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EASTMAN WORLD

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AGM VRLA BATTERY

FRONT TERMINAL SERIES



AGM VRLA Front Terminal Series

50Ah ~ 200Ah

Certifications



Characteristics

- Capacity range: 50Ah to 200Ah.
- Available in: 12V blocks.
- EUROBAT design life: 10/12 years, Long Life.
- Self-discharge per month: $\leq 3\%$ at 25°C.
- Operation temperature range: - 20°C to + 50°C .
- Recommended operation temperature: 25°C.

Product Specifications

Battery Model	Nominal Voltage [V]	Rated Capacity [Ah], 25°C			Internal Resistance [mΩ]	Terminal Type	Terminal Location	Design Life [years]		Weight [kg] $\pm 3\%$	Length [mm]	Width [mm]	Height [mm]	Total Height [mm]
		10Hr (10.8V)	20Hr (10.8V)	5Hr (10.8V)				JIS 25°C	EUROBAT 20°C					
		EM12-50-FT	12	50				53	42.7					
EM12-55-FT	12	55	58.4	47.0	7	T14	E	12	10/12	17.30 $\pm 3\%$	277 ± 2	106 ± 2	221 ± 2	221 ± 2
EM12-75-FT	12	75	79.6	64	5.5	T14	E	12	10/12	24.50 $\pm 3\%$	562 ± 2	114 ± 2	189 ± 2	189 ± 2
EM12-100-FT	12	100	106	85.5	5.50	T16	E	12	10/12	32.80 $\pm 3\%$	395 ± 2	110 ± 2	286 ± 2	286 ± 2
EM12-105-FT	12	105	111.4	89.5	5.00	T16	E	12	10/12	32.00 $\pm 3\%$	506 ± 2	110 ± 2	224 ± 2	239 ± 2
EM12-125-FT	12	125	132.6	100.5	4.50	T18	E	12	10/12	42.00 $\pm 3\%$	550 ± 2	105 ± 2	315 ± 2	315 ± 2
EM12-150-FT	12	150	159	128	4.00	T16	E	12	10/12	47.50 $\pm 3\%$	551 ± 2	110 ± 2	287 ± 2	287 ± 2
EM12-155-FT	12	155	164.4	132.5	4.00	T18	E	12	10/12	50.00 $\pm 3\%$	546 ± 2	125 ± 2	315 ± 2	315 ± 2
EM12-165-FT	12	166	176	141.5	4.00	T16	E	12	10/12	50.00 $\pm 3\%$	546 ± 2	125 ± 2	317 ± 2	323 ± 2
EM12-180-FT	12	180	190.8	153.5	3.50	T18	E	12	10/12	55.00 $\pm 3\%$	546 ± 2	125 ± 2	315 ± 2	315 ± 2
EM12-200-FT	12	200	190.8	170.5	3.50	T18	E	12	10/12	60.50 $\pm 3\%$	546 ± 2	125 ± 2	317 ± 2	323 ± 2

Introduction

Eastman Front Terminal Series batteries are mainly used in the area of communication. By adopting a new AGM separator and centralized venting system, the battery can be installed in different positions while maintaining high reliability. Available in gel technology also.

Product Features

- Low internal resistance.
- Long service life.
- High energy density.
- Very low self-discharge.
- Container available in flame retardant (UL 94-V0).

Application Scenarios

UPS, Telecommunication, Solar Systems.

Technical Information

Charging & Discharging | Characteristics & Cycle Life

Charge Voltage & Charge Current

Ambient Temperature: 25°C

Usage	Standby Use				Cycle Use			
	2V Cell	4V Battery	6V Battery	12V Battery	2V Cell	4V Battery	6V Battery	12V Battery
Charge Voltage (V)	2.25-2.30	4.50-4.60	6.75-6.90	13.5-13.8	2.40-2.50	4.80-5.00	7.25-7.50	14.5-15.0
Max Charge Current (A)	0.3C*	0.3C	0.3C	0.3C	0.3C	0.3C	0.3C	0.3C
Max Charge Current HR (A)	0.08P*	0.08P	0.08P	0.08P	0.08P	0.08P	0.08P	0.08P

Discharge Voltage & Final Voltage

Ambient Temperature: 25°C

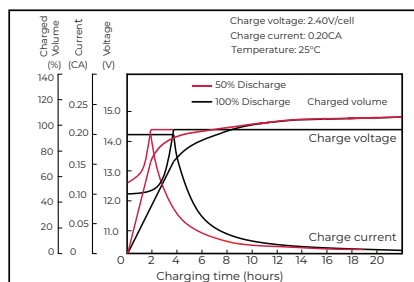
Discharge Current (A)	Final Voltage (V)			
	2V Battery	4V Battery	6V Battery	12V Battery
0.05C ₂₀	1.75	3.50	5.35	10.50
0.1C ₁₀ ~ 0.25C ₁₀	1.80	3.60	5.40	10.80
0.55C ₂₀	1.75	3.50	5.25	10.50
1C ₁₀ ~ 3C ₁₀	1.60	3.20	4.80	9.60

Notes

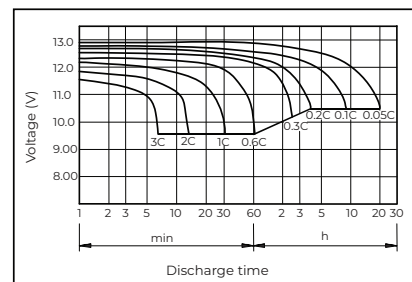
- "C" means Ah value of battery's rated capacity. "P" means watt value of battery's rated power (HR series).
- When the ambient temperature is outside of 15°C to 35°C range, use a temperature compensation factor $\pm 3 \text{ mV}/^\circ\text{C}/\text{cell}$ (standby charge) or $\pm 5 \text{ mV}/^\circ\text{C}/\text{cell}$ (cycle charge), starting from the standard centre point at 25°C.
- When charging, the ambient temperature should be in the range of -10°C to +50°C.
- End of discharge voltage should vary according to the discharge current.
- Battery voltage must be higher than its corresponding end voltage when discharge.
- Charge the batteries immediately after discharge.
- When discharging, the ambient temperature should be in the range of -15°C to +50°C.

Characteristics & Cycle Life

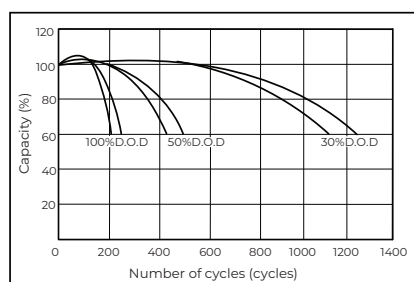
Charging Characteristics (25°C)



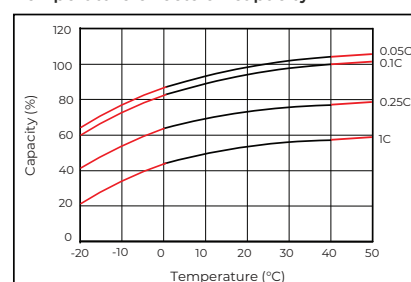
Discharge Characteristics (25°C)



Cycle Life on D.O.D (25°C)

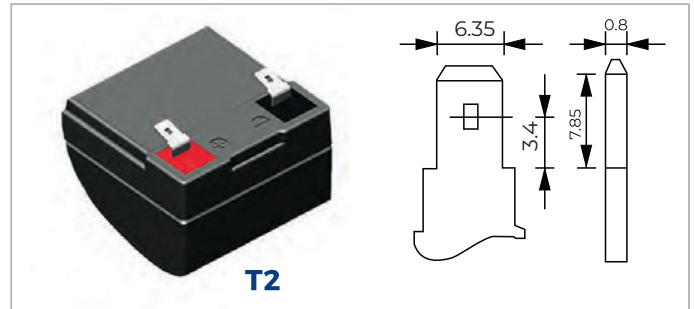
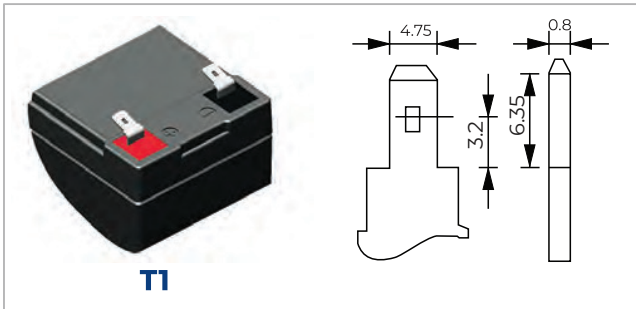


Temperature effects on capacity



Technical Information

Terminal Type & Position



Flat Terminal

Type	A (mm)	B (mm)	C (mm)	D (mm)	Material
T3	12	6	12	2	Cu
T4	14	6	14	2	Cu
T5	16	7	17	8	Pb
T6	18	8	18	7	Pb
T7	18	7	20	8	Pb
T8	24	9	24	7	Pb
T9	26	9	25	8	Pb
T10	26	9	21	7	Pb
T21	20	6	18	3	Cu
T22	22	9	23	3	Cu
T25	25	9	23	3	Cu
T64	20	6	16	3	Cu

Insert Terminal

Type	A (mm)	B (mm)	C (mm)	Material
T12	12	5	2	Cu
T14	14	6	4	Cu
T16	16	8	5	Cu
T16A	16	6	5	Cu
T18	18	8	5	Cu
T20	20	8	5	Cu

Torque specificatio	N.m
T12	3.0 ± 0.6
T14	5.1 ± 0.6
T16	12.3 ± 2.5
T16A	5.1 ± 0.6
T18	12.3 ± 2.5
T20	12.3 ± 2.5



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