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**RACK MOUNTING  
BATTERY SYSTEMS**

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**EnerSys®**

*Power/Full Solutions*

RESERVE  
POWER

## Introduction to . . . Rack Mounting Battery Systems

**EnerSys® SpaceSaver Rack Mounting Battery Systems are the ideal way to install high energy density battery systems in standard 19" and 23" equipment racks.**

EnerSys PowerSafe™ V, VX and SBS front terminal batteries are ideal for telecom applications.

### Modular Design

A single 48V string or up to two 24V strings fit on a single shelf. Multiple strings are connected in parallel to achieve the required capacity.

This multi-string modular approach is inherently more reliable than a single high capacity string.

PowerSafe V and PowerSafe SBS front terminal battery configuration and modular systems make it easy to match battery capacity to the load and installation and maintenance quick and easy.

### BENEFITS

#### Compact Installation

PowerSafe V and PowerSafe SBS front terminal battery capacity ranges from 92 to 190Ah. A 48V string or 2 x 24V strings per shelf provides high energy density.



#### PowerSafe™ V-VX Types

Internationally recognized for quality, performance and long life.



#### PowerSafe™ SBS Types

The same reputation for quality, performance and long life, plus higher energy density and lower weight.

### Long Life

Thick lead-calcium positives grids in the PowerSafe V series and Thin Plate Pure Lead (TPPL) technology in PowerSafe SBS batteries have a proven track record in telecommunications applications around the world.

### Thermal Control

Monobloc design provides each cell with full side wall exposure for efficient bloc cooling.

The shelves are perforated to allow air flow through the stack for efficient system cooling.

### Flexibility

If new equipment is added to a site increasing the power consumption - additional battery strings can be added to match the new load.

### Easy Handling and Maintenance

Lifting handles make handling easy. Front terminals make installation and maintenance quick and simple.

### Shelves

EnerSys SpaceSaver shelves in 19" or 23" equipment racks provide a well ventilated platform for high capacity battery systems.

### Bus Bar

Rack mounting bus bars and battery-to-bus bar cable kits provide a convenient method and location for connecting multiple strings in parallel.

### New or Retrofit Installations

EnerSys SpaceSaver complete Rack Mounting Battery Systems or components are easy to order.

Refer to the String Configuration and Ordering Guide sections for full information on ordering EnerSys SpaceSaver Rack Mounting Battery Systems for new installations or individual components for replacement or retrofit applications.



### PowerSafe™ V Front Terminal Battery Performance Data

Nominal Performance at 77°F (25°C)

Model	End Vpc	Constant Current Discharge Rates							
		1 Hr	2 Hrs	3 Hrs	4 Hrs	5 Hrs	8 Hrs	10 Hrs	
12V92F-FT	1.75	64.8	36.6	26.0	20.2	16.6	11.5	9.4	
12V100F	1.75	66.3	38.6	27.9	22.0	18.4	12.5	10.4	
12V125F	1.75	66.3	48.7	35.1	28.1	23.3	15.7	12.8	
12V155FS	1.75	107.7	62.3	44.4	34.9	28.9	19.4	15.9	
12V170F	1.75	118.2	67.0	47.8	37.5	31.2	21.3	17.4	

Model	End Vpc	Constant Power Discharge Rates (Watts per Cell)							
		1 Hr	2 Hrs	3 Hrs	4 Hrs	5 Hrs	8 Hrs	10 Hrs	
12V92F-FT	1.75	126.2	72.6	51.7	40.5	33.4	22.9	18.9	
12V100F	1.75	124.4	72.9	52.8	42.5	35.6	24.4	20.3	
12V125F	1.75	163.5	94.9	68.6	54.0	45.5	31.3	25.2	
12V155FS	1.75	206.3	119.4	86.0	67.7	56.2	37.7	31.1	
12V170F	1.75	223.9	129.3	92.6	73.2	60.8	41.5	34.2	

### PowerSafe™ SBS Front Terminal Battery Performance Data

Nominal Performance at 77°F (25°C)

Model	End Vpc	Constant Current Discharge Rates							
		1 Hr	2 Hrs	3 Hrs	4 Hrs	5 Hrs	8 Hrs	10 Hrs	
SBS C11F	1.75	64.9	36.7	26.0	20.2	16.7	11.4	9.39	
SBS170F	1.75	124.3	72.0	51.2	39.9	32.8	21.6	17.4	
SBS190F	1.75	138.2	80.3	57.2	44.6	36.7	24.2	19.9	

Model	End Vpc	Constant Power Discharge Rates (Watts per Cell)							
		1 Hr	2 Hrs	3 Hrs	4 Hrs	5 Hrs	8 Hrs	10 Hrs	
SBS C11F	1.75	126	72.7	51.8	40.5	33.5	23.0	18.9	
SBS170F	1.75	244.2	143.1	102.2	79.9	65.7	43.4	35.5	
SBS190F	1.75	279.8	163	116	90.4	74.3	48.6	39.7	

## Configuration for Standard 84" High Equipment Racks

### 48V Systems

Model	Shelf Part No.	Rack		Bloc to Bloc		String		Maximum # Shelves	Strings Per Shelf	Shelf to Shelf Spacing (Min) In
		19"	23"	Connector	Spacing In	Width In	Depth In			
12V92F-FT	SC11-U*	•	•	C11CONN	0.39	17.2	16.5	6	1	11.4
12V100F	SVF23		•	VFCONN	0.37	20.9	22	7	1	10.0
12V125F	SVF19	•		1463083	0.08	16.8	22	5	1	13.4
	SVF23		•				22			
12V155FS	SVF23		•	VFCONN	0.37	20.8	22	5	1	13.4
12V170F	SVF23		•	VFCONN	0.37	20.8	22	5	1	13.4
12VX100F	SVF23		•	VFCONN	0.37	20.8	22	7	1	10.0
SBS C11F	SC11-U*	•	•	C11CONN	0.39	17.7	16.5	6	1	11.4
SBS170F	SVF23		•	VFCONN	0.37	20.8	22	5	1	13.0
SBS190F	SVF23		•	VFCONN	0.37	20.8	22	5	1	13.8

### 24V Systems

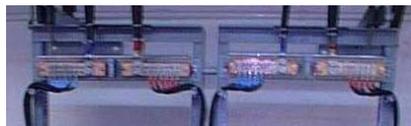
Model	Shelf Part No.	Rack		Bloc to Bloc		String		Maximum # Shelves	Strings Per Shelf	Shelf to Shelf Spacing (Min) In
		19"	23"	Connector	Spacing In	Width In	Depth In			
12V92F-FT	SC11-U*	•	•	C11CONN	0.39	8.6	16.5	6	2	11.4
12V100F	SVF23		•	VFCONN	0.37	10.2	22	7	2	10.0
12V125F	SVF19	•		1463083	0.08	8.4	22	5	2	13.4
	SVF23		•				22			
12V155FS	SVF23		•	VFCONN	0.37	10.2	22	5	2	12.0
12V170F	SVF23		•	VFCONN	0.37	10.2	22	5	2	13.4
12VX100F	SVF23		•	VFCONN	0.37	20.8	22	7	2	10.0
SBS C11F	SC11-U*	•	•	C11CONN	0.39	8.5	16.5	6	2	11.4
SBS170F	SVF23		•	VFCONN	0.37	10.2	22	5	2	13.0
SBS190F	SVF23		•	VFCONN	0.37	10.2	22	5	2	13.8

\* The SC11-U shelf can be mounted in 19" and 23" equipment racks.

Two 24V strings on the same shelf might require special accessories - consult factory.

String width dimensions are for bloc dimensions only, no allowance is made for main terminal cables.

### Bus Bars and Cables



#### BB23 Bus Bar

The Bus Bar provides a convenient in-rack point for connecting the strings in parallel and the batteries to power plant

BB23 connections for up to 7 strings  
BB19 connections for up to 6 strings



#### SC11-U in 19" Rack

With a depth of only 16.5" the PowerSafe™ SBS C11F and 12V92F-FT are ideal for sites with narrow rooms such as customer premises



#### Fast-Disconnect Cables

The Fast-Disconnects allow single strings to be isolated during installation or maintenance procedures

## Ordering Guide

### System and Component Selection Guide

Part Number	Description
PR	23" Equipment Rack, 84" High
PR19	19" Equipment Rack, 84" High
SVF23	23" Rack Mounting Shelf
SVF19	19" Rack Mounting Shelf (for model 12V125F)
SC11-U	19" and 23" Rack Mounting Shelf (for models 12V92FT and SBS C11F)
BB23	23" Rack Mounting Bus Bar for Parallel Connection of 1-7 Battery Strings
BB19	19" Rack Mounting Bus Bar for Parallel Connection of 1-6 Battery Strings

Part Number	Description
VF1CKA	82" Cable Kit with Fast-Disconnect
VF2CKA	72" Cable Kit with Fast-Disconnect
VF3CKA	62" Cable Kit with Fast-Disconnect
VF4CKA	52" Cable Kit with Fast-Disconnect
VF5CKA	42" Cable Kit with Fast-Disconnect
VF6CKA	32" Cable Kit with Fast-Disconnect
VF7CKA	22" Cable Kit with Fast-Disconnect

Notes: For cables without the Fast-Disconnect omit the letter "A" from the Part Number.  
Cable numbering system is based on String 1 being at the bottom of the rack.

### System Order Code

48 - XXX - V - X - 23 - S1 - 1 - A

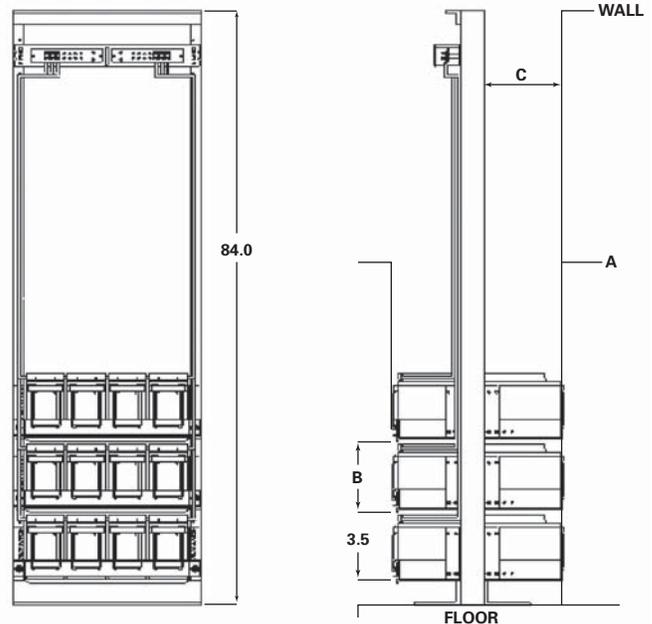
Voltage	Ah	Type	Shelves 1 - 7	Rack Type	Shelf Type	Bus Bar	Fast Disconnect
24 = 24V	92	S = SBS	See configuration tables for maximum shelves per rack	19 = 19"	S1 = SVF19 S3 = SC11-U	1 = BB19	A
48 = 48V	100	V = V		23 = 23"	S2 = SVF23	2 = BB23	

Example: 48-100 VX 4 23 S2 2 A

- 48 48 Volt system
- 100 100 Ah Capacity
- VX PowerSafe™ 12VX100F battery
- 4 4 Strings
- 23 23" Equipment Rack
- S2 SVF23 Shelves
- 2 BB23 Bus Bar – Omit if not required
- A Fast Disconnect - Omit if cables are not required

Min Dimension	PowerSafe™ V FT Models				PowerSafe™ SBS FT Models			
	12V92FT	12V100F	12V125F	12V155F	12V170F	SBS C11F	SBS170F	SBS190F
A	16.5	22.0	22.0	22.0	22.0	16.5	22.0	22.0
B	11.4	10.0	13.4	12.0	13.4	11.4	13.0	13.8
C	6.5	10.5	10.5	10.5	10.5	6.5	10.5	10.5

All measurements are in inches



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