

Ordering Guide

827E Inverter System

-48V input, scalable up to 28.8KVA @ 120Vac

+24V input, scalable up to 4200VA @ 120Vac

-48V input, scalable up to 28.8KVA @ 230/240Vac



Table of contents

03	Overview
05	Specifications
06 – 07	Controller
08 – 13	Ordering Guides Information

System Solutions

The ABB 827E is an N+1 redundant and expandable source of AC power for the telecommunications industry. The highly-reliable AC power output is robust enough to handle linear and nonlinear loads with low power factors such as personal computers, servers and modems. Inverter modules operating in parallel eliminate the need for a second AC source of power.

Compact, Scalable Design

A complete system requires only 5U of space. The system can be configured with a minimum of inverter units sized to meet your immediate need, and can be expanded as required, allowing for low initial deployment costs while retaining scalability to serve future needs. Combined with user-defined input choices and a compact footprint (8.75”H x 15”D), the 827E inverter is able to adapt to varying needs and requirements.

Shelf / System Options

The 827E can be configured in a 19”- or 23”- wide framework. Both 24Vdc and -48Vdc shelves can utilize as little as 5U of rack space. Each shelf is a complete system including a controller and distribution monitor. The 19” shelf can hold up to four inverter modules and the 23” system can hold up to six. The -48Vdc system can be expanded to a four-shelf arrangement for applications requiring as much as 28.8KVA of 120Vac, 230V/50Hz or 240V/60Hz. Maintenance Bypass and AC Distribution panels are optional equipment.

Intelligent Controller

The shelf configurations utilize the Pulsar Edge Controller which consolidates all controller functionality into a single small plug-in module with a display.

Features and Benefits

Reliability

- Distributed fault tolerance
- Proven field performance
- Controller continuity

Intelligence

- Industry-leading controller features
- Modem option for remote access
- Centralized network management

Investment Protection

- Module compatibility
- Power shelf growth
- Flexible upgrade options

On-Time Delivery

- 4–6 week availability
- 24/7 technical support
- Standard building blocks

Advantages

- Modular design lowers initial deployment costs
- Compact depth allows for a broad range of placement options
- True sine wave output
- Patented forced load share without LSO
- Quickly backup and restore system configuration

827E Inverter Module



The 827E inverter modules provide a highly-reliable source of AC power for the telecommunications industry.

The 827E can be purchased with +24Vdc or -48Vdc input. This feature broadens the range of applications to include both wireline and wireless applications. The +24Vdc solution is sized to support various cell site applications, including wireless backhaul. The +24Vdc version of the 827E can provide 4.2KVA of 120Vac. The -48Vdc product is designed to utilize the local -48Vdc power supply. Its scalable architecture can serve applications requiring as much as 28.8KVA of 120Vac, 230V/50Hz or 240V/60Hz in a four-shelf arrangement.

Applications

The 827E can be used anywhere high-quality 120Vac is needed. Applications may include any of the following:

- Central Office
- Wireless base stations
- CCTV
- Critical servers, PCs, modems & gateway devices
- Gates & card readers
- On-premise telephonesystems
- Diagnostic & test equipment
- HVAC facility management controllers

Key Features

- -48V input, scalable up to 28.8KVA @ 120Vac, 230V/50Hz or 240V/60Hz
- +24V input, scalable up to 4200VA @120Vac
- Hot-swappable, redundant inverter modules
- Optional maintenance bypass panel
- Dial-up access with optional modem
- Optional AC distribution panel
- Voltage THD less than 3%
- Front panel LED indicators

Specifications

INPUT	SI10A120PME	SI5A120PME	SI5A240PME	SI5A230PME50
Startup voltage requirement	-49.5Vdc	+24.75Vdc	-49.5Vdc	-49.5Vdc
Operational voltage	-42 to -60Vdc	+21 to +32Vdc	-42 to -60Vdc	-42 to -60Vdc
Current	32A per inverter	32A per inverter	32A per inverter	32A per inverter
Recommended input fuse/cb	40 per module	40 per module	40 per module	40 per module
OUTPUT	SI10A120PME	SI5A120PME	SI5A240PME	SI5A230PME50
Voltage	120Vac	120Vac	240Vac	230Vac
Frequency	60Hz	60Hz	60Hz	50Hz
Current	1200W per inverter 8400W per shelf 28.8KW per system	600W per inverter 4200W per shelf 3600W per system	1200W per inverter 8400W per shelf 28.8KW per system	1200W per inverter 8400W per shelf 2 8.8KW per system
Heat Dissipation	778 BTU/hr	389 BTU/hr	778 BTU/hr	778 BTU/hr

Specifications (continued)

ENVIRONMENTAL	SI10A120PME	SI5A120PME	SI5A240PME	SI5A230PME50
Operating Temperature	-40°C to +65°C (-40°F to 149°F)			
Storage Temperature	-40°C to +85°C (-40°F to 185°F)			
Humidity	< 95% non-condensing			
Altitude	4800 feet			

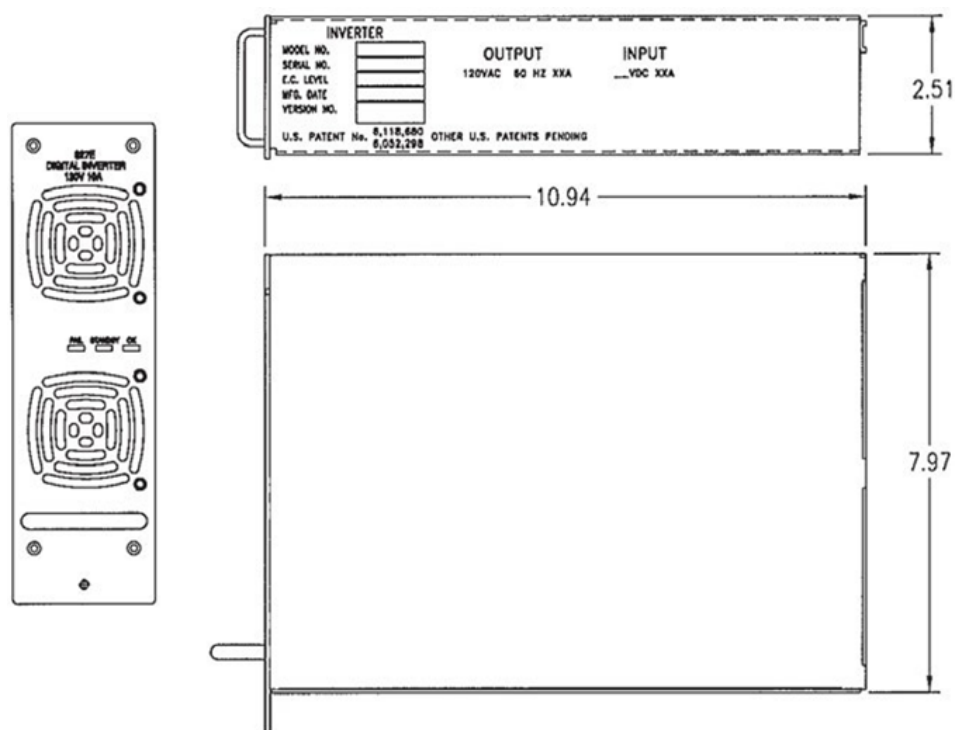
Mechanical	SI10A120PME	SI5A120PME	SI5A240PME	SI5A230PME50
Length (inch/mm)	10.94/ 277.9			
Width (inch/mm)	2.51/ 63.8			
Height (inch/mm)	2.51/ 63.8			
Weight (lb/Kg)	2.51/ 63.8			

SAFETY AND STANDARDS	SI10A120PME	SI5A120PME	SI5A240PME	SI5A230PME50
----------------------	-------------	------------	------------	--------------

COMPLIANCE

NEBs Level 3	Evaluated by independent NRTL test lab to Telcordia GR63, Issue 2 & GR1089, Issue 3			
Safety	ANSI/UL 60950-1 CAN/CSA C22.2 60950-1			
RoHS	EU Directive 2002/95/EC			

OUTLINE DRAWING



827E Inverter System INV841A Pulsar Edge Controller

The Pulsar Edge Controller delivers large system intelligence in a small system form factor. This family of controllers functions as network interface cards (NIC) and as a full featured plant. Its thin modular plug-in form factor minimizes space consumption, allowing maximum power module and distribution capabilities.

The controller is utilized in bulk power applications in data centers and enterprise applications, and has been configured as the INV841A controller to manage the 827E inverter systems. Ethernet connectivity with SNMP facilitates remote network management. Access through its front-accessible USB port and aided by the EasyView2 graphical enables full user interface locally. The display also features alarm context sensitive backlighting for at-a-glance system status.

As a controller, it provides a complete set of features to monitor and control. A flexible set of configurable inputs allow the Pulsar Edge Controller to monitor a wide variety of system equipment and incorporate appropriate state information, enabling a centralized point of management.

The controller utilizes standard network management protocols, allowing for advanced network supervision. ABB Galaxy Manager* software is the centralized visibility and control component of a comprehensive power management system designed to meet engineering, operations and maintenance needs. The Galaxy Manager client-server architecture enables remote access to system controllers across the power network.

Key Features

Remote Access and Features

- Integrated 10/100 Base-T Ethernet Network
 - TCP/IP
 - SNMP V2c/V3 for management
 - SMTP for email
 - Telnet for command line interface
 - DHCP for plug-n-play
 - FTP for rapid backup and upgrades
 - HTTP/HTTPS for standard web pages and browsers
 - Compatible with Galaxy Manager and other management packages
 - Shielded RJ-45 interface referenced to chassis ground
 - IPV6
 - SSH/SSL secure protocols
- Password protected security levels:
 - User
 - Super-User
 - Administrator for all access
- Ground-referenced USB system port
- ANSI T1.317 command-line interface
- EasyView2, Windows-based GUI software for local terminal or modem access

Standard System Features

- Monitor and control of more than 40 connected devices
 - Maximum of 32 inverters
 - Robust RS485 system bus
- Standard and user-defined alarms
 - Alarm test
 - Assignable alarm severity: Critical, Major, Minor, Warning, and record-only
- Inverter Management features
 - Automatic inverter restart
 - Remote inverter (on/off)
 - Reserve Operation
 - N + X redundancy check
- Configuration, statistics, and history
 - All stored in non-volatile memory
 - Remote/local backup and restore of configuration data
- Industry standard defaults
 - Customer specific configurations available
- Remote/local software upgrade
- Basic, busy hour, and trend statistics
- Detailed event history
- User-defined events and derived channels

Integrated Monitoring

- Up to 6 user-assignable Form-C output alarms

GENERAL	
Operating Voltage	±24 Vdc, ±48 Vdc (Range: ±18 to ±60 Vdc)
Input Power	Less than 7W
Operating Temperature Range	-40°C to +70°C (-40°F to 167°F)
Operating Relative Humidity	0 - 95% (non-condensing)
Storage Temperature Range	-40°C to +85°C (-40°F to 185°F)
Physical Specifications	1.75 in. H, 0.75 in. W, 8.00 in. D; 0.5lb
Display	8-line by 40-character backlit LCD
EMC	FCC/EN55022 Class A, CISPR22 Level A

Galaxy Manager Compatible

- Centralized web server and database with multiple user access to live or managed data with drill down to problem details
- Monitor and control of more than 40 connected devices
- Management information from polling or alarms received from alarm traps from multiple sites are available on one screen via the Internet/Intranet
- Trend user-selected data over time
- Automatic or manual report generation
- Standard engineering tools like reserve time calculators and cable voltage drop analyzer

AGENCY CERTIFICATIONS	
Electrostatic Discharge	EN 61000-4-2 level 4
Radiated Emissions	FCC, Class A; EN 55022, Class A
Safety	UL Listed Component as Part of CPL or SPS Power System

Ordering Information – 827E Inverter System

Ordering Guide

The 827E can be configured in a 19” or 23” wide framework. Both 24Vdc and -48Vdc shelves can utilize as little as 5U of rack space. Each shelf is a complete system including a controller and distribution monitor. The 19” shelf can hold up to four inverter modules, and the 23” system can hold up to six.

The -48Vdc system can be expanded to a four shelf arrangement for applications requiring as much as 28.8KVA of 120Vac, 230Vac or 240Vac. Maintenance Bypass and AC Distribution panels are optional equipment.

Features

- Inverter modules for +24V and -48V applications
- Modular architecture for easy growth and low cost
- Maintenance Bypass Panel option
- AC Distribution Panel Option
- 19” shelf holds 4 inverter modules
- 23” shelf holds 6 inverter modules



Step 1: Select Inverter System

Primary Voltage Stand-Alone Systems

INPUT	ORDERING CODE	EQUIPMENT DESCRIPTION	PICTURE
	1600114277A	Basic 4.8KVA inverter system cage, 19” rack mounting 5 Rack Unit equipped with intelligent controller module and AC distribution module. Can accommodate up to 4 inverter modules	
		All modules in system must have same input and output voltage	
	1600114278A	Basic 7.2KVA inverter system cage, 23” rack mounting 5 Rack Unit equipped with intelligent controller module and AC distribution module. Can accommodate up to 6 inverter modules.	
		All modules in system must have same input and output voltage	

The following shelves allow a user to directly interface with a ABB system that features a Galaxy Pulsar Plus system controller. These shelves can operate with +24V or -48V input inverters and output 120V, 240V, or 230V - 50Hz. These shelves are not intended for stand-alone use.

Galaxy Protocol Universal Inverter Shelves

INPUT	ORDERING CODE	EQUIPMENT DESCRIPTION	PICTURE
-48V or +24V	150033358	Basic 8.4kVA (-48V Input) and 4.2kVA (+24V Input) System Cage 23" Rack mounting 5 Rack Unit equipped with GP interface and AC disconnect module. Can accommodate up to 7 inverter modules. J438827E L803	
-48V or +24V	150033359	Basic 6kVA (-48V Input) and 3kVA (+24V Input) System Cage 19" Rack mounting 5 Rack Unit equipped with GP interface and AC disconnect module. Can accommodate up to 5 inverter modules. J438827E L804	

Note: All modules in a shelf must have the same input and output voltage

Primary Voltage Systems

INPUT	ORDERING CODE	EQUIPMENT DESCRIPTION	PICTURE
-48V	1600171418A (3) inverter shelves 1600171421A (4) inverter shelves	Inverter system equipped with maintenance bypass panel (MBP), 23" rack mounting. MBP, 4 Rack Unit and 1 to 4 inverter cages, 5 Rack Unit equipped with intelligent controller module and AC distribution module. 1-position blank panel separating each component. Can accommodate up to 6 inverter modules per inverter shelf equipped.	
-48V	1600171360A (1) inverter shelf 1600171417A (2) inverter shelves	Inverter system equipped with maintenance bypass panel (MBP) & AC distribution panel, 23" rack mounting. MBP & AC distribution panels, 4 Rack Units/ each and 1 to 4 inverter cages, 5 Rack Unit equipped with intelligent controller module and AC distribution module. 1-position blank panel separating each component. Can accommodate up to 6 inverter modules per inverter cage equipped.	
-48V	1600171359A (1) inverter shelf 1600171420A (3) inverter shelves 1600171422A (4) inverter shelves	Inverter system equipped with maintenance bypass panel (MBP) & bulk input, 23" rack mounting. MBP, 4 Rack Unit and 1 to 4 inverter cages, 5 Rack Unit equipped with intelligent controller module and AC distribution module. 1-position blank panel separating each component. Can accommodate up to 6 inverter modules per inverter cage equipped	

Step 1: Select Inverter System (CONTINUED)

Standalone Inverters

INPUT	ORDERING CODE	EQUIPMENT DESCRIPTION	PICTURE
-48V	CC10916515	Standalone 1.2KVA Inverter Shelf, 19" rack mount, 120Vac 60Hz, 10A, -48Vdc input with 2 NEMA 5 outlet plugs	
	SI10A120SA	Inverter and Shelf – L16 Inverter Only – L725	
-48V	150031529	Standalone 1.2KVA Inverter Shelf, 19" rack mount, 230Vac 50Hz, 5A, -48Vdc input with terminal block output.	
	SI5A230SA0	Inverter and Shelf -708 Inverter Only – L727	
-48V	150031045	Standalone 1.2KVA Inverter Shelf, 19" rack mount, 240Vac 60Hz, 5A, -48Vdc input with terminal block output.	
	SI5A240SA	Inverter and Shelf-L709 Inverter Only – L726	

Step 2: Select Inverters

Inverters

INPUT	ORDERING CODE	EQUIPMENT DESCRIPTION	LIST	PICTURE
-48V	SI10A120PME	-48Vdc input, 120Vac output @ 10Amps	L11	
-48V	SI5A120PME	+24Vdc input, 120Vac output @ 5Amps	L14	
+24V	SI5A230PME50	-48Vdc input, 230Vac output @ 5Amps	L723	
-48V	SI5A240PME	-48Vdc input, 240Vac output @ 5Amps	L722	
	150031530	Blank module	L15	

Step 3: Select Alarm Cables

Alarm Cables


ORDERING CODE	MODEL	LIST	PICTURE
6370213P-9	Alarm cable, 25-pin male, 9 foot	L26	
6370213P-20	Alarm cable, 25-pin male, 20 foot	L29	
6370213P-60	Alarm cable, 25-pin male, 60 foot	L30	
6370213P-100	Alarm cable, 25-pin male, 100 foot	L31	
6370213P-150	Alarm cable, 25-pin male, 150 foot	L32	

Step 4: Select AC Distribution Options

AC Distribution Panel (Optional)

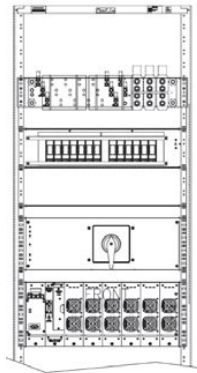
ORDERING CODE	DESCRIPTION	LIST	PICTURE
6180498P	AC Distribution Panel (12) AC Distribution positions	L70	

Circuit Breakers

ORDERING CODE	AMPERAGE	POSITIONS (POLES)	PICTURE
3050081P-10	10A	1	
408506855	15A	1	
408550776	20A	1	
3050081P-25	25A	1	
3050081P-30	30A	1	
3050081P-35	35A	1	
3050081P-40	40A	1	
3050081P-45	45A	1	
3050081P-50	50A	1	
3050081P-60	60A	1	
3050081P-70	70A	1	

Step 5: Select Bulk DC Input

DC Input Kit Assembly (Optional)

ORDERING CODE	DESCRIPTION	LIST	PICTURE
642827ETPSDCPK	Bulk DC Input Panel with 6+6 TPS fuse positions, ground return bus, Lexan rear cover, for 23" relay rack mounting. Includes: - 6190036P-5 - 6170078P-5 6380027P - 6401643P-3 - 4362329P-11 - 4362328P-11	L70	 shown for reference only


Step 6: DC Input Cable Kits

DC Input Kit Assembly (Optional)

ORDERING CODE	DESCRIPTION
150036125	Cabling kit to connect a single 23" inverter shelf to an Infinity M Power Plant. Compatible with: 657827E-23, 150026249 and 657827E-2324
150036126	Cabling kit to connect a single 23" inverter shelf to an Infinity M Power Plant. Compatible with: Controller-less 23" inverter shelves 827E, NE M DC Input, 23IN 7-Pos
150036127	Cabling kit to connect a single 19" inverter shelf to an Infinity M Power Plant. Compatible with: 657827E-19, 150026250 and 657827E-1924 827E, NE M DC Input, 19IN 4-Pos
150038128	Cabling kit to connect a single 19" inverter shelf to an Infinity M Power Plant. Compatible with: Controller-less 19" inverter shelves 827E, NE M DC Input, 19IN 5-Pos

Step 7: Select Maintenance Bypass Options


Maintenance Bypass Panel (MBP)

ORDERING CODE	DESCRIPTION	LIST	PICTURE
6310408P-1	Bulk DC Input Panel with 6+6 TPS fuse positions, ground return bus,	L52	
6310408P	10 KVA Maintenance Bypass Panel (Only available on -48V Input, 120V Output systems)	L51	
6370413P	Alarm Cable, Ribbon to 1st Inverter Shelf	L53	
6370413P-1	Alarm Cable, Ribbon to 2nd Inverter Shelf	L54	
6370413P-2	Alarm Cable, Ribbon to 3rd Inverter Shelf	L55	
6370413P-3	Alarm Cable, Ribbon to 4th Inverter Shelf	L56	
6401608P-1	Wiring List, MBP to (1) Inverter Shelf		
6401608P-2	Wiring List, MBP to (2) Inverter Shelves		
6401608P	Wiring List, MBP to (3) Inverter Shelves		
6401608P-3	Wiring List, MBP to (4) Inverter Shelves		

Note: MBP alarm cable (s) & wiring list (s) required to connect MBP to inverter system.

Step 8: Select Framework

Relay Rack

ORDERING CODE	DESCRIPTION	LIST	PICTURE
6270008EQCG	Zone 4 Relay Rack, 7.0', 23" Note: Compatible frame for systems equipped with AC Distribution, Bulk DC Input and/or Maintenance Bypass Panels (Step 5 - 8).	L502	
CC848828938	Zone 4 Relay Rack, 7.0', 23" Only for use with standard inverter shelves. Cannot be used with systems equipped with Maintenance Bypass Panels (Step 8).		
CC848842641	23" Kickplate (for 15" Depth) for CC848828938 Relay Rack		
CC848852260	23" Kickplate (for 24" Depth) for CC848828938 Relay Rack		



Step 9: Select Filler Panels

Filler Panels

ORDERING CODE	DESCRIPTION	LIST
4362326P-11	Blank panel, 1RU, 23"	L600

Spares

Spare Modules

ORDERING CODE	DESCRIPTION	LIST	PICTURE
6180443PE	Intelligent Controller Module	L43	
150027444	Distribution Monitor Module/Disconnect for -48V Shelf	L40	
150028440	Distribution Monitor Module/Disconnect for +24V Shelf	L45	
850027237	Distribution Monitor Module/Disconnect for 230/240VAC Shelves	755	

Reliability

- Distributed fault tolerance
- Proven field performance
- Controller continuity

Intelligence

- Industry-leading controller features
- Ethernet interface for remote access
- Centralized network management

Investment Protection

- Module compatibility
- Power shelf growth
- Secondary voltage flexibility +24V/-48V
- Flexible upgrade options

Management Visibility

Galaxy Manager* software is the centralized visibility and control component of a comprehensive power management system designed to meet engineering, operations and maintenance needs. The Galaxy Manager client-server architecture enables remote access to system controllers across the power network.

- Dashboard display with one-click access to management information database
- Trend analysis
- Scheduled or on-demand reports
- Fault, configuration, asset, and performance management

Training

ABB offers on-site and classroom training options based on certification curriculum. Technical training can be tailored to individual customer needs. Training enables customers and partners to more effectively manage and support the power infrastructure. We have built our training program on practical learning objectives that are relevant to specific technologies or infrastructure design

Service & Support

ABB field service and support personnel are trusted advisors to our customers always available to answer questions and help with any project, large or small. Our certified professional services team consists of experts in every aspect of power conversion with the resources and experience to handle large turnkey projects along with custom approaches to complex challenges. Proven systems engineering and installation best practices are designed to safely deliver results that exceed our customers' expectations.

Warranty

ABB is committed to providing quality products and solutions. We have developed a comprehensive warranty that protects you and provides a simple way to get your products repaired or replaced as soon as possible.

For full warranty terms and conditions please visit

abbpowerconversion.com



ABB

601 Shiloh Rd.
Plano, TX USA

abbpowerconversion.com

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB.

Copyright© 2021 ABB
All rights reserved