



# MASTERVOLT

## SPECIFICATIONS

# 2 VOLT GEL CELLS

MVSV series



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v 1.1 July 2006

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# 1 SPECIFICATIONS

## 1.1 PHYSICAL SPECIFICATIONS

### General

Operating temperature:	-20°C to 45°C (-4°F to 113°F)
Nominal operating temperature:	10°C to 30°C (50 °F to 86°F), recommended at 20°C (68°F)
Storage temperature:	-40°C to 55°C (-40°F to 131°F)
Material of the battery container:	Styrene-acrylnitrile-copolymer (SAN), UL classification 94 HB

### Dimensions and weights

Model	Part number	Length (l) Max mm	Width (b) Max mm	Height (h1) Max mm	Height (h2) Max mm	Installed length (B) Max mm	Weight (approx)	Terminal
MVSV 280	68000280	125	207	357	401	134	22kg	F-M8
MVSV 420	68000420	125	207	473	517	134	32kg	F-M8
MVSV 500	68000500	146	207	473	517	155	37kg	F-M8
MVSV 580	68000580	167	207	473	517	176	42kg	F-M8
MVSV 750	68000750	146	207	648	693	155	50kg	F-M8
MVSV 1000	68001000	211	192	648	693	210	68kg	F-M8
MVSV 1250	68001250	211	234	648	693	220	82kg	F-M8
MVSV 1500	68001500	211	276	648	693	220	98kg	F-M8
MVSV 1650	68001650	211	276	798	843	220	112kg	F-M8
MVSV 2200	68002200	214	399	775	819	223	153kg	F-M8
MVSV 2700	68002700	214	488	774	819	222	196kg	F-M8

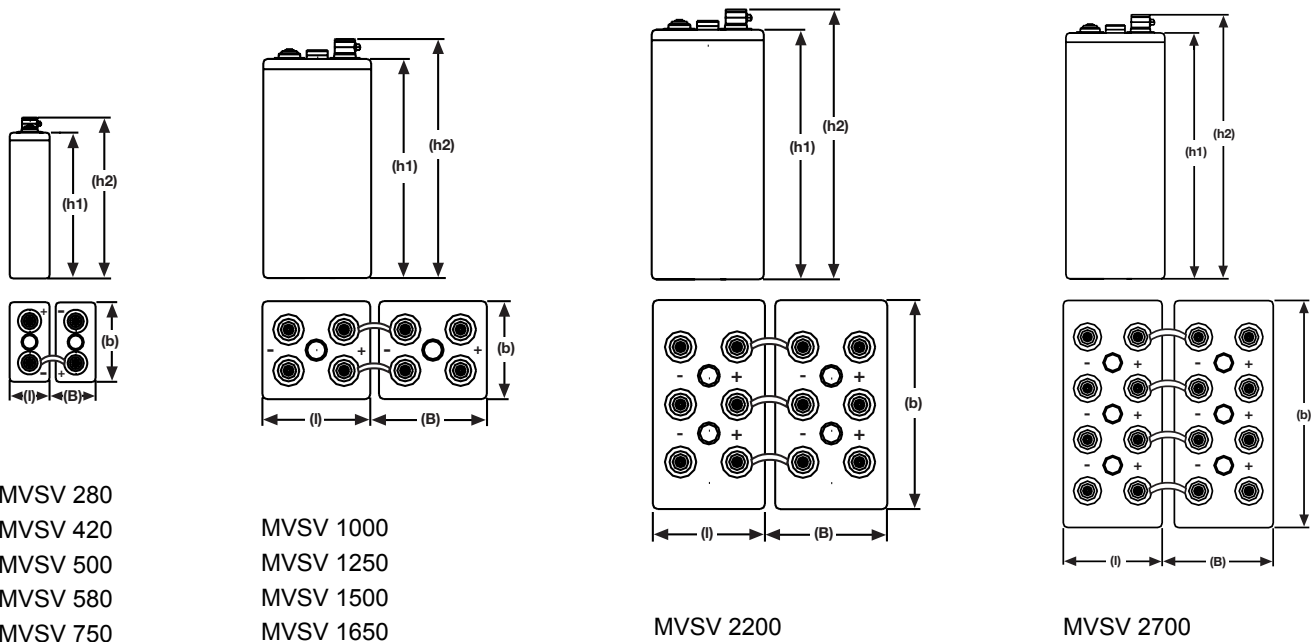


Figure 1: Drawings with terminal position (not to scale!)

## 1.2 ELECTRICAL SPECIFICATIONS

### 1.2.1 General

Model	Part number	Nominal voltage	Nominal capacity*	Discharge current I <sub>10</sub> *	Pole pairs	Internal resistance**	Short circuit current**
MVSV 280	68000280	2V	280Ah	28.0A	1	0.79mΩ	2700A
MVSV 420	68000420	2V	416Ah	41.6A	1	0.62mΩ	3310A
MVSV 500	68000500	2V	499Ah	49.9A	1	0.53mΩ	3930A
MVSV 580	68000580	2V	582Ah	58.2A	1	0.47mΩ	4370A
MVSV 750	68000750	2V	748Ah	74.8A	1	0.48mΩ	4290A
MVSV 1000	68001000	2V	998Ah	99.8A	2	0.38mΩ	4830A
MVSV 1250	68001250	2V	1248Ah	124.8A	2	0.33mΩ	6260A
MVSV 1500	68001500	2V	1497Ah	149.7A	2	0.29mΩ	7840A
MVSV 1650	68001650	2V	1643Ah	164.3A	2	0.19mΩ	10500A
MVSV 2200	68002200	2V	2190Ah	219.0A	3	0.15mΩ	14000A
MVSV 2700	68002700	2V	2738Ah	273.8A	4	0.12mΩ	17500A

\* Nominal capacity C<sub>10</sub>: 1.8V/cell @ 20°C (68°F)

\*\* According to IEC60896-22

### 1.2.2 Charge voltage settings for three step battery chargers

Float:	2.23V/cell @ 20°C / 68°F
Absorption:	2.40V/cell @ 20°C / 68°F (max 5 hrs)
Temperature compensation:	-5mV/°C/cell or -2.8mV/°F/cell

### 1.2.3 Final discharge voltage

Model	Part number	Discharge current			
		C <sub>1</sub>	C <sub>3</sub>	C <sub>5</sub>	C <sub>10</sub>
MVSV 280	68000280	154.7A	76.5A	50.3A	28.0A
MVSV 420	68000420	239.9A	116.5A	81.2A	41.6A
MVSV 500	68000500	287.9A	139.8A	97.5A	49.9A
MVSV 580	68000580	335.9A	163.1A	113.7A	58.2A
MVSV 750	68000750	437.8A	195.5A	135.2A	74.8A
MVSV 1000	68001000	583.4A	261.0A	179.9A	99.8A
MVSV 1250	68001250	729.0A	326.6A	224.6A	124.8A
MVSV 1500	68001500	874.6A	392.1A	269.4A	149.7A
MVSV 1650	68001650	958.9A	445.1A	289.1A	164.3A
MVSV 2200	68002200	1287.5A	593.5A	385.5A	219.0A
MVSV 2700	68002700	1598.1A	741.9A	481.9A	273.8A
<b>Final discharge voltage</b>		<b>1.60V</b>	<b>1.70V</b>	<b>1.75V</b>	<b>1.80V</b>

All data refer to 20°C (68°F)

### 1.2.4 Open circuit voltage versus remaining capacity

Open circuit voltage	1.92V	1.98V	2.03V	2.08V	2.13V	2.16V
Approximate state of charge (± 20%)	0%	20%	40%	60%	80%	100%

Open circuit voltage is measured after the battery was disconnected from any load or power source for at least 24hrs.

### 1.3 CONSTANT CURRENT DISCHARGE

#### 1.90V/cell – Discharge in A @ 20°C (68°F)

Model	Part number	10min	15min	30min	1h	2h	3h	5h	8h	10h
MVSV 280	68000280	180	158	134	95.3	74.5	57.2	39	26.9	23
MVSV 420	68000420	244	231	187	143	114	93.4	65.3	44.6	36.6
MVSV 500	68000500	293	277	224	171	137	112	78.4	53.5	43.9
MVSV 580	68000580	342	323	262	200	160	130	91.4	62.5	51.3
MVSV 750	68000750	265	259	243	214	167	143	100	71.8	60.3
MVSV 1000	68001000	353	345	324	286	222	191	135	95.7	81
MVSV 1250	68001250	442	431	405	357	278	239	168	119	100
MVSV 1500	68001500	530	517	486	429	334	281	201	143	120
MVSV 1650	68001650	519	502	479	436	352	286	209	152	133
MVSV 2200	68002200	691	669	639	582	470	381	278	203	177
MVSV 2700	68002700	864	837	799	728	587	476	348	254	221

#### 1.87V/cell – Discharge in A @ 20°C (68°F)

Model	Part number	10min	15min	30min	1h	2h	3h	5h	8h	10h
MVSV 280	68000280	216	195	155	104	80.9	62	43.7	30.3	25.7
MVSV 420	68000420	332	284	239	163	123	99.1	69.5	47.8	39
MVSV 500	68000500	399	341	287	196	147	118	83.4	57.4	46.8
MVSV 580	68000580	465	398	334	228	172	138	97.3	67	54.6
MVSV 750	68000750	335	327	305	248	194	156	112	78	65.5
MVSV 1000	68001000	448	436	407	330	260	208	149	104	87.4
MVSV 1250	68001250	560	546	509	413	324	260	187	130	109
MVSV 1500	68001500	624	613	595	474	401	328	228	164	145
MVSV 1650	68001650	672	655	611	497	389	312	224	156	131
MVSV 2200	68002200	832	818	794	632	535	438	305	219	194
MVSV 2700	68002700	1040	1022	993	790	669	547	381	273	242

#### 1.85V/cell – Discharge in A @ 20°C (68°F)

Model	Part number	10min	15min	30min	1h	2h	3h	5h	8h	10h
MVSV 280	68000280	242	214	171	114	85.2	65	45.4	31.1	26.7
MVSV 420	68000420	332	291	249	176	124	104	72.8	49.9	40.5
MVSV 500	68000500	399	349	299	212	149	125	87.4	59.9	48.5
MVSV 580	68000580	465	407	349	247	174	146	101	69.9	56.6
MVSV 750	68000750	399	368	337	269	200	165	119	82.2	68.5
MVSV 1000	68001000	532	490	449	359	268	220	159	110	91.5
MVSV 1250	68001250	665	613	561	449	334	275	198	137	114
MVSV 1500	68001500	773	729	612	488	416	342	239	169	148
MVSV 1650	68001650	798	736	673	538	401	330	238	164	137
MVSV 2200	68002200	1031	972	816	651	555	456	319	226	197
MVSV 2700	68002700	1289	1215	1020	814	694	570	399	283	247

#### 1.83V/cell – Discharge in A @ 20°C (68°F)

Model	Part number	10min	15min	30min	1h	2h	3h	5h	8h	10h
MVSV 280	68000280	261	228	185	119	89.3	67.7	47.6	32.5	27.8
MVSV 420	68000420	350	297	265	187	126	106	74.8	50.9	41
MVSV 500	68000500	420	356	318	225	152	127	89.7	61	49.2
MVSV 580	68000580	490	416	372	262	177	148	104	71.2	57.4
MVSV 750	68000750	421	404	365	290	221	176	125	87.4	71
MVSV 1000	68001000	561	539	487	386	295	234	167	116	94.8
MVSV 1250	68001250	692	673	609	483	369	293	209	145	118
MVSV 1500	68001500	842	808	708	535	442	373	260	178	153
MVSV 1650	68001650	831	808	731	580	443	351	250	174	142
MVSV 2200	68002200	1123	1077	944	714	589	497	346	238	205
MVSV 2700	68002700	1404	1346	1180	892	737	622	433	298	256

**1.80V/cell – Discharge in A @ 20°C (68°F)**

Model	Part number	10min	15min	30min	1h	2h	3h	5h	8h	10h
MVSV 280	68000280	291	259	197	124	93.2	72.5	49	33.2	28.1
MVSV 420	68000420	418	374	280	201	136	109	79.5	51.3	41.6
MVSV 500	68000500	501	448	336	242	163	131	95.5	61.5	49.9
MVSV 580	68000580	585	523	393	282	190	152	111	71.8	58.2
MVSV 750	68000750	488	458	388	314	227	185	130	89.4	74.9
MVSV 1000	68001000	652	611	518	419	303	247	173	119	99.8
MVSV 1250	68001250	815	764	649	524	379	308	217	149	124
MVSV 1500	68001500	978	917	779	629	455	370	261	179	149
MVSV 1650	68001650	959	898	807	647	467	398	271	186	164
MVSV 2200	68002200	1279	1198	1076	863	622	531	361	248	219
MVSV 2700	68002700	1599	1497	1345	1079	778	663	452	310	273

**1.75V/cell – Discharge in A @ 20°C (68°F)**

Model	Part number	10min	15min	30min	1h	2h	3h	5h	8h	10h
MVSV 280	68000280	323	302	222	143	99.9	75.4	50.3	34.1	28.7
MVSV 420	68000420	423	389	300	227	136	112	81.2	52.7	42.4
MVSV 500	68000500	508	467	360	273	163	135	97.5	63.3	50.9
MVSV 580	68000580	592	545	420	318	190	158	113	73.8	59.4
MVSV 750	68000750	561	534	463	333	240	192	135	92.6	77
MVSV 1000	68001000	748	712	618	445	320	255	179	123	101
MVSV 1250	68001250	936	890	773	556	400	320	224	155	127
MVSV 1500	68001500	1123	1068	928	667	480	384	269	186	153
MVSV 1650	68001650	1016	985	928	759	490	425	289	189	164
MVSV 2200	68002200	1354	1314	1238	1012	654	567	385	252	219
MVSV 2700	68002700	1693	1643	1547	1265	818	708	481	315	273

**1.70V/cell – Discharge in A @ 20°C (68°F)**

Model	Part number	10min	15min	30min	1h	2h	3h	5h	8h	10h
MVSV 280	68000280	356	322	252	148	102	76.5	50.3	34.1	28.7
MVSV 420	68000420	468	425	334	233	140	116	81.8	53	42.8
MVSV 500	68000500	562	510	401	279	168	139	98.2	63.6	51.4
MVSV 580	68000580	656	595	468	326	196	163	114	74.3	60
MVSV 750	68000750	639	615	527	393	252	195	136	92.6	77
MVSV 1000	68001000	852	820	703	524	337	261	181	123	101
MVSV 1250	68001250	1066	1025	878	655	421	326	226	155	127
MVSV 1500	68001500	1279	1230	1054	786	505	392	272	186	153
MVSV 1650	68001650	1169	1110	1024	861	540	445	296	189	164
MVSV 2200	68002200	1558	1481	1365	1148	721	593	395	252	219
MVSV 2700	68002700	1948	1851	1707	1435	901	741	494	315	273

**1.65V/cell – Discharge in A @ 20°C (68°F)**

Model	Part number	10min	15min	30min	1h	2h	3h	5h	8h	10h
MVSV 280	68000280	393	348	265	153	103	76.5	50.3	34.1	28.7
MVSV 420	68000420	528	488	369	236	140	116	81.8	53	42.8
MVSV 500	68000500	634	586	442	283	168	139	98.2	63.6	51.4
MVSV 580	68000580	739	683	516	330	196	163	114	74.3	60
MVSV 750	68000750	705	696	583	419	255	195	136	92.6	77
MVSV 1000	68001000	940	928	777	559	341	261	181	123	101
MVSV 1250	68001250	1175	1160	972	698	426	326	226	155	127
MVSV 1500	68001500	1410	1392	1166	838	511	392	272	186	153
MVSV 1650	68001650	1256	1206	1107	916	548	447	299	190	166
MVSV 2200	68002200	1675	1608	1476	1221	730	596	399	253	221
MVSV 2700	68002700	2093	2010	1846	1527	913	745	499	317	277

## 1.60V/cell – Discharge in A @ 20°C (68°F)

Model	Part number	10min	15min	30min	1h	2h	3h	5h	8h	10h
MVSV 280	68000280	435	377	277	154	103	76.5	50.3	34.1	28.7
MVSV 420	68000420	552	508	382	239	140	116	81.8	53	42.8
MVSV 500	68000500	662	610	459	287	168	139	98.2	63.6	51.4
MVSV 580	68000580	773	712	535	335	196	163	114	74.3	60
MVSV 750	68000750	786	767	632	437	255	195	136	92.6	77
MVSV 1000	68001000	1048	1023	843	583	341	261	181	123	101
MVSV 1250	68001250	1310	1279	1054	729	426	326	226	155	127
MVSV 1500	68001500	1572	1535	1265	874	511	392	272	186	153
MVSV 1650	68001650	1544	1404	1248	958	560	455	303	191	166
MVSV 2200	68002200	2059	1872	1664	1278	747	607	404	255	221
MVSV 2700	68002700	2574	2340	2080	1598	934	759	506	318	277

## 1.4 PARTS INCLUDED IN THE STANDARD DELIVERY

Please note that the contents of your delivery may differ due to special agreements

Part number	Description	6 x MVSV 280	12 x MVSV 280	6 x MVSV 420	12 x MVSV 420	6 x MVSV 500	12 x MVSV 500	6 x MVSV 580	12 x MVSV 580	6 x MVSV 750	12 x MVSV 750	6 x MVSV 1000	12 x MVSV 1000	6 x MVSV 1250	12 x MVSV 1250	6 x MVSV 1500	12 x MVSV 1500	6 x MVSV 1650	12 x MVSV 1650	6 x MVSV 2200	12 x MVSV 2200	6 x MVSV 2700	12 x MVSV 2700		
67909016	Battery cable 70mm2, L=135 mm	4	10	4	10																				
67909017	Battery cable 70mm2, L=155 mm					4	10																		
67909025	Battery cable 70mm2, L=165 mm	1	1	1	1	1	1					2	2	2	2										
67909024	Battery cable 70mm2, L=175 mm							5	11																
67909023	Battery cable 70mm2, L=230 mm																				3	3			
67909026	Battery cable 70mm2, L=330 mm									8	20	8	20												
67909027	Battery cable 95mm2, L=115mm																				12	30	16	40	
67909021	Battery cable 95mm2, L=155 mm									4	10														
67909018	Battery cable 95mm2, L=190 mm									1	1					2	2	2	2						
67909028	Battery cable 95mm2, L=400 mm															8	20	8	20						
67909019	Battery cable 95mm2, L=580 mm																						4	4	
67909100	Cover for connector positive	5	11	5	11	5	11	5	11	5	11	10	22	10	22	10	22	10	22	10	22	30	33	20	44
67909102	Cover for connector negative, with hole	5	11	5	11	5	11	5	11	5	11	10	22	10	22	10	22	10	22	10	22	30	33	20	44
67909104	Screw M8x25 for connector	12	24	12	24	12	24	12	24	12	24	24	48	24	48	24	48	24	48	24	48	36	72	48	96
67909105	Spring washer B8 for connector	12	24	12	24	12	24	12	24	12	24	24	48	24	48	24	48	24	48	24	48	36	72	48	96
67909101	User's manual	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
67909106	Angle for end connector											4	4	4	4	4	4	4	4	4	6	6	8	8	
67909107	Cover for angle rubber											4	4	4	4	4	4	4	4	4	6	6	8	8	
67909201	Plate for end connector 50x5x110mm											2	2												
67909202	Plate for end connector 50x5x140mm													2	2										
67909203	Plate for end connector 50x5x170mm															2	2	2	2						
67909204	Plate for end connector 50x8x250mm																				2	2			
67909205	Plate for end connector 50x8x360mm																						2	2	
67909104	Screw M8x25 for connector									4	4	4	4	4	4	4	4	4	4	4	6	6	8	8	
67909108	Hex nut M8 for end connector									4	4	4	4	4	4	4	4	4	4	4	6	6	8	8	
67909109	Washer B 8,4 for end connector									4	4	4	4	4	4	4	4	4	4	4	6	6	8	8	
67909110	Spring washer B8 for connector									4	4	4	4	4	4	4	4	4	4	4	6	6	8	8	

Mastervolt can offer a wide range of products for your electrical installation, including a wide variety of automatic battery chargers, battery cables, DC fuses, cable lugs, battery consumption meters and DC distribution kits  
See our website [www.mastervolt.com](http://www.mastervolt.com) for an extensive overview of all our products



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