

Zuma[®]
BATTERY

VRLA Battery

MS 4.5-6A

6V4.5AH

MS Series SLA Battery

MS Series--Small-size batteries

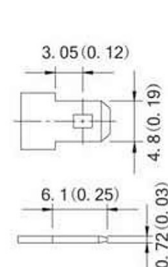
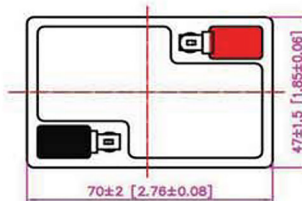
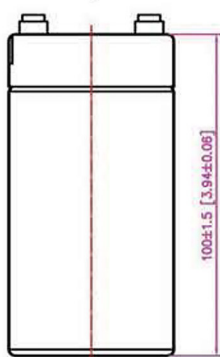
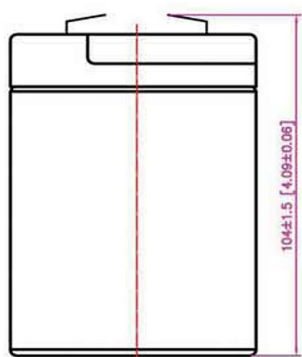
- 100% before shipment testing, stable and reliable long-term quality
- patented grid alloy formula and updated manufacturing technique
- completely sealed and maintenance-free, low self-discharge
- Excellent charging and re-charging acceptance
- Cycle use: More than 260 cycles at 100% DOD
- Floating & standby use: 3-5 years

Application:

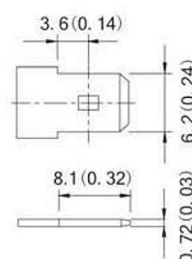
- Alarm System
- Cable Television
- Communication Equipment
- Emergency Power System
- Security System
- Medical Equipment
- UPS
- Power tools
- Control Equipment
- Toys

Construction:

- ComponentRaw material
- PositiveLead dioxide
- NegativeLead
- ContainerABS
- CoverABS
- SealantEpoxy
- Safety valve Rubber
- TerminalCopper
- SeparatorFiber glass
- ElectrolyteSulfuric acid



F1 Terminal



F2 Terminal

Speification:

Battery Model	MS 4.5-6A 6V4.5AH			
Designed Floating Life	3~5 Years			
Capacity (25℃)	20HR(0.225A,5.25V)	10HR(0.435A,5.25V)	5HR(0.855A,5.25V)	1HR(2.92A,5.25V)
	4.50AH	4.35AH	4.27AH	2.92AH
Dimensions	Length	Width	Height	Total Height
	70mm (2.76inch)	47mm (1.85inch)	100mm (3.94inch)	104mm (4.09inch)
Approx. Weight	0.76Kg (1.68 lbs) ±5%			
Internal Resistance	Full charged at 25℃ : ≤17. 5mΩ			
Self Discharge	2% of capacity declined per month at (25℃)			
Capacity Affected by Temp.(20HR)	40℃	25℃	0℃	-15℃
	102%	100%	85%	65%
Charge Voltage(25℃)	Cycle use		Float use	
	7.20-7.50V(-15mV/℃), max. Current: 1.35A		6.75-6.90V (-10mV/℃)	

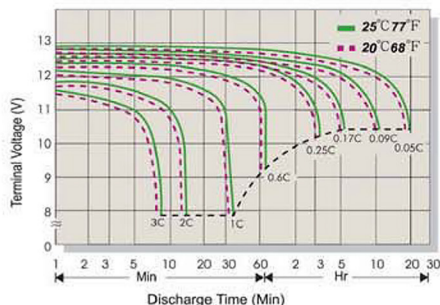
Zuma[®]
BATTERY

VRLA Battery

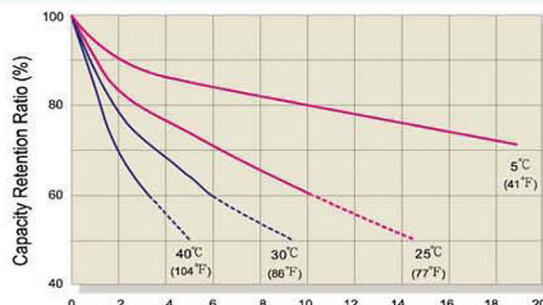
MS 4.5-6A

6V4.5AH

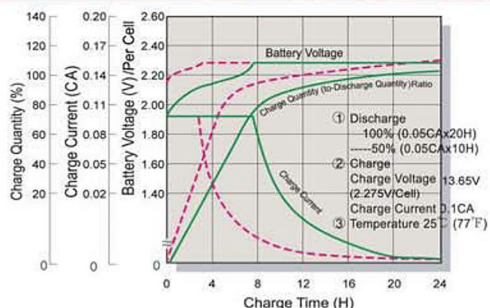
Terminal Voltage (V) and Discharge Time



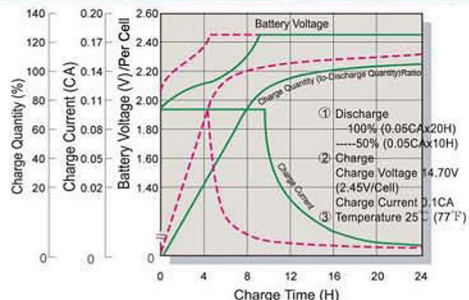
Capacity Retention Characteristic



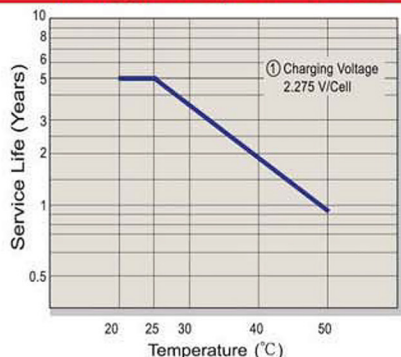
Battery Voltage and Charge Time for Standby Use



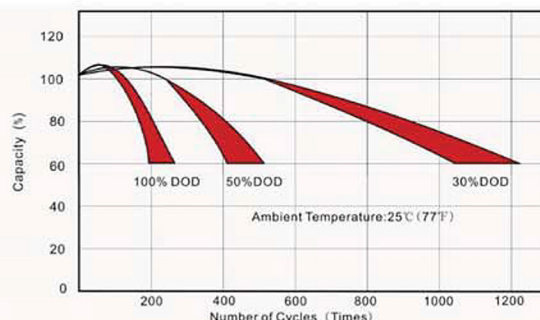
Battery Voltage and Charge Time for Cycle Use



Tickle(or Float) Service Life



Cycle Service Life



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

F.V/Time	5Min	10Min	15Min	30Min	1Hr	2Hr	3Hr	4Hr	5Hr	6Hr	10Hr	20Hr
1.85V/Cell	13.71	10.25	7.51	4.91	2.81	1.51	1.25	0.952	0.823	0.658	0.419	0.217
1.80V/Cell	13.97	10.45	7.66	5.00	2.87	1.54	1.27	0.970	0.839	0.670	0.427	0.221
1.75V/Cell	14.24	10.64	7.80	5.10	2.92	1.57	1.29	0.988	0.855	0.683	0.435	0.225
1.70V/Cell	15.52	11.28	8.27	5.30	2.97	1.59	1.32	1.006	0.870	0.695	0.443	0.229
1.67V/Cell	17.08	12.24	8.97	5.59	3.00	1.61	1.33	1.016	0.879	0.702	0.448	0.231
1.60V/Cell	18.51	12.88	9.44	5.83	3.04	1.63	1.34	1.027	0.889	0.710	0.452	0.234

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

F.V/Time	5Min	10Min	15Min	30Min	1Hr	2Hr	3Hr	4Hr	5Hr	6Hr	10Hr	20Hr
1.85V/Cell	26.74	19.99	14.65	9.57	5.49	2.94	2.43	1.86	1.61	1.28	0.82	0.42
1.80V/Cell	27.25	20.37	14.93	9.75	5.59	3.00	2.48	1.89	1.64	1.31	0.83	0.43
1.75V/Cell	27.76	20.75	15.21	9.94	5.69	3.06	2.52	1.93	1.67	1.33	0.85	0.44
1.70V/Cell	30.26	22.00	16.13	10.33	5.80	3.11	2.57	1.96	1.70	1.35	0.86	0.45
1.67V/Cell	33.31	23.87	17.50	10.91	5.86	3.14	2.59	1.98	1.71	1.37	0.87	0.45
1.60V/Cell	36.09	25.11	18.41	11.38	5.92	3.18	2.62	2.00	1.73	1.38	0.88	0.46

Zuma[®]
BATTERY

VRLA Battery

MS 9-12

12V9.0AH

MS Series SLA Battery

MS Series--Small-size batteries

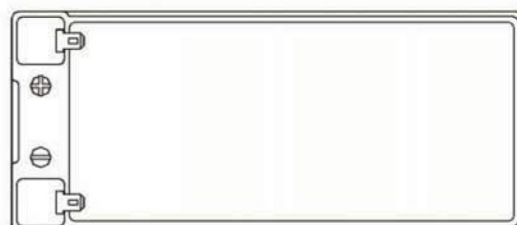
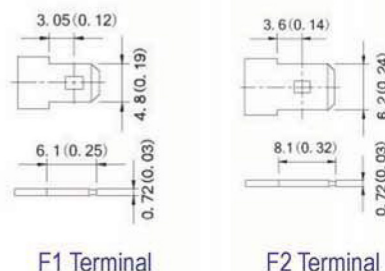
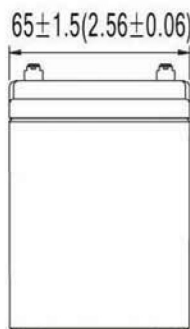
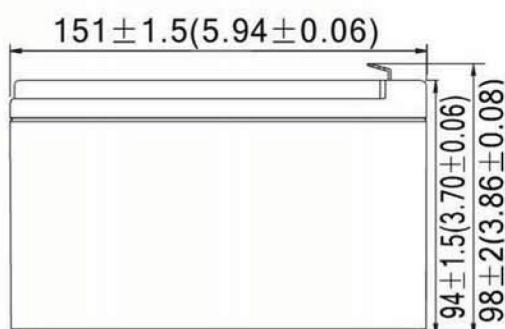
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- patented grid alloy formula and updated manufacturing technique
- completely sealed and maintenance-free, low self-discharge
- Excellent charging and re-charging acceptance
- Cycle use: More than 260 cycles at 100% DOD
- Floating & standby use: 3-5 years

Application:

- Alarm System
- Cable Television
- Communication Equipment
- Emergency Power System
- Security System
- Medical Equipment
- UPS
- Power tools
- Control Equipment
- Toys

Construction:

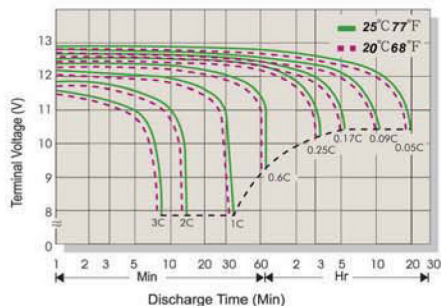
- ComponentRaw material
- PositiveLead dioxide
- NegativeLead
- ContainerABS
- CoverABS
- SealantEpoxy
- Safety valve Rubber
- TerminalCopper
- SeparatorFiber glass
- ElectrolyteSulfuric acid



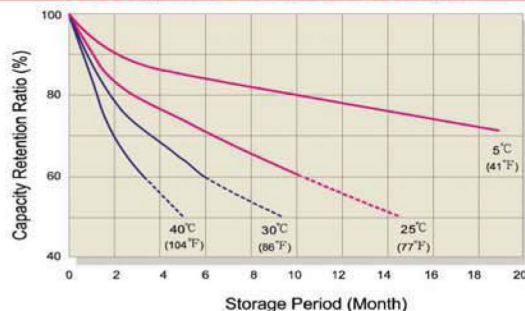
Speification:

Battery Model	MS 9-12 12V9.0AH			
Designed Floating Life	3~5 Years			
Capacity (25℃)	20HR(0.45A,10.5V)	10HR(0.80A,10.5V)	5HR(1.48A,10.5V)	1HR(4.31A,10.5V)
	9.00AH	8.00AH	7.40AH	4.31AH
Dimensions	Length	Width	Height	Total Height
	151mm (5.94inch)	65mm (2.56inch)	94mm (3.70inch)	98mm (3.86inch)
Approx. Weight	2.60Kg (5.66 lbs) ±5%			
Internal Resistance	Full charged at 25℃ : ≤22mΩ			
Self Discharge	3% of capacity declined per month at (25℃)			
Capacity Affected by Temp.(20HR)	40℃	25℃	0℃	-15℃
	102%	100%	85%	65%
Charge Voltage(25oC)	Cycle use		Float use	
	14.4-14.7V(-30mV/℃), max. Current: 2.70A		13.5-13.8V (-20mV/℃)	

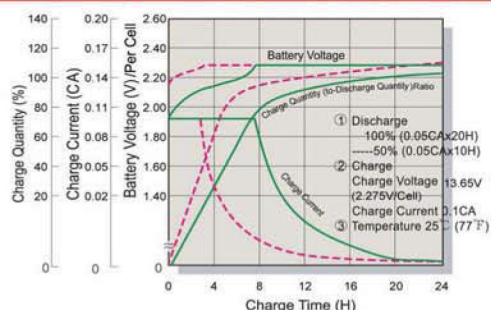
Terminal Voltage (V) and Discharge Time



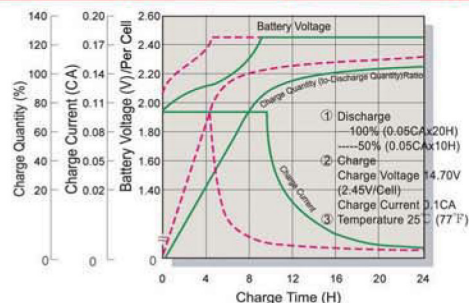
Capacity Retention Characteristic



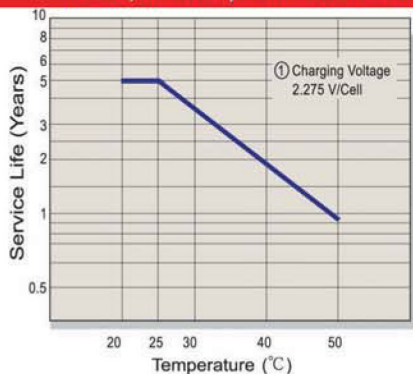
Battery Voltage and Charge Time for Standby Use



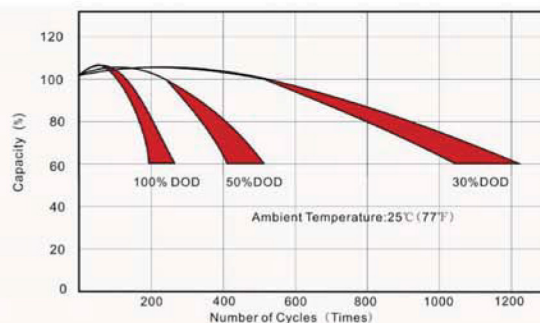
Battery Voltage and Charge Time for Cycle Use



Tickle(or Float) Service Life



Cycle Service Life



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

F.V/Time	5Min	10Min	15Min	30Min	1Hr	2Hr	3Hr	4Hr	5Hr	6Hr	10Hr	20Hr
1.85V/Cell	26.56	19.37	15.03	9.38	5.34	2.98	2.28	1.817	1.560	1.272	0.834	0.433
1.80V/Cell	27.06	19.74	15.32	9.56	5.44	3.03	2.32	1.852	1.590	1.296	0.850	0.442
1.75V/Cell	27.57	20.12	15.60	9.74	5.54	3.09	2.36	1.887	1.620	1.320	0.866	0.450
1.70V/Cell	30.05	21.32	16.54	10.13	5.64	3.14	2.40	1.920	1.648	1.344	0.881	0.458
1.67V/Cell	33.09	23.13	17.94	10.70	5.70	3.18	2.43	1.940	1.666	1.358	0.891	0.463
1.60V/Cell	35.84	24.34	18.88	11.15	5.76	3.21	2.46	1.961	1.684	1.373	0.900	0.468

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

F.V/Time	5Min	10Min	15Min	30Min	1Hr	2Hr	3Hr	4Hr	5Hr	6Hr	10Hr	20Hr
1.85V/Cell	51.78	37.78	29.31	18.30	10.40	5.80	4.44	3.54	3.04	2.48	1.63	0.85
1.80V/Cell	52.77	38.50	29.87	18.65	10.60	5.91	4.52	3.61	3.10	2.53	1.66	0.86
1.75V/Cell	53.76	39.22	30.43	19.00	10.80	6.02	4.61	3.68	3.16	2.57	1.69	0.88
1.70V/Cell	58.60	41.58	32.25	19.75	10.99	6.13	4.69	3.74	3.21	2.62	1.72	0.89
1.67V/Cell	64.52	45.11	34.99	20.86	11.11	6.20	4.74	3.78	3.25	2.65	1.74	0.90
1.60V/Cell	69.89	47.46	36.00	21.75	11.23	6.26	4.79	3.82	3.28	2.68	1.76	0.91

Zuma[®]
BATTERY

VRLA Battery

MS 18-12

12V18AH

MS Series SLA Battery

MS Series--Small-size batteries

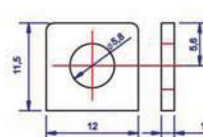
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- patented grid alloy formula and updated manufacturing technique
- completely sealed and maintenance-free, low self-discharge
- Excellent charging and re-charging acceptance
- Cycle use: More than 260 cycles at 100% DOD
- Floating & standby use: 3-5 years

Application:

- Alarm System
- Cable Television
- Communication Equipment
- Emergency Power System
- Security System
- Medical Equipment
- UPS
- Power tools
- Control Equipment
- Toys

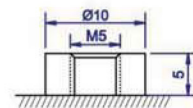
Construction:

- ComponentRaw material
- PositiveLead dioxide
- NegativeLead
- ContainerABS
- CoverABS
- SealantEpoxy
- Safety valve Rubber
- TerminalCopper
- SeparatorFiber glass
- ElectrolyteSulfuric acid



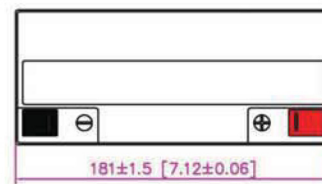
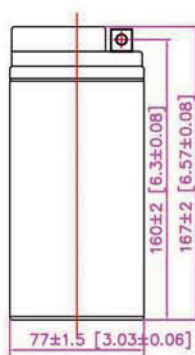
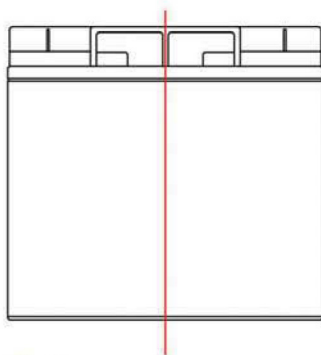
M5 Bolt & Nut

T1 Terminal



M5 Bolt

B1 Terminal



Speification:

Battery Model	MS 18-12 12V18AH			
Designed Floating Life	3~5 Years			
Capacity (25℃)	20HR(0.90A,10.5V)	10HR(1.73A,10.5V)	5HR(3.24A,10.5V)	1HR(10.85A,10.5V)
	18.00AH	17.30AH	16.20AH	10.85AH
Dimensions	Length	Width	Height	Total Height
	181mm (7.12inch)	77mm (3.03inch)	160mm (6.30inch)	167mm (6.57inch)
Approx. Weight	5.30Kg (11.68 lbs) ±5%			
Internal Resistance	Full charged at 25℃ : ≤12.0mΩ			
Self Discharge	3% of capacity declined per month at (25℃)			
Capacity Affected by Temp.(20HR)	40℃	25℃	0℃	-15℃
	102%	100%	85%	65%
Charge Voltage(25oC)	Cycle use		Float use	
	14.4-15.0V(-30mV/℃), max. Current: 5.4A		13.5-13.8V (-20mV/℃)	

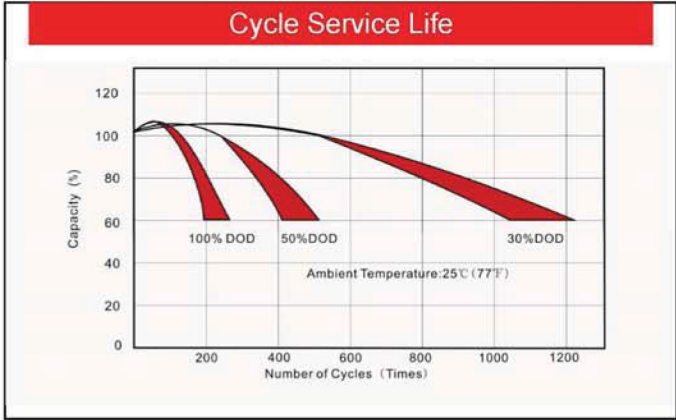
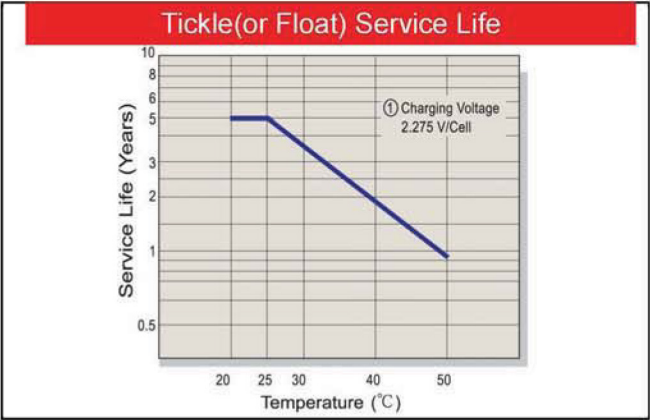
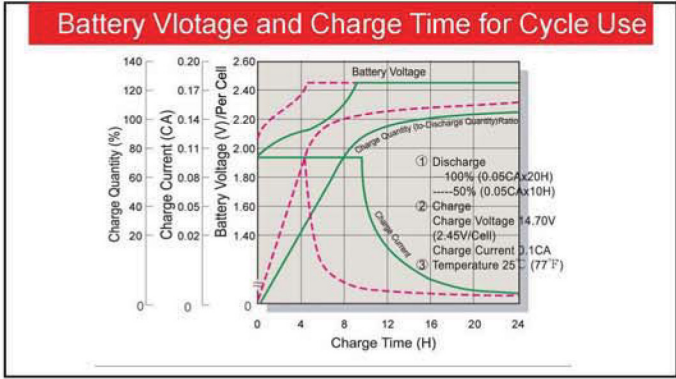
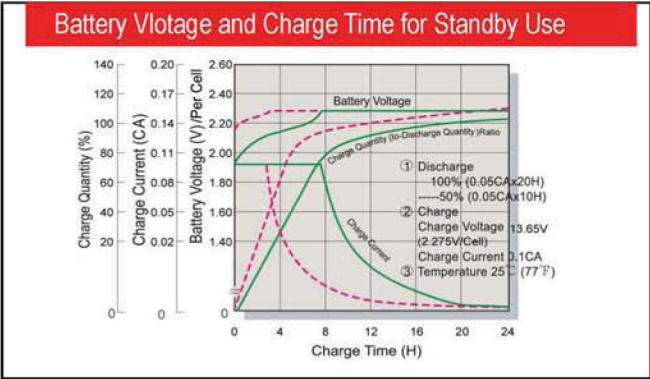
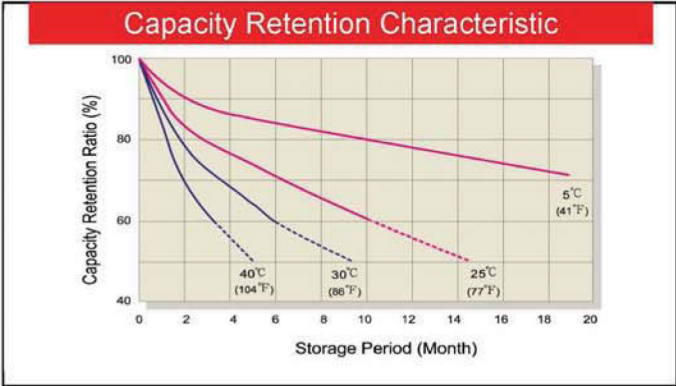
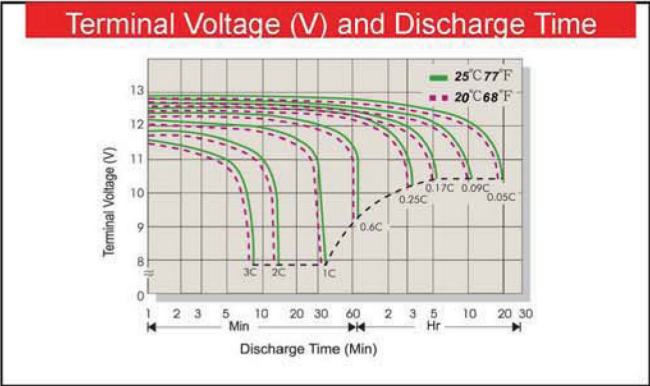
Zuma[®]

BATTERY

VRLA Battery

MS 18-12

12V18AH



Constant Current Discharge(CC,Unit:A) at 25°C(77°F)												
F.V/Time	5Min	10Min	15Min	30Min	1Hr	2Hr	3Hr	4Hr	5Hr	6Hr	10Hr	20Hr
1.85V/Cell	59.18	34.94	28.46	17.90	10.45	6.04	4.64	3.808	3.120	2.544	1.668	0.867
1.80V/Cell	60.31	35.60	28.98	18.24	10.65	6.15	4.73	3.880	3.180	2.592	1.700	0.883
1.75V/Cell	61.44	36.27	30.51	18.58	10.85	6.27	4.81	3.953	3.239	2.641	1.732	0.900
1.70V/Cell	66.97	38.45	32.22	19.32	11.04	6.38	4.90	4.023	3.296	2.687	1.762	0.916
1.67V/Cell	73.73	41.71	34.78	20.40	11.15	6.45	4.95	4.066	3.332	2.716	1.781	0.926
1.60V/Cell	79.87	43.89	35.90	21.28	11.27	6.52	5.00	4.110	3.368	2.745	1.800	0.936
Constant Power Discharge (CP,Unit:W) at 25°C(77°F)												
F.V/Time	5Min	10Min	15Min	30Min	1Hr	2Hr	3Hr	4Hr	5Hr	6Hr	10Hr	20Hr
1.85V/Cell	115.40	68.12	53.54	34.90	20.37	11.77	9.04	7.43	6.08	4.96	3.25	1.69
1.80V/Cell	117.61	69.43	54.57	35.57	20.76	12.00	9.21	7.57	6.20	5.05	3.31	1.72
1.75V/Cell	119.81	70.73	55.59	36.24	21.15	12.22	9.39	7.71	6.32	5.15	3.38	1.76
1.70V/Cell	130.59	74.97	58.92	37.68	21.52	12.44	9.55	7.84	6.43	5.24	3.44	1.79
1.67V/Cell	143.77	81.34	63.93	39.79	21.75	12.57	9.66	7.93	6.50	5.30	3.47	1.81
1.60V/Cell	155.76	85.58	67.26	41.49	21.99	12.71	9.76	8.01	6.57	5.35	3.51	1.82

BATTERY

MNG SERIES

MNG SERIES batteries are designed to have a large amount of stored current discharged between charging sessions, with very heavy non-porous battery plates to withstand repeated major discharging and charging cycle(deep cycle). The deep-cycle gel batteries uses a different chemistry for the plates active paste material, and a slightly stronger electrolyte than normal battery electrolyte, which allows for a much longer life in deep cycle applications.

Application

- Alarm System
- Cable Television
- Power tools
- Emergency Power System
- Security System
- Medical Equipment
- Solar and Wind Power System
- Communication Equipment
- Control Equipment
- Toys

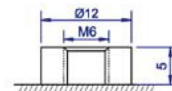
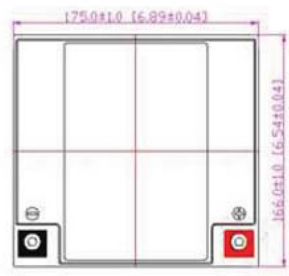
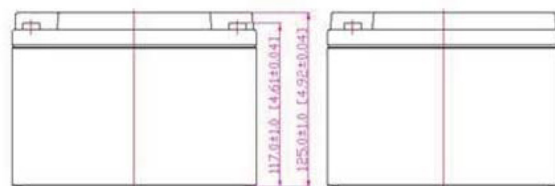
General Features

- Sealed and maintenance free operation.
- Non-Spillable construction design.
- ABS containers and covers (UL94HB, UL94V-0) optional.
- Safety valve installation for explosion proof .
- High quality and high reliability..
- Exceptional deep discharge recovery performance..
- Flame Retardant A.B.S
- Low self discharge characteristic.
- Flexibility design for multiple install positions.



MNG28-12

(12V28.0Ah/20hr)



M6 Bolt

B2 Terminal

CONSTRUCTION

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

TECHNOLOGY PARAMETER

Battery model	MNG28-12			
Designed Cycle Life	> 350 Cycles @ -0.5CA to 9.6V			
Capacity (25℃)	20hR(1.4A, 10.5V)	10hR(2.63A, 10.5V)	5hR(4.59A, 10.5V)	1hR(17.6A, 9.60V)
	28Ah	26.3Ah	22.95Ah	17.6Ah
Dimensions	Length	Width	Height	Total Height
	175±1mm	166±1mm	125±1mm	125±1mm
Approx. weight (±5%)	8.0Kg (18.08 lbs)			
Internal resistance	Full charged at 25℃: Approx. 12mOhms			
Self discharge	3% of capacity declined per month at 25℃ (average)			
Capacity Affected by Temp.(20HR)	40℃	25℃	0℃	-15℃
	102%	100%	85%	65%
Charge Voltage (25℃)	Cycle use		Float use	
	14.4-14.7V(-30mV/℃), max. Current: 8.4A		13.6-13.8V(-20mV/℃)	

MNG28-12 (12V28.0Ah/20hr)

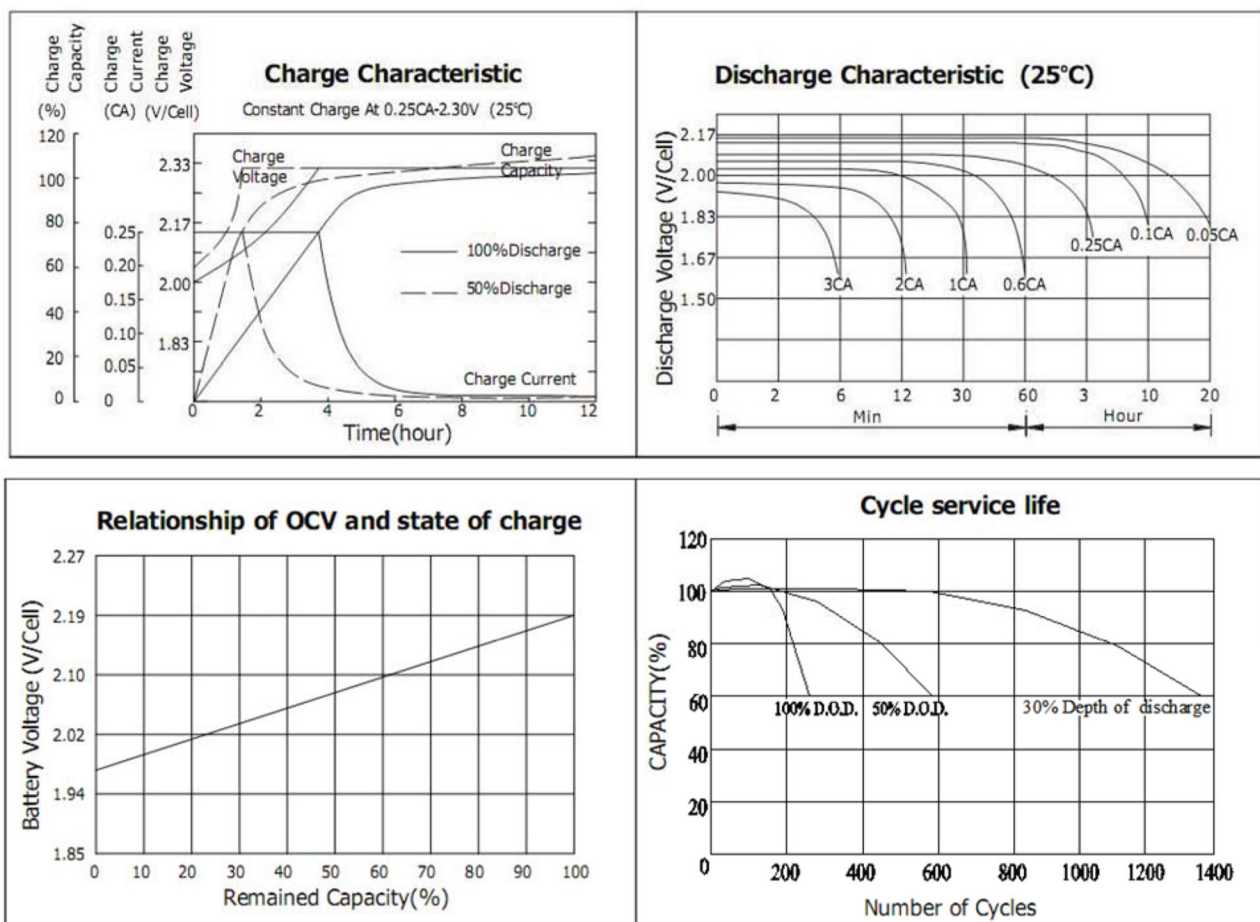
Constant current discharge ratings-amperes at 25°C

End Point Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60V	104	73.1	55.6	31.3	17.6	7.66	5.00	2.77	1.47
1.65V	99.2	69.8	52.9	30.1	17.2	7.41	4.86	2.72	1.44
1.70V	93.3	65.9	50.2	28.8	16.8	7.16	4.73	2.66	1.42
1.75V	87.4	62.0	47.5	27.3	16.1	6.86	4.59	2.63	1.40
1.80V	81.5	58.7	44.8	26.0	15.3	6.55	4.45	2.58	1.38

Constant power discharge ratings-watts at 25°C

End Point Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60V	193	135	103	58.6	33.0	14.5	9.51	5.28	2.82
1.65V	182	128	97.9	55.9	32.2	13.9	9.19	5.17	2.75
1.70V	171	121	92.4	53.2	31.2	13.4	8.88	5.04	2.70
1.75V	159	113	86.9	50.3	29.8	12.8	8.58	4.95	2.65
1.80V	147	105.7	81.0	47.3	28.0	12.0	8.23	4.80	2.57

(NOTE) The above characteristics data are average values obtained within three charge/discharge cycles not the minimum values



MNG SERIES

MNG SERIES batteries are designed to have a large amount of stored current discharged between charging sessions, with very heavy non-porous battery plates to withstand repeated major discharging and charging cycle(deep cycle). The deep-cycle gel batteries uses a different chemistry for the plates active paste material, and a slightly stronger electrolyte than normal battery electrolyte, which allows for a much longer life in deep cycle applications.

Application

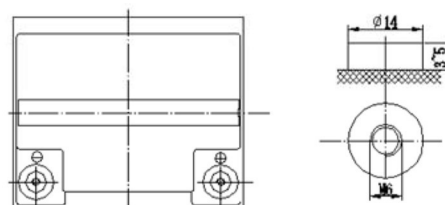
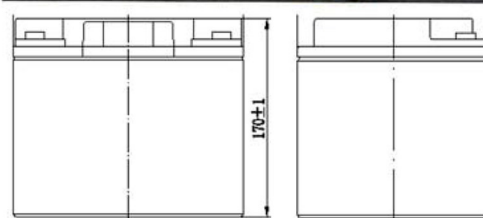
- Alarm System
- Cable Television
- Power tools
- Emergency Power System
- Security System
- Medical Equipment
- Solar and Wind Power System
- Communication Equipment
- Control Equipment
- Toys

General Features

- Sealed and maintenance free operation.
- Non-Spillable construction design.
- ABS containers and covers (UL94HB, UL94V-0) optional.
- Safety valve installation for explosion proof .
- High quality and high reliability..
- Exceptional deep discharge recovery performance..
- Flame Retardant A.B.S
- Flexibility design for multiple install positions.
- Low self discharge characteristic.

MNG42-12

(12V42Ah/10hr)



CONSTRUCTION

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

TECHNOLOGY PARAMETER

Battery model	MNG42-12			
Designed Cycle Life	> 350 Cycles @ -0.5CA to 9.6V			
Capacity (25°C)	20hR(2.15A, 10.8V)	10hR(4.2A, 10.8V)	5hR(7.5A, 10.5V)	1hR(28.56A, 9.60V)
	43.0Ah	42Ah	37.5Ah	28.56Ah
Dimensions	Length	Width	Height	Total Height
	197±1mm	165±1mm	170±1mm	170±1mm
Approx. weight (±5%)	14.2Kg (31.31lbs)			
Internal resistance	Full charged at 25°C: Approx. 9mOhms			
Self discharge	3% of capacity declined per month at 25°C (average)			
Capacity Affected by Temp.(20HR)	40 °C	25 °C	0 °C	-15 °C
	102%	100%	85%	65%
Charge Voltage (25°C)	Cycle use		Float use	
	14.4-14.7V(-30mV/°C), max. Current: 10A		13.6-13.8V(-20mV/°C)	

MNG42-12 (12V42Ah/10hr)

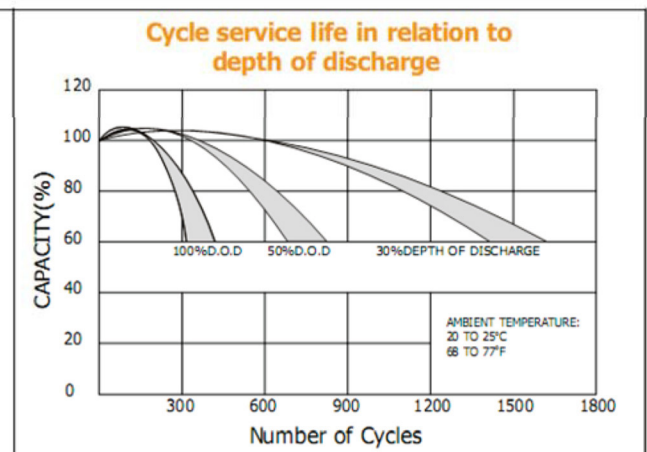
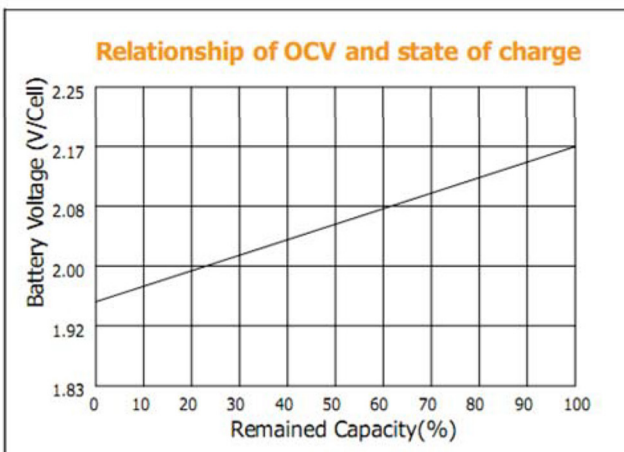
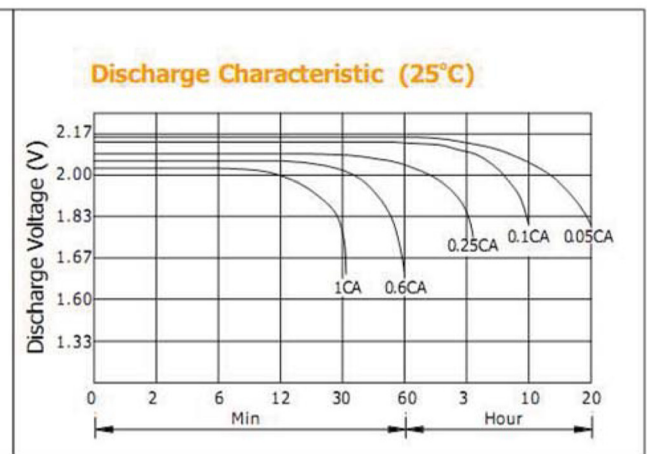
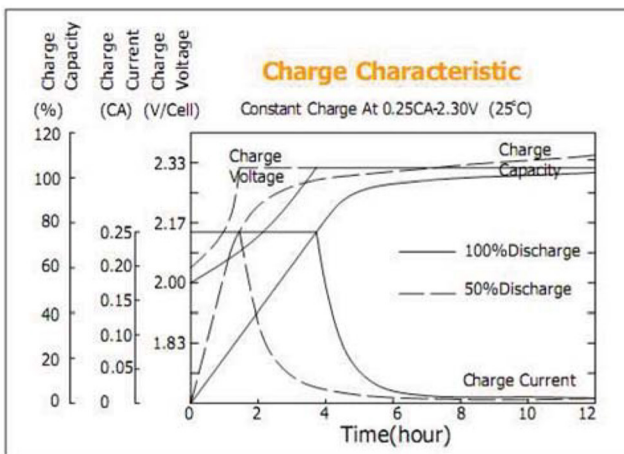
Constant current discharge ratings-amperes at 25°C

End Point Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60V	150.99	99.23	76.86	47.00	28.56	12.08	7.73	4.63	2.38
1.65V	145.53	95.87	73.59	44.88	27.50	11.69	7.65	4.57	2.34
1.70V	141.96	93.56	70.65	43.32	26.46	11.31	7.56	4.43	2.28
1.75V	136.61	89.67	67.81	41.53	25.05	10.93	7.50	4.36	2.21
1.80V	128.31	85.75	64.95	40.14	23.67	10.52	7.31	4.20	2.15

Constant power discharge ratings-watts at 25°C

End Point Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60V	264	185	144	93.1	57.7	25.5	16.8	8.94	4.78
1.65V	258	178	139	90.8	55.2	24.9	16.4	8.75	4.74
1.70V	251	172	135	87.2	53.9	24.4	16	8.56	4.67
1.75V	243	168	130.6	83.8	51.4	23.9	15.7	8.37	4.54
1.80V	234.3	160	126	80	49.3	23.4	15.4	8.15	4.41

(NOTE) The above characteristics data are average values obtained within three charge/discharge cycles not the minimum values



MNG SERIES

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Application

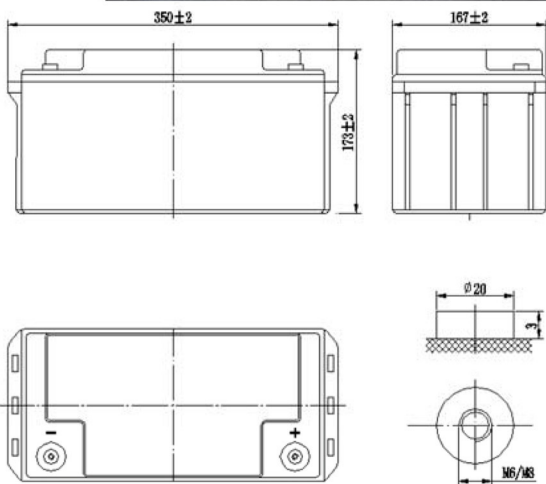
- Alarm System
- Cable Television
- Power tools
- Emergency Power System
- Security System
- Medical Equipment
- Solar and Wind Power System
- Communication Equipment
- Control Equipment
- Toys

General Features

- Sealed and maintenance free operation.
- Non-Spillable construction design.
- ABS containers and covers (UL94HB, UL94V-0) optional.
- Safety valve installation for explosion proof .
- High quality and high reliability.
- Exceptional deep discharge recovery performance.
- Low self discharge characteristic.
- Flexibility design for multiple install positions.
- Flame Retardant A.B.S

MNG65-12

(12V65Ah/10hr)



CONSTRUCTION

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

TECHNOLOGY PARAMETER

Battery model	MNG65-12			
Designed Cycle Life	> 350 Cycles @ -0.5CA to 9.6V			
Capacity (25°C)	20hR(3.37A, 10.8V)	10hR(6.5A, 10.8V)	5hR(10.7A, 10.5V)	1hR(40.7A, 9.60V)
	67.4Ah	65Ah	53.5Ah	40.7Ah
Dimensions	Length	Width	Height	Total Height
	350±2mm	167±2mm	173±2mm	173±2mm
Approx. weight (±5%)	20.2Kg (44.53lbs)			
Internal resistance	Full charged at 25°C: Approx. 8mOhms			
Self discharge	3% of capacity declined per month at 25°C (average)			
Capacity Affected by Temp.(20HR)	40 °C	25 °C	0 °C	-15 °C
	102%	100%	85%	65%
Charge Voltage (25°C)	Cycle use		Float use	
	14.4-14.7V(-30mV/°C), max. Current: 16.25A		13.6-13.8V(-20mV/°C)	

Zuma[®]

BATTERY

VRLA BATTERY

MNG65-12

12V65AH

MNG65-12 (12V65Ah/10hr)

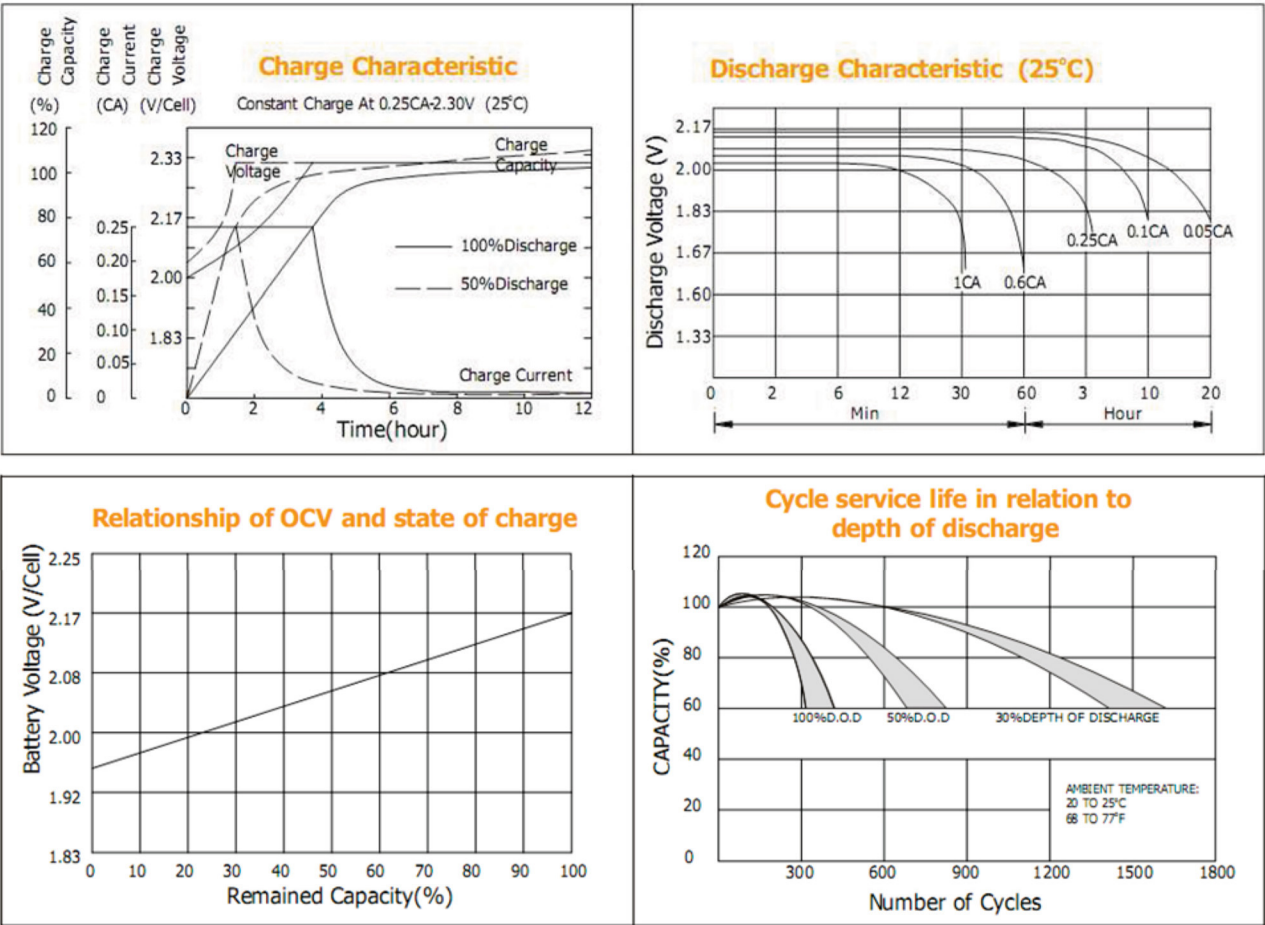
Constant current discharge ratings-amperes at 25°C

End Point Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60V	210	159	121	70.8	40.7	17.9	11.7	6.70	3.51
1.65V	200	152	115	69.5	39.2	17.3	11.4	6.65	3.47
1.70V	188	143	109	68.2	37.7	16.7	11.0	6.58	3.45
1.75V	176	135	103	66.9	36.2	16.0	10.7	6.53	3.40
1.80V	164	128	97.2	65.6	34.7	15.3	10.4	6.50	3.37

Constant power discharge ratings-watts at 25°C

End Point Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60V	378	287	220	130	74.9	33.1	21.7	12.5	6.60
1.65V	357	273	208	127	71.8	31.9	21.0	12.4	6.50
1.70V	334	256	196	123	68.6	30.6	20.3	12.2	6.42
1.75V	311	240	185	120	65.6	29.2	19.6	12.0	6.30
1.80V	289	226	173	117	62.5	27.7	18.9	11.7	6.20

(NOTE) The above characteristics data are average values obtained within three charge/discharge cycles not the minimum values



Zuma
BATTERY

VRLA Battery

MNG 100-12

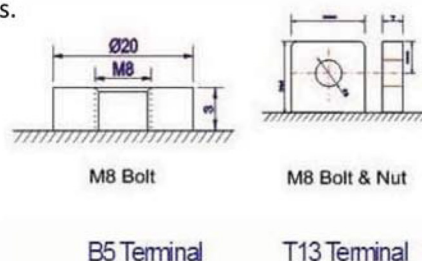
12V100AH

MNG SERIES

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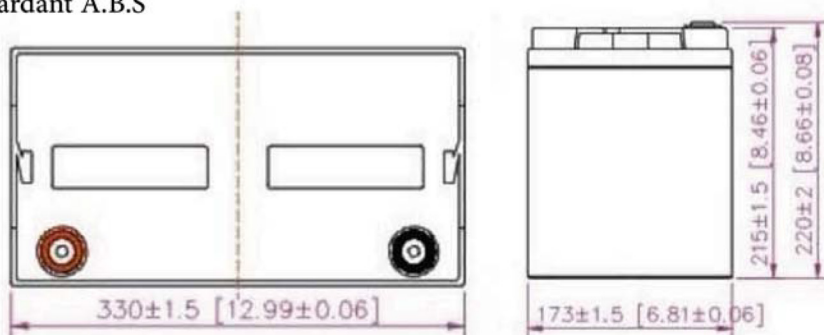
Application

- Alarm System
- Cable Television
- Power tools
- Emergency Power System
- Security System
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General Features

- Sealed and maintenance free operation.
- Non-Spillable construction design.
- ABS containers and covers (UL94HB, UL94V-0) optional.
- Safety valve installation for explosion proof.
- High quality and high reliability.
- Exceptional deep discharge recovery performance.
- Flame Retardant A.B.S
- Low self discharge characteristic.
- Flexibility design for multiple install positions.



Speifcation:

Battery Model	MNG 100-12 12V100AH			
Designed Floating Life	Up to 12 Years			
Capacity (25°C)	20HR(5.0A,10.50V)	10HR(10.0A,10.50V)	5HR(16.6A,10.5V)	3HR(25.8A,10.5V)
	100AH	100AH	83.0AH	77.4AH
Dimensions	Length	Width	Height	Total Height
	330mm (12.99inch)	173mm 6.81inch)	215mm (8.46inch)	220mm (8.66inch)
Approx. Weight	30.8Kg (67.90 lbs)			
Internal Resistance	Full charged at 25°C: ≤6.5mΩ			
Self Discharge	2% of capacity declined per month at (25°C)			
Capacity Affected by Temp.(20HR)	40°C	25°C	0°C	-15°C
	102%	100%	88%	78%
Charge Voltage(25oC)	Cycle use		Float use	
	14.4-14.6V(-30mV/°C), max. Current: 1.56A		13.6-13.8V (-20mV/°C)	

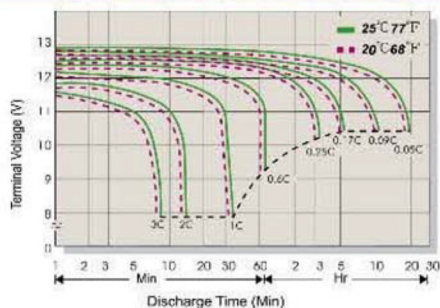
Zuma
BATTERY

VRLA Battery

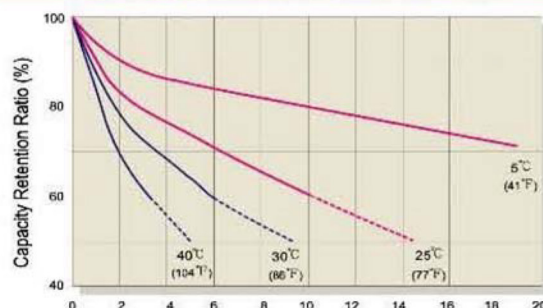
MNG 100-12

12V100AH

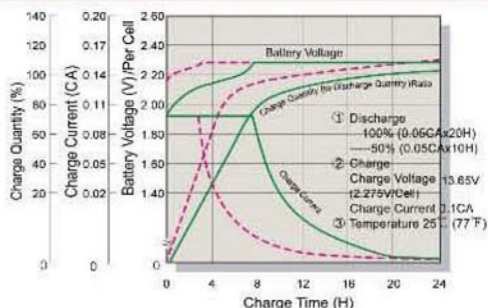
Terminal Voltage (V) and Discharge Time



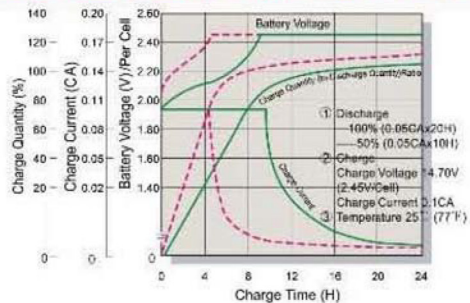
Capacity Retention Characteristic



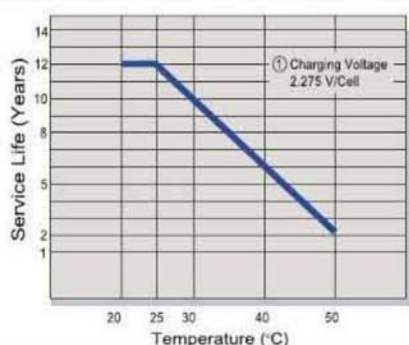
Battery Voltage and Charge Time for Standby Use



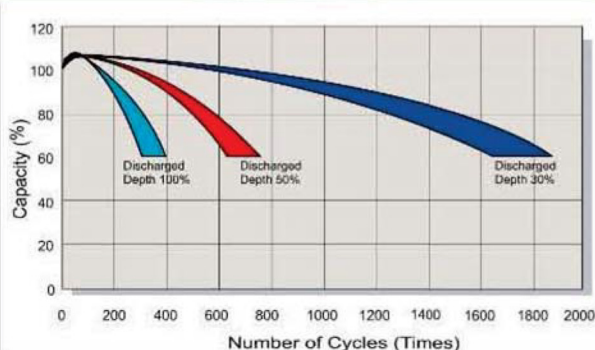
Battery Voltage and Charge Time for Cycle Use



Tickle(or Float) Service Life



Cycle Service Life



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

F.V/Time	5Min	10Min	15Min	30Min	1Hr	2Hr	3Hr	4Hr	5Hr	8Hr	10Hr	20Hr
1.85V/Cell	209.0	160.0	135.0	98.0	56.0	33.30	23.90	19.70	16.20	11.41	9.80	4.85
1.80V/Cell	259.0	205.0	164.0	105.0	58.0	34.50	25.30	20.80	16.30	11.92	10.0	5.00
1.75V/Cell	266.0	224.0	171.0	108.0	59.0	36.80	25.80	21.30	16.60	12.12	10.10	5.20
1.70V/Cell	284.0	230.0	176.0	110.0	60.0	37.10	26.30	21.30	16.60	12.20	10.20	5.30
1.60V/Cell	318.0	242.0	183.0	114.0	62.0	37.60	27.10	21.80	17.10	12.42	10.40	5.50

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

F.V/Time	5Min	10Min	15Min	30Min	1Hr	2Hr	3Hr	4Hr	5Hr	8Hr	10Hr	20Hr
1.85V/Cell	397.1	304.0	256.5	186.2	106.4	63.3	45.4	37.4	30.8	21.7	18.6	9.2
1.80V/Cell	492.1	389.5	311.6	199.5	110.2	65.6	48.1	39.5	31.0	22.6	19.0	9.5
1.75V/Cell	505.4	425.6	324.9	205.2	112.1	69.9	50.0	40.5	31.5	23.0	19.2	9.9
1.70V/Cell	539.6	437.0	334.4	209.0	114.0	70.5	50.0	40.5	31.5	23.2	19.4	10.1
1.60V/Cell	604.2	459.8	347.7	216.6	117.8	71.4	51.5	41.4	32.5	23.6	19.8	10.5