List Price GO-AC17
1000VA GT Series 19" Rack 1-Phase UPS (removable IEC line cord/plug)	100/110/120	100/110/120	1000	5	3.5 x 17.3 x 17.7	UPS16167	**$730.00**
1500VA GT Series 19" Rack 1-Phase UPS (removable IEC line cord/plug)	100/110/120	100/110/120	1500	5	3.5 x 17.3 x 20.7	UPS16168	**$1010.00**
2200VA GT Series 19" Rack 1-Phase UPS (fixed line cord and plug)	100/110/120	100/110/120	2200	7	3.5 x 17.3 x 20.7	UPS16169	**$1340.00**
3000VA GT Series 19" Rack 1-Phase UPS (fixed line cord and plug)	100/110/120	100/110/120	3000	7	5.2 x 17.3 x 19.8	UPS16180	**$1720.00**

Battery Packs For Extended Run Time[1]

Description	Power (VA)	Extended Battery Run Time (mins.) 100% Load	Dimensions (H x W x D, inches)	Product Number	List Price GO-AC18
Battery Pack For GT Series 19" Rack 1000VA	1000	39	3.5 x 17.3 x 17.7	UPS16324	**$375.00**
Battery Pack For GT Series 19" Rack 1500VA	2000	19	3.5 x 17.3 x 20.7	UPS16325	**$390.00**
Battery Pack For GT Series 19" Rack 2200VA	3000	27	3.5 x 17.3 x 20.7	UPS16326	**$390.00**
Battery Pack For GT Series 19" Rack 3000VA	3000	19	3.5 x 17.3 x 19.8	UPS16327	**$410.00**

[1]Up to 4 individual Extended Battery Packs can be interconnected for increased times.

Connectivity, Software and Monitoring

Description	Product Number	List Price GO-AC21
SNMP interface plug-in card	UPS16400	**$380.00**

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Digital Energy™ LP11U Series

Single-Phase 5 – 10 kVA

The Digital Energy™ LP11U Series is a robust, high-performance UPS system that provides power protection for a wide range of mission-critical applications. Every LP11U Series unit operates in a double conversion mode with true continuous on-line VFI (voltage and frequency independent) operation, thus yielding maximum levels of power protection even under the toughest conditions. In addition, the LP11U Series UPS is easy to install and service, even in an office environment. Its robust design makes it suitable for traditional industrial applications as well.

To achieve redundancy or to increase power capacity, GE's unique Redundant Parallel Architecture (RPA) technology enables the LP11U Series to parallel up to four units in a flexible and cost effective manner. In the RPA system, every UPS is controlled in a true peer-to-peer configuration with redundancy in all critical elements and functions. This advanced technology provides the highest possible system reliability for mission critical applications eliminating any single points of failure associated with other types of UPS systems. The RPA system precisely synchronizes the output phase and automatically shares the load supported by each of the UPS.

Through their complete life cycle, every GE UPS system is fully supported by GE's Global Services team, which provides world-class, 24 x 7 preventive and corrective services, training and application expertise.

Features and Benefits

—High input power factor (1.0) and low input distortion prevents disturbances to other electrical equipment, thus eliminating the need for costly filters or over- sized feeders
—Compact footprint, easily transportable, robustly designed system with low audible noise suitable for both office and industrial environments
—Utilizes high-frequency PWM (Pulse Width Modulation) digital control technique resulting in extremely low output distortion and fast transient response eliminating the need for over-sizing the UPS
—Intelligent Energy Management (ECO-mode) enables automatic energy savings under stable power conditions
—Redundant Parallel Architecture (RPA) increases system reliability by eliminating single points of failure without increasing overall system complexity
—Superior Battery Management (SBM) enhances battery lifetime resulting in reduced cost of operation
—Fully isolated output providing additional critical power protection
—Robustly designed to handle short-circuit, high overload and over-heating conditions, thus reducing maintenance and service costs
—The LP High Crest Factor (5:1) capability makes it ideal for computer loads while eliminating the need to oversize the UPS
—Very wide AC-input voltage capability minimizing the need to switch to batteries which results in increased battery life
—Integrated internal manual maintenance bypass reducing the need for external equipment
—Fully compliant with North American standards for VFI (UL, CUL 1778) operation providing full power protection for demanding critical applications
—Automatic start-up procedure and a user-friendly interface with multi-language capability simplifying UPS operation
—Every GE UPS can be monitored and managed via LAN, serial/modem connection or through the Internet
—UPS management software facilitating operation and maintenance of the UPS
—Three available slots for options such as: SNMP plug-in card, potential-free relay contacts, RPA and RS232/contact interface providing maximum flexibility

Digital Energy™ LP11U Series

Single-Phase 5 – 10 kVA

Technical Specifications-UL approved

Models	LP5-11U	(120)	LP6-11U	(120)	LP8-11U	LP10-11U
Rating (VA/W)	5000 / 4000	5000 / 4000	6000 / 4800	6000 / 4800	8000 / 6400	10,000 / 8000
Backup Time @ 50% / 100% loads	25 / 10 min.	25 / 10 min.	20 / 8 min.	20 / 8 min.	29 / 11 min.	22 / 8 min.
Enclosure (see below)	A	B	A	B	A	A
Net Wgt Incl. Batteries (kg/lbs)	134 / 295	175 / 386	134 / 295	175 / 386	175 / 386	186 / 410
Input Voltage (VAC)						
Nominal (V)	208	120	208	120	208	208
Range @ 100% Load (V)	162-285	81-141	162-285	81-141	162-285	162-285
Range @ 50% Load (V)	146-285	72-141	146-285	72-141	146-285	146-285
Input Power Factor	0.99					
Input Frequency (Hz)	40-70					
Output Voltage (VAC) (sinusoidal)	120+208+220/230/240 User Selectable					
Output Frequency (Hz)	50 / 60					
Output Voltage Regulation	+/-1%					
Output THD at Linear Load	<1%					
Output THD at Non-linear Load	<2%					
Crest Factor Handling Capacity of a Non-linear Load	5:1					
Overload Capability on Inverter	110% 20 min., 130% 3.5 min., 150% 2 min.					
Communications Interface	RS232, Plug and Play, open collector alarm contacts					
Color	Front bezel: Aluminum Grey (RAL9006); Cabinet: Pure White (RAL9010)					
Environment	IP20 (IEC 60529)					
Operating Temperature / Humidity	32° F – 104° F (0° C – 40° C) / 95% Non-condensing					
Audible Noise	40-50 dBA - 3.3 feet (1 meter)					
Safety Classifications & Listings	UL, C-UL: UL1778; CE: EN50091-1-1; EN 60950; IEC 950					
EMI	FCC Part 15 Class A / EN50091-2					
Surge Protection	IEC 1000-4-5 (6kV 1.2/50 µsec – 3kA 8/20 µsec) IEEE 587 B, EN 50091-2					
Standard Connectivity	RS232; programmable alarm contacts; SNMP (optional)					
Warranty	24 months					

Specifications subject to change without notice.

Dimensions (in/cm)

	Height	Width	Depth
Enclosure A	26.8 (68)	12.3 (31.2)	28.7 (72.9)
Enclosure B	39.2 (99.6)	12.3 (31.2)	28.7 (72.9)

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Power Quality Products
Uninterruptible Power Supplies
Digital Energy™ LP11U Series
Single-Phase 5 – 10 kVA

LP11U Series - 5kVA to 10kVA Single-Phase UPS

Description	Input Voltage	Output Voltage[1]	Power Output	Standard Battery Run Time (mins.)	Dimensions (H x W x D, inches)	Weight (lbs.)	Product Number	List Price GO-AC17
Single-Phase, 5 kVA, 208 or 240 V input, 120/208/240V output, 60 Hz	208/240V	120/208/240	5 kVA/4 KW	10	26.8 x 12.3 x 28.7	295	UPS105LP2230000	**$5600.00**
Single-Phase, 5 kVA, 120V input, 120/208/240V output, 60 Hz	120V[2]	120/208/240	5 kVA/4 KW	10	39.2 x 12.3 x 28.7	386	UPS105LP1230000	**$6250.00**
Single-Phase, 6 kVA, 208 or 240 V input, 120/208/240V output, 60 Hz	208/240V	120/208/240	6 kVA/4.8 KW	8	26.8 x 12.3 x 28.7	295	UPS106LP2230000	**$5850.00**
Single-Phase, 6 kVA, 120V input, 120/208/240V output, 60 Hz	120V[2]	120/208/240	6 kVA/4.8 KW	8	39.2 x 12.3 x 28.7	386	UPS106LP1230000	**$6400.00**
Single-Phase, 8 kVA, 208 or 240 V input, 120/208/240V output, 60 Hz	208/240V	120/208/240	8 kVA/6.4 KW	12	26.8 x 12.3 x 28.7	386	UPS108LP2230000	**$7600.00**
Single-Phase, 10 kVA, 208 or 240 V input, 120/208/240V output, 60 Hz	208/240V	120/208/240	10 kVA/ 8KW	8	26.8 x 12.3 x 28.7	410	UPS110LP2230000	**$8250.00**
Single-Phase, 10 kVA, 208 or 240 V input, 120/208/240V output, 60 Hz; Vibration Hardened Unit	208/240V	120/208/240	10 kVA/ 8KW	8	26.8 x 12.3 x 28.7	410	UPS110LP223000H	**$9700.00**

[1]Output voltage is 2-wire or 3-wire configuration - 120V (2-wire), 240/120V (center-tapped, 3-wire) or 208V (tapped at 120V, 3-wire).
[2]Includes 120V input auto-transformer enclosure mounted under the standard UPS enclosure, increasing the overall height from 26.8" to 39.2".

Options and Accessories

Description	Product Number	List Price GO-AC21
RPA-Kit for LP11U (required for each UPS in a RPA system)[3]	UPS15871	**$620.00**
DC cable, 2.5 mtr + DC connector, required for external batteries	UPS15873	**$155.00**

[3]The RPA-kit contains the following items:
Bus-cable for communication between UPSs (2 meters),
Bus terminator, RPA plug-in card, Add-on electronic module,
Thyristor module, Installation guide.

Connectivity, Software and Monitoring

Description	Product Number	List Price GO-AC21
SNMP interface plug-in card	UPS1009224	**$390.00**
Relay card	UPS12458	**$195.00**
IRIS Install Kit (includes modem and 1st year service). Installation labor included if completed during unit commissioning.	UPS11176	**$1280.00**
IRIS Annual Fee (after 1st year)	UPS11167	**$505.00**
RS485/422 Converter (Not needed if ESI is installed, or if distance less than 15 meters)	UPS11227	**$710.00**

LP11U Series Commissioning and Warranties[4]

Description	Product Number	List Price GO-AC23
LP11U Commissioning Service Level 1, 8AM to 5PM Mon/Fri	FSUSLP	**$800.00**
LP11U Commissioning Service Level 2, 5PM to 8AM Mon/Fri, any time Saturday	FSUSLPA	**$1100.00**
LP11U Commissioning Service Level 3, Sunday and Holidays	FSUSLPB	**$1395.00**
LP11U PM Service. (sold during initial sale) Includes one PM visit at start of coverage (8-5, M-F). Service includes PM for UPS and internal batteries only. Remedial parts/labor and battery replacement not provided.	PMLP[5]	**$850.00**
LP11U Extended Warranty Level 1 (sold during initial sale). Includes one PM visit at start of coverage and remedial parts/labor (8-5, M-F). Includes internal batteries only.	WARLPE[5]	**$1525.00**
LP11U Extended Warranty Level 2. (sold during initial sale). Includes one PM visit at start of coverage and remedial parts/labor (7x24, 12 hr response).Includes internal batteries only.	FSLP[5]	**$1850.00**

LP11U Series Commissioning and Warranties (RPA systems)[4]

Description	Product Number	Module Qty: 2 List Price GO-AC23	Module kVA: 10kVA - 20kVA Additional Modules Each List Price GO-AC23
UPS Commissioning Service Level 1, 8AM to 5PM, Mon/Fri	FSUSLPxxxNz	**$1650.00**	**$800.00**
UPS Commissioning Service Level 2, 5PM to 8AM Mon/Fri, anytime Saturday	FSUSLPxxxP1z	**$2270.00**	**$1100.00**
UPS Commissioning Service Level 3, Sunday/Holidays	FSUSLPxxxP2z	**$2875.00**	**$1395.00**

[4]Service pricing is not discountable.
[5]Extended Warranty coverage at the listed prices is limited to two additional years following the standard warranty.
NOTES: "xxx" in the Product Number represents the UPS module kVA rating: '006' for 6kVA, '010' for 10kVA, etc.
"z" in the Product Number represents the total number of UPS modules in RPA systems.
UPS Commissioning by a GE-authorized Service Technician is optional (but highly recommended) for LP11U Series single-phase products.
All equipment installation must be completed prior to commissioning (see Startup Checklist) and must be scheduled two weeks in advance.
LP11U Series UPS are shipped pre-configured for operation at 208V input and output (except for 120V input versions, which are configured for 120V input and 208V output).
Re-configuration of the input and output voltages must be performed and verified by someone familiar with electrical circuits and equipment.
GE strongly suggests that units requiring input/output voltage re-configuration be Commissioned by a GE-authorized Service Technician.

Power Quality Products
Uninterruptible Power Supplies
Digital Energy™ LP11U Series
Single-Phase 5 – 10 kVA

LP11U Series 5 kVA to 10 kVA - External Battery

Description	Dimensions (H x W x D, inches)	Weight (lbs.)	Product Number	List Price GO-AC18
External battery cabinet for LP11U, 7AH	31.1 x 12.3 x 23.2	154	UPS12434	**$1340.00**
External battery cabinet for LP11U, 14AH	31.1 x 12.3 x 23.2	264	UPS12438	**$1855.00**
External battery cabinet for LP11U, 21AH	31.1 x 12.3 x 23.2	418	UPSLPB21AH	**$3195.00**
External battery cabinet for LP11U, 28AH	31.1 x 12.3 x 23.2	528	UPSLPB28AH	**$3710.00**

LP11U External Battery Packs - Run Time[1]

	External Battery		5 kVA UPS Rating		6 kVA UPS Rating		8 kVA UPS Rating		10 kVA UPS Rating	
Product Number	Configuration	Capacity	100% UPS Load	50% UPS Load	100% UPS Load	50% UPS Load	100% UPS Load	50% UPS Load	100% UPS Load	50% UPS Load
None	None	None	10	25	8	20	11	29	8	22
UPS12434	UPS12434	7AH	25	60	21	50	22	50	16	39
UPS12438	UPS12438	14AH	45	90	35	75	33	70	25	57
UPSLPB21AH	UPS12434 + UPS12438	21AH	60	120	50	100	44	90	34	70
UPSLPB28AH	UPS12438 + UPS12438	28AH	80	150	65	130	55	110	43	90

[1]Approximate run times, including internal UPS battery

NOTES: All LP11U Battery Cabinets include cable and connector for connection to the LP11U UPS.

The 14AH LP11U Battery Cabinet includes connectors for use in paralleling multiple LP11U Battery Cabinets. The 7AH LP11U Battery Cabinet does not include provisions for paralleling multiple LP11U Battery Cabinets. Only one 7AH LP11U Battery Cabinet can be included in each system.

A maximum of two 14AH LP11U Battery Cabinets may be connected in a system without additional fusing.

Additional cabinets require user supplied 60A fusing.

GE Digital Energy™ LP11U Series PDU For 5-10kVA Single-Phase UPS

Basic PDU Frame

P/N	Description (Req'd for all versions)	5kVA	6kVA	8kVA	10kVA	List Price GO-AC21
PDU	PDU Frame	x	x	x	x	**$100.00**

Input Options[2]

	UPS Rating:	5kVA			6kVA			8kVA			10kVA			List Price
P/N	Description (choose 1)	Input V: 120V	208V	240V	120V	208V	240V	120V	208V	240V	120V	208V	240V	GO-AC21
I000	208/240V Input, No Input Cord		x	x		x	x		x	x		x	x	**$4.00**
I001	120V Input, No Input Cord	x			x			x			x			**$30.00**
I002	208/240V Input, 10/3 Input Cord & L6-30P Plug		x	x										**$75.00**
I003	208/240V Input, 8/3 Input Cord & 6-50P Plug		x	x		x	x		x	x				**$120.00**
I004	120V Input, 8/3 Input Cord & 5-50P Plugx												**$145.00**	

Output Options

	UPS Rating:	5kVA			6kVA			8kVA			10kVA			List Price
P/N	Description (choose 3)	Output V: 120V	208V	240V	120V	208V	240V	120V	208V	240V	120V	208V	240V	GO-AC21
0	Blank Cover Plate - Req'd for unused spaces	x	x	x	x	x	x	x	x	x	x	x	x	**$20.00**
1	5-20 Duplex, 120V, 20A (L-N-G)	x	x	x	x	x	x	x	x	x	x	x	x	**$70.00**
2	L5-15R, 120V, 15A (L-N-G)	x	x	x	x	x	x	x	x	x	x	x	x	**$95.00**
3	L5-20R, 120V, 20A (L-N-G)	x	x	x	x	x	x	x	x	x	x	x	x	**$100.00**
4	L5-30R, 120V, 30A (L-N-G)	x	x	x	x	x	x	x	x	x	x	x	x	**$115.00**
5	L6-15R, 208/240V, 15A (L1-L2-G)		x	x		x	x		x	x		x	x	**$65.00**
6	L6-20R, 208/240V, 20A (L1-L2-G)		x	x		x	x		x	x		x	x	**$135.00**
8	L6-30R, 208/240V, 30A (L1-L2-G)		x	x		x	x		x	x		x	x	**$150.00**
A	5-50R, 120V, 50A (L-N-G)	x			x				x	x	x	x	x	**$125.00**
B	L14-20R, 208/240V, 20A (L1-N-L2-G)		x	x		x	x		x	x		x	x	**$145.00**
C	L14-30R, 208/240V, 30A (L1-N-L2-G)		x	x		x	x			x		x	x	**$175.00**

Installation Options

P/N	Description (choose 1)	List Price GO-AC21
IA	Factory Installed	**$25.00**
RA	Field Installed[2]	**$5.00**

Example Product Number and Price:

PDU Frame		Input Option		Output Option 1		Output Option 2		Output Option 3		Inst. Option		List Price GO-AC21
PDU		1003		5		2		A		IA		
$100.00	+	**$120.00**	+	**$65.00**	+	**$95.00**	+	**$125.00**	+	**$25.00**	=	**$530.00**

[1]Input cords, if included, are eight feet long.

[2]Field installation cost is not included in the PDU price. Field installation must be performed by someone knowledgeable in UPS systems and electrical wiring.

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Digital Energy™ LP33U Series

Three-Phase 10 - 60 kVA

The Digital Energy™ LP33U Series is a robust, high-performance UPS system that provides power protection for a wide range of mission-critical applications. Every LP33U Series unit operates in a double conversion mode with true continuous on-line VFI (voltage and frequency independent) operation yielding maximum levels of power protection even under the toughest conditions. In addition, the LP33U UPS is a high efficiency design with low THD (total harmonic distortion) which takes up less space and is easy to install and service, especially in an office environment. Its robust design makes it suitable for traditional industrial applications as well.

To achieve redundancy or to increase power capacity, GE's unique Redundant Parallel Architecture (RPA) technology enables the LP33U Series to parallel up to four units in a flexible and cost effective manner. In the RPA system, every UPS is controlled in a true peer-to-peer configuration with redundancy in all critical elements and functions. This advanced technology provides the highest possible system reliability for mission critical applications eliminating any single points of failure associated with other types of UPS systems. The RPA system precisely synchronizes the output phase and automatically shares the load supported by each of the UPS.

Through their complete life cycle, every GE UPS system is fully supported by GE's Global Services team, which provides world-class, 24 x 7 preventive and corrective services, training and application expertise.

Features and Benefits

—High input power factor (.98) and low input distortion prevents disturbances to other electrical equipment, thus eliminating the need for costly filters or over-sized feeders
—Compact footprint, easily transportable, robustly designed system with low audible noise suitable for both office and industrial environments
—Utilizes high-frequency PWM (Pulse Width Modulation) IGBT digital control technique resulting in extremely low output distortion and fast transient response eliminating the need for over-sizing the UPS
—Intelligent Energy Management (ECO-mode) enables automatic energy savings under stable power conditions
—Redundant Parallel Architecture (RPA) increases system reliability by eliminating single points of failure without increasing overall system complexity
—Superior Battery Management (SBM) enhances battery lifetime resulting in reduced cost of operation
—Transformerless design for smaller footprint, less weight and better efficiency
—Robustly designed to handle short-circuit, high overload and over-heating conditions, thus reducing maintenance and service costs
—LP33U High Crest Factor (3:1) capability makes it ideal for computer loads while eliminating the need to oversize the UPS
—Very wide AC-input voltage capability minimizing the need to switch to batteries which results in increased battery life
—Integrated internal manual maintenance bypass reducing the need for external equipment
—Fully compliant with North American standards for VFI (UL, CUL 1778) operation providing full power protection for demanding critical applications
—Automatic start-up procedure and a user-friendly interface with multi-language capability simplifying UPS operation
—Every GE UPS can be monitored and managed via LAN, serial/modem connection or through the Internet
—UPS management software facilitating operation and maintenance of the UPS
—Three available slots for options such as: SNMP plug-in card, potential-free relay contacts, RPA and RS232/contact interface providing maximum flexibility
—Matching battery packs for expanded backup times

Digital Energy™ LP33U Series

Three-Phase 10 - 60 kVA

Technical Specifications-UL approved

Model Number	LP-33U-10	LP-33U-20	LP-33U-30	LP-33U-40	LP-33U-50	LP-33U-60
Power Rating						
Output Capacity	10kVA/8kW	20kVA/16kW	30kVA/24kW	40kVA/32kV	50kVA/45kW	60kVA/54kW
Power Factor						
Output Power Factor	0.8				.09	
Physical						
Weight w/o batteries (lbs.)	397	430	772	816	1015	
Dimensions (W x D x H) (in.) (UPS only)	22.7" x 30.7" x 51.6"		23.6" x 29.6" .71.7"		28.4 x 28.5" x 71.7"	
Input						
Input Voltage	120Y/208V					
Voltage Range	-25%/+20%		-20%/+15%		-15%/+10%	
Frequency	60Hz +/-10%					
Input THD	<8%		<10%		<10%	
Input Power Factor	.098 lagging					
Output						
Output Voltage	120Y/208V		120Y/208V		120Y/208V	
Frequency	50/60 Hz (+/- 1%)					
Crest Factor	>3:1					
Voltage Regulation						
–Static	+/-1%					
-100% Step Load	+/-1%					
Voltage Distortion						
-100% Linear Load	<2% THD					
-100% Non-Linear Load	<3% THD					
Overload Capability						
–Inverter	125% for 10 minutes; 150% for 1 minute					
–Bypass	200% for 2 minutes; 2000% for 1/2 cycle					
Battery						
Battery Type	Valve Regulated Lead Acid (VRLA)					
Float Voltage	328 VDC					
Min Discharge Voltage	236 VDC (programmable)					
General						
Audible Noise db(A)	50	55	61	62	65	65
Operating Tempature - UPS	32° to 104° F (0°–40°C)					
Operating Tempature – Battery	68° to 77°F (20°–25°C)					
Humidity	0–95%; non-condensing					
Safety Classifications & Listings	UL/cUL; UL 1778/C/EN50091/EN60850/IEC950/IEC62040/ISO9001					
EMI Classification	FCC Part 15; Class A					
Surge Protection	IEEE587-B/ANSI C62.41-B/IEC 1000-4					
Communications/Connectivity	RS-232; programmable alarm contacts; open collector outputs; SNMP (optional)					
Color	White (RAL 9003)					
Warranty	12 months from start-up					

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Digital Energy™ LP33U Series

Three-Phase 10 - 40 kVA

LP33U - 10kVA to 20kVA Three-Phase On-Line UPS

Description	Input Voltage	Output Voltage	Power Output	Standard Battery Run Time (mins.)	Dimensions (H x W x D, inches)	Weight (lbs.)	Product Number	List Price GO-AC17
LP10-33U Three-Phase, 10kVA, 208 V input, 208 V Output, 60 Hz, no batteries installed - used with optional extended battery cabinet	208V	208	10 kVA/ 8KW	0	51.6 x 22.3 x30.7		UPS301LP2240010	**$13520.00**
LP10-33U Three-Phase, 10kVA, 208 V input, 208 V Output, 60 Hz	208V	208	10 kVA/ 8KW	9	51.6 x 22.3 x30.7	640	UPS301LP2240011	**$14000.00**
LP10-33U Three-Phase, 10kVA, 208 V input, 208 V Output, 60 Hz	208V	208	10 kVA/ 8KW	22	51.6 x 22.3 x30.7	871	UPS301LP2240012	**$14648.00**
LP20-33U Three-Phase, 20kVA, 208 V input, 208 V Output, 60 Hz, no batteries installed - used with optional extended battery cabinet	208V	208	20 kVA/ 16KW	0	51.6 x 22.3 x30.7	430	UPS302LP2240010	**$17975.00**
LP20-33U Three-Phase, 20kVA, 208 V input, 208 V Output, 60 Hz	208V	208	20 kVA/ 16KW	9	51.6 x 22.3 x30.7	905	UPS302LP2240012	**$19140.00**

LP33U - 30kVA Three-Phase On-Line UPS

Description	Input Voltage	Output Voltage	Power Output	Standard Battery Run Time (mins.)	Dimensions (H x W x D, inches)	Weight (lbs.)	Product Number	List Price GO-AC17
4W input & output + Gnd, 60 Hz No internal batteries installed	208/120	208/120	30 kVA/24KW	0	40.6 x 29.9 x 17.7	816	UPS303LP2240010	**$25337.00**
4W input & output + Gnd, 60 Hz, Internal battery (10 min.)	208/120	208/120	30 kVA/24KW	10	40.6 x 29.9 x 17.7	1379	UPS303LP2240011	**$26970.00**
4W input & output + Gnd, 60 Hz, Internal battery (19 min.)	208/120	208/120	30 kVA/24KW	19	40.6 x 29.9 x 17.7	1665	UPS303LP2240012	**$27435.00**
4W input & output + Gnd, 60 Hz, Internal battery (25 min.)	208/120	208/120	30 kVA/24KW	25	40.6 x 29.9 x 17.7	1941	UPS303LP2240013	**$29667.00**
4W input & output + Gnd, 60 Hz No internal batteries installed	208/120	208/120	30 kVA/24KW	0	40.6 x 29.9 x 17.7	816	UPS303LP2240020	**$25914.00**
4W input & output + Gnd, 60 Hz, Internal battery (10 min.)	208/120	208/120	30 kVA/24KW	10	40.6 x 29.9 x 17.7	1379	UPS303LP2240021	**$27547.00**
4W input & output + Gnd, 60 Hz, Internal battery (19 min.)	208/120	208/120	30 kVA/24KW	19	40.6 x 29.9 x 17.7	1665	UPS303LP2240022	**$28012.00**
4W input & output + Gnd, 60 Hz, Internal battery (25 min.)	208/120	208/120	30 kVA/24KW	25	40.6 x 29.9 x 17.7	1941	UPS303LP2240023	**$30244.00**

LP33U - 40kVA Three-Phase On-Line UPS

Description	Input Voltage	Output Voltage	Power Output	Standard Battery Run Time (mins.)	Dimensions (H x W x D, inches)	Weight (lbs.)	Product Number	List Price GO-AC17
4W input & output + Gnd, 60 Hz No internal batteries installed	208/120	208/120	40 kVA/32KW	0	40.6 x 29.9 x 17.7	816	UPS304LP2240010	**$29710.00**
4W input & output + Gnd, 60 Hz, Internal battery (8 min.)	208/120	208/120	40 kVA/32KW	8	40.6 x 29.9 x 17.7	1379	UPS304LP2240011	**$30600.00**
4W input & output + Gnd, 60 Hz, Internal battery (12 min.)	208/120	208/120	40 kVA/32KW	12	40.6 x 29.9 x 17.7	1665	UPS304LP2240012	**$32010.00**
4W input & output + Gnd, 60 Hz, Internal battery (19 min.)	208/120	208/120	40 kVA/32KW	19	40.6 x 29.9 x 17.7	1941	UPS304LP2240013	**$33235.00**
4W input & output + Gnd, 60 Hz No internal batteries installed	208/120	208/120	40 kVA/32KW	0	40.6 x 29.9 x 17.7	816	UPS304LP2240020	**$30400.00**
4W input & output + Gnd, 60 Hz, Internal battery (8 min.)	208/120	208/120	40 kVA/32KW	8	40.6 x 29.9 x 17.7	1379	UPS304LP2240021	**$31295.00**
4W input & output + Gnd, 60 Hz, Internal battery (12 min.)	208/120	208/120	40 kVA/32KW	12	40.6 x 29.9 x 17.7	1665	UPS304LP2240022	**$32701.00**
4W input & output + Gnd, 60 Hz, Internal battery (19 min.)	208/120	208/120	40 kVA/32KW	19	40.6 x 29.9 x 17.7	1941	UPS304LP2240023	**$33925.00**

Digital Energy™ LP33U Series

Three-Phase 50 - 60 kVA

LP33U - 50kVA Three-Phase On-Line UPS

Description	Input Voltage	Output Voltage	Power Output	Standard Battery Run Time (mins.)	Dimensions (H x W x D, inches)	Weight (lbs.)	Product Number	List Price GO-AC17
4W input & output + Gnd, 60 Hz	208/120	208/120	50 kVA/45KW	0	28.3 x 28.5 x 77.2	1015	UPS305LP2240010	**$38200.00**
4W input & output + Gnd, 60 Hz, Internal battery (7 min.)	208/120	208/120	50 kVA/45KW	7	45.2 x 28.5 x 72.2	2148	UPS305LP2240012	**$46800.00**
4W input & output + Gnd, 60 Hz, Internal battery (9 min.)	208/120	208/120	50 kVA/45KW	9	45.2 x 28.5 x 72.2	2397	UPS305LP2240013	**$47850.00**
4W input & output + Gnd, 60 Hz, Internal battery (16 min.)	208/120	208/120	50 kVA/45KW	16	62.1 x 28.5 x 72.2	3282	UPS305LP2240014	**$55400.00**
4W input & output + Gnd, 60 Hz Internal battery (25 min.)	208/120	208/120	50 kVA/45KW	25	62.1 x 28.5 x 72.2	3779	UPS305LP2240015	**$57500.00**
4W input & output + Gnd, 60 Hz, Internal battery (29 min.)	208/120	208/120	50 kVA/45KW	29	79 x 28.5 x 72.2	4415	UPS305LP2240016	**$64000.00**
4W input & output + Gnd, 60 Hz, Internal battery (39 min.)	208/120	208/120	50 kVA/45KW	39	95.9 x 28.5 x 72.2	5548	UPS305LP2240017	**$72600.00**
4W input & output + Gnd, 60 Hz	208/120	208/120	50 kVA/45KW	0	28.3 x 28.5 x 77.2	1030	UPS305LP2240020	**$39100.00**
4W input & output + Gnd, 60 Hz, Internal battery (7 min.)	208/120	208/120	50 kVA/45KW	7	45.2 x 28.5 x 72.2	2163	UPS305LP2240022	**$47700.00**
4W input & output + Gnd, 60 Hz, Internal battery (9 min.)	208/120	208/120	50 kVA/45KW	9	45.2 x 28.5 x 72.2	2412	UPS305LP2240023	**$48750.00**
4W input & output + Gnd, 60 Hz, Internal battery (16 min.)	208/120	208/120	50 kVA/45KW	16	62.1 x 28.5 x 72.2	3297	UPS305LP2240024	**$56300.00**
4W input & output + Gnd, 60 Hz Internal battery (25 min.)	208/120	208/120	50 kVA/45KW	25	62.1 x 28.5 x 72.2	3794	UPS305LP2240025	**$58400.00**
4W input & output + Gnd, 60 Hz, Internal battery (29 min.)	208/120	208/120	50 kVA/45KW	29	79 x 28.5 x 72.2	4430	UPS305LP2240026	**$64900.00**
4W input & output + Gnd, 60 Hz, Internal battery (39 min.)	208/120	208/120	50 kVA/45KW	39	95.9 x 28.5 x 72.2	5563	UPS305LP2240027	**$73500.00**

LP33U - 60kVA Three-Phase On-Line UPS

Description	Input Voltage	Output Voltage	Power Output	Standard Battery Run Time (mins.)	Dimensions (H x W x D, inches)	Weight (lbs.)	Product Number	List Price GO-AC17
4W input & output + Gnd, 60 Hz	208/120	208/120	60 kVA/54KW	0	28.3 x 28.5 x 77.2	1015	UPS306LP2240010	**$40500.00**
4W input & output + Gnd, 60 Hz, Internal battery (8 min.)	208/120	208/120	60 kVA/54KW	8	45.2 x 28.5 x 72.2	2397	UPS306LP2240012	**$50150.00**
4W input & output + Gnd, 60 Hz, Internal battery (13 min.)	208/120	208/120	60 kVA/54KW	13	62.1 x 28.5 x 72.2	3282	UPS306LP2240013	**$57700.00**
4W input & output + Gnd, 60 Hz, Internal battery (19 min.)	208/120	208/120	60 kVA/54KW	19	62.1 x 28.5 x 72.2	3779	UPS306LP2240014	**$59800.00**
4W input & output + Gnd, 60 Hz Internal battery (23 min.)	208/120	208/120	60 kVA/54KW	23	79 x 28.5 x 72.2	4415	UPS306LP2240015	**$66300.00**
4W input & output + Gnd, 60 Hz, Internal battery (33 min.)	208/120	208/120	60 kVA/54KW	33	95.9 x 28.5 x 72.2	5548	UPS306LP2240016	**$74900.00**
4W input & output + Gnd, 60 Hz	208/120	208/120	60 kVA/54KW	0	28.3 x 28.5 x 77.2	1030	UPS306LP2240020	**$41600.00**
4W input & output + Gnd, 60 Hz, Internal battery (8 min.)	208/120	208/120	60 kVA/54KW	8	45.2 x 28.5 x 72.2	2412	UPS306LP2240022	**$51250.00**
4W input & output + Gnd, 60 Hz, Internal battery (13 min.)	208/120	208/120	60 kVA/54KW	13	62.1 x 28.5 x 72.2	3297	UPS306LP2240023	**$58800.00**
4W input & output + Gnd, 60 Hz, Internal battery (19 min.)	208/120	208/120	60 kVA/54KW	19	62.1 x 28.5 x 72.2	3794	UPS306LP2240024	**$60900.00**
4W input & output + Gnd, 60 Hz Internal battery (23 min.)	208/120	208/120	60 kVA/54KW	23	79 x 28.5 x 72.2	4430	UPS306LP2240025	**$67400.00**
4W input & output + Gnd, 60 Hz, Internal battery (33 min.)	208/120	208/120	60 kVA/54KW	33	95.9 x 28.5 x 72.2	5563	UPS306LP2240026	**$76000.00**

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Options and Accessories

Description	Product Number	List Price GO-AC21
RPA-Kit for LP33U (required for each UPS in a RPA system)[1]	UPS11626	**$1680.00**
SNMP interface plug-in card	UPS11701	**$650.00**
Extended customer interface card	UPS15822	**$370.00**
Additional battery charger	UPS16139	**$745.00**

[1]The RPA-kit contains the following items:
Bus-cable for communication between UPSs (2 meters),
Bus terminator, RPA plug-in card, Add-on electronic module, Thyristor module, Installation guide.

LP33U Series Commissioning and Warranties[1] (Single modules only)

Description	Product Number	kVA Rating 10kVA List Price GO-AC23	kVA Rating 20kVA List Price GO-AC23
LP33U Commissioning Service Level 1, 8AM to 5PM Mon/Fri	FSUSLP33xxxN	**$995.00**	**$995.00**
LP33U Commissioning Service Level 2, 5PM to 8AM Mon/Fri, anytime Saturday	FSUSLP33xxxP1	**$1423.00**	**$1423.00**
LP33U Commissioning Service Level 3, Sunday and Holidays	FSUSLP33xxxP2	**$1861.00**	**$1861.00**
LP33U PM Service. (sold during initial sale) Includes one PM visit at start of coverage (8-5, M-F). PM covers UPS and internal batteries only. Remedial parts/labor and battery replacement not provided.	PMLP33xxx	**$835.00**	**$835.00**
LP33U Extended Warranty Level 1 (sold during initial sale). Includes one PM visit at start of coverage and remedial parts/labor (8-5, M-F). Coverage includes internal batteries only.	WARLP33xxxE	**$1764.00**	**$1935.00**
LP33U Extended Warranty Level 2 (sold during initial sale). Includes one PM visit at start of coverage and remedial parts/labor (7x24, 12-hour response). Coverage includes internal batteries only.	FSLP33xxx	**$1960.00**	**$2150.00**

LP33U Series Commissioning and Warranties[1] (RPA systems)

Description	Product Number	Module kVA: 10kVA – 20kVA Module Qty: 2 List Price GO-AC23	Module kVA: 10kVA – 20kVA Additional Modules Each List Price GO-AC23
UPS Commissioning Service Level 1, 8AM to 5PM, Mon/Fri	FSUSLP33xxxNz	**$2985.00**	**$995.00**
UPS Commissioning Service Level 2, 5PM to 8AM Mon/Fri, anytime Saturday	FSUSLP33xxxP1z	**$4269.00**	**$1423.00**
UPS Commissioning Service Level 3, Sunday/Holidays	FSUSLP33xxxP2z	**$5583.00**	**$1861.00**

[1]Service pricing is not discountable.

"xxx" in the Product Number represents the UPS module kVA rating: '010' for 10kVA, '225' for 225kVA, etc.
"z" in the Product Number represents the total number of UPS modules in RPA systems.
UPS Commissioning by a GE-authorized Service Technician is required to initiate warranty coverage.
All equipment installation must be completed prior to commissioning (see Startup Checklist) and must be scheduled two weeks in advance.

LP33U Series 10kVA - Battery Cabinets (non-matching)

10 Year Pro-Rated Battery Warranty

Approximate Run Times (minutes) 100% Load[1]	Dimensions (H x W x D)	Breaker Configuration	Parallel Strings	Battery System Product Number	Battery System List Price GO-AC18
5	43" x 24" x 32.5"	1 x 50A	1	LP33L010PW11	**$3590.00**
10	43" x 24" x 32.5"	1 x 50A	1	LP33L010PW12	**$3900.00**
25	43" x 24" x 32.5"	1 x 50A	1	LP33L010PW1Y	**$4457.00**
35	43" x 24" x 32.5"	1 x 50A	1	LP33L010PW1R	**$5386.00**
40	43" x 40" x 32.5"	1 x 50A	1	LP33L010PW13	**$6110.00**
61	43" x 40" x 32.5"	1 x 50A	1	LP33L010PW1S	**$6533.00**
99	60" x 40" x 32.5"	1 x 50A	1	LP33L010PW1U	**$7968.00**
136	60" x 40" x 32.5"	1 x 50A	1	LP33L010PW1V	**$8453.00**

[1]0.8 pF

All run times listed above are based on the manufacturers published data, and do not include connector and wiring losses.
These run times are approxmate and are intended for use as a guide only. Consult factory for guarranteed run times.

All cabinets contain Flame Retardant Batteries.
288 Vdc Nominal - 144 cells - 1.67 Final Volts per Cell, except 1.75 Final Volts per Cell over 60 minutes.
Price above includes internally mounted circuit breaker(s) sized for the UPS at 100% load. See "Breaker Configuration" column in table above.
Each string, in multi-string systems, is individually fused.
An external, user supplied junction panel is required when multiple battery systems are to be connected to a single UPS.

These cabinets utilize batteries manufactured by Power Battery Company, Inc. and carry a standard 10-year, pro-rated warranty.
(Labor and freight not included.)

Optional 5-year, full replacement warranty does not include labor of freight. Total warranty period is 5-years.

LP33U Series 20kVA - Battery Cabinets (non-matching)

10 Year Pro-Rated Battery Warranty

Approximate Run Times (minutes) 100% Load[1]	Dimensions (H x W x D)	Breaker Configuration	Parallel Strings	Battery System Product Number	Battery System List Price GO-AC18
5	43" x 24" x 32.5"	1 x 100A	1	LP33L020PW1Y	**$4498.00**
15	43" x 40" x 32.5"	1 x 100A	1	LP33L020PW13	**$6151.00**
24	43" x 40" x 32.5"	1 x 100A	1	LP33L020PW1S	**$6574.00**
28	43" x 40" x 32.5"	1 x 100A	1	LP33L020PW1T	**$7870.00**
42	60" x 40" x 32.5"	1 x 100A	1	LP33L020PW1U	**$8009.00**
65	60" x 40" x 32.5"	1 x 100A	1	LP33L020PW1W	**$9470.00**
104	60" x 80" x 32.5"	1 x 100A	2	LP33L020PW2U	**$13793.00**
136	60" x 80" x 32.5"	1 x 100A	2	LP33L020PW2V	**$14767.00**

[1]0.8 pF

All run times listed above are based on the manufacturers published data, and do not include connector and wiring losses.
These run times are approxmate and are intended for use as a guide only. Consult factory for guarranteed run times.

All cabinets contain Flame Retardant Batteries.
288 Vdc Nominal - 144 cells - 1.67 Final Volts per Cell, except 1.75 Final Volts per Cell over 60 minutes.
Price above includes internally mounted circuit breaker(s) sized for the UPS at 100% load. See "Breaker Configuration" column in table above.
Each string, in multi-string systems, is individually fused.
An external, user supplied junction panel is required when multiple battery systems are to be connected to a single UPS.

These cabinets utilize batteries manufactured by Power Battery Company, Inc. and carry a standard 10-year, pro-rated warranty.
(Labor and freight not included.)

Optional 5-year, full replacement warranty does not include labor of freight. Total warranty period is 5-years.

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Digital Energy™ SG Series

10-150 kVA Three-Phase
225-300 kVA Three-Phase
400-500 kVA Three-Phase
750 kVA Three-Phase

The GE Digital Energy™ SG Series is one of the best performing and most reliable three-phase UPS systems providing critical power protection for a wide range of applications. Every SG Series system operates in a double conversion mode with true continuous on-line VFI (voltage and frequency independent) operation yielding the maximum levels of power reliability for all mission-critical processes. The Digital Energy™ SG Series was developed using GE's Design for Six Sigma methodology to ensure that the product fully meets customer requirements and expectations.

To achieve redundancy or to increase power capacity, the Digital Energy™ SG Series can parallel up to eight units using GE's unique Redundant Parallel Architecture (RPA) technology in a flexible and cost effective manner. In the RPA system, every UPS is controlled in a true peer-to-peer configuration with redundancy in all critical elements and functions. This advanced technology provides the highest possible system reliability for mission critical applications eliminating any single points of failure associated with other types of UPS systems. The RPA system precisely synchronizes the output phase and automatically shares the load supported by each UPS.

The GE UPS systems are designed with serviceability in mind. Any factory trained service provider can utilize GE's open architecture to perform diagnostics and maintenance without requiring any proprietary software or special interface equipment. The systems are fully supported by GE's Global Services team, which is renowned for its world-class, 24 x 7 preventive and corrective services, training, and application expertise.

10-150 kVA Three-Phase

225-300 kVA Three-Phase

400-750 kVA Three-Phase

Digital Energy™ SG Series

10-150 kVA Three-Phase
225-300 kVA Three-Phase
400-500 kVA Three-Phase
750 kVA Three-Phase

Available Options

—Additional battery systems for extended back up times
—Input 5th harmonic filter reduces the input distortion (input THD) to less than 7%; this option is integral to the UPS, no additional cabinet required
—Additional 11th harmonic filter on 400-750 kVA model to further reduce the input distortion (input THD) to 5%. This option is internal to the UPS, no additional cabinet required
—Additional input/output isolation and voltage adaptation transformers available for all kVA sizes and voltages
—External (full wrap-around) maintenance bypass; available in two or three breaker, panel mounted configurations; Kirk Key protection also available
—Remote status panel: Allows the UPS to be remotely monitored with an UPS panel incorporating indicator lights and alarms
—RPA kit: Any single UPS can be easily field-configured for Redundant Parallel Architecture
—SNMP card: This optional plug-in card allows the UPS to be managed using an existing network management system or with GE's exclusive UPS management software
—UPS monitoring and management software (10-750 kVA models)
—FCC filter for applications where FCC Class A, Part 15 compliance is required
—Three-wire input conversion kit (225-300 kVA & 400-750 kVA models)

Features and Benefits

—Extremely low output voltage distortion for even non-linear and 100% step loads reducing the need for over sizing the UPS
—Redundant Parallel Architecture (RPA) increases system reliability by eliminating single points of failure without increasing overall system complexity
—Utilizes SVM (Space Vector Modulation), an advanced PWM (Pulse Width Modulation) digital control technique, to modulate the inverter resulting in fast transient response with high efficiency
—Fully compliant with international standards on Voltage Frequency Independent (IEC 62040-3) operation providing full power protection for demanding critical applications
—Standard inverter output isolation transformer that isolates utility power from the load, thus providing additional critical power protection
—Superior Battery Management (SBM) enhances battery lifetime resulting in reduced cost of operation
—Intelligent Energy Management (IEM) automatically determines the most efficient mode of operation for the RPA system thus reducing overall operating costs
—Designed for serviceability with front service access reducing maintenance and repair costs
—Integrated internal manual maintenance bypass reducing the need for external equipment
—Automatic start-up procedure and a user-friendly interface simplifying UPS operation
—Designed with GE's Six Sigma methodology ensuring high product quality
—Casters and leveling feet easing installation procedure (10-150 kVA only)
—Every GE UPS can be monitored and managed via LAN, serial/modem connection or through the Internet

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Digital Energy™ SG Series

10-150 kVA Three-Phase

Technical Specifications-UL approved

Topology	True on-line, double conversion (VFI) with integral static switch and internal maintenance bypass
Technology	Advanced IGBT with SVM strategy, microprocessor controlled at optimal switching frequency
Operating Modes	True on-line double conversion, automatic bypass, frequency converter, RPA up to eight units

Output Power Rating kVA (at PF = 0.6 – 0.8 lag)	**10[1]**	**20[1]**	**30**	**40**	**50**	**80**	**100**	**120**	**150**
Output Power Rating (kW)	8	16	24	32	40	64	80	96	120
Dimensions WxDxH (inches)	27x32x71	27x32x71	27x32x71	27x32x71	32x32x71	32x32x71	47x32x71	47x32x71	47x32x71
Weight w/o Batteries (lbs)	735	763	970	1147	1257	1489	1929	2006	2160
Noise Level dB(A)	60	60	60	60	60	63	65	65	65
Overall Efficiency at 100% Load (Double Conversion Mode)	≤91%	≤91%	≤91%	≤91%	≤92.5%	≤92.5%	≤93.3%	≤93.3%	≤93.3%

Input Voltage (VAC)	3x480/277 + Neutral (-20% to +15% without battery discharge)
Input Frequency	60/50 Hz +/-10%
Output Voltage (sinusoidal) (VAC)	3x480/277 + Neutral
Output Frequency	60/50 Hz +/- 0.01%
Output THD at Linear Load	<2%
Output THD at Non-linear Load	<3%
Overload Capability on Inverter	125% 10 min., 150% 1 min.
Overload Capability on Automatic Bypass	200% 5 min., 110% continuously
Output Voltage Regulation	
Static	+/- 1%
0-100% Step Load	+/- 3% recovering to +/-1% in one cycle
Ambient Operating Temp.	32°-104°F (0°- 40°C)
Color	RAL 9010 (white)
Classifications and Listing	UL1778/IP20/NEMA-PE-1/ISO9001
RFI and Surge Protection	EN 50091-2 / IEC 62040-2 / IEEE 587 B / FCC Class A compliance[2]
Standard Connectivity	RS232; alarm contacts; programmable relays, SNMP (optional)
Warranty	12 months

[1]Units available with internal batteries.
[2]FCC Feature available as option.
Specifications subject to change without notice.

SG Series 10 kVA UPS (Three-Phase)

Description	Rating (0.8 pf)	Parallel Configuration	Input Voltage	Output Voltage	Dimensions (W x D X H)	Weight[3] (lbs.)	Product Number	List Price GO-AC17
10 kVA Three-Phase, 4W+G input & output, single module, 60 Hz	10 kVA	Single Module	277/480V	277/480V	27"x32"x71"	717	UPS001SG444AN00	**$17975.00**
10 kVA Three-Phase, 4W+G input & output, single module, 60 Hz, 14 minute internal battery	10 kVA	Single Module	277/480V	277/480V	27"x32"x71"	1837	UPSB01SG444AN00	**$22755.00**
10 kVA Three-Phase + EMI Filter (FCC Class A), 4W+G input and output, single module, 60 Hz	10 kVA	Single Module	277/480V	277/480V	27"x32"x71"	727	UPS001SG444AY00	**$19700.00**
10 kVA Three-Phase + EMI Filter (FCC Class A), 4W+G input and output, single module, 60 Hz, 14 minute internal battery	10 kVA	Single Module	277/480V	277/480V	27"x32"x71"	1847	UPSB01SG444AY00	**$24490.00**
10 kVA Three-Phase + EMI Filter (FCC Class A) + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	10 kVA	Single Module	277/480V	277/480V	27"x32"x71"	744	UPS001SG444AY50	**$20500.00**
10 kVA Three-Phase + EMI Filter (FCC Class A) + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz, 14 minute internal battery	10 kVA	Single Module	277/480V	277/480V	27"x32"x71"	1864	UPSB01SG444AY50	**$25240.00**
10 kVA Three-Phase + 5th Harmonic Filter , 4W+G input and output, single module, 60 Hz	10 kVA	Single Module	277/480V	277/480V	27"x32"x71"	734	UPS001SG444AN50	**$22180.00**
10 kVA Three-Phase + 5th Harmonic Filter , 4W+G input and output, single module, 60 Hz, 14 minute internal battery	10 kVA	Single Module	277/480V	277/480V	27"x32"x71"	1854	UPSB01SG444AN50	**$26975.00**

[3]Installed Weight. Note that shipping weight is higher.
Quotation must include cost for Commissioning Service (see SG Service).

SG Series 20-80 kVA UPS (Three-Phase)

Description	Rating (0.8 pf)	Parallel Configuration	Input Voltage	Output Voltage	Dimensions (W x D X H)	Weight[1] (lbs.)	Product Number	List Price GO-AC17
20 kVA Three-Phase, 4W+G input & output, single module, 60 Hz	20 kVA	Single Module	277/480V	277/480V	27"x32"x71"	745	UPS002SG444AN00	**$19825.00**
20 kVA Three-Phase, 4W+G input & output, single module, 60 Hz, 5 minute internal battery	20 kVA	Single Module	277/480V	277/480V	27"x32"x71"	1914	UPSB02SG444AN00	**$24615.00**
20 kVA Three-Phase + EMI Filter (FCC Class A), 4W+G input and output,single module, 60 Hz	20 kVA	Single Module	277/480V	277/480V	27"x32"x71"	755	UPS002SG444AY00	**$21310.00**
20 kVA Three-Phase + EMI Filter (FCC Class A), 4W+G input and output, single module, 60 Hz, 5 minute internal battery	20 kVA	Single Module	277/480V	277/480V	27"x32"x71"	1924	UPSB02SG444AY00	**$26105.00**
20 kVA Three-Phase + EMI Filter (FCC Class A) + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	20 kVA	Single Module	277/480V	277/480V	27"x32"x71"	773	UPS002SG444AY50	**$22925.00**
20 kVA Three-Phase + EMI Filter (FCC Class A) + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz, 5 minute internal battery	20 kVA	Single Module	277/480V	277/480V	27"x32"x71"	1942	UPSB02SG444AY50	**$27710.00**
20 kVA Three-Phase + 5th Harmonic Filter , 4W+G input and output, single module, 60 Hz	20 kVA	Single Module	277/480V	277/480V	27"x32"x71"	763	UPS002SG444AN50	**$24410.00**
20 kVA Three-Phase + 5th Harmonic Filter , 4W+G input and output, single module, 60 Hz, 5 minute internal battery	20 kVA	Single Module	277/480V	277/480V	27"x32"x71"	1932	UPSB02SG444AN50	**$29200.00**
30 kVA Three-Phase, 4W+G input & output, single module, 60 Hz	30 kVA	Single Module	277/480V	277/480V	27"x32"x71"	952	UPS003SG444AN00	**$23100.00**
30 kVA Three-Phase + EMI Filter (FCC Class A), 4W+G input and output, single module, 60 Hz	30 kVA	Single Module	277/480V	277/480V	27"x32"x71"	962	UPS003SG444AY00	**$24470.00**
30 kVA Three-Phase + EMI Filter (FCC Class A) + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	30 kVA	Single Module	277/480V	277/480V	27"x32"x71"	980	UPS003SG444AY50	**$25725.00**
30 kVA Three-Phase + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	30 kVA	Single Module	277/480V	277/480V	27"x32"x71"	970	UPS003SG444AN50	**$27090.00**
40 kVA Three-Phase, 4W +G input & output, single module, 60 Hz	40 kVA	Single Module	277/480V	277/480V	27"x32"x71"	1127	UPS004SG444AN00	**$27565.00**
40 kVA Three-Phase + EMI Filter (FCC Class A), 4W+G input and output, single module, 60 Hz	40 kVA	Single Module	277/480V	277/480V	27"x32"x71"	1137	UPS004SG444AY00	**$29110.00**
40 kVA Three-Phase + EMI Filter (FCC Class A) + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	40 kVA	Single Module	277/480V	277/480V	27"x32"x71"	1159	UPS004SG444AY50	**$30320.00**
40 kVA Three-Phase + 5th Harmonic Filter , 4W+G input and output, single module, 60 Hz	40 kVA	Single Module	277/480V	277/480V	27"x32"x71"	1147	UPS004SG444AN50	**$31875.00**
50 kVA Three-Phase, 4W+G input & output, single module, 60 Hz	50 kVA	Single Module	277/480V	277/480V	32"x32"x71"	1230	UPS005SG444AN00	**$28840.00**
50 kVA Three-Phase + EMI Filter (FCC Class A), 4W+G input and output, single module, 60 Hz	50 kVA	Single Module	277/480V	277/480V	32"x32"x71"	1240	UPS005SG444AY00	**$30500.00**
50 kVA Three-Phase + EMI Filter (FCC Class A) + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	50 kVA	Single Module	277/480V	277/480V	32"x32"x71"	1267	UPS005SG444AY50	**$32960.00**
50 kVA Three-Phase + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	50 kVA	Single Module	277/480V	277/480V	32"x32"x71"	1257	UPS005SG444AN50	**$34610.00**
80 kVA Three-Phase, 4W+G input & output, single module, 60 Hz	80 kVA	Single Module	277/480V	277/480V	32"x32"x71"	1466	UPS008SG444AN00	**$32960.00**
80 kVA Three-Phase + EMI Filter (FCC Class A), 4W+G input and output, single module, 60 Hz	80 kVA	Single Module	277/480V	277/480V	32"x32"x71"	1476	UPS008SG444AY00	**$34610.00**
80 kVA Three-Phase + EMI Filter (FCC Class A) + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	80 kVA	Single Module	277/480V	277/480V	32"x32"x71"	1498	UPS008SG444AY50	**$37080.00**
80 kVA Three-Phase + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	80 kVA	Single Module	277/480V	277/480V	32"x32"x71"	1488	UPS008SG444AN50	**$38730.00**

[1]Installed Weight. Note that shipping weight is higher.
Quotation must include cost for Commissioning Service (see SG Service).

Publications and Reference: See Section 22 for a complete list of additional product-related publications

SG Series 100-150 kVA UPS (Three-Phase)

Description	Rating (0.8 pf)	Parallel Configuration	Input Voltage	Output Voltage	Dimensions (W x D X H)	Weight[1] (lbs.)	Product Number	List Price (USD) GO-AC17
100 kVA Three-Phase, 4W+G input & output, single module, 60 Hz	100 kVA	Single Module	277/480V	277/480V	47"x32"x71"	1896	UPS010SG444AN00	**$33990.00**
100 kVA Three-Phase + EMI Filter, 4W+G input and output, single module, 60 Hz	100 kVA	Single Module	277/480V	277/480V	47"x32"x71"	1906	UPS010SG444AY00	**$37080.00**
100 kVA Three-Phase + EMI Filter + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	100 kVA	Single Module	277/480V	277/480V	47"x32"x71"	1939	UPS010SG444AY50	**$39655.00**
100 kVA Three-Phase + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	100 kVA	Single Module	277/480V	277/480V	47"x32"x71"	1929	UPS010SG444AN50	**$42745.00**
120 kVA Three-Phase, 4W+G input & output, single module, 60 Hz	120 kVA	Single Module	277/480V	277/480V	47"x32"x71"	1973	UPS012SG444AN00	**$38160.00**
120 kVA Three-Phase + EMI Filter, 4W+G input and output, single module, 60 Hz	120 kVA	Single Module	277/480V	277/480V	47"x32"x71"	1983	UPS012SG444AY00	**$41870.00**
120 kVA Three-Phase + EMI Filter (FCC Class A) + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	120 kVA	Single Module	277/480V	277/480V	47"x32"x71"	2017	UPS012SG444AY50	**$42930.00**
120 kVA Three-Phase + 5th Harmonic Filter , 4W+G input and output, single module, 60 Hz	120 kVA	Single Module	277/480V	277/480V	47"x32"x71"	2007	UPS012SG444AN50	**$46640.00**
150 kVA Three-Phase, 4W+G input & output, single module, 60 Hz	150 kVA	Single Module	277/480V	277/480V	47"x32"x71"	2128	UPS015SG444AN00	**$45320.00**
150 kVA Three-Phase + EMI Filter (FCC Class A), 4W+G input and output, single module, 60 Hz	150 kVA	Single Module	277/480V	277/480V	47"x32"x71"	2138	UPS015SG444AY00	**$49440.00**
150 kVA Three-Phase + EMI Filter (FCC Class A) + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	150 kVA	Single Module	277/480V	277/480V	47"x32"x71"	2181	UPS015SG444AY50	**$49955.00**
150 kVA Three-Phase + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	150 kVA	Single Module	277/480V	277/480V	47"x32"x71"	2161	UPS015SG444AN50	**$54075.00**

[1]Installed Weight. Note that shipping weight is higher.
Quotation must include cost for Commissioning Service (see SG Service).

Digital Energy™ SG Series

10-150 kVA Three-Phase

Battery Cabinets

SG Series 10 kVA - Battery Cabinets (matching)

10 Year Pro-Rated Battery Warranty

Approximate Run Times (minutes)			Dimensions	Weight	Battery System	List Price	Breaker	Parallel	Castor Kit	List Adder
50% Load[1]	75% Load[1]	100% Load[1]	(H x W x D)	(lbs.)	Product Number	GO-AC18	Config.	Strings	P/N Suffix	GO-AC18
105	61	42	71.3"x 27"x 31.9"	1255	SGA010-1-07-N	**$6545.00**	1 x 30A	1	C	**$720.00**
182	105	72	71.3"x 27"x 31.9"	1566	SGA010-1-01-N	**$8487.00**	1 x 30A	1	C	**$720.00**
303	181	127	71.3"x 27"x 31.9"	1917	SGA010-1-08-N	**$9815.00**	1 x 30A	1	C	**$720.00**

SG Series 20 kVA - Battery Cabinets (matching)

10 Year Pro-Rated Battery Warranty

Approximate Run Times (minutes)			Dimensions	Weight	Battery System	List Price	Breaker	Parallel	Castor Kit	List Adder
50% Load[1]	75% Load[1]	100% Load[1]	(H x W x D)	(lbs.)	Product Number	GO-AC18	Config.	Strings	P/N Suffix	GO-AC18
42	23	14	71.3"x 27"x 31.9"	1250	SGA020-1-07-N	**$6599.00**	1 x 50A	1	C	**$720.00**
73	43	29	71.3"x 27"x 31.9"	1566	SGA020-1-01-N	**$8542.00**	1 x 50A	1	C	**$720.00**
150	88	60	71.3"x 27"x 31.9"	2663	SGA020-1-02-N	**$11308.00**	1 x 50A	1	C	**$720.00**
215	128	85	71.3"x 27"x 31.9"	3067	SGA020-1-03-N	**$12180.00**	1 x 50A	1	C	**$720.00**

SG Series 30 kVA - Battery Cabinets (matching)

10 Year Pro-Rated Battery Warranty

Approximate Run Times (minutes)			Dimensions	Weight	Battery System	List Price	Breaker	Parallel	Castor Kit	List Adder
50% Load[1]	75% Load[1]	100% Load[1]	(H x W x D)	(lbs.)	Product Number	GO-AC18	Config.	Strings	P/N Suffix	GO-AC18
23	11	7	71.3"x 27"x 31.9"	1255	SGA030-1-07-N	**$6599.00**	1 x 80A	1	C	**720.00**
43	26	17	71.3"x 27"x 31.9"	1566	SGA030-1-01-N	**$8542.00**	1 x 80A	1	C	**$720.00**
72	43	29	71.3"x 27"x 31.9"	1917	SGA030-1-08-N	**$9870.00**	1 x 80A	1	C	**$720.00**
130	74	54	71.3"x 27"x 31.9"	3528	SGA030-1-03-N	**$12180.00**	1 x 80A	1	C	**$1037.00**
277	172	107	71.3"x 27"x 31.9"	4679	SGA030-1-06-N	**$19900.00**	1 x 80A	1	C	**$1282.00**

SG Series 40kVA - Battery Cabinets (matching)

10 Year Pro-Rated Battery Warranty

Approximate Run Times (minutes)			Dimensions	Weight	Battery System	List Price	Breaker	Parallel	Castor Kit	List Adder
50% Load[1]	75% Load[1]	100% Load[1]	(H x W x D)	(lbs.)	Product Number	GO-AC18	Config.	Strings	P/N Suffix	GO-AC18
29	17	11	71.3"x 27"x 31.9"	1566	SGA040-1-01-N	**$8770.00**	1 x 100A	1	C	**$720.00**
50	29	20	71.3"x 27"x 31.9"	1917	SGA040-1-08-N	**$10090.00**	1 x 100A	1	C	**$720.00**
61	35	23	71.3"x 27"x 31.9"	2663	SGA040-1-02-N	**$11552.00**	1 x 100A	1	C	**$720.00**
86	54	38	71.3"x 27"x 31.9"	3067	SGA040-1-03-N	**$12440.00**	1 x 100A	1	C	**$1037.00**
138	79	55	71.3"x 44"x 31.9"	4679	SGA040-1-05-N	**$15720.00**	1 x 100A	1	C	**$1037.00**

SG Series 50kVA - Battery Cabinets (matching)

10 Year Pro-Rated Battery Warranty

Approximate Run Times (minutes)			Dimensions	Weight	Battery System	List Price	Breaker	Parallel	Castor Kit	List Adder
50% Load[1]	75% Load[1]	100% Load[1]	(H x W x D)	(lbs.)	Product Number	GO-AC18	Config.	Strings	P/N Suffix	GO-AC18
23	13	8	71.3"x 27"x 31.9"	1566	SGA050-1-01-N	**$9108.00**	1 x 125A	1	C	**$720.00**
38	22	14	71.3"x 27"x 31.9"	1917	SGA050-1-08-N	**$10435.00**	1 x 125A	1	C	**$720.00**
65	42	29	71.3"x 27"x 31.9"	3067	SGA050-1-03-N	**$12745.00**	1 x 125A	1	C	**$1037.00**
150	77	61	71.3"x 44"x 31.9"	4679	SGA050-1-06-N	**$20465.00**	1 x 125A	1	C	**$1282.00**

[1]0.8 pF

All run times listed above are based on the manufacturer's published data, and do not include connector and wiring losses.
These run times are approximate and are intended for use as a guide only. Consult factory for guaranteed run times.

All cabinets contain Flame Retardant Batteries.
480 Vdc Nominal - 240 cells - 1.67 Final Volts per Cell, except 1.75 Final Volts per Cell over 60 minutes.
Prices above include internally mounted circuit breaker(s) sized for the UPS at 100% load. See "Breaker Configuration" column in tables above.
An external, user supplied junction panel is required when multiple battery systems are to be connected to a single UPS.
Each string, in multi-string systems, is individually fused.

Publications and Reference: See Section 22 for a complete list of additional product-related publications

SG Series 80kVA - Battery Cabinets (matching)

10 Year Pro-Rated Battery Warranty

Approximate Run Times (minutes)			Dimensions	Weight	Battery System	List Price	Breaker	Parallel	Castor Kit	List Adder
50% Load[1]	75% Load[1]	100% Load[1]	(H x W x D)	(lbs.)	Product Number	GO-AC18	Config.	Strings	P/N Suffix	GO-AC18
20	11	5	71.3"x 27"x 31.5"	1917	SGA080-1-08-N	**$10450.00**	1 x 200A	1	C	**$720.00**
39	22	15	71.3"x 27"x 31.5"	3067	SGA080-1-03-N	**$12760.00**	1 x 200A	1	C	**$1037.00**
70	49	33	71.3"x 44"x 31.5"	4679	SGA080-1-06-N	**$20480.00**	1 x 200A	1	C	**$1282.00**
139	79	55	71.3"x 88"x 31.5"	7864	SGA080-2-05-N	**$30663.00**	1 x 200A	2	C	**$2074.00**
232	139	93	71.3 x 132"x 31.5"	11796	SGA080-3-05-N	**$43350.00**	1 x 200A	3	C	**$3110.00**

SG Series 100kVA - Battery Cabinets (matching)

10 Year Pro-Rated Battery Warranty

Approximate Run Times (minutes)			Dimensions	Weight	Battery System	List Price	Breaker	Parallel	Castor Kit	List Adder
50% Load[1]	75% Load[1]	100% Load[1]	(H x W x D)	(lbs.)	Product Number	GO-AC18	Config.	Strings	P/N Suffix	GO-AC18
29	16	10	71.3"x 27"x 31.5"	3067	SGA100-1-03-N	**$12842.00**	1 x 250A	1	C	**$1037.00**
41	24	16	71.3"x 44"x 31.5"	3932	SGB100-1-05-N	**$16063.00**	1 x 250A	1	C	**$1037.00**
61	36	25	71.3"x 44"x 31.5"	4679	SGB100-1-06-N	**$20562.00**	1 x 250A	1	C	**$1282.00**
149	76	61	71.3"x 88"x 31.5"	9358	SGB100-2-06-N	**$39744.00**	1 x 250A	2	C	**$2563.00**
257	149	93	71.3"x 132"x 31.5"	14037	SGB100-3-06-N	**$58926.00**	1 x 250A	3	C	**$3845.00**

SG Series 120kVA - Battery Cabinets (matching)

Pro-Rated Battery Warranty

Approximate Run Times (minutes)			Dimensions	Weight	Battery System	List Price	Breaker	Parallel	Castor Kit	List Adder
50% Load[1]	75% Load[1]	100% Load[1]	(H x W x D)	(lbs.)	Product Number	GO-AC18	Config.	Strings	P/N Suffix	GO-AC18
22	12	6	71.3"x 27"x 31.5"	3067	SGA120-1-03-N	**$13188.00**	1 x 300A	1	C	**$1037.00**
32	18	12	71.3"x 44"x 31.5"	3932	SGB120-1-05-N	**$16340.00**	1 x 300A	1	C	**$1037.00**
49	28	19	71.3"x 44"x 31.5"	4679	SGB120-1-06-N	**$20838.00**	1 x 300A	1	C	**$1282.00**
139	79	55	71.3"x 132"x 31.5"	11796	SGB120-3-05-N	**$45706.00**	1 x 300A	3	C	**$2074.00**
200	120	79	71.3"x 176"x 31.5"	15728	SGB120-4-05-N	**$60390.00**	1 x 300A	4	C	**$2074.00**
279	173	109	71.3"x 176"x 31.5"	18716	SGB120-4-06-N	**$78384.00**	1 x 300A	4	C	**$3845.00**

SG Series 150kVA - Battery Cabinets (matching)

10 Year Pro-Rated Battery Warranty

Approximate Run Times (minutes)			Dimensions	Weight	Battery System	List Price	Breaker	Parallel	Castor Kit	List Adder
50% Load[1]	75% Load[1]	100% Load[1]	(H x W x D)	(lbs.)	Product Number	GO-AC18	Config.	Strings	P/N Suffix	GO-AC18
19	10	5	71.3"x 27"x 31.5"	3528	SGA150-1-04-N	**$14442.00**	1 x 400A	1	C	**$1037.00**
24	13	7	71.3"x 44"x 31.5"	3932	SGB150-1-05-N	**$16564.00**	1 x 400A	1	C	**$1037.00**
36	21	14	71.3"x 44"x 31.5"	4679	SGB150-1-06-N	**$20965.00**	1 x 400A	1	C	**$1282.00**
59	35	24	71.3"x 88"x 31.5"	7864	SGB150-2-05-N	**$30928.00**	1 x 400A	2	C	**$2074.00**
148	76	60	71.3"x 132"x 31.5"	14037	SGB150-3-06-N	**$58495.00**	1 x 400A	3	C	**$3845.00**
217	125	76	71.3"x 176"x 31.5"	18716	SGB150-4-06-N	**$77260.00**	1 x 400A	4	C	**$5126.00**

[1]0.8 pF

All run times listed above are based on the manufacturer's published data, and do not include connector and wiring losses.
These run times are approximate and are intended for use as a guide only. Consult factory for guaranteed run times.

All cabinets contain Flame Retardant Batteries.
480 Vdc Nominal - 240 cells - 1.67 Final Volts per Cell, except 1.75 Final Volts per Cell over 60 minutes.
Prices above include internally mounted circuit breaker(s) sized for the UPS at 100% load. See "Breaker Configuration" column in tables above.

An external, user supplied junction panel is required when multiple battery systems are to be connected to a single UPS.
Each string, in multi-string systems, is individually fused.

SG Series 10-20 kVA Input / Output Transformers (non-matching)

			Voltage Rating	kVA Rating	Dimensions (inches) Height	Width	Depth	Weight (lbs)	Product Number	List Price GO-AC20
10 kVA Input	Non Shielded	Aluminum Windings	208 Δ-480 Y	30	32.25	24	18.07	300	U9T83B3802	**$2031.00**
			480 Δ-480 Y	30	32.25	24	18.07	300	U9T83B3852	**$2499.00**
10 kVA Output	Non Shielded	Aluminum Windings	480 Δ-208 Y	15	32.25	24	18.07	300	U9T83B3872	**$1416.00**
			480 Δ-480 Y	15	32.25	24	18.07	300	U9T83B3852	**$2499.00**
20 kVA Input	Non Shielded	Aluminum Windings	208 Δ-480 Y	45	32.25	24	18.07	365	U9T83B3803	**$2178.00**
			480 Δ-480 Y	45	32.25	24	18.07	365	U9T83B3853	**$2192.00**
20 kVA Output	Non Shielded	Aluminum Windings	480 Δ-208 Y	30	32.25	24	18.07	300	U9T83B3872	**$1416.00**
			480 Δ-480 Y	30	32.25	24	18.07	300	U9T83B3852	**$2499.00**

SG Series 30-40 kVA Input / Output Transformers (non-matching)

			Voltage Rating	kVA Rating	Dimensions (inches) Height	Width	Depth	Weight (lbs)	Product Number	List Price GO-AC20
30 kVA Input	Non Shielded	Aluminum Windings	208 Δ-480 Y	75	35.75	32	23.69	505	U9T83B3804	**$2817.00**
			480 Δ-480 Y	75	35.75	32	23.69	505	U9T84B3854	**$3385.00**
30 kVA Output	Non Shielded	Aluminum Windings	480 Δ-208 Y	45	32.25	24	18.07	365	U9T83B3873	**$1753.00**
			480 Δ-480 Y	45	32.25	24	18.07	365	U9T83B3853	**$2192.00**
40 kVA Input	Non Shielded	Aluminum Windings	208 Δ-480 Y	75	35.75	32	23.69	505	U9T83B3804	**$2817.00**
			480 Δ-480 Y	75	35.75	32	23.69	505	U9T84B3854	**$3385.00**
40 kVA Output	Non Shielded	Aluminum Windings	480 Δ-208 Y	75	35.75	32	23.69	505	U9T83B3874	**$2499.00**
			480 Δ-480 Y	75	35.75	32	23.69	505	U9T84B3854	**$3385.00**

SG Series 50-80 kVA Input / Output Transformers (non-matching)

			Voltage Rating	kVA Rating	Dimensions (inches) Height	Width	Depth	Weight (lbs)	Product Number	List Price GO-AC20
50 kVA Input	Non Shielded	Aluminum Windings	208 Δ-480 Y	75	35.75	32	23.69	505	U9T83B3804	**$2817.00**
			480 Δ-480 Y	75	35.75	32	23.69	505	U9T84B3854	**$3385.00**
50 kVA Output	Non Shielded	Aluminum Windings	480 Δ-208 Y	75	35.75	32	23.69	505	U9T83B3874	**$2499.00**
			480 Δ-480 Y	75	35.75	32	23.69	505	U9T84B3854	**$3385.00**
80 kVA Input	Non Shielded	Aluminum Windings	208 Δ-480 Y	150	46	35	23.69	775	U9T83B3806	**$4667.00**
			480 Δ-480 Y	150	46	35	23.69	775	U9T83B3836	**$2896.00**
80 kVA Output	Non Shielded	Aluminum Windings	480 Δ-208 Y	150	46	35	23.69	775	U9T83B3876	**$4003.00**
			480 Δ-480 Y	150	46	35	23.69	775	U9T83B3856	**$2896.00**

SG Series 100-120 kVA Input / Output Transformers (non-matching)

			Voltage Rating	kVA Rating	Dimensions (inches) Height	Width	Depth	Weight (lbs)	Product Number	List Price GO-AC20
100 kVA Input	Non Shielded	Aluminum Windings	208 Δ-480 Y	150	46	35	23.69	775	U9T83B3806	**$4667.00**
			480 Δ-480 Y	150	46	35	23.69	775	U9T83B3856	**$2896.00**
100 kVA Output	Non Shielded	Aluminum Windings	480 Δ-208 Y	150	46	35	23.69	775	U9T83B3876	**$4003.00**
			480 Δ-480 Y	150	46	35	23.69	775	U9T83B3856	**$2896.00**
120 kVA Input	Non Shielded	Aluminum Windings	208 Δ-480 Y	225	48	38.5	28.94	1030	U9T83B3807	**$5246.00**
			480 Δ-480 Y	225	48	38.5	28.94	1030	U9T83B3857	**$3849.00**
120 kVA Output	Non Shielded	Aluminum Windings	480 Δ-208 Y	225	48	38.5	28.94	1030	U9T83B3877	**$5107.00**
			480 Δ-480 Y	225	48	38.5	28.94	1030	U9T83B3857	**$3849.00**

SG Series 150 kVA Input / Output Transformers (non-matching)

			Voltage Rating	kVA Rating	Dimensions (inches) Height	Width	Depth	Weight (lbs)	Product Number	List Price GO-AC20
150 kVA Input	Non Shielded	Aluminum Windings	208 Δ-480 Y	225	48	38.5	28.94	1030	U9T83B3807	**$5246.00**
			480 Δ-480 Y	225	48	38.5	28.94	1030	U9T83B3857	**$3849.00**
150 kVA Output	Non Shielded	Aluminum Windings	208 Δ-480 Y	225	48	38.5	28.94	1030	U9T83B3877	**$5107.00**
			480 Δ-480 Y	225	48	38.5	28.94	1030	U9T83B3857	**$3849.00**

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Digital Energy™ SG Series

10-150 kVA Three-Phase

Bypass Panels

SG Series 10-150 kVA External Bypass Panels (non-matching)

Stand-alone, single module systems

UPS Rating	Breaker Configuration	Key Interlocks	Interrupt Rating	Dimensions (inches) Height	Width	Depth	Weight[1] (lbs.)	Product Number	List Price GO-AC19
10 kVA	2-breaker	No	14kAIC	49.38	31	11.5	178	GS20015-00000-A0S	**$2330.00**
	3-breaker	No	14kAIC	65.88	31	11.5	280	GS20015-10025-A0S	**$3190.00**
	2-breaker	Yes	14kAIC	57.63	31	14	260	GS20015-00000-A1S	**$5215.00**
	3-breaker	Yes	14kAIC	78.25	31	14	382	GS20015-10025-A1S	**$6370.00**
	2-breaker	No	65kAIC	49.38	31	11.5	178	GS20015-00000-A0H	**$2740.00**
	3-breaker	No	65kAIC	65.88	31	11.5	280	GS20015-10025-A0H	**$3925.00**
	2-breaker	Yes	65kAIC	57.63	31	14	260	GS20015-00000-A1H	**$5705.00**
	3-breaker	Yes	65kAIC	78.25	31	14	382	GS20015-10025-A1H	**$7105.00**
20 kVA	2-breaker	No	14kAIC	49.38	31	11.5	178	GS20030-00000-A0S	**$2330.00**
	3-breaker	No	14kAIC	65.88	31	11.5	280	GS20030-10050-A0S	**$3190.00**
	2-breaker	Yes	14kAIC	57.63	31	14	260	GS20030-00000-A1S	**$5215.00**
	3-breaker	Yes	14kAIC	78.25	31	14	382	GS20030-10050-A1S	**$6370.00**
	2-breaker	No	65kAIC	49.38	31	11.5	178	GS20030-00000-A0H	**$2740.00**
	3-breaker	No	65kAIC	65.88	31	11.5	280	GS20030-10050-A0H	**$3925.00**
	2-breaker	Yes	65kAIC	57.63	31	14	260	GS20030-00000-A1H	**$5705.00**
	3-breaker	Yes	65kAIC	78.25	31	14	382	GS20030-10050-A1H	**$7105.00**
30 kVA	2-breaker	No	14kAIC	49.38	31	11.5	178	GS20050-00000-A0S	**$2330.00**
	3-breaker	No	14kAIC	65.88	31	11.5	280	GS20050-10070-A0S	**$3230.00**
	2-breaker	Yes	14kAIC	57.63	31	14	260	GS20050-00000-A1S	**$5215.00**
	3-breaker	Yes	14kAIC	78.25	31	14	382	GS20050-10070-A1S	**$6410.00**
	2-breaker	No	65kAIC	49.38	31	11.5	178	GS20050-00000-A0H	**$2740.00**
	3-breaker	No	65kAIC	65.88	31	11.5	280	GS20050-10070-A0H	**$3995.00**
	2-breaker	Yes	65kAIC	57.63	31	14	260	GS20050-00000-A1H	**$5705.00**
	3-breaker	Yes	65kAIC	78.25	31	14	382	GS20050-10070-A1H	**$7175.00**
40 kVA	2-breaker	No	14kAIC	49.38	31	11.5	178	GS20060-00000-A0S	**$2330.00**
	3-breaker	No	14kAIC	65.88	31	11.5	280	GS20060-10080-A0S	**$3230.00**
	2-breaker	Yes	14kAIC	57.63	31	14	260	GS20060-00000-A1S	**$5215.00**
	3-breaker	Yes	14kAIC	78.25	31	14	382	GS20060-10080-A1S	**$6410.00**
	2-breaker	No	65kAIC	49.38	31	11.5	178	GS20060-00000-A0H	**$2740.00**
	3-breaker	No	65kAIC	65.88	31	11.5	280	GS20060-10080-A0H	**$3995.00**
	2-breaker	Yes	65kAIC	57.63	31	14	260	GS20060-00000-A1H	**$5705.00**
	3-breaker	Yes	65kAIC	78.25	31	14	382	GS20060-10080-A1H	**$7175.00**
50 kVA	2-breaker	No	35kAIC	49.38	31	11.5	178	GS20080-00000-A0S	**$2860.00**
	3-breaker	No	35kAIC	65.88	31	11.5	280	GS20080-10125-A0S	**$4590.00**
	2-breaker	Yes	35kAIC	57.63	31	14	260	GS20080-00000-A1S	**$5580.00**
	3-breaker	Yes	35kAIC	78.25	31	14	382	GS20080-10125-A1S	**$7310.00**
80 kVA	2-breaker	No	35kAIC	49.38	31	11.5	178	GS20125-00000-A0S	**$4200.00**
	3-breaker	No	35kAIC	65.88	31	11.5	280	GS20125-10175-A0S	**$5190.00**
	2-breaker	Yes	35kAIC	57.63	31	14	260	GS20125-00000-A1S	**$6745.00**
	3-breaker	Yes	35kAIC	78.25	31	14	382	GS20125-10175-A1S	**$7915.00**
100 kVA	2-breaker	No	35kAIC	49.38	31	11.5	178	GS20150-00000-A0S	**$4200.00**
	3-breaker	No	35kAIC	65.88	31	11.5	280	GS20150-10200-A0S	**$5190.00**
	2-breaker	Yes	35kAIC	57.63	31	14	260	GS20150-00000-A1S	**$6745.00**
	3-breaker	Yes	35kAIC	78.25	31	14	382	GS20150-10200-A1S	**$7915.00**
120 kVA	2-breaker	No	35kAIC	49.38	31	11.5	178	GS20200-00000-A0S	**$2900.00**
	3-breaker	No	35kAIC	65.88	31	11.5	280	GS20200-10250-A0S	**$4375.00**
	2-breaker	Yes	35kAIC	57.63	31	14	260	GS20200-00000-A1S	**$5875.00**
	3-breaker	Yes	35kAIC	78.25	31	14	382	GS20200-10250-A1S	**$7555.00**
150 kVA	2-breaker	No	35kAIC	49.38	40	11.5	221	GS20250-00000-A0S	**$3170.00**
	3-breaker	No	35kAIC	70	40	11.5	405	GS20250-10300-A0S	**$5040.00**
	2-breaker	Yes	35kAIC	61.75	40	14	290	GS20250-00000-A1S	**$6200.00**
	3-breaker	Yes	35kAIC	86.5	40	14	500	GS20250-10300-A1S	**$8110.00**

[1]Installed Weight. Note that shipping weight is higher.

Digital Energy™ SG Series

225-300 kVA Three-Phase

Technical Specifications-UL approved

Topology	True on-line, double conversion (VFI) with integral static switch and internal maintenance bypass
Technology	Advanced IGBT with SVM strategy, microprocessor and DSP controlled at optimal switching frequency
Operating Modes	True on-line double conversion, automatic bypass, frequency converter, RPA up to eight units

Output Power Rating kVA (at PF=0.6–0.8 lag)	**225**	**300**
Output Power Rating (kW)	180	240
Weight w/o Batteries (lbs)	2756	3087
Dimensions WxDxH (inches)	65x32x71	
Noise Level dB(A)	<65 dB	
Input Voltage (VAC)	3x480/277 + Neutral (-20% to +15% without battery discharge)	
Input Frequency	60/50 Hz +/-10%	
Output Voltage (sinusoidal) (VAC)	3x480/277 + Neutral	
Output Frequency	60/50 Hz +/-0.01%	
Output THD at Linear Load	<2%	
Output THD at Non-linear Load	<3%	
Crest Factor	3:1	
Overload Capability on Inverter	125% 10 min., 150% 1 min.	
Overload Capability on Automatic Bypass	200% 5 min., 110% continuously	
Output Voltage Regulation		
Static	+/- 1%	
0-100% Step Load	+/- 3%	
Overall Efficiency at 100% Load	93%	
Ambient Operating Temperature	32°-104°F (0°-40°C)	
Color	RAL 9003 (white)	
Classifications and Listing	UL1778/IP20/NEMA-PE-1/ISO9001	
RFI and Surge Protection	EN 50091-2 / IEC 62040-2 / IEEE 587 B / FCC Class A compliance[1]	
Standard Connectivity	RS232; programmable alarm contacts; SNMP (optional)	
Warranty	12 months	

[1]FCC compliance feature available as an option.
Specifications subject to change without notice.

SG Series 225-300 kVA UPS (Three-Phase)

Description	Rating (0.8 pf)	Parallel Configuration	Input Voltage	Output Voltage	Dimensions (W x D X H)	Weight[2] (lbs.)	Product Number	List Price GO-AC17
225 kVA Three-Phase, 4W+G input & output, single module, 60 Hz	225 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3200	UPS022SG444AN00	**$60320.00**
225 kVA Three-Phase + EMI Filter (FCC Class A), 4W+G input and output,single module, 60 Hz	225 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3325	UPS022SG444AY00	**$69680.00**
225 kVA Three-Phase + EMI Filter (FCC Class A) + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	225 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3425	UPS022SG444AY50	**$66560.00**
225 kVA Three-Phase + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	225 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3300	UPS022SG444AN50	**$75920.00**
225 kVA Three-Phase, 3W+G input & output, single module, 60 Hz	225 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3200	UPS022SG443AN00	**$62080.00**
225 kVA Three-Phase + EMI Filter (FCC Class A), 3W+G input and output, single module, 60 Hz	225 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3325	UPS022SG443AY00	**$71435.00**
225 kVA Three-Phase + EMI Filter (FCC Class A) + 5th Harmonic Filter, 3W+G input and output, single module, 60 Hz	225 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3425	UPS022SG443AY50	**$68320.00**
225 kVA Three-Phase + 5th Harmonic Filter, 3W+G input and output, single module, 60 Hz	225 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3300	UPS022SG443AN50	**$77685.00**
300 kVA Three-Phase, 4W+G input & output, single module, 60 Hz	300 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3400	UPS030SG444AN00	**$70720.00**
300 kVA Three-Phase + EMI Filter (FCC Class A), 4W+G input and output, single module, 60 Hz	300 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3550	UPS030SG444AY00	**$80080.00**
300 kVA Three-Phase + EMI Filter (FCC Class A) + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	300 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3500	UPS030SG444AY50	**$80080.00**
300 kVA Three-Phase + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	300 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3650	UPS030SG444AN50	**$89440.00**
300 kVA Three-Phase, 3W+G input & output, single module, 60 Hz	300 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3400	UPS030SG443AN00	**$72570.00**
300 kVA Three-Phase + EMI Filter (FCC Class A), 3W+G input and output, single module, 60 Hz	300 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3550	UPS030SG443AY00	**$81920.00**
300 kVA Three-Phase + EMI Filter (FCC Class A) + 5th Harmonic Filter, 3W+G input and output, single module, 60 Hz	300 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3500	UPS030SG443AY50	**$81920.00**
300 kVA Three-Phase + 5th Harmonic Filter, 3W+G input and output, single module, 60 Hz	300 kVA	Single Module	277/480V	277/480V	65"x32"x71"	3650	UPS030SG443AN50	**$91285.00**

[2]Installed Weight. Note that shipping weight is higher.

Publications and Reference: See Section 22 for a complete list of additional product-related publications

SG Series 225kVA - Battery Cabinets (matching)

10 Year Pro-Rated Battery Warranty

Approximate Run Times (minutes)			Dimensions	Weight	Battery System	List Price	Breaker	Parallel	Castor Kit	List Adder
50% Load[1]	75% Load[1]	100% Load[1]	(H x W x D)	(lbs.)	Product Number	GO-AC18	Config.	Strings	P/N Suffix	GO-AC18
24	13	8	71.3"x 54"x 31.5"	6134	SGA225-2-03-N	**$26195.00**	2 x 300A	2	C	**$2074.00**
28	16	10	71.3"x 54"x 31.5"	7056	SGA225-2-04-N	**$27625.00**	2 x 300A	2	C	**$2074.00**
35	20	13	71.3"x 88"x 31.5"	7864	SGA225-2-05-N	**$31775.00**	1 x 600A	2	C	**$2074.00**
76	53	36	71.3"x 132"x 31.5"	14037	SGB225-3-06-N	**$58728.00**	1 x 600A	3	C	**$3845.00**
126	67	53	71.3"x 176"x 31.5"	18716	SGB225-4-06-N	**$77073.00**	1 x 600A	4	C	**$5126.00**
217	126	76	71.3"x 264"x 31.5"	28074	SGB225-6-06-N	**$113770.00**	1 x 600A	6	C	**$7690.00**

SG Series 300kVA - Battery Cabinets (matching)

10 Year Pro-Rated Battery Warranty

Approximate Run Times (minutes)			Dimensions	Weight	Battery System	List Price	Breaker	Parallel	Castor Kit	List Adder
50% Load[1]	75% Load[1]	100% Load[1]	(H x W x D)	(lbs.)	Product Number	GO-AC18	Config.	Strings	P/N Suffix	GO-AC18
19	10	5	71.3"x 54"x 31.5"	7056	SGA300-2-04-N	**$28205.00**	2 x 400A	2	C	**$2074.00**
36	21	14	71.3"x 88"x 31.5"	9358	SGB300-2-06-N	**$40960.00**	1 x 800A	2	C	**$2563.00**
41	24	15	71.3"x 132"x 31.5"	11796	SGB300-3-05-N	**$46398.00**	1 x 800A	3	C	**$3110.00**
76	53	36	71.3"x 176"x 31.5"	18716	SGB300-4-06-N	**$77655.00**	1 x 800A	5	C	**$5126.00**
107	65	49	71.3"x 220"x 31.5"	23395	SGB300-5-06-N	**$96005.00**	1 x 800A	4	C	**$6408.00**
148	76	60	71.3"x 264"x 31.5"	28074	SGB300-6-06-N	**$114351.00**	1 x 800A	6	C	**$7690.00**

[1]0.8 pF

All run times listed above are based on the manufacturer's published data, and do not include connector and wiring losses.
These run times are approximate and are intended for use as a guide only. Consult factory for guaranteed run times.

All cabinets contain Flame Retardant Batteries.
480 Vdc Nominal - 240 cells - 1.67 Final Volts per Cell, except 1.75 Final Volts per Cell over 60 minutes.
Prices above include internally mounted circuit breaker(s) sized for the UPS at 100% load. See "Breaker Configuration" column in tables above.

An external, user supplied junction panel is required when multiple battery systems are to be connected to a single UPS.
Each string, in multi-string systems, is individually fused.

SG Series 225-300 kVA Input / Output Transformers (non-matching)

			Voltage Rating	kVA Rating	Dimensions (inches) Height	Width	Depth	Weight (lbs)	Product Number	List Price GO-AC20
225 kVA Input	Non Shielded	Aluminum Windings	208 Δ-480 Y	500	59	43.5	38.5	2800	UNMK500BK	**$23479.00**
			480 Δ-480 Y	500	59	43.5	38.5	2800	UNMK500KK	**$21540.00**
225 kVA Output	Non Shielded	Aluminum Windings	480 Δ-208 Y	500	59	43.5	38.5	2800	UMNK500KB	**$21540.00**
			480 Δ-480 Y	500	59	43.5	38.5	2800	UMNK500KK	**$21540.00**
300 kVA Input	Non Shielded	Aluminum Windings	208 Δ-480 Y	500	59	43.5	38.5	2800	UMNK500BK	**$23479.00**
			480 Δ-480 Y	500	59	43.5	38.5	2800	UMNK500KK	**$21540.00**
300 kVA Output	Non Shielded	Aluminum Windings	480 Δ-208 Y	500	59	43.5	38.5	2800	UMNK500KB	**$21540.00**
			480 Δ-480 Y	500	59	43.5	38.5	2800	UMNK500KK	**$21540.00**

SG Series 225-300 kVA External Bypass Panels (non-matching)

Stand-alone, single module systems

UPS Rating	Breaker Configuration	Key Interlocks	Interrupt Rating	Dimensions (inches) Height	Width	Depth	Weight[1] (lbs.)	Product Number	List Price GO-AC19
225kVA	2-breaker	No	35kAIC	53.5	40	11.5	288	GS20350-00000-A0S	**$3775.00**
	3-breaker	No	35kAIC	82.38	40	11.5	471	GS20350-10450-A0S	**$8320.00**
	2-breaker	Yes	35kAIC	65.88	40	14	360	GS20350-00000-A1S	**$6500.00**
	3-breaker	Yes	35kAIC	90.63	40	14	557	GS20350-10450-A1S	**$11040.00**
300kVA	2-breaker	No	35kAIC	53.5	40	11.5	288	GS20500-00000-A0S	**$5305.00**
	3-breaker	No	35kAIC	82.38	40	11.5	471	GS20500-10600-A0S	**$8925.00**
	2-breaker	Yes	35kAIC	65.88	40	14	360	GS20500-00000-A1S	**$8625.00**
	3-breaker	Yes	35kAIC	90.63	40	14	557	GS20500-10600-A1S	**$11650.00**

[1]Installed Weight. Note that shipping weight is higher.

Digital Energy™ SG Series

400-500 kVA Three-Phase

Technical Specifications-UL approved

Topology	True on-line, double conversion (VFI) with integral static switch and internal maintenance bypass
Technology	Advanced IGBT with SVM strategy, microprocessor and DSP controlled at optimal switching frequency
Operating Modes	True on-line double conversion, automatic bypass, frequency converter, RPA up to eight units

Output Power Rating kVA (at PF=0.6–0.9 lag)	**400**	**500**
Weight w/o Batteries (lbs)	4600	5100
Output Power Rating (kW)	320	400
Overload Capability on Inverter	125% 10 min., 150% 60 sec.	125% 10 min., 150% 10 sec.
Noise Level dB(A)	<65 dB	
Input Voltage (VAC)	3x480/277 + Neutral (-20% to +15% without battery discharge)	
Input Frequency	60/50 Hz +/-10%	
Output Voltage (sinusoidal) (VAC)	3x480/277 + Neutral	
Output Frequency	60/50 Hz +/-0.01%	
Output THD at Linear Load	<2%	
Output THD at Non-linear Load	<3%	
Crest Factor	3:1	
Overload Capability on Automatic Bypass	200% 5 min., 110% continuously	
Output Voltage Regulation		
Static	+/- 1%	
0-100% Step Load	+/- 3%	
Overall Efficiency at 100% Load	94%	
Ambient Operating Temperature	32°-104°F (0°-40°C)	
Color	RAL 9010 (white)	
Classifications and Listing	UL1778/IP20/NEMA-PE-1/ISO9001	
RFI and Surge Protection	EN 50091-2 / IEC 62040-2 / IEEE 587 B / FCC Class A compliance[1]	
Standard Connectivity	RS232; programmable alarm contacts; SNMP (optional)	
Warranty	12 months	

[1]FCC compliance feature available as an option.
Specifications subject to change without notice.

SG Series 400-500 kVA UPS (Three-Phase)

Description	Rating (0.8 pf)	Parallel Configuration	Input Voltage	Output Voltage	Dimensions (W x D X H)	Weight[2] (lbs.)	Product Number	List Price GO-AC17
400 kVA Three-Phase, 4W+G input & output, single module, 60 Hz	400 kVA	Single Module	277/480V	277/480V	81"x32.5"x77"	4410	UPS040SG444AN00	**$92560.00**
400 kVA Three-Phase + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	400 kVA	Single Module	277/480V	277/480V	81"x32.5"x77"	4631	UPS040SG444AN50	**$102440.00**
400 kVA Three-Phase + 5th & 11th Harmonic Filters, 4W+G input and output, single module, 60 Hz	400 kVA	Single Module	277/480V	277/480V	81"x32.5"x77"	4631	UPS040SG444ANE0	**$105040.00**
400 kVA Three-Phase, 3W+G input & output, single module, 60 Hz	400 kVA	Single Module	277/480V	277/480V	81"x32.5"x77"	4410	UPS040SG443AN00	**$94595.00**
400 kVA Three-Phase + 5th Harmonic Filter, 3W+G input and output, single module, 60 Hz	400 kVA	Single Module	277/480V	277/480V	81"x32.5"x77"	4631	UPS040SG443AN50	**$104470.00**
400 kVA Three-Phase + 5th & 11th Harmonic Filters, 3W+G input and output, single module, 60 Hz	400 kVA	Single Module	277/480V	277/480V	81"x32.5"x77"	4631	UPS040SG443ANE0	**$107700.00**
500 kVA Three-Phase, 4W+G input & output, single module, 60 Hz	500 kVA	Single Module	277/480V	277/480V	81"x32.5"x77"	4851	UPS050SG444AN00	**$102960.00**
500 kVA Three-Phase + 5th Harmonic Filter, 4W+G input and output, single module, 60 Hz	500 kVA	Single Module	277/480V	277/480V	81"x32.5"x77"	5072	UPS050SG444AN50	**$114920.00**
500 kVA Three-Phase + 5th & 11th Harmonic Filters, 4W+G input and output, single module, 60 Hz	500 kVA	Single Module	277/480V	277/480V	81"x32.5"x77"	5072	UPS050SG444ANE0	**$118732.00**
500 kVA Three-Phase, 3W+G input & output, single module, 60 Hz	500 kVA	Single Module	277/480V	277/480V	81"x32.5"x77"	4851	UPS050SG443AN00	**$105080.00**
500 kVA Three-Phase + 5th Harmonic Filter, 3W+G input and output, single module, 60 Hz	500 kVA	Single Module	277/480V	277/480V	81"x32.5"x77"	5072	UPS050SG443AN50	**$117050.00**
500 kVA Three-Phase + 5th & 11th Harmonic Filters, 3W+G input and output, single module, 60 Hz	500 kVA	Single Module	277/480V	277/480V	81"x32.5"x77"	5072	UPS050SG443ANE0	**$120860.00**

[2]Installed Weight. Note that shipping weight is higher.
Quotation must include cost for Commissioning Service (see SG Service).

Digital Energy™ SG Series

400-500 kVA Three-Phase

Battery Cabinets, Transformers, Bypass Panels

SG Series 400 kVA - Battery Cabinets (non-matching)

10 Year Pro-Rated Battery Warranty

Approximate Run Times (minutes)			Dimensions	Weight	Battery System	List Price	Breaker	Parallel	Castor Kit	List Adder
50% Load[1]	75% Load[1]	100% Load[1]	(H x W x D)	(lbs.)	Product Number	GO-AC18	Config.	Strings	P/N Suffix	GO-AC18
25	14	8	71.3"x 88"x 31.5"	9358	SGB400-2-06-N	**$43795.00**	2 x 500A	2	C	**$43795.00**
28	16	10	71.3"x 132"x 31.5"	11796	SGB400-3-05-N	**$48810.00**	3 x 400A	3	C	**$48810.00**
42	24	16	71.3"x 176"x 31.5"	15728	SGB400-4-05-N	**$65080.00**	4 x 400A	4	C	**$65080.00**
71	50	33	71.3"x 220"x 31.5"	23395	SGB400-5-06-N	**$102965.00**	4 x 400A	5	C	**$102965.00**
94	61	43	71.3"x 264"x 31.5"	28074	SGB400-6-06-N	**$123558.00**	6 x 400A	6	C	**$123558.00**

SG Series 500 kVA - Battery Cabinets (non-matching)

10 Year Pro-Rated Battery Warranty

Approximate Run Times (minutes)			Dimensions	Weight	Battery System	List Price	Breaker	Parallel	Castor Kit	List Adder
50% Load[2]	75% Load[2]	100% Load[2]	(H x W x D)	(lbs.)	Product Number	GO-AC18	Config.	Strings	P/N Suffix	GO-AC18
15	7	4	88" x 31.5" x 71.3"	9400	SGB500-2-06-N	**$40999.00**	2 x 600A	2	C	**$2563.00**
17	9	4	132" x 31.5" x 71.3"	11796	SGB500-3-05-N	**$48589.00**	3 x 400A	3	C	**$3110.00**
21	11	6	125" x 31.5" x 71.3"	14111	SGC500-4-04-N	**$56485.00**	4 x 400A	4	C	**$4147.00**
26	14	9	176 x 31.5" x 71.3"	15728	SGB500-4-05-N	**$64785.00**	4 x 400A	4	C	**$4147.00**
39	23	15	176 x 31.5" x 71.3"	18716	SGB500-4-06-N	**$81998.00**	4 x 400A	4	C	**$5126.00**
54	31	22	220" x 31.5" x 71.3"	23395	SGB500-5-06-N	**$102498.00**	5 x 400A	5	C	**$6408.00**
63	39	27	264" x 31.5" x 71.3"	28074	SGB500-6-06-N	**$122997.00**	6 x 400A	6	C	**$7690.00**

[1]0.8 pF
[2]0.9 pF
[3]Optional 5-year, full replacement warranty does not include labor or freight. Total warranty period is 5 years.
All run times listed above are based on the manufacturer's published data, and do not include connector and wiring losses.
These run times are approximate and are intended for use as a guide only. Consult factory for guaranteed run times.
All cabinets contain Flame Retardant Batteries.
480 Vdc Nominal - 240 cells - 1.67 Final Volts per Cell, except 1.75 Final Volts per Cell over 60 minutes.
Prices above include internally mounted circuit breaker(s) sized for the UPS at 100% load. See "Breaker Configuration" column in tables above.
An external, user supplied junction panel is required when multiple battery systems are to be connected to a single UPS.
Each string, in multi-string systems, is individually fused.
These cabinets utilize batteries manufactured by Power Battery Company, Inc. and carry a standard 10-year, pro-rated warranty.
(Labor and freight not included.)

SG Series 400-500 kVA Input / Output Transformers (non-matching)

			Voltage Rating	kVA Rating	Dimensions (inches) Height	Width	Depth	Weight (lbs)	Product Number	List Price GO-AC17
400 kVA Input	Non Shielded	Aluminum Windings	208-480 Y	750	66	51.5	43.5	4200	UNMK750BK	**$32256.00**
			480-480 Y	750	66	51.5	43.5	4200	UNMK750KK	**$29594.00**
400 kVA Output	Non Shielded	Aluminum Windings	480-208 Y	750	66	51.5	43.5	4200	UMNK750KB	**$29594.00**
			480-480 Y	750	66	51.5	43.5	4200	UMNK750KK	**$29594.00**
500 kVA Input	Non Shielded	Aluminum Windings	208-480 Y	750	66	51.5	43.5	4200	UMNK750BK	**$32256.00**
			480-480 Y	750	66	51.5	43.5	4200	UMNK750KK	**$29594.00**
500 kVA Output	Non Shielded	Aluminum Windings	480-208 Y	750	66	51.5	43.5	4200	UMNK750KB	**$29594.00**
			480-480 Y	750	66	51.5	43.5	4200	UMNK750KK	**$29594.00**

SG Series 400-500 kVA External Bypass Panels (non-matching)

Stand-alone, single module systems

UPS Rating	Breaker Configuration	Key Interlocks	Interrupt Rating	Dimensions (inches) Height	Width	Depth	Weight[4] (lbs.)	Product Number	List Price GO-AC19
400kVA	2-breaker	No	50kAIC	70	40	11.5	288	GS20600-00000-A0S	**$6110.00**
	3-breaker	No	50kAIC	90.63	40	11.5	500	GS20600-10800-A0S	**$10970.00**
	2-breaker	Yes	50kAIC	82.38	40	14	416	GS20600-00000-A1S	**$8830.00**
	3-breaker	Yes	50kAIC	90.63	40	14	557	GS20600-10800-A1S	**$13690.00**
500kVA	2-breaker	No	50kAIC	74.13	40	11.5	335	GS20800-00000-A0S	**$6800.00**
	3-breaker	No	50kAIC	90.63	40	11.5	583	GS20800-11000-A0S	**$13685.00**
	2-breaker	Yes	50kAIC	90.63	40	14	416	GS20800-00000-A1S	**$9520.00**
	3-breaker	Yes	50kAIC	90.63	40	14	608	GS20800-11000-A1S	**$16410.00**

[4]Installed Weight. Note that shipping weight is higher.

Publications and Reference: See Section 22 for a complete list of additional product-related publications

SG Software/Monitoring

Description	Product Number	List Price GO-AC21
Advanced SNMP/Web interface card, UTP/BNC	UPS11701	$710.00
Remote Status Panel (includes APS)	UPS11785	$650.00
Customer Interface Card (CIC) - six programmable relay contacts	UPS1006691	$765.00
External SNMP Interface Box (requires LincBox Protocol Converter)	UPS1009223	$725.00
LincBox (CP4) Protocol Converter (uses RS-232 connection to UPS)	UPS11483	$530.00
Modbus RTU RS232	UPS16276	$1485.00
Modbus RTU RS485	UPS16275	$1485.00
RS232 to RS485/422 Converter	UPS11227	$1000.00

Hardware

Description	Product Number	List Price GO-AC21
Intelligent Sync Module This module sync's two parallel systems together to allow the outputs to switch in-Phase with a static switch.	UPS16274	$8000.00

IRIS Services

Description	Product Number	List Price GO-AC21
IRIS starter kit for LanPro[1]	IRLP	Contact Factory
IRIS starter kit for SP/SG/LP33U S/P 10-40kVA[1]	IRSP04	
IRIS starter kit for SP/SG/LP33U S/P 60-120kVA[1]	IRSP12	
IRIS starter kit for SP/SG/LP33U S/P 150-550kVA[1]	IRSP50	
IRIS yearly fee after 1st year for LP11U[2]	FIRLP	
IRIS yearly fee after 1st year for SP/SG/LP33U S/P 10-40kVA[2]	FIRSP04	
IRIS yearly fee after 1st year for SP/SG/LP33U S/P 60-120kVA[2]	FIRSP12	
IRIS yearly fee after 1st year for SP/SG/LP33U S/P 150-500kVA[2]	FIRSP50	
Additional IRIS Fees		
LincBox (CP4) Protocol Converter w/cables	UPS11483	
IRIS end user license per year incl. 1 password, email, fax or pager address	LIREU01	
IRIS additional Pager, FAX or email address, prices per message for each individual address	AIR01	
IRIS manual refresh UPS status (price per refresh/per UPS)	RIR01	

[1]Includes Lincbox, prices per unit
[2]Does not include Lincbox, prices per unit

SG Series Connectivity, Software and Monitoring

Description	RPA Product Number	List Price GO-AC21
Advanced SNMP/Web interface card, UTP/BNC	UPS11701	**$627.00**[1,3]
Remote Status Panel (includes APS)	UPS11785	**$642.00**[2]
Customer Interface Card (CIC) - six programmable relay contacts	UPS1006691	**$586.00**[1]
External SNMP Interface Box (uses RS-232 connection to UPS)	UPS1009223	**$690.00**[3]
IRIS Install Kit (includes modem and 1st year service) Installation labor included if completed during unit commissioning.	IRSP04	**$1240.00**
IRIS Annual Fee (after 1st year)	400130.1	**$490.00**
RS485/422 Converter	145994.0	**$690.00**

[1]The SG Series UPS comes with one Customer Interface Card (CIC) pre-installed in the card cage.
The card cage has one open slot for optional cards.
This slot can hold either an additional Customer Interface Card OR an SNMP Interface Card, but not both.
[2]The Remote Status Panel uses the Customer Interface Card that is supplied with the system.
A second Customer Interface Card is required If relay contacts are required for other purposes (such as interface to an External Bypass Panel).
[3]Systems using the optional Customer Interface Card will need to use the External SNMP Interface Box, if SNMP connectivity is required.

GE Digital Energy™ SG Series Spare Parts Kits

kVA Rating	Description	Product Number	List Price GO-AC22
10 kVA	Parts kit, SG Series 10 kVA, fuses	SK10SGA	**$1435.00**
	Parts kit, SG Series 10 kVA, basic	SK10SGB	**$6475.00**
	Parts kit, SG Series 10 kVA, comprehensive	SK10SGC	**$17575.00**
20 kVA	Parts kit, SG Series 20 kVA, fuses	SK20SGA	**$1530.00**
	Parts kit, SG Series 20 kVA, basic	SK20SGB	**$7005.00**
	Parts kit, SG Series 20 kVA, comprehensive	SK20SGC	**$18285.00**
30 kVA	Parts kit, SG Series 30 kVA, fuses	SK30SGA	**$2650.00**
	Parts kit, SG Series 30 kVA, basic	SK30SGB	**$88340.00**
	Parts kit, SG Series 30 kVA, comprehensive	SK30SGC	**$20445.00**
40 kVA	Parts kit, SG Series 40 kVA, fuses	SK40SGA	**$2650.00**
	Parts kit, SG Series 40 kVA, basic	SK40SGB	**$8445.00**
	Parts kit, SG Series 40 kVA, comprehensive	SK40SGC	**$19865.00**
50 kVA	Parts kit, SG Series 50 kVA, fuses	SK50SGA	**$2513.00**
	Parts kit, SG Series 50 kVA, basic	SK50SGB	**$9770.00**
	Parts kit, SG Series 50 kVA, comprehensive	SK50SGC	**$21150.00**
80 kVA	Parts kit, SG Series 80 kVA, fuses	SK80SGA	**$2885.00**
	Parts kit, SG Series 80 kVA, basic	SK80SGB	**$9900.00**
	Parts kit, SG Series 80 kVA, comprehensive	SK80SGC	**$22690.00**
100 kVA	Parts kit, SG Series 100 kVA, fuses	SK100SGA	**$2705.00**
	Parts kit, SG Series 100 kVA, basic	SK100SGB	**$9750.00**
	Parts kit, SG Series 100 kVA, comprehensive	SK100SGC	**$25180.00**
120 kVA	Parts kit, SG Series 120 kVA, fuses	SK120SGA	**$2705.00**
	Parts kit, SG Series 120 kVA, basic	SK120SGB	**$9750.00**
	Parts kit, SG Series 120 kVA, comprehensive	SK120SGC	**$24940.00**
150 kVA	Parts kit, SG Series 150 kVA, fuses	SK150SGA	**$2750.00**
	Parts kit, SG Series 150 kVA, basic	SK150SGB	**$9750.00**
	Parts kit, SG Series 150 kVA, comprehensive	SK150SGC	**$24940.00**
225 kVA	Parts kit, SG Series 225 kVA, fuses	SK225SGA	**$2945.00**
	Parts kit, SG Series 225 kVA, basic	SK225SGB	**$11140.00**
	Parts kit, SG Series 225 kVA, comprehensive	SK225SGC	**$32665.00**
300 kVA	Parts kit, SG Series 300 kVA, fuses	SK300SGA	**$2945.00**
	Parts kit, SG Series 300 kVA, basic	SK300SGB	**$11140..00**
	Parts kit, SG Series 300 kVA, comprehensive	SK300SGC	**$32470.00**
400 kVA	Parts kit, SG Series 400 kVA, fuses	SK400SGA	**$5460.00**
	Parts kit, SG Series 400 kVA, basic	SK400SGB	**$23985.00**
	Parts kit, SG Series 400 kVA, comprehensive	SK400SGC	**$56195.00**
500 kVA	Parts kit, SG Series 500 kVA, fuses	SK500SGA	**$5460.00**
	Parts kit, SG Series 500 kVA, basic	SK500SGB	**$23985.00**
	Parts kit, SG Series 500 kVA, comprehensive	SK500SGC	**$56235.00**

SG Series Options and Accessories

Description	RPA Product Number[4]	List Price GO-AC21
RPA Kit Installed in Factory/Start-up (10-40 kVA) for each UPS	UPS15875	**$1500.00**
RPA Kit Installed in Factory/Start-up (50-80kVA) for each UPS	UPS15876	**$1750.00**
RPA Kit Installed in Factory/Start-up (100-150kVA) for each UPS	UPS15877	**$2000.00**
RPA Kit Installed in Factory/Start-up (225-300kVA) for each UPS	UPS16241	**$2250.00**
RPA Kit Installed in Factory/Start-up (400-500 kVA) for each	UPS16242	**$2500.00**
RPA Kit for Field Upgrade (10-500 kVA)	UPS11626	**$3000.00**

[4]Parallel configured systems require one RPA kit per UPS module.

Publications and Reference: See Section 22 for a complete list of additional product-related publications

SG Series UPS Commissioning and Extended Waranties[1] (Single modules only)

Description	Product Number	System kVA Rating — List Price GO-AC23												
		10 kVA	20 kVA	30 kVA	40 kVA	50 kVA	80 kVA	100 kVA	120 kVA	150 kVA	225 kVA	300 kVA	400 kVA	500 kVA
UPS Commissioning Service Level 1, 8AM to 5PM, Mon/Fri	FSUSGxxxN	$1075	$1075	$1075	$1075	$1075	$1075	$1075	$1075	$1395	$1395	$1395	$1795	$1795
UPS Commissioning Service Level 2, 5PM to 8AM Mon/Fri, anytime Saturday	FSUSGxxxP1	$1595	$1595	$1595	$1595	$1595	$1595	$1595	$1595	$2025	$2025	$2025	$2125	$2125
UPS Commissioning Service Level 3, Sunday/Holidays	FSUSGxxxP2	$2025	$2025	$2025	$2025	$2025	$2025	$2025	$2025	$2675	$2675	$2675	$3295	$3295
UPS on-site Operator Training - Provides instruction on proper use if users were not available at initial commissioning. 8AM to 5PM, Mon/Fri	TRNSxxxN	$650	$650	$650	$650	$650	$650	$650	$650	$650	$650	$650	$650	$650
SG Series Extended Warranty Level 3 - (sold during initial sale). Additional 12 months of UPS warranty. One PM Uvisit covering UPS + 1 string of VRLA batteries (at start of coverage), factoryrequired firmware updates and remedial parts/labor for UPS only (7x24, 12 hr response). Does not include battery replacement.	WARSGxxx	$2625	$2725	$2725	$3050	$3050	$3050	$3375	$3375	$4325	$4775	$4975	$5295	$5295
SG Series Service Contract Level 3 - (sold after initial sale). Additional 12 months of UPS service. One PM visit covering UPS + 1 string of VRLA batteries (at start of coverage), factory required firmware updates and remedial parts/labor for UPS only (7x24, 12 hr response). Does not include battery replacement.	FSSGxxx	$2825	$2950	$2950	$3275	$3275	$3275	$3695	$3695	$4875	$5295	$5625	$5825	$5825
SG Series Basic Service. Includes one PM visit covering UPS + 1 string of VRLA batteries, at customer's connvenience, Sundays & Holidays excluded. Does not included remedial parts/labor or battery replacement.	PMSGxxx	$1175	$1295	$1295	$1395	$1395	$1395	$1395	$1395	$1600	$1925	$2150	$2450	$2450
Additional Semi-annual PM - adder for performing a 2nd PM within the 12 month period on the UPS + 1 string of VRLA batteries. Does not include remedial parts/labor or battery replacement.	2PMSGxxx	$950	$1025	$1025	$1125	$1125	$1125	$1125	$1125	$1275	$1550	$1725	$1950	$1950
Additional Battery Strings - adder for perfoming PM on each addional string of VRLA batteries to be included in Warranty and Service Contracts. Does not include battery replacement.	BATSG	$425	$425	$425	$425	$425	$425	$425	$425	$425	$425	$425	$425	$425

SG Series UPS Commissioning[1] (RPA Systems)

Description	Product Number	10 kVA - 120 kVA – List Price GO-AC23		150 kVA - 300 kVA – List Price GO-AC23		400 kVA - 500 kVA – List Price GO-AC23	
		Module Qty: 2	Additional Modules (Each)	Module Qty: 2	Additional Modules (Each)	Module Qty: 2	Additional Modules (Each)
UPS Commissioning Service Level 1, 8AM to 5PM, Mon/Fri	FSUSGRxxxNz	$3225.00	$1075.00	$4185.00	$1395.00	$5385.00	$1795.00
UPS Commissioning Service Level 2, 5PM to 8AM Mon/Fri, anytime Saturday	FSUSGRxxxP1z	$4785.00	$1595.00	$6075.00	$2025.00	$6375.00	$2125.00
UPS Commissioning Service Level 3, Sunday/Holidays	FSUSGRxxxP2z	$6075.00	$2025.00	$8025.00	$2675.00	$9885.00	$3295.00

[1]Service pricing is not discountable.

"xxx" in the Product Number represents the UPS module kVA rating: '010' for 10kVA, '225' for 225kVA, etc.
"z" in the Product Number represents the total number of UPS modules in RPA systems.
UPS Commissioning by a GE-authorized Service Technician is required to initiate warranty coverage.
All equipment installation must be completed prior to commissioning (see Startup Checklist) and must be scheduled two weeks in advance.

Introduction

General Electric has been a leader in lightning and surge protection for commercial, industrial and utility applications for decades. The GE Transient Voltage Surge Suppression product line utilizes the combined strengths of GE engineering capabilities and surge suppression technology.

GE TVSS products use quality materials and innovative designs to achieve the best possible performance while maintaining competitive prices. All units are 3rd party tested to the NEMA LS-1 standards, are rated in accordance with NEC Article 285 and comply with UL1449. We have a full line of TVSS products available, integral to GE Distribution Equipment, or wall mounted.

GE has a strong commitment to customer service. We offer a level of service and engineering support unmatched by our competition. Many of our products are designed to suit specific customer applications. Our application engineering team is ready to provide solutions for your surge suppression needs.

Contact your local GE sales office for additional information.

References

Integrated TVSS	DEA-390, DEA-391, DEA-393, DEA-394
Wall Mounted	DEA-300, DEA-320, DEA-391, DEA-392

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Integrated TRANQUELL® ME

Designed for GE Pro-Stock Panelboards

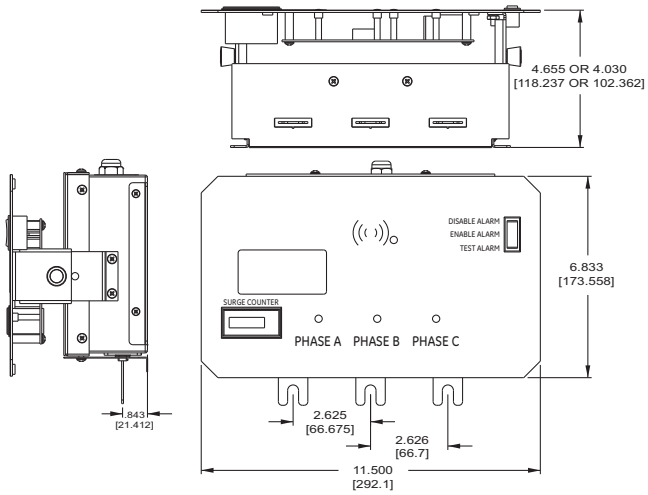
This TVSS model connects to the ProStock panelboard bus bars without adding width or depth to the panel enclosure. These units have been tested to surge current ratings per NEMA LS-1, up to 100kA per mode, including the fuses in the surge path. Standard features include an audible alarm, indicating lights, and dry contacts. Rating options range from 65kA per mode to 100kA per mode.

All mode protection is provided with surge components (MOVs) connected on the phase to neutral, phase to ground, and neutral to ground paths as appropriate for the voltage configuration.

Integrated TRANQUELL® ME products are engineered for reliability, flexibility and long life in the most extreme surge environment. The true maximum surge current rating, unlimited by fusing, has been proven successful in 3rd party tests.

Features and Benefits

—UL1449, UL1283 Optional
—UL Tested to 65,000 Amperes Symmetrical Withstand
—Field Installed in Pro-Stock Panels
—TRANQUELL® ME Device is Capable of Surviving a minimum of 5,000 Category C3 Impulses (10kA, 20kV) per mode.
—Device Capable of Surviving a minimum of 5,000 Longwave (10x1000µs) Impulses per mode.
—Form C Dry Contacts for Remote Monitoring
—Green Status Indicating Lights, Red Service Light
—Audible Alarm with Test/Disable Feature
—Optional Surge Counter
—Standard 5 year limited warranty, Optional 10 year warranty



Specifications

Operating Frequency:	50/60 Hz
Connection:	Direct Bus Connect, Parallel Connected
Operating Temperature:	-40°C to +65°C
Operating Humidity:	0% to 95% Non-Condensing
Weight:	20 lbs.

Integrated TRANQUELL® ME for ProStock Panelboards - 65kA Symmetrical Fault Withstand

Maximum Surge Current	Description	Product Number	List Price GO-AC11
65kA per mode / 130kA per phase	Panelboard, Lights, Alarm, Surge Counter, Form C Contacts	TPMEXXXX06PS	**$1500.00**
80kA per mode / 160kA per phase	Panelboard, Lights, Alarm, Surge Counter, Form C Contacts	TPMEXXXX08PS	**$1700.00**
100kA per mode / 200kA per phase	Panelboard, Lights, Alarm, Surge Counter, Form C Contacts	TPMEXXXX10PS	**$2200.00**
100kA per mode / 200kA per phase	Panelboard, Lights, Alarm, Contacts, No Surge Counter, No Filter	TPMEXXXX10PSNC	**$1000.00**
100kA per mode / 200kA per phase	Panelboard, Lights, Alarm, Surge Counter, Contacts, No Filter	TPMEXXXX10PSNF	**$1200.00**

Note: Replace XXXX in Product Number with nomenclature for Nominal Voltage (Volts RMS).

Product # T P M E ___ ___ ___ ___ ___ ___ *

* **PS** = Full featured
PSNC = No surge counter
PSNF = No surge counter or filter

	Nominal Voltage (Volts RMS)	System Voltage Configuration	Suppressed Voltage Rating (SVR) UL 1449, 2nd Edition February 2007 Revision						MCOV % Max. Continuous Operating Voltage
			L-N	HL-N	L-G	HL-G	N-G	L-L	
120S	120/240	1 Ph, 3 W + G	500	—	500	—	500	700	125%
120Y	120Y/208	3 Ph, 4 W + G	500	—	500	—	500	700	125%
220Y	220Y/380	3 Ph, 4 W + G	800	—	800	—	800	1500	145%
240D	240 Delta	3 Ph, 3 W + G	—	—	700	—	—	1500	115%
240H	120/240 Delta HL	3 Ph, 4 W + G	500	700	500	700	500	900	115%
240Y	240Y/415	3 Ph, 4 W + G	800	—	800	—	800	1500	130%
277Y	277Y/480	3 Ph, 4 W + G	800	—	800	—	800	1500	115%
347Y	347Y/600	3 Ph, 4 W + G	1200	—	1000	—	1000	2000	115%
480D	480 Delta	3 Ph, 3 W + G	—	—	1500	—	—	3000	170%

Also available in 600D configurations. For details, please contact GE Power Quality Customer Service at 800 637 1738.

	Maximum Surge Current Capacity	
	Per Mode	Per Phase
06	65kA	130kA
08	80kA	160kA
10	100kA	200kA

Product # Example

TPME120S10PS

Integrated TRANQUELL® ME

Designed to Connect within GE "A Series®" Panelboards

This TVSS model connects directly to the A Series® Panelboard bus bars without adding width or depth to the panel enclosure. These devices have been tested to surge current ratings per NEMA LS-1, including the fuses in the surge path. Since these surge suppression units are mounted to the bus bars, a breaker feeder is not required or used. This design allows for maximum protection. Ratings are available from 65kA per mode to 100kA per mode.

All mode protection is provided with surge components (MOVs) connected on the phase to neutral, phase to ground, and neutral to ground paths as appropriate for the voltage configuration.

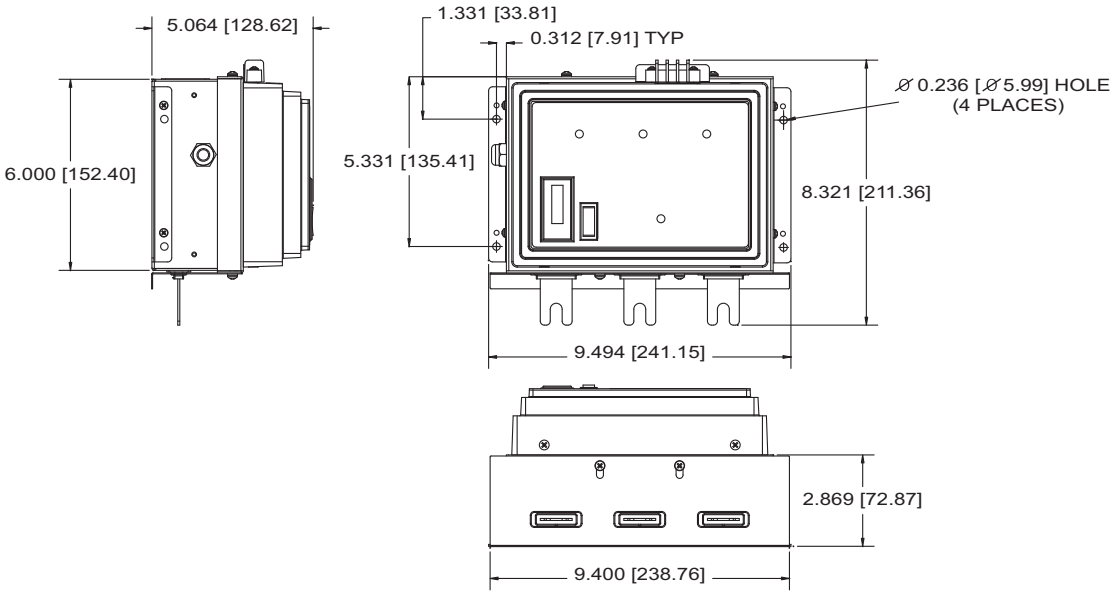
Integrated TRANQUELL® ME products are engineered for reliability, flexibility and long life in the most extreme surge environment. The true maximum surge current rating, unlimited by fusing, has been proven successful in 3rd party tests.

Features and Benefits

—UL1449, CUL
—Optional UL1283 Noise Filters
—UL Tested to 65,000 Amperes Symmetrical Withstand
—TRANQUELL® ME Device is Capable of Surviving a minimum of 5,000 Category C3 Impulses (10kA, 20kV) per mode
—Device Capable of Surviving a minimum of 5,000 Longwave (10x1000µs) Impulses per mode
—Form C Dry Contacts for Remote Monitoring
—Green Status Indicating Lights, Red Service Light
—Audible Alarm with Test/Disable Feature
—Optional Surge Counter
—Factory installed in GE "A Series®" Panels
—Standard 5 year limited warranty, Optional 10 year warranty

Specifications

Operating Frequency:	50/60 Hz
Connection:	Direct Bus Connection, Parallel Connected
Operating Temperature:	-40°C to +65°C
Operating Humidity:	0% to 95% Non-Condensing
Weight:	13 lbs.

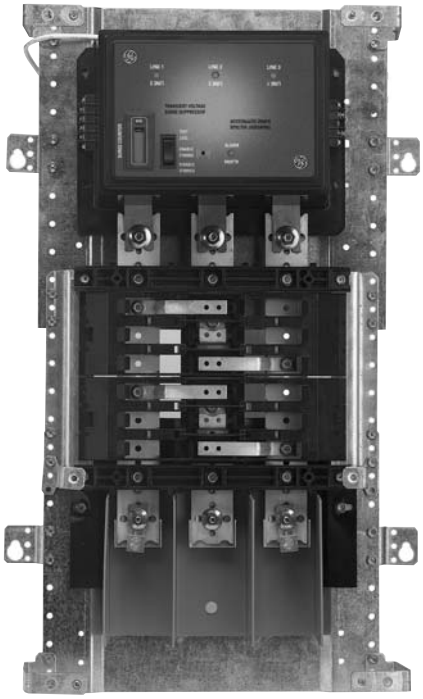


Power Quality Products
Surge Protection (TVSS)
Integrated TRANQUELL® ME
Designed to Connect within GE "A Series®" Panelboards

For GE "A" Series Panelboards - 65 kA Symmetrical Fault Withstand

Panelboard, Lights, Alarm, Surge Counter, Form C Contacts

Maximum Surge Current	Product Number
65kA per mode / 130kA per phase	TPME120S06AS
65kA per mode / 130kA per phase	TPME120Y06AS
65kA per mode / 130kA per phase	TPME220Y06AS
65kA per mode / 130kA per phase	TPME277Y06AS
65kA per mode / 130kA per phase	TPME480D06AS
65kA per mode / 130kA per phase	TPME347Y06AS
65kA per mode / 130kA per phase	TPME240H06AS
65kA per mode / 130kA per phase	TPME240D06AS
65kA per mode / 130kA per phase	TPME240Y06AS
65kA per mode / 130kA per phase	TME600D065AS
80kA per mode / 160kA per phase	TPME120S08AS
80kA per mode / 160kA per phase	TPME120Y08AS
80kA per mode / 130kA per phase	TPME220Y08AS
80kA per mode / 160kA per phase	TPME277Y08AS
80kA per mode / 160kA per phase	TPME480D08AS
80kA per mode / 160kA per phase	TPME347Y08AS
80kA per mode / 160kA per phase	TPME240H08AS
80kA per mode / 160kA per phase	TPME240D08AS
80kA per mode / 160kA per phase	TPME240Y08AS
80kA per mode / 160kA per phase	TME600D080AS
100kA per mode / 200kA per phase	TPME120S10AS
100kA per mode / 200kA per phase	TPME120Y10AS
100kA per mode / 200kA per phase	TPME220Y10AS
100kA per mode / 200kA per phase	TPME277Y10AS
100kA per mode / 200kA per phase	TPME480D10AS
100kA per mode / 200kA per phase	TPME347Y10AS
100kA per mode / 200kA per phase	TPME240H10AS
100kA per mode / 200kA per phase	TPME240D10AS
100kA per mode / 200kA per phase	TPME240Y10AS
100kA per mode / 200kA per phase	TME600D100AS



Product # T P M E ___ ___ ___ ___ ___ ___ *

* **AS** = Full featured, with UL 1283 noise filtering and surge counter
ASNF = without UL 1283 noise filtering (Available 100kA per Mode) only
ASNC = without UL 1283 noise filtering, without surge counter (Available 100kA per Mode) only

	Nominal Voltage (Volts RMS)	System Voltage Configuration	Suppressed Voltage Rating (SVR) UL 1449, 2nd Edition February 2007 Revision						MCOV % Max. Continuous Operating Voltage
			L-N	HL-N	L-G	HL-G	N-G	L-L	
120S	120/240	1 Ph, 3 W + G	500	—	500	—	500	700	125%
120Y	120Y/208	3 Ph, 4 W + G	500	—	500	—	500	700	125%
240D	240 Delta	3 Ph, 3 W	—	—	700	—	—	1500	115%
240H	120/240 Delta HL	3 Ph, 4 W + G	500	700	500	700	500	900	115%
240Y	240Y/415	3 Ph, 4 W + G	800	—	800	—	800	1500	130%
277Y	277Y/480	3 Ph, 4 W + G	800	—	800	—	800	1500	115%
220Y	220Y/380	3 Ph, 4 W + G	800	—	800	—	800	1500	145%
480D	480 Delta	3 Ph, 3 W	—	—	1500	—	—	3000	170%
347Y	347Y/600	3 Ph, 4 W + G	1200	—	1000	—	1000	2000	115%

Also available in 600D configurations. For details, please contact GE Power Quality Customer Service at 800 637 1738.

	Maximum Surge Current Capacity	
	Per Mode	Per Phase
06	65kA	130kA
08	80kA	160kA
10	100kA	200kA

Phase Rating = (L-N + L-G)

Product # Example

TPME277Y10AS

—277Y/480 V, 3 Ph, 4 W + G
—100kA per mode
—Full featured, with UL 1283 noise filtering and surge counter

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Integrated TRANQUELL® HE and ME

Designed for GE Distribution Equipment

This TVSS model connects to the panelboard or switchboard bus bars without adding width or depth to the panel enclosure, and only occupying 7X of vertical bus space. These units have been tested to surge current ratings per NEMA LS-1, up to 200 kA per mode, including the fuses in the surge path. Standard features include a surge counter, audible alarm, indicating lights, dry contacts, and an integral surge rated disconnect. Rating options range from 65 kA per mode to 300 kA per mode.

All mode protection is provided with surge components (MOVs) connected on the phase to neutral, phase to ground, and neutral to ground paths as appropriate for the voltage configuration.

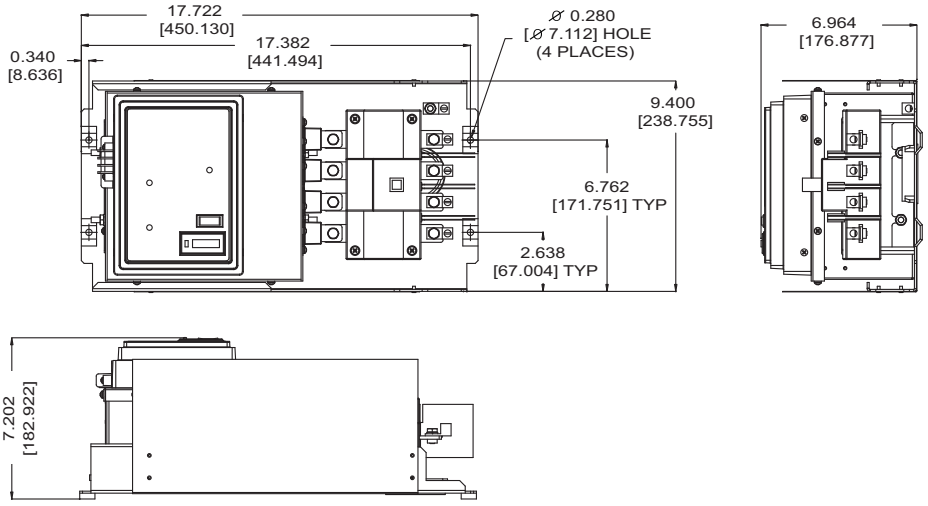
Integrated TRANQUELL® HE and ME products are engineered for reliability, flexibility and long life in the most extreme surge environment. The true maximum surge current rating, unlimited by fusing, has been proven successful in 3rd party tests.

Features and Benefits

—UL1449, CUL, UL1283
—UL Tested to 200,000 Amperes Symmetrical Withstand
—Integral Surge Rated Disconnect
—Factory installed in Spectra® Series Panels and Switchboards (7X Mounting Space), or Switchgear
—TRANQUELL® ME Device is Capable of Surviving a minimum of 5,000 Category C3 Impulses (10kA, 20kV) per mode.
—TRANQUELL® HE Device is Capable of Surviving a minimum of 20,000 Category C3 Impulses (10kA, 20kV) per mode.
—Device Capable of Surviving a minimum of 5,000 Longwave (10x1000ms) Impulses per mode.
—Patented Thermal Fuse Technology in Combination with Surge Rated Fuses
—Form C Dry Contacts for Remote Monitoring
—Green Status Indicating Lights, Red Service Light
—Audible Alarm with Test/Disable Feature
—Optional Surge Counter
—Standard 5 year limited warranty, Optional 10 year warranty

Specifications

Operating Frequency:	50/60 Hz
Connection:	6 to 2/0 Conductors, Parallel Connected
Operating Temperature:	-40°C to +65°C
Operating Humidity:	0% to 95% Non-Condensing
Weight:	24 lbs.



Integrated TRANQUELL® HE and ME

Designed for GE Distribution Equipment

For GE MCC Distribution Equipment

200 kA Symmetrical Fault Withstand
Panelboard, Lights, Alarm, Surge Counter, Form C Contacts

Maximum Surge Current	Product Number
65kA per mode / 130kA per phase	TPME120S06ME
65kA per mode / 130kA per phase	TPME120Y06ME
65kA per mode / 130kA per phase	TPME220Y06ME
65kA per mode / 130kA per phase	TPME277Y06ME
65kA per mode / 130kA per phase	TPME480D06ME
65kA per mode / 130kA per phase	TPME347Y06ME
65kA per mode / 130kA per phase	TPME240H06ME
65kA per mode / 130kA per phase	TPME240D06ME
65kA per mode / 130kA per phase	TPME240Y06ME
65kA per mode / 130kA per phase	TME600D065ME
80kA per mode / 160kA per phase	TPME120S08ME
80kA per mode / 160kA per phase	TPME120Y08ME
80kA per mode / 130kA per phase	TPME220Y08ME
80kA per mode / 160kA per phase	TPME277Y08ME
80kA per mode / 160kA per phase	TPME480D08ME
80kA per mode / 160kA per phase	TPME347Y08ME
80kA per mode / 160kA per phase	TPME240H08ME
80kA per mode / 160kA per phase	TPME240D08ME
80kA per mode / 160kA per phase	TPME240Y08ME
80kA per mode / 160kA per phase	TME600D080ME
100kA per mode / 200kA per phase	TPHE120S10ME
100kA per mode / 200kA per phase	TPHE120Y10ME
100kA per mode / 200kA per phase	TPHE220Y10ME
100kA per mode / 200kA per phase	TPHE277Y10ME
100kA per mode / 200kA per phase	TPHE480D10ME
100kA per mode / 200kA per phase	TPHE347Y10ME
100kA per mode / 200kA per phase	TPHE240H10ME
100kA per mode / 200kA per phase	TPHE240D10ME
100kA per mode / 200kA per phase	TPHE240Y10ME
100kA per mode / 200kA per phase	THE600D100ME
150kA per mode / 300kA per phase	TPHE120S15ME
150kA per mode / 300kA per phase	TPHE120Y15ME
150kA per mode / 300kA per phase	TPHE220Y15ME
150kA per mode / 300kA per phase	TPHE277Y15ME
150kA per mode / 300kA per phase	TPHE480D15ME
150kA per mode / 300kA per phase	TPHE347Y15ME
150kA per mode / 300kA per phase	TPHE240H15ME
150kA per mode / 300kA per phase	TPHE240D15ME
150kA per mode / 300kA per phase	TPHE240Y15ME
150kA per mode / 300kA per phase	THE600D150ME
200kA per mode / 400kA per phase	TPHE120S20ME
200kA per mode / 400kA per phase	TPHE120Y20ME
200kA per mode / 400kA per phase	TPHE220Y20ME
200kA per mode / 400kA per phase	TPHE277Y20ME
200kA per mode / 400kA per phase	TPHE480D20ME
200kA per mode / 400kA per phase	TPHE347Y20ME
200kA per mode / 400kA per phase	TPHE240H20ME
200kA per mode / 400kA per phase	TPHE240D20ME
200kA per mode / 400kA per phase	TPHE240Y20ME
200kA per mode / 400kA per phase	THE600D200ME
300kA per mode / 600kA per phase	TPHE120S30ME
300kA per mode / 600kA per phase	TPHE120Y30ME
300kA per mode / 600kA per phase	TPHE220Y30ME
300kA per mode / 600kA per phase	TPHE277Y30ME
300kA per mode / 600kA per phase	TPHE480D30ME
300kA per mode / 600kA per phase	TPHE347Y30ME
300kA per mode / 600kA per phase	TPHE240H30ME
300kA per mode / 600kA per phase	TPHE240D30ME
300kA per mode / 600kA per phase	TPHE240Y30ME
300kA per mode / 600kA per phase	THE600D300ME

For GE Spectra® Panel or Switch Board Distribution Equipment -

200 kA Symmetrical Fault Withstand
Panelboard, Lights, Alarm, Surge Counter, Form C Contacts

Maximum Surge Current	Product Number
65kA per mode / 130kA per phase	TPME120S06PP
65kA per mode / 130kA per phase	TPME120Y06PP
65kA per mode / 130kA per phase	TPME220Y06PP
65kA per mode / 130kA per phase	TPME277Y06PP
65kA per mode / 130kA per phase	TPME480D06PP
65kA per mode / 130kA per phase	TPME347Y06PP
65kA per mode / 130kA per phase	TPME240H06PP
65kA per mode / 130kA per phase	TPME240D06PP
65kA per mode / 130kA per phase	TPME240Y06PP
65kA per mode / 130kA per phase	TPME600D06PP
80kA per mode / 160kA per phase	TPME120S08PP
80kA per mode / 160kA per phase	TPME120Y08PP
80kA per mode / 130kA per phase	TPME220Y08PP
80kA per mode / 160kA per phase	TPME277Y08PP
80kA per mode / 160kA per phase	TPME480D08PP
80kA per mode / 160kA per phase	TPME347Y08PP
80kA per mode / 160kA per phase	TPME240H08PP
80kA per mode / 160kA per phase	TPME240D08PP
80kA per mode / 160kA per phase	TPME240Y08PP
80kA per mode / 160kA per phase	TME600D080PP
100kA per mode / 200kA per phase	TPHE120S10PP
100kA per mode / 200kA per phase	TPHE120Y10PP
100kA per mode / 200kA per phase	TPHE220Y10PP
100kA per mode / 200kA per phase	TPHE277Y10PP
100kA per mode / 200kA per phase	TPHE480D10PP
100kA per mode / 200kA per phase	TPHE347Y10PP
100kA per mode / 200kA per phase	TPHE240H10PP
100kA per mode / 200kA per phase	TPHE240D10PP
100kA per mode / 200kA per phase	TPHE240Y10PP
100kA per mode / 200kA per phase	THE600D100PP
150kA per mode / 300kA per phase	TPHE120S15PP
150kA per mode / 300kA per phase	TPHE120Y15PP
150kA per mode / 300kA per phase	TPHE220Y15PP
150kA per mode / 300kA per phase	TPHE277Y15PP
150kA per mode / 300kA per phase	TPHE480D15PP
150kA per mode / 300kA per phase	TPHE347Y15PP
150kA per mode / 300kA per phase	TPHE240H15PP
150kA per mode / 300kA per phase	TPHE240D15PP
150kA per mode / 300kA per phase	TPHE240Y15PP
150kA per mode / 300kA per phase	THE600D150PP
200kA per mode / 400kA per phase	TPHE120S20PP
200kA per mode / 400kA per phase	TPHE120Y20PP
200kA per mode / 400kA per phase	TPHE220Y20PP
200kA per mode / 400kA per phase	TPHE277Y20PP
200kA per mode / 400kA per phase	TPHE480D20PP
200kA per mode / 400kA per phase	TPHE347Y20PP
200kA per mode / 400kA per phase	TPHE240H20PP
200kA per mode / 400kA per phase	TPHE240D20PP
200kA per mode / 400kA per phase	TPHE240Y20PP
200kA per mode / 400kA per phase	THE600D200PP
300kA per mode / 600kA per phase	TPHE120S30PP
300kA per mode / 600kA per phase	TPHE120Y30PP
300kA per mode / 600kA per phase	TPHE220Y30PP
300kA per mode / 600kA per phase	TPHE277Y30PP
300kA per mode / 600kA per phase	TPHE480D30PP
300kA per mode / 600kA per phase	TPHE347Y30PP
300kA per mode / 600kA per phase	TPHE240H30PP
300kA per mode / 600kA per phase	TPHE240D30PP
300kA per mode / 600kA per phase	TPHE240Y30PP
300kA per mode / 600kA per phase	THE600D300PP

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Integrated TRANQUELL® HE and ME

Designed for GE Distribution Equipment

For GE Switch Gear Distribution Equipment

200 kA Symmetrical Fault Withstand
Panelboard, Lights, Alarm, Surge Counter, Form C Contacts

Maximum Surge Current	Product Number
100kA per mode / 200kA per phase	TPHE120S10SG
100kA per mode / 200kA per phase	TPHE120Y10SG
100kA per mode / 200kA per phase	TPHE220Y10SG
100kA per mode / 200kA per phase	TPHE277Y10SG
100kA per mode / 200kA per phase	TPHE480D10SG
100kA per mode / 200kA per phase	TPHE347Y10SG
100kA per mode / 200kA per phase	TPHE240H10SG
100kA per mode / 200kA per phase	TPHE240D10SG
100kA per mode / 200kA per phase	TPHE240Y10SG
100kA per mode / 200kA per phase	THE600D100SG
150kA per mode / 300kA per phase	TPHE120S15SG
150kA per mode / 300kA per phase	TPHE120Y15SG
150kA per mode / 300kA per phase	TPHE220Y15SG
150kA per mode / 300kA per phase	TPHE277Y15SG
150kA per mode / 300kA per phase	TPHE480D15SG
150kA per mode / 300kA per phase	TPHE347Y15SG
150kA per mode / 300kA per phase	TPHE240H15SG
150kA per mode / 300kA per phase	TPHE240D15SG
150kA per mode / 300kA per phase	TPHE240Y15SG
150kA per mode / 300kA per phase	THE600D150SG
200kA per mode / 400kA per phase	TPHE120S20SG
200kA per mode / 400kA per phase	TPHE120Y20SG
200kA per mode / 400kA per phase	TPHE220Y20SG
200kA per mode / 400kA per phase	TPHE277Y20SG
200kA per mode / 400kA per phase	TPHE480D20SG
200kA per mode / 400kA per phase	TPHE347Y20SG
200kA per mode / 400kA per phase	TPHE240H20SG
200kA per mode / 400kA per phase	TPHE240D20SG
200kA per mode / 400kA per phase	TPHE240Y20SG
200kA per mode / 400kA per phase	THE600D200SG
300kA per mode / 600kA per phase	TPHE120S30SG
300kA per mode / 600kA per phase	TPHE120Y30SG
300kA per mode / 600kA per phase	TPHE220Y30SG
300kA per mode / 600kA per phase	TPHE277Y30SG
300kA per mode / 600kA per phase	TPHE480D30SG
300kA per mode / 600kA per phase	TPHE347Y30SG
300kA per mode / 600kA per phase	TPHE240H30SG
300kA per mode / 600kA per phase	TPHE240D30SG
300kA per mode / 600kA per phase	TPHE240Y30SG
300kA per mode / 600kA per phase	THE600D300SG

Product # _____ _____ _____ _____ _____ _____ _____ _____ *

* **PP** suffix available for all kA ratings (integral to Spectra® panel or switchboard)
SG suffix for all THE devices (100kA - 300kA) integral to switchgear
ME suffix available for all kA ratings (integral to MCC)

		Nominal Voltage (Volts RMS)	System Voltage Configuration	Suppressed Voltage Rating (SVR) UL 1449, 2nd Edition February 2007 Revision						MCOV % Max. Continuous Operating Voltage
				L-N	HL-N	L-G	HL-G	N-G	L-L	
TPHE	120S	120/240	1 Ph, 3 W + G	400	—	400	—	400	700	125%
TPME	120Y	120Y/208	3 Ph, 4 W + G	400	—	400	—	400	700	125%
	220Y	220Y/380	3 Ph, 4 W + G	800	—	800	—	800	1500	145%
	240D	240 Delta	3 Ph, 3 W + G	—	—	800	—	—	1500	196%
	240H	120/240 Delta HL	3 Ph, 4 W + G	500	700	400	700	400	900	115%
	240Y	240Y/415	3 Ph, 4 W + G	800	—	800	—	800	1500	130%
	277Y	277Y/480	3 Ph, 4 W + G	800	—	800	—	800	1500	115%
	347Y	347Y/600	3 Ph, 4 W + G	1200	—	1000	—	1000	2000	115%
	480D	480 Delta	3 Ph, 3 W + G	—	—	1500	—	—	3000	198%

Also available in 600D configurations. For details, please contact GE Power Quality Customer Service at 800 637-1738.

	Maximum Surge Current Capacity		
	Exposure Level	Per Mode	Per Phase
06	TPME	65kA	130kA
08	TPME	80kA	160kA
10	TPHE	100kA	200kA
15	TPHE	150kA	300kA
20	TPHE	200kA	400kA
30	TPHE	200kA	400kA

NOTE: For TVSS field installation kit, add the prefix "A" and replace "PP" suffix with "K" suffix

Product # Example

TPHE277Y15PP (factory installed)
ATHE277Y15K (field installation)

TRANQUELL® 9X and 24X

Box Extensions Designed for GE "A Series®" Distribution Equipment

This TVSS model is installed in an extended box and connects to the "A Series®" Panelboard without adding width or depth to the panel enclosure and is ideal for aftermarket installations. These units have been tested to surge current ratings per NEMA LS-1, up to 200 kA per mode, including the fuses in the surge path. Standard features include a surge counter, audible alarm, indicating lights, dry contacts. Rating options range from 65 kA per mode to 300 kA per mode.

All mode protection is provided with surge components (MOVs) connected on the phase-to-neutral, phase-to-ground, and neutral-to-ground paths as appropriate for the voltage configuration.

TRANQUELL® 9X and 24X products are engineered for reliability, flexibility and long life in the most extreme surge environments. The true maximum surge current rating, unlimited by fusing, has been proven successful in 3rd party tests.

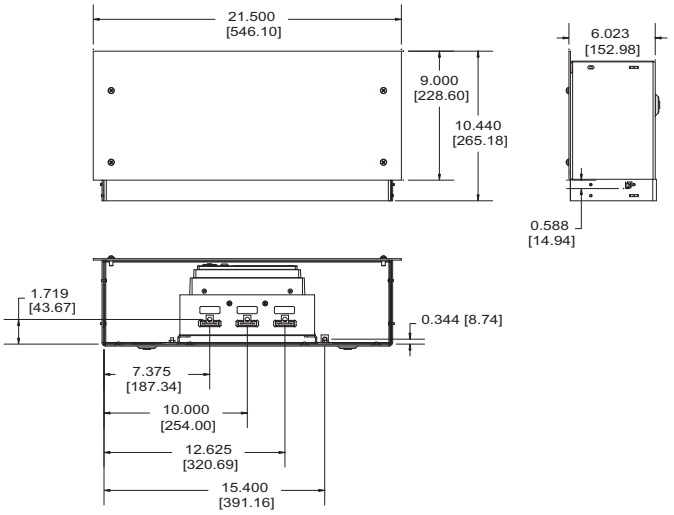
Features and Benefits

—UL1449
—UL Tested to 200,000 Amperes Symmetrical Withstand for 24X
—UL Tested to 65,000 Amperes Symmetrical Withstand for 9X
—Field Installed with "A Series®" panels
—TRANQUELL® ME Device is Capable of Surviving a minimum of 5,000 Category C3 Impulses (10kA, 20kV) per mode.
—TRANQUELL® HE Device is Capable of Surviving a minimum of 20,000 Category C3 Impulses (10kA, 20kV) per mode.
—Device Capable of Surviving a minimum of 5,000 Longwave (10x1000µs) Impulses per mode.
—Form C Dry Contacts for Remote Monitoring
—Green Status Indicating Lights, Red Service Light
—Audible Alarm with Test/Disable Feature
—Surge Counter
—Standard 5 year limited warranty, Optional 10 year warranty

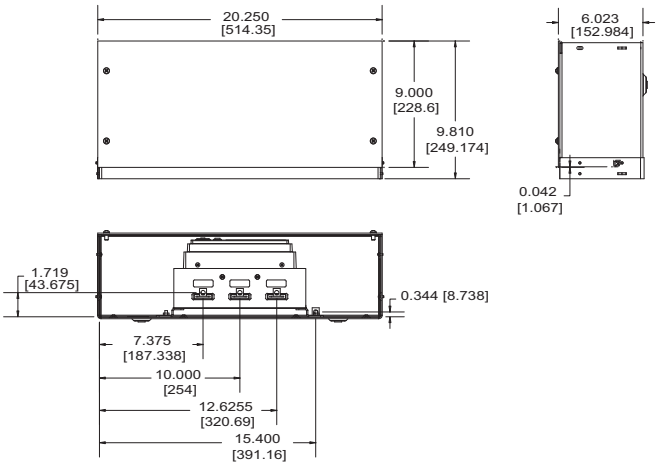
Specifications

Operating Frequency:	50/60 Hz
Connection:	6 to 2/0 Conductors, Parallel Connected
Operating Temperature:	-40°C to +65°C
Operating Humidity:	0% to 95% Non-Condensing
Weight:	9X - 30 lbs., 12X - 52 lbs.

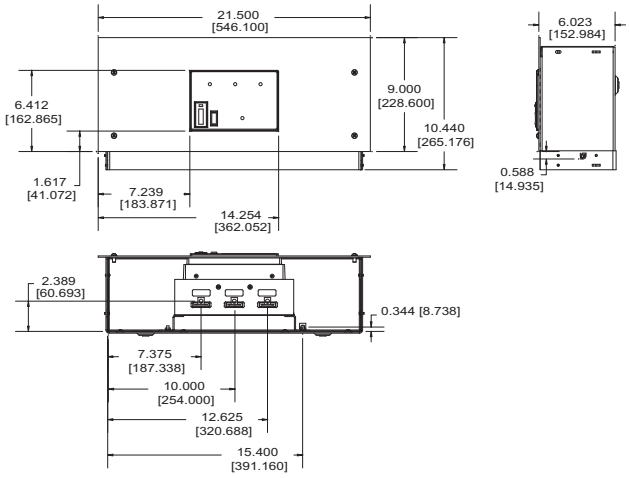
Publications and Reference: See Section 22 for a complete list of additional product-related publications



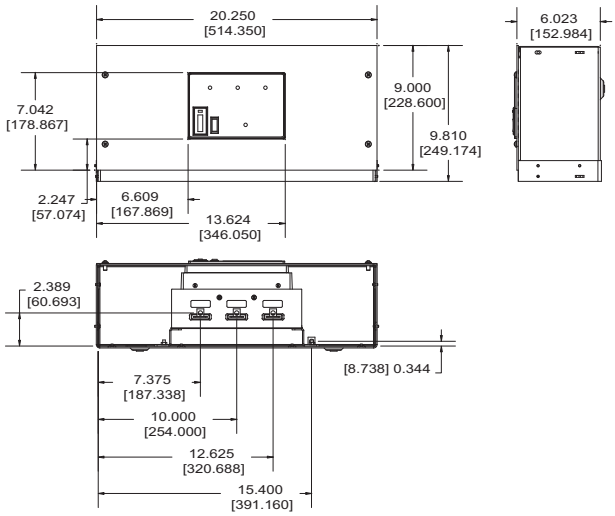
BX9F Dimensions



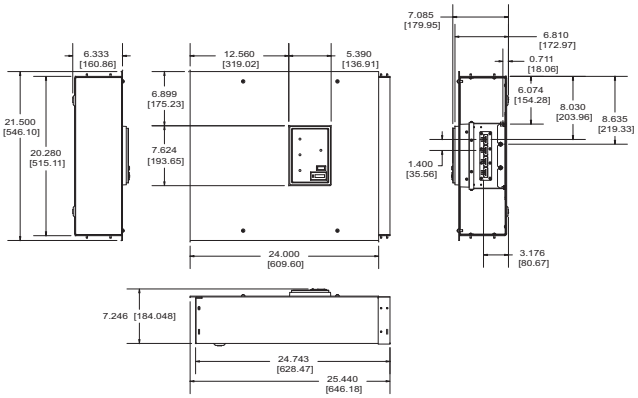
BX9S Dimensions



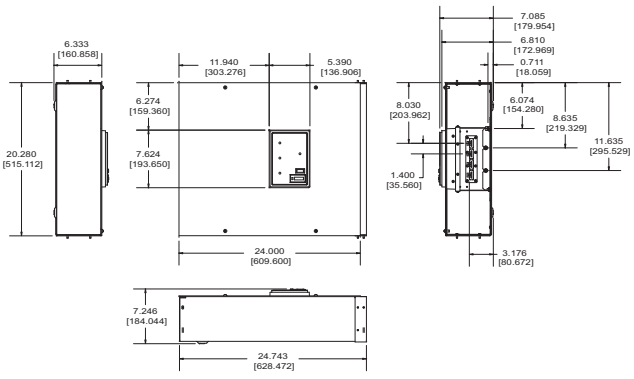
BX9WF Dimensions



BX9WS Dimensions



BX24WF Dimensions



BX24WS Dimensions

TRANQUELL® 9X and 24X

Box Extensions Designed for GE "A Series®" Distribution Equipment

TRANQUELL® 9X Box Extensions - 65 kA Symmetrical Fault Withstand

Maximum Surge Current	Enclosure Type	Description	Product Number	List Price GO-AC11
65kA per mode / 130kA per phase	A Series® Extension Flush Mount	9" Box Ext,Flush Mount, Lights, Alarm, Counter, Contacts	TPMEXXXX06BX9F	**$1500.00**
80kA per mode / 160kA per phase	A Series® Extension Flush Mount	9" Box Ext,Flush Mount, Lights, Alarm, Counter, Contacts	TPMEXXXX08BX9F	**$2300.00**
100kA per mode / 200kA per phase	A Series® Extension Flush Mount	9" Box Ext,Flush Mount, Lights, Alarm, Counter, Contacts	TPMEXXXX10BX9F	**$2700.00**
65kA per mode / 130kA per phase	A Series® Extension Flush Mount	9" Box Ext,Flush Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPMEXXXX06BX9WF	**$1500.00**
80kA per mode / 160kA per phase	A Series® Extension Flush Mount	9" Box Ext,Flush Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPMEXXXX08BX9WF	**$2300.00**
100kA per mode / 200kA per phase	A Series® Extension Flush Mount	9" Box Ext,Flush Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPMEXXXX10BX9WF	**$2800.00**
65kA per mode / 130kA per phase	A Series® Extension Surface Mount	9" Box Ext,Surface Mount, Lights, Alarm, Counter, Contacts	TPMEXXXX06BX9S	**$1500.00**
80kA per mode / 160kA per phase	A Series® Extension Surface Mount	9" Box Ext,Surface Mount, Lights, Alarm, Counter, Contacts	TPMEXXXX08BX9S	**$2300.00**
100kA per mode / 200kA per phase	A Series® Extension Surface Mount	9" Box Ext,Surface Mount, Lights, Alarm, Counter, Contacts	TPMEXXXX10BX9S	**$2700.00**
65kA per mode / 130kA per phase	A Series® Extension Surface Mount	9" Box Ext,Surface Mount, Access Display, Lights, Alarm, Counter, Contacts	TPMEXXXX06BX9WS	**$1500.00**
80kA per mode / 160kA per phase	A Series® Extension Surface Mount	9" Box Ext,Surface Mount, Access Display, Lights, Alarm, Counter, Contacts	TPMEXXXX08BX9WS	**$2300.00**
100kA per mode / 200kA per phase	A Series® Extension Surface Mount	9" Box Ext,Surface Mount, Access Display, Lights, Alarm, Counter, Contacts	TPMEXXXX10BX9WS	**$2800.00**

Note: Replace XXXX in Product Number with nomenclature for Nominal Voltage (Volts RMS).

Tranquell® 24X Box Extensions - 65kA Symmetrical Fault Withstand

Maximum Surge Current	Enclosure Type	Description	Product Number	List Price GO-AC11
65kA per mode / 130kA per phase	A Series® Extension Flush Mount	24" Box Ext,Flush Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPMEXXXX06BX24WF	**$1700.00**
80kA per mode / 160kA per phase	A Series® Extension Flush Mount	24" Box Ext,Flush Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPMEXXXX08BX24WF	**$2500.00**
100kA per mode / 200kA per phase	A Series® Extension Flush Mount	24" Box Ext,Flush Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPMEXXXX10BX24WF	**$3500.00**
65kA per mode / 130kA per phase	A Series® Extension Surface Mount	24" Box Ext,Surface Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPMEXXXX06BX24WS	**$1700.00**
80kA per mode / 160kA per phase	A Series® Extension Surface Mount	24" Box Ext,Surface Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPMEXXXX08BX24WS	**$2500.00**
100kA per mode / 200kA per phase	A Series® Extension Surface Mount	24" Box Ext,Surface Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPMEXXXX10BX24WS	**$3500.00**

Note: Replace XXXX in Product Number with nomenclature for Nominal Voltage (Volts RMS).

Tranquell® 24X Box Extensions - 200kA Symmetrical Fault Withstand

Maximum Surge Current	Enclosure Type	Description	Product Number	List Price GO-AC11
100kA per mode / 200kA per phase	A Series® Extension Surface Mount	24" Box Ext,Surface Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPHEXXXX10BX24WS	**$3500.00**
150kA per mode / 300kA per phase	A Series® Extension Surface Mount	24" Box Ext,Surface Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPHEXXXX15BX24WS	**$4000.00**
200kA per mode / 400kA per phase	A Series® Extension Surface Mount	24" Box Ext,Surface Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPHEXXXX20BX24WS	**$5200.00**
300kA per mode / 600kA per phase	A Series® Extension Surface Mount	24" Box Ext,Surface Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPHEXXXX30BX24WS	**$10500.00**
100kA per mode / 200kA per phase	A Series® Extension Flush Mount	24" Box Ext,Flush Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPHEXXXX10BX24WF	**$3500.00**
150kA per mode / 300kA per phase	A Series® Extension Flush Mount	24" Box Ext,Flush Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPHEXXXX15BX24WF	**$4000.00**
200kA per mode / 400kA per phase	A Series® Extension Flush Mount	24" Box Ext,Flush Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPHEXXXX20BX24WF	**$5200.00**
300kA per mode / 600kA per phase	A Series® Extension Flush Mount	24" Box Ext,Flush Mount, DisplayAccess, Lights, Alarm, Counter, Contacts	TPHEXXXX30BX24WF	**$10500.00**

Note: Replace XXXX in Product Number with nomenclature for Nominal Voltage (Volts RMS).

Publications and Reference: See Section 22 for a complete list of additional product-related publications

TRANQUELL® 9X and 24X

Box Extensions Designed for GE "A Series®" Distribution Equipment

ME – Medium Exposure Level

- * 9S - Surface mounted, no display
- 9WS - Surface mounted, display access
- 9F - Flush mounted , no display
- 9WF - Flush mounted, display access

ME – Medium Exposure & HE – High Exposure Level

- * 24WS - Surface mounted, display access
- 24WF - Flush mounted, display access

Product # T P __ __ __ __ __ __ __ __ B X *

		Nominal Voltage (Volts RMS)	System Voltage Configuration	MCOV % Max. Continuous Operating Voltage
ME	120S	120/240	1 Ph, 3 W + G	125%
HE	120Y	120Y/208	3 Ph, 4 W + G	125%
	220Y	220Y/380	3 Ph, 4 W + G	145%
	240D	240 Delta	3 Ph, 3 W + G	115%
	240H	120/240 Delta HL	3 Ph, 4 W + G	115%
	240Y	240Y/415	3 Ph, 4 W + G	130%
	277Y	277Y/480	3 Ph, 4 W + G	115%
	347Y	347Y/600	3 Ph, 4 W + G	115%
	480D	480 Delta	3 Ph, 3 W + G	170%

Also available in 600D configurations. For details, please contact GE Power Quality Customer Service at 800 637 1738.

	Maximum Surge Current Capacity		
	Exposure Level	Per Mode	Per Phase
06	ME	65kA	130kA
08	ME	80kA	160kA
10	ME & HE	100kA	200kA
15	HE	150kA	300kA
20	HE	200kA	400kA
30	HE	300kA	600kA

Phase Rating = (L-N + L-G)

Product # Example

TPHE277Y15BX24WF
—277Y/480 V, 3 Ph, 4 W + G
—150kA per mode
—Flush mounted, display access

Suppressed Voltage Rating (SVR)
UL 1449, 2nd Edition — February 2007 Revision

	B x 9						B x 24					
	L-N	HL-N	L-G	HL-G	N-G	L-L	L-N	HL-N	L-G	HL-G	N-G	L-L
120S	500	—	500	—	500	700	400	—	400	—	400	700
120Y	500	—	500	—	500	700	400	—	400	—	400	700
220Y	800	—	800	—	800	1500	800	—	800	—	800	1500
240D	—	—	700	—	—	1500	—	—	700	—	—	1500
240H	500	700	500	700	500	900	500	700	400	700	400	900
240Y	800	—	800	—	800	1500	800	—	800	—	800	1500
277Y	800	—	800	—	800	1500	800	—	800	—	800	1500
347Y	1200	—	1000	—	1000	2000	1200	—	1000	—	1000	2000
480D	—	—	1500	—	—	3000	—	—	1500	—	—	3000

TRANQUELL® HE and ME

Wall Mount

These devices are available in a standard NEMA 12 enclosure. Optional enclosure types include NEMA 12 and 4X, flushmount, surface mount and stainless steel. These units have been tested to surge current ratings per NEMA LS-1, up to 200kA per mode, including the fuses in the surge path. Standard features include a surge counter, audible alarm, indicating lights, dry contacts, and an integral surge rated disconnect (WMN1 and WMN4 only). Rating options range from 65kA per mode to 300 kA per mode.

All mode protection is provided with surge components (MOVs) connected on the phase to neutral, phase to ground, and neutral to ground paths as appropriate for the voltage configuration.

TRANQUELL® HE and ME products are engineered for reliability, flexibility and long life in the most extreme surge environment. The true maximum surge current rating, unlimited by fusing, has been proven successful in 3rd party tests.

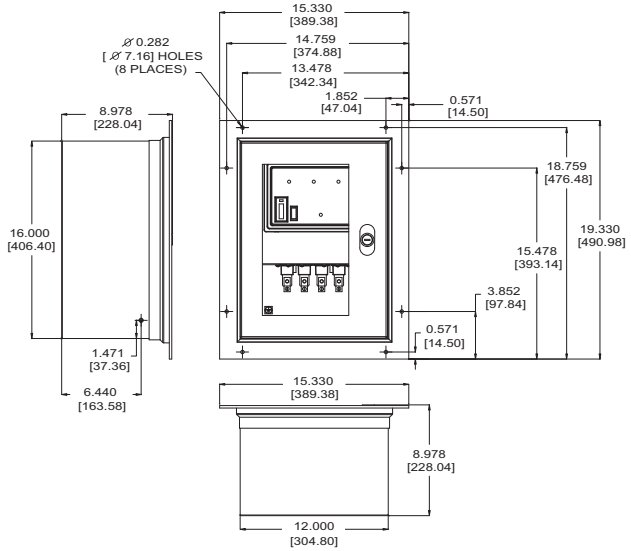
Features and Benefits

—UL1449, CUL, UL1283
—UL Tested to 200,000 Amperes Symmetrical Withstand
—Integral Surge Rated Disconnect
—TRANQUELL® ME Device is Capable of Surviving a minimum of 5,000 Category C3 Impulses (10kA, 20kV) per mode.
—TRANQUELL® HE Device is Capable of Surviving a minimum of 20,000 Category C3 Impulses (10kA, 20kV) per mode.
—Device Capable of Surviving a minimum of 5,000 Longwave (10x1000µs) Impulses per mode.
—Patented Thermal Fuse Technology in Combination with Surge Rated Fuses
—Form C Dry Contacts for Remote Monitoring
—Green Status Indicating Lights, Red Service Light
—Audible Alarm with Test/Disable Feature
—Surge Counter
—Standard 5 year limited warranty, Optional 10 year warranty

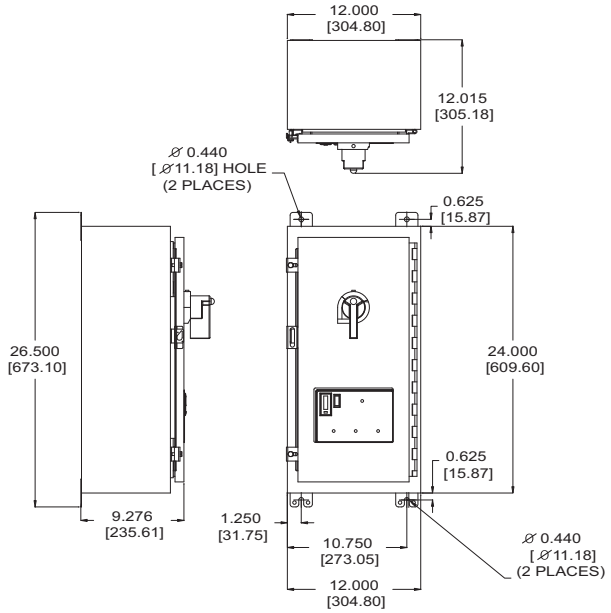
Specifications

Operating Frequency:	50/60 Hz
Connection:	6 to 2/0 Conductors, Parallel Connected
Operating Temperature:	-40°C to +65°C
Operating Humidity:	0% to 95% Non-Condensing
Weight:	50 lbs.: (THE), 32 lbs. (TME)

*Must be installed downstream from breaker 60 Amp or less.



WMN12F Dimensions



WMN1 Dimensions

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Wall Mount TRANQUELL® ME - 200kA Symmetrical Fault Withstand – Lights, Alarm, Surge Counter, Form C Contacts

Maximum Surge Current	Enclosure Type	Product Number	List Price GO-AC11
65kA per mode / 130kA per phase	NEMA 12 Flush	TMEXXXX065WMN12F	**$2400.00**
80kA per mode / 160kA per phase	NEMA 12 Flush	TMEXXXX080WMN12F	**$3000.00**
100kA per mode / 200kA per phase	NEMA 12 Flush	TMEXXXX100WMN12F	**$3400.00**
65kA per mode / 130kA per phase	NEMA 12 Surface, Integral Disconnect	TMEXXXX065WMN1	**$2600.00**
80kA per mode / 160kA per phase	NEMA 12 Surface, Integral Disconnect	TMEXXXX080WMN1	**$3200.00**
100kA per mode / 200kA per phase	NEMA 12 Surface, Integral Disconnect	TMEXXXX100WMN1	**$3600.00**
65kA per mode / 130kA per phase	NEMA 12 Surface	TMEXXXX065WMN12S	**$2200.00**
80kA per mode / 160kA per phase	NEMA 12 Surface	TMEXXXX080WMN12S	**$2800.00**
100kA per mode / 200kA per phase	NEMA 12 Surface	TMEXXXX100WMN12S	**$3200.00**
65kA per mode / 130kA per phase	NEMA 4 Painted Steel Surface	TMEXXXX065WMN4S	**$2800.00**
80kA per mode / 160kA per phase	NEMA 4 Painted Steel Surface	TMEXXXX080WMN4S	**$3300.00**
100kA per mode / 200kA per phase	NEMA 4 Painted Steel Surface	TMEXXXX100WMN4S	**$4000.00**
65kA per mode / 130kA per phase	NEMA 4X Fiberglass, Integral Disconnect	TMEXXXX065WMN4	**$2900.00**
80kA per mode / 160kA per phase	NEMA 4X Fiberglass, Integral Disconnect	TMEXXXX080WMN4	**$3725.00**
100kA per mode / 200kA per phase	NEMA 4X Fiberglass, Integral Disconnect	TMEXXXX100WMN4	**$4200.00**
65kA per mode / 130kA per phase	NEMA 4X Stainless Steel	TMEXXXX065WMN4X	**$3200.00**
80kA per mode / 160kA per phase	NEMA 4X Stainless Steel	TMEXXXX080WMN4X	**$3900.00**
100kA per mode / 200kA per phase	NEMA 4X Stainless Steel	TMEXXXX100WMN4X	**$4500.00**

Note: Replace XXXX in Product Number with nomenclature for Nominal Voltage (Volts RMS).

Wall Mount Tranquell® HE - 200kA Symmetrical Fault Withstand – Lights, Alarm, Surge Counter, Form C Contacts

Maximum Surge Current	Enclosure Type	Product Number	List Price GO-AC8
100kA per mode / 200kA per phase	NEMA 12 Flush	THEXXXX100WMN12F	**$4400.00**
150kA per mode / 300kA per phase	NEMA 12 Flush	THEXXXX150WMN12F	**$5800.00**
200kA per mode / 400kA per phase	NEMA 12 Flush	THEXXXX200WMN12F	**$7400.00**
300kA per mode / 600kA per phase	NEMA 12 Flush	THEXXXX300WMN12F	**$10700.00**
100kA per mode / 200kA per phase	NEMA 12 Surface, Integral Disconnect	THEXXXX100WMN1	**$4700.00**
150kA per mode / 300kA per phase	NEMA 12 Surface, Integral Disconnect	THEXXXX150WMN1	**$6100.00**
200kA per mode / 400kA per phase	NEMA 12 Surface, Integral Disconnect	THEXXXX200WMN1	**$7800.00**
300kA per mode / 600kA per phase	NEMA 12 Surface, Integral Disconnect	THEXXXX300WMN1	**$12600.00**
100kA per mode / 200kA per phase	NEMA 12 Surface	THEXXXX100WMN12S	**$4200.00**
150kA per mode / 300kA per phase	NEMA 12 Surface	THEXXXX150WMN12S	**$5600.00**
200kA per mode / 400kA per phase	NEMA 12 Surface	THEXXXX200WMN12S	**$7200.00**
300kA per mode / 600kA per phase	NEMA 12 Surface	THEXXXX300WMN12S	**$10500.00**
100kA per mode / 200kA per phase	NEMA 4 Painted Steel Surface	THEXXXX100WMN4S	**$5000.00**
150kA per mode / 300kA per phase	NEMA 4 Painted Steel Surface	THEXXXX150WMN4S	**$6600.00**
200kA per mode / 400kA per phase	NEMA 4 Painted Steel Surface	THEXXXX200WMN4S	**$8300.00**
300kA per mode / 600kA per phase	NEMA 4 Painted Steel Surface	THEXXXX300WMN4S	**$12900.00**
100kA per mode / 200kA per phase	NEMA 4X Fiberglass, Integral Disconnect	THEXXXX100WMN4	**$5200.00**
150kA per mode / 300kA per phase	NEMA 4X Fiberglass, Integral Disconnect	THEXXXX150WMN4	**$7200.00**
200kA per mode / 400kA per phase	NEMA 4X Fiberglass, Integral Disconnect	THEXXXX200WMN4	**$8600.00**
300kA per mode / 600kA per phase	NEMA 4X Fiberglass, Integral Disconnect	THEXXXX300WMN4	**$13200.00**
100kA per mode / 200kA per phase	NEMA 4X Stainless Steel	THEXXXX100WMN4X	**$5600.00**
150kA per mode / 300kA per phase	NEMA 4X Stainless Steel	THEXXXX150WMN4X	**$7500.00**
200kA per mode / 400kA per phase	NEMA 4X Stainless Steel	THEXXXX200WMN4X	**$9500.00**
300kA per mode / 600kA per phase	NEMA 4X Stainless Steel	THEXXXX300WMN4X	**$13500.00**

Note: Replace XXXX in Product Number with nomenclature for Nominal Voltage (Volts RMS).

Product # ___ ___ ___ ___ ___ ___ ___ ___ WMN ___ ___ ___

		Nominal Voltage (Volts RMS)	System Voltage Configuration	Suppressed Voltage Rating (SVR) UL 1449, 2nd Edition February 2007 Revision					MCOV % Max. Continuous Operating Voltage
				L–N	HL–N	L–G	HL–G	N–G	
THE	120S	120/240	1 Ph, 3 W + G	400	—	400	—	400	125%
TME	120Y	120Y/208	3 Ph, 4 W + G	400	—	400	—	400	125%
	220Y	220Y/380	3 Ph, 4 W + G	800	—	800	—	800	145%
	240D	240 Delta	3 Ph, 3 W + G	—	—	800	—	—	196%
	240H	120/240 Delta HL	3 Ph, 4 W + G	400	700	400	700	400	115%
	240Y	240Y/415	3 Ph, 4 W + G	800	—	800	—	800	130%
	277Y	277Y/480	3 Ph, 4 W + G	800	—	800	—	800	115%
	347Y	347Y/600	3 Ph, 4 W + G	1000	—	1000	—	900	115%
	480D	480 Delta	3 Ph, 3 W + G	—	—	1500	—	—	198%
	600D	600 Delta	3 Ph, 3 W + G	—	—	1500	—	—	170%

		Maximum Surge Current Capacity	
	Exposure Level	Per Mode	Per Phase
065	ME	65kA	130kA
080	ME	80kA	160kA
100	ME & HE	100kA	200kA
150	HE	150kA	300kA
200	HE	200kA	400kA
300	HE	300kA	600kA

Suffix	Description	NEMA Enclosure	Mounting	Disconnect
1	Painted Steel	1	Surface	Yes
12S	Painted Steel	12	Surface	No
12F	Painted Steel	12	Flush	No
4	Fiberglass	4X	Surface	Yes
4S	Painted Steel	4	Surface	No
4X	Stainless Steel	4X	Surface	No

Product # Example

THE277Y150WMN12S

Tranquell® HE and ME

Wall Mount, with Enhanced Thermal Protection Transient Voltage Surge Suppressors

Introduction

Recommended installation locations are primary and secondary distribution and point of use levels. Designed for distribution and point of use locations, but rated for service entrance, the Tranquell® HE and ME with enhanced thermal protection has been third-party tested to ANSI/IEEE C3 10kA 8x20µs impulses. The entire Tranquell® HE and ME line-up has been engineered to the highest standards and is designed for rigorous duty and long life, as evidenced in our outstanding minimum repetitive surge current capacity test results.

These devices are available in a standard NEMA 12 enclosure. Optional enclosure types from NEMA 12 – NEMA 4x include flush mount, surface mount, fiberglass and stainless steel.

These units have been tested to surge current ratings per NEMA LS-1, up to 200kA per mode, 400kA per phase. Standard features include a surge counter, audible alarm, indicating lights, dry contacts, and an integral surge rated disconnect. Rating options range from 65kA – 300kA per mode, 130kA – 600kA per phase.

GE engineers design and build transient voltage surge suppressors in our state-of-the-art lab and production facilities. Extensive testing is performed at GE and third-party test labs across North America. Production is carried out at our factory in Bonham, Texas utilizing Six Sigma, ISO 9001 methodologies and lean manufacturing processes.

Features and Benefits

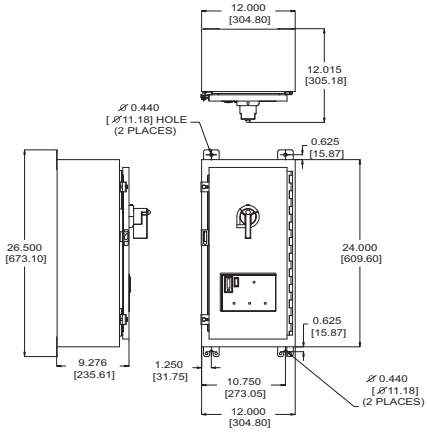
—UL 1449 2nd Edition, Feb. 2007 Revision, cUL
—UL 1283 noise filtering. The TVSS device EMI-RFI noise rejection or attenuation value is measured in accordance with the procedures outlined in NEMA LS 1-1992 (R2000)/MIL–STD-220B. Attenuation is -50db minimum @ 100kHz.
—UL tested to 200,000 amperes symmetrical withstand
—Integral surge rated disconnect
—Tranquell® ME device is capable of surviving a minimum of 5,000 category C3 impulses (10kA, 20kV) per mode
—Tranquell® HE device is capable of surviving a minimum of 20,000 category C3 impulses (10kA, 20kV) per mode
—Thermally protected MOVS eliminate the need for additional upstream fuses
—NO/NC Form C dry type contacts for remote monitoring
—Green status indicating lights, red service light
—Audible alarm with test/disable feature
—Standard LCD surge counter
—5 year limited warranty (standard), 10 year limited warranty (optional)

Technical Specifications

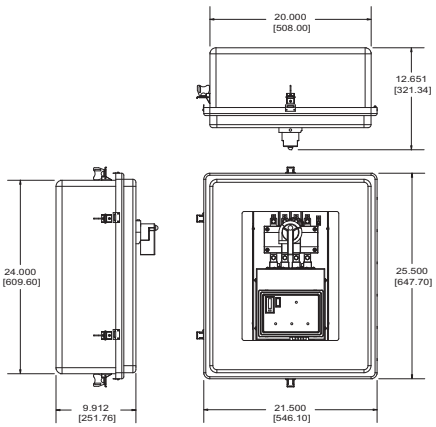
Operating Frequency	50/60 Hz	
Connection	6 to 2/0 Conductors, Parallel Connected	
Operating Temperature	-40° F to 140° F (-40° C to +65° C)	
Operating Humidity	0% to 95% Non-Condensing	
Weight	NEMA Enclosure Suffix:	
	1	63 lbs. (28.5 kg)
	4	56 lbs. (25.4 kg)
	4S, 12S, 12F	44 lbs. (20.0 kg)
	4X	50 lbs. (22.7 kg)

Tranquell® HE and ME

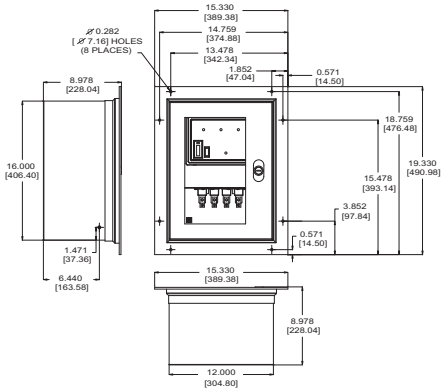
Wall Mount, with Enhanced Thermal Protection Transient Voltage Surge Suppressors



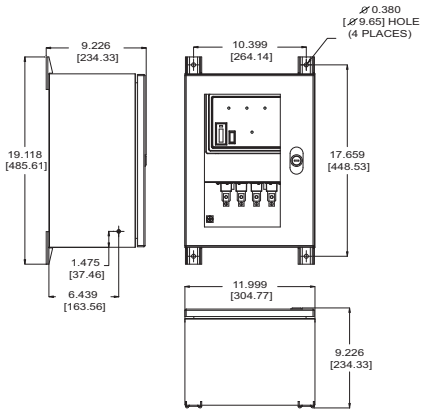
WMN1 Dimensions



WMN4 Dimensions



WMN12F Dimensions



WMN12S, WMN4S, WMN4X Dimensions

Wall Mount Tranquell® ME - 200kA Symmetrical Fault Withstand – Lights, Alarm, Surge Counter, Form C Contacts

Maximum Surge Current	Enclosure Type	Product Number	List Price GO-AC11
65kA per mode / 130kA per phase	NEMA 12 Flush	TPMEXXXX06WMN12F	**$2700.00**
80kA per mode / 160kA per phase	NEMA 12 Flush	TPMEXXXX08WMN12F	**$3300.00**
100kA per mode / 200kA per phase	NEMA 12 Flush	TPMEXXXX10WMN12F	**$3400.00**
65kA per mode / 130kA per phase	NEMA 12 Surface, Integral Disconnect	TPMEXXXX06WMN1	**$2900.00**
80kA per mode / 160kA per phase	NEMA 12 Surface, Integral Disconnect	TPMEXXXX08WMN1	**$3500.00**
100kA per mode / 200kA per phase	NEMA 12 Surface, Integral Disconnect	TPMEXXXX10WMN1	**$3900.00**
65kA per mode / 130kA per phase	NEMA 12 Surface	TPMEXXXX06WMN12S	**$2500.00**
80kA per mode / 160kA per phase	NEMA 12 Surface	TPMEXXXX08WMN12S	**$3100.00**
100kA per mode / 200kA per phase	NEMA 12 Surface	TPMEXXXX10WMN12S	**$3500.00**
65kA per mode / 130kA per phase	NEMA 4 Painted Steel Surface	TPMEXXXX06WMN4S	**$3100.00**
80kA per mode / 160kA per phase	NEMA 4 Painted Steel Surface	TPMEXXXX08WMN4S	**$3600.00**
100kA per mode / 200kA per phase	NEMA 4 Painted Steel Surface	TPMEXXXX10WMN4S	**$4300.00**
65kA per mode / 130kA per phase	NEMA 4X Fiberglass, Integral Disconnect	TPMEXXXX06WMN4	**$3200.00**
80kA per mode / 160kA per phase	NEMA 4X Fiberglass, Integral Disconnect	TPMEXXXX08WMN4	**$4000.00**
100kA per mode / 200kA per phase	NEMA 4X Fiberglass, Integral Disconnect	TPMEXXXX10WMN4	**$4500.00**
65kA per mode / 130kA per phase	NEMA 4X Stainless Steel	TPMEXXXX06WMN4X	**$3500.00**
80kA per mode / 160kA per phase	NEMA 4X Stainless Steel	TPMEXXXX08WMN4X	**$4200.00**
100kA per mode / 200kA per phase	NEMA 4X Stainless Steel	TPMEXXXX10WMN4X	**$4900.00**

Note: Replace XXXX in Product Number with nomenclature for Nominal Voltage (Volts RMS).

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Tranquell® HE and ME

Wall Mount, with Enhanced Thermal Protection Transient Voltage Surge Suppressors

Wall Mount Tranquell® HE - 200kA Symmetrical Fault Withstand – Lights, Alarm, Surge Counter, Form C Contacts

Maximum Surge Current	Enclosure Type	Product Number	List Price GO-AC8
100kA per mode / 200kA per phase	NEMA 12 Flush	TPHEXXXX10WMN12F	**$4800.00**
150kA per mode / 300kA per phase	NEMA 12 Flush	TPHEXXXX15WMN12F	**$6300.00**
200kA per mode / 400kA per phase	NEMA 12 Flush	TPHEXXXX20WMN12F	**$8000.00**
300kA per mode / 600kA per phase	NEMA 12 Flush	TPHEXXXX30WMN12F	**$10700.00**
100kA per mode / 200kA per phase	NEMA 12 Surface, Integral Disconnect	TPHEXXXX10WMN1	**$5100.00**
150kA per mode / 300kA per phase	NEMA 12 Surface, Integral Disconnect	TPHEXXXX15WMN1	**$6600.00**
200kA per mode / 400kA per phase	NEMA 12 Surface, Integral Disconnect	TPHEXXXX20WMN1	**$8400.00**
300kA per mode / 600kA per phase	NEMA 12 Surface, Integral Disconnect	TPHEXXXX30WMN1	**$13600.00**
100kA per mode / 200kA per phase	NEMA 12 Surface	TPHEXXXX10WMN12S	**$4600.00**
150kA per mode / 300kA per phase	NEMA 12 Surface	TPHEXXXX15WMN12S	**$6000.00**
200kA per mode / 400kA per phase	NEMA 12 Surface	TPHEXXXX20WMN12S	**$7800.00**
300kA per mode / 600kA per phase	NEMA 12 Surface	TPHEXXXX30WMN12S	**$10500.00**
100kA per mode / 200kA per phase	NEMA 4 Painted Steel Surface	TPHEXXXX10WMN4S	**$5400.00**
150kA per mode / 300kA per phase	NEMA 4 Painted Steel Surface	TPHEXXXX15WMN4S	**$7100.00**
200kA per mode / 400kA per phase	NEMA 4 Painted Steel Surface	TPHEXXXX20WMN4S	**$9000.00**
300kA per mode / 600kA per phase	NEMA 4 Painted Steel Surface	TPHEXXXX30WMN4S	**$13900.00**
100kA per mode / 200kA per phase	NEMA 4X Fiberglass, Integral Disconnect	TPHEXXXX10WMN4	**$5600.00**
150kA per mode / 300kA per phase	NEMA 4X Fiberglass, Integral Disconnect	TPHEXXXX15WMN4	**$7800.00**
200kA per mode / 400kA per phase	NEMA 4X Fiberglass, Integral Disconnect	TPHEXXXX20WMN4	**$9300.00**
300kA per mode / 600kA per phase	NEMA 4X Fiberglass, Integral Disconnect	TPHEXXXX30WMN4	**$14300.00**
100kA per mode / 200kA per phase	NEMA 4X Stainless Steel	TPHEXXXX10WMN4X	**$6000.00**
150kA per mode / 300kA per phase	NEMA 4X Stainless Steel	TPHEXXXX15WMN4X	**$8100.00**
200kA per mode / 400kA per phase	NEMA 4X Stainless Steel	TPHEXXXX20WMN4X	**$10300.00**
300kA per mode / 600kA per phase	NEMA 4X Stainless Steel	TPHEXXXX30WMN4X	**$14600.00**

Note: Replace XXXX in Product Number with nomenclature for Nominal Voltage (Volts RMS).

Product # T P ___ ___ ___ ___ ___ ___ ___ ___ W M N ___ ___ ___

		Nominal Voltage (Volts RMS)	System Voltage Configuration	Suppressed Voltage Rating (SVR) UL 1449, 2nd Edition February 2007 Revision L-N	HL-N	L-G	HL-G	N-G	L-L	MCOV % Max. Continuous Operating Voltage
ME	**120S**	120/240	1 Ph, 3 W + G	500	—	500	—	500	800	125%
HE	**120Y**	120Y/208	3 Ph, 4 W + G	500	—	500	—	500	800	125%
	220Y	220Y/380	3 Ph, 4 W + G	800	—	900	—	800	1500	145%
	240D	240 Delta	3 Ph, 3 W + G	—	—	700	—	—	1500	115%
	240H	120/240 Delta HL	3 Ph, 4 W + G	500	800	500	800	500	1000	115%
	240Y	240Y/415	3 Ph, 4 W + G	800	—	900	—	800	1500	130%
	277Y	277Y/480	3 Ph, 4 W + G	800	—	900	—	800	1500	115%
	347Y	347Y/600	3 Ph, 4 W + G	1200	—	1200	—	1200	2000	115%
	480D	480 Delta	3 Ph, 3 W + G	—	—	1500	—	—	3000	170%

Also available in 600D configurations. For details, please contact GE Power Quality Customer Service at 800 637 1738.

	Maximum Surge Current Capacity		
	Exposure Level	Per Mode	Per Phase
06	**ME**	65kA	130kA
08	**ME**	80kA	160kA
10	**ME & HE**	100kA	200kA
15	**HE**	150kA	300kA
20	**HE**	200kA	400kA
30	**HE**	300kA	600kA

Phase Rating = (L-N + L-G)

Product # Example

TPHE277Y15WMN12S
—277Y/480 V, 3 Ph, 4 W + G
—150kA per mode
—Surface mount enclosure without disconnect
—Painted steel

Suffix	Description	NEMA Enclosure	Mounting	Disconnect
1	Painted Steel	1	Surface	Yes
12S	Painted Steel	12	Surface	No
12F	Painted Steel	12	Flush	No
4	Fiberglass	4X	Surface	Yes
4S	Painted Steel	4	Surface	No
4X	Stainless Steel	4X	Surface	No

TRANQUELL® ME and LE

Wall Mount

The TRANQUELL® ME and LE feature compact, economical designs for use at medium exposure, distribution or branch panels and are available in a standard NEMA 12 enclosure. These devices have been tested to surge current ratings per NEMA LS-1, including the fuses in the surge path. These units come standard with indicating lights and dry contacts. Ratings are available from 25kA per mode to 100kA per mode.

These transient voltage surge suppressors provide all mode protection, with surge components (MOVs) connected on the phase- to-neutral, phase-to-ground, and neutral-to-ground paths as appropriate for the voltage configuration.

Features and Benefits

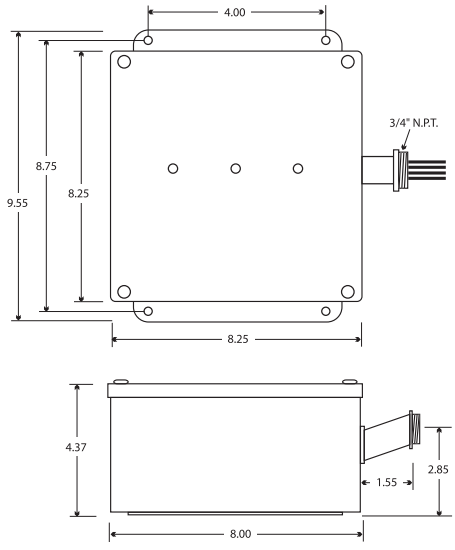
—UL1449, CUL
—TRANQUELL® ME devices with UL1283 Noise Filters
—UL Tested to 65,000 Amperes Symmetrical Withstand
—TRANQUELL® ME Device is Capable of Surviving a minimum of 5,000 Category C3 Impulses (10kA, 20kV) per mode
—TRANQUELL® ME Device Capable of Surviving a minimum of 5,000 Longwave (10x1000ms) Impulses per mode
—TRANQUELL® LE Device is Capable of Surviving a minimum of 3,500 Category C3 Impulses (10kA, 20kV) per mode
—Form C Dry Contacts for Remote Monitoring
—Green Status Indicating Light(s)
—Standard 5 year limited warranty, Optional 10 year warranty

Specifications

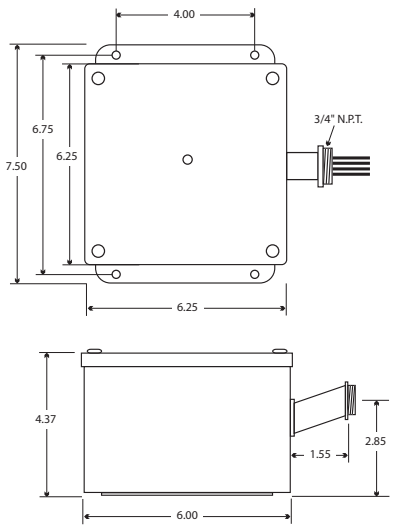
Operating Frequency:	50/60 Hz
Connection:	10 AWG Conductors, Parallel Connected
Operating Temperature:	-40°C to +65°C
Operating Humidity:	0% to 95% Non-Condensing
Weight:	(TME) 19 lbs., (TLE) 11.4 lbs.

*Must be installed downstream from 60 Amp breaker or less.

TME



TLE



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Wall Mount TRANQUELL® ME and LE - 65 kA Symmetrical Fault Withstand

Maximum Surge Current	Enclosure Type	Description	Product Number	List Price GO-AC11
25 kA per mode / 50 kA per phase	NEMA 12	Lights, Form C Contacts	TLEXXXX025WM	**$475.00**
50 kA per mode / 100 kA per phase	NEMA 12	Lights, Form C Contacts	TLEXXXX050WM	**$825.00**
65 kA per mode / 130 kA per phase	NEMA 12	Lights, Form C Contacts	TMEXXXX065WM	**$1250.00**
80 kA per mode / 160 kA per phase	NEMA 12	Lights, Form C Contacts	TMEXXXX080WM	**$1800.00**
100 kA per mode / 200 kA per phase	NEMA 12	Lights, Form C Contacts	TMEXXXX100WM	**$2200.00**

Note: Replace XXXX in Product Number with nomenclature for Nominal Voltage (Volts RMS).

Product # ___ ____ ___ **WM**

* Suppressed Voltage Rating UL1449 2nd Edition
** Maximum Continuous Operating Voltage

		Nominal Voltage (Volts RMS)	Configuration	TME SVR* L-N / N-G / L-G	TLE SVR* L-N / N-G / L-G	MCOV%**
TLE TME	**120S**	120/240	1 Phase, 3 Wire + Ground	400 / 400 / 400	500 / 500 / 500	125%
	120Y	120Y/208	3 Phase, 4 Wire + Ground	400 / 400 / 400	500 / 500 / 500	125%
	240D	240 Delta	3 Phase, 3 Wire + Ground	- / - / 700	- / - / 800	115%
	240H	120/240 Delta HL	3 Phase, 4 Wire + Ground	400/700 / 400 / 400/700	500/800 / 500 / 500/800	115%
	240Y	277Y/480	3 Phase, 4 Wire + Ground	900 / 1500 / 800	800 / 800 / 800	130%
	277Y	277Y/480	3 Phase, 4 Wire + Ground	900 / 1500 / 800	800 / 800 / 800	115%
	220Y	220/380	3 Phase, 4 Wire + Ground	900 / 800 / 800	800 / 800 / 800	145%
	480D	480 Delta	3 Phase, 3 Wire + Ground	- / - / 1500	- / - / 1500	170%

025	25kA per mode	50 kA per phase	(TLE)
050	50kA per mode	100 kA per phase	(TLE)
065	65kA per mode	130 kA per phase	(TME)
080	80kA per mode	160 kA per phase	(TME)
100	100kA per mode	200 kA per phase	(TME)

Communication/Alarm Surge Protector

Surge Arrestor Device

Description

The GE 422 is designed to be used as a surge arrestor device typically mounted at a de-mark board in a commercial or industrial office environment. Paired circuits are continuously monitored by the GE 422 for any surge activity. When surges are detected, the bi-directional solid state device reacts in less than a nanosecond to shunt the energy to ground. Product is designed for use with T1/E1, telephone and alarm lines.

Features and Benefits

—UL Listed 497, 497A, 497B
—CSA C22.2, No. 226-92
—Protects T1/E1, Data, Alarm and Telephone Lines
—Provides Up to 6 Pair Protection
—Diode / Gas Tube Hybrid Technology
—Provides Bi-directional Protection
—Extremely Tight Suppression Voltage
—Easy to Install

Specifications

Duty:	Primary and Secondary
Clamp Voltages:	17, 60, 265
Peak Current:	10,000 Amps (8x20µS)
DC Series Rs:	4-7 Ohms Typical
Connection:	Screw Terminals (28 to 12AWG wire)
UL:	497, 497A, 497B
CSA:	C22.2 No 226-92
Housing:	Aluminum
Dimensions:	6.5"Hx4.2"Wx1.4"D
Ground Posts:	10-32x1/2" Stainless

Communication/Alarm Surge Protector

Communication/Alarm Surge Protector–Surge Arrestor Device

Application	Suppression Voltage	Peak Current (8x20 µS)	Response	Capacitance	Typical Failure Condition (equipment to line)	Product No.	List Price GO-AC4
T1/E1	±17-36V	10,000A DC	1NANOSECOND	60pF	Open	422-017-600	**$248.00**
ALARM	±60-95V	10,000A DC	1NANOSECOND	60pF	Open	422-060-600	**$248.00**
TELEPHONE	±265-350V	10,000A DC	1NANOSECOND	60pF	Open	422-265-600	**$248.00**

Publications and Reference: See Section 22 for a complete list of additional product-related publications

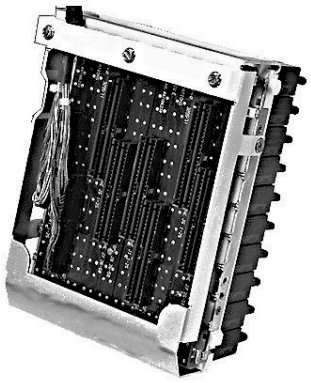
Protection Block Assembly–Surge Protection Device

Introduction

The GE 427 patented 5 Pin Protection Block Assembly is equipped with a multi-layered printed circuit board, providing a connectorized interface for cable assemblies. It accommodates 25, 50 or 100 pair cable. It is used in many applications, including: central offices, remote switching sites, customer premises and building entrances, to protect telephone and voice/data lines.

When wiring cabinets with conventional wire wrap blocks each block becomes a different part number and causes difficulty for OEMs who have to inventory parts.

The same GE 427 Protection Block Assembly is used in every position of a cabinet or mainframe. The cables are now treated as less expensive parts and are stocked by length and mating connector type. Manual labor, in running cables and making wire wrap connections, is reduced significantly by employing GE Connectorized Block Assemblies.



Protection Block Assembly

Performance Features

—Gold pins and sockets ensure proper electrical connections
—Self-locking aluminum hood (optional) provides protection to connectors and printed circuit board and serves as the cable strain relief tie point
—Multi-layered printed circuit board
—Handle heavy transient current surges
—U.S. Patent No. 5,457,593

Benefits

—Provides maximum reliability by eliminating all wire wraps
—Provides the high quality installation of a protection block
—Provides additional flexibility for equipment installations
—Easily serviceable in the field
—Eliminates the need for wire wrapping
—Allows connectorization into many different applications and greatly reduces installation, labor and repair costs
—All cables connected to this unit can be removed, permitting specific cable change out or change out of the entire protection block assembly. This allows the protected equipment to quickly be put back into service.
—Covered by a two year limited product warranty

Specifications

Voltage Class:	600 V
BIL rating:	10 kV
Primary Currents:	10 to 5000 amps

Protection Block Assembly–Surge Protection Device

Pair	Block Type	Hood	Product Number	List Price GO-AC1
50	Marconi Block	YES	427-050-202	**$168.47**
100	Avaya Block	YES	427-100-102	**$336.42**
100	Marconi Block	YES	427-100-202	**$369.23**
100	Corning Block	YES	427-100-302	**$336.42**

Automatic Transfer Switches

It is imperative that emergency power systems allow for a smooth transition from a normal source to an emergency source and back again. Our automatic transfer switches are field-proven to be superior in design and reliability, regardless of the application.

Model ZTX is built specifically for residential and light commercial applications. The switches are ideal for standby applications, and are available as NEMA 1 or NEMA 3R enclosed.

Model ZTG is a product solution designed for standard open transition applications. Building on ZTS technology, the series uses the MX150 microprocessor control system and includes many of the most common features specified on a transfer switch. It also provides an intuitive user interface, communications capability and self-diagnostics.

Model ZTGD has the features of the ZTG Series but is built for delayed transition applications that require the dependability and ease of operation of a power contactor switch.

Model ZTGSE has the features of the ZTG Series but is built for a service entrance application that integrates the utility circuit breaker, optional transient voltage surge suppression and power monitor into one simple coordinated package.

Model ZTGDSE has the features of the ZTG Series but is built for delayed transition service entrance application that integrates the utility circuit breaker, optional transient voltage surge suppression and power monitor into one simple coordinated package.

Model ZTS is the building block of the transfer switch product line. Available in open type or NEMA enclosed to customer specifications, the ZTS withstand and closing ratings far exceed UL requirements and comes standard with our MX250 controller.

Model ZTSD of delayed transition transfer switches allows for the full decay of rotating motors or transformer fields. They can also be used for load shedding of selected circuits or other applications.

Model ZBTS Bypass-Isolation Transfer Switches are the solution when power interruption during service or testing is unacceptable. Incorporating a quick-make/quick-break manual load transfer handle and GE Zenith Controls control/interlock system, the bypass uses normal failure sensing and a time delay to start the engine automatically if a failure occurs when the automatic transfer switch (ATS) has been removed for service.

Model ZBTSD Delayed Transition Transfer/Bypass-Isolation Switches incorporate the features of the ZBTS Bypass-Isolation Switch and the ZTSD unit for transfer of large motor loads, transformers, uninterruptible power supplies (UPS) systems or load shedding to a neutral "off" position.

Model ZTSCT of closed transition switches combine ZTSD operation during a source failure with a highly engineered control system that allows momentary paralleling of two acceptable sources, limiting the impact of transfer on the load.

Model ZBTSCT Closed Transition Transfer/Bypass-Isolation Switches combines all the functionality of our bypass and closed transition switches for the highest level in reliability.

Model ZTSMV Medium Voltage Automatic Transfer Switches are designed for installations from 5 kV to 15 kV and loads up to 3000 amps.

Features

Model ZTX switches are built for residential and light commercial applications requiring the dependability and ease of operation found in a power contactor switch.

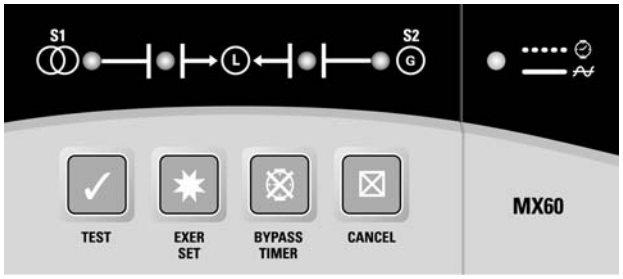
—Ratings 40 to 400 amps (2, 3 and 4 pole)
—UL 1008, CSA and IEC listed to 480 VAC 50/60Hz
—Double throw, mechanically interlocked contactor mechanism
—Electrically operated, mechanically held
—Designed for standby applications
—Equipment (controls & power section) seismic test qualified to:
  —IBC-2003
  —IEEE-693-2005

Model ZTX switches are equipped with the MX60 control panel as standard. This microprocessor control includes:

—Undervoltage sensing (90% pickup/80% dropout) of the utility source
—Voltage and frequency sensing of the generator source (90% voltage/95% frequency pickup)
—Time Delay Engine Start – 5 seconds (P)
—Time Delay Engine Warmup – Transfer to Generator – 20 seconds (W)
—Time Delay Utility Stabilization/Retransfer to Utility – 5 minutes (T)
—Time Delay Engine Cool Down – 5 minutes (U)
—"All time delays are fixed."
—Indicating LEDs for source availability and switch position
—Pushbuttons for test, engine start (manual), generator exerciser and diagnostic reset
—Special status annunciation of in-phase transfer and timer operation
—Selectable 7, 14, 21 or 28 day (factory set 28 days) generator exerciser timer
—Diagnostic LED indications

Additional options include:
A3/A4 Auxiliary contacts (1 each) closed in utility and generator positions
B9X 1.5 Amp/12 or 24 VDC Battery Charger

ZTX Series Residential and Light Commercial Switch with MX60 Control Panel (front cover removed)



MX60 Microprocessor Control Panel

Ordering Information

Z T X 0 0 0		0			– Z E C		Z V C		M 0 6 0
Model/Type	Control Panel	Application	Ampere Size	Switched Poles	Enclosure Type		Operational Voltage		Accessories

Model/Type
- Z T X 0 0 0 — Standard (Open Transition)

Control Panel
- M 6 — MX60 Microprocessor Control Unit
- 0 0 — No Microprocessor Control Unit

Application
- 0 — Utility-Generator

Ampere Size
- 0 0 4 — 40 amps
- 0 0 8 — 80 amps
- 0 1 0 — 100 amps
- 0 1 5 — 150 amps
- 0 2 0 — 200 amps
- 0 2 2 — 225 amps
- 0 3 0 — 300 amps
- 0 4 0 — 400 amps

Switched Poles
- B — 2 Poles
- E — 3 Poles
- F — 4 Poles

Enclosure Type
- 0 1 — Type 1 Enclosed
- 3 R — Type 3R Enclosure
- 0 0 — Open Style Unit

Operational Voltage
- A B — Consult Table Below

Accessories
- A3/A4 — Auxiliary Contacts (1 each) Closed in Source 1 (normal) and Source 2 (emergency)
- B9X — Battery Charger 1.5 Amp/12 or 24 VDC

For information on ZTX OEM plans, please consult your GE representative

A	B	Voltage	Phase	Config.	Hz
1	0	120	1	2 wire	60
2	0	120/240	1	3 wire	60
2	1	120/208	1	3 wire	60
3	0	240	3	3 wire	60
3	1	208	3	3 wire	60
3	2	220	3	3 wire	50
3	3	120/240	3	4 wire	50
3	4	110/220	3	4 wire	60
3	5	139/240	3	4 wire	60
3	8	120/240	3	4 wire	60
4	0	120/208	3	4 wire	60
4	1	127/220	3	4 wire	60
4	2	127/220	3	4 wire	50
5	0	480	3	3 wire	60
5	1	440	3	3 wire	60
5	2	440	3	3 wire	50
5	5	460	1	3 wire	50
5	7	480	1	2 wire	60
5	8	254/440	3	4 wire	60
7	0	277/480	3	4 wire	60
7	1	277	1	2 wire	60
7	4	266/460	3	4 wire	60
7	5	460	3	3 wire	60
8	2	380	1	2 wire	50
9	0	240/416	3	4 wire	60
9	1	220/380	3	4 wire	60
9	2	220/380	3	4 wire	50
9	3	240/416	3	4 wire	50
9	7	380	3	3 wire	60

Note: Operating voltage must be specified at time of order. Only the most common voltages are shown above.

Product # Example

ZTX000M60010E-ZEC01ZVC50M060

This number string shows the correct format for a ZTX Model Automatic Transfer Switch with MX60 microprocessor control unit, Utility-Generator, 100 amps, 3 pole, NEMA Type 1 enclosure, 480 V, 3ϕ, 3 wire, 60 Hz system with the standard group of accessories.

Technical Specifications

Lug Configuration			
Amp Size	Qty Per Phase and Neutral	Size	
40-80	1	#8 to 3/0	8 to 85 mm^2
100-225	1	#6 to 250 MCM	13 to 127 mm^2
300-400	1	#4 to 600 MCM	21 to 304 mm^2

Dimensions							
Ampere Rating	Poles	NEMA 1			NEMA 3R		
		Height	Width	Depth	Height	Width	Depth
40-225	2, 3, 4	24	18	10	24	18.5	10.5
300-400	2, 3, 4	46	24	14	46	24	15

UL 1008 Withstand and Closing Ratings

Please refer to GE Zenith Controls Bulletin TB-1102.

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Features

Model ZTG switches are built for standard applications requiring the dependability and ease of operation found in a power contactor switch.

—Ratings 40 to 3000 amps (2, 3 or 4 poles)
—UL 1008 listed at 480 VAC
—CSA certified at 600 VAC (200-260 amp-480V)
—IEC listed at 480V
—Equipment (controls and power section) seismic test qualified to:
  —IBC–2003
  —IEEE–693–2005
—Double throw, mechanically interlocked contactor mechanism
—Electrically operated, mechanically held
—Designed for emergency and standby applications
—Available in standard (ZTG) or delayed transition (ZTGD) models

ZTG switches are equipped with GE Zenith's next-generation MX150 microprocessor panel, which controls the operation and displays the status of the transfer switch's position, timers and available sources. As an embedded digital controller, the MX150 offers high reliability and ease of unattended operation across a range of applications. The MX150 features include:

—Timer and voltage/frequency settings adjustable without disconnection from the power section
—Built-in diagnostics with LCD displays for immediate troubleshooting
—LED/LCD indicators for ease of viewing and long life
—Nonvolatile memory—clock battery backup not required for standard switch operation
—Processor and digital circuitry isolated from line voltage
—Inputs optoisolated for high electrical immunity to transients and noise
—Communications header for network interface

Fully Approved

—UL, CSA and IEC listed
—IBC–2003
—IEEE–693–2005
—Ringing wave immunity per IEEE 472 (ANSI C37.90A)
—Conducted and Radiated Emissions per EN55022 Class B (CISPR 22) (Exceeds EN55011 and MILSTD 461 Class 3)
—ESD immunity test per EN61000-4-2 Class B (Level 4)
—Radiated RF, electromagnetic field immunity test per EN61000-4-3 (ENV50140) 10v/m
—Electrical fast transient/burst immunity test per EN61000-4-4
—Surge immunity test per EN61000-4-5 IEEE C62.41 (1.2 X 50µs, 0.5 and 4 kV)
—Conducted immunity test per EN61000-4-6 (ENV50141)
—Voltage dips and interruption immunity EN61000-4-11

Design and Construction Features

—Close differential 3 phase under-voltage sensing of the normal source—factory standard setting 90% pickup, 80% dropout (adjustable); under-frequency sensing of the normal source factory setting 95% pickup (adjustable)
—Voltage and frequency sensing of the emergency source—factory standard setting 90% pickup voltage, 95% pickup frequency (adjustable)
—Test switch (fast test/load/no load) to simulate normal source failure—automatically bypassed should the emergency source fail
—Type 1 enclosure is standard—also available in open style or Types 3R, 4, 4X or 12

Options

6A	Test Switch, Maintained
6AP	Test Switch, Maintained Programmable
A1	Auxiliary Contact, operates on Source 1 line failure
A1E	Auxiliary Contact, operates on Source 2 line failure
A3	Auxiliary Contacts: Closed when the transfer switch is in Source 2 position
A4	Auxiliary Contacts: Closed when the transfer switch is in Source 1 position
A62	Sequential Universal Motor Load Disconnect Circuit. Normally closed Auxiliary contacts for Motor Loads. Open 0-60 seconds pior to transfer, after transfer, or both in either direction then reclose in timed sequence after transfer.
ATGEW-X	Extended annual parts and labor warranty (1-4 years for a total of 5 years max.)
CTAP	Alarm panel on transfer to emergency w/silence button & light
DS	Inhibits transfer in either direction when in inhibit. Allows automatic operation when in Auto (Standard on 800A and above)
HT	Heater and Thermostat
LCM	LonWorks Communication Module
MCM	Modbus RTU Communication Module

M90 Series Power Measurement Meters
(Not available in NEMA 4 enclosure)

M90	EPM2000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factory and Frequency). 3 Line LED Display. 50/60 Hz Universal Operation. 1 or 3 phase. Standard Modbus RTU RS485 communications capability. 40 – 1200 Amps.
M90A	Adds Pre-Wiring for Enervista® Viewpoint Monitoring of M90 Accessory & ATS Status using Modbus RS485 Serial Communications
M90B	Adds Pre-Wiring for Enervista® Viewpoint Monitoring of M90 Accessory & ATS Status using Ethernet TCP/IP Communications
M91	EPM6000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factory and Frequency, THD). Certified energy and demand metering. Meets ANSI C12.20 and IEC 687 Accuracy Classes. Front IrDA Port Laptop Connection. Standard Modbus RTU RS485 or DNP 3.0 communications capability.
M91A	Adds Pre-Wiring for Enervista® Viewpoint Monitoring of M91 Accessory & ATS Status using Modbus RS485 Serial Communications
M91B	Adds Pre-Wiring for Enervista® Viewpoint Monitoring of M91 Accessory & ATS Status using Ethernet TCP/IP Communications
OCVR-1SG	Lockable see-through microprocessor cover for NEMA 3R or 12
OCVR-1SS	Lockable see-through microprocessor and meters cover for NEMA 3R or 12
T3/W3	Elevator Pre-Signal Auxiliary Contacts: Open 0-60 seconds prior to transfer to either direction, re-closes after transfer.
UMD	Universal Motor Load Disconnect Circuit: Auxiliary Contact opens 0-5 minutes prior to transfer in either direction, re-closes after transfer. Can be configured by end user for Pre-transfer, Post-transfer, or both.
VI	Voltage Imbalance Monitor (Three Phase)

NOTE: For applications requiring additional options or other configurations, use GE Zenith Factory.

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Testing Standards

UL, CSA and IEC listed	UL 1008, CSA 22.2 No. 178, IEC 947-6-1
Ringing wave immunity	IEEE 472 (ANSI C37.90A)
Conducted and Radiated Emissions	EN55022 Class B (CISPR 22) (Exceeds EN55011 & MILSTD 461 Class 3)
ESD immunity test	EN61000-4-2 Class B (Level 4)
Radiated RF, electromagnetic field immunity test	EN61000-4-3 (ENV50140) 10v/m
Electrical fast, transient/burst immunity test	EN61000-4-4
Surge immunity test	EN61000-4-5 IEEE C62.41 1.2 X 50µs, 0.5 & 4 kV
Conducted immunity test	EN61000-4-6 (ENV50141)
Voltage dips and interruption immunity	EN61000-4-11

ZTG AL/CU UL Listed Solderless Screw-Type Terminals for External Power Connections[1]

Normal, Emergency and Load Terminals			
Switch Size (Amps)	**Cables per Phase & Neutral**	**Range of Wire Sizes**	
40	1	#8 to 3/0	8-85 mm^2
80			
100	1	#6 to 250 MCM	13-127 mm^2
150			
200, 225			
260	1	#6 to 350 MCM	13-177 mm^2
400		#4 to 600 MCM	21-304 mm^2
600	2	#2 to 600 MCM	33-304 mm^2
800, 1000, 1200	4		
1600, 2000, 2600, 3000	8	#2 to 600 MCM	33-304 mm^2

[1] For ZTGD series data, contact the GE Zenith factory

Standard MX150 Control Setting Ranges

	Control Function	Range	Factory Setting
MSTDG	Source 1 Line Sensing – Under-voltage Dropout/Pickup	75-98%	80%
		85-100%	90%
	Source 2 Line Sensing – Under-voltage Dropout/Pickup	75-98%	80%
		85-100%	90%
	Source 2 Line Sensing – Under-frequency Dropout/Pickup	88-98%	90%
		90-100%	95%
	Time Delay – Engine Start (Acc. P1)	0-10 seconds	3 seconds
	Time Delay – Engine Cool Down (Acc. U)	0-60 minutes	5 minutes
	Time Delay – Transfer to Source 2 (Acc. W)	0-5 minutes	1 second
	Time Delay – Retransfer to Source 1 (Acc. T)	0-60 minutes	30 minutes
	Time Delay – Motor Disconnect or Transfer Presignal (Acc. UMD, or T3/W3)	0-60 seconds	20 seconds
	Delayed Transition Time Delays (DT, DW)	0-10 minutes	5 seconds
	Event Exerciser (CDT)	5-60 min.-1,7,14 or 28 days load or no load	20 min. - 7 days no load
MEXEG	Programmable Event Exerciser (CDP)	365 day cycle, load or no load	0 min. - 7 days no load
	Voltage Imbalance (VI)	5-20% nominal; 10-30 sec.	10% Fail, 8% Restore; 30 sec.
Options	Elevator Pre-Signal (T3/W3)	0-60 seconds	20 seconds
	Sequential Motor Load Disconnect (A62)	0-5 minutes	20 seconds
	Motor Load Disconnect (UMD)	0-60 seconds	5 seconds

Ordering Information

Z						—	Z	E	C			Z	V	C						
Model/Type						Switched Poles	Enclosure Type					Operational Voltage					Accessories			

Control Panel	Application	Ampere Size	Switched Poles	Enclosure Type	Operational Voltage	Accessories
A 0		0 0 4	B	0 1	A B	M S T D
Entelli-Switch 150 Microprocessor Control Unit	0 Utility-Generator	0 0 8	E	1 2	Consult Table Below	M E X E
	U Utility-Utility	0 1 0	F	3 R		M A N O
	M Manual Transfer	0 1 5		4 0		Then choose additional accessories
		0 2 0		4 X		6A
		0 2 2		0 0		6AP
		0 2 6				A1
		0 4 0				A1E
		0 6 0				A3
		0 8 0				A4
		1 0 0				A62
		1 2 0				ATGEW-X
		1 6 0				CTAP
		2 0 0				DS
		2 6 0				HT
		3 0 0				LCM
						M90
						M90A
						M90B
						M91
						M91A
						M91B
						MCM
						OCVR-15G
						OCVR-1SS
						T3/W3
						UMD
						VI
						None

Standard (Open Transition)

Delayed Transition

Entelli-Switch 150 Microprocessor Control Unit

Utility-Generator

Utility-Utility

Manual Transfer

40 amps

80 amps

100 amps

150 amps

200 amps

225 amps

260 amps

400 amps

600 amps

800 amps

1000 amps

1200 amps

1600 amps

2000 amps

2600 amps

3000 amps

2 Poles

3 Poles

4 Poles

Type 1 Enclosed

Type 12 Enclosure

Type 3R Enclosure

Type 4 Enclosure

Type 4X Enclosure

Open Style Unit

Consult Table Below

A	B	Voltage	Phase	Config.	Hz
1	0	120	1	2 wire	60
2	0	120/240	1	3 wire	60
2	1	120/208	1	3 wire	60
3	0	240	3	3 wire	60
3	1	208	3	3 wire	60
3	2	220	3	3 wire	50
3	3	120/240	3	4 wire	50
3	4	110/220	3	4 wire	60
3	5	139/240	3	4 wire	60
3	8	120/240	3	4 wire	60
4	0	120/208	3	4 wire	60
4	1	127/220	3	4 wire	60
4	2	127/220	3	4 wire	50
5	0	480	3	3 wire	60
5	1	440	3	3 wire	60
5	2	440	3	3 wire	50
5	5	460	1	3 wire	50
5	7	480	1	2 wire	60
5	8	254/440	3	4 wire	60
6	0	575	3	3 wire	60
6	1	347/600	3	4 wire	60
7	0	277/480	3	4 wire	60
7	1	277	1	2 wire	60
7	4	266/460	3	4 wire	60
7	5	460	3	3 wire	60
8	0	120/240	2	4/5 wire	60
8	2	380	1	2 wire	50
9	0	240/416	3	4 wire	60
9	1	220/380	3	4 wire	60
9	2	220/380	3	4 wire	50
9	3	240/416	3	4 wire	50
9	7	380	3	3 wire	60

Note: Operating voltage must be specified at time of order. Only the most common voltages are shown above.

Switch Types

—**Standard:** Unless otherwise noted, the standard switch with quick transfer will be supplied.

—**Delayed Transition:** When ordered as the ZTGD, the delayed transition switch offers time delay during transfer from one position to the other. This is primarily for transfer of large motor or inductive loads. The operation of the delayed transition switch is totally independent of the synchronism of the power sources, eliminating the need for in-phase monitors or extensive motor-disconnect control wiring between the transfer switch and motor control centers.

Product # Example

ZTG000A00040F-ZEC01ZVC40MSTD

This number string shows the correct format for a ZTG Series Automatic Transfer Switch with an MX150 microprocessor control unit, Utility - Generator, 400 amps, 4 pole, NEMA Type 1 enclosure, 120/208V 3ϕ, 4 wire, 60 Hz system with the standard group of accessories.

UL 1008 Withstand and Closing Ratings

Please refer to GE Zenith Controls Bulletin TB-1102.

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Dimensional and Weight Specifications

Model	Ampere Rating	Poles	NEMA 1 Height (A)	NEMA 1 Width (B)	NEMA 1 Depth (C)	NEMA 1 Ref. Figure	Weight Open Type	Weight NEMA 1	Application Notes
ZTG	40, 80	2, 3	24 (61)	18 (46)	11 (28)	A	21 (10)	57 (26)	1 - 6
		4	24 (61)	18 (46)	11 (28)	A	21 (10)	60 (27)	
	100, 150	2, 3	24 (61)	18 (46)	11 (28)	A	21 (10)	57 (26)	1 - 6
		4	24 (61)	18 (46)	11 (28)	A	21 (10)	60 (27)	
	200	2, 3	24 (61)	18 (46)	11 (28)	A	21 (10)	57 (26)	1 - 6
		4	24 (61)	18 (46)	11 (28)	A	21 (10)	60 (27)	
	225, 260, 400	2, 3	46 (117)	24 (61)	14 (36)	A	70 (32)	175 (80)	1 - 5
		4	46 (117)	24 (61)	14 (36)	A	75 (34)	180 (82)	
	600	2, 3	66 (168)	24 (61)	19.5 (50)	B	165 (75)	400 (450)	1 - 5, 7
		4	66 (168)	24 (61)	19.5 (50)	B	185 (84)	450 (204)	
	800, 1000, 1200	2, 3	74 (188)	40 (102)	19.5 (50)	B	190 (86)	455 (206)	1 - 5, 7
		4	74 (188)	40 (102)	19.5 (50)	B	210 (95)	540 (245)	
	1600, 2000	3	90 (229)	35.5 (90)	48 (122)	C	345 (156)	1010 (458)	1 - 5, 7-8
		4	90 (229)	35.5 (90)	48 (122)	C	450 (204)	1160 (526)	
	2600, 3000	3	90 (229)	35.5 (90)	48 (122)	C	465 (211)	1010 (458)	1 - 5, 7-8
		4	90 (229)	35.5 (90)	48 (122)	C	670 (304)	1160 (526)	
ZTGD	40, 80	2, 3	46 (117)	24 (61)	14 (36)	A	21 (10)	57 (26)	1 - 6
		4	46 (117)	24 (61)	14 (36)	A	21 (10)	60 (27)	
	100, 150	2, 3	46 (117)	24 (61)	14 (36)	A	21 (10)	57 (26)	1 - 6
		4	46 (117)	24 (61)	14 (36)	A	21 (10)	60 (27)	
	200, 225	2, 3	46 (117)	24 (61)	14 (36)	A	21 (10)	57 (26)	1 - 6
		4	46 (117)	24 (61)	14 (36)	A	21 (10)	60 (27)	
	260, 400	2, 3	46 (117)	24 (61)	14 (36)	A	80 (36)	220 (100)	1 - 5
		4	46 (117)	24 (61)	14 (36)	A	85 (39)	230 (102)	
	600	2, 3	66 (168)	24 (61)	19.5 (50)	B	185 (84)	400 (181)	1 - 5, 7
		4	66 (168)	24 (61)	19.5 (50)	B	205 (93)	450 (204)	
	800, 1000, 1200	2, 3	74 (188)	40 (102)	19.5 (50)	B	210 (95)	475 (215)	1 - 5, 7
		4	74 (188)	40 (102)	19.5 (50)	B	230 (104)	560 (254)	
	1600, 2000	3	90 (229)	35.5 (90)	48 (122)	C	365 (166)	1010 (458)	1 - 5, 7-8
		4	90 (229)	35.5 (90)	48 (122)	C	470 (204)	1160 (526)	
	2600, 3000	3	90 (229)	35.5 (90)	48 (122)	C	485 (220)	1130 (513)	1 - 5, 7-8
		4	90 (229)	35.5 (90)	48 (122)	C	690 (313)	1395 (633)	

Application Notes:

1. Metric dimensions (cm) and weights (kg) shown in parentheses adjacent to English measurements.
2. Includes 1.25" door projection beyond base depth. Allow a minimum of 3" additional depth for projection of handle, lights, switches, pushbuttons, etc.
3. All dimensions and weights are approximate and subject to change without notice.
4. Packing materials must be added to weights shown. Allow 15% additional weight for cartons, skids, crates, etc.
5. Special enclosure (NEMA 3R, 4, 4x, 12, etc.) dimensions and layouts may differ. Consult the GE zenith factory for details.
6. A ZTG(D) 40-225A, when ordered with the following options, will require a larger enclosure: A62(T), Digital Meter, HT, OCVR-1SG, OCVR-1SS. Contact the GE Zenith factory for dimensions.
7. Add 3" in height for removable lifting eyes.
8. Ventilation louvers on side and rear of enclosure at 1600-3000 amps. One set of louvers must be clear for airflow with standard cable connections.

Reference Figures

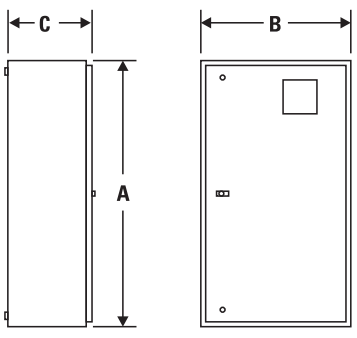


Figure A

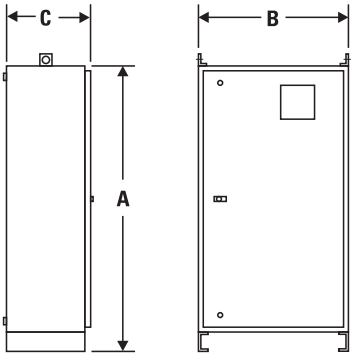


Figure B

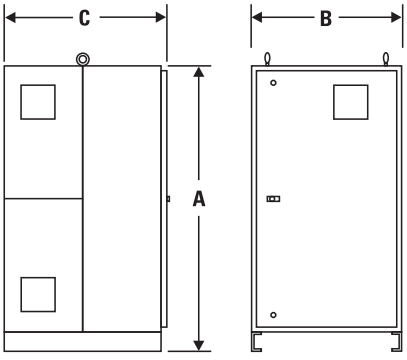


Figure C

Power Quality Products
Automatic Transfer Switches
Models ZTGSE and ZTGDSE

Features

While providing the functionality of an automatic transfer switch the ZTGSE integrates the utility circuit breaker, optional transient voltage surge suppression and power monitor into one simple coordinated package.

—Suitable for use as Service Entrance equipment
—Ratings 40 to 3000 amps (2, 3 or 4 poles)
—UL 1008 listed at 480 Vac
—Double throw, mechanically interlocked contactor mechanism
—Electrically operated, mechanically held
—Designed for emergency and standby applications
—Optional Load center for multiple loadside connections available up to 240 volts
—Additional options include battery charger, GFP, shunt trip selector, power monitor and TVSS
—Available with delayed transition feature

ZTGSE switches are equipped with GE Zenith's next-generation MX150 microprocessor panel, which controls the operation and displays the status of the transfer switch's position, timers and available sources. As an embedded digital controller, the MX150 offers high reliability and ease of unattended operation across a range of applications. The MX150 features include:

—Timer and voltage/frequency settings adjustable without disconnection from the power section
—Built-in diagnostics with an LCD display for immediate troubleshooting
—LED/LCD indicators for ease of viewing and long life
—Nonvolatile memory—clock battery backup not required for standard switch operation
—Processor and digital circuitry isolated from line voltage
—Inputs optoisolated for high electrical immunity to transients and noise
—Communications header for network interface

Fully Approved

—UL891, UL1008, CSA 22.2
—Ringing wave immunity per IEEE 472 (ANSI C37.90A).
—Conducted and Radiated Emissions per EN55022 Class B (CISPR 11) (Exceeds EN55011 & MILSTD 461 Class 3)
—ESD immunity test per EN61000-4-2 (Level 4)
—Radiated RF, electromagnetic field immunity test per EN61000-4-3 (ENV50140) 10v/m
—Electrical fast transient/burst immunity test per EN61000-4-4.
—Surge immunity test per EN61000-4-5 IEEE C62.41 (1.2 X 50ms, 5 & 8 kV)
—Conducted immunity test per EN61000-4-6 (ENV50141)
—Voltage dips and interruption immunity EN61000-4-11

Design and Construction Features

—Includes Normal (Source 1) molded or insulated case style circuit breaker 2 or 3 pole
—Includes mechanical lug connections for cables
—Close differential 3 phase under-voltage sensing of the normal source—factory standard setting 90% pickup, 80% dropout (adjustable); under-frequency sensing of the normal source factory setting 95% pickup (adjustable)
—Voltage and frequency sensing of the emergency source—factory standard setting 90% pickup voltage, 95% pickup frequency (adjustable)
—Test switch (fast test/load/no load) to simulate normal source failure—automatically bypassed should the emergency source fail
—NEMA Type 1 enclosure is standard with optional NEMA 3R available
—Ground fault protection is standard 1000A and above
—Disconnect link on Neutral and Ground

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Reference Charts

Testing Standards	
UL, CSA	UL 1008, UL891, CSA 22.2
Ringing wave immunity	IEEE 472 (ANSI C37.90A)
Conducted and Radiated Emissions	EN55022 Class B (CISPR 11) (Exceeds EN55011 & MILSTD 461 Class 3)
ESD immunity test	EN61000-4-2 (Level 4)
Radiated RF, electromagnetic field immunity test	EN61000-4-3 (ENV50140) 10v/m
Electrical fast, transient/burst immunity test	EN61000-4-4
Surge immunity test	EN61000-4-5 IEEE C62.41 1.2 X 50µs, 5 & 8 kV
Conducted immunity test	EN61000-4-6 (ENV50141)
Voltage dips and interruption immunity	EN61000-4-11

AL/CU UL Listed Solderless Screw-Type Terminals for External Power Connections			
	Normal, Emergency and Load Terminals		
Switch Size (Amps)	Cables per Pole	Range of Wire Sizes	
40, 80, 100, 150	1	#8 to 3/0 AWG	8-85 mm
200, 225		#6 AWG to 250 MCM	13-127 mm
260		#6 AWG to 350 MCM	13-177 mm
400		#4 AWG to 600 MCM	21-304 mm
600	2	#2 AWG to 600 MCM	33-304 mm
800	4		

Ordering Information

Z T G	S E 0	A 0	0				—	N 0 1		M S T D G
Base Model	Type	Control Panel	Config.	Ampere Size			Switched Poles	Enclosure Type	Operational Voltage	Accessories

Type
- S E 0 — Standard (Open Transition Transfer Switch)
- D S E — Standard (Delayed Transition Transfer Switch)

Control Panel
- A 0 — MX150 Microprocessor Control Unit

Config.
- 0 — Utility - Generator

Ampere Size
- 0 0 4 — 40 amps
- 0 0 8 — 80 amps
- 0 1 0 — 100 amps
- 0 1 5 — 150 amps
- 0 2 0 — 200 amps
- 0 2 2 — 220 amps
- 0 2 6 — 260 amps
- 0 4 0 — 400 amps
- 0 6 0 — 600 amps
- 0 8 0 — 800 amps

Switched Poles
- B — 2 Poles
- E — 3 Poles
- F — 4 Poles

Enclosure Type
- N 0 1 — Type 1 Enclosure
- N 3 R — Type 3R Enclosure

Operational Voltage
- A B — Consult Table Below

Accessories
- M S T D G
- M E X E G

If Required, choose additional accessories.

A	B	Voltage	Phase	Config.	Hz
1	0	120	1	2 wire	60
2	0	120/240	1	3 wire	60
2	1	120/208	3	3 wire	60
3	0	240	3	3 wire	60
3	1	208	3	3 wire	60
3	2	220	3	3 wire	50
3	3	120/240	3	4 wire	50
3	4	110/220	3	4 wire	60
3	5	139/240	3	4 wire	60
3	8	120/240	3	4 wire	60
4	0	120/208	3	4 wire	60
4	1	127/220	3	4 wire	60
4	2	127/220	3	4 wire	50
5	0	480	3	3 wire	60
5	1	440	3	3 wire	60
5	2	440	3	3 wire	50
5	5	460	1	3 wire	50
5	7	480	1	2 wire	60
5	8	254/440	3	4 wire	60
6	0	575	3	3 wire	60
6	1	347/600	3	4 wire	60
7	0	277/480	3	4 wire	60
7	1	277	1	2 wire	60
7	4	266/460	3	4 wire	60
7	5	460	3	3 wire	60
8	0	120/240	2	4/5 wire	60
8	2	380	1	2 wire	50
9	0	240/416	3	4 wire	60
9	1	220/380	3	4 wire	60
9	2	220/380	3	4 wire	50
9	3	240/416	3	4 wire	50
9	7	380	3	3 wire	60

Note: Will need to specify with order the operating voltage. Only the most common ones are shown here

Product # Example

ZTGSE0A0040E-N0140MSTDG

This number string shows the correct format for a ZTGSE Series Automatic Transfer Switch with an MX150 microprocessor control unit, Utility - Generator application, 400 amps, 3 pole, NEMA Type 1 enclosure, 120/208V 3Ø, 4 wire, 60 Hz system with the standard group of accessories.

Withstand Current Ratings per UL1008

ZTGSE Switch Ratings (Amps)	Maximum Circuit Amps When Used With Current Limiting Fuse ZTGSE/ZTGDSE	Maximum Circuit Amps When Used With Specific Coordinated Breaker Rating	ZTGDSE Switch Ratings (Amps)	Maximum Circuit Amps When Used With Specific Coordinated Breaker Rating
40, 80, 100, 150, 200, 225	200,000	30,000	40, 80, 100, 150 225, 260, 400, 600	50,000
260		35,000		
400 - 600		50,000		
800		65,000	800	65,000

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Dimensional Specifications

ZTGSE and ZTGDSE Model Transfer Switches

Model	Ampere Rating	Poles	NEMA 1 Enclosure H	NEMA 1 Enclosure W	NEMA 1 Enclosure D	NEMA 1 Enclosure Ref. Fig.	NEMA 3R Enclosure H	NEMA 3R Enclosure W	NEMA 3R Enclosure D	NEMA 3R Enclosure Ref. Fig.	App. Notes
ZTGSE/ ZTGDSE	40-80	2, 3, 4	51(130)	28(71)	16(41)	A	51(130)	29(74)	20(51)	A	1 - 5
	100-200	2, 3, 4	51(130)	28(71)	16(41)	A	51(130)	29(74)	20(51)	A	1 - 5
	225	2, 3, 4	51(130)	28(71)	16(41)	A	51(130)	29(74)	20(51)	A	1 - 5
	260	2, 3, 4	51(130)	28(71)	16(41)	A	51(130)	29(74)	20(51)	A	1 - 5
	400	2, 3, 4	51(130)	28(71)	16(41)	A	51(130)	29(74)	20(51)	A	1 - 5
	600	2, 3, 4	73(185)	34(86)	20(51)	B	73(185)	34(86)	24(61)	B	1 - 6
	800	2, 3	73(185)	34(86)	20(51)	B	73(185)	34(86)	24(61)	B	1 - 6
		4	73(185)	40(102)	20(51)	B	73(185)	40(102)	24(61)	B	1 - 6

Application Notes:
1. Metric dimensions (cm) and weights (kg) shown in parentheses adjacent to English measurements.
2. Includes 1.25" door projection beyond base depth. Allow a minimum of 3" additional depth for projection of handle, lights, switches, pushbuttons, etc.
3. All dimensions and weights are approximate and subject to change without notice.
4. Packing materials must be added to weights shown. Allow 15% additional weight for cartons, skids, crates, etc.
5. Add 4 inches in depth for NEMA 3R enclosure.
6. Add 3" in height for lifting eyes.
7. Contact factory for dimensional and weight information for 1000 Amps and above.

Model	Amp Rtg	Poles	Weights NEMA 1 Weight	Weights NEMA 3R Weight
ZTGSE	40-80	2	157(71)	212(96)
		3	159(72)	214(97)
		4	163(74)	218(99)
	100-200	2	162(74)	217(99)
		3	164(75)	219(99)
		4	168(76)	223(101)
	225	2	169(77)	224(102)
		3	171(78)	226(103)
		4	175(79)	230(104)
	260	2	178(81)	233(106)
		3	183(83)	238(108)
		4	187(85)	242(110)
	400	2	254(115)	309(140)
		3	265(120)	320(145)
		4	289(131)	344(156)
	600	2	467(212)	552(250)
		3	483(219)	568(257)
		4	512(232)	597(271)
	800	2	567(257)	652(296)
		3	577(262)	662(300)
		4	662(300)	767(348)
ZTGDSE	40-400	2	262(119)	317(144)
		3	273(124)	328(149)
		4	296(134)	351(159)
	600	2	475(215)	560(254)
		3	491(222)	576(261)
		4	520(236)	605(274)
	800	2	570(259)	655(297)
		3	580(263)	665(302)
		4	665(302)	770(349)

Reference Figures

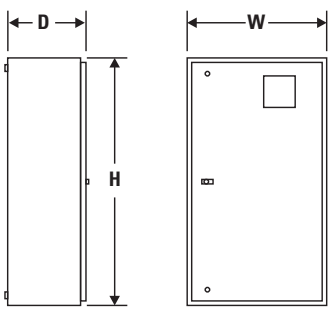


Figure A
ZTGSE Series Transfer Switch (40-400 Amp)

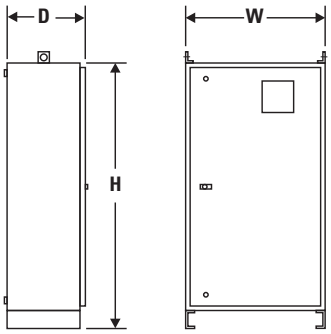


Figure B
ZTGSE Series Transfer Switch (600-800 Amp)

ZTS Series Automatic Transfer Switches

An Introduction to the ZTS Series of Automatic Transfer Switches

Since its introduction, the GE Zenith ZTS Series of transfer switches has become a hallmark of quality and performance. Reliability resulting from superior design and heavy duty construction has made the ZTS the industry standard for critical installations. Our emphasis on research and development, design improvements, materials, manufacturing methods, quality assurance, and service yields products that have been proven in hundreds of thousands of applications.

Our engineering staff has been dedicated to the improvement and expansion of our line. Today, GE Zenith offers the widest selection of transfer switch products worldwide.

—ZTS Automatic Transfer Switches
40-4000 Amps
—ZTSD Delayed Transition Transfer Switches
40-4000 Amps
—ZTSCT Closed Transition Transfer Switches
100-4000 Amps
—ZBTS Automatic Transfer/Bypass Switches
100-4000 Amps
—ZBTSD Delayed Transition Bypass Switches
100-4000 Amps
—ZBTSCT Closed Transition Bypass Switches
100-4000 Amps
—ZTSMV Medium Voltage Switches
600-3000 Amps

All ZTS products meet or exceed industry requirements allowing specification and installation confidence.

—UL 1008 listed through 480 VAC
—CSA C22.2 No. 178 listed through 600 VAC
—IEC 947-6-1 listed through 480 VAC
— Codes and Standards
NFPA 70, 99, 101, 110
IEEE 446, 241
NEC 517, 700, 701, 702
NEMA ICS2-447
— Controls tested in accordance with:
IEEE 472 (ANSI C37.90A)
EN55022 Class B (CISPR 22) (Exceeds EN55011 & MILSTD 461 Class 3)
EN61000-4-2 (Level 4)
EN61000-4-3 (ENV50140) 10 v/m
EN61000-4-4
EN61000-4-5, IEEE C62.41 (1.2 X 50µs, 0.5 & 4 kV)
EN61000-4-6 (ENV50141)
EN61000-4-11
— Enclosures meet the requirements of:
UL 508, 50
ANSI C33.76
ICS 6
NEMA 250
— Quality System:
ISO 9001 Registered
—Equipment (controls and power section) seismic tested to:
IBC–2003
IEEE–693–2003

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Model ZTS Automatic Transfer Switches

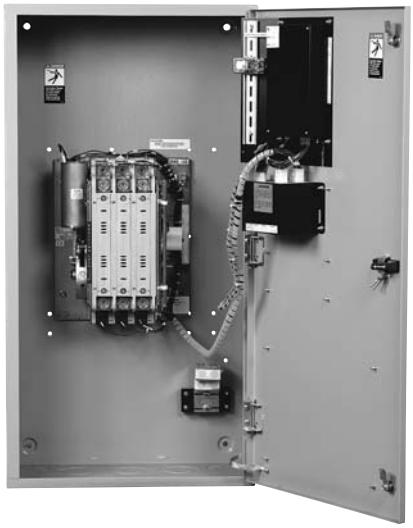
The ZTS Model is the foundation of the transfer switch product line. This ruggedly built power contactor family of switches has been specifically designed for transfer switch duty with dependability, versatility and user friendliness of prime concern.

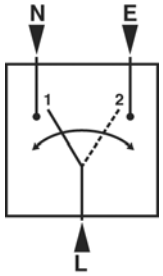
ZTS switches are available in open type construction for switchboard installation or NEMA enclosed to the customer's specifications. The power panel components, consisting of power switching contacts, drive mechanism and terminal lugs, are mounted on a specially formed panel. Logic devices including microprocessor control auxiliary time delays and special accessory equipment are assembled on the door for ease of maintenance and separation from the power section. They are connected with a numbered wiring harness equipped with a disconnect plug that allows isolation of the control panel for maintenance.

ZTS Model Operation

When the normal source fails or the voltage drops to a predetermined point (usually 80% of nominal), if required, a circuit is closed to start the engine generator set. When the emergency source reaches 90% of rated voltage and 95% of rated frequency, the drive solenoid is energized through the emergency coil control relay, causing the main contacts to disconnect the load from the normal source and connect it to the emergency source. After the drive solenoid has completed its electrical stroke and is seated, the emergency coil control relay opens to disconnect it. The transfer switch is now mechanically locked in the emergency position.

When normal voltage is restored to a predetermined point (usually 90% of nominal), the control voltage sensing energizes. The normal side coil relay closes, and after the drive solenoid has completed its electrical stroke and is seated, the coil control relay opens to disconnect it. The transfer switch is now mechanically locked in the normal position.





Drive Mechanism

All GE Zenith ZTS switches employ the simple "over-center" principle to achieve a mechanically locked position in either normal or emergency. GE Zenith's high speed drive assures contact transfer in 100 ms or less. High contact pressure and positive mechanical lock allow for high withstand and closing ratings, far exceeding UL requirements. All ATS units are listed with UL umbrella breaker and current limiting fuse ratings.

Ratings

—Ratings 40 to 4000 amperes
—2, 3 or 4 Poles
—Open type, NEMA 1, 3R, 4, 4X and 12
—Available to 600 VAC, 50 or 60 Hz
—Suitable for emergency and standby applications on all classes of load, 100% tungsten rated through 400 amps
—UL 1008 listed at 480 VAC
—CSA C22.2 No. 178 certified at 600 VAC
—IEC 947-6-1 listed at 480 VAC
—Equipment (controls and power section) seismic test qualified to:
  —IBC–2003
  —IEEE–693–2003

Performance Features

—Contact transfer speed less than 100 milliseconds
—High close-in and withstand capability
—Temperature rise test per UL 1008 conducted after overload and endurance tests - exceeds UL requirements
—Available in:
  ZTS (utility-generator)
  ZTSU (utility-utility)
  ZTSG (generator-generator)
  ZTSM (manual) configurations

Design and Construction Features

—Double throw, interlocked operation
—Electrically operated, mechanically held by a simple, over-center mechanism
—Segmented silver tungsten alloy contacts with separate arcing contacts on 600 amp and above
—Arc quenching grids, enclosed arc chambers, and wide contact air gap for superior source-to-source isolation on all units
—Control disconnect switch for safe maintenance
—Components accessible for inspection and maintenance without removal of the switch or the power conductors
—Mechanical indicator and contact chamber cover designed for inspection, safety and position designation.

Model ZTSD Automatic Transfer Switches

The ZTSD Model provides an adjustable time delay after the opening of the closed contacts and before the closing of the open contacts for transferring large motor and/or transformer loads. This delayed transition time allows for motors to coast down and transformer fields to decay, thus allowing inductive loads to be re-energized after transfer with only normal inrush starting currents. The delayed transition design is an effective method of handling these applications and can be utilized as an alternative to a standard transfer switch equipped with an in-phase monitor.

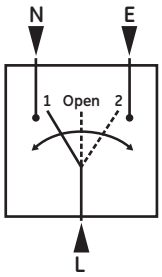
The delayed transition transfer switch is ideally suited for pumping stations, sewage treatment plants, hospital X-ray equipment, or wherever the bulk of the load being controlled consists of large motors and/or transformers. Major UPS manufacturers strongly recommend the use of delayed transition type transfer switches to ensure proper operation of their rectifier circuit and battery system.

The ZTSD Model allows a UPS system sufficient delay to recognize a power failure and transfer to batteries, acknowledge the return of power and allow the rectifier to walk onto the new source, reducing any transfer anomalies.

Except for the delayed transition period, the performance, operating capabilities, ratings, UL listings, with-stand current values and available options are identical to those of the GE Zenith ZTS Series Automatic Transfer Switches.

The ZTSD incorporates all of the important features of the standard ZTS Series switches as well as features oriented toward its specific operation.

ZTSD
Delayed Transition Transfer Switch
400 amp, 3 pole
(shown)



Ratings

—Ratings 40 to 4000 amperes
—2, 3 or 4 Poles
—Open type, NEMA1, 3R, 4, 4X and 12
—Available to 600 VAC, 50 or 60 Hz
—Suitable for emergency and standby applications on all classes of load, 100% tungsten rated through 400 amps
—UL 1008 listed at 480 VAC
—CSA C22.2 No. 178 certified at 600 VAC
—IEC 947-6-1 listed at 480 VAC
—Equipment (controls and power section) seismic test qualified to:
  —IBC–2003
  —IEEE–693–2003

Performance Features

—Adjustable center-off time to meet specific installation requirements
—High close-in and withstand capability
—Temperature rise test per UL 1008 conducted after overload and endurance tests - exceeds UL requirements
—Available in:
  ZTSD (utility-generator)
  ZTSDU (utility-utility)
  ZTSDG (generator-generator)
  ZTSDM (manual) configurations

Design and Construction Features

—Mechanically interlocked center-off position for load decay
—Electrically operated, mechanically held by a simple, over-center mechanism
—Segmented silver tungsten alloy contacts with separate arcing contacts on 600 amp and above
—Arc quenching grids, enclosed arc chambers, and wide contact air gap for superior source-to-source isolation on all units
—Control circuit disconnect plug and drive inhibit switch for safe maintenance
—Components accessible for inspection and maintenance without removal of the switch or the power conductors
—Mechanical indicator and contact chamber cover designed for inspection, safety and position designation

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Model ZTSCT Closed Transition Transfer Switches

An automatic transfer switch is the single vital link between utility and alternate power supplies. Yet it is the very operation and re-transfer back to normal that may be the cause of concern for many users. Loads such as electronic equipment, HID lighting, motor starters, etc., are sensitive to even the 30-100 millisecond outage experienced during a typical transfer switch operation. Therefore, testing and use of the standby system is not optimized and necessary system checks are not performed because of concerns about the effects of transfer.

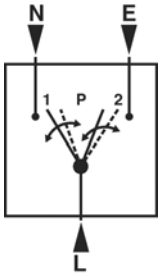
In addition to these applications, opportunities for peak shaving and utility incentive rates may be passed over because of the inability to accept the short power interruptions inflicted during operation. In response to the needs of these installations, GE Zenith offers the ZTSCT Closed Transition Transfer Switch and ZBTSCT Closed Transition Transfer/Bypass Switch.

These products utilize the proven switching technology of the ZTS/ZTSD Models of transfer switches combined with controls developed during GE Zenith's years of experience in the manufacture of synchronizing switchgear. They provide the capability to transfer in a closed transition mode when both sources are within preset parameters. Utilizing GE Zenith's high speed drive system, the overlap of the normal and alternate sources is less than 100 milliseconds. When one source is not within specified limits, such as during a power failure, the ZTSCT operates in an open transition mode.

Description and Operation

Closed transition switches have two basic modes of operation. During a failure of one source or an out of specification condition, the ZTSCT Model operates as a delayed transition switch (ZTSD Model). This sequence allows clear separation of an unreliable source from an available one.

ZTSCT
Closed Transition Transfer Switch
800 amp, 3 pole



Closed transition operation takes place when both sources are within preset voltage and frequency parameters and the phase angle differential is less than five degrees. The closed transition sequence may be initiated by the test switch, a load exerciser clock, peak shaving controls or special utility incentive rate signals.

Ratings

—Ratings 100 to 4000 amperes
—2, 3 or 4 Poles
—Open type, NEMA 1, 3R, 4, 4X and 12
—Available in Transfer Switch (ZTSCT) or Transfer/Bypass Switch (ZBTSCT) styles
—Suitable for emergency and standby applications on all classes of load, 100% tungsten rated through 400 amps
—UL 1008 listed at 480 VAC
—CSA certified at 600 VAC
—IEC listed at 480 VAC
—Equipment (controls and power section) seismic test qualified to:
  —IBC–2003
  —IEEE–693–2003

Performance Features

—Incorporates the applicable features of the ZTS and ZBTS Series
—Source parallel time of less than 100 milliseconds
—Closed transition operation (no power interruption) during transfer and retransfer when sources are within specified parameters
—Open transition transfer operation is initiated upon a source failure
—Available in:
  ZTSCT (utility-generator)
  ZTSCTU (utility-utility)
  ZTSCTM (manual) configurations

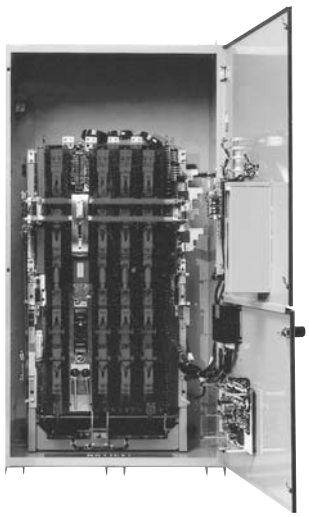
Design and Construction Features

—Electrically operated, mechanically held
—Segmented silver tungsten alloy contacts with separate arcing contacts on 600 amps and above
—Arc quenching grids, enclosed arc chambers, and wide contact air gap
—Components accessible for inspection and maintenance without removal of the switch or the power conductors
—Standard annunciation and operational selection package for user interface
—Active control of the generator governor not required, but is available as an option

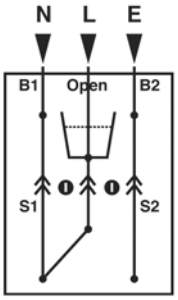
Models ZBTS, ZBTSD and ZBTSCT Bypass-Isolation Transfer Switches

The ZBTS Model Bypass-Isolation Transfer Switch consists of two major modules – the automatic transfer and the bypass-isolation switch. The automatic transfer switch module is the proven GE Zenith ZTS Series, built in ZTS, ZTSD or ZTSCT configuration and constructed for reliable operation. The same components, heavy-duty silver alloy contacts, rugged drive mechanism and silver plated bus bar inter-connections are used throughout the ZBTS Model.

The bypass section is a basic ZTS switch provided with a quick make/quick break manual load transfer handle and GE Zenith's control/interlock system consisting of both mechanical and electrical interlocks. The bypass is equipped with normal failure sensing and a time delay to start the engine automatically if the ATS has been removed for service and a failure occurs. The modules are mounted in a compact enclosure and completely interconnected requiring only the normal source, emergency source and load cable connections. Once installed, no cables need to be removed to isolate the transfer switch module for maintenance or inspection. The automatic transfer switch may be withdrawn for testing or maintenance without disturbing the load. The transfer switch module has three positions:



ZBTS
Transfer/Bypass-Isolation Transfer Switch
1200 amp, 3 pole
(shown)



1. Automatic: The transfer switch is carrying the load, and the bypass switch is in the open position. This is the normal operating mode.
2. Test: The bypass switch is closed and feeding the load. The transfer switch has control power and may be operated for test purposes via the test switch on the enclosure door.
3. Isolate: The transfer switch is withdrawn from all power and ready for maintenance. The load is served by the bypass switch.

The ZTS Transfer Switch is installed on a draw-out mechanism, with electrical and mechanical interlocks for secure removal after the load has been bypassed. The ZTS control/logic panel is mounted on the enclosure door and connected by a wire harness and multi-pin disconnect plugs. The transfer switch and/or the control panel may be tested, isolated and removed for maintenance without load interruption.

The bypass-isolation switch module is the same basic design as the transfer switch module and has the same electrical ratings. Manually operated, it features high speed, quick make/quick break contact action. The bypass-isolation switch has three basic positions:

1. Automatic: Normal bypass contacts open, emergency bypass contacts open.
2. Bypass Normal: Normal bypass contacts closed, emergency bypass contacts open.
3. Bypass Emergency: Normal bypass contacts open, emergency bypass contacts closed.

GE Zenith's design requires no additional load break contacts which cause load interruption during bypass-isolation functions. The bypass-isolation switch contacts are out of the system current path except during actual bypass operation.

Therefore, they are not constantly exposed to the destructive effects of potential fault currents. The normal, emergency and load are connected between the automatic transfer switch and the bypass-isolation switch through solidly braced isolating contacts that are open when the transfer switch is isolated. All current carrying components provide high withstand current ratings in excess of those specified in UL 1008 standards.

Models ZBTS, ZBTSD and ZBTSCT Bypass-Isolation Transfer Switches (Continued)

Interlocks and Indicators

Every ZBTS Model Bypass-Isolation Transfer Switch is supplied with all necessary electrical and mechanical interlocks to prevent improper sequence of operation as well as the necessary interlocking circuit for engine starting integrity. Each ZBTS is furnished with a detailed step by step operating instruction plate as well as the following functional diagnostic lights:

Normal Source Available
Emergency Source Available
Bypass Switch in Normal Position
Bypass Switch in Emergency Position
Automatic Transfer Switch in Test Position
Automatic Transfer Switch Isolated
Automatic Transfer Switch Inhibit
Automatic Transfer Switch Operator Disconnect Switch "Off"
Automatic Transfer Switch in Normal Position
Automatic Transfer Switch in Emergency Position

ZBTSCT Model – Closed Transition Transfer/Bypass-Isolation Switches

The ZTSCT Closed Transition Transfer Switch may be applied with a bypass-isolation switch for the utmost in reliability and versatility. The ZBTSCT Series provides the ability to withdraw the transfer switch unit for maintenance or inspection. Reference the ZTSCT unit features and operational description for more details.

ZBTSD Model – Delayed Transition Transfer/Bypass-Isolation Switches

The ZTSD Delayed Transition Transfer Switch with a timed center-off position is available in a bypass configuration. The ZBTSD Series Bypass incorporates the features of both the ZBTS Bypass-Isolation Switch and the ZTSD unit for transfer of large motor loads, transformers, UPS systems or load shedding to a neutral "Off" position. Reference the ZTSD unit features and operational description for more details.

Ratings

—Ratings 100 to 4000 amperes
—2, 3 or 4 Poles
—Open type, NEMA 1, 3R, 4, 4X and 12
—Available with ZTS, ZTSD and ZTSCT Series Transfer Switch
—Bypass and transfer switch have identical ratings
—Suitable for emergency and standby applications on all classes of load, 100% tungsten rated through 400 amps
—UL 1008 listed at 480 VAC
—CSA C22.2 No. 178 certified at 600 VAC
—IEC 947-6-1 listed at 480 VAC
—Equipment (controls and power section) seismic test qualified to:
  —IBC–2003
  —IEEE–693–2003

Performance Features

—Load is not interrupted during bypass operation
—High close-in and withstand capability
—Temperature rise test per UL 1008 conducted after overload and endurance tests - exceeds UL requirements
—Available in:
  ZBTS (utility-generator)
  ZBTSU (utility-utility)
  ZBTSG (generator-generator)
  ZBTSM (manual) configurations; models include standard, delayed and closed transition

Design and Construction Features

—Transfer switch is located on a draw out mechanism to facilitate maintenance
—Emergency power systems can be electrically tested without disturbing the load
—Power cables do not have to be disconnected to remove the transfer switch
—Bypass to any available source with transfer switch removed
—Engine start circuit maintained during bypass operation; normal power failure causes engine start contact closure even with the ATS removed
—Diagnostic lights and detailed instructions for simple step-by-step operation
—Mechanical and electrical interlocks ensure proper sequence of operation
—Bypass switch contacts are closed only during the bypass-isolation operation
—Silver plated copper bus interconnection of the transfer and bypass switches on all sizes

Automatic Transfer Switch Controller

With more powerful integrated features, the new MX250 Microprocessor, standard with the entire ZTS product family, offers expanded programmability and field adaptability. This premium product is designed for use in specification-grade applications. As an embedded digital controller, the MX250 offers high reliability and ease of unattended operation across a range of applications.

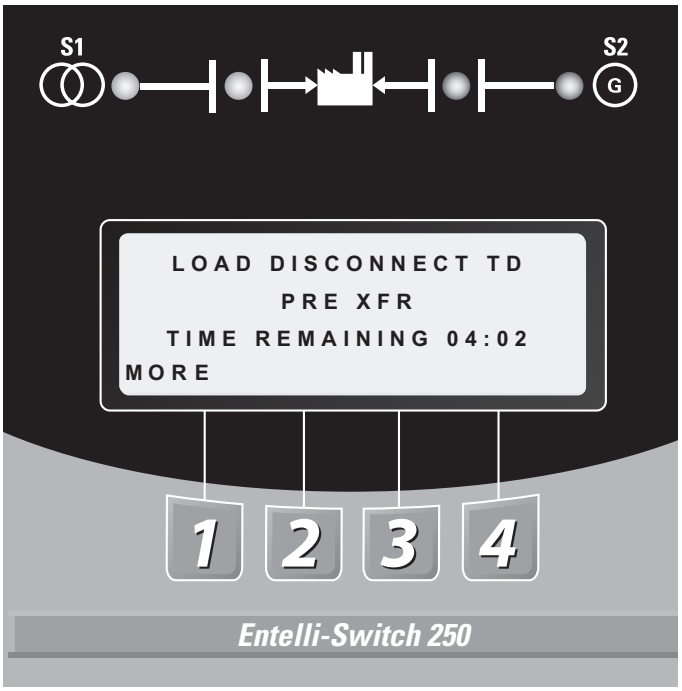
- —Available in ALL transfer modes:
  - —Open, Delayed and Bypass
  - —Closed
- —User-friendly programmable engine exerciser, used for the engine generator with or without load, at ANY interval in a one-year period
- —Operating voltages available in a single controller for most domestic and international applications
- —Real-time display of ATS status, including active timer(s)
- —Multiple levels of user-defined password protection
- —Serial communications allowing connectivity with other ATS's, paralleling switchgear, and SCADA systems
- —Time-tested synchronous logic automatically measures phase angle and frequency allowing disturbance-free transfer
- —Unsurpassed statistical ATS/System monitoring available in real-time
- —T3/W3 elevator pre-signal. Automatically bypassed if the selected source fails, minimizing time an elevator is without power
- —Universal Motor Disconnect (UMD) sends a pre-signal, post-signal or both to any motor control center. Not bypassed in an outage, the UMD ensures safety in the event of a single phase loss
- —Voltage unbalance detection standard
- —Imbedded synchoscope with display to ensure smooth transfer

Performance Features

- —UL, CSA and IEC listed
- —Ringing wave immunity per IEEE 472 (ANSI C37.90A)
- —Condusted and Radiated Emissions per EN55022 Class B (CISPR 22) (Exceeds EN55011 and MILSTD 461 Class 3)
- —ESD Immunity test per EN61000-4-2 (Level 4)
- —Radiated RF, electromagnetic field immunity test per EN61000-4-3 (ENV50140) 10v/m
- —Electrical fast transient/burst immunity test for EN61000-4-4
- —Surge immunity test per EN61000-4-5 IEEE C62.41 (1.2 x 50µs, 0.5 and 4 kV)
- —Conducted immunity test per EN61000-4-6 (ENV50141)
- —Voltage dips and interruption immunity EN61000-4-11

User-Friendly Operation

LEDs are used in a recognizable line configuration for continuous monitoring of switch position. A new LCD display shows source availability, exercise time delay operation and system source condition. A new simplified adjustment is featured for voltage, frequency and time delay settings.



The control operates off a close differential 3 phase under-voltage sensing of source 1, factory standard setting 90% pickup, 80% dropout; under-frequency sensing of source 1 factory setting 95% pickup; voltage and frequency sensing of source 2, factory standard setting 90% pickup voltage, 95% pickup frequency. All factory settings are operator adjustable see table on reverse side).

A test is standard (fast test/load/no load) to simulate source 1 failure - automatically bypassed should source 2 fail.

Publications and Reference: See Section 22 for a complete list of additional product-related publications

ZTS Series Accessory Definitions

6P	Microprocessor activated test switch (Momentary)
6A	Hardwired test switch (Maintained)
6AP	Microprocessor activated test switch (Maintained)
6B	Hardwired test switch (Maintained Auto - Momentary Test) Key operated
6C	Hardwired test switch (Maintained Auto - Maintained Test) Key operated
A1	Auxiliary Contact S.P.D.T. - Normal (Source 1) Failure
A1E	Auxiliary Contact S.P.D.T. - Emergency (Source 2) Failure
A3	Auxiliary Contact - closed in emergency (Source 2) Additional available (10 max.) on ZTS Series and need to be specified
A4	Auxiliary Contact - closed in normal (Source 1) Additional available (10 max.) on ZTS Series and need to be specified
A62	Motor disconnect and staged restart (1 contact)
AB3	Auxiliary Contact - closed in bypass emergency (Source 2) (S.P.T.D.) (Standard up to 400A) Additional available (10 max.) on ZBTS Series and need to be specified
AB4	Auxiliary Contact - closed in bypass normal (Source 1) (S.P.T.D.) (Standard up to 400A) Additional available (10 max.) on ZBTS Series and need to be specified
Calibrate	Microprocessor activated calibration feature
CDP	Programmable exerciser daily, 7/14/28/365 days user-selectable, with or without load
CDT	Exerciser no load timer
CTAP	Chicago transfer alarm panel mounted in door of enclosure. Includes 3 aux. contacts and fuse.
DS	Disconnect Switch. Disconnects source voltage to transfer power panel.
DT	(Delayed Transition Only) Time Delay from Neutral Switch position to Source 1 on retransfer
DW	(Delayed Transition Only) Time Delay from Neutral Switch position to Source 2 on retransfer
E	Engine Start Relay
ECM	Ethernet Communication Adapter. Requires MCM (Modbus) Accessory.
EL/P	Event log of last 16 events
F	Fan contact, closed when engine runs.
HT(1)(2)	Heater and Thermostat 208/240V (1) 380/600V (2) mounted and interwired in enclosure. (requires larger enclosure for 40-200A)
K	Frequency Meter (Analog) - Door mounted
K/P	Frequency Indication on the controller
LNP	Center-off position LCD-Indicator
L1	LED light indicates Switch in Source 2 position
L2	LED light indicates Switch in Source 1 position
L3	LED light indicates Source 1 available
L4	LED light indicates Source 2 available
LCM	LonWorks Communication Module
M1	Single Phase Amp Meter (Analog)
M2	Three Phase Amp Meter (Analog)
M90	EPM2000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factory and Frequency). 3 Line LED Display. 50/60 Hz Universal Operation. 1 or 3 phase. Standard Modbus RTU RS485 communications capability. 40 - 1200 Amps.
M90A	Adds Pre-Wiring for Enervista® Viewpoint Monitoring of M90 Accessory & ATS Status using Modbus RS485 Serial Communications
M90B	Adds Pre-Wiring for Enervista® Viewpoint Monitoring of M90 Accessory & ATS Status using Ethernet TCP/IP Communications
M91	EPM6000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factory and Frequency, THD). Certified energy and demand metering. Meets ANSI C12.20 and IEC 687 Accuracy Classes. Front LRDA Port Laptop Connection. Standard Modbus RTU RS485 or DNP 3.0 communications capability.
M91A	Adds Pre-Wiring for Enervista® Viewpoint Monitoring of M91 Accessory & ATS Status using Modbus RS485 Serial Communications
M91B	Adds Pre-Wiring for Enervista® Viewpoint Monitoring of M91 Accessory & ATS Status using Ethernet TCP/IP Communications
MCM	Modbus RTU Communication Module
N1	Running Time Indicator - Door mounted
N2	Operation Counter - Door Mounted
P1	Engine Start Timer (adjustable to 6 sec.)
P2	Engine Start Timer (adjustable to 300 sec.)
Q2	Peak shave/remote load test/area protection - Relay (S.P.D.T.) (Need to specify voltage - 120 VAC, 24 VAC, 24 VDC - 120V default standard)
Q3	Inhibit transfer to emergency (Source 2) (load add relay) - Relay (S.P.D.T.) (Need to specify voltage - 120 VAC, 24 VAC, 24 VDC - 120V default standard)
Q7	Inhibit transfer to normal (Source 1) - Relay (S.P.D.T.) (Need to specify voltage - 120 VAC, 24 VAC, 24 VDC - 120V default standard)
R1-1/R1-3	Over Voltage sensing for normal (Source 1) single (R1-1) or three (R1-3) phase
R15/R15D	Load Shed. Should Source 2 become overloaded, a signal can be given to switch to the Neutral position.
R16	Phase rotation sensing of Normal (Source 1) and Emergency (Source 2)
R26/R26D	Interruptable Power Rate Provisions. Allow transfer out of Source 1 position to Mid position or dead Source 2. Alarm and Pre-Signal circuit included. (Need to specify voltage - 120 VAC, 24 VAC, 24 VDC - 120V default standard)
R50	In Phase monitor between Normal (Source 1) and Emergency (Source 2) to allow transfer
S5P	Microprocessor activated auto/manual retransfer selector switch for trnsferring to Normal (Source 1) (includes microprocessor activated YN accessory)
S12P	Microprocessor activated auto/manual retransfer selector switch for trnsferring to Normal (Source 1) (includes microprocessor activated YN & YE accessory)

ZTS Series Accessory Definitions (continued)

S13P	Microprocessor activated commit/no commit on transferring to Emergency (Source 2) (with enable/disable settings)
S14	Keyed selector switch for retransfer to normal-test-auto
SW1	Auto/Off/Start Engine control selector - Door mounted (keyed or non-keyed operation available)
SW2	Auto/Off Engine control selector - Door mounted (keyed or non-keyed operation available)
SW3	Source Priority Selector Switch - Door mounted Allows selection of Source 1 or Source 2 to be the Prime Source. Transfer Switch will transfer to selected Prime Source if that Source is available. (keyed or non-keyed operation available)
T	Retransfer to Normal (Source 1) adjustable time delay
T3/W3	Pre-signal contact on transfer to Normal (Source 1) or Emergency (Source 2) during test
U	Engine stop /cool adjustable cool down timer
UMD	Pre and ppost transfer output adjustable time range. Functions in both directions. Includes 2 circuits. (Additional circuits available).
VI	Voltage imbalance between phases (3 Phase only)
W	Adjustabvle time delay on transfer to Emergency (Source 2)
YEN	Bypass transfer timers function (soft key switch in microprocessor)

ZTS Series Accessory Group Matrix

Accessories	Group Packages					
	MSTD	MEXE	MCON	MSEN	MSPE	MPSG
6P	●	●	●	●	●	●
A1	○	●	●	●	●	●
A1E	○	●	●	●	●	●
A3	●	②●	②●	②●	②●	③●
A4	●	②●	②●	②●	②●	③●
Calibrate	●	●	●	●	●	●
CDT	●					
CDP		●	●	●	●	●
**DS	●	●	●	●	●	●
*DT	●	●	●	●	●	●
*DW	●	●	●	●	●	●
E	●	●	●	●	●	●
EL/P	●	●	●	●	●	●
K/P	●	●	●	●	●	●
L1	●	●	●	●	●	●
L2	●	●	●	●	●	●
L3	●	●	●	●	●	●
L4	●	●	●	●	●	●
*LNP	●	●	●	●	●	●
P1	●	●	●	●	●	●
Q2	○	●	●	●	●	●
Q3	○	○	●	○	●	●
Q7	○	○	●	●	●	●
R1-1	○	○	○	●	●	●
R1-3	○	○	○	●	●	●
R15	○	○	○	○	○	●
*R15D	○	○	○	○	○	●
R16	○	●	●	●	●	●
R50	●	●	●	●	●	●
S5P	◪	◪	◪		●	
S12P	◪	◪	◪	●		●
S13P	●	●	●	●	●	●
T	●	●	●	●	●	●
T3/W3	②	②	②	②	②	②
U	●	●	●	●	●	●
UMD	②	②	②	②	②	②
VI	●	●	●	●	●	●
W	●	●	●	●	●	●
YEN	●	●	●	●	●	●

● Standard Accessory included in the group package.
○ Optional Accessory not included but can be added to group package.
◪ Optional Accessory. Can not be used with accessory having the same symbol.
— N/A
②② Denotes an Accessory with 2 circuits as a standard.
③ Denotes an Accessory with 3 circuits as a standard.

* Delayed Transition Units Only.
** Optional for 40-400 Amp

Publications and Reference: See Section 22 for a complete list of additional product-related publications

ZTS Series Ordering Information

Z							B	0								–	Z	E	C			Z	V	C							
Model/Type							Control Panel		Application			Ampere Size			Switched Poles		Enclosure Type					Operational Voltage					Accessories				

Model/Type	Control Panel	Application	Ampere Size	Switched Poles	Enclosure Type	Operational Voltage	Accessories
ZTS000 Standard (Open Transition)	B0 Entelli-Switch 250 Microprocessor Control Unit	0 Utility - Generator	004 40 amps	B 2 Poles	01 Type 1 Enclosed	AB Consult Table Below	MSTD
ZTSD00 Delayed Transition		U Utility - Utility	008 80 amps	E 3 Poles	12 Type 12 Enclosure		MEXE
ZTSCT0 Closed Transition		M Manual	010 100 amps	F 4 Poles	3R Type 3R Enclosure		MCON
ZBTS00 Standard (Open Transition) w/Bypass		G Gen to Gen	015 150 amps		40 Type 4 Enclosure		MSEN
ZBTSD0 Delayed Transition w/Bypass			022 225 amps		4X Type 4X Enclosure		MSPE
ZBTSCT Closed Transition w/Bypass			026 260 amps		00 Open Style Unit		MPSG
			040 400 amps				MAN0
			060 600 amps				Then choose additional accessories
			080 800 amps				
			100 1000 amps				
			120 1200 amps				
			160 1600 amps				
			200 2000 amps				
			300 3000 amps				
			400 4000 amps				

A	B	Voltage	Phase	ConWg.	Hz
1	0	120	1	2 wire	60
2	0	120/240	1	3 wire	60
2	1	120/208	1	3 wire	60
3	0	240	3	3 wire	60
3	1	208	3	3 wire	60
3	2	220	3	3 wire	50
3	3	120/240	3	4 wire	50
3	4	110/220	3	4 wire	60
3	5	139/240	3	4 wire	60
3	8	120/240	3	4 wire	60
4	0	120/208	3	4 wire	60
4	1	127/220	3	4 wire	60
4	2	127/220	3	4 wire	50
5	0	480	3	3 wire	60
5	1	440	3	3 wire	60
5	2	440	3	3 wire	50
5	5	460	1	3 wire	50
5	7	480	1	2 wire	60
5	8	254/440	3	4 wire	60
6	0	575	3	3 wire	60
6	1	347/600	3	4 wire	60
7	0	277/480	3	4 wire	60
7	1	277	1	2 wire	60
7	4	266/460	3	4 wire	60
7	5	460	3	3 wire	60
8	0	120/240	2	4/5 wire	60
8	2	380	1	2 wire	50
9	0	240/416	3	4 wire	60
9	1	220/380	3	4 wire	60
9	2	220/380	3	4 wire	50
9	3	240/416	3	4 wire	50
9	7	380	3	3 wire	60

Note: Operating voltage must be specified at time of order.
Only the most common voltages are shown above.

Switch Types

—**Standard:** Unless otherwise noted, the standard switch with quick transfer will be supplied.

—**Delayed Transition:** When ordered as the ZTSD, the delayed transition switch offers time delay during transfer from one position to the other. This is primarily for transfer of large motor or inductive loads.

—**Closed Transition:** When ordered as the ZTSCT, the closed transition switch offers two basic modes of operation. During a failure of one source or an out of specification condition, the ZTSCT Model operates as a standard delayed transition switch (ZTSD Model). This sequence allows clear separation of an unreliable source from an available one.

—**Bypass:** When ordered as the ZBTS, the bypass transition switch offers a draw-out mechanism, with electrical and mechanical interlocks for secure removal after load bypass. In this way the transfer switch and/or the control panel may be tested, isolated and removed for maintenance without load interruption.

Product # Example

ZTSCT0B00040F-ZEC01ZVC40MSTD

This number string shows the correct format for a ZTS Model Automatic Transfer Switch with closed transition, an Entelli-Switch 250 microprocessor control unit, Utility - Generator, 400 amps, 4 pole, NEMA Type 1 enclosure, 120/208V 3F, 4 wire, 60 Hz system with the standard group of accessories.

UL 1008 Withstand and Closing Ratings

Please refer to GE Zenith Controls Bulletin TB-1102.

ZTS Model, Dimensions and Weights

Ampere Rating	Poles	NEMA 1 Height (A)	NEMA 1 Width (B)	NEMA 1 Depth (C)	NEMA 1 Reference Figure	Weight Open Type	Weight NEMA 1	Application Notes
40, 80	2, 3	24 (61)	18 (46)	11 (28)	A	21 (10)	57 (26)	1 - 7, 11-14
	4	24 (61)	18 (46)	11 (28)	A	21 (10)	60 (27)	
100, 150	2, 3	24 (61)	18 (46)	11 (28)	A	21 (10)	57 (26)	1 - 7, 11-14
	4	24 (61)	18 (46)	11 (28)	A	21 (10)	60 (27)	
225	2, 3	46 (117)	24 (61)	14 (36)	A	70 (32)	165 (75)	1 - 7, 12-14
	4	46 (117)	24 (61)	14 (36)	A	75 (34)	170 (68)	
260, 400	2, 3	46 (117)	24 (61)	14 (36)	A	70 (32)	165 (75)	1 - 7, 12-14
	4	46 (117)	24 (61)	14 (36)	A	75 (34)	170 (68)	
600	2, 3	74 (188)	40 (102)	19.5 (50)	B	165 (75)	380 (172)	1 - 8, 12-14
	4	74 (188)	40 (102)	19.5 (50)	B	185 (84)	430 (195)	
800, 1000, 1200	2, 3	74 (188)	40 (102)	19.5 (50)	B	190 (86)	455 (206)	1 - 8, 12-13
	4	74 (188)	40 (102)	19.5 (50)	B	210 (95)	540 (245)	
1600, 2000	3	90 (229)	35.5 (90)	48 (122)	C	345 (156)	1010 (458)	1 - 13
	4	90 (229)	35.5 (90)	48 (122)	C	450 (204)	1160 (526)	
3000	3	90 (229)	35.5 (90)	48 (122)	C	465 (211)	1130 (513)	1 - 13
	4	90 (229)	35.5 (90)	48 (122)	C	670 (304)	1395 (633)	
4000	3	90 (229)	46.5 (118)	60 (152)	C	770 (349)	1595 (723)	1 - 13
	4	90 (229)	46.5 (118)	60 (152)	C	1025 (465)	1850 (839)	

Application Notes:

1. Metric dimensions (cm) and weights (Kg) shown in parenthesis adjacent to English measurements in inches and pounds.
2. Includes 1.25" door projection beyond base depth. Allow a minimum of 3" additional depth for projection of handle, light, switches, pushbuttons, etc.
3. All dimensions and weights are approximate and subject to change without notice.
4. Special enclosures (NEMA 3R, 4, 12, etc.) dimensions and layout may differ. Consult the GE Zenith factory for details.
5. Normal and emergency may be ordered inverted on any switch. The load may be inverted 600-1200 amps. Consult the GE Zenith factory for details.
6. Special lug arrangements may require different enclosure dimensions. For certified drawings, contact the GE Zenith factory.
7. Packing materials must be added to weights shown. Allow 15% additional weight for cartons, skids, crates, etc.
8. Add 4" in height for removable lifting lugs.
9. Lug adapters for 3000-4000 amp limits may be staggered length for ease of entrance. Consult the ge Zenith factory for details.
10. Ventilation louvers on both sides and rear of enclosure. Louvers must be clear for airflow with standard cable connections.
11. A ZTS 40-150A, when ordered with the following options, will require a larger enclosure of 46" x 24" x 14" (HxWxD): A62(T), Digital Meter, HT, HH, K, LDS, L11, N1, N2, OCVR-1SG, OCVR-1SS, P2, Q2M, Q3M, Q7M, R26(D).
12. For Delayed and Closed Transition dimensions and weights, refer to GE Zenith Publication PB-5067 and PB-5069.
13. For Bypass/Isolation dimensions and weights, refer to GE Zenith Publication pb-5068.
14. A ZTS, when ordered with compression lugs suitable for use with copper cables, will require a larger enclosure. For 40-225A, the enclosure is 46" x 24" x 14" (HxWxD). For 260-400A, the enclosure is 66" x 24" x 19.75". For 600A, the enclosure is 74" x 40" x 19.75". For certified drawings, please contact the GE Zenith factory.

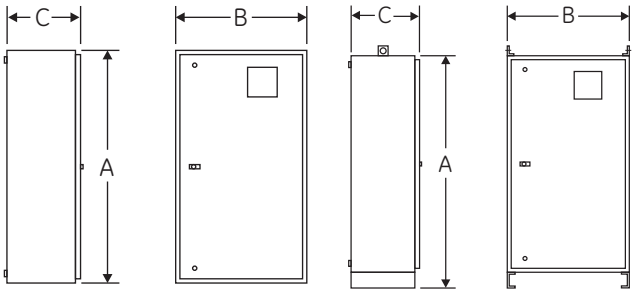


Figure A

Figure B

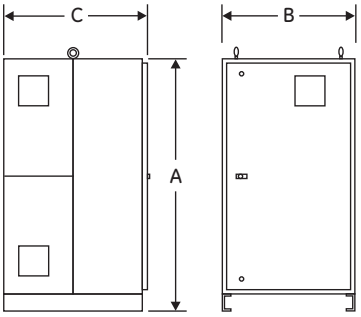


Figure C

AL-CU UL Listed Solderless Screw-Type Terminals for External Power Connections

Switch Size Amps	Normal, & Load Terminals Cables/Pole	Wire Ranges
40-80	1	#8 to 3/0
100, 150	1	#6 to 250 MCM
225	1	#4 to 600 MCM
260	1	#4 to 600 MCM
400	1	#4 to 600 MCM
600	2	#2 to 600 MCM
800, 1000, 1200	4	#2 to 600 MCM
1600, 2000,3000, 4000	*	

Notes

* Line and load terminals are located in rear and arranged for bus bar connection. Terminal lugs are available as an accessory. Contact GE Zenith factory for more details.
1. Special terminal lugs and neutral bars are available at additional cost. Contact factory and advise cable sizes and number of conductors per pole.
2. Fully rated neutral provided on 3 phase, 4 wire system.
3. Special lug arrangements may require different enclosure dimensions. For certified drawings, contact the GE Zenith factory.

Publications and Reference: See Section 22 for a complete list of additional product-related publications

ZTS Series Dimensional Specifications

Model ZTS Transfer Switches								
		NEMA 1 Enclosure				Weight		
Ampere Rating	Poles	Height (A)	Width (B)	Depth (C)	Ref. Fig.	Open Type	NEMA 1	App. Notes
40, 80, 100, 150,	2, 3	24 (61)	18 (46)	11 (28)	A	21 (10)	57 (26)	1 – 7, 11 - 14
	4	24 (61)	18 (46)	11 (28)	A	21 (10)	60 (27)	1 – 7, 11 - 14
225, 260, 400	2, 3	46 (117)	24 (61)	14 (36)	A	70 (32)	165 (75)	1 – 7, 12 - 14
	4	46 (117)	24 (61)	14 (36)	A	75 (34)	170 (68)	1 – 7, 12 - 14
600	2, 3	74 (188)	40 (102)	19.5 (50)	B	165 (75)	380 (172)	1 – 8, 12 - 14
	4	74 (188)	40 (102)	19.5 (50)	B	185 (84)	430 (195)	1 – 8, 12 - 14
800, 1000, 1200	2, 3	74 (188)	40 (102)	19.5 (50)	B	190 (86)	455 (206)	1 – 8, 12 - 13
	4	74 (188)	40 (102)	19.5 (50)	B	210 (95)	540 (245)	1 – 8, 12 - 13
1600, 2000	3	90 (229)	35.5 (90)	48 (122)	C	345 (156)	1010 (458)	1 – 13
	4	90 (229)	35.5 (90)	48 (122)	C	450 (204)	1160 (526)	1 – 13
3000	3	90 (229)	35.5 (90)	48 (122)	C	465 (211)	1130 (513)	1 – 13
	4	90 (229)	35.5 (90)	48 (122)	C	670 (304)	1395 (633)	1 – 13
4000	3	90 (229)	46.5 (118)	60 (152)	C	770 (349)	1595 (723)	1 – 13
	4	90 (229)	46.5 (118)	60 (152)	C	1025 (465)	1850 (839)	1 – 13

Application Notes:
1. Metric dimensions (cm) and weights (Kg) shown in parenthesis adjacent to English measurements in inches and pounds.
2. Includes 1.25" door projection beyond base depth. Allow a minimum of 3" additional depth for projection of handle, light, switches, pushbuttons, etc.
3. All dimensions and weights are approximate and subject to change without notice.
4. Special enclosures (NEMA 3R, 4, 4X, 12, etc.) dimensions and layout may differ. Consult the GE Zenith factory for details.
5. Normal and emergency may be ordered inverted on any switch. The load may be inverted 600-1200 amps. Consult the factory for details.
6. Special lug arrangements may require different enclosure dimensions. For certified drawings, contact the GE Zenith factory.
7. Packing materials must be added to weights shown. Allow 15% additional weight for cartons, skids, crates, etc.
8. Add 4" in height for removable lifting lugs.
9. Lug adapters for 3000-4000 amp limits may be staggered length for ease of entrance. Consult the GE Zenith factory for details.
10. Ventilation louvers on both sides and rear of enclosure. Louvers must be clear for airflow with standard cable connections.
11. A ZTS 40-150A, when ordered with the following options, will require a larger enclosure of 46"x 24"x 14" (HxWxD): A62(T), Digital Meter HT, HH, K, LDS, L11, N1, N2, OCVR-1SG, OCVR-1SS, P2, Q2M, Q3M, Q7M, R26(D).
12. For Delayed and Closed Transition dimensions and weights, refer to GE Zenith publication PB-5067 and PB-5069.
13. For Bypass/Isolation dimensions and weights, refer to GE Zenith publication PB-5068.
14. A ZTS, when ordered with compression lugs suitable for use with copper cables will require a larger enclosure. For 40-225A, the enclosure is 46" x 24" x 14" (H x W x D). For 260-400A, the enclosure is 66" x 24" x 19.75". For 600A, the enclosure is 74" x 40" x 19.75". For certified drawings, please contact the GE Zenith factory.

Model ZTSD Transfer Switches								
		NEMA 1 Enclosure				Weight		
Ampere Rating	Poles	Height (A)	Width (B)	Depth (C)	Ref. Fig.	Open Type	NEMA 1	App. Notes
40, 80, 100, 150, 225, 260, 400	2, 3	46 (117)	24 (61)	14 (36)	A	80 (36)	200 (91)	1 - 7, 11 - 13
	4	46 (117)	24 (61)	14 (36)	A	85 (39)	205 (93)	1 – 7, 11 - 13
600	2, 3	74 (188)	40 (102)	19.5 (50)	B	185 (84)	400 (181)	1 – 8, 12 - 13
	4	74 (188)	40 (102)	19.5 (50)	B	205 (93)	450 (204)	1 – 8, 12 - 13
800, 1000, 1200	2, 3	74 (188)	40 (102)	19.5 (50)	B	210 (95)	475 (215)	1 – 8, 12 - 13
	4	74 (188)	40 (102)	19.5 (50)	B	230 (104)	560 (254)	1 – 8, 12 - 13
1600, 2000	3	90 (229)	35.5 (90)	48 (122)	C	365 (166)	1030 (467)	1 – 8, 10, 12 - 13
	4	90 (229)	35.5 (90)	48 (122)	C	470 (213)	1190 (540)	1 – 8, 10, 12 - 13
3000	3	90 (229)	35.5 (90)	48 (122)	C	485 (220)	1150 (522)	1 – 10, 12 - 13
	4	90 (229)	35.5 (90)	48 (122)	C	690 (313)	1415 (642)	1 – 10, 12 - 13
4000	3	90 (229)	46.5 (118)	60 (152)	C	802 (372)	1635 (742)	1 – 10, 12 - 13
	4	90 (229)	46.5 (118)	60 (152)	C	1045 (474)	1870 (848)	1 – 10, 12 - 13

Application Notes:
1 - 9, 11, 13. Same as above
10. Ventilation louvers on both sides and rear of enclosure. One set of louvers must be clear for airflow with standard cable connectors.

Reference Figures

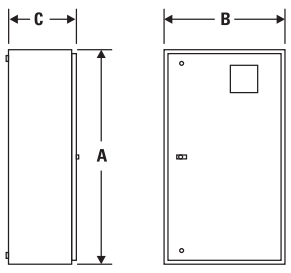


Figure A

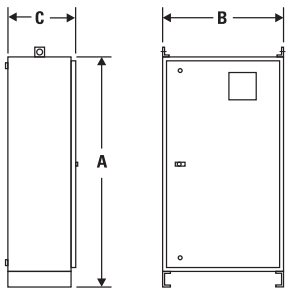


Figure B

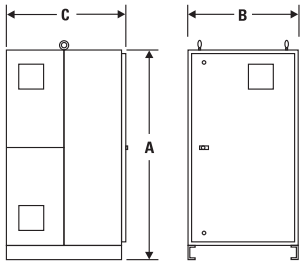


Figure C

ZTS Series Dimensional Specifications

Model ZBTS and ZBTSD Transfer/Bypass-Isolation Switches

Ampere Rating	Poles	NEMA 1 Enclosure				Weight		App. Notes
		Height (A)	Width (B)	Depth (C)	Ref. Fig.	Open Type	NEMA 1	
100, 150, 225, 260, 400	2, 3	83 (211)	30 (76)	28.5 (73)	D	310 (141)	770 (350)	1 – 9
	4	83 (211)	30 (76)	28.5 (73)	D	380 (173)	840 (381)	1 – 9
600	3	90 (229)	36 (91)	28.25 (72)	E	660 (299)	1220 (553)	1 – 9
	4	90 (229)	40 (102)	28.25 (72)	E	770 (349)	1365 (619)	1 – 9
800, 1000, 1200	3	90 (229)	40 (102)	28.25 (72)	E	765 (347)	1355 (615)	1 – 9
	4	90 (229)	46 (117)	28.25 (72)	E	910 (413)	1570 (712)	1 – 9
1600, 2000	3	90 (229)	40 (102)	61.25 (156)	F	2900 (1315)	3100 (1406)	1 – 7
	4	90 (229)	50 (127)	61.25 (156)	F	3800 (1724)	4000 (1814)	1 – 7, 10
3000	3	90 (229)	40 (102)	73.25 (186)	F	3700 (1678)	3900 (1769)	1 – 7, 10
	4	90 (229)	50 (127)	73.25 (186)	F	4800 (2177)	5000 (2268)	10 – 12
4000	3	90 (229)	47.5 (121)	81 (206)	F	4310 (1955)	4660 (2113)	1 – 7, 10 – 11
	4	90 (229)	54 (137)	81 (206)	F	5510 (2499)	5860 (2658)	1 – 7, 10 – 11

Model ZBTSCT Closed Transition Transfer/Bypass-Isolation Switches

Ampere Rating	Poles	NEMA 1 Enclosure				Weight		App. Notes
		Height (A)	Width (B)	Depth (C)	Ref. Fig.	Open Type	NEMA 1	
100, 150, 225, 260, 400, 600	3	90 (229)	36 (91)	28.25 (72)	E	730 (331)	1280 (581)	1 – 8
	4	90 (229)	40 (102)	28.25 (72)	E	840 (381)	1385 (628)	1 – 8
800, 1000, 1200	3	90 (229)	40 (102)	28.25 (72)	E	835 (379)	1435 (651)	1 – 9
	4	90 (229)	46 (117)	28.25 (72)	E	980 (444)	1640 (744)	1 – 9
1600, 2000	3	90 (229)	40 (102)	61.25 (156)	F	2970 (1347)	3170 (1438)	1 – 7, 10
	4	90 (229)	50 (127)	61.25 (156)	F	3870 (1755)	4070 (1846)	1 – 7, 10
3000	3	90 (229)	40 (102)	73.25 (186)	F	3770 (1710)	3970 (1801)	1 – 7, 10– 12
	4	90 (229)	50 (127)	73.25 (186)	F	4870 (2209)	5070 (2300)	1 - 7, 10 – 12
4000	3	90 (229)	47.5 (121)	81 (206)	F	4380 (1986)	4730 (2145)	1 – 7, 10 – 12
	4	90 (229)	54 (137)	81 (206)	F	5580 (2531)	5930 (2689)	1 – 7, 10 – 12

Application Notes:
1. Metric dimensions (cm) and weights (Kg) shown in parenthesis adjacent to English measurements in inches and pounds.
2. Includes 1.25" door projection beyond base depth. Allow a minimum of 3" additional depth for projection of handle, light, switches, pushbuttons, etc.
3. All dimensions and weights are approximate and subject to change without notice.
4. Special enclosures (NEMA 3R, 4, 4X, 12, etc.) dimensions and layout may differ. Consult the GE Zenith factory for details.
5. Bypass Model product can not be ordered with inverted style.
6. Special lug arrangements may require different enclosure dimensions. For certified drawings, contact the GE Zenith factory.
7. Packing materials must be added to weights shown. Allow 15% additional weight for cartons, skids, crates, etc.
8. Add 4" in height for removable lifting lugs.
9. ZBTS(D) 600-1200A and ZBTSCT 100-1200A standard configuration is top entry. 14" rear adapter bay required for bottom entry. Consult GE Zenith factory for details.
10. Bypass switch weights for 1600 - 4000 amp units vary up to 10% based on connections variations. Weights shown are for estimation only.
11. 3000 amp depth dimension shown is standard. Depending on your cable/conduit requirements you may desire a deeper enclosure. Consult the GE Zenith factory for further details.
12. Lug adapters for 3000-4000 amp limits may be staggered length for ease of entrance. Consult the GE Zenith factory for details.

Reference Figures

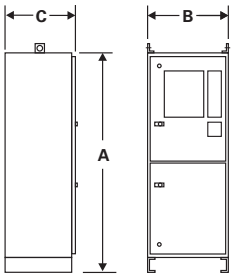


Figure D

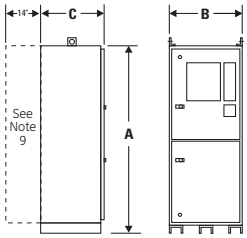


Figure E

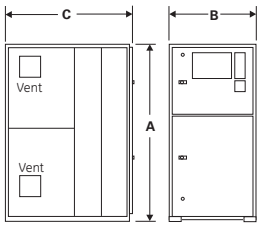


Figure F

Publications and Reference: See Section 22 for a complete list of additional product-related publications

ZTS Series Dimensional Specifications

Model ZTSCT Transfer Switches

Ampere Rating	Poles	NEMA 1 Enclosure				Weight		App. Notes
		Height (A)	Width (B)	Depth (C)	Ref. Fig.	Open Type	NEMA 1	
100, 150, 225, 260, 400, 600	2, 3	74 (188)	40 (102)	19.5 (50)	A	185 (84)	400 (181)	1 – 8
	4	74 (188)	40 (102	19.5 (50)	A	205 (93)	450 (204)	1 – 8
800, 1000, 1200	2, 3	74 (188)	40 (102)	19.5 (50)	A	210 (95)	475 (215)	1 – 8
	4	74 (188)	40 (102)	19.5 (50)	A	230 (104)	560 (254)	1 – 8
1600, 2000	3	90 (229)	35.5 (90)	48 (122)	B	365 (166)	1030 (467)	1 – 8
	4	90 (229)	35.5 (90)	48 (122)	B	470 (204)	1190 (540)	1 – 8
3000	3	90 (229)	35.5 (90)	48 (122)	B	485 (220)	1150 (522)	1 – 10
	4	90 (229)	35.5 (90)	48 (122)	B	690 (313)	1415 (642)	1 – 10
4000	3	90 (229)	46.5 (118)	60 (152)	B	820 (372)	1635 (742)	1 – 10
	4	90 (229)	46.5 (118)	60 (152)	B	1045 (474)	1870 (848)	1 – 10

Application Notes:
1. Metric dimensions (cm) and weights (Kg) shown in parenthesis adjacent to English measurements in inches and pounds.
2. Includes 1.25" door projection beyond base depth. Allow a minimum of 3" additional depth for projection of handle, light, switches, pushbuttons, etc.
3. All dimensions and weights are approximate and subject to change without notice.
4. Special enclosures (NEMA 3R, 4, 4X, 12, etc.) dimensions and layout may differ. Consult the GE Zenith factory for details.
5. Normal and emergency may be ordered inverted on any switch. The load may be inverted 600–1200 amps. Consult the factory for details.
6. Special lug arrangements may require different enclosure dimensions. For certified drawings, contact the GE Zenith factory.
7. Packing materials must be added to weights shown. Allow 15% additional weight for cartons, skids, crates, etc.
8. Add 4" in height for removable lifting lugs.
9. 4000 amp depth dimension shown is standard. Depending on your cable/conduit requirements you may desire a deeper enclosure. Consult the GE Zenith factory for further details.
10. Lug adapters for 3000-4000 amp limits may be staggered length for ease of entrance. Consult the GE Zenith factory for details.

Reference Figures

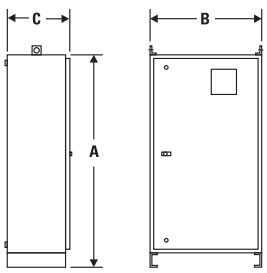


Figure A

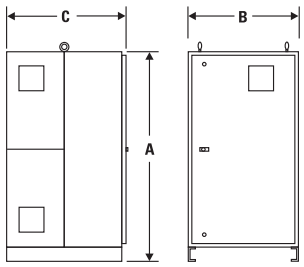


Figure B

Model ZTSMV Medium Voltage Transfer Switches

The Standard of Quality in Design and Manufacturing

Introduction

ZTS Series Automatic Transfer Switches have been the preferred standard for quality and reliability in the electrical industry. The ZTSMV Model medium voltage automatic transfer switches provides that same quality for installations from 5kV to 15kV.

The ZTSMV Model is designed for use in the most critical applications: hospitals, military sites, airports, communications facilities, and computer installations. ZTSMV Model switches fit the need for dependable continuity of power where emergency or standby applications exist.

Backed by over 75 years of experience in manufacturing automatic transfer switches, as well as extensive experience in the design and development of paralleling switchgear systems, the GE ZTSMV Model provides the reliable answer to critical medium voltage switching applications. Like all GE switches, the ZTSMV Model is supported by a nationwide network of field service facilities.

ZTSMV

Construction

The switching elements consist of two vacuum circuit breakers interlocked to ensure that only one set of contacts can be closed at any one time. The control module for transferring operations of the power unit is the same reliable microprocessor control system that GE has designed, built and used on our low voltage automatic transfer switches. The control module is physically isolated from the power portion by an insulating barrier. The completed unit is enclosed in a NEMA1 cabinet (NEMA 3R optional) and is both front and rear accessible.

Model ZTSMV Medium Voltage Transfer Switches
Standard Features

The ZTSMV Features:

—State-of-the-art vacuum breaker design
—Electrically interlocked for secure operation
—Over-current protection for the load
—A drawout P.T. trunnion design on utility to facilitate removal of control fuses from rear of cabinet
—The control module completely isolated from power section
—Standard indication of source availability
—MX250 control with MSPES Options provided for use with generator as an alternate source
—A control circuit disconnect switch
—Capable of supporting modules to allow remote communication to annunciators, modems and SCADA systems
—Drawout vacuum breaker design
—Dual electrical interlocks
—Compliance with ANSI/IEEE spec C37 and NEMA spec SG5
—A drawout P.T. trunnion design on utility and generator side to facilitate removal of control fuses while the system is operating
—The control module completely isolated from power section
—Standard indication of source availability
—One year warranty

Publications and Reference: See Section 22 for a complete list of additional product-related publications

ZTSMV Series Medium Voltage Transfer Switches
Electrical Ratings

The ZTS-MV Series is available in a wide range of voltage, current and MVA classes. It is critical to evaluate the project requirements prior to specifying the equipment. Verify:

—Normal and emergency system voltages
—Current rating requirements
—MVA class
—Short circuit rating
—Protective relay requirements (if any)

ZTSMV

Rated Voltage	5kV	15kV	15kV
MVA Class	250	500	1,000
System Voltage	2.4 - 4.16 kV	7.2 - 13.8 kV	7.2 - 13.8 kV
Rated Current	1,200 A	1,200 - 3,000 A	1,200 - 3,000 A
Short Circuit Rating	29 kA @ 4.16 kV	20 kA @ 13.8 kV	40 kA @ 13.8 kV
		33 kA @ 7.2 kV	

NOTE: Additional ratings are available. Consult the factory for details.

Ordering Information

Z	T	S	M	V			—		—		—		—			—			—			—			—		
Block A								Block B		Block C		Block D		Block E			Block F			Block G			Block H			Block I	

Block A
Model Designation

ZTSMV05 - 5kV Class
ZTSMV15 - 15 kV Class

Block B
Transition Type

S - Standard Transition
D - Delayed Transition
T - Closed Transition

Block C
NEMA

C - NEMA 1
S - NEMA 3R

Block D
Number of Poles

3

Block E
System Voltage

V0 = 2400V, 3 phase, 3 wire
V1 = 2400V, 3 phase, 4 wire
V2 = 4160V, 3 phase, 3 wire
V3 = 4160V, 3 phase, 4 wire
V4 = 6600V, 3 phase, 3 wire
V5 = 6600V, 3 phase, 4 wire
V6 = 7200V, 3 phase, 3 wire
V7 = 7200V, 3 phase, 4 wire
W0 = 12.47kV, 3 phase, 3 wire
W1 = 12.47kV, 3 phase, 4 wire
V8 = 13.8kV, 3 phase, 3 wire
V9 = 13.8kV, 3 phase, 4 wire
VX = Special Voltage

Block F
Rated Current

03	1,200A
04	2,000A
05	3,000A

Block G
MVA Rating

02	250
03	500[1]
05	1000[1]

Block H
Current Transformer Ratio on Utility

01	100/5	09	800/5
02	150/5	10	1000/5
03	200/5	11	1200/5
04	250/5	12	1500/5
05	300/5	13	1600/5
06	400/5	14	2000/5
07	500/5	15	2500/5
08	600/5	16	3000/5

Block I
Current Transformer Ratio on Emergency

Use same chart as Block H

[1]115kV Class (7.2-15 kV only)

*Other ratings are available. Contact the factory for details.

Standard Accessories

MSPES Option Group

A1	Auxiliary Contact – Energized on Normal (SPDT)
A1E	Auxiliary Contact – Energized on Emergency (SPDT)
A3	Auxiliary Contact – Closed in Emergency Position
A4	Auxiliary Contact – Closed in Normal Position
A6	Timed Load Disconnect Prior to Transfer (Adjustable)
C/D	Load/No-load exerciser clock (specify 7, 14 or 365 day)
E	Engine Start Contact
J2E	Over/Under Frequency – Normal Source
J2N	Over/Under Frequency – Emergency Source
L1	Pilot Light – Transfer Switch in Normal Position
L2	Pilot Light – Transfer Switch in Emergency Position
L3	Pilot Light – Emergency Power Available
L4	Pilot Light – Normal Power Available
P1	Time Delay – Engine Start (Adjustable)
Q2	Peak Shave/Remote Load Test: Input for peak shave or remote load test; includes automatic return to normal if emergency source fails and normal is present; 120 VAC or 24 VDC
Q3	Inhibit Transfer: Input circuit to inhibit transfer to emergency; 120 VAC or 24 VDC
R1	Over Voltage – Normal Source
R8	Over Voltage – Emergency Source
R16	Phase Sequence Sensing
R17	Under-voltage Sensing: Emergency (3 phase)
R50	In-phase monitor (if delayed transition units are not specified)
T	Time Delay – Retransfer to Normal (Adjustable)
U	Time Delay – Engine Cooldown (Adjustable)
W	Time Delay – Transfer to Emergency (Adjustable)
YEN	Time Delay Bypass Switch (T & W Timers)

Optional Accessories

Protective Relays

UPR1-A	Utility Source 1 Protective Relay (GE SR750)
UPR1-B	Utility Source 1 Protective Relay (GE F60)
UPR2-A	Utility Source 2 2 Protective Relays (GE SR750)
UPR2-B	Utility Source 2 2 Protective Relays (GE F60)
GRP2-A	Generator Source 3 2 Protective Relays (GE SR489)
IPR1-C	Source 1 Industrial Grade Protective Relay (MX3500)
IPR2-C	Source 2 Industrial Grade Protective Relay (MX3500)

Other Accessories Available Include:

—Multi-function power measurement metering including amps, volts, frequency, KW, KVA, KVAR, etc.

—Soft load switches are available. Consult the factory.

Publications and Reference: See Section 22 for a complete list of additional product-related publications

Paralleling Switchgear

Paralleling is an operation in which multiple power sources, usually two or more generator sets, are connected and synchronized to a common bus (same parameters with respect to frequency, phase angle, etc.).

Why Paralleling Switchgear?

There are several advantages to be realized when employing paralleling switchgear in an electrical design such as increased reliability, flexibility, ease of uninterruptible maintenance and application/operation cost savings. It is because of these advantages that paralleling switchgear has become one of the best choices for meeting today's power requirements.

Reliability
Systems in which part of the load is very critical may be best served by paralleling one or more generator sets. Under parallel operation all the generator sets are started at once. The first set to reach the proper parameters will assume the most critical portion of the load, with the remaining sets picking up lower priority loads. In addition, by using a load shedding application, the failure of one generator set will not interrupt power to the critical loads, as lower priority loads can be dropped offline.

Flexibility
Paralleling power sources allows for a wide variety of choices in the generation, distribution and utilization of the system's power.

Uninterruptible Maintenance
When one engine - generator set is out of service for maintenance or repair, having others synchronized on the same bus can provide the necessary back-up power, should an outage occur.

Cost Savings
Savings can be realized on the application when a number of smaller sets would be less expensive than one large set or when the load makes it impractical to divide into several sections, each with it's own generator. Savings can also occur on the operation side when generator set life is extended from being used only when needed to support the load. Also, when it is anticipated that the load will grow significantly in the future, the capital investment can be reduced by starting with small sets and paralleling additional units as load increases dictate.

Why Energy Commander?

Energy Commander™ paralleling switchgear has been providing customer facilities with reliable power switching systems for many years and continues its excellence into the 21st century. Since the inception of paralleling switchgear, many successful Energy Commander installations have been supplied with a focus on providing reliability.

Energy Commander has become the leader in supplying solutions to simple and very complex systems due to its design reliability, flexibility, uninterruptible maintenance, and operative cost savings.

Energy Commander has evolved and adapted to the changing technologies in engine generator design, switchgear controls and monitoring systems. It reflects GE's continuing commitment to reliable solutions for critical power applications.

Designed to your specifications in a team effort

Complex switchgear systems is where GE excels. With over 30 years experience in all types of paralleling applications, our team of systems engineers will work with you to design a system that conforms to your exact facility needs. Whether low or medium voltage, GE provides you with expert system layout, device selection, construction, programming, monitoring, control, startup, training, and preventative maintenance services. We will work with you from project inception through commissioning and training to make certain that your project goes smoothly.

Available for all types of systems including emergency power, peak shave/utility rate incentive, cogeneration and prime power and utilizing diesel or natural gas reciprocating engines, turbines, fuel cells, multiple utility sources and other prime movers, Energy Commander is truly versatile. In all applications, the systems use the latest technology in programmable control, high-speed networks, data acquisition and operator interface software and hardware.

Energy Commander products offer designers and owners an almost unlimited number of configurations and operational parameters.

—Designed to meet your requirements
—Operator interface panel with touch screen for system control UL 891, UL 1558 and UL Medium Voltage switchgear listings available
—GE Fanuc PLC control and full range of GE components including protective relays, breakers, metering and monitoring devices, etc.
—Complete project design and approval drawings coordinated by our experienced project engineers
—Final instruction manuals including a drawing package that shows part numbers on all devices, making it easier to order spare parts and replacements
—To/from numbering on the wire ends for easy verification and debugging
—Field startup and training of site personnel
—Project management from pre-quote services to final acceptance
—Preventative maintenance services

System Reliability

The Energy Commander Paralleling Switchgear product has several hardwired features which ensures trouble-free operation and maximum reliability. Annunciator panels, load control switches and meters are all hardwired components. Upon the unlikely failure of the master control, a back-up engine start operation is hardwired into the system. Also the programmable logic controller (PLC) which runs automatic operations is backed up with a true hardwired manual control.

Finally, as a leader of paralleling switchgear technology, Energy Commander has an extensive array of successful, trouble-free installations around the globe. The breadth of experience and system complexity all make Energy Commander second to none in the industry.

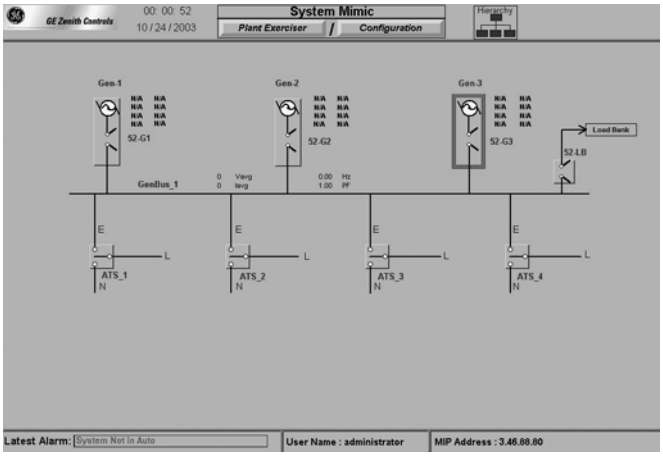
Ease of Use and Operations

A Master HMI panel can be useful to paralleling switchgear systems for user access and monitoring. The key control and monitoring functions in these systems include metering, annunciation, controlling breakers and engine generators in automatic operations as well as manual.

This monitoring and control should be carefully considered when selecting which type of HMI is best suited for the operator and his facility. The greatest reliability in monitoring and control functions is realized with hard-wired analog meters, switches, and annunciation indicators, with very limited HMI access needs by the operator.

In some cases, critical facilities may be suitable for additional system monitoring, trouble-shooting, and remote access ability. Operators in this case will require a more advanced Master HMI in addition to the system hard-wired meters, switches, and annunciation. The Energy Commander ACS "Advanced Control System" is recommended for these cases.

The Energy Commander Operator Interface Panel (OIP) is ideal for simpler systems. Since status of the system can be viewed in front of the line-up including all source metering, alarm, shutdown, and status annunciation, the operator is not required to utilize the OIP to cycle through any screens for the system control and monitoring. The user is only required to use the touch panel for system testing purposes, non-critical settings and timing adjustments, and limited manual control redundant to the hard-wired switches.



Standard Operator Interface Panel (OIP)

—Intuitive interface makes operation simple. Little or no learning curve required to operate system.
—Main screen with navigation buttons and non-system critical button/switches.
—System testing screen allowing the operator to manually initiate automatic system testing operations.
—Generator interface settings latched into the PLC control system upon entry.
—System load add/shed manual control redundant to hard-wired manual control switches in master control.
—Generator optimization settings latched into PLC control system upon entry.

Optional Advanced Control System (ACS) for Special Applications

—Full functions of OIP with the addition of SCADA capabilities.
—Optionally Internet capable - allows remote access via web.
—Online controllable / programmable (behind customer's own firewall).
—Advanced Event Logging and Source Trending allows statistical root cause analysis.
—Duplicates System and Generator Annunciation.
—Remote system diagnostics.
—Alarm and maintenance messaging, including predictive maintenance.
—Graphical User interface. Intuitive and user friendly. Requires NO computer experience.
—Password protection. Capable of hundreds of levels of authority.

Publications and Reference: See Section 22 for a complete list of additional product-related publications

System Applications

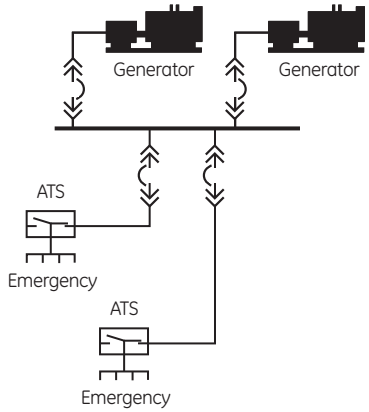
Emergency or Standby Power

Features

—The emergency system is used to supply power to building loads during a power failure.
—Paralleling switchgear controls the system transfer to generators and return back to normal sequences of operations.
—Paralleling switchgear controls the addition of load on/off generators (load add/shed).
—Transfers between utilities and generators occur in open transition or passive momentary closed transition (no active synchronization of sources).

Components

—System typically consists of paralleling switchgear product and automatic transfer switches of which GE has a wide variety for many applications.



Emergency/Standby Configuration Example

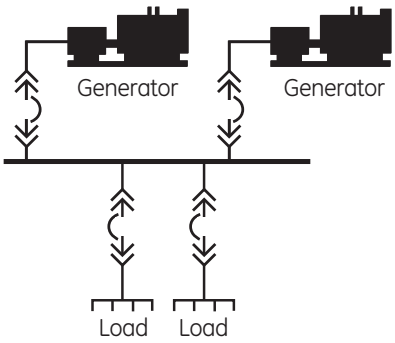
Prime Power

Features

—On-site prime power systems are most often used where there is no utility source available.
—The required electricity is generated entirely on-site, typically at facilities such as island resorts, mines, mills or other remote locations.
—Since utility is not available in prime power systems, ATS's/ATO's and utility/tie breakers are not required.

Components

—Generators are the only source of power. The system typically consists of PSG product with no ATS/ATO products.



Prime Power Configuration Example

System Applications

Parallel with Utility

Features

—Parallel with utility systems are utilized whenever generators are to be actively synchronized and paralleled with utility sources for short or long durations.
—These systems are often also used for standby use as well.
—PSG controls the generators transfer operations with the utility source(s) as well as the power management (loading controls) to direct power the appropriate direction.
—Transfers may occur in short duration (momentary closed transition), a somewhat longer duration (softload/unload closed transition), or a sustained duration (maintained parallel with utility).
—Power management in maintained parallel situations includes controlling import levels from utility, export levels to utility, or base load levels where generators are loaded to set amount disregarding the import and export contribution from utility
—"Co-generation" is often used for maximizing generator efficiency with heat recovery systems.
—Complies to interconnection requirements of each utility and IEEE 1547 Standard for Interconnecting Distributed Resources with Electric Power Systems.

Components

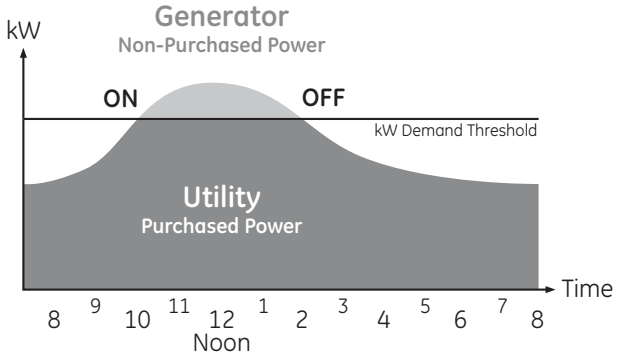
—System combines generators with utility sources. It typically consists of PSG product which handles the ATS/ATO operations.

Configuration Example

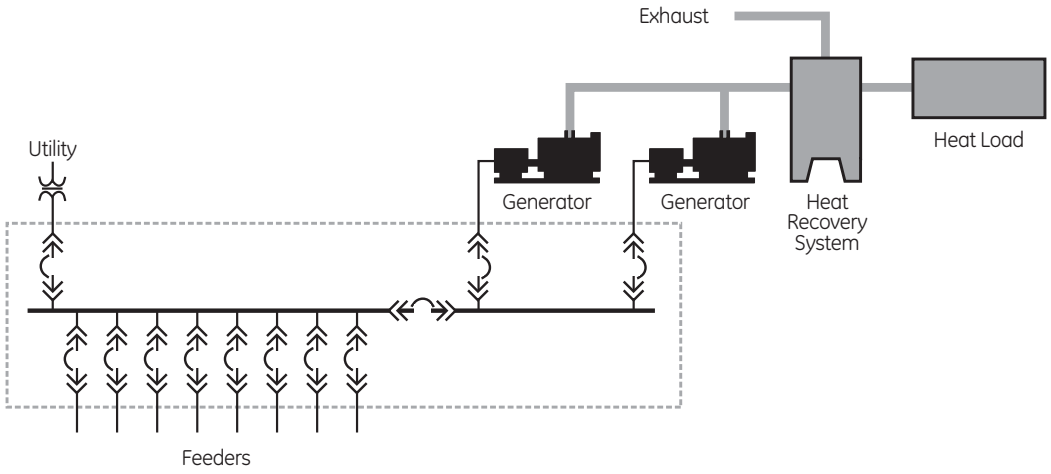
—Parallel with Utility application with "Co-Generation" heat recovery system.

Peak Shave Example

—A "Peak Shaving" application is sometimes used to transfer non-critical loads onto generators during peak utility demand hours.



Peak Shave Example



Co-Generation Configuration Example

Please supply the details below to our Request for Quotation E-mail inbox @PSGQuotes@ge.com or call 800-637-1738.

Include this form on all paralleling switchgear projects you send in for quotes along with:
1. Paralleling Switchgear System Specification
2. One-line Drawings
3. Electrical Room Layout

Today's Date _____ Required Quote Date _____

Closing Date _____ Required Ship Date _____

Customer Name _____ Location _____

Nat. Account or Partnership _____ Industry Field _____

Sales Engineer _____ Project Name _____

District _____ Phone # _____ Fax # _____

Paralleling Switchgear

Utility Transfer Control Type
- ☐ ATS Only
- ☐ Open Transfer
- ☐ Momentary Closed Transition
- ☐ Softload Closed Transition
- ☐ Maintained Parallel with Utility

Number of Generators
+ any future required Generators _____

List Generator kW Ratings _____

Automatic Transfer Switch (if applicable)
Product Number (from pages 16-63 through 16-89.) _____