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MSJ 400 ▶ 2V 405 Ah

MSJ 400 is a long service life battery up to 20 years expected life under normal float charge. As with all CSB batteries, all are rechargeable, highly efficient, leak proof and maintenance free.



► Specification

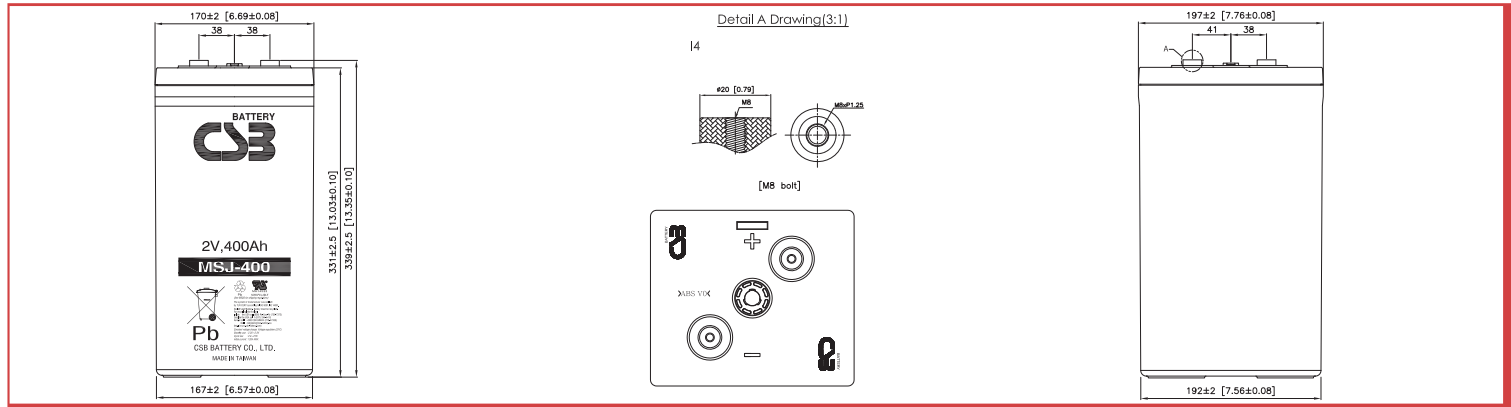
Cells Per Unit	1
Voltage Per Unit	2
Capacity	405Ah @ 10hr-rate to 1.80V per cell @25 °C (77°F)
Weight	Approx. 28.6 kg(63.0 lbs)
Maximum Discharge Current	2400A(5sec)
Internal Resistance	Approx. 0.30m Ω
Operating Temperature Range	Discharge: -20°C~50°C (-4°F~122°F) Charge: 0°C~40°C (32°F~104°F) Storage: -20°C~40°C (-4°F~104°F)
Nominal Operating Temperature Range	25°C±3°C (77°F±5°F)
Float Charging Voltage	2.23±0.02/Cell at 25 °C (77°F) Temp. Coefficient ±3.3mV/°C (±1.8mV/°F)
Recommended Maximum Charging Current Limit	120A
Equalization / Cycle Use Charging Voltage	2.35V Temps coefficient ±3.3mV/°C (±1.8mV/°F)
Terminal	Pb-Ca-Sn Alloy Recessed Terminal
Container Material	The container and cover are made of flame retardant plastics which meet ABS(UL 94-V0) specifications. The oxygen index level is higher than 28

CSB-manufactured **VRLA** (Absorbent Glass Mat type) batteries are UL-recognized components under UL1989.

CSB is also certified by ISO 9001 and ISO 14001.

► Dimensions :

Unit: mm (inch)	Overall Height (H)	Container height (h)	Length (L)	Width (W)
	339±2.5 (13.35±0.10)	331±2.5 (13.03±0.10)	197±2 (7.76±0.08)	170±2 (6.69±0.08)



Constant Current Discharge Characteristics Unit:A (25°C, 77°F)

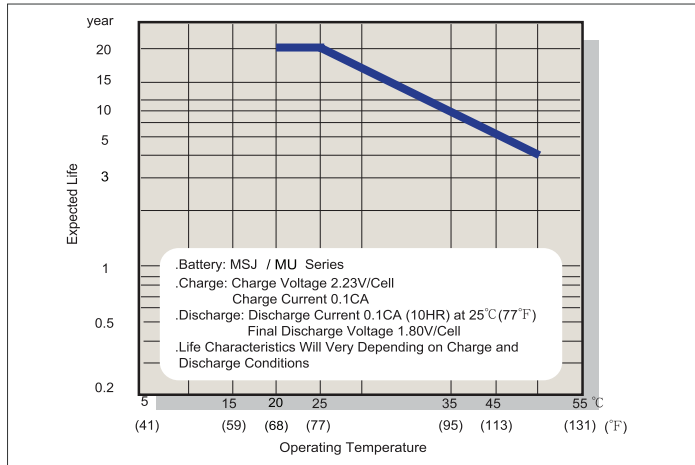
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	711	544	316	180	129	99.6	81.2	68.7	54.8	46.1
1.67V	637	517	308	178	128	98.6	80.4	68.0	54.4	45.8
1.70V	599	500	302	177	127	97.9	79.9	67.6	54.1	45.6
1.75V	539	455	287	173	125	96.1	78.6	66.6	53.4	45.0
1.80V	461	403	265	165	120.2	92.8	76.1	64.9	52.1	43.9
1.83V	407	370	248	158	115.5	89.5	73.6	63.2	50.9	42.9

Constant Power Discharge Characteristics Unit:W (25°C, 77°F)

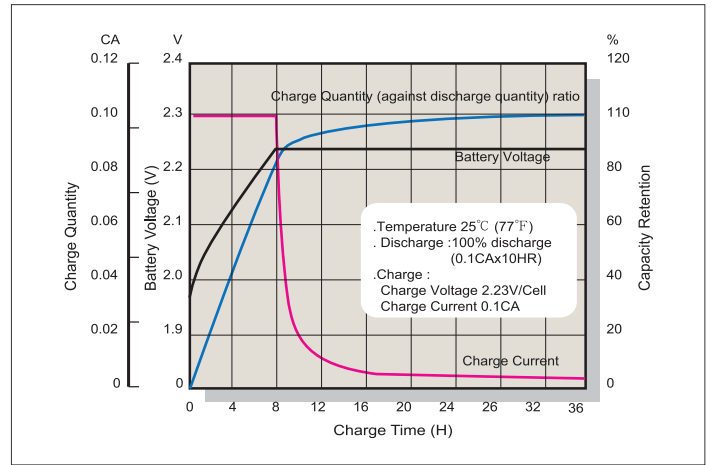
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	1183	938	574	344	246	194	161	138	108	85.8
1.67V	1100	902	563	341	244	193	160	137	107	85.3
1.70V	1056	879	555	339	243	192	159	137	107	85.0
1.75V	965	821	532	332	239	189	157	135	105	83.8
1.80V	866	742	496	319	231	184	154	132	102	81.6
1.83V	780	692	468	306	224	179	149	129	99.5	79.5

Ratings presented herein are subject to revision without notice. Please refer to www.csb-battery.com to confirm the latest version.

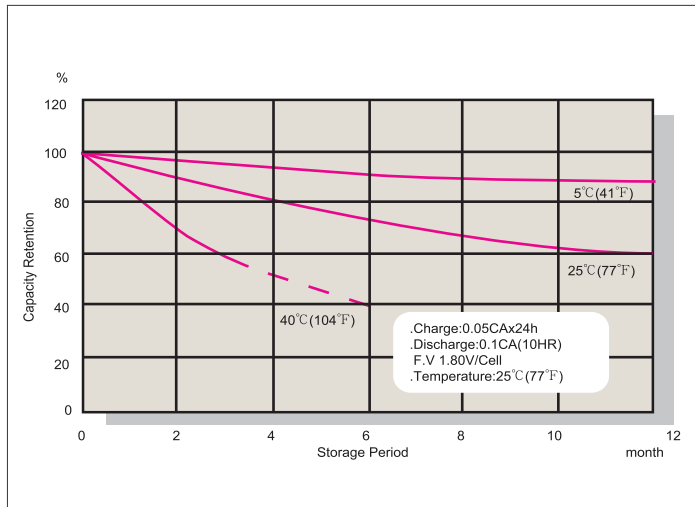
Expected Life V.S Operating Temperature



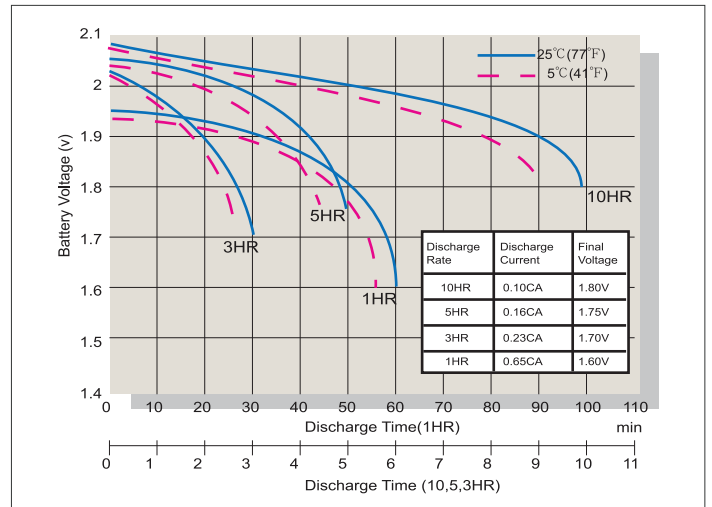
Typical Constant Voltage Charge Characteristics



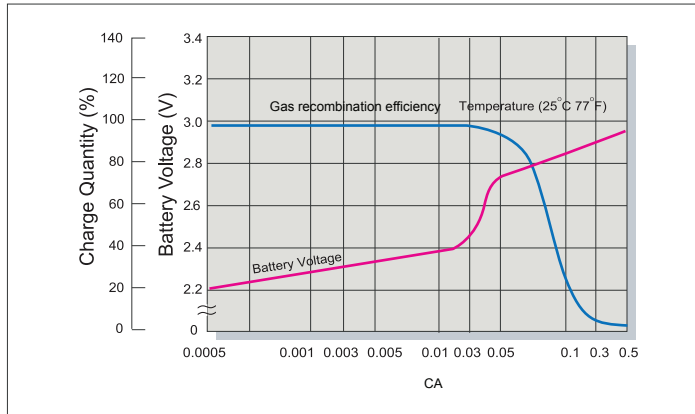
Capacity Retention Characteristics



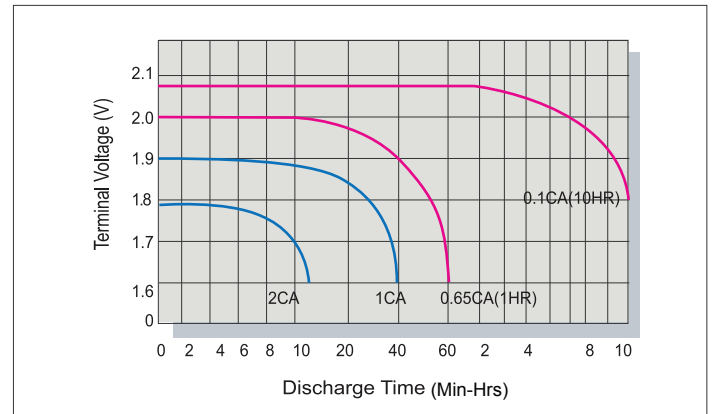
Discharge Characteristics



Oxygen Recombination Efficiency Chart



Terminal Voltage (V) and Discharge Time 25°C (77°F)



Charging Procedures

Application	Charge Voltage (V/Cell)			Max. Charge Current
	Temperature	Set Point	Allowable Range	
Standby	25°C (77°F)	2.23	2.21~2.25	0.3C

Discharge Current VS. Discharge Voltage

Discharge Current (A)	Final Discharge Voltage (V/Cell)
0.05C > A	1.90
0.15C > A ≥ 0.05C	1.80
0.20C > A ≥ 0.15C	1.75
0.40C > A ≥ 0.20C	1.70
A > 0.40C	1.60

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