# VRLA AGM battery ATP 12-120AH

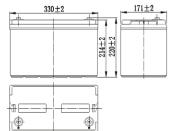


ATP series is a general Purpose battery. It meets with heavy duty grids, thicker plates, special additives and advanced AGM valve regulated technology, the ATP series battery provides consistent performance and long service life. The new grid design effectively reduces the internal resistance, which provides higher specific energy density and excellent high rate discharge characteristics. It is suitable for telecommunications back-up power and EPS/UPS applications.

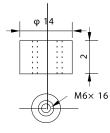
## **Specifications**

Nominal Voltage	12V			
Rated capacity (20 hour	120Ah			
Dimensions	Length	330±2mm(12.99inch)		
	Width	171±2mm(6.73inch)		
	Height	214±2mm(8.43inch)		
	Total Height	220±2mm(8.66inch)		
Approx. Weight	32.7kg(72.1lbs)±3%			

#### **Outer dimensions (mm)**



**Terminal Type (mm)** 



## Characteristics

20HR(10.8V)120AhCapacity (25°C)(10HR(1.8V)90Ah3HR(1.8V)90Ah90Ah1114(1.5V)66Ah116ATerminal type116AApprox.4m OInternal - Terminal type0°CApprox.4m OCapacity affected by temperature (10HR)0°C10.5V0°C6.5V10.5V10°C0°C5.5V10°C3.5V10.5V0°C8.5V10.5V10°C0°C5.5V11°C10.5V10.5V11°C10.5V10.5V12°C12°C10.5V12°C12°C10.5V12°C12°C10.5V12°C12°C10.5V0perating temperature rangeDischarge13.5V0perating temperature range13.5V13.8VFloat chargiv_vlage(25°C)13.5V13.8VFloat chargiv_vlage(25°C)14.50 V18.8VCyclic chargiv_vlage(25°C)14.50 V18.8VMaximum civrg current950.43.4V							
Capacity (25°C)90Ah3HR(10.8V)90Ah1HR(10.5V)66AhInternal reminal typeT16AInternal resistance (Fully charged, 25°C)Approx.4m $\Omega$ 40°C102×Capacity affected by temperature (10HR)25°C10°C85%25°C100×0°C85%25°C00×0°C85%115°C65%3 monthsRemaining Capacity:91%Self-discharge (25°C)3 months6 monthsRemaining Capacity:65%12 monthsRemaining Capacity:65%Nominal operature range25°C ±3°C(7°F ±5°F)Operating temperature rangeDischarge ChargeCharge-10°C-50°C(4°F-122°F)Storage-20°C-50°C(4°F-122°F)Float charging voltage(25°C)13.50 to 13.80V Temperature compensation: -18mV'°CCyclic charging voltage(25°C)14.50 to 15.00V Temperature compensation: -30mV'°CMaximum charging current34.54		20HR	120Ah				
$\begin{tabular}{ c c c } \hline \begin{tabular}{ c c c } \hline & 3HR(10.8V) & 90Ah \\ \hline & 1HR(10.5V) & 66Ah \\ \hline & 1HR(10.5V) & 66Ah \\ \hline & 116A \\ \hline \end{tabular} \en$	Capacity (25°C)	10HR(	115Ah				
Terminal typeT16AInternal resistance (Fully charged,25°C)Approx.4m $\Omega$ Approx.4m $\Omega$ Approx.4		3HR(1	90Ah				
Internal registance (Fully charged, 25°C)Approx.4m $\Omega$ Internal registance (Fully charged, 25°C)Approx.4m $\Omega$ Approx.4m $\Omega$ Capacity affected by temperature (10HR)40°C102%0°C85%		1HR(1	0.5V)	66Ah			
$\begin{array}{c c} \mbox{Capacity} \\ \mbox{affected by} \\ \mbox{temperature} \\ \mbox{(10HR)} & 25^{\circ}\mbox{C} & 102\% \\ \mbox{$25^{\circ}\mbox{C}$} & 100\% \\ \mbox{$0^{\circ}\mbox{C}$} & 85\% \\ \mbox{$-15^{\circ}\mbox{C}$} & 65\% \\ \mbox{$-15^{\circ}\mbox{C}$} & 65\% \\ \mbox{$-15^{\circ}\mbox{C}$} & 65\% \\ \mbox{$3$ months$} & Remaining Capacity:91\% \\ \mbox{$6$ months$} & Remaining Capacity:82\% \\ \mbox{$12$ months$} & Remaining Capacity:82\% \\ \mbox{$12$ months$} & Remaining Capacity:82\% \\ \mbox{$12$ months$} & Remaining Capacity:65\% \\ \mbox{$Nominal operaturg temperature} & 25^{\circ}\mbox{$C$ ±3^{\circ}\mbox{$C$}(77^{\circ}\mbox{$±5^{\circ}\mbox{$F$}}) \\ \mbox{$Operating$} & temperature & 25^{\circ}\mbox{$C$ 50^{\circ}\mbox{$C$}(5^{\circ}\mbox{$F$}-122^{\circ}\mbox{$F$}) \\ \mbox{$Charge$} & -10^{\circ}\mbox{$C$}-50^{\circ}\mbox{$C$}(4^{\circ}\mbox{$F$}-122^{\circ}\mbox{$F$}) \\ \mbox{$Float charging$ $\nb_1$ tage}(25^{\circ}\mbox{$C$}) \\ \mbox{$Float charging$ $\nu$ ltage}(25^{\circ}\mbox{$C$}) \\ \mbox{$Temperature compensation:$-18mV/^{\circ}\mbox{$C$} \\ \mbox{$14.50 to 15.00V$} \\ \mbox{$Temperature compensation:$-30mV/^{\circ}\mbox{$C$} \\ \mbox{$-30mV/^{\circ}\mbox{$C$} \\ \end{tabular} \\ \mbox{$Maximum charging current$} & 34.5A \\ \end{tabular} \end{tabular} $		Terminal type		T16A			
$\begin{tabular}{ c c c } \hline Capacity affected by temperature (10HR) & 25°C & 100% & 0°C & 85% & 0°C & 15°C & 65% & 0°C & 15°C & 0°C & 10°C & 10°C & 10°C & 10°C & 10°C & 12°C &$	Interna! re	sistance (Fully char	ged,25°C)	Approx.4m Ω			
$\frac{4 \text{frected by}}{4 \text{temperature}} = \frac{25 ^{\circ} \text{C}}{100\%}$ $\frac{25 ^{\circ} \text{C}}{100\%} = \frac{100\%}{100\%}$ $\frac{100\%}{100\%} = \frac{100\%}{100\%}$ $\frac{100\%}{100\%} = \frac{100\%}{100\%}$ $\frac{3 \text{ months}}{15 ^{\circ} \text{C}} = \frac{65\%}{65\%}$ $\frac{3 \text{ months}}{6 \text{ months}} = \frac{8 \text{ maining Capacity:91\%}}{8 \text{ maining Capacity:82\%}}$ $\frac{6 \text{ months}}{12 \text{ months}} = \frac{8 \text{ maining Capacity:82\%}}{12 \text{ months}}$ $\frac{6 \text{ months}}{12 \text{ months}} = \frac{8 \text{ maining Capacity:82\%}}{12 \text{ months}}$ $\frac{25^{\circ} \text{C} \pm 3^{\circ} \text{C} (77^{\circ} \text{F} \pm 5^{\circ} \text{F})}{12 \text{ months}}$ $\frac{0 \text{ perating}}{12 \text{ months}} = \frac{25^{\circ} \text{C} \pm 3^{\circ} \text{C} (77^{\circ} \text{F} \pm 5^{\circ} \text{F})}{12 \text{ months}}$ $\frac{0 \text{ perating}}{12 \text{ months}} = \frac{10^{\circ} \text{C} - 50^{\circ} \text{C} (5^{\circ} \text{F} - 122^{\circ} \text{F})}{13.50 \text{ to } 13.80 \text{V}}$ $\frac{13.50 \text{ to } 13.80 \text{V}}{12 \text{ months}}$ $\frac{13.50 \text{ to } 13.80 \text{V}}{18 \text{ months}}$ $\frac{13.50 \text{ to } 13.80 \text{V}}{18 \text{ months}}$ $\frac{14.50 \text{ to } 15.00 \text{V}}{18 \text{ months}}$ $\frac{14.50 \text{ to } 15.00 \text{V}}{18 \text{ months}}$ $\frac{30 \text{ mV}^{\circ} \text{C}}{30 \text{ mV}^{\circ} \text{C}}$		40°C	10:	2%			
IOCC         83%           -15°C         65%           3 months         Remaining Capacity:91%           Self-discharge (25°C)         6 months         Remaining Capacity:82%           12 months         Remaining Capacity:82%           12 months         Remaining Capacity:65%           Nominal operating temperature range         Discharge         -15°C-50°C(5°F-122°F)           Charge         -10°C-50°C(14°F-122°F)           Storage         -20°C-50°C(4°F-122°F)           Float charginy voltage(25°C)         13.50 to 13.80V           Float charginy voltage(25°C)         13.50 to 13.80V           Cyclic charginy voltage(25°C)         14.50 to 15.00V           Maximum charging current         34.5A		25°C	10	0%			
-15°C65%3 monthsRemaining Capacity:91 %Self-discharge (25°C)6 monthsRemaining Capacity:82%12 monthsRemaining Capacity:82%12 monthsRemaining Capacity:65%Nominal operative temperature range25°C ±3°C(77°F ±5°F)Operating temperature rangeDischargeCharge-15°C-50°C(5°F-122°F)Storage-20°C-50°C(14°F-122°F)Float charging voltage(25°C)13.50 to 13.80V Temperature compensation: -18mV/°CCyclic charging voltage(25°C)14.50 to 15.00V Temperature compensation: -30mV/°CMaximum charging current34.5A		0°C	85	5%			
Self-discharge (25°C)6 monthsRemaining Capacity:82%12 monthsRemaining Capacity:65%Nominal operating temperature25°C ±3°C(77°F ±5°F)Operating temperature rangeDischargeCharge-15°C-50°C(5°F-122°F)Storage-20°C-50°C(14°F-122°F)Float charging voltage(25°C)13.50 to 13.80V Temperature compensation: -18mV/°CFloat charging voltage(25°C)14.50 to 15.00V Temperature compensation: -30mV/°CMaximum charging current34.5A		-15°C	65%				
(25°C)     6 months     Remaining Capacity:82%       12 months     Remaining Capacity:82%       Nominal operating temperature     25°C ±3°C(77°F ±5°F)       Operating temperature range     Discharge     -15°C-50°C(5°F-122°F)       Charge     -10°C-50°C(14°F-122°F)       Storage     -20°C-50°C(4°F-122°F)       Float charging voltage(25°C)     13.50 to 13.80V       Temperature compensation: -18mV/°C     -18mV/°C       Queue charging voltage(25°C)     14.50 to 15.00V       Maximum charging current     34.5A		3 months	Remaining Capacity:91 %				
12 monthsRemaining Capacity:65%Nominal operating temperature rangeEmperature Discharge25°C ±3°C(77°F ±5°F)Operating temperature rangeDischarge-15°C-50°C(5°F-122°F)Charge-10°C-50°C(14°F-122°F)5torageStorage-20°C-50°C(-4°F-122°F)13.50 to 13.80VFloat charging Cyclic charging Voltage(25°C)13.50 to 13.80V14.50 to 15.00VCyclic charging voltage(25°C)14.50 to 15.00V Temperature compensation: -30mV/°C-30mV/°CMaximum charging current34.5A34.5A		6 months	Remaining Capacity:82%				
Operating temperature rangeDischarge-15°C-50°C(5°F-122°F)Charge-10°C-50°C(14°F-122°F)Storage-20°C-50°C(4°F-122°F)Float charging voltage(25°C)13.50 to 13.80V Temperature compensation: -18mV/°CCyclic charging voltage(25°C)14.50 to 15.00V Temperature compensation: -30mV/°CMaximum charging current34.5A	()	12 months	Remaining Capacity:65%				
Operating temperature range     Charge     -10°C-50°C(14°F-122°F)       Storage     -20°C-50°C(-4°F-122°F)       Float charging voltage(25°C)     13.50 to 13.80V Temperature compensation: -18mV/ °C       Cyclic charging voltage(25°C)     14.50 to 15.00V Temperature compensation: -30mV/°C       Maximum charging current     34.5A	Nominal operati	ng temperature	25°C ±3°C	(77°F ±5°F)			
temperature range     Charge     -10°C-50°C(14°F-122°F)       Storage     -20°C-50°C(-4°F-122°F)       Storage     -30°C-50°C(-4°F-122°F)       Float charging voltage(25°C)     13.50 to 13.80V       Float charging voltage(25°C)     14.50 to 15.00V       Cyclic charging voltage(25°C)     14.50 to 15.00V       Maximum charging current     34.5A	Operating	Discharge	-15°C-50°C(5°F-122°F)				
Storage     -20°C-50°C(-4°F-122°F)       Float charging voltage(25°C)     13.50 to 13.80V       Temperature compensation: -18mV/ °C     14.50 to 15.00V       Cyclic charging voltage(25°C)     14.50 to 15.00V       Maximum charging current     34.5A	temperature	Charge	-10°C-50°C(14°F-122°F)				
Float charging voltage(25°C)       Temperature compensation: -18mV/ °C         Cyclic charging voltage(25°C)       14.50 to 15.00V         Cyclic charging voltage(25°C)       Temperature compensation: -30mV/°C         Maximum charging current       34.5A	range	Storage	-20°C-50°C(-4°F-122°F)				
Cyclic charging voltage(25°C)     Temperature compensation: -30mV/°C       Maximum charging current     34.5A	Float charging	voltage(25°C)	Temperature compensation:				
	Cyclic charging	y voltage(25°C)	Temperature compensation:				
Maximum discharge current 950A(5 sec.)	Maximum cha	arging current	34.5A				
	Maximum disc	harge current	950A(5 sec.)				
Designed floating life(20°C) 10 years	Designed floa	ting life(20°C)	10 years				

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VALVE REGULATED LEAD-ACID BATTERY ATP 12-120Ah 12V120Ah



#### Construction

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

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

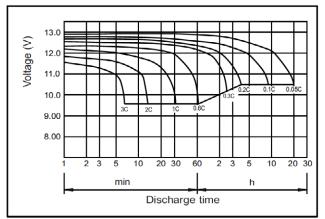
F.V/Time	10min	15min	30min	60min	2h	3h	4h	5h	Bh	10h	20h
9.60V	254	196	117	72.0	42.5	30.7	24.4	20.9	14.4	11.8	6.28
9.90V	246	191	114	70.8	42.3	30.5	24.3	20.8	14.3	11.8	6.27
10.2V	236	184	112	69.1	41.9	30.3	24.2	20.7	14.2	11.8	6.25
10.5V	226	178	109	66.9	41.3	30.1	24.0	20.5	14.1	11.7	6.21
10.8V	213	168	105	64.7	40.3	29.1	23.3	19.9	13.7	11.6	6.17

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

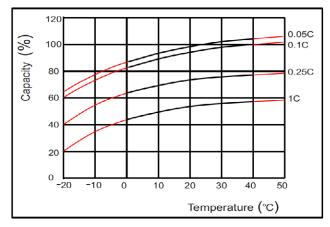
F.V/Time	10min	15min	30min	60min	2h	3h	4h	5h	Bh	10h	20h
9.60V	2740	2148	1312	820	493	360	288	247	171	142	75.4
9.90V	2659	2095	1286	808	490	358	286	245	170	142	75.2
10.2V	2549	2019	1246	788	485	356	284	243	169	141	75.0
10.5V	2438	1950	1216	762	478	353	282	242	169	140	74.6
10.8V	2302	1847	1172	738	396	342	274	235	162	139	74.0

Note: The above characteristics data can be obtained within three charge or discharge cycles.

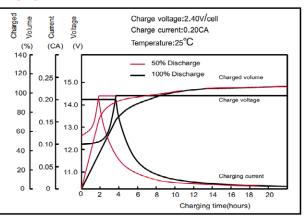
## Discharge characteristics(25°C)



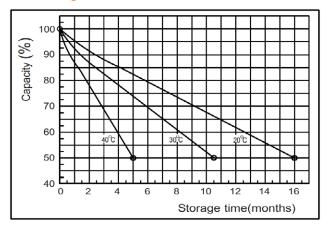
## Effect of Temperature on Capacity



#### **Charging characteristics**

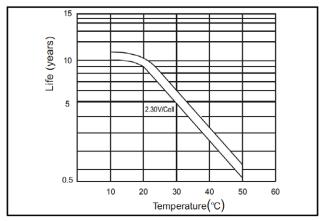


#### **Self-discharge characteristics**









## Cycle service life in relation to depth of discharge

