

**NCR SEISMIC ZONE 4
BATTERY SYSTEMS**

PowerSafe™

Battery Systems

The EnerSys® NCR battery rack is an ideal solution for critical applications requiring high energy density, high reliability and NEBS compliance.

The NEBS certified rack is a six-shelf, fully welded structure.

The EnerSys NEBS certified Seismic Zone 4 battery rack can house up to six 48V strings or twelve 24V strings of batteries.

The EnerSys NCR rack houses PowerSafe™ V and PowerSafe SBS front terminal battery models. Both types are known for long life and reliability.

PowerSafe SBS battery types also offer unequalled energy density.

PowerSafe V and PowerSafe SBS battery systems can be customized to meet the specific power requirement at each remote terminal or small central office.

Multi-string systems are a viable and more reliable alternative to large capacity single-string modular batteries.

System features:

- NEBS compliant
- High energy density
- Pre-wired for quick installation
- Front terminals for easy maintenance
- Redundant strings for high reliability
- Optional circuit breakers



48V 1,140Ah System
Six Strings of SBS190F



Optional circuit breakers

PowerSafe™ V-VX Types

Internationally recognized for quality, performance and long life.



PowerSafe™ SBS Types

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



Battery Performance and Floor Loading Data

PowerSafe™ V Battery Performance

Nominal Performance for PowerSafe™ V Front Terminal Battery Models at 77°F (25°C)

Model	End Vpc	Constant Current Discharge Rates							
		1 Hr	2 Hrs	3 Hrs	4 Hrs	5 Hrs	8 Hrs	9 Hrs	10 Hrs
12V100F	1.75	66.3	38.6	27.9	22.0	18.4	12.5	11.3	10.4
12VX100F	1.75	66.3	38.6	27.9	22.0	18.4	12.5	11.3	10.4
12V125F	1.75	85.4	48.7	35.1	28.1	23.3	15.7	14.0	12.7
12V155FS	1.75	107.7	62.3	44.4	34.9	28.9	19.4	17.5	15.9
12V170F	1.75	118.2	67.0	47.8	37.5	31.2	21.3	19.2	17.4

Model	End Vpc	Constant Power Discharge Rates (Watts per Cell)							
		1 Hr	2 Hrs	3 Hrs	4 Hrs	5 Hrs	8 Hrs	9 Hrs	10 Hrs
12V100F	1.75	124.4	72.9	52.8	42.5	35.6	24.4	22.1	20.3
12VX100F	1.75	124.4	72.9	52.8	42.5	35.6	24.4	22.1	20.3
12V125F	1.75	163.5	94.9	68.6	54.0	45.5	31.3	27.9	25.2
12V155FS	1.75	206.3	119.4	86.0	67.7	56.2	37.7	34.1	31.1
12V170F	1.75	223.9	129.3	92.6	73.2	60.8	41.5	37.6	34.2

PowerSafe™ SBS Battery Performance

Nominal Performance for PowerSafe™ SBS Battery Models at 77°F (25°C)

Model	End Vpc	Constant Current Discharge Rates							
		1 Hr	2 Hrs	3 Hrs	4 Hrs	5 Hrs	8 Hrs	9 Hrs	10 Hrs
SBS170F	1.75	123.2	72.0	50.7	39.4	32.3	21.4	18.9	17.4
SBS190F	1.75	137.7	80.5	56.7	44.1	36.1	23.9	21.3	19.5

Model	End Vpc	Constant Power Discharge Rates (Watts per Cell)							
		1 Hr	2 Hrs	3 Hrs	4 Hrs	5 Hrs	8 Hrs	9 Hrs	10 Hrs
SBS170F	1.75	240.0	142.1	100.8	78.6	64.5	43.2	38.0	34.9
SBS190F	1.75	280.0	162.2	115.0	89.7	73.6	48.3	43.0	39.0

Battery Capacities and Floor Loading

Battery Model	Rack Weight lbs	Battery Capacities				Floor Loading lbs/ft ²	
		Strings 48V / 24V	Ah Per String	Max Ah/48V System	Max Ah/24V System	Full System Load	Load Factor
12V100F	450	6 / 12	100	600	1,200	686	97
12VX100F	450	6 / 12	100	600	1,200	686	97
12V125F	450	6 / 12	130	780	1,560	788	114
12V155FS	450	6 / 12	155	930	1,860	800	116
12V170F	450	6 / 12	170	1,020	2,040	923	136
SBS170F	450	6 / 12	170	1,020	2,040	745	107
SBS190F	450	6 / 12	190	1,140	2,280	837	122

Floor loading correction for partially loaded rack:

Rack dimensions: 26" W x 24" D x 84" H, base plate area is 624 in² or 4.33 ft²

Floor Loading = Full System Load - (Load Factor x No. of Empty Shelves)

Example: System comprising of 4 x 48V strings of 12V170F

Floor loading = 923 - (136 x 2) = 923 - 272 = 651 lbs/ft²

Battery System Part Numbers

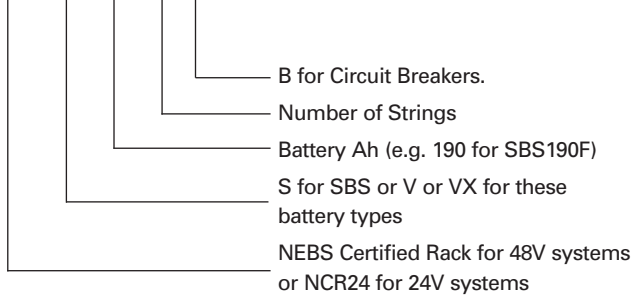
Standard systems are:

- 48V - Hot or live negative with positive ground
- +24V - Hot or live positive with negative ground

The racks are pre-wired for fast and easy installation. The optional Circuit Breakers in the Negative (Hot) cable allow each string to be isolated and ensure maximum safety during installation and maintenance.

Ordering a battery system is easy. A single part number includes the rack, battery strings and accessories.

NCR48 - S - XXX - X - X



Example:

The part number NCR48-VX-100-5-B would comprise of:

- 1 - 6 Shelf NCR NEBS Certified Rack (pre-wired with Circuit Breakers in Negative cable)
- 20 - 12VX100F batteries with terminal fasteners
- 15 - Inter-bloc connectors
- 1 - Instruction sheet

Notes:

1. Each shelf must be fully loaded with four blocs regardless of system voltage.
2. The installer is responsible for ensuring the battery is situated where battery system weight and floor load bearing capacity are compatible.
3. The installer is responsible for situating and anchoring the rack in accordance with all applicable company, local, state and federal codes.



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