



Batteries for Marine & Life Boat



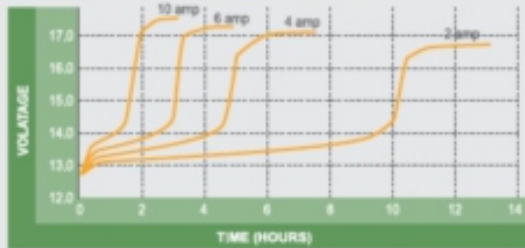
EDGE Series

Made in Korea

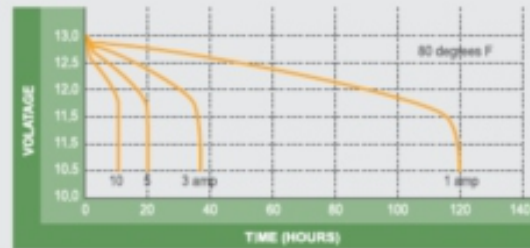
Charging Instructions

Battery Charge Characteristics

Recharge from 20% DOD, DC31MF



Battery Discharge Characteristics



Operating Temperature Range :

- Discharge : -40°F(-40℃) to +160°F(71℃)
- Charge : -10°F(-23℃) to +122°F(50℃)

Recommended Operating Temperature Range

: +74°F(23℃) to +80°F(27℃)

Charging Method

- Batteries should be recharged within 24hours after each period of use.
- Charge time by various charging rate can be determined by the SOC(state of charge)

Method 1 ; Constant Voltage Charge

- Recommended Method -

Charge Voltage setting	
Type	Voltage setting
Equalization and Cycle Service Charging Voltage	14.4 to 14.8 VDC
Float Charging Voltage	13.2 to 13.7 VDC

* Unit Average at 77°F(25℃)

End of Charge

- Current : below 1.0A during charge.
- Stabilized Open circuit voltage : 12.7V or higher.

Method 2 ; Constant Current Charge

Constant current setting and charging time

Battery		DC24MF	DC27MF	DC31MF
SOC	OCV	4.0A	4.5A	5.0A
100%	12.7V		-	
75%	12.4V		6Hr	
50%	12.2V		12Hr	
25%	12.0V		18Hr	
0%	11.9V		24Hr	

End of Charge

- Maximum voltage output across the battery terminals is maintained at constant level for two(2) hours during charge.
- Stabilized Open circuit voltage : 12.7V or higher.




X-FRAME

- Full Frame with Stamped Grid Technology
- Round edge grid structure
- Unique designed Grid for electric flow

- ▶ Preventable grid growth and short circuits
- ▶ Faster flow of the electricity
- ▶ Low electric resistance
- ▶ Maximal tensile strength

EDGE Series Technology

XDC Series Unique Consturction Features & Benefits

e	a
Dual Purpose Plate(Starting & Deep Cycling) <ul style="list-style-type: none"> - X-Frame (Pos. / Neg.) - Special (Thicker) Plate with High Density Active Material - Calcuim + High Tin Alloy - New Special Tissue Vibration Resistant Design <ul style="list-style-type: none"> - Low Resistance Envelope Separator with Glass Mat - Hot Melt Glue - Reinfor ced Container 	Longer Life & High Cycle Stability <ul style="list-style-type: none"> - High endurance in deep cycle service - Flexible design for semi-traction (deep cycling) and star ting - Prevent inter nal shor t circuits - More electric power to ter minal posts - The MF endurance by r eserving mor e electr olyte volume over the plate Minimal self-discharge : can be safely stored for longer Built strong to withstand the pounding and vibration of marine, 4WD and heavy vehicle use
Le oM N mMH	
 Full Framed Grid (Round edge design) <ul style="list-style-type: none"> - Full Framed Grid design r estricts grid gr owth and shor t-circuits. Benefit : Upgraded quality , and longer life span.	Unique designed grid for electric flow <ul style="list-style-type: none"> - As punching grids mechanically , it ensures high electric conductivities and str ong adhesion of active materials. Benefit: Pr oviding higher star ting power , stable structur e, and few corr osion.
 Upgraded Active Material <ul style="list-style-type: none"> - Provide high endurance in deep cycle service 	 Low Resistance Envelope Separator with Glass Mat <ul style="list-style-type: none"> - Prevent inter nal shor t circuits between positive and negative plates

Common Structure & Advantage (Marine & RV)

1. Convenience and stability

Ergonomically Designed Handle

- Provide an easy transpor tation and installation



Special Sealed Cover

- Protect for m acid leakage and minimize gassing
- Frame Arr estor prevents an inflow of outside spark



2. Excellent Performance

Hot Melt Glue to resist vibration

- Ensure resistance to outside impact and vibration, and minimize loss of active materials



Magic Eye Indicator

- Easy to check Charging-State



Special Tissue

- Provide a mechanical suppor t for adhesion of active material during the service



Marine Twin (Dual=SAE/Wing-Nut) Terminal

- Quick connection
- Compatibility with TOP POST and STUD

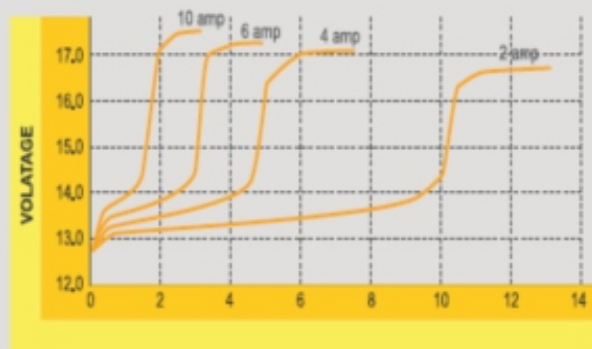


EDGE Series

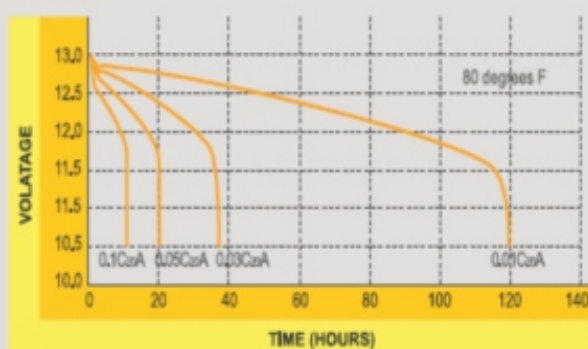
Charging instruction and H.U.P

Charge and Discharge Characteristics

Charge characteristics from 20% DOD, XDC31 MF



Discharge characteristics



Charging Method

- Batteries should be recharged within 24 hours after each period of use.
- Charging time by various charging rate can be determined by the SOC (state of charge)

Method 1 ; Constant Voltage Charge (Recommended Method)

Type	Voltage Setting
Daily Cycle Service	14.4~14.8
Floating Service	13.2~13.7
Equalizing	15.5

* Unit Average at 77 °F (25 °C)

- Every 30 to 90 days, conduct the equalizing charge. Daily cycle service and deep discharging service need more frequent equalizing.

End of charge

- Current : below 1.0A during charge.
- Stabilized open circuit voltage : 12.75V or higher .

Method 2 ; Constant Current charge

Battery		XDC24MF	XDC27MF	XDC31MF
SOC	OCV	4.0A	4.5A	5.0A
100%	12.75V	-		
75%	12.40V	6Hr		
50%	12.20V	12Hr		
25%	12.00V	18Hr		
0%	11.90V	24Hr		

End of charge

- Maximum voltage output across the battery terminals is maintained at constant level for 2 hours during the charge.
- Stabilized open circuit voltage : 12.75V or higher .



Special Tissue
New Special tissue provides a mechanical support for the adherence to the active materials on the plate and improves durability of the grids by delivering high conductivity.

EDGE Series Technology

Enveloped Separator for low electric resistance

- Reliable starting power
- Prevent internal short between positive and negative plates

Technology

Structure

Common Structure & Advantage (Marine & RV)

1. Convenience and stability

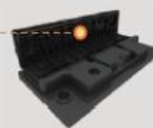
Ergonomically Designed Handle

- Provide an easy transportation and installation



Special Sealed Cover

- Protect from acid leakage and minimize gassing
- Frame Arr ester prevents an inflow of outside spark



2. Excellent Performance

Hot Melt Glue to resist vibration

- Ensure resistance to outside impact and vibration, and minimize loss of active materials



Magic Eye Indicator

- Easy to check Charging-State



Special Tissue

- Provide a mechanical support for adhesion of active material during the service



Marine Twin (Dual=SAE/Wing-Nut) Terminal

- Quick connection
- Compatibility with TOP POST and STUD



5/16" -18 THREADS



5/16" -18 THREADS

Warranty Conditions

This warranty does not cover:

- Normal wear and tear.
- Labour for removal, and replacement of the unit, from the vehicle unless prior written approval has been obtained
- Batteries that break or fail due to abuse or neglect such as improper installation, misapplication, loose wiring, corroded terminal connections, mishandled or dropped batteries, freezing, fire, explosion, or unauthorized battery modifications.
- This warranty does not cover sulphation damage caused by failing to maintain sufficient charge in batteries for extended periods of time. Batteries must be fully charged after any significant drain and the charge cycle must be completed.

EDGE Series

Specification

JIS No.	Capacity	CCA	RC	Dimension (mm)				Warranty Period
EDGE SERIES	20Hr (Ah)	(SAE)	(Min.)	Length	Width	Height	T. Height	
40B19R/L	35	350	54	187	127	199	219	12 Months
85D26R/NS70	70	600	120	260	168	204	220	12 Months
90D26R/L	73	550	125	258	171	220	225	12 Months
DC27SMF TWIN MARINE	90	750	170	302	172	200	220	12 Months
105D31R/L	90	840	165	302	172	200	220	12 Months
N100	100	830	175	401	174	210	230	12 Months
MF100	100	840	182	330	175	200	220	12 Months
N120	120	850	200	503	182	220	231	12 Months
N150	150	1000	300	503	216	208	230	12 Months
N200	200	1180	480	503	265	205	230	12 Months










DIN SERIES	Capacity	CCA	Dimension (mm)				Warranty Period
EDGE SERIES	20Hr (Ah)	(SAE)	Length	Width	Height	T. Height	
DIN43	43	440	208	174	174	174	12 Months
DIN50	50	450	208	174	189	189	12 Months
DIN62	62	520	242	174	189	189	12 Months
DIN72	72	660	275	174	189	189	12 Months
DIN100	100	830	353	175	190	190	12 Months
DIN66	66	650	272	174	189	189	12 Months

Terminal & Layout

TERMINAL

LAYOUT

Terminal

	STANDARD	STUD	MARINE TWIN	U1 LUG	TOP POST
Positive Terminal		3/8" -16 THREADS 	5/16" -18 THREADS 		
Negative Terminal		3/8" -16 THREADS 	5/16" -18 THREADS 		

- Calcium – Calcium Maintenance-Free • Factory-sealed – heat-sealed covers prevent contamination and increase casing strength • Denser active plate material for improved cyclic ability • High Cranking Power • High Reserve Capacity • Ultra-low water loss – liquid-gas separator. • Low-resistance envelope separators.

Cycle Charge: 14.1 ~ 14.5 V between 20~30 °C, Maximum Charge Current : 25A Float Voltage : 13.5 Volts @ 27°C, Maximum Charge Current : 25A Note : To prevent from over-charged issue, user should be recommended to use Constant Current charging method. To avoid over-charging, user is recommended to use constant voltage charging method.

EDGESERIES	Capacity 20Hr (Ah)	CCA (SAE)	RC (Min.)	Dimension (mm)				TERMINAL
EDGEDC24 SMF				Length	Width	Height	T. Height	
TWIN MARINE	80	680	140	260	174	202	225	MARINE TWIN





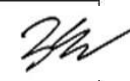


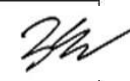


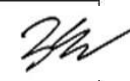
EDGESERIES	Capacity 20Hr (Ah)	CCA (SAE)	RC (Min.)	Dimension (mm)				TERMINAL
EDGEDC27 SMF				Length	Width	Height	T. Height	
TWIN MARINE	90	750	170	302	172	200	220	MARINE TWIN

EDGESERIES	Capacity 20Hr (Ah)	CCA (SAE)	RC (Min.)	Dimension (mm)				TERMINAL
EDGEDC31 SMF				Length	Width	Height	T. Height	
TWIN MARINE	100	800	180	330	172	218	242	MARINE TWIN



Data Sheet

DC24 SMF

Items		Contents								
Model		DC24 SMF (12Volts 80Ah)								
Dimensions(max) (mm)	L	260								
	W	174								
	H	202								
		225								
Base Hold down	Type	B1								
Plates per cell		15								
Lid Type		Flat/Sealed Type								
Positive Plates	Type	Expanded								
	Alloy	Pb-Ca-Sn								
Negative Plates	Type	Expanded								
	Alloy	Pb-Ca								
Separator		PE Enveloping								
Handle		with Handle								
Strap	Type	COS(Caston-strap)								
	Alloy	Pb-Sb								
Charge Acceptance(A)		8.0								
20-Hour Rate Capacity(Ah)		80								
Reserve Capacity(min)		140								
SAE CCA[A](\sim 18 \bar{u})		680								
Weight with acid (kg)		18.4								
Approved: 11.Oct.2023										
Application ; MARINE APPLICATION, LIFE BOAT MARINE ENGINE		<table><tr><td>Eng.</td><td>Checked by</td><td>Prepared by</td><td>Approved by</td></tr><tr><td>Dept.</td><td></td><td></td><td></td></tr></table>	Eng.	Checked by	Prepared by	Approved by	Dept.			
Eng.	Checked by	Prepared by	Approved by							
Dept.										
EDGE Batteries - Made in Korea										



Data Sheet

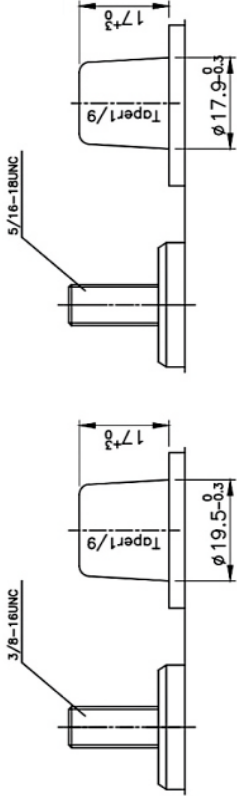
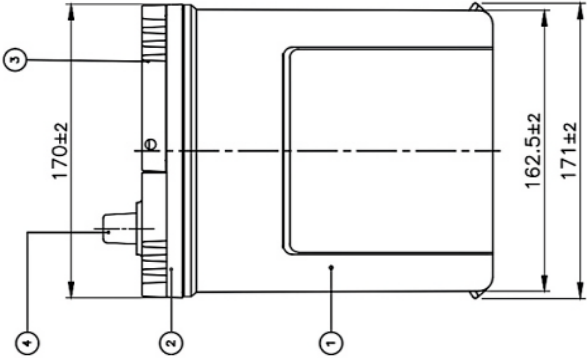
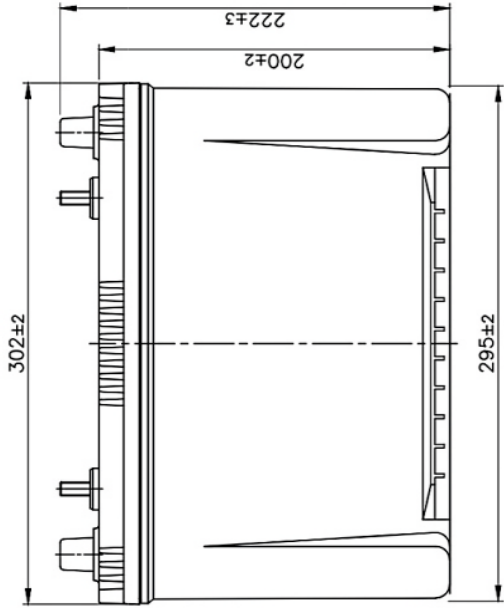
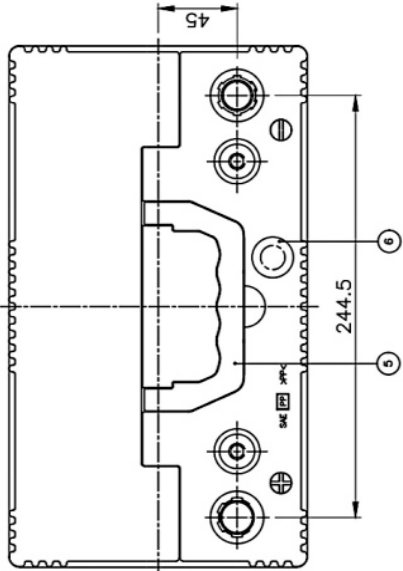
DC27 SMF

Items		Contents
Model		DC27 SMF (12Volts 90Ah)
Dimensions(max) (mm)	L	304
	W	172
	H	202
	TH	225
Base Hold down	Type	B7
Plates per cell		15
Lid Type		Flat/Sealed Type
Positive Plates	Type	Expanded
	Alloy	Pb-Ca-Sn
Negative Plates	Type	Expanded
	Alloy	Pb-Ca
Separator		PE Enveloping
Handle		with Handle
Strap	Type	COS(Caston-strap)
	Alloy	Pb-Sb
Charge Acceptance(A)		9.5
20-Hour Rate Capacity(Ah)		90
Reserve Capacity(min)		170
SAECCA[A](180)		750
Weight with acid (kg)		21.5

Approved: 11.Oct.2023

Application ; MARINE APPLICATION, LIFE BOAT * MARINE ENGINE	Eng.	Checked by	Prepared by	Approved by
	Dept.			
EDGE Batteries- Made in Korea				

No	DESCRIPTION	MATERIAL
1	CONTAINER	PLASTIC(P.P)
2	LOWER COVER	PLASTIC(P.P)
3	UPPER COVER	PLASTIC(P.P)
4	TERMINAL BUSHING	LEAD ALLOY
5	HANDLE	PLASTIC(P.P)
6	INDICATOR	SAN+PLASTIC(P.P)



POSITIVE TERMINAL S=1:1

NEGATIVE TERMINAL S=1:1

-	-	2024.01.12.	ORIGINAL ISSUE					
NO.	EA	DATE	REVISION CAUSE	DES	DWG	CHK	APP	
TITLE		SMF 27DC - 750 BATTERY ASS'Y DC 27-15(BH)						
FOR								
DWG.NO.		SEA-01-3367K		SCALE	UNIT	PROJECTION	SOFT WARE	
				1/3	mm			A

Data Sheet

DC31 SMF




Items		Contents
Model		DC31 SMF (12Volts 100Ah)
Dimensions(max) (mm)	L	330
	W	173
	H	217
	TH	240
Base Hold down	Type	BX
x`		18
Lid Type		Flat/Sealed Type
Positive Plates	Type	Expanded
	Alloy	Pb-Ca-Sn
Negative Plates	Type	Expanded
	Alloy	Pb-Ca
Separator		PE Enveloping
Handle		with Handle
Strap	Type	COS(Caston-strap)
	Alloy	Pb-Sb
Charge Acceptance(A)		9.5
20-Hour Rate Capacity(Ah)		100
Reserve Capacity(min)		180
SAECCA[A](-18ü)		800
Weight with acid (kg)		23.5

Approved: 11.Oct.2023

Application

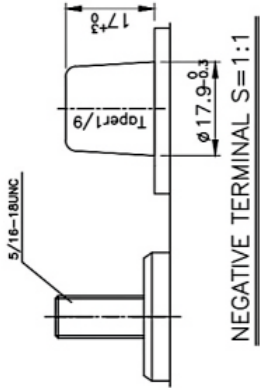
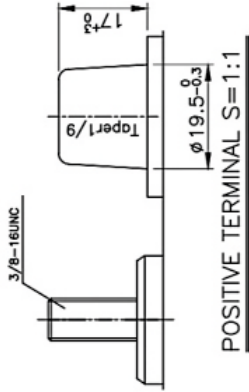
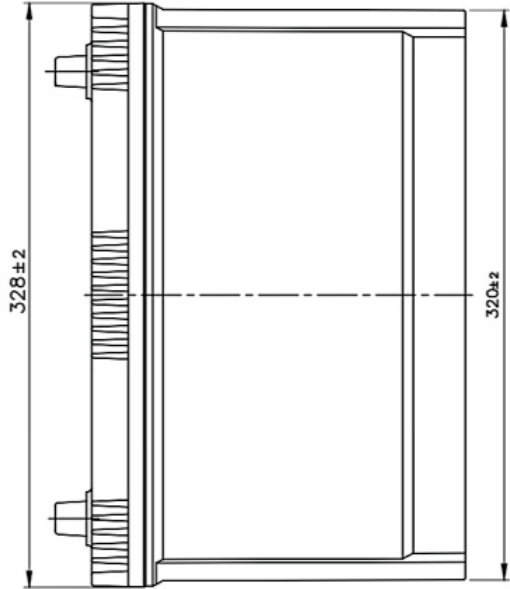
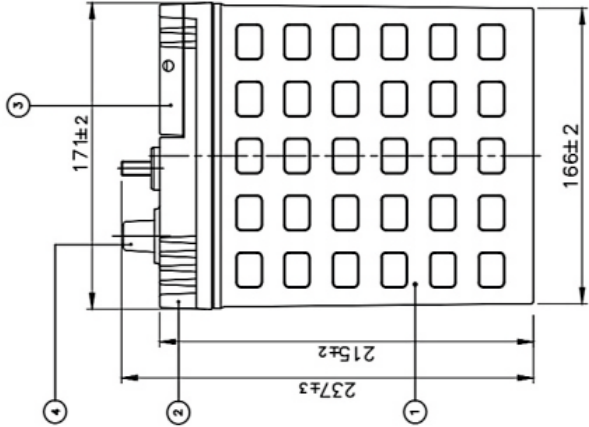
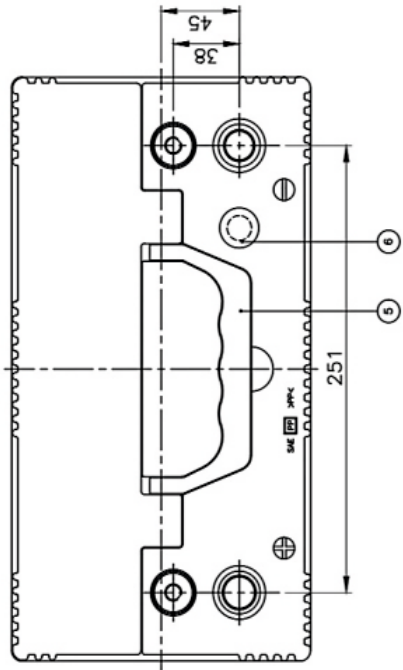
; MARINE APPLICATION, LIFE BOAT * MARINE ENGINE

Eng.
Dept.

Checked by	Prepared by	Approved by
		

EDGE Batteries- Made in Korea

No	DESCRIPTION	MATERIAL
1	CONTAINER	PLASTIC(P.P)
2	LOWER COVER	PLASTIC(P.P)
3	UPPER COVER	PLASTIC(P.P)
4	TERMINAL BUSHING	LEAD ALLOY
5	HANDLE	PLASTIC(P.P)
6	INDICATOR	SAN+PLASTIC(P.P)



-	-	2024.01.12.	ORIGINAL ISSUE						
NO.	EA	DATE	REVISION CAUSE	DES	DWG	CHK	CHK	APP	
TITLE		SMF 31DC - 800 BATTERY ASS'Y DC 31 - 108(SG6)							
FOR									
DWG.NO.		SEA-01-3366K		SCALE	UNIT	PROJECTION	SOFT WARE		
				1/3	mm			A	

**EDGE SMF batteries do not require water and acid top-up.
There is no water loss during the charge-discharge cycle.**

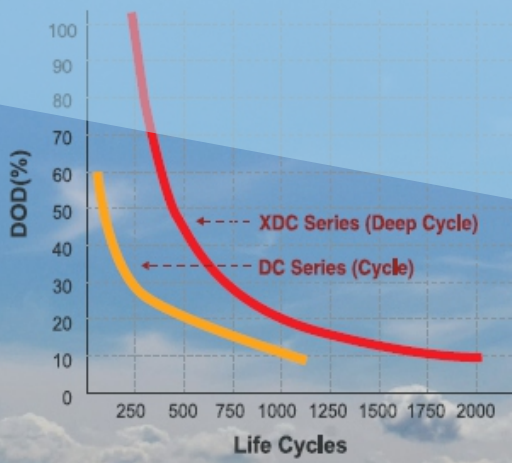
**Spill Free
Battery**



**Sealed
Maintenance
Free Battery**

**Calcium Alloy
Marine Engine
Battery**





EDGE BATTERIES ARE USED FOR LIFE BOAT APPLICATION AND MARINE ENGINES START.





Alpha Batteries

📍 A/16, Kalpak Estate, S. M. Road, Antop Hill, Wadala (East), Mumbai - 400 037.

📞 +91 88504 88403 ✉ alphabatteries@gmail.com