

HR Series

HR(High-Rate) Series of valve regulated lead acid (VRLA) batteries have been developed with high efficiency active materials to stimulate inside the battery with higher power output when the battery is discharged to a extent level of discharging. Along with high-density structure design for relatively smaller Inner resistance which will significantly improve the performance for high rate discharging when high power output service is needed.

Application

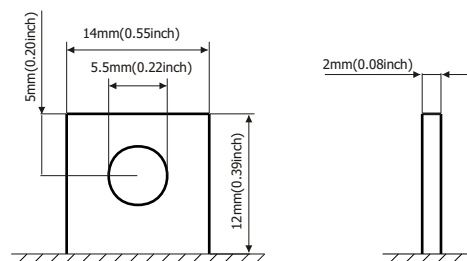
- Alarm System
- Cable Television
- Communication Equipment
- Control Equipment
- Security System
- Medical Equipment
- Toys
- UPS
- Emergency Power System

General Features

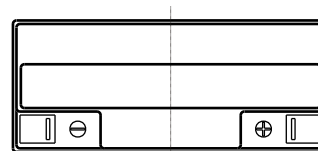
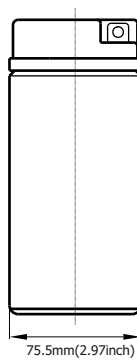
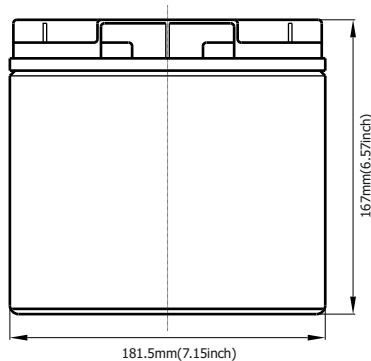
- Sealed and maintenance free operation.
- Non-Spillable construction design.
- ABS containers and covers(UL94HB, UL94V-0) optional.
- Safety valve installation for explosion proof.
- High quality and high reliability.
- Exceptional deep discharge recovery performance.
- Low self discharge characteristic.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

Construction

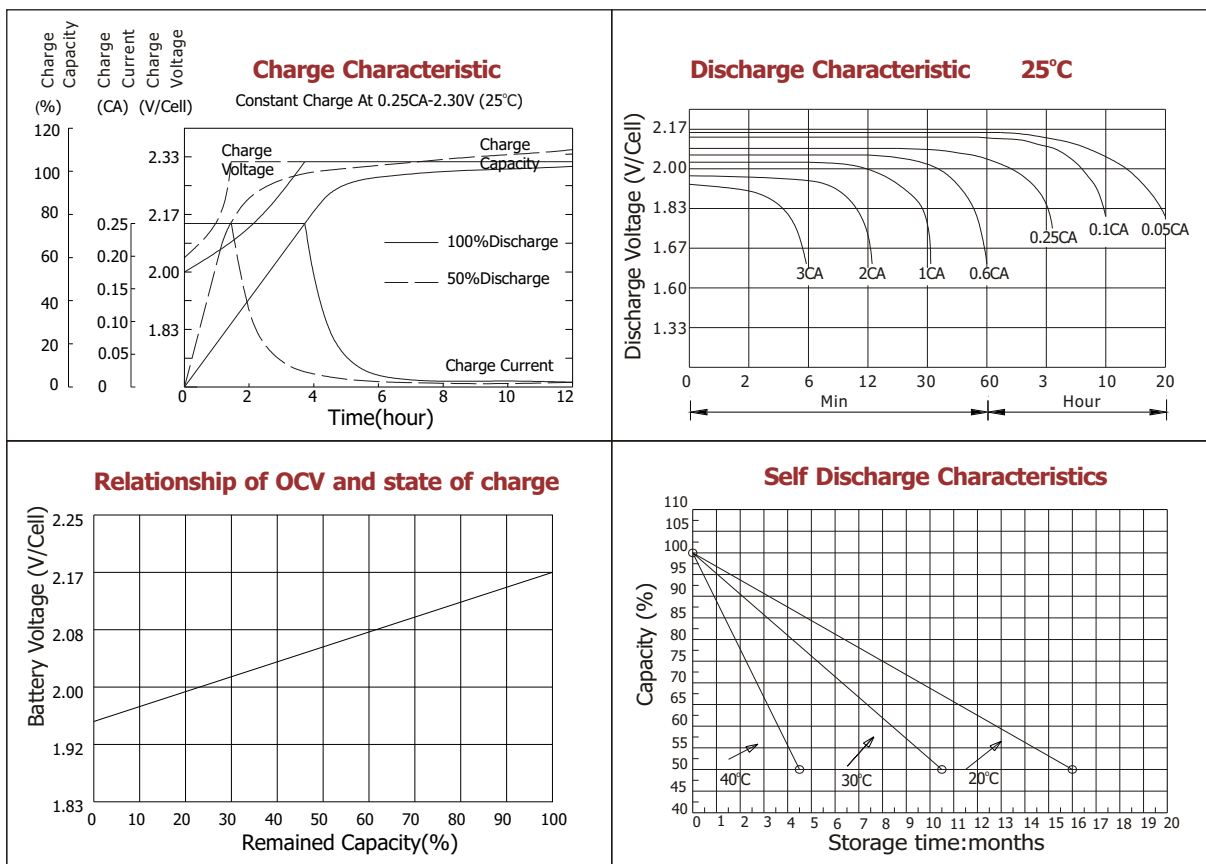
- ComponentRaw material
- PositiveLead dioxide
- NegativeLead
- ContainerABS
- CoverABS
- SealantEpoxy Resin
- Safety valveEPDR
- TerminalCopper
- SeparatorFibre glass
- ElectrolyteSulfuric acid



Terminal Dimensions



Battery Model	HR12-88W (88W to 1.67V, 15min)			
Designed Floating Life	8 Years			
Capacity(25°C)	20HR(1.15A,1.75V)	10HR(2.15A,1.75V)	5HR(3.9A,1.75V)	1HR(15.3A,1.75V)
	23AH	21.5AH	19.5AH	15.3AH
Dimensions	Length	Width	Height	Total Height
	181.5mm(7.15inch)	75.5mm(2.97inch)	167mm(6.57inch)	167mm(6.57inch)
Approx. Weight	6.6Kg (14.55 lbs)			
Internal Resistance	Full charged at 25°C: 0.0088 Ohm			
Self Discharge	3% of capacity declined per month at (25°C)			
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	
	14.4-15V(-30mV/ °C), max. Current: 6.6A		13.6-13.8V(-20mV/ °C)	



Constant current discharge ratings-amperes at 25°C

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	3HR	5HR	10HR	20HR
1.60V	104	64.7	48.8	29.8	16.3	7.18	4.39	2.39	1.29
1.67V	97.6	61.4	47.0	28.5	16.1	6.90	4.29	2.37	1.25
1.70V	89.4	59.2	45.8	25.9	15.6	6.44	4.20	2.36	1.23
1.75V	87.7	57.3	44.4	24.6	14.9	6.23	4.11	2.35	1.19
1.80V	78.4	54.7	40.3	22.8	14.0	5.98	3.86	2.30	1.16
1.85V	69.2	52.1	36.2	21.0	13.0	5.77	3.62	2.27	1.13

Constant power discharge ratings-watts at 25°C

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	3HR	5HR	10HR	20HR
1.60V	182	117	89.1	53.6	29.5	12.7	7.41	4.91	2.58
1.67V	176	114	88.0	52.5	29.3	12.3	7.38	4.88	2.48
1.70V	166	113	87.3	49.2	28.8	11.8	7.28	4.85	2.45
1.75V	167	112	86.5	47.7	28.3	11.5	7.22	4.78	2.39
1.80V	153	111	80.2	45.5	26.6	11.2	7.00	4.72	2.33
1.85V	138	105	72.8	42.6	25.1	10.8	6.77	4.66	2.24

