CITY OF MERCER ISLAND

Fire Marshal's Office

3030 78th Ave SE | MERCER ISLAND, WA 98040 PHONE: 206.275.7966 | www.mercerisland.gov



STATIONARY STORAGE BATTERY SYSTEMS

Projec	t Type:
Projec	t Address:
Conta	ct Name: Phone No.
Owne	r Name:
1.	Battery System
	☐ The battery system has an electrolyte capacity of more than 50 gallons (189 L) for flooded lead-acid, nickel cadmium (Ni-Cd) and value-regulated lead-acid (VRLA)
-	Specify # of Gallons
	☐ The battery system has more than 1,000 pounds (454 kg) for lithium-ion and lithium metal polymer.
	Specify # of Pounds
	s proposed to existing battery quantity onsite - 9 ith 2.09 gal/battery
2.	Battery Classification (Total for building or control area)
	☐ Nonrecombinant Vented Lead Acid- kWh?
	□ Nonrecombinant Vented Nickel-Cadmium- kWh?
	☐ Recombinant Value Regulated Lead Acid Cells- kWh?
	☐ Recombinant Valve Regulated Lithium-Ion Cells kWh?
	☐ Lithium Metal Cells kWh?
3.	Current Fire Protection Systems (Check all that apply)
	□ NFPA 72 Monitored Fire Alarm System
	Monitoring Center/Central Station?
	□ NFPA 704 Placarding
	☐ Knox Box for Fire Department Access
	☐ Fire Sprinkler System
	☐ Neutralization Product and Quantity

- **4. Permits Required** (*fire code requirements are referenced in the table on the following page*)
 - Battery System Permit
 - Fire Alarm Permit

BATTERY TECHNOLOGY	MAXIMUM ALLOWABLE QUANTITIES ³	GROUP HOCCUPANCY					
Flow batteries th	600 kWh	Group H-2					
Lead acid, all types	Unlimited	Not Applicable					
Lithium, all types	600 kWh	Group H-2					
Nickel cadmium (NFCd)	Unlimited	Not Applicable					
Sodium, all types	600 kWh	Group H-2					
Other battery technologies	200 KWh	Group H-2 ^C					

TABLE 608.1 BATTERY REQUIREMENTS

	NONRECOMBINA	INT BATTERIES	RECOMBINANT	OTHER BATTERIES			
REQUIREMENT	Vented (Flooded) Lead Acid Batteries	Vented (Flooded) Nickel-Cadmium (Ni-Cd) Batteries	Valve Regulated Lead- Acid (VRLA) Cells	Lithium-Ion Cells	Lithium Metal Cells		
Safety caps	Venting caps (608.2.1)	Venting caps (608.2.1)	Self-resealing flame- arresting caps (608.2.2)	No caps	No caps		
Thermal runaway management	Not required	Not required	Required (608.3)	Not required	Required (608.3)		
Spill control	Required (608.5)	Required (608.5)	Not required	Not required	Not required		
Neutralization	Required (608.5.1)	Required (608.5.1)	Required (608.5.2)	Not required	Not required		
Ventilation	Required (608.6.1; 608.6.2)	Required (608.6.1; 608.6.2)	Required (608.6.1; 608.6.2)	Not required	Not required		
Signage	Required (608.7)	Required (608.7)	Required (608.7)	Required (608.7)	Required (608.7)		
Seismic protection	Required (608.8)	Required (608.8)	Required (608.8)	Required (608.8)	Required (608.8)		
Smoke detection	Required (608.9)	Required (608.9)	Required (608.9)	Required (608.9)	Required (608.9)		



Features and Benefits

- Capacity range 7-361Ah
- 2V, 6V and 12V monobloc configurations
- Multiple string configurations available
- Two year shelf life
- SR-4228 compliant
- Long service life
- High energy density and cycling capability

Construction

- Utillizes Thin Plate Pure Lead (TPPL) technology. Thin positive grids are produced from high purity lead from a unique manufacturing process to maximize corrosion resistance and service life while increasing energy density
- Separators are Absorbent Glass Mat (AGM) made from high purity, superior quality fibers. The electrolyte is absorbed within the AGM, preventing acid spills in case of accidental damage
- High purity electrolyte to reduce self discharge rate and float currents
- Container and cover in flame retardant UL94-V0 material, highly resistant to shock and vibration
- Front terminal batteries use tin-plated copper terminals. Top terminal batteries use a copper alloy insert
- Self-regulating one way pressure relief valves prevent air ingress

Installation and Operation

- Space efficient footprint
- Valve Regulated Lead Acid (VRLA) design reduces maintenance requirements
- Greater than 10 year life expectancy in float service at 77°F (25°C)
- TPPL technology provides increased active material surface area which yields increased energy density
- Operating temperature: -40°F (-40°C) to 122°F (50°C) Recommended temperature: 68°F (20°C) to 86°F (30°C)

Standards

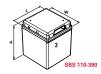
- Approved as non-hazardous cargo for ground, sea and air transportation. Please see our SDS for complete packaging requirements at www.enersys.com
- Complies with Telcordia® SR-4228, Network Equipment Building System (NEBS™) Criteria Levels
- The management systems governing the manufacture of this product are ISO 9001:2008 and ISO 14001:2004 certified

General Specifications

				Nominal	Capacity	Nominal Dimensions											Electr	olyte (1.300	S.G.)	Pure Acid (H2SO4)					
	Battery Type	of	Voltage	8hr. Rate 1.75Vpc	1.80Vpc	Len	gth	Wi	dth	Hei	ight		ical ight	Short Circui Current	Resistance	e Terminals	Volu (per l		We (per	ight bloc)	Volu (per		We (per	ight bloc)	Lead V (per b	•
		Cells	(V)	@ 77°F	@ 20°C	in	mm	in	mm	in	mm	lbs	kg	(Amps)	Milli-Ohms	•	gal	L	lbs	kg	lbs	kg	lbs	kg	lbs	kg
	SBS 8	6	12	7	7	5.43	138	3.39	86.0	3.90	99.0	5.95	2.70	455	27.1	M4 F	0.10	0.38	1.08	0.49	0.03	0.11	0.43	0.19	4.26	1.93
Ξ	SBS 15	6	12	14	14	7.87	200	3.03	77.0	5.51	140	11.5	5.20	891	13.5	M6 M	0.20	0.75	2.14	0.97	0.06	0.21	0.85	0.38	7.83	3.55
Form Factor 1	SBS 30	6	12	26	26	9.84	250	3.82	97.0	6.14	156	20.9	9.50	1556	7.90	M6 M	0.40	1.51	4.33	1.96	0.11	0.43	1.72	0.78	15.5	7.04
Ē	HB30	6	12	26	26	9.84	250	3.82	97.0	6.14	156	21.2	9.60	1556	7.90	harness	0.40	1.51	4.33	1.96	0.11	0.43	1.72	0.78	15.5	7.04
포	SBS 40	6	12	38	38	9.84	250	3.82	97.0	8.11	206	29.1	13.2	2184	5.60	M6 M	0.59	2.23	6.39	2.90	0.17	0.63	2.53	1.15	21.2	9.61
	SBS 60	6	12	51	51	8.66	220	4.76	121	10.3	261	40.8	18.5	2618	4.40	M6 M	0.85	3.22	9.21	4.17	0.24	0.91	3.65	1.66	29.1	13.2
Jr 2	SBS 110	3	6	116	115	7.87	200	8.19	208	9.41	239	46.7	21.2	3804	1.70	M8 M	0.95	3.60	10.3	4.67	0.27	1.01	4.08	1.85	31.6	14.3
Factor 2	SBS 130	3	6	133	132	7.87	200	8.19	208	9.41	239	50.0	22.7	4111	1.40	M8 M	0.98	3.70	10.6	4.80	0.28	1.04	4.20	1.90	34.2	15.5
Form	SBS 300	1	2	307	310	7.87	200	8.19	208	9.41	239	47.8	21.7	8700	0.23	M8 M	0.95	3.60	10.3	4.67	0.27	1.01	4.08	1.85	31.9	14.5
<u>-</u>	SBS 390	1	2	361	360	7.87	200	8.19	208	9.41	239	51.1	23.2	11101	0.18	M8 M	0.90	3.39	9.70	4.40	0.25	0.95	3.85	1.75	34.7	15.7
	SBS J13	6	12	12	12	6.89	175	3.27	83.0	5.08	129	11.5	5.20	957	13.0	M6 F	0.18	0.68	1.95	0.88	0.05	0.19	0.77	0.35	8.11	3.68
ctor	SBS J16	6	12	15	15	7.13	181	2.99	76.0	6.57	167	14.8	6.70	1111	11.0	M6 F	0.23	0.87	2.49	1.13	0.06	0.25	0.99	0.45	11.0	5.00
Form Factor	SBS J30	6	12	26	26	6.54	166	6.89	175	4.92	125	26.0	11.8	1766	7.00	M6 F	0.39	1.48	4.22	1.92	0.11	0.42	1.68	0.76	18.1	8.19
퉏	SBS J40	6	12	39	39	7.76	197	6.50	165	6.69	170	35.1	15.9	2400	5.20	M6 F	0.61	2.31	6.61	3.00	0.17	0.65	2.62	1.19	27.6	12.5
_	SBS J70	6	12	64	64	13.0	329	6.54	166	6.85	174	60.8	27.6	3500	3.50	M6 F	0.98	3.71	10.6	4.81	0.28	1.04	4.21	1.91	44.4	20.2
	SBS J13X	6	12	12	12	7.0	177	3.37	85.6	5.17	131	11.5	5.20	957	13.0	M6 F	0.18	0.68	1.95	0.88	0.05	0.19	0.77	0.35	8.11	3.68
	SBS J16X	6	12	15	15	7.27	185	3.11	78.9	6.67	16	14.8	6.70	1111	11.0	M6 F	0.23	0.87	2.49	1.13	0.06	0.25	0.99	0.45	11.0	5.00
	SBS J30X	6	12	26	26	6.64	169	7.05	179	5.04	128	26.0	11.8	1766	7.00	M6 F	0.39	1.48	4.22	1.92	0.11	0.42	1.68	0.76	18.1	8.19
	SBS J40X	6	12	39	39	7.87	200	6.66	169	6.80	173	35.1	15.9	2400	5.20	M6 F	0.61	2.31	6.61	3.00	0.17	0.65	2.62	1.19	27.6	12.5
	SBS J70X	6	12	64	64	13.03	331	6.63	168	6.97	177	60.8	27.6	3500	3.50	M6 F	0.98	3.71	10.6	4.81	0.28	1.04	4.21	1.91	44.4	20.2
_	SBS B14X	6	12	62	62	12.03	306	3.94	100	10.5	266	42.1	19.1	1800	7.00	M8 F	0.78	2.95	8.45	3.83	0.22	0.83	3.35	1.52	29.6	13.4
	SBS B8	6	12	31	31	11.0	280	3.82	97.0	6.26	159	22.7	10.3	1270	10.0	M8 F	0.37	1.42	4.05	1.84	0.11	0.40	1.61	0.73	15.6	7.08
<u>.</u>	SBS B10	6	12	38	38	11.0	280	3.82	97.0	7.24	184	26.0	11.8	1390	9.00	M8 F	0.48	1.80	5.15	2.34	0.13	0.51	2.04	0.93	17.7	8.03
Factor (SBS B14	6	12	62	62	11.0	280	3.82	97.0	10.4	264	42.1	19.1	1800	7.00	M8 F	0.78	2.95	8.45	3.83	0.22	0.83	3.35	1.52	29.6	13.4
Form	SBS C11	6	12	91	92	15.6	395	4.13	105	10.4	264	61.7	28.0	2300	5.50	M8 F	1.28	4.85	13.9	6.29	0.36	1.36	5.50	2.49	43.3	19.7
Œ	SBS 100	6	12	100	100	15.6	395	4.25	108	11.3	287	71.9	32.6	2210	5.60	M8 F	1.34	5.09	14.6	6.60	0.38	1.43	5.77	2.62	49.7	22.6
	SBS145	6	12	145	145	16.9	429	6.77	172	9.37	238	105	47.6	4100	3.00	M8 F	2.21	8.37	23.9	10.9	0.62	2.35	9.49	4.31	79.5	36.1
	SBS B8F	6	12	31	31	11.9	303	3.82	97.0	6.26	159	22.7	10.3	1270	10.0	M6 M	0.37	1.42	4.05	1.84	0.11	0.40	1.61	0.73	15.6	7.08
	SBS B10F	6	12	38	38	11.9	303	3.82	97.0	7.24	184	28.2	12.8	1390	9.00	M6 M	0.48	1.80	5.15	2.34	0.13	0.51	2.04	0.93	17.7	8.03
	SBS B14F	6	12	62	62	11.9	303	3.82	97.0	10.4	264	42.0	19.1	1800	7.00	M6 M	0.78	2.95	8.45	3.83	0.22	0.83	3.35	1.52	29.6	13.4
4 70	SBS C11F	6	12	91	92	16.4	417	4.13	105	10.1	256	61.6	28.0	2300	5.50	M6 M	1.28	4.85	13.9	6.29	0.36	1.36	5.50	2.49	43.3	19.7
Factor 4	SBS 100F	6	12	100	100	15.6	395	4.25	108	11.3	287	71.9	32.6	2210	5.60	M6 M	1.34	5.09	14.6	6.60	0.38	1.43	5.77	2.62	49.7	22.5
Form	SBS 112F	6	12	112	112	22.1	561	4.92	125	8.98	228	90.4	41.0	2500	5.00	M6 M	1.71	6.48	18.5	8.41	0.48	1.82	7.35	3.34	56.8	25.8
æ	SBS 145F	6	12	145	145	17.8	452	6.77	172	9.37	238	105	47.6	4100	3.00	M6 M	2.25	8.51	24.3	11.0	0.63	2.39	9.66	4.38	72.4	32.8
	SBS 165F	6	12	165	165	17.8	452	6.77	172	10.8	274	116	52.8	3700	2.30	M6 M	2.45	9.27	26.5	12.0	0.64	2.42	9.72	4.41	82.7	37.5
	SBS 170F	6	12	170	170	22.1	561	4.92	125	11.1	283	116	52.5	3500	3.50	M6 M	2.09	7.92	22.7	10.3	0.59	2.23	8.99	4.08	82.0	37.2
	SBS 190F	6	12	190	190	22.1	561	4.92	125	12.4	316	132	60.0	3990	3.20	M6 M	2.34	8.86	25.3	11.5	0.66	2.49	10.1	4.56	95.8	43.4

^{*}Resistance values are for reference only and not intended to represent an Ohmic value or base line measurement









Existing Battery Quantity of (9) SBS 170F