

	DESCRIPTION		DETAILS	ISTRIES LINITED
SL. NO	DESCRIPTION		DETAILS	
	1 Capacity in Ah			
(a (i			415	
(ii			415	
(iii			332	
(b			Formula : Ct = { 1+ 0.0043 (t-27) }	
	ambient temperature of (as per IS 15549 : 2005)			
(C) Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (t-27) }	
(0	ambient temperature of (as per IS 15549 : 2005)			
:	2 Capacity at Various Discharge Rates at 27°C			
	Pariad of Disabarra	A.h	Discharge Comment	End Call
	Period of Discharge	Ah capacities	Discharge Current (Amps)	End Cell Voltage
			(Amps)	(Volts)
				(rono)
	10Hr	415.00	41.5	1.75
	9Hr	406.29	45.1	1.75
	8Hr	394.25	49.3	1.75
	7Hr	380.56	54.4	1.75
	6Hr	364.79	60.8	1.75
	5Hr	345.70	69.1	1.75
	4Hr	324.53	81.1	1.74
	3Hr	297.56	99.2	1.74
	2Hr	262.70	131.3	1.7
	1Hr	207.50	207.5	1.7
	50 min	193.81	232.7	1.7
	40 min	178.45	267.9	1.7
	30 min	166.00	332.0	1.7
	20 min	149.40	448.6	1.7
	15 min	123.96	495.8	1.7
	10 min	90.59	545.8	1.7
	5 min	51.00	612.3	1.7
	1 min	15.23	917.5	1.7
	Maximum Momentary Current for 1 min upto cut off voltage		1015	
:	3 of 1.6 V		1245	Amps
	4 Expected Fault at bus due to battery		2490	Amps
E (1	Short Circuit Current at Pottery terminale		2490	Amno
) Short Circuit Current at Battery terminals) Time for which the battery can withstand		5 Sec	Amps
5 (ii	short circuit at terminals		3 360	
L	Short on our at terminals			
	6 Type/No. of Negative Plates per cell		Flat pasted; 12	
	7 Type/No. of Positive Plates per cell		Flat pasted; 11	
	B Size of negative plates, mm		315(L) x 140(W) x 2.65 (+/- 1) (Thk)	
	Size of positive plates, mm		315(L) x 140(W) x 4.5 (+/- 1) (Thk)	
	Type of Connection between cells		Bolted rigid copper connectors	
1:	2 Type of Separators		Absorptive glass mat	
1:	3 Thickness of Separators		4.5 (2 layers of 2.25 mm each)	
1.	Dimensison of 2 volts cell (LXWXH), mm		167 (+/-3) mm x 172 (+/-3) mm x 378 (+/- 5) mm	
1:	5 Clearance between the bottom of the plates and container		5 mm	
1	6 Material of Container		Polypropylene Co-polymer	

17	Recommended Charging Rate	
(i)	Float Charging Voltage	MEXIDE
(1)		2.27 +/- 0.02 VPC
	between ambient temp. (-)5-14 ° C	
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC
(::)	•	
(ii)		62.25 Amps (Max)
(iii)	Trickle Charging Voltage	NA
(iv)	Trickle Charging Current	NA
(v)		2.35 Volts
	Doost Onlarging Voltage	
(vi)	Boost Charging Current	83 Amps.
(vii)	Time taken to full charge from 100%	72 Hrs (Min)
	discharge state by constant voltage	2.1 volts(ocv)
	charging & voltage at the end of this charge	· · · · ·
6		
(viii)	Equalising Charging Current;Voltage	NA
18	Guaranteed efficiencies at 10 hrs rate	
_	(a) Ampere-hour efficiency	90%
	(b) Watt-hour efficiency	80%
10	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)
19	Allowable voltage lipple	
		0.5 % RMS of the charging voltage(Float charging)
20	Internal Resistance of each cell at	
20		0.40 milli share min
	Fully Charged Condition	0.42 milli ohms min
21	Total Resistance of Battery ; milliohms	Depending on no. of cells
21	Total Resistance of Dattery, minionins	Depending on no. or cens
22	Overall Dimensions of each complete	Length 619 +/- 5, Width 445 +/- 5, Height 388 +/- 5
	•	
	module (LxWxH) in mm	(6 cell module)
23	Weight of unpacked and complete module	156.3 +/- 5% Kgs (Single 6 cell module)
	with electrolyte ; Kgs	·····
	with electrolyte, rigs	
24	Material of Modules	Powder coated MS
25	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor
_0		
26	Loss of capacity due to self discharge	< 0.5% per week of c-10 capacity
27	The period for which the battery should be	If stored in Indian ambient temp of 30 deg C
	stored after supply in charged conditions	cells will need freshning charge once
		in every three months, however if stored
		at higher or lower temperature freshning
		charge to be provided as recommended.
		charge to be provided as recommended.
1		
1		
28	Amount of Hydrogen evolved during normal	Less than 200ppm
	normal float charging	normal float condition
1	nomarnoat charging	
1		
29	Recommended interval at which battery	Once annually
1	should be discharged at 10 hr discharge rate	
L	J J J	
	No. of shows discharge and the	1
30	No. of charge-discharge cycle battery can	1
1	give during its entire life	
1	at 20% DOD	4000 cycles
		,
	at 50% DOD	1800 cycles
1	at 80% DOD	1400 cycles
1		1
31	Expected Life of Battery in years	20 Yrs at 27 deg C in ideal float condition.
		IEC 60896 - 21 & 22,
1		JIS : C 8704-2, : 1998
	Ann Banklan standard	ANSI T1 330,
32	Applicable standard	GR/BAT-01/03-MARCH 2004,
		IS 15549 : 2005;
1		10 100 10 . 2000,



SL. NO.	DESCRIPTION		DETAILS	NDUSTRIES LIMITED
1 (a) (i) (ii) (iii)	Capacity in Ah At 27 ° C Initial Rated End of Life		425 425 340	
(b)	Rated Capacity(in Ah) at minimum ambient temperature of (as per IS 15549 : 2005)		Formula : Ct = { 1+ 0.0043 (t-27) }	
(c)	Rated Capacity(in Ah) at maximum ambient temperature of (as per IS 15549 : 2005)		Formula : Ct = { 1+ 0.0043 (t-27) }	
2 C	apacity at Various Discharge Rates at 27°C <i>Period of Discharge</i>	Ah capacities	Discharge Current (Amps)	End Cell Voltage (Volts)
3 of	10Hr 9Hr 8Hr 7Hr 6Hr 5Hr 4Hr 3Hr 2Hr 1Hr 50 min 40 min 30 min 20 min 15 min 10 min 5 min 10 min 5 min 1 min	425.00 416.08 403.75 389.73 373.58 354.03 332.35 304.73 269.03 212.50 198.48 182.75 170.00 153.00 126.95 92.78 52.23 15.60	42.5 46.2 50.5 55.7 62.3 70.8 83.1 101.6 134.5 212.5 238.3 274.4 340.0 459.5 507.8 558.9 627.0 939.6 1275	1.75 1.75 1.75 1.75 1.75 1.75 1.74 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7
5 (i) SI 5 (ii) Ti	hort Circuit Current at Battery terminals ime for which the battery can withstand hort circuit at terminals		2550 2550 5 Sec	Amps
6 Ty	ype/No. of Negative Plates per cell		Flat pasted; 12	
	ype/No. of Positive Plates per cell		Flat pasted; 11	
	ize of negative plates, mm		315(L) x 140(W) x 2.65 (+/- 1) (Thk)	
	ize of positive plates, mm		315(L) x 140(W) x 4.5 (+/- 1) (Thk)	
	ype of Connection between cells		Bolted rigid copper connectors	
	ype of Separators		Absorptive glass mat	
1211	hickness of Separators		4.5 (2 layers of 2.25 mm each)	

13	Dimensison of 2 volts cell (LXWXH), mm	167 (+/-3) mm x 172 (+/-3) mm x 378 (+/- 5) mm
	Clearance between the bottom of the plates and container	5 mm
15	Material of Container	Polypropylene Co-polymer

16	Recommended Charging Rate		
(i)	Float Charging Voltage		MEXIDE
(1)	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC	INDUSTRIES LIMITED
	between ambient temp. 15-24 ° C	2.27 +/- 0.02 VPC	
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC	
(::)	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC	
(ii)	Float Charging Current	63.75	Amps (Max)
(iii)	Trickle Charging Voltage	NA	
(iv)	Trickle Charging Current	NA	N / - 1(-
(v)	Boost Charging Voltage	2.35	Volts
(vi)	Boost Charging Current	85 70 Hzs (Mis)	Amps.
(vii)		72 Hrs (Min)	
	discharge state by constant voltage	2.1 volts(ocv)	
(,)	charging & voltage at the end of this charge	NA	
(viii)	Equalising Charging Current;Voltage	NA	
17	Guaranteed efficiencies at 10 hrs rate		
17	(a) Ampere-hour efficiency	90%	
	(b) Watt-hour efficiency	80%	
	(b) Watthout enciency	0075	
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk cha	arging)
		0.5 % RMS of the charging voltage(Float ch	
10	luternal Desistance of each call at		
19	Internal Resistance of each cell at Fully Charged Condition	0.46	milli ohms min
		0.40	
20	Total Resistance of Battery ; milliohms	Depending on no. of cells	
	Overall Dimensions of each complete	Length 619 +/- 5, Width 445 +/- 5, Height 38	38 +/- 5
	module (LxWxH) in mm	(6 cell module)	
22	Weight of unpacked and complete module	156.3 +/- 5% Kgs (Single 6 cell module)	
	with electrolyte ; Kgs		
23	Material of Modules	Powder coated MS	
24	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with	flame arrestor
25	Loss of capacity due to self discharge	< 0.5% per week of c-10 capacity	
26	The period for which the battery should be	If stored in Indian ambient temp of 30 deg C	;
	stored after supply in charged conditions	cells will need freshning charge once	
		in every three months, however if stored	
		at higher or lower temperature freshning	
		charge to be provided as recommended.	
	Amount of Hydrogen evolved during normal	Less than 200ppm	
		normal float condition	
	normal float charging		
28	Recommended interval at which battery	Once annually	
20	should be discharged at 10 hr discharge rate	Shoo annaany	
		• • • • • • • • • • • • • • • • • • •	
29	No. of charge-discharge cycle battery can		
	give during its entire life		
	at 20% DOD	4000 cycles	
	at 50% DOD	1800 cycles	
	at 80% DOD	1400 cycles	
	Evenented Life of Dettermin verse	20 Vm et 27 de s O is ideal (la strans d'ile	
30	Expected Life of Battery in years	20 Yrs at 27 deg C in ideal float condition.	

31 Applicable standard	IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 ANSI T1 330, GR/BAT-01/03-MARCH 2004, IS 15549 : 2005;
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		0101400		DUSTRIES LIMITED
SL. NO.	DESCRIPTION		DETAILS	
1	Capacity in Ah At 27 ° C			
(a) (i)			430	
(i) (ii)			430	
(ii) (iii)			344	
(,			011	
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct = { 1+ 0.0043 (t-27) }	
. ,	ambient temperature of (as per IS 15549 : 2005)			
(c)			Formula : Ct = { 1+ 0.0043 (t-27) }	
	ambient temperature of (as per IS 15549 : 2005)	1		-
2	Capacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ah capacities	Discharge Current	End Cell
	r chou or Discharge	An euplicities	(Amps)	Voltage
			(*********	(Volts)
				, ,
	10Hr	430.00	43.0	1.75
	9Hr	420.97	46.8	1.75
	8Hr	408.50	51.1	1.75
	7Hr	394.31	56.3	1.75
	6Hr	377.97	63.0	1.75
	5Hr 4Hr	358.19 336.26	71.6 84.1	1.75 1.74
	4HI 3Hr	308.31	102.8	1.74
	2Hr	272.19	136.1	1.74
	1Hr	215.00	215.0	1.7
	50 min	200.81	241.1	1.7
	40 min	184.90	277.6	1.7
	30 min	172.00	344.0	1.7
	20 min	154.80	464.9	1.7
	15 min	128.44	513.8	1.7
	10 min	93.87	565.5	1.7
	5 min	52.85	634.4	1.7
	1 min	15.78	950.7	1.7
	Maximum Momentary Current for 1 min upto cut off voltage			1
	of 1.6 V		1290	Amps
Ū				
4	Expected Fault at bus due to battery		2580	Amps
	Short Circuit Current at Battery terminals		2580	Amps
5 (11)	Time for which the battery can withstand short circuit at terminals		5 Sec	
	Short circuit at terminals			
6	Type/No. of Negative Plates per cell		Flat pasted; 12	
Ĭ	,			
7	Type/No. of Positive Plates per cell		Flat pasted; 11	
8	Size of negative plates, mm		315(L) x 140(W) x 2.65 (+/- 1) (Thk)	
9	Size of positive plates, mm		315(L) x 140(W) x 4.5 (+/- 1) (Thk)	
10	Type of Connection between cells		Bolted rigid copper connectors	
10				
12	Type of Separators		Absorptive glass mat	
13	Thickness of Separators		4.5 (2 layers of 2.25 mm each)	
14	Dimensison of 2 volts cell (LXWXH), mm		167 (+/-3) mm x 172 (+/-3) mm x 378 (+/- 5) mm	
-	Oleans the het was the hetter:			
15	Clearance between the bottom		E mm	
	of the plates and container		5 mm	
16	Material of Container		Polypropylene Co-polymer	
10			. e.jp. opjiono oo poljinoi	

17	5 5	
(i)		INDUSTRIES LIMITED
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC
(ii)	Float Charging Current	64.5 Amps (Max)
(iii)	Trickle Charging Voltage	NA
(iv)		NA
(v)		2.35 Volts
(vi)		86 Amps.
	0.0	
(vii)		72 Hrs (Min)
	discharge state by constant voltage	2.1 volts(ocv)
	charging & voltage at the end of this charge	
(viii)	Equalising Charging Current;Voltage	NA
18	Guaranteed efficiencies at 10 hrs rate	
	(a) Ampere-hour efficiency	90%
	(b) Watt-hour efficiency	80%
	(-) ····································	
10	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)
10	i lionable voltage ripple	0.5 % RMS of the charging voltage(Float charging)
20	Internal Resistance of each cell at	
	Fully Charged Condition	0.46 milli ohms m
21	Total Resistance of Battery ; milliohms	Depending on no. of cells
22	Overall Dimensions of each complete	Longth 610 $1/5$ Width 445 $1/5$ Hoight 299 $1/5$
22	Overall Dimensions of each complete	Length 619 +/- 5, Width 445 +/- 5, Height 388 +/- 5
	module (LxWxH) in mm	(6 cell module)
23	Weight of unpacked and complete module	156.3 +/- 5% Kgs (Single 6 cell module)
	with electrolyte ; Kgs	
24	Material of Modules	Powder coated MS
05		
25	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor
26	Lang of consolity due to calf discharge	· 0.5% norweak of a 10 consein
20	Loss of capacity due to self discharge	< 0.5% per week of c-10 capacity
27	The period for which the battery should be	If stored in Indian ambient temp of 30 deg C
	stored after supply in charged conditions	cells will need freshning charge once
		in every three months, however if stored
		at higher or lower temperature freshning
		charge to be provided as recommended.
28	Amount of Hydrogen evolved during normal	Less than 200ppm
	normal float charging	normal float condition
20	Recommended interval at which battery	Once annually
28	should be discharged at 10 hr discharge rate	
<u> </u>		I
30	No. of charge-discharge cycle battery can	
	give during its entire life	
1	at 20% DOD	4000 cycles
1	at 50% DOD	1800 cycles
1	at 50% DOD at 80% DOD	1400 cycles
1		1700 69665
21	Expected Life of Battery in years	20 Yrs at 27 deg C in ideal float condition.
51	Expected Life of Battery in years	
		IEC 60896 - 21 & 22,
		JIS : C 8704-2, : 1998
		ANSI T1 330,
32	Applicable standard	GR/BAT-01/03-MARCH 2004,
		IS 15549 : 2005;
		1010070.2000,



				USTRIES LIMITED
SL. NO.	DESCRIPTION		DETAILS	
1 (a)	Capacity in Ah At 27 ° C			
(a) (i)			440	
(ii)	Rated		440	
(iii)	End of Life		352	
(b)			Formula : Ct = { 1+ 0.0043 (t-27) }	
	ambient temperature of (as per IS 15549 : 2005)			
(c)	Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (t-27) }	
	ambient temperature of (as per IS 15549 : 2005)			
2	Capacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ab capacities	Discharge Current	End Cell
	Feriod of Discharge	Ah capacities	(Amps)	Voltage
			((Volts)
	10Hr	440.00	44.0	1.75
	9Hr 8Hr	430.76 418.00	47.9 52.3	1.75 1.75
	o⊓i 7Hr	403.48	52.5	1.75
	6Hr	386.76	64.5	1.75
	5Hr	366.52	73.3	1.75
	4Hr	344.08	86.0	1.74
	3Hr	315.48	105.2	1.74
	2Hr	278.52	139.3	1.7
	1Hr 50 min	220.00 205.48	220.0 246.7	1.7 1.7
	40 min	205.48 189.20	240.7 284.1	1.7
	30 min	176.00	352.0	1.7
	20 min	158.40	475.7	1.7
	15 min	131.43	525.7	1.7
	10 min	96.05	578.6	1.7
	5 min	54.08	649.2	1.7
	1 min	16.15	972.8	1.7
	Maximum Momentary Current for 1 min upto cut off voltage			1.
3	of 1.6 V		1320	Amps
4	Expected Fault at hus due to bettery		2640	4
4	Expected Fault at bus due to battery		2640	Amps
5 (i)	Short Circuit Current at Battery terminals		2640	Amps
5 (ii)	Time for which the battery can withstand		5 Sec	
	short circuit at terminals			
6	Type/No. of Negative Plates per cell		Flat pasted; 12	
0	Type/No. of Negative Flates per cell		Flat pasted, 12	
7	Type/No. of Positive Plates per cell		Flat pasted; 11	
8	Size of negative plates, mm		315(L) x 140(W) x 2.65 (+/- 1) (Thk)	
0	Size of positive plates, mm		315(L) x 140(W) x 4.5 (+/- 1) (Thk)	
9	Size of positive plates, min		315(L) x 140(W) x 4.5 (+/- 1) (111K)	
10	Type of Connection between cells		Bolted rigid copper connectors	
12	Type of Separators		Absorptive glass mat	
10	Thiskness of Concentration		4.5 (0 laws of 0.05 mm soch)	
13	Thickness of Separators		4.5 (2 layers of 2.25 mm each)	
14	Dimensison of 2 volts cell (LXWXH), mm		167 (+/-3) mm x 172 (+/-3) mm x 378 (+/- 5) mm	
15	Clearance between the bottom			
	of the plates and container		5 mm	
10	Material of Container		Polypropylong Co. solymer	
16	Material of Container		Polypropylene Co-polymer	

17	Recommended Charging Rate	
(i)		THOUSTRIES UNDER
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC
(ii)	Float Charging Current	66 Amps (Max)
	Trickle Charging Voltage	NA (Max)
(iii)		
(iv)		NA
(v)		2.35 Volts
(vi)		88 Amps.
(vii)		72 Hrs (Min)
	discharge state by constant voltage	2.1 volts(ocv)
	charging & voltage at the end of this charge	
(viii)	Equalising Charging Current;Voltage	NA
· · ·		
19	Guaranteed efficiencies at 10 hrs rate	
10		000/
	(a) Ampere-hour efficiency	90%
	(b) Watt-hour efficiency	80%
19	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)
		0.5 % RMS of the charging voltage(Float charging)
	·	
20	Internal Resistance of each cell at	
	Fully Charged Condition	0.46 milli ohms m
-		
21	Total Resistance of Battery ; milliohms	Depending on no. of cells
22	Overall Dimensions of each complete	Length 619 +/- 5, Width 445 +/- 5, Height 388 +/- 5
22	module (LxWxH) in mm	(6 cell module)
		(o cell module)
23	Weight of unpacked and complete module	156.3 +/- 5% Kgs (Single 6 cell module)
	with electrolyte ; Kgs	
24	Material of Modules	Powder coated MS
05		
25	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor
26	Loss of capacity due to self discharge	< 0.5% per week of c-10 capacity
20	Loss of capacity due to sell discharge	< 0.3% per week of C-10 capacity
07	The second for the destruction of a little	
27	The period for which the battery should be	If stored in Indian ambient temp of 30 deg C
	stored after supply in charged conditions	cells will need freshning charge once
		in every three months, however if stored
		at higher or lower temperature freshning
		charge to be provided as recommended.
		0
28	Amount of Hydrogen evolved during normal	Less than 200ppm
20	normal float charging	normal float condition
1	normai noai chaiging	
		On an annually
29	Recommended interval at which battery	Once annually
<u> </u>	should be discharged at 10 hr discharge rate	
20	No. of charge-discharge cycle battery can	
30	give during its entire life	
1	5 5 F	1000 evelop
1	at 20% DOD	4000 cycles
1	at 50% DOD	1800 cycles
1	at 80% DOD	1400 cycles
	Even entrol Life of Detter via via serie	
31	Expected Life of Battery in years	20 Yrs at 27 deg C in ideal float condition.
		IEC 60896 - 21 & 22,
1		JIS : C 8704-2, : 1998
1		
30	Applicable standard	ANSI T1 330,
52		GR/BAT-01/03-MARCH 2004,
1		IS 15549 : 2005;



SL.NO.	DESCRIPTION		DETAILS	
1	Capacity in Ah			
(a)	At 27 ° C			
(i)	Initial		500	
(ii)	Rated		500	
(iii)	End of Life		400	
(1-)				
(b)	Rated Capacity(in Ah) at minimum ambient temperature of (as per IS 15549 : 2005)		Formula : Ct = { 1+ 0.0043 (t-27) }	
	ambient temperature of (as per 15 15549 . 2005)			
(c)	Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (t-27) }	
(0)	ambient temperature of (as per IS 15549 : 2005)			
2	Capacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ah capacities	Discharge Current	End Cell
			(Amps)	Voltage
				(Volts)
		_		
1	10Hr	500.00	50.0	1.75
	9Hr	489.50	54.4	1.75
	8Hr 7Hr	475.00	59.4	1.75
		458.50	65.5	1.75
1	6Hr 5Hr	439.50 416.50	73.3 83.3	1.75 1.75
	4Hr	391.00	97.8	1.75
	3Hr	358.50	119.5	1.74
	2Hr	316.50	158.3	1.74
	1Hr	250.00	250.0	1.7
	50 min	233.50	280.3	1.7
	40 min	215.00	322.8	1.7
	30 min	200.00	400.0	1.7
	20 min	180.00	540.5	1.7
	15 min	149.35	597.4	1.7
	10 min	109.15	657.5	1.7
	5 min	61.45	737.7	1.7
	1 min	18.35	1105.4	1.7
	Maximum Momentary Current for 1 min upto cut off voltage		1500	Amps
3	of 1.6 V			
1	Expected Fault at bus due to battery		3000	Amps
4	Expected 1 aut at bus due to battery		5000	Ашра
5 (i)	Short Circuit Current at Battery terminals		3000	Amps
	Time for which the battery can withstand		5 Sec	, anpo
- ()	short circuit at terminals			
1			•	-
6	Type/No. of Negative Plates per cell		Flat pasted; 6	
7	Type/No. of Positive Plates per cell		Flat pasted; 5	
1				
8	Size of negative plates, mm		528 +/-1 (L) x 170 +/0.05 (W) x 3.5 (+/-0.15) (Thk)	
9	Size of positive plates, mm		528 +/-1 (L) x 170 +/0.05 (W) x 5.9 (+/-0.15) (Thk)	
10	Type of Connection between cells		Bolted rigid copper connectors	
	Turne of Separatore		Absorptive close met	
11	Type of Separators		Absorptive glass mat	
10	Thickness of Separators		5.3 (2 layers of 2.65 mm each)	
12	THICKNESS OF SEPARATORS			
12	Dimensison of 2 volts cell (LXWXH), mm		199 (+/-3) x 120 (+/-3) x 578.5 (+/- 5)	
13			133 (T/-3) X 120 (T/-3) X 370.3 (T/- 3)	
14	Clearance between the bottom			
14	of the plates and container		5 mm	
15	Material of Container		Polypropylene Co-polymer	
.0			1 VI - I V I - V	

16	Recommended Charging Rate		
(i)	Float Charging Voltage		
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC	INDUSTRIES LIMITED
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC	
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC	
		2.20 +/- 0.02 VPC	
	between ambient temp. 35-40 ° C		
(ii)		75	Amps (Max)
(iii)	Trickle Charging Voltage	NA	
(iv)	Trickle Charging Current	NA	
(v)		2.35	Volts
(vi)		100	Amps.
• • •			Amps.
(vii)		72 Hrs (Min)	
	discharge state by constant voltage	2.1 volts(ocv)	
	charging & voltage at the end of this charge		
(viii)	Equalising Charging Current;Voltage	NA	
47			
17	Guaranteed efficiencies at 10 hrs rate	90%	
	(a) Ampere-hour efficiency		
	(b) Watt-hour efficiency	80%	
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)	
		0.5 % RMS of the charging voltage(Float charging)	
19	Internal Resistance of each cell at Fully Charged Condition	0.49	milli ohms
	·,		
20	Total Resistance of Battery ; milliohms	Depending on no. of cells	
21	Overall Dimensions of each complete	Length 880 +/- 5, Width 605 +/- 5, Height 176 +/- 5	
	module (LxWxH) in mm	(4 cell module)	
		(• • • • • • • • • • • • • • • • • • •	
22	Waight of uppeaked and complete medule	162 E 1/ EV/ Kap (Single 4 coll module)	
22	Weight of unpacked and complete module with electrolyte ; Kgs	162.5 +/- 5% Kgs (Single 4 cell module)	
	with electrolyte; rigs		
23	Material of Modules	Powder coated MS	
24	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arr	estor
25	Loss of capacity due to self discharge	< 0.5% per week of c-10 capacity	
20			
26	The period for which the battery should be	If stored in Indian ambient temp of 30 deg C	
	stored after supply in charged conditions	cells will need freshning charge once	
		in every three months, however if stored	
		at higher or lower temperature freshning	
		charge to be provided as recommended.	
		charge to be provided as recommended.	
07	Amount of Hudrogon avalued during normal	Lass than 200nnm	
27	Amount of Hydrogen evolved during normal	Less than 200ppm	
	normal float charging	normal float condition	
28	Recommended interval at which battery	Once annually	
	should be discharged at 10 hr discharge rate		
29	No. of charge-discharge cycle battery can		
	give during its entire life		
	at 20% DOD	4000 cycles	
	at 50% DOD	1800 cycles	
	at 80% DOD	1400 cycles	
30	Expected Life of Battery in years	20 Yrs at 27 deg C in ideal float condition.	
		IEC 60896 - 21 & 22,	
		JIS : C 8704-2, : 1998	
31	Applicable standard	ANSI T1 330,	
01			

		IEC 60896 - 21 & 22,
		JIS : C 8704-2, : 1998
31	Applicable standard	ANSI T1 330,
		GR/BAT-01/03-MARCH 2004,
		IS 15549 : 2005



				LIMITED
SL.NO.	DESCRIPTION		DETAILS	
-				
1	Capacity in Ah			
(a)	At 27 ° C			
(i)	Initial		510	
(ii)	Rated		510	
(iii)	End of Life		408	
(1)				
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct = { 1+ 0.0043 (t-27) }	
	ambient temperature of (as per IS 15549 : 2005)			
(c)	Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (t-27) }	
(0)	ambient temperature of (as per IS 15549 : 2005)			
2	Capacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ah capacities	Discharge Current	End Cell
			(Amps)	Voltage
				(Volts)
	10Hr	510.00	51.0	1.75
	9Hr	499.29	55.5	1.75
	8Hr	484.50	60.6	1.75
	7Hr	467.67	66.8	1.75
	6Hr	448.29	74.7	1.75
	5Hr	424.83	85.0	1.75
	4Hr 3Hr	398.82 365.67	99.7 121.9	1.74 1.74
	2Hr	322.83	121.9	1.74
	201 1Hr	255.00	255.0	1.7
	50 min	238.17	285.9	1.7
	40 min	219.30	329.3	1.7
	30 min	204.00	408.0	1.7
	20 min	183.60	551.4	1.7
	15 min	152.34	609.3	1.7
	10 min	111.33	670.7	1.7
	5 min	62.68	752.4	1.7
	1 min	18.72	1127.5	1.7
				-
	Maximum Momentary Current for 1 min upto cut off voltage		1530	Amps
3	of 1.6 V			
4	Expected Fault at bus due to battery		3060	Amps
4	Expected I add at bus due to battery		3080	Anips
5 (i)	Short Circuit Current at Battery terminals		3060	Amps
	Time for which the battery can withstand		5 Sec	,
	short circuit at terminals			
6	Type/No. of Negative Plates per cell		Flat pasted; 6	
7	Type/No. of Positive Plates per cell		Flat pasted; 5	
8	Size of negative plates, mm		528 +/-1 (L) x 170 +/0.05 (W) x 3.5 (+/-0.15) (Thk)	
9	Size of positive plates, mm		528 +/-1 (L) x 170 +/0.05 (W) x 5.9 (+/-0.15) (Thk)	
10	Turne of Connection between colle		Baltad rigid conner correctors	
10	Type of Connection between cells		Bolted rigid copper connectors	
11	Type of Separators		Absorptive glass mat	
	i ypo or deparators			
12	Thickness of Separators		5.3 (2 layers of 2.65 mm each)	
12				
13	Dimensison of 2 volts cell (LXWXH), mm		199 (+/-3) x 120 (+/-3) x 578.5 (+/- 5)	
10				
14	Clearance between the bottom		1	
	of the plates and container		5 mm	
			1	
15	Material of Container		Polypropylene Co-polymer	

16	Recommended Charging Rate		
(i)	Float Charging Voltage		MEXIDE
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC	EXIDE INDUSTRIES LIMITED
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC	
		2.23 +/- 0.02 VPC	
	between ambient temp. 25-34 ° C		
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC	
(ii)		76.5	Amps (Max)
(iii)	Trickle Charging Voltage	NA	
(iv)	Trickle Charging Current	NA	
(v)		2.35	Volts
(v) (vi)	0 0 0	102	Amps.
• • •		72 Hrs (Min)	Amps.
(vii)			
	discharge state by constant voltage	2.1 volts(ocv)	
	charging & voltage at the end of this charge		
(viii)	Equalising Charging Current;Voltage	NA	
17	Guaranteed efficiencies at 10 hrs rate		
17	(a) Ampere-hour efficiency	90%	
		80%	
	(b) Watt-hour efficiency	00%	
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)	
		0.5 % RMS of the charging voltage(Float charging)	
19	Internal Resistance of each cell at		
	Fully Charged Condition	0.44	milli ohms
20	Total Resistance of Battery ; milliohms	Depending on no. of cells	
21	Overall Dimensions of each complete	Length 880 +/- 5, Width 605 +/- 5, Height 176 +/- 5	
	module (LxWxH) in mm	(4 cell module)	
22	Weight of unpacked and complete module with electrolyte ; Kgs	162.5 +/- 5% Kgs (Single 4 cell module)	
23	Material of Modules	Powder coated MS	
24	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arre	stor
25	Loss of capacity due to self discharge	< 0.5% per week of c-10 capacity	
	The period for which the battery should be	If stored in Indian ambient temp of 30 deg C	
	stored after supply in charged conditions	cells will need freshning charge once	
		in every three months, however if stored	
		at higher or lower temperature freshning	
		charge to be provided as recommended.	
27	Amount of Hydrogen evolved during normal	Less than 200ppm	
	normal float charging	normal float condition	
	normal noar onarging		
~~~	December and adjuster of subject heatings	Ones enough	
	Recommended interval at which battery	Once annually	
	should be discharged at 10 hr discharge rate		
29	No. of charge-discharge cycle battery can		
-	give during its entire life		
	at 20% DOD	4000 cycles	
	at 50% DOD	1800 cycles	
	at 80% DOD	1400 cycles	
30	Expected Life of Battery in years	20 Yrs at 27 deg C in ideal float condition.	
		IEC 60896 - 21 & 22,	
		JIS : C 8704-2, : 1998	
31	Applicable standard	ANSI T1 330,	

		IEC 60896 - 21 & 22,
		JIS : C 8704-2, : 1998
31	Applicable standard	ANSI T1 330,
		GR/BAT-01/03-MARCH 2004,
		IS 15549 : 2005



SL. NO.	DESCRIPTION		DETAILS	
1 (a) (i) (ii) (iii)	(i) Initial (ii) Rated		600 600 480	
(b)	Rated Capacity(in Ah) at minimum ambient temperature of ( as per IS 15549 : 2005)	Formula : Ct = { 1+ 0.0043 (t-27) } Formula : Ct = { 1+ 0.0043 (t-27) }		
(c)	Rated Capacity(in Ah) at maximum ambient temperature of ( as per IS 15549 : 2005)			
2	Capacity at Various Discharge Rates at 27°C <i>Period of Discharge</i>	Ah capacities	Discharge Current (Amps)	End Cell Voltage (Volts )
3	10Hr 9Hr 8Hr 7Hr 6Hr 5Hr 4Hr 3Hr 2Hr 1Hr 50 min 40 min 30 min 20 min 15 min 10 min 5 min 1 min 1 min	600.00 587.40 570.00 550.20 527.40 499.80 469.20 430.20 379.80 300.00 280.20 258.00 240.00 216.00 179.22 130.98 73.74 22.02	60.0 65.3 71.3 78.6 87.9 100.0 117.3 143.4 189.9 300.0 336.4 387.4 480.0 648.6 716.9 789.0 885.2 1326.5	1.75 1.75 1.75 1.75 1.75 1.75 1.74 1.74 1.74 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7
5 (i)	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals		3600 3600 5 Sec	Amps Amps
6	Type/No. of Negative Plates per cell		Flat pasted;11	
	Type/No. of Positive Plates per cell		Flat pasted;10	
	Size of negative plates, mm		440(L) x 140(W) x 3.2 (+/-1) (Thk)	
	Size of positive plates, mm		440(L) x 140(W) x 5.3 (+/-1) (Thk)	
10	Type of Connection between cells		Bolted rigid copper connectors	
11	Type of Separators		Absorptive glass mat	
12	Thickness of Separators		5.3 (2 layers of 2.65 mm each)	
13	Dimensison of 2 volts cell (LXWXH), mm		189 (+/-3) mm x 172 (+/-3) mm x 50	7 (+/- 5) mm
14	Clearance between the bottom of the plates and container		5 mm	
15	Material of Container		Polypropylene Co-polymer	

16 (i)		
(i)	Recommended Charging Rate	
(.)	Float Charging Voltage	<b>EXIDE</b>
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC
<i>(</i> )	•	
(ii)	Float Charging Current	90 Amps (Max)
(iii)	Trickle Charging Voltage	NA
(iv)	Trickle Charging Current	NA
(v)	Boost Charging Voltage	2.35 Volts
(vi)	Boost Charging Current	120 Amps.
	Time taken to full charge from 100%	72 Hrs (Min)
	discharge state by constant voltage	2.1 volts(ocv)
	charging & voltage at the end of this charge	
(viii)	Equalising Charging Current;Voltage	NA
17	Guaranteed efficiencies at 10 hrs rate	
	(a) Ampere-hour efficiency	90%
		80%
	(b) Watt-hour efficiency	00%
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)
		0.5 % RMS of the charging voltage(Float charging)
19	Internal Resistance of each cell at	
	Fully Charged Condition	0.40 milli ohms min
	r diry onarged oondition	
20	Total Resistance of Battery ; milliohms	Depending on no. of cells
21	Overall Dimensions of each complete	Length 634 +/- 5, Width 580 +/- 5, Height 420 +/- 5
	module (LxWxH) in mm	( 6 cell module)
~~~		$240.0 \pm 1/100$ (Kee (Single C = 1) $= -100$
	Weight of unpacked and complete module	249.8 +/- 5% Kgs (Single 6 cell module)
	with electrolyte ; Kgs	
23	Material of Modules	
		Powder coated MS
		Powder coated MS
24	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor
24	Whether explosion vents are offered	
		Yes, self re-sealing rubber safety valve with flame arrestor
	Whether explosion vents are offered Loss of capacity due to self discharge	
25	Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
25 26	Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C
25 26	Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once
25 26	Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C
25 26	Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored
25 26	Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning
25 26	Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored
25 26	Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning
25 26	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
25 26 27	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
25 26 27	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
25 26 27	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
25 26 27	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
25 26 27 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
25 26 27 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
25 26 27 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
25 26 27 28 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
25 26 27 28 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
25 26 27 28 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
25 26 27 28 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles
25 26 27 28 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles
25 26 27 28 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually
25 26 27 28 29	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles

		IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998
31	Applicable standard	ANSI T1 330,
		GR/BAT-01/03-MARCH 2004,
		IS 15549 : 2005

<u>UPST 600</u>



NO.	DESCRIPTION		DETAILS	
1	Capacity in Ah			
(a)	At 27 ° C			
(i)	Initial		600	
(i) (ii)	Rated		600	
	End of Life		480	
(iii)			480	
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct = { 1+ 0.0043 (t-27) }	
	ambient temperature of (as per IS 15549 : 2005)			
(c)	Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (t-27) }	
	ambient temperature of (as per IS 15549 : 2005)			-
2 Ca	pacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ah capacities	Discharge Current	End Cell
	U		(Amps)	Voltage
			(7.11.20)	(Volts)
	10Hr	594.06	59.4	1.8
	9Hr	587.40	65.3	1.75
	8Hr	570.00	71.3	1.75
	7Hr	550.20	78.6	1.75
	6Hr	527.40	87.9	1.75
	5Hr	499.80	100.0	1.75
	4Hr	469.20	117.3	1.74
	3Hr	430.20	143.4	1.74
	2Hr	379.80	189.9	1.7
	1Hr	300.00	300.0	1.7
	50 min	280.20	336.4	1.7
	40 min	258.00	387.4	1.7
	30 min	240.00	480.0	1.7
	20 min	216.00	648.6	1.7
	15 min	179.22	716.9	1.7
	10 min	130.98	789.0	1.7
	5 min	73.74	885.2	1.7
	1 min	22.02	1326.5	1.7
Ма	ximum Momentary Current for 1 min upto cut off voltage o	f	I	
3 1.6		I	1800	Amps
4 Ex	pected Fault at bus due to battery		3600	Amps
5 (i) Sh	ort Circuit Current at Battery terminals		3600	Amps
	ne for which the battery can withstand		5 Sec	
	ort circuit at terminals		5 580	
6 Tv	pe/No. of Negative Plates per cell		Flat pasted;11	
7 Ту	pe/No. of Positive Plates per cell		Flat pasted;10	
8 Siz	e of negative plates, mm		440(L) x 140(W) x 3.2 (+/-1) (Thk)	
9 Siz	e of positive plates, mm		440(L) x 140(W) x 5.3 (+/-1) (Thk)	
10 Ту	pe of Connection between cells		Bolted rigid copper connectors	
11 Ty	pe of Separators		Absorptive glass mat	
12 Th	ickness of Separators		5.3 (2 layers of 2.65 mm each)	
			190(1/2) mm x $172(1/2)$ mm x 50	
4.0			$E_{1} = E_{1} = E_{1$	1 (1 1 / 1-) 100 100

13	Dimensison of 2 volts cell (LXWXH), mm	189 (+/-3) mm x 172 (+/-3) mm x 507 (+/- 5) mm
	Clearance between the bottom of the plates and container	5 mm
15	Material of Container	Polypropylene Co-polymer

16	Recommended Charging Rate	
16 (i)	Float Charging Voltage	
(1)	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC
	between ambient temp. ()o 14 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 25 34 °C	2.20 +/- 0.02 VPC
(ii)	Float Charging Current	90 (Max)
(ii) (iii)	Trickle Charging Voltage	NA (Max)
(iii)	Trickle Charging Current	NA
(iv) (v)	Boost Charging Voltage	2.35 Volts
(v) (vi)	Boost Charging Current	120 Amps.
	Time taken to full charge from 100%	72 Hrs (Min)
`` '	discharge state by constant voltage	2.1 volts(ocv)
	charging & voltage at the end of this charge	2.1 VOIIS(00V)
(viii)	Equalising Charging Current;Voltage	NA
(*111)	Equalising Onarging Ourient, Voltage	
17 (Guaranteed efficiencies at 10 hrs rate	
	(a) Ampere-hour efficiency	90%
	(b) Watt-hour efficiency	80%
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)
		0.5 % RMS of the charging voltage(Float charging)
19 I	Internal Resistance of each cell at	
F	Fully Charged Condition	0.40 milli ohms min
20	Total Resistance of Battery ; milliohms	Depending on no. of cells
21 (Overall Dimensions of each complete	Length 796 $1/5$ Midth 510 $1/5$ Height 244 $1/5$
	Overall Dimensions of each complete module (LxWxH) in mm	Length 786 +/- 5, Width 510 +/- 5, Height 244 +/- 5 (4 cell module)
ſ		
22 \	Weight of unpacked and complete module	171.5+/- 5% Kgs (Single 4 cell module)
	with electrolyte ; Kgs	
23	Material of Modules	Powder coated MS
24 \	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor
25 l	Loss of capacity due to self discharge	< 0.5% per week of c-10 capacity
26	The period for which the better should be	If starsd in Indian ambient terms of 20 day C
	The period for which the battery should be	If stored in Indian ambient temp of 30 deg C
5	stored after supply in charged conditions	cells will need freshning charge once
		in every three months, however if stored
		at higher or lower temperature freshning
		charge to be provided as recommended.
27	Amount of Hydrogen evolved during normal	Less than 200ppm
	normal float charging	normal float condition
	Recommended interval at which battery	Once annually
S	should be discharged at 10 hr discharge rate	
29	No. of charge-discharge cycle battery can	
	give during its entire life	
Ì	at 20% DOD	4000 cycles
	at 50% DOD	1800 cycles
	at 80% DOD	1400 cycles
0.0	Expected Life of Battery in years	20 Yrs at 27 deg C in ideal float condition.

		IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998
31	Applicable standard	ANSI T1 330,
		GR/BAT-01/03-MARCH 2004,
		IS 15549 : 2005



SL. NO.	SL. NO. DESCRIPTION DETAILS					
1	1 Capacity in Ah					
(a)	At 27 ° C					
(i)	Initial		650			
(ii)	Rated		650			
(iii)) End of Life		520			
			Formula (Q) (A) and (A)			
(b)	Rated Capacity(in Ah) at minimum ambient temperature of (as per IS 15549 : 2005)		Formula : Ct = { 1+ 0.0043 (t-27) }			
	ambient temperature of (as per 10 10049 . 2000)					
(c)	Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (t-27) }			
	ambient temperature of (as per IS 15549 : 2005)					
2	Capacity at Various Discharge Rates at 27°C					
	Period of Discharge	Ah capacities	Discharge Current	End Cell		
	Feriou of Discharge	Ancapacities	(Amps)	Voltage		
			((Volts)		
	10Hr	650.00	65.0	1.75		
	9Hr	636.35	70.7	1.75		
	8Hr	617.50	77.2	1.75		
	7Hr	596.05	85.2	1.75		
	6Hr	571.35	95.2	1.75		
	5Hr	541.45	108.3	1.75		
	4Hr	508.30	127.1	1.74		
	3Hr	466.05	155.4	1.74		
	2Hr	411.45	205.7	1.7		
	1Hr	325.00	325.0	1.7		
	50 min	303.55	364.4	1.7		
	40 min	279.50	419.7	1.7		
	30 min	260.00	520.0	1.7		
	20 min	234.00	702.7	1.7		
	15 min	194.16	776.6	1.7		
	10 min	141.90	854.8	1.7		
	5 min	79.89	959.0	1.7		
	1 min	23.86	1437.0	1.7		
I						
	Maximum Momentary Current for 1 min upto cut off voltage		1950	Amps		
3	of 1.6 V		1000	/ impo		
4	Expected Fault at bus due to battery		3900	Amps		
5 (i)	Short Circuit Current at Battery terminals		3900	Amno		
	Time for which the battery can withstand		5 Sec	Amps		
5 (II)	short circuit at terminals		3 860			
6	Type/No. of Negative Plates per cell		Flat pasted; 7			
_	Tyrne/Ne. of Depitive Diotec per coll		Flat postadi 6			
7	Type/No. of Positive Plates per cell		Flat pasted; 6			
8	Size of negative plates, mm		528 ± 1 (L) x 170 ± 0.05 (W) x 3.5 ± 0.15 (Thk)			
9	Size of positive plates, mm		528 ± 1 (L) x 170 ± 0.05 (W) x 5.9 ± 0.15 (Thk)			
10	Type of Connection between cells		Bolted rigid copper connectors			
11	Type of Separators		Absorptive glass mat			
12	Thickness of Separators		5.3 (2 layers of 2.65 mm each)			
13	Dimensison of 2 volts cell (LXWXH), mm		199 (+/-3) mm x 120 (+/-3) mm x 578.5 (+/- 5) mm			
14	Clearance between the bottom					
	of the plates and container		5 mm			
	Matarial of Container					
15	Material of Container		Polypropylene Co-polymer			

16			
(i)	Float Charging Voltage		
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC	INDUSTRIES LIMIT
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC	
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC	
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC	
(ii)		97.5	Amps (Max)
(iii)		NA	/ impo (max)
(iv)		NA	
	5 5		Valta
(v)	Boost Charging Voltage	2.35	Volts
(vi)		130	Amps.
(vii)	Time taken to full charge from 100%	72 Hrs (Min)	
	discharge state by constant voltage	2.1 volts(ocv)	
	charging & voltage at the end of this charge		
(viii)	Equalising Charging Current;Voltage	NA	
17	Guaranteed efficiencies at 10 hrs rate		
	(a) Ampere-hour efficiency	90%	
	(b) Watt-hour efficiency	80%	
	(b) Watt-hour enclency	00 %	
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)	
		0.5 % RMS of the charging voltage(Float charging)	
19	Internal Resistance of each cell at		
	Fully Charged Condition	0.45	milli ohms mi
20	Total Resistance of Battery ; milliohms	Depending on no. of cells	
21	Overall Dimensions of each complete	Length 880 +/- 5, Width 596 +/- 5, Height 176 +/- 5	
2.	module (LxWxH) in mm	(4 cell module)	
00	Weight of some all and an end of the second state		
22	Weight of unpacked and complete module	171.7 +/- 5% Kgs (Single 4 cell module)	
	with electrolyte ; Kgs		
23	Material of Modules	Powder coated MS	
20		· on a of obalisa me	
24	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor	
25	Loss of capacity due to self discharge	< 0.5% per week of c-10 capacity	
26	The period for which the battery should be	If stored in Indian ambient temp of 30 deg C	
	stored after supply in charged conditions	cells will need freshning charge once	
		in every three months, however if stored	
		at higher or lower temperature freshning	
		charge to be provided as recommended.	
		sharge to be provided as recommended.	
27	Amount of Hydrogen evolved during normal	Less than 200ppm	
	normal float charging	normal float condition	
	Decommended interval at which hatters		
28	Recommended interval at which battery	Once annually	
	should be discharged at 10 hr discharge rate		
29	No. of charge-discharge cycle battery can		
	give during its entire life		
	at 20% DOD	4000 cycles	
	at 50% DOD	1800 cycles	
	at 80% DOD	1400 cycles	
30	Expected Life of Battery in years	20 Yrs at 27 deg C in ideal float condition.	
20			
		IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998	
	Applicable standard	JIS : C 8704-2, : 1998 ANSI T1 330	
-21			

		IEC 60896 - 21 & 22,
		JIS : C 8704-2, : 1998
31	Applicable standard	ANSI T1 330,
		GR/BAT-01/03-MARCH 2004,
		IS 15549 : 2005



SL. NO.	DESCRIPTION		DETAILS	
1	Capacity in Ah			
(a)	At 27 ° C			
(i)	Initial		650	
(ii)	Rated		650	
(iii)	End of Life		520	
			Formula (Q) (A) and (A)	
(b)	Rated Capacity(in Ah) at minimum ambient temperature of (as per IS 15549 : 2005)		Formula : Ct = { 1+ 0.0043 (t-27) }	
	ambient temperature of (as per 10 10049 . 2000)			
(c)	Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (t-27) }	
	ambient temperature of (as per IS 15549 : 2005)			
2	Capacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ah capacities	Discharge Current	End Cell
	Feriou of Discharge	Ancapacities	(Amps)	Voltage
			((Volts)
	10Hr	650.00	65.0	1.75
	9Hr	636.35	70.7	1.75
	8Hr	617.50	77.2	1.75
	7Hr	596.05	85.2	1.75
	6Hr	571.35	95.2	1.75
	5Hr	541.45	108.3	1.75
	4Hr	508.30	127.1	1.74
	3Hr	466.05	155.4	1.74
	2Hr	411.45	205.7	1.7
	1Hr	325.00	325.0	1.7
	50 min	303.55	364.4	1.7
	40 min	279.50	419.7	1.7
	30 min	260.00	520.0	1.7
	20 min	234.00	702.7	1.7
	15 min	194.16	776.6	1.7
	10 min	141.90	854.8	1.7
	5 min	79.89	959.0	1.7
	1 min	23.86	1437.0	1.7
I				
	Maximum Momentary Current for 1 min upto cut off voltage		1950	Amps
3	of 1.6 V		1000	/ impo
4	Expected Fault at bus due to battery		3900	Amps
5 (i)	Short Circuit Current at Battery terminals		3900	Amno
	Time for which the battery can withstand		5 Sec	Amps
5 (II)	short circuit at terminals		3 860	
6	Type/No. of Negative Plates per cell		Flat pasted; 7	
_	Tyrne/Ne. of Depitive Diotec per coll		Flat postadi 6	
7	Type/No. of Positive Plates per cell		Flat pasted; 6	
8	Size of negative plates, mm		528 ± 1 (L) x 170 ± 0.05 (W) x 3.5 ± 0.15 (Thk)	
9	Size of positive plates, mm		528 ± 1 (L) x 170 ± 0.05 (W) x 5.9 ± 0.15 (Thk)	
10	Type of Connection between cells		Bolted rigid copper connectors	
11	Type of Separators		Absorptive glass mat	
12	Thickness of Separators		5.3 (2 layers of 2.65 mm each)	
13	Dimensison of 2 volts cell (LXWXH), mm		199 (+/-3) mm x 120 (+/-3) mm x 578.5 (+/- 5) mm	
14	Clearance between the bottom			
	of the plates and container		5 mm	
	Matarial of Container			
15	Material of Container		Polypropylene Co-polymer	

16	Recommended Charging Rate		
(i)	Float Charging Voltage		N EXID
(.)	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC	INDUSTRIES LIM
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC	
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC	
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC	
(::)			
(ii)	Float Charging Current	97.5	Amps (Max)
(iii)	Trickle Charging Voltage	NA	
(iv)	Trickle Charging Current	NA	
(v)	Boost Charging Voltage	2.35	Volts
		130	
(vi)			Amps.
(vii)	Time taken to full charge from 100%	72 Hrs (Min)	
	discharge state by constant voltage	2.1 volts(ocv)	
	charging & voltage at the end of this charge		
(viii)		NA	
(viii)	Equalising Charging Current, Voltage	NA	
17	Cuerenteed efficiencies at 10 hrs rate		
17	Guaranteed efficiencies at 10 hrs rate	2004	
	(a) Ampere-hour efficiency	90%	
	(b) Watt-hour efficiency	80%	
10	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)	
10	Allowable voltage ripple	0.5 % RMS of the charging voltage(Float charging)	
		0.5 % RMS of the charging voltage(Float charging)	
	Internal Resistance of each cell at		
	Fully Charged Condition	0.45	milli ohms m
20	Total Resistance of Battery ; milliohms	Depending on no. of cells	
20	Total Resistance of Dattery, minoritis	Depending on no. of cens	
21	Overall Dimensions of each complete	Length 880 +/- 5, Width 596 +/- 5, Height 176 +/- 5	
	module (LxWxH) in mm	(4 cell module)	
		(4 ceil module)	
22	Weight of unpacked and complete module	171.7 +/- 5% Kgs (Single 4 cell module)	
	with electrolyte ; Kgs		
23	Material of Modules	Powder coated MS	
24	M/hathan avelasian varia ava affarad		
24	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor	
25	Loss of capacity due to self discharge	< 0.5% per week of c-10 capacity	
26	The period for which the battery should be	If stored in Indian ambient temp of 30 deg C	
20			
	stored after supply in charged conditions	cells will need freshning charge once	
		in every three months, however if stored	
		at higher or lower temperature freshning	
		charge to be provided as recommended.	
27	Amount of Hydrogen evolved during normal	Less than 200ppm	
	normal float charging	normal float condition	
	norma noat charging	normal libat condition	
20	Decommended interval at which bottom:		
	Recommended interval at which battery	Once annually	
	should be discharged at 10 hr discharge rate		
20	No. of charge-discharge cycle battery can		
29	give during its entire life		
	at 20% DOD	4000 avalas	
		4000 cycles	
	at 50% DOD	1800 cycles	
	at 80% DOD	1400 cycles	
20	Expected Life of Battony in years	20 Vrs at 27 dag C in ideal flast condition	
30	Expected Life of Battery in years	20 Yrs at 27 deg C in ideal float condition.	
		IEC 60896 - 21 & 22,	
		JIS : C 8704-2, : 1998	
24	Applicable standard	ANICI T1 220	

		IEC 60896 - 21 & 22,
		JIS : C 8704-2, : 1998
31	Applicable standard	ANSI T1 330,
		GR/BAT-01/03-MARCH 2004,
		IS 15549 : 2005



SL. NO.	DESCRIPTION		DETAILS	INDUSTRIES LIMITED
BL. NO.	DESCRIPTION		DETAILS	
1	Capacity in Ah			
(a)	At 27 ° C			
(i)	Initial		680	
(ii) (iii)	Rated End of Life		680 544	
(111)			544	
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct = { 1+ 0.0043 (t-27) }	
	ambient temperature of (as per IS 15549 : 2005)			
(-)				
(c)	Rated Capacity(in Ah) at maximum ambient temperature of (as per IS 15549 : 2005)		Formula : Ct = { 1+ 0.0043 (t-27) }	
2	Capacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ah capacities	Discharge Current	End Cell
			(Amps)	Voltage
				(Volts)
	10Hr	680.00	68.0	1.75
	9Hr	665.72	74.0	1.75
	8Hr	646.00	80.8	1.75
	7Hr	623.56	89.1	1.75
	6Hr	597.72	99.6	1.75
	5Hr	566.44 531.76	113.3	1.75 1.74
	4Hr 3Hr	531.76 487.56	132.9 162.5	1.74
	2Hr	430.44	215.2	1.74
	1Hr	340.00	340.0	1.7
	50 min	317.56	381.2	1.7
	40 min	292.40	439.0	1.7
	30 min	272.00	544.0	1.7
	20 min	244.80	735.1	1.7
	15 min	203.12	812.5	1.7
	10 min	148.44	894.2	1.7
	5 min 1 min	83.57 24.96	1003.3 1503.4	1.7 1.7
	1 000	21.00	1000.1	1.7
	Maximum Momentary Current for 1 min upto cut off voltage of		2040	Amps
3	1.6 V		2040	лпрэ
4	Expected Fault at bus due to battery		4080	Amps
•			1000	/ 1100
5 (i)	Short Circuit Current at Battery terminals		4080	Amps
5 (ii)	Time for which the battery can withstand		5 Sec	
	short circuit at terminals			
6	Type/No. of Negative Plates per cell		Flat pasted;12	
0	Typerio. or negative r lates per cell		1 iai puoloa, 12	
7	Type/No. of Positive Plates per cell		Flat pasted;11	
8	Size of negative plates, mm		440(L) x 140(W) x 3.2 (+/-1) (Thk)	
	Size of positive plates, mm		440(L) x 140(W) x 5.3 (+/-1) (Thk)	
	Type of Connection between cells		Bolted rigid copper connectors	
	Type of Separators		Absorptive glass mat	
	Thickness of Separators		4.5 (2 layers of 2.25 mm each)	
14	Dimensison of 2 volts cell (LXWXH), mm		189 (+/-3) mm x 172 (+/-3) mm x 50	07 (+/- 5) mm
15	Clearance between the bottom of the plates and container		5 mm	
16	Material of Container		Polypropylene Co-polymer	

17	Recommended Charging Rate		
(i)	Float Charging Voltage		MEXID
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC	INDUSTRIES LIMITE
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC	
I	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC	
I	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC	
(ii)	Float Charging Current	102	Amps (Max)
(iii)	Trickle Charging Voltage	NA	
(iv)	Trickle Charging Current	NA	
(v)	Boost Charging Voltage	2.35	Volts
(vi)	Boost Charging Current	136	Amps.
(vii) Time taker	n to full charge from 100%	72 Hrs (Min)	
	state by constant voltage	2.1 volts(ocv)	
	voltage at the end of this charge		
(viii) Equalising	Charging Current;Voltage	NA	
18 Guarantee	d efficiencies at 10 hrs rate		
(a) Ampe	re-hour efficiency	90%	
(b) Watt-I	hour efficiency	80%	
19 Allowable	voltage ripple	1.5 % RMS of the charging vol	U ()
		0.5 % RMS of the charging vol	tage(Float charging)
	esistance of each cell at	0.40	
	narged Condition	0.46	milli ohm
21 Total Resis	stance of Battery ; milliohms	Depending on no. of cells	

21 Total	Resistance of Battery ; milliohms	Depending on no. of cells
	all Dimensions of each complete ile (LxWxH) in mm	Length 634 +/- 5, Width 580 +/- 5, Height 420 +/- 5 (6 cell module)
	ht of unpacked and complete module electrolyte ; Kgs	263.0 +/- 5% Kgs (Single 6 cell module)
24 Mater	rial of Modules	Powder coated MS
25 Whet	her explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor
26 Loss	of capacity due to self discharge	< 0.5% per week of c-10 capacity
	period for which the battery should be d after supply in charged conditions	If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
	unt of Hydrogen evolved during normal al float charging	Less than 200ppm normal float condition
	mmended interval at which battery d be discharged at 10 hr discharge rate	Once annually
	f charge-discharge cycle battery can during its entire life at 20% DOD at 50% DOD at 80% DOD	4000 cycles 1800 cycles 1400 cycles
31 Expe	cted Life of Battery in years	20 Yrs at 27 deg C in ideal float condition.
32	Applicable standard	IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 ANSI T1 330, GR/BAT-01/03-MARCH 2004, IS 15549 : 2005



			,	INDUSTRIES LIMITED
. NO.	DESCRIPTION		DETAILS	
1	Capacity in Ah			
(a)	At 27 ° C			
(i)	Initial		700	
(ii)	Rated		700	
(iii)	End of Life		560	
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct = C27{ 1+ 0.0043 (t-27) }	
. ,	ambient temperature of (as per IS 15549 : 2005)			
(c)	Rated Capacity(in Ah) at maximum ambient temperature of (as per IS 15549 : 2005)		Formula : Ct = C27 { 1+ 0.0043 (t-27) }	
20	Capacity at Various Discharge Rates at 27°C			
-				
	Period of Discharge	Ah capacities	Discharge Current	End Ce
			(Amps)	Voltag
				(Volts
	10Hr	700.00	70.0	1.75
	9Hr	685.30	76.1	1.75
	8Hr	665.00	83.1	1.75
	7Hr	641.90	91.7	1.75
	6Hr	615.30	102.6	1.75
	5Hr	583.10	116.6	1.75
	4Hr 3Hr	547.40	136.9	1.74 1.74
	2Hr	501.90 443.10	167.3 221.6	1.74
	1Hr	350.00	350.0	1.7
	50 min	326.90	392.4	1.7
	40 min	301.00	452.0	1.7
	30 min	280.00	560.0	1.7
	20 min	252.00	756.8	1.7
	15 min	209.09	836.4	1.7
	10 min	152.81	920.5	1.7
	5 min 1 min	86.03 25.69	1032.8 1547.6	1.7 1.7
Ν	Maximum Momentary Current for 1 min upto cut off voltage of		2100	4
	Maximum Momentary Current for 1 min upto cut off voltage of I.6 V		2100	Amps
			2100	Amps
31	1.6 V			
31			2100 4200	Amps Amps
3 1 4 E 5 (i) S	I.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals			
3 1 4 E 5 (i) S (ii) T	I.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Fime for which the battery can withstand		4200	Amps
3 1 4 E 5 (i) S (ii) T	I.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals		4200 4200	Amps
3 1 4 E 5 (i) S (ii) T	I.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Fime for which the battery can withstand		4200 4200	Amps
3 1 4 E 5 (i) S (ii) T 5 T	I.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Fime for which the battery can withstand short circuit at terminals		4200 4200 5 Sec	Amps
3 1 4 E 5 (i) S (ii) T 5 7 T	1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Fime for which the battery can withstand short circuit at terminals		4200 4200 5 Sec Flat pasted;13	Amps
3 1 4 E 5 (i) S (ii) T 5 7 T 8 S	I.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Fime for which the battery can withstand short circuit at terminals Fype/No. of Negative Plates per cell		4200 4200 5 Sec Flat pasted;13 Flat pasted;12	Amps
3 1 4 E 5 (i) S (ii) T 5 7 T 7 T 8 S 9 S	I.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Firme for which the battery can withstand short circuit at terminals Fype/No. of Negative Plates per cell Fype/No. of Positive Plates per cell Size of negative plates, mm		4200 4200 5 Sec Flat pasted;13 Flat pasted;12 440(L) x 140(W) x 3.2 (+/-1) (Thk)	Amps
3 1 4 E 5 (i) S (ii) T 5 7 T 8 S 9 S 10 T	I.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Fime for which the battery can withstand short circuit at terminals Fype/No. of Negative Plates per cell Fype/No. of Positive Plates per cell Size of negative plates, mm Size of positive plates, mm		4200 4200 5 Sec Flat pasted;13 Flat pasted;12 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk)	Amps
3 1 4 E 5 (i) S (ii) T 5 7 T 8 S 9 S 10 T 11 T	I.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Firme for which the battery can withstand short circuit at terminals Fype/No. of Negative Plates per cell Fype/No. of Positive Plates per cell Size of negative plates, mm Size of positive plates, mm		4200 4200 5 Sec Flat pasted;13 Flat pasted;12 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk) Bolted rigid copper connectors	Amps
3 1 4 E 5 (i) S (ii) T 7 T 8 S 9 S 10 T 11 T 12 T	I.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Fime for which the battery can withstand short circuit at terminals Fype/No. of Negative Plates per cell Fype/No. of Positive Plates per cell Size of negative plates, mm Size of positive plates, mm Fype of Connection between cells Fype of Separators		4200 4200 5 Sec Flat pasted;13 Flat pasted;12 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk) Bolted rigid copper connectors Absorptive glass mat	Amps
3 1 4 E 5 (i) S (ii) T 5 7 T 8 S 9 S 10 T 11 T 12 T 13 C 14 C	I.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Fime for which the battery can withstand short circuit at terminals Fype/No. of Negative Plates per cell Fype/No. of Positive Plates per cell Size of negative plates, mm Size of positive plates, mm Fype of Connection between cells Fype of Separators Fhickness of Separators Dimensison of 2 volts cell (LXWXH), mm Clearance between the bottom		4200 4200 5 Sec Flat pasted;13 Flat pasted;12 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk) Bolted rigid copper connectors Absorptive glass mat 5.3 (2 layers of 2.65 mm each) 303 (+/-3) mm x 172 (+/-3) mm x 507 (+/- 5) mm	Amps
3 1 4 E 5 (i) S (ii) T 5 7 T 8 S 9 S 10 T 11 T 12 T 13 C 14 C	I.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Fime for which the battery can withstand short circuit at terminals Fype/No. of Negative Plates per cell Fype/No. of Positive Plates per cell Size of negative plates, mm Size of positive plates, mm Fype of Connection between cells Fype of Separators Fhickness of Separators Dimensison of 2 volts cell (LXWXH), mm		4200 4200 5 Sec Flat pasted;13 Flat pasted;12 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk) Bolted rigid copper connectors Absorptive glass mat 5.3 (2 layers of 2.65 mm each)	Amps

10		
16	Recommended Charging Rate	A. EVINE
(i)	Float Charging Voltage	
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC
(ii)	Float Charging Current	105 Amps (Max)
(iii)	Trickle Charging Voltage	NA
(iv)	Trickle Charging Current	NA
(v)	Boost Charging Voltage	2.35 Volts
(vi)	Boost Charging Current	140 Amps.
(vii)	Time taken to full charge from 100%	72 Hrs (Min)
	discharge state by constant voltage	OCV 2.1 volts (Min.)
	charging & voltage at the end of this charge	
(viii)	Equalising Charging Current; Voltage	NA
· ,		
17	Guaranteed efficiencies at 10 hrs rate	
	(a) Ampere-hour efficiency	90%
		80%
	(b) Watt-hour efficiency	00%
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)
		0.5 % RMS of the charging voltage(Float charging)
10	Total Desistance of Battery , millishme	Depending on no. of colle
19	Total Resistance of Battery ; milliohms	Depending on no. of cells
20	Overall Dimensions of each complete	Length 462 +/- 5, Width 510 +/- 5, Height 363 +/- 5 (mm)
	module (LxWxH) in mm	(2 cell module)
		· · · · · · · · · · · · · · · · · · ·
21	Weight of unpacked and complete module	121.7 +/- 5% Kgs (Single 2 cell module)
21	with electrolyte ; Kgs	
	with electrolyte, rgs	
	Markanial of Marylulan	Develop sectod MO
22	Material of Modules	Powder coated MS
23		
	Whather explosion vents are offered	Vos solf re-sealing rubber safety valve with flame arrester
20	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor
	Whether explosion vents are offered Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
24	Loss of capacity due to self discharge	< 0.5% per week of c-10 capacity
24 25	Loss of capacity due to self discharge The period for which the battery should be	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C
24 25	Loss of capacity due to self discharge	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once
24 25	Loss of capacity due to self discharge The period for which the battery should be	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C
24 25	Loss of capacity due to self discharge The period for which the battery should be	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored
24 25	Loss of capacity due to self discharge The period for which the battery should be	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning
24 25	Loss of capacity due to self discharge The period for which the battery should be	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored
24 25	Loss of capacity due to self discharge The period for which the battery should be	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning
24 25	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
24 25 26	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
24 25 26	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
24 25 26	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
24 25 26	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
24 25 26	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
24 25 26 27	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
24 25 26 27	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
24 25 26 27	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
24 25 26 27	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
24 25 26 27	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles
24 25 26 27	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	 < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles
24 25 26 27	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	< 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles
24 25 26 27 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	 < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles
24 25 26 27 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	 < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles
24 25 26 27 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	 < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles
24 25 26 27 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	 < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles
24 25 26 27 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	 < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles 20 Yrs at 27 deg C in ideal float condition.
24 25 26 27 28 29	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD Expected Life of Battery in years	 < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998
24 25 26 27 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	 < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1800 cycles 1400 cycles 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 ANSI T1 330,
24 25 26 27 28 29	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD Expected Life of Battery in years	 < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998

	GENERAL TECHNICAL PARTICULARS	<u>UPST 1000</u>		
SL. NO.	DESCRIPTION		DETAILS	
1	Capacity in Ah			
(a) (i) (ii) (iii)	At 27 ° C Initial Rated End of Life		1000 1000 800	
(b)	Rated Capacity(in Ah) at minimum ambient temperature of (as per IS 15549 : 2005)		Formula : Ct ={ 1+ 0.0043 (t-27) }	
(c)	Rated Capacity(in Ah) at maximum ambient temperature of (as per IS 15549 : 2005)		Formula : Ct = { 1+ 0.0043 (t-27) }	
2	Capacity at Various Discharge Rates at 27°C Period of Discharge	Ah capacities	Discharge Current (Amps)	End Cell Voltage (Volts)
	10Hr 9Hr 8Hr 7Hr 6Hr 5Hr 4Hr 2Hr 1Hr 50 min 40 min 30 min 20 min 15 min 10 min 5 min 1 min	1000.00 979.00 917.00 879.00 833.00 782.00 717.00 633.00 500.00 467.00 430.00 400.00 360.00 298.70 218.30 122.90 36.70	100.0 108.8 118.8 131.0 146.5 166.6 195.5 239.0 316.5 500.0 560.6 645.6 800.0 1081.1 1194.8 1315.1 1475.4 2210.8	1.75 1.75 1.75 1.75 1.75 1.75 1.75 1.74 1.74 1.74 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7
3	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V		3000	Amps
5 (i)	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand		6000 6000 5 Sec	Amps Amps
	short circuit at terminals			
6	Type/No. of Negative Plates per cell		Flat pasted;18	
7	Type/No. of Positive Plates per cell		Flat pasted;17	
8	Size of negative plates, mm		440(L) x 140(W) x 3.2 (+/-1) (Thk)	
9	Size of positive plates, mm		440(L) x 140(W) x 5.3 (+/-1) (Thk)	
10	Type of Connection between cells		Bolted rigid copper connectors	
11	Type of Separators		Absorptive glass mat	
12	Thickness of Separators		5.3 (2 layers of 2.65 mm each)	
13	Dimensison of 2 volts cell (LXWXH), mm		303 (+/-3) mm x 172 (+/-3) mm x 507 (+/- 5) mm	
14	Clearance between the bottom of the plates and container		5 mm	
15	Material of Container		Polypropylene Co-polymer	

(')	Recommended Charging Rate	C EVI
(i)	Float Charging Voltage	
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC
(ii)	Float Charging Current	150 Amps (Ma
(iii)	Trickle Charging Voltage	NA
(iv)	Trickle Charging Current	NA
(v)	Boost Charging Voltage	2.35 Volts
(vi)	Boost Charging Current	200 Amps.
(vii)	Time taken to full charge from 100%	72 Hrs (Min)
	discharge state by constant voltage	OCV 2.1 volts (Min.)
	charging & voltage at the end of this charge	
(viii)	Equalising Charging Current;Voltage	NA
17	Guaranteed efficiencies at 10 hrs rate	
	(a) Ampere-hour efficiency	90%
	(b) Watt-hour efficiency	80%
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)
		0.5 % RMS of the charging voltage(Float charging)
19	Internal Resistance of each cell at	
	Fully Charged Condition	0.30 milli ohms
20	Total Resistance of Battery ; milliohms	Depending on no. of cells
21	Overall Dimensions of each complete	Length 462 +/- 5, Width 510 +/- 5, Height 363 +/- 5 (mm)
	module (LxWxH) in mm	(2 cell module)
22	Weight of unpacked and complete module	142.1 +/- 5% Kas (Sinale 2 cell module)
22	Weight of unpacked and complete module with electrolyte ; Kgs	142.1 +/- 5% Kgs (Single 2 cell module)
		142.1 +/- 5% Kgs (Single 2 cell module) Powder coated MS
23	with electrolyte ; Kgs	
23	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor
23 24 25	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
23 24 25	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C
23 24 25	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once
23 24 25	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored
23 24 25	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once
23 24 25 26	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
23 24 25 26 27	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning
23 24 25 26 27	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
23 24 25 26 27 27	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
23 24 25 26 27 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
23 24 25 26 27 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
23 24 25 26 27 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharge dat 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
23 24 25 26 27 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
23 24 25 26 27 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharge dat 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity

		IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998
31	Applicable standard	ANSI T1 330, GR/BAT-01/03-MARCH 2004, IS 15549 : 2005

<u>PPST 480</u>



				INDUSTRIES LIMITED
L. NO.	DESCRIPTION		DETAILS	
1	Capacity in Ah			
(a)	At 27 ° C			
(i)	Initial		480	
(ii)	Rated		480	
(iii)	End of Life		384	
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct = { 1+ 0.0043 (27-t) }	
	ambient temperature of (as per IS 15549 : 2005)			
(c)	Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (27-t) }	
(0)	ambient temperature of (as per IS 15549 : 2005)		1 Official : Gt = { 1+ 0.0043 (27-t) }	
2	Capacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ah capacities	Discharge Current	End Cell
			(Amps)	Voltage
				(Volts)
	4011-	400.00	49.0	4 75
	10Нг 9Нг	480.00 469.92	48.0 52.2	1.75 1.75
	8Hr	409.92	57.0	1.75
	7Hr	430.00	62.9	1.75
	6Hr	421.92	70.3	1.75
	5Hr	399.84	80.0	1.75
	4Hr	375.36	93.8	1.74
	3Hr	344.16	114.7	1.74
	2Hr	303.84	151.9	1.7
	1Hr	240.00	240.0	1.7
	50 min	224.16	269.1	1.7
	40 min	206.40	309.9	1.7
	30 min	192.00	384.0	1.7
	20 min	172.80	518.9	1.7
	15 min	143.38	573.5	1.7
	10 min	104.78	631.2	1.7
	5 min 1 min	58.99 17.62	708.2 1061.2	1.7 1.7
		11102	100112	
3	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V		1440	Amps
4	Expected Fault at bus due to battery		2880	Amps
-	Expected Fault at bus due to battery		2000	Апрэ
5 (i)	Short Circuit Current at Battery terminals		2880	Amps
	Time for which the battery can withstand		5 Sec	
	short circuit at terminals			
6	Type/No. of Negative Plates per cell		Flat pasted;7	
7	Type/No. of Positive Plates per cell		Flat pasted;6	
8	Size of negative plates, mm		470 ± 1 (H) x 150 ± 0.05 (W) x 3.6 ± 0.15 (Thk)	
9	Size of positive plates, mm		470 ± 1 (H) x 150 ± 0.05 (W) x 5.7 ± 0.15 (Thk)	
10	Type of Connection between cells		Bolted rigid copper connectors	
11	Type of Separators		Absorptive glass mat	
12	Thickness of Separators		5.4 (2 layers of 2.7 mm each)	
13	Dimensison of 2 volts cell (LXWXH), mm		183.0 (+/-3) mm x 162.0 (+/-3) mm x 529 (+/- 5) mm	
	Clearance between the bottom		Emm	
	of the plates and container		5 mm	
45	Material of Container		Polypropylene Co-polymer	

16	Recommended Charging Rate		
(i)	Float Charging Voltage		FYIDE
(1)	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC	INDUSTRIES LIMITED
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC	
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC	
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC	
(ii)	Float Charging Current	72	Amps (Max)
(iii)	Trickle Charging Voltage	NA	
(iv)	Trickle Charging Current	NA	
(v)	Boost Charging Voltage	2.35	Volts
(vi)	Boost Charging Current	96	Amps.
(vii)	Time taken to full charge from 100%	72 Hrs (Min)	
(*11)	discharge state by constant voltage	2.1 volts(ocv)	
	charging & voltage at the end of this charge	2.1 Volt3(00V)	
(viii)		NA	
(VIII)	Equalising Charging Current;Voltage	INA	
17	Guaranteed efficiencies at 10 hrs rate		
	(a) Ampere-hour efficiency	90%	
	(b) Watt-hour efficiency	80%	
10	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)	
10	, monable , onago rippio	0.5 % RMS of the charging voltage(Float charging)	
		0.5 % third of the charging voltage(r loat charging)	
19	Total Resistance of Battery ; milliohms	Depending on no. of cells	
-	···· · ··· · ··· · ··· · ···· · ········		
20	Overall Dimensions of each complete	Length 637.0 ^{+/- 5} , Width 581.0 ^{+/- 5} , Height 360.0 ^{+/- 5} (mm)	
	module (LxWxH) in mm	(6 cell module)	
21	Weight of unpacked and complete module	204.4 +/- 5% Kgs (Single 6 cell module)	
	with electrolyte ; Kgs		
22			
		Powder coated MS	
	Material of Modules	Powder coated MS	
23	Waternal of Modules Whether explosion vents are offered	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor	
23			
	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor	
24	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor	
24 25	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity	
24 25	Whether explosion vents are offered Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once	
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24 25	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.	
24 25 26	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm	
24 25 26	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.	
24 25 26	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition	
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24 25 26 27	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition	
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<u>PPST 500</u>



		<u></u>		INDUSTRIES LIMITED
L. NO.	DESCRIPTION		DETAILS	
	Occurrently to Ale		1	
(a)	Capacity in Ah At 27 ° C			
(a) (i)	Initial		500	
(i) (ii)	Rated		500	
(iii)	End of Life		400	
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct = { 1+ 0.0043 (27-t) }	
	ambient temperature of (as per IS 15549 : 2005)			
(c)	Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (27-t) }	
(c)	ambient temperature of (as per IS 15549 : 2005)		$101110112 \cdot 01 = \{1+0.0043(27-0)\}$	
2 Car	apacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ah capacities	Discharge Current	End Cell
			(Amps)	Voltage
				(Volts)
	10Hr	500.00	50.0	1.75
	9Hr	489.50	50.0 54.4	1.75
	8Hr	475.00	59.4	1.75
	7Hr	475.00	65.5	1.75
	6Hr	439.50	73.3	1.75
	5Hr	416.50	83.3	1.75
	4Hr	391.00	97.8	1.74
	3Hr	358.50	119.5	1.74
	2Hr	316.50	158.3	1.7
	1Hr	250.00	250.0	1.7
	50 min	233.50	280.3	1.7
	40 min	215.00	322.8	1.7
	30 min	200.00	400.0	1.7
	20 min	180.00	540.5	1.7
	15 min	149.35	597.4	1.7
	10 min	109.15	657.5	1.7
	5 min	61.45	737.7	1.7
	1 min	18.35	1105.4	1.7
		-		
3 Ma	aximum Momentary Current for 1 min upto cut off voltage of 1.6 V		1500	Amps
4 Exp	pected Fault at bus due to battery		3000	Amps
	ort Circuit Current at Battery terminals		3000	Amps
	ne for which the battery can withstand nort circuit at terminals		5 Sec	
6 Тур	pe/No. of Negative Plates per cell		Flat pasted;7	
7 Tyr	pe/No. of Positive Plates per cell		Flat pasted;6	
8 Siz	ze of negative plates, mm		470 ± 1 (H) x 150 ± 0.05 (W) x 3.6 ± 0.15 (Thk)	
9 Siz	ze of positive plates, mm		470 ± 1 (H) x 150 ± 0.05 (W) x 5.7 ± 0.15 (Thk)	
	pe of Connection between cells		Bolted rigid copper connectors	
10 Тур	•			
10 Тур 11 Тур	pe of Connection between cells pe of Separators ickness of Separators		Bolted rigid copper connectors Absorptive glass mat 5.4 (2 layers of 2.7 mm each)	
10 Тур 11 Тур 12 Тһі	pe of Separators		Absorptive glass mat 5.4 (2 layers of 2.7 mm each)	n
10 Typ 11 Typ 12 Thi 13 Din	, pe of Separators ickness of Separators mensison of 2 volts cell (LXWXH), mm		Absorptive glass mat	n
10 Typ 11 Typ 12 Thi 13 Din 14 Cle	pe of Separators ickness of Separators		Absorptive glass mat 5.4 (2 layers of 2.7 mm each)	n

	Recommended Charging Rate	
16 (i)	Float Charging Voltage	
(.)	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC
(ii)	Float Charging Current	75 Amps (Max
(iii)	Trickle Charging Voltage	NA
	Trickle Charging Current	NA
(iv)	Boost Charging Voltage	2.35 Volts
(v)		
(vi)	Boost Charging Current	100 Amps.
(vii)	Time taken to full charge from 100%	72 Hrs (Min)
	discharge state by constant voltage	2.1 volts(ocv)
	charging & voltage at the end of this charge	
(viii)	Equalising Charging Current; Voltage	NA
17	Guaranteed efficiencies at 10 hrs rate	
	(a) Ampere-hour efficiency	90%
	(b) Watt-hour efficiency	80%
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)
10		0.5 % RMS of the charging voltage(Float charging)
		o.o /o raise of the onarging voltage(r loat onarging)
10	Tatel Desistence of Detter , millichere	
19	Total Resistance of Battery ; milliohms	Depending on no. of cells
20	Overall Dimensions of each complete	Length 637.0 ^{+/- 5} , Width 581.0 ^{+/- 5} , Height 360.0 ^{+/- 5} (mm)
	module (LxWxH) in mm	(6 cell module)
21	Weight of unpacked and complete module	204.4 +/- 5% Kgs (Single 6 cell module)
	with electrolyte ; Kgs	
22	Material of Modules	Powder coated MS
		i ondoi obalod me
23		
	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor
24	Whether explosion vents are offered Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
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24 25 26	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
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24 25 26 27 28	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
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24 25 26 27 28	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually
24 25 26 27 28	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles
24 25 26 27 28	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles
24 25 26 27 28	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles
24 25 26 27 28	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles
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24 25 26 27 28	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
24 25 26 27 28 29	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 80% DOD Expected Life of Battery in years	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
24 25 26 27 28 29	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity

<u>PPST 535</u>



				INDUSTRIES LIMITED
SL. NO.	DESCRIPTION		DETAILS	
1	Capacity in Ah			
(a)	At 27 ° C			
(i)	Initial		535	
(ii)	Rated		535	
(iii)	End of Life		428	
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct = { 1+ 0.0043 (27-t) }	
	ambient temperature of (as per IS 15549 : 2005)			
(c)	Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (27-t) }	
(-)	ambient temperature of (as per IS 15549 : 2005)			
2	Capacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ah capacities	Discharge Current	End Cell
			(Amps)	Voltage
				(Volts)
	10Hr	535.00	53.5	1.75
	9Hr	523.77	58.2	1.75
	8Hr	508.25	63.5	1.75
	7Hr	490.60	70.1	1.75
	6Hr	470.27	78.4	1.75
	5Hr	445.66	89.1	1.75
	4Hr	418.37	104.6	1.74
	ЗHr	383.60	127.9	1.74
	2Hr	338.66	169.3	1.7
	1Hr	267.50	267.5	1.7
	50 min	249.85	299.9	1.7
	40 min	230.05	345.4	1.7
	30 min	214.00	428.0	1.7
	20 min	192.60	578.4	1.7
	15 min	159.80	639.2	1.7
	10 min 5 min	116.79 65.75	703.6 789.3	1.7 1.7
	1 min	19.63	1182.8	1.7
-		•	<u>.</u>	•
3	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V		1605	Amps
4	Expected Fault at bus due to battery		3210	Amps
5 (i)	Short Circuit Current at Battery terminals		3210	Amps
	Time for which the battery can withstand		5 Sec	, inpo
• ()	short circuit at terminals			
6	Type/No. of Negative Plates per cell		Flat pasted;8	
	Type/No. of Positive Plates per cell		Flat pasted;7	
	Size of negative plates, mm		470 ± 1 (H) x 150 ± 0.05 (W) x 3.6 ± 0.15 (Thk)	
9	Size of positive plates, mm		470 ± 1 (H) x 150 ± 0.05 (W) x 5.7 ± 0.15 (Thk)	
10	Type of Connection between cells		Bolted rigid copper connectors	
11	Type of Separators		Absorptive glass mat	
12	Thickness of Separators		5.4 (2 layers of 2.7 mm each)	
13	Dimensison of 2 volts cell (LXWXH), mm		183.0 (+/-3) mm x 162.0 (+/-3) mm x 529 (+/- 5) mm	
14	Clearance between the bottom of the plates and container		5 mm	
	Matarial of Ocatainan			
15	Material of Container		Polypropylene Co-polymer	

16	Recommonded Charging Pate		
(i)	Recommended Charging Rate Float Charging Voltage		IDE
(1)	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC	ES LIWITED
	between ambient temp. (-)3-14 °C	2.27 +/- 0.02 VPC	
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC	
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC	
(ii)	Float Charging Current	80.25 Amps ((Max)
(iii)	Trickle Charging Voltage	NA	
(iv)	Trickle Charging Current	NA	
(v)	Boost Charging Voltage	2.35 Volts	
(vi)	Boost Charging Current	107 Amps.	
(vii)	Time taken to full charge from 100%	72 Hrs (Min)	
(VII)			
	discharge state by constant voltage	2.1 volts(ocv)	
	charging & voltage at the end of this charge		
(viii)	Equalising Charging Current;Voltage	NA	
17	Guaranteed efficiencies at 10 hrs rate		
	(a) Ampere-hour efficiency	90%	
	(b) Watt-hour efficiency	80%	
	(b) Watt-hour enciency	00 %	
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)	
		0.5 % RMS of the charging voltage(Float charging)	
19	Total Resistance of Battery ; milliohms	Depending on no. of cells	
20	Overall Dimensions of each complete	Length 637.0 ^{+/-5} , Width 581.0 ^{+/-5} , Height 360.0 ^{+/-5} (mm)	
	module (LxWxH) in mm	(6 cell module)	
21	Weight of unpacked and complete module	222.4 +/- 5% Kgs (Single 6 cell module)	
	with electrolyte ; Kgs		
22	Material of Modules		
	Waterial of Woddles	Powder coated MS	
	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor	
23			
23 24	Whether explosion vents are offered Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity	
23 24	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C	
23 24	Whether explosion vents are offered Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once	
23 24	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored	
23 24	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning	
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23 24 25	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.	
23 24 25	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm	
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23 24 25 26	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition	
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23 24 25 26 27	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition	
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				INDUSTRIES LIWITED
L. NO.	DESCRIPTION		DETAILS	
1	Capacity in Ah			
(a)	At 27 ° C			
(i)	Initial		650	
(ii)	Rated		650	
(iii)	End of Life		520	
(1-)	Deted Conseit (in Ah) at minimum			
(b)	Rated Capacity(in Ah) at minimum ambient temperature of (as per IS 15549 : 2005)		Formula : Ct = { 1+ 0.0043 (27-t) }	
	ambient temperature of (as per 13 15549 . 2005)			
(c)	Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (27-t) }	
	ambient temperature of (as per IS 15549 : 2005)			
2	Capacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ah capacities	Discharge Current	End Cel
	Fellou of Discharge	An capacities	(Amps)	Voltage
			(Amps)	(Volts)
				(1911)
	10Hr	650.00	65.0	1.75
	9Hr	636.35	70.7	1.75
	8Hr	617.50	77.2	1.75
	7Hr	596.05	85.2	1.75
	6Hr	571.35	95.2	1.75
	5Hr	541.45	108.3	1.75
	4Hr	508.30	127.1	1.74
	3Hr	466.05	155.4	1.74
	2Hr	411.45	205.7	1.7
	1Hr	325.00	325.0	1.7
	50 min	303.55	364.4	1.7
	40 min	279.50	419.7	1.7
	30 min	260.00	520.0	1.7
	20 min	234.00	702.7	1.7
	15 min	194.16	776.6	1.7
	10 min	141.90	854.8	1.7
	5 min	79.89	959.0	1.7
	1 min	23.86	1437.0	1.7
3	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V		1950	Amps
-				
4	Expected Fault at bus due to battery		3900	Amps
5 (i)	Short Circuit Current at Battery terminals		3900	Amps
	Time for which the battery can withstand		5 Sec	Amps
5 (11)	short circuit at terminals		5.060	
6	Type/No. of Negative Plates per cell		Flat pasted;9	
			•	
	Type/No. of Positive Plates per cell		Flat pasted;8	
	Size of negative plates, mm		470 ± 1 (H) x 150 ± 0.05 (W) x 3.6 ± 0.15 (Thk)	
	Size of positive plates, mm		470 ± 1 (H) x 150 ± 0.05 (W) x 5.7 ± 0.15 (Thk)	
10	Type of Connection between cells		Bolted rigid copper connectors	
11	Type of Separators		Absorptive glass mat	
12	Thickness of Separators		5.4 (2 layers of 2.7 mm each)	
13	Dimensison of 2 volts cell (LXWXH), mm		183.0 (+/-3) mm x 162.0 (+/-3) mm x 529 (+/- 5) mm	ı
14	Clearance between the bottom of the plates and container		5 mm	
	Material of Container		Polypropylene Co-polymer	

16	Recommended Charging Rate		
(i)			EXIDE
(1)	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC	INDUSTRIES LIWITED
		2.27 +/- 0.02 VPC	
	between ambient temp. 15-24 ° C		
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC	
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC	
(ii)	Float Charging Current	97.5	Amps (Max)
(iii)	Trickle Charging Voltage	NA	
(iv)	Trickle Charging Current	NA	
(v)	Boost Charging Voltage	2.35	Volts
(vi)	Boost Charging Current	130	Amps.
(vii)	Time taken to full charge from 100%	72 Hrs (Min)	
(•)	discharge state by constant voltage	2.1 volts(ocv)	
	charging & voltage at the end of this charge	211 (010(001)	
(viii)		NA	
(VIII)	Equalising Charging Current, Voltage	IN/A	
17	Guaranteed efficiencies at 10 hrs rate		
	(a) Ampere-hour efficiency	90%	
	(b) Watt-hour efficiency	80%	
	(b) Wattehour enciency	0078	
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)	
		0.5 % RMS of the charging voltage(Float charging)	
40	Tatal Decisiones of Detter	Depending on pollof collo	
19	Total Resistance of Battery ; milliohms	Depending on no. of cells	
20	Overall Dimensions of each complete	Length 637.0 ^{+/- 5} , Width 581.0 ^{+/- 5} , Height 360.0 ^{+/- 5} (n	om)
20			(((())))
	module (LxWxH) in mm	(6 cell module)	
	MAN Subtra Commendation de la constante constante.		
21	Weight of unpacked and complete module	240.4 +/- 5% Kgs (Single 6 cell module)	
	with electrolyte ; Kgs		
22			
22	with electrolyte ; Kgs Material of Modules	Powder coated MS	
			estor
	Material of Modules	Powder coated MS	estor
23	Material of Modules	Powder coated MS	estor
23 24	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge	Powder coated MS Yes, self re-sealing rubber safety valve with flame arre < 0.5% per week of c-10 capacity	estor
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<u>PPST 750</u>



				INDUSTRIES LIMITED
SL. NO.	DESCRIPTION		DETAILS	
1	Capacity in Ah			
(a)	At 27 ° C		770	
(i)	Initial		750	
(ii)	Rated		750	
(iii)	End of Life		600	
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct = { 1+ 0.0043 (27-t) }	
	ambient temperature of (as per IS 15549 : 2005)			
(c)			Formula : Ct = { 1+ 0.0043 (27-t) }	
	ambient temperature of (as per IS 15549 : 2005)			
2	Capacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ah capacities	Discharge Current	End Cell
			(Amps)	Voltage
				(Volts)
	10Hr	750.00	75.0	1.75
	9Hr	734.25	81.6	1.75
	8Hr	712.50	89.1	1.75
	7Hr	687.75	98.3	1.75
	6Hr	659.25	109.9	1.75
	5Hr	624.75	125.0	1.75
	4Hr	586.50	146.6	1.74
	3Hr	537.75	179.3	1.74
	2Hr	474.75	237.4	1.7
	1Hr	375.00	375.0	1.7
	50 min	350.25	420.5	1.7
	40 min	322.50	484.2	1.7
	30 min	300.00	600.0	1.7
	20 min	270.00	810.8	1.7
	15 min	224.03	896.1	1.7
	10 min	163.73	986.3	1.7
	5 min	92.18	1106.5	1.7
	1 min	27.53	1658.1	1.7
3	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V		2250	Amps
4	Expected Fault at bus due to battery		4500	Amps
5 (i)	Short Circuit Current at Battery terminals		4500	Amps
	Time for which the battery can withstand		5 Sec	
	short circuit at terminals			
6	Type/No. of Negative Plates per cell		Flat pasted;11	
7	Type/No. of Positive Plates per cell		Flat pasted;10	
0	Size of pogetive plates, mm		470 + 1 (H) x 150 + 1 (M) x 2 6 + 0 5 (Thk)	
0	Size of negative plates, mm		470 ± 1 (H) x 150 ± 1 (W) x 3.6 ± 0.5 (Thk)	
9	Size of positive plates, mm		470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk)	
10	Type of Connection between cells		Bolted rigid copper connectors	
11	Type of Separators		Absorptive glass mat	
12	Thickness of Separators		5.4 (2 layers of 2.7 mm each)	
13	Dimensison of 2 volts cell (LXWXH), mm		183.0 (+/-3) mm x 217.0 (+/-3) mm x 529 (+/- 5) mm	
14	Clearance between the bottom			
	of the plates and container		5 mm	
	Material of Container		Polypropylene Co-polymer	

16	Recommended Charging Rate		
(i)	Float Charging Voltage		MEXIDE
.,	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC	INDUSTRIES LIWITED
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC	
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC	
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC	
(***			A
(ii)	Float Charging Current	112.5	Amps (Max)
(iii)	Trickle Charging Voltage	NA	
(iv)	Trickle Charging Current	NA	
(v)	Boost Charging Voltage	2.35	Volts
(vi)	Boost Charging Current	150	Amps.
(vii)	Time taken to full charge from 100%	72 Hrs (Min)	•
(,	discharge state by constant voltage	2.1 volts(ocv)	
	charging & voltage at the end of this charge	()	
(viii)		NA	
(VIII)	Equalising Charging Current, Voltage		
17	Guaranteed efficiencies at 10 hrs rate		
	(a) Ampere-hour efficiency	90%	
	(b) Watt-hour efficiency	80%	
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)	
10	Allowable voltage hpple	0.5 % RMS of the charging voltage(Float charging)	
		0.5 % Rivis of the charging voltage(f loat charging)	
19	Total Resistance of Battery ; milliohms	Depending on no. of cells	
		Les alte 050 0 t/ 5 M/ the 000 0 t/ 5 Height 400 0 t/ 5	()
20	Overall Dimensions of each complete	Length 659.0 ^{+/-5} , Width 632.0 ^{+/-5} , Height 463.0 ^{+/-5}	(mm)
	module (LxWxH) in mm	(6 cell module)	
	Market af sum a desidered as deservated a second de		
21	Weight of unpacked and complete module	309 +/- 5% Kgs (Single 6 cell module)	
	with electrolyte ; Kgs		
22	Material of Modules	Powder coated MS	
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	Material of Modules Whether explosion vents are offered	Powder coated MS Yes, self re-sealing rubber safety valve with flame an	restor
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GENERAL TECHNICAL PARTICULARS

<u>PPST 800</u>



Copacity in Ah Al 27 * C in this al bit in the intervention of tap or IS 1549 : 2000) State Copacity at Various Discharge Rates at 27*C State Absolution Copacity (in Ah) antihert temperature of tap or IS 1549 : 2000) Formula: Cit - (1 + 0.004 (27.0)) 2 Capacity at Various Discharge Rates at 27*C Ab capacities Discharge Current (Ampo) End of Discharge Based Capacity (in Ah) at maintum antihert temperature of tap or IS 1549 : 2000) Formula: Cit - (1 + 0.004 (27.0)) End Of Voting (Voting (Voting (Voting (Voting (Voting (Voting)) 2 Capacity at Various Discharge Rates at 27*C Ab capacities Discharge Current (Ampo) End O Voting (Voting (Voting (Voting)) 2 Capacity at Various Discharge Rates at 27*C Ab capacities Discharge Current (Ampo) End O Voting (Voting (Voting)) 3 Capacity at Various Discharge Rates at 27*C Ab capacities Discharge Current (Ampo) End O Voting (Voting) 4 Capacities Discharge Current (Ampo) End O Voting (Voting) End O Voting (Voting) End O Voting (Voting) End O Voting (Voting) 3 Capacity at Various Discharge Rates at 27*C Ab capacities Discharge Current (Ampo) End O Voting (Voting) End O Voting (Voting) End O Voting (Voting) 3 Capacity Ab Various Discharge Rates at 27*C Ab capacities Discharge Current (Ampo) End O Voting (Voting					INDUSTRIES LIMITED
(a) A127 ° C 800 (b) Rated 800 (b) Rated Capachylin Ahj at minimum 800 (c) Rated Capachylin Ahj at minimum Formula: C1 - (1 = 0.005 (27.0) (c) Rated Capachylin Ahj at minimum Formula: C1 = (1 = 0.005 (27.0) (c) Rated Capachylin Ahj at minimum Formula: C1 = (1 = 0.005 (27.0) (c) Rated Capachylin Ahj at minimum Formula: C1 = (1 = 0.005 (27.0) (c) Rated Capachylin Ahj at minimum Ford C / (Angel) (c) Rated Capachylin Ahj at minimum Ford C / (Angel) (c) Rated Capachylin Ahj at minimum Ford C / (Angel) (c) Rated Capachylin Ahj at minimum Ford C / (Angel) (c) Rated Capachylin Ahj at minimum Ford C / (Angel) (c) Rated Capachylin Ahj at minimum Ford C / (Angel) (c) Non Sol 0 173 (c) Non Sol 0 173 (c) Sol 0 172 174 (c) Sol 0 173 174 (c) Sol 0	L. NO.	DESCRIPTION		DETAILS	
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(ii) (iii) Read Field of Life ambient temperature of a sep 15 15549 : 2005) Formula : Ci - (1 + 0.004) (27.9) (i) Read Capacity(in A) at mainum ambient temperature of (a per 15 15549 : 2005) Formula : Ci - (1 + 0.004) (27.9) 2 Read Capacity(in A) at mainum ambient temperature of (a per 15 15549 : 2005) Formula : Ci - (1 + 0.004) (27.9) 2 Read Capacity at yature of Sectory at yature of				800	
(ii) End of Life 640 (i) Rated Capachy(in Ah) at minimum aniletin timperature of (as per 15 1559-2005) Formula: Ci+ (i + 2004 (27.6)) (ii) Relied Capachy(in Ah) at maximum aniletin timperature of (as per 15 1559-2005) Formula: Ci+ (i + 2004 (27.6)) (iii) Relied Capachy(in Ah) at maximum aniletin timperature of (as per 15 1559-2005) Formula: Ci+ (i + 2004 (27.6)) (iii) Period of Discharge Ah capachies Discharge Current (Amps) End Ci Voiting (Voiting (Voiting) 10Hr 980.00 80.0 17.7 9Hr 763.20 87.0 17.7 9Hr 763.00 95.0 17.7 9Hr 763.00 95.0 17.7 9Hr 763.00 163.3 17.7 9Hr 763.00 191.2 17.7 9Hr 506.00 253.2 17.7 9Hr 400.00 400.0 17.7 9Hr 400.00 400.0 17.7 9Hr 400.00 400.0 17.7 9Hr 400.00 17.7 17.7					
(b) Reted Capacity(in Ah) at minimum ambient temperature of (as per IS 15549 : 2005) Formula: C1 - (1+ 0.0043 (27.9)) (c) Reted Capacity(in Ah) at minimum ambient temperature of (as per IS 15549 : 2005) Formula: C1 - (1+ 0.0043 (27.9)) 2 Capacity at Various Docharge Rates at 27°C Ah capacities Discharge Current (Amps) End C Voltage (Volta 0 th 900.00 900.00 900.00 900.00 17.7 0 th 700.00 900.00 900.00 17.7 0 th 700.00 900.00 17.7 0 th 700.00 900.00 17.2 17.7 0 th 700.00 900.00 104.8 17.7 0 th 700.00 900.00 104.8 17.7 0 th 700.00 20.00 104.8 17.7 0 th 97.80 117.2 17.7 0 th 97.80 191.2 17.7 0 th 97.80 98.4 17.7 0 th 97.80 98.4 17.7 0 th 97.90 98.4 <td></td> <td></td> <td></td> <td></td> <td></td>					
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(c) Rated Capacity (n A)) at maximum ambient temperature of (a per IS 15549 : 2005) Formula : Cl = (1+0.0051 (27-4)) 2 Capacity at Vanco Discharge Ah capacities Discharge Current (Ampy) End C. (Ampy) 10Hr 900.00 80.0 1.75 9Hr 783.20 87.0 1.75 95.0 8H 700.0 95.0 104.8 1.75 95.0 104.8 1.75 95.0 9Hr 733.00 100.0 95.0 117.2 1.75 95.0 17.7 95.0 9Hr 733.00 104.8 1.75 95.0 104.8 1.77 95.0 17.7 95.0 17.	(b)			Formula : Ct = { 1+ 0.0043 (27-t) }	
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2 Capacity at Various Discharge Rates at 27°C Period of Discharge At capacities Discharge Current (Amps) End Ci Voltage (Volta) 19Hr 9147 753.20 87.0 1.73 9Hr 776.00 95.0 1.73 7Hr 733.20 91.72 1.75 7Hr 733.20 117.2 1.75 9Hr 703.20 117.2 1.77 9Hr 753.60 155.4 1.74 9Hr 576.60 155.4 1.74 9Hr 97.60 400.0 117.2 1.77 9Hr 97.60 191.2 1.74 1.74 9Hr 97.60 253.2 1.7 1.77 9D min 334.00 456.5 1.7 1.7 9D min 238.00 964.9 1.7 1.7 9D min 238.00 964.9 1.7 1.7 9D min 238.00 964.9 1.7 1.7 10 run 177.464 1052.0 <td< td=""><td>(C)</td><td></td><td></td><td>Formula : Ct = { 1+ 0.0043 (27-t) }</td><td></td></td<>	(C)			Formula : Ct = { 1+ 0.0043 (27-t) }	
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9Hr 78.20 87.0 17.7 8Hr 78.00 95.0 17.7 7Hr 73.80 104.8 17.7 7Hr 73.80 104.8 17.7 9Hr 73.80 104.8 17.7 9Hr 664.0 133.3 17.7 9Hr 666.40 133.3 17.7 9Hr 55.60 156.4 17.4 14 73.80 191.2 1.7 14 444.7 57.80 191.2 1.7 14 40.00 400.0 17.7 7 30 min 320.00 644.0 17.7 7 30 min 288.06 955.8 1.7 1.7 10 min 174.64 1062.0 1.7 1.7 10 min 288.06 955.8 1.7 1.7 10 min 174.64 1062.0 1.7 1.7 10 min 174.64 1062.0 1.7 1.7 10 m					(Volts)
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Bir 7600 95.0 1.75 7Hr 73.80 104.8 1.75 6Hr 703.20 117.2 1.75 6Hr 703.20 117.2 1.75 6Hr 703.20 117.2 1.75 6Hr 66.40 133.3 1.75 7 14 625.60 156.4 1.74 17 573.60 191.2 1.74 17 50 min 373.80 448.5 1.7 18 700 min 320.00 640.0 1.7 30 min 320.00 640.0 1.7 1.7 30 min 238.66 955.8 1.7 15 min 238.66 955.8 1.7 16 min 238.66 955.8 1.7 17 min 238.66 955.8 1.7 17 min 288.00 844.9 1.7 17 min 288.00 849.0 1.7 10 min 14.2 160.7 1.7					
Print 73.60 104.8 1.75 6Hr 703.20 117.2 1.75 9Hr 666.40 133.3 1.75 9Hr 666.40 133.3 1.75 9Hr 526.60 156.4 1.74 9Hr 506.40 253.2 1.7 9Hr 506.40 253.2 1.7 1Hr 400.00 400.0 10.1 1Hr 400.00 400.0 1.7 20 min 320.00 640.0 1.7 30 min 320.00 640.0 1.7 20 min 220.86 955.8 1.7 10 min 174.64 1052.0 1.7 10 min 124.80 864.9 1.7 15 min 23.86 1768.7 1.7 20 min 23.86 1768.7 1.7 3 Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V 2400 Amps 4 Expected Fault at bus due to battery 480.0 1.75 5 (i) Short Circuit Current at Battery terminals 5 Sec 480.0 5 (ii) Short Circuit Current at Battery terminals 1.7 1.7 5 (iii) Short Circuit at terminals 480.0 Amps 1 Type/No. of Negative Plate					
Bir 703 20 4Hr 117.2 666.40 117.2 133 117.2 13 4Hr 625.60 156.4 1.74 3Hr 557.80 191.2 1.74 2Hr 506.40 253.2 1.7 1Hr 400.00 400.0 17.7 3Um 373.80 448.5 1.7 40 min 334.00 516.5 1.7 30 min 320.00 640.0 1.7 30 min 328.00 864.9 1.7 15 min 288.00 864.9 1.7 16 min 288.00 864.9 1.7 17 min 289.6 955.8 1.7 10 min 144.9 1.7 1.7 1					
SHr 666.40 133.3 1.77 4Hr 55260 156.4 1.74 3Hr 573.60 191.2 1.74 2Hr 506.40 253.2 1.7 1Hr 400.00 400.0 17.7 50 min 373.60 448.5 1.7 30 min 220.00 660.0 1.7 30 min 220.00 664.9 1.7 30 min 220.00 664.9 1.7 30 min 228.00 864.9 1.7 15 min 238.96 955.8 1.7 16 min 238.96 955.8 1.7 3 Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V 2400 Amps 4 Expected Fault at bus due to battery 4800 Amps 5 (i) Short Circuit Current at Battery terminals 5 Sec Sec Amps 5 (ii) Time for which the battery can withstand shot circuit at terminals 5 Sec Amps 6 Type/No. of Positive Plates per cell Flat pasted;11 Flat pasted;10					
4Hr 625.60 156.4 1.74 3Hr 573.60 191.2 1.74 2Hr 506.40 253.2 1.7 1Hr 400.00 400.0 1.7 36 min 373.60 448.5 1.7 40 min 344.00 516.5 1.7 30 min 200.00 640.0 1.7 20 min 228.00 64.9 1.7 20 min 228.00 955.8 1.7 10 min 174.64 1062.0 1.7 10 min 174.64 1062.0 1.7 10 min 128.806 955.8 1.7 3 Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V 2400 Amps 4 Expected Fault at bus due to battery 4800 Amps 5 (i) Short Circuit Current at Battery terminals 5 Sec 4800 Amps 5 (ii) Time for which the battery can withstand stort circuit at terminals 5 Sec 4800 Amps 5 (ii) Time for which the battery can withstand stort circuit at terminals 5 Sec 5 Sec 1.7 9 Size of negative plates, mm 470					
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50 min 373 60 448.5 1.7 40 min 344.00 516.5 1.7 30 min 320.00 640.0 1.7 20 min 228.00 864.9 1.7 15 min 238.96 955.8 1.7 10 min 174.64 1052.0 1.7 1 min 98.32 1180.3 1.7 1 min 29.36 1768.7 1.7 1 min 29.36 1768.7 1.7 3 Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V 2400 Amps 4 Expected Fault at bus due to battery 4800 Amps 5 (ii) Short Circuit Current at Battery can withstand s5 Sec 5 Sec Amps 5 (iii) Size of negative Plates per cell Flat pasted;10 4900 Amps 8 Size of positive plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 3.6 ± 0.5 (Thk) 470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) 9 Size of positive plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) 5.4 (2 layers of 2.7 mm each) 11					
40 min 344.00 516.5 1.7 30 min 320.00 640.0 1.7 20 min 288.00 864.9 1.7 15 min 238.96 955.8 1.7 10 min 174.64 1052.0 1.7 1 min 98.32 1180.3 1.7 3 Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V 2400 Amps 4 Expected Fault at bus due to battery 4800 Amps 5 (i) Short Circuit Current at Battery terminals 4800 Amps 5 (ii) Short Circuit Current at Battery terminals 4800 Amps 5 (ii) Short Circuit Current at Battery terminals 4800 Amps 5 (iii) Short Circuit at terminals 4800 Amps 5 (iii) Short Circuit Current at Battery terminals 4800 Amps 5 (iii) Short Circuit Current at Battery terminals 4800 Amps 5 (iii) Time for which the battery can withstand stated 5 Sec Amps 6 Type/No. of Positive Plates per cell					
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10 min 174.64 1052.0 1.7 5 min 98.32 1180.3 1.7 1 min 29.36 1768.7 1.7 3 Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V 2400 Amps 4 Expected Fault at bus due to battery 4800 Amps 5 (i) Short Circuit Current at Battery terminals 4800 Amps 5 (ii) Thire for which the battery can withstand short circuit at terminals 4800 Amps 5 (iii) Size of negative Plates per cell Flat pasted;11 Flat pasted;10 Flat pasted;10 8 Size of opsitive plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 3.6 ± 0.5 (Thk) 400 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) 9 Size of positive plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) 400 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) 10 Type of Connection between cells Bolted rigid copper connectors 41 11 Type of Separators 5.4 (2 layers of 2.7 mm each) 13 13 Dimension of 2 volts cell (LXWXH), mm 183.0 (+/-3) mm x 217.0 (+/-3) mm x 529 (+/- 5) mm 5 mm		20 min	288.00	864.9	1.7
S min 98.32 1180.3 1.7 1 min 29.36 1768.7 1.7 3 Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V 2400 Amps 4 Expected Fault at bus due to battery 4800 Amps 5 (i) Short Circuit Current at Battery terminals 4800 Amps 5 (ii) Time for which the battery can withstand 5 Sec Amps 6 Type/No. of Negative Plates per cell Flat pasted;11 7 Type/No. of Positive Plates per cell Flat pasted;10 8 Size of negative plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 3.6 ± 0.5 (Thk) 9 Size of positive plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) 10 Type of Connection between cells Bolted rigid copper connectors 11 Type of Separators 5.4 (2 layers of 2.7 mm each) 12 Thickness of Separators 5.4 (2 layers of 2.7 mm each) 13 Dimension of 2 volts cell (LXWXH), mm 183.0 (±/-3) mm x 217.0 (±/-3) mm x 529 (±/- 5) mm 14 Clearance between the bottom of the plates and container 5 mm		15 min	238.96	955.8	1.7
1 min 29.36 1768.7 1.7 3 Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V 2400 Amps 4 Expected Fault at bus due to battery 4800 Amps 5 (i) Short Circuit Current at Battery terminals short circuit at terminals 4800 Amps 6 Type/No. of Negative Plates per cell Flat pasted;11 Amps Amps 7 Type/No. of Positive Plates per cell Flat pasted;10 Amps Amps 8 Size of negative plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 3.6 ± 0.5 (Thk) Amps 9 Size of positive plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) Amps 10 Type of Connection between cells Bolted rigid copper connectors Amps 11 Type of Separators 5.4 (2 layers of 2.7 mm each) Amps 12 Thickness of Separators 5.4 (2 layers of 2.7 mm each) Amps 13 Dimension of 2 volts cell (LXWXH), mm 183.0 (±/-3) mm x 217.0 (±/-3) mm x 529 (±/- 5) mm 5 mm		10 min	174.64	1052.0	1.7
3 Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V 2400 Amps 4 Expected Fault at bus due to battery 4800 Amps 5 (i) Short Circuit Current at Battery terminals 4800 Amps 5 (ii) Time for which the battery can withstand 5 Sec Amps 6 Type/No. of Negative Plates per cell Flat pasted;11 Flat pasted;10 8 Size of negative plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 3.6 ± 0.5 (Thk) 9 9 Size of positive plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) 10 10 Type of Connection between cells Bolted rigid copper connectors 11 11 Type of Separators 5.4 (2 layers of 2.7 mm each) 13.0 (H-3) mm x 217.0 (H-3) mm x 529 (H-5) mm 13 Dimensison of 2 volts cell (LXWXH), mm 183.0 (H-3) mm x 217.0 (H-3) mm x 529 (H-5) mm 5 mm		5 min			
4 Expected Fault at bus due to battery 4800 Amps 5 (i) Short Circuit Current at Battery terminals 4800 Amps 5 (ii) Short Circuit at terminals 4800 Short 6 Type/No. of Negative Plates per cell Flat pasted;11 7 Type/No. of Positive Plates per cell Flat pasted;10 8 Size of negative plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 3.6 ± 0.5 (Thk) 9 Size of positive plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) 10 Type of Connection between cells Bolted rigid copper connectors 11 Type of Separators Absorptive glass mat 12 Thickness of Separators 5.4 (2 layers of 2.7 mm each) 13 Dimensison of 2 volts cell (LXWXH), mm 183.0 (+/-3) mm x 217.0 (+/-3) mm x 529 (+/- 5) mm 14 Clearance between the bottom of the plates and container 5 mm		1 min	29.36	1768.7	1.7
4 Expected Fault at bus due to battery 4800 Amps 5 (i) Short Circuit Current at Battery terminals 4800 Amps 5 (ii) Short Circuit at terminals 4800 Short 6 Type/No. of Negative Plates per cell Flat pasted;11 7 Type/No. of Positive Plates per cell Flat pasted;10 8 Size of negative plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 3.6 ± 0.5 (Thk) 9 Size of positive plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) 10 Type of Connection between cells Bolted rigid copper connectors 11 Type of Separators Absorptive glass mat 12 Thickness of Separators 5.4 (2 layers of 2.7 mm each) 13 Dimensison of 2 volts cell (LXWXH), mm 183.0 (+/-3) mm x 217.0 (+/-3) mm x 529 (+/- 5) mm 14 Clearance between the bottom of the plates and container 5 mm	3 Maxim	num Momentary Current for 1 min upto cut off voltage of 1.6.V		2400	Amos
5 (i) Short Circuit Current at Battery can withstand 4800 Amps 5 (ii) Short Circuit at terminals 5 Sec Amps 6 Type/No. of Negative Plates per cell Flat pasted;11 7 Type/No. of Positive Plates per cell Flat pasted;10 8 Size of negative plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 3.6 ± 0.5 (Thk) 9 Size of positive plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) 10 Type of Connection between cells Bolted rigid copper connectors 11 Type of Separators 5.4 (2 layers of 2.7 mm each) 13 Dimensison of 2 volts cell (LXWXH), mm 183.0 (+/-3) mm x 217.0 (+/-3) mm x 529 (+/- 5) mm 14 Clearance between the bottom of the plates and container 5 mm	0 Maxin			2400	7 (11)50
5 (i) Short Circuit Current at Battery can withstand 4800 Amps 5 (ii) Short Circuit at terminals 5 Sec Amps 6 Type/No. of Negative Plates per cell Flat pasted;11 7 Type/No. of Positive Plates per cell Flat pasted;10 8 Size of negative plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 3.6 ± 0.5 (Thk) 9 Size of positive plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) 10 Type of Connection between cells Bolted rigid copper connectors 11 Type of Separators 5.4 (2 layers of 2.7 mm each) 13 Dimensison of 2 volts cell (LXWXH), mm 183.0 (+/-3) mm x 217.0 (+/-3) mm x 529 (+/- 5) mm 14 Clearance between the bottom of the plates and container 5 mm					
5 (ii) Time for which the battery can withstand short circuit at terminals 5 Sec 6 Type/No. of Negative Plates per cell Flat pasted;11 7 Type/No. of Positive Plates per cell Flat pasted;10 8 Size of negative plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 3.6 ± 0.5 (Thk) 9 Size of positive plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) 10 Type of Connection between cells Bolted rigid copper connectors 11 Type of Separators Absorptive glass mat 12 Thickness of Separators 5.4 (2 layers of 2.7 mm each) 13 Dimensison of 2 volts cell (LXWXH), mm 183.0 (+/-3) mm x 217.0 (+/-3) mm x 529 (+/- 5) mm 14 Clearance between the bottom of the plates and container 5 mm	4 Expec	ted Fault at bus due to battery		4800	Amps
5 (ii) Time for which the battery can withstand short circuit at terminals 5 Sec 6 Type/No. of Negative Plates per cell Flat pasted;11 7 Type/No. of Positive Plates per cell Flat pasted;10 8 Size of negative plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 3.6 ± 0.5 (Thk) 9 Size of positive plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) 10 Type of Connection between cells Bolted rigid copper connectors 11 Type of Separators Absorptive glass mat 12 Thickness of Separators 5.4 (2 layers of 2.7 mm each) 13 Dimensison of 2 volts cell (LXWXH), mm 183.0 (+/-3) mm x 217.0 (+/-3) mm x 529 (+/- 5) mm 14 Clearance between the bottom of the plates and container 5 mm					
short circuit at terminals 6 Type/No. of Negative Plates per cell 7 Type/No. of Positive Plates per cell 8 Size of negative plates, mm 9 Size of positive plates, mm 10 Type of Connection between cells 11 Type of Separators 12 Thickness of Separators 12 Thickness of 2 volts cell (LXWXH), mm 14 Clearance between the bottom of the plates and container					Amps
6 Type/No. of Negative Plates per cell Flat pasted;11 7 Type/No. of Positive Plates per cell Flat pasted;10 8 Size of negative plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 3.6 ± 0.5 (Thk) 9 Size of positive plates, mm 470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk) 10 Type of Connection between cells Bolted rigid copper connectors 11 Type of Separators Absorptive glass mat 12 Thickness of Separators 5.4 (2 layers of 2.7 mm each) 13 Dimensison of 2 volts cell (LXWXH), mm 183.0 (+/-3) mm x 217.0 (+/-3) mm x 529 (+/- 5) mm 14 Clearance between the bottom of the plates and container 5 mm				5 Sec	
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10 Type of Connection between cells Bolted rigid copper connectors 11 Type of Separators Absorptive glass mat 12 Thickness of Separators 5.4 (2 layers of 2.7 mm each) 13 Dimensison of 2 volts cell (LXWXH), mm 183.0 (+/-3) mm x 217.0 (+/-3) mm x 529 (+/- 5) mm 14 Clearance between the bottom of the plates and container 5 mm	9 Size o	of positive plates, mm			
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14 Clearance between the bottom of the plates and container 5 mm					m
of the plates and container 5 mm				100.0 (+/-0) IIIII x 2 17.0 (+/-0) IIIII x 529 (+/- 0) III	
				5 mm	
15 Material of Container Polypropylene Co-polymer	15 Motor:	ial of Container		Polypropylene Co-polymer	

16	Recommended Charging Rate		
(i)	Float Charging Voltage		MEXIDE
(1)	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC	INDUSTRIES LIWITED
	between ambient temp. ()6 14 °C	2.25 +/- 0.02 VPC	
	between ambient temp. 13-24 °C	2.23 +/- 0.02 VPC	
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC	
(ii)	Float Charging Current	120	Amps (Max)
(iii)	Trickle Charging Voltage	NA	
(iv)	Trickle Charging Current	NA	
(v)	Boost Charging Voltage	2.35	Volts
(vi)	Boost Charging Current	160	Amps.
(vii)	Time taken to full charge from 100%	72 Hrs (Min)	, inpoi
(VII)			
	discharge state by constant voltage	2.1 volts(ocv)	
	charging & voltage at the end of this charge		
(viii)	Equalising Charging Current; Voltage	NA	
17	Guaranteed efficiencies at 10 hrs rate		
	(a) Ampere-hour efficiency	90%	
	(b) Watt-hour efficiency	80%	
	(b) Wat hour onlocity	00,1	
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)	
		0.5 % RMS of the charging voltage(Float charging)	
19	Total Resistance of Battery ; milliohms	Depending on no. of cells	
20	Overall Dimensions of each complete	Length 659.0 +/- 5, Width 632.0 +/- 5, Height 463.0 +/-	⁵ (mm)
20		(O cell module)	(1111)
	module (LxWxH) in mm	(6 cell module)	
21	Weight of unpacked and complete module	310.25 +/- 5% Kgs (Single 6 cell module)	
	with electrolyte ; Kgs		
22	with electrolyte ; Kgs Material of Modules	Powder coated MS	
	Material of Modules		
		Powder coated MS Yes, self re-sealing rubber safety valve with flame a	arrestor
23	Material of Modules		arrestor
23 24	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity	arrestor
23 24	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C	arrestor
23 24	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once	arrestor
23 24	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C	arrestor
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23 24	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning	arrestor
23 24	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored	arrestor
23 24	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning	arrestor
23 24 25	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning	arrestor
23 24 25	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.	arrestor
23 24 25	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm	arrestor
23 24 25 26	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition	arrestor
23 24 25 26	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm	arrestor
23 24 25 26 27	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition	arrestor
23 24 25 26 27	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition	arrestor
23 24 25 26 27	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually	arrestor
23 24 25 26 27	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually	arrestor
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23 24 25 26 27 28	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles 20 Yrs at 27 deg C in ideal float condition.	arrestor
23 24 25 26 27 28 29	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22,	arrestor
23 24 25 26 27 28 29	Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD Expected Life of Battery in years	Yes, self re-sealing rubber safety valve with flame a < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998	arrestor

	GENERAL TECHNICAL PARTICULARS	<u>PPST 850</u>		EXIDE
SL. NO.	DESCRIPTION		DETAILS	INDUSTRIES LIMITED
1 (a) (i) (ii) (iii)	Capacity in Ah At 27 ° C Initial Rated End of Life		850 850 680	
(b)	Rated Capacity(in Ah) at minimum ambient temperature of (as per IS 15549 : 2005)		Formula : Ct = { 1+ 0.0043 (27-t) }	
(c)	Rated Capacity(in Ah) at maximum ambient temperature of (as per IS 15549 : 2005)		Formula : Ct = { 1+ 0.0043 (27-t) }	
2	Capacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ah capacities	Discharge Current (Amps)	End Cell Voltage (Volts)
4 5 (i)	10Hr 9Hr 8Hr 7Hr 6Hr 5Hr 4Hr 3Hr 2Hr 1Hr 50 min 40 min 30 min 20 min 15 min 10 min 5 min 10 min 5 min 10 min 5 min 1 min Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand	850.00 832.15 807.50 779.45 747.15 708.05 664.70 609.45 538.05 425.00 396.95 365.50 340.00 306.00 253.90 185.56 104.47 31.20	85.0 92.5 100.9 111.4 124.5 141.6 166.2 203.2 269.0 425.0 476.5 548.8 660.0 918.9 1015.6 1117.8 1254.1 1879.2 2550 5100 5100 5 Sec	1.75 1.75 1.75 1.75 1.75 1.75 1.74 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7
	short circuit at terminals			
	Type/No. of Negative Plates per cell		Flat pasted;12	
	Type/No. of Positive Plates per cell		Flat pasted;11	
	Size of negative plates, mm		470 ± 1 (H) x 150 ± 1 (W) x 3.6 ± 0.5 (Thk)	
	Size of positive plates, mm		470 ± 1 (H) x 150 ± 1 (W) x 5.7 ± 0.5 (Thk)	
	Type of Connection between cells		Bolted rigid copper connectors	
	Type of Separators		Absorptive glass mat	
	Thickness of Separators		5.4 (2 layers of 2.7 mm each)	
	Dimensison of 2 volts cell (LXWXH), mm		183.0 (+/-3) mm x 217.0 (+/-3) mm x 529 (+/- 5) mm	l
14	Clearance between the bottom of the plates and container		5 mm	
15	Material of Container		Polypropylene Co-polymer	

0) Float Charging Voltage between antherit term, 1/5:4 ° C between antheriter antherit		December 1 of Observice Data	
between ambient men, 1-58-14 ° C 2.27 + 0.42 VPC C between ambient men, 25-34 ° C 2.23 + 0.42 VPC 2.23 + 0.42 VPC (i) Float Charge Qurrent 2.23 + 0.42 VPC 2.23 + 0.42 VPC (ii) Float Charge Qurrent 2.23 + 0.42 VPC 2.23 + 0.42 VPC (iii) Trickle Charge Qurrent 3.4 3.4 (iiii) Trickle Charge Qurrent NA Volts (iiii) Trickle Charge Qurrent NA Volts (iii) Trickle Charge Qurrent NA Volts (iii) Trickle Charge Qurrent NA Volts (iiii) Trickle Charge Qurrent NA NA (iiii) Trickle Charge Qurrent NA NA (iiii) Trickle Charge Qurrent NA NA (iiii) Trickle Charge Qurent NA NA <t< td=""><td>16</td><td>0 0</td><td></td></t<>	16	0 0	
between antient imp: 15:24 ° C 2 25:4 ° C 2 25:5 ° C	(1)		
between antient temp. 35:34 ° C 2:23 + / 0.02 VPC (i) Float Charging Current 77.5 Anps (Max) (ii) Troke Charging Virtuge NA NA (iii) Troke Charging Virtuge NA NA (iii) Troke Charging Virtuge NA NA (iii) Troke Charging Current NA NA (ivi) The taken to ULit charge From 100% 2.3 Style NA (ivi) The taken to ULit charge From 100% 2.1 Voltage NA (ivi) The taken to ULit charge From 100% 2.1 Voltage NA 12 Classifier Charging Virtuge NA 2.1 Voltage (ivi) The taken to ULit charge From 100% 2.0 %, RMS of the charging voltage/Eluk charging) 2.1 Style 13 Allowable voltage ripple 1.5 %, RMS of the charging voltage/Eluk charging) 2.5 %, RMS of the charging voltage/Eluk charging) 24 Variall Dimensions of each complete module with electrolys , Kgs 2.6 % and charging voltage/Eluk charging) 25 Variall Dimensions of each complete module with electrolys , Kgs 316.25 + .5% Kgs (Single 6 call module)			
Detween ambient tom;: 35-40 ° C 2.20 +/ 10.22 VPC (i) Float Charging Current NA (ii) Tracks Charging Current NA (iii) Tracks Charging Current NA (iv) Bood Charging Current NA (iv) Bood Charging Current NA (iv) Bood Charging Current NA (iv) Current et al. Status (iv) Current Notation 90% (iv) Current Notation 90% (iv) Current Notation 90% 19 Total Resistance of Battery : milliohms Depending on no. of cells 20 Overall Dimensions of each complete models (LW/H) in mm 16.5 %. RMS of the charging Voltage/Float charging) 21 Veloption Versions Cells and model 22 Weight of upacelo			
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(ii) Trickle Charging Voltage NA (iv) Equality Charge State by constant voltage NA (iv) Equality Charge State by constant voltage NA (iv) Garanteed efficiencies at 10 har state 90% (iv) (iv) State of the charging Voltage (Hock charging) (iv) (iv) State of the charging Voltage (Float Charging) (iv) (iv) State of the charging Voltage (Hock charging) (iv) (iv) State of the charging Voltage (Hock charging) (iv) Value State of Battery : milliohns Depending on no. of cells (iv) Use of case of Battery : milliohns Depending on no. of cells (iv) Value State of Models Powder coated MS 20 Value field of Use of the charging Voltage (Hock charging) 21 Weight of unpaked and complete module with electory to : Kgs State of the charging Value with fiame amestor 22 Weight of unpaked and complete module Yes, self re-sealing rubber safety valve with fiame amestor	(***		
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(v) Boot Charging Voltage 2.35 Volts (v) Time taken to full charge from 100% 170 Amps. (vi) Time taken to full charge from 100% 170 Amps. (vii) Equilibities (Charge Corrent, Voltage NA 17 Guaranteed officiencies at 10 hrs rate 00% 00% 18 Altowable voltage ripple 1.5 % FMS of the charging voltage(Fluic charging) 19 Total Resistance of Battery ; millichms Depending on no. of cells 20 Overall Dimensions of each complete module Largin 658.0 ** 6, Width 632.0 ** 5, (mm) 19 Total Resistance of Battery ; millichms Depending on no. of cells 20 Overall Dimensions of each complete module Largin 658.0 ** 6, Width 632.0 ** 5, (mm) 12 Weight or unpacked and complete module 116.2 % Kgs (Single 6 call module) 21 Weight or unpacked and complete module Yes, self re-sealing rubber safety valve with fiame arrestor 22 Versel of unpacked and complete module Yes, self re-sealing rubber safety valve with fiame arrestor 23 Whether explosion verits are offered Yes, self re-sealing rubber safety valve with fiame arrestor 24 Loss of capacity due to self discharge -0.5 % kres (Single 6 call module) 25 Ansout of Hydrogen evolved during normal Last than			
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at higher or lower temperature freshning charge to be provided as recommended. 26 Amount of Hydrogen evolved during normal normal float charging Less than 200ppm normal float condition 27 Recommended interval at which battery should be discharged at 10 hr discharge rate Once annually 28 No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD 1800 cycles 29 Expected Life of Battery in years 20 Yrs at 27 deg C in ideal float condition. 29 Spected Life of Battery in years 20 Yrs at 27 deg C in ideal float condition. 30 Applicable standard IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 ANSI T1 330, GR/BAT-01/03-MARCH 2004,		stored after supply in charged conditions	
26 Amount of Hydrogen evolved during normal normal float charging Less than 200ppm normal float condition 27 Recommended interval at which battery should be discharged at 10 hr discharge rate Once annually 28 No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 50% DOD 1800 cycles 4000 cycles 29 Expected Life of Battery in years 20 Yrs at 27 deg C in ideal float condition. 30 Applicable standard IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 ANSI T1 30, GR/BAT-01/03-MARCH 2004,			
26 Amount of Hydrogen evolved during normal normal float charging Less than 200ppm normal float condition 27 Recommended interval at which battery should be discharged at 10 hr discharge rate Once annually 28 No. of charge-discharge cycle battery can give during its entire life 4000 cycles 1800 cycles 1800 cycles 29 Expected Life of Battery in years 20 Yrs at 27 deg C in ideal float condition. 30 Applicable standard IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 ANSI TI 330, GR/BAT-01/03-MARCH 2004,			
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normal float charging normal float condition 27 Recommended interval at which battery should be discharged at 10 hr discharge rate Once annually 28 No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 50% DOD 4000 cycles 1800 cycles 29 Expected Life of Battery in years 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 ANSI T1 330, GR/BAT-01/03-MARCH 2004,			
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27 Recommended interval at which battery should be discharged at 10 hr discharge rate Once annually 28 No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 50% DOD at 800 cycles 29 Expected Life of Battery in years 20 Yrs at 27 deg C in ideal float condition. 29 Expected Life of Battery in years 20 Yrs at 27 deg C in ideal float condition. 30 Applicable standard IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 ANSI T 130, GR/BAT-01/03-MARCH 2004,	20		
should be discharged at 10 hr discharge rate 28 No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD 1800 cycles 1400 cycles 1400 cycles 29 Expected Life of Battery in years 20 Yrs at 27 deg C in ideal float condition. 30 Applicable standard IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 30 Applicable standard ANSI TI 330, GR/BAT-01/03-MARCH 2004,		normal noal onalyllig	norma noat condition
should be discharged at 10 hr discharge rate 28 No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD 1800 cycles 1400 cycles 1400 cycles 29 Expected Life of Battery in years 20 Yrs at 27 deg C in ideal float condition. 30 Applicable standard IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 30 Applicable standard ANSI TI 330, GR/BAT-01/03-MARCH 2004,	27	Recommended interval at which battery	Once annually
28 No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD 1800 cycles 1400 cycles 1400 cycles 29 Expected Life of Battery in years 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22, 30 Applicable standard ANSI T1 330, GR/BAT-01/03-MARCH 2004, GR/BAT-01/03-MARCH 2004,			
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at 50% DOD at 80% DOD 1800 cycles 1400 cycles 29 Expected Life of Battery in years 20 Yrs at 27 deg C in ideal float condition.			
at 80% DOD 1400 cycles 29 Expected Life of Battery in years 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 30 Applicable standard ANSI T1 330, GR/BAT-01/03-MARCH 2004,			
29 Expected Life of Battery in years 20 Yrs at 27 deg C in ideal float condition.		at 50% DOD	1800 cycles
IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 Applicable standard GR/BAT-01/03-MARCH 2004,		at 80% DOD	1400 cycles
IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 ANSI T1 330, GR/BAT-01/03-MARCH 2004,		Eveneted Life of Detter via vege	
JIS : C 8704-2, : 1998 30 Applicable standard ANSI T1 330, GR/BAT-01/03-MARCH 2004,	29	Expected Life of Battery in years	20 Yrs at 27 deg C in ideal float condition.
JIS : C 8704-2, : 1998 30 Applicable standard ANSI T1 330, GR/BAT-01/03-MARCH 2004,			
30 Applicable standard ANSI T1 330, GR/BAT-01/03-MARCH 2004,			
GR/BAT-01/03-MARCH 2004,			
	30	Applicable standard	
IS 15549 : 2005			
	1		IS 15549 : 2005

GENERAL TECHNICAL PARTICULARS

<u>PPST 880</u>



				INDUSTRIES LIMITED
SL. NO.	DESCRIPTION		DETAILS	
4	Canacity in Alt			
(a)	Capacity in Ah At 27 ° C			
(i)	Initial		880	
(ii)	Rated		880	
(iii)	End of Life		704	
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct = { 1+ 0.0043 (27-t) }	
	ambient temperature of (as per IS 15549 : 2005)			
(c)	Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (27-t) }	
(0)	ambient temperature of (as per IS 15549 : 2005)			
2	Capacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ah capacities	Discharge Current	End Cell
			(Amps)	Voltage (Volts)
				(voits)
	10Hr	880.00	88.0	1.75
	9Hr	861.52	95.7	1.75
	8Hr	836.00	104.5	1.75
	7Hr	806.96	115.3	1.75
	6Hr	773.52	128.9	1.75
	5Hr	733.04	146.6	1.75
	4Hr	688.16	172.0	1.74
	3Hr 2Hr	630.96 557.04	210.3 278.5	1.74 1.7
	1Hr	440.00	440.0	1.7
	50 min	410.96	440.0	1.7
	40 min	378.40	568.2	1.7
	30 min	352.00	704.0	1.7
	20 min	316.80	951.4	1.7
	15 min	262.86	1051.4	1.7
	10 min	192.10	1157.3	1.7
	5 min	108.15	1298.3	1.7
	1 min	32.30	1945.5	1.7
3	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V		2640	Amps
4	Expected Fault at bus due to battery		5280	Amps
E (i)	Short Circuit Current at Battery terminals		5280	Amps
	Time for which the battery can withstand		5280 5 Sec	Amps
5 (II)	short circuit at terminals		5.000	
6	Type/No. of Negative Plates per cell		Flat pasted;12	
7	Type/No. of Positive Plates per cell		Flat pasted;11	
8	Size of negative plates, mm		470 ± 1 (H) x 150 ± 0.05 (W) x 3.6 ± 0.15 (Thk)	
9	Size of positive plates, mm		470 ± 1 (H) x 150 ± 0.05 (W) x 5.7 ± 0.15 (Thk)	
10	Type of Connection between cells		Bolted rigid copper connectors	
12	Type of Separators		Absorptive glass mat	
13	Thickness of Separators		5.4 (2 layers of 2.7 mm each)	
14	Dimensison of 2 volts cell (LXWXH), mm		183.0 (+/-3) mm x 217.0 (+/-3) mm x 529 (+/- 5) mm	
15	Clearance between the bottom of the plates and container		5 mm	

17		
	Recommended Charging Rate	C. EVIDE
(i)		
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC
(ii)	Float Charging Current	132 Amps (Max)
(iii)		NA
(iv)		NA
		2.35 Volts
(v)		
(vi)		176 Amps.
(vii)		72 Hrs (Min)
	discharge state by constant voltage	2.1 volts(ocv)
	charging & voltage at the end of this charge	
(viii)	Equalising Charging Current;Voltage	NA
18	Guaranteed efficiencies at 10 hrs rate	
10	(a) Ampere-hour efficiency	90%
		80%
	(b) Watt-hour efficiency	80%
19	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)
		0.5 % RMS of the charging voltage(Float charging)
20	Total Resistance of Battery ; milliohms	Depending on no. of cells
20	rotar recistance of Battery, minioring	
21	Overall Dimensions of each complete	Length 659.0 ^{+/- 5} , Width 632.0 ^{+/- 5} , Height 463.0 ^{+/- 5} (mm)
	module (LxWxH) in mm	(6 cell module)
22	Weight of unpacked and complete module	337.3 +/- 5% Kgs (Single 6 cell module)
22	with electrolyte ; Kgs	
	with electrolyte, kgs	
22	Address of the Address of the second s	
	Inaterial of Modules	Powder coated MS
23	Material of Modules	Powder coated MS
	Whether explosion vents are offered	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor
24	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor
24		
24 25	Whether explosion vents are offered Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
24 25	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C
24 25	Whether explosion vents are offered Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once
24 25	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored
24 25	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning
24 25	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored
24 25	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning
24 25 26	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
24 25	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
24 25 26	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
24 25 26 27	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
24 25 26 27	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
24 25 26 27	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
24 25 26 27 28	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
24 25 26 27 28	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
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24 25 26 27 28	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles
24 25 26 27 28	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
24 25 26 27 28	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles
24 25 26 27 28 29	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
24 25 26 27 28 29	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
24 25 26 27 28 29	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
24 25 26 27 28 29	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
24 25 26 27 28 29 30	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharge at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
24 25 26 27 28 29 30	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
24 25 26 27 28 29 30	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharge at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity

GENERAL TECHNICAL PARTICULARS PPST 925

	DESCRIPTION		DETAILS	
1	Capacity in Ah		1	
(a)				
(ü)			925	
(ii)			925	
(iii)			740	
. ,				
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct ={ 1+ 0.0043 (t-27) }	
	ambient temperature of (as per IS 15549 : 2005)			
(c)			Formula : Ct = { 1+ 0.0043 (t-27) }	
	ambient temperature of (as per IS 15549 : 2005)			
2	Capacity at Various Discharge Rates at 27°C			
	Davia d of Discharge	A &	Discharme Ourment	End Oal
	Period of Discharge	Ah capacities	Discharge Current	End Cell
			(Amps)	Voltage
				(Volts)
	10Hr	925.00	92.5	1.75
	9Hr	905.58	100.6	1.75
	8Hr	878.75	109.8	1.75
	7Hr	848.23	121.2	1.75
	6Hr	813.08	135.5	1.75
	5Hr	770.53	154.1	1.75
	4Hr	723.35	180.8	1.74
	3Hr	663.23	221.1	1.74
	2Hr	585.53	292.8	1.7
	1Hr	462.50	462.5	1.7
	50 min	431.98	518.6	1.7
	40 min	397.75	597.2	1.7
	30 min	370.00	740.0	1.7
	20 min	333.00	1000.0	1.7
	15 min	276.30	1105.2	1.7
	10 min	201.93	1216.4	1.7
	5 min	113.68	1364.7	1.7
	1 min	33.95	2045.0	1.7
		33.95	2045.0	1.7
	Maximum Momentary Current for 1 min upto cut off voltage	33.95		
		33.95	2045.0	1.7 Amps
	Maximum Momentary Current for 1 min upto cut off voltage	33.95		
3	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V	33.95	2775	Amps
3	Maximum Momentary Current for 1 min upto cut off voltage	33.95		
3	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V	33.95	2775	Amps
3 4 5 (i)	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals	33.95	2775	Amps
3 4 5 (i)	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery	33.95	2775 5550	Amps Amps
3 4 5 (i)	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals	33.95	2775 5550 5550	Amps Amps
3 4 5 (i) 5 (ii)	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals	33.95	2775 5550 5550 5 Sec	Amps Amps
3 4 5 (i) 5 (ii)	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand	33.95	2775 5550 5550	Amps Amps
3 4 5 (i) 5 (ii) 6	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals	33.95	2775 5550 5550 5 Sec	Amps Amps
3 4 5 (i) 5 (ii) 6 7	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell	33.95	2775 5550 5550 5 Sec Flat pasted;18	Amps Amps
3 4 5 (i) 5 (ii) 6 7 8	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell	33.95	2775 5550 5550 5 Sec Flat pasted;18 Flat pasted;17	Amps Amps
3 4 5 (i) 5 (ii) 6 7 8 9	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell Size of negative plates, mm	33.95	2775 5550 5550 5 Sec Flat pasted;18 Flat pasted;17 440(L) x 140(W) x 3.2 (+/-1) (Thk)	Amps Amps
3 4 5 (i) 5 (ii) 6 7 8 9 10	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell Size of negative plates, mm Size of positive plates, mm	33.95	2775 5550 5550 5 Sec Flat pasted;18 Flat pasted;17 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk)	Amps Amps
3 4 5 (i) 5 (ii) 6 7 8 9 10 11	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell Size of negative plates, mm Size of positive plates, mm Type of Connection between cells	33.95	2775 5550 5550 5 Sec Flat pasted;18 Flat pasted;17 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk) Bolted rigid copper connectors	Amps Amps
3 4 5 (i) 5 (ii) 6 7 8 9 10 11 12	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell Size of negative plates, mm Size of negative plates, mm Type of Connection between cells Type of Separators Thickness of Separators	33.95	2775 5550 5550 5 Sec Flat pasted;18 Flat pasted;17 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk) Bolted rigid copper connectors Absorptive glass mat	Amps Amps
3 4 5 (i) 5 (ii) 6 7 8 9 10 11 11 12 13	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell Size of negative plates, mm Size of positive plates, mm Type of Connection between cells Type of Separators Thickness of Separators Dimensison of 2 volts cell (LXWXH), mm	33.95	2775 5550 5550 5 Sec Flat pasted;18 Flat pasted;17 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk) Bolted rigid copper connectors Absorptive glass mat 5.3 (2 layers of 2.65 mm each)	Amps Amps
3 4 5 (i) 5 (ii) 6 7 8 9 10 11 11 12 13	Maximum Momentary Current for 1 min upto cut off voltage of 1.6 V Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell Size of negative plates, mm Size of negative plates, mm Type of Connection between cells Type of Separators Thickness of Separators	33.95	2775 5550 5550 5 Sec Flat pasted;18 Flat pasted;17 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk) Bolted rigid copper connectors Absorptive glass mat 5.3 (2 layers of 2.65 mm each)	Amps Amps

(1)	Recommended Charging Rate	
(i)	Float Charging Voltage	
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC
(ii)	Float Charging Current	138.75 Amps (Max)
(iii)	Trickle Charging Voltage	NA
(iv)	Trickle Charging Current	NA
(v)	Boost Charging Voltage	2.35 Volts
(vi)	Boost Charging Current	185 Amps.
(vii)	Time taken to full charge from 100%	72 Hrs (Min)
	discharge state by constant voltage	OCV 2.1 volts (Min.)
	charging & voltage at the end of this charge	
(viii)	Equalising Charging Current;Voltage	NA
17	Guaranteed efficiencies at 10 hrs rate	000/
	(a) Ampere-hour efficiency	90%
	(b) Watt-hour efficiency	80%
10	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)
10	Allowable voltage lipple	0.5 % RMS of the charging voltage(Float charging)
19	Internal Resistance of each cell at	
	Fully Charged Condition	0.30 milli ohms n
20	Total Resistance of Battery ; milliohms	Depending on no. of cells
21	Overall Dimensions of each complete	Length 462 +/- 5, Width 510 +/- 5, Height 363 +/- 5 (mm)
	module (LxWxH) in mm	(2 cell module)
22	Weight of unpacked and complete module	142.1 +/- 5% Kgs (Single 2 cell module)
	Weight of unpacked and complete module with electrolyte ; Kgs	142.1 +/- 5% Kgs (Single 2 cell module)
		142.1 +/- 5% Kgs (Single 2 cell module) Powder coated MS
23	with electrolyte ; Kgs Material of Modules	Powder coated MS
23	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor
23	with electrolyte ; Kgs Material of Modules	Powder coated MS
23 24 25	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor
23 24 25 26	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
23 24 25 26	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C
23 24 25 26	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once
23 24 25 26	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored
23 24 25 26	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
23 24 25 26 27	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
23 24 25 26 27	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
23 24 25 26 27	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
23 24 25 26 27 27	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
23 24 25 26 27 27 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
23 24 25 26 27 28 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
23 24 25 26 27 28 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually
23 24 25 26 27 28 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
23 24 25 26 27 28 28	with electrolyte ; Kgs <u>Material of Modules</u> Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually
23 24 25 26 27 28 29	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharge dat 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity

	JIS : C 8704-2, : 1998
31 Applicable standard	ANSI T1 330, GR/BAT-01/03-MARCH 2004, IS 15549 : 2005

GENERAL TECHNICAL PARTICULARS UPST/NMST 500



				THOUSTRIES LIMITED
L. NO.	DESCRIPTION		DETAILS	
4	Organitation Ale		I	
1 (a)	Capacity in Ah At 27 ° C			
(a) (i)	Initial		500	
(ii)	Rated		500	
(iii)	End of Life		400	
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct = { 1+ 0.0043 (t-27) }	
	ambient temperature of (as per IS 15549 : 2005)			
(c)	Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (t-27) }	
(0)	ambient temperature of (as per IS 15549 : 2005)			
2	Capacity at Various Discharge Rates at 27°C			
	Period of Discharge	Ah capacities	Discharge Current	End Cell
			(Amps)	Voltage
				(Volts)
	10Hr	500.00	50.0	1.75
	9Hr	489.50	54.4	1.75
	8Hr	475.00	59.4	1.75
	7Hr	458.50	65.5	1.75
	6Hr	439.50	73.3	1.75
	5Hr	416.50	83.3	1.75
	4Hr 3Hr	391.00 358.50	97.8 119.5	1.74 1.74
	2Hr	316.50	158.3	1.74
	2111 1Hr	250.00	250.0	1.7
	50 min	233.50	280.3	1.7
	40 min	215.00	322.8	1.7
	30 min	200.00	400.0	1.7
	20 min	180.00	540.5	1.7
	15 min	149.35	597.4	1.7
	10 min 5 min	109.15 61.45	657.5 737.7	1.7 1.7
	1 min	18.35	1105.4	1.7
	Maximum Momentary Current for 1 min upto cut off voltage of		1500	Amps
3	1.6 V			
4	Expected Fault at bus due to battery		3000	Amps
	,,			
	Short Circuit Current at Battery terminals		3000	Amps
5 (ii)	Time for which the battery can withstand		5 Sec	
	short circuit at terminals			
6	Type/No. of Negative Plates per cell		Flat pasted;10	
7	Type/No. of Positive Plates per cell		Flat pasted;9	
8	Size of negative plates, mm		440(L) x 140(W) x 3.2 (+/-1) (Thk)	
9	Size of positive plates, mm		440(L) x 140(W) x 5.3 (+/-1) (Thk)	
10	Type of Connection between cells		Bolted rigid copper connectors	
11	Type of Separators		Absorptive glass mat	
12	Thickness of Separators		5.3 (2 layers of 2.65 mm each)	
13	Dimensison of 2 volts cell (LXWXH), mm		189 (+/-3) mm x 172 (+/-3) mm x 50	07 (+/- 5) mm
14	Clearance between the bottom of the plates and container		5 mm	
15	Material of Container		Polypropylene Co-polymer	
.0			21 1 2 1 2 1 2 1 2 1 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P - 2 P	

16	Person manded Charging Pate	
	Recommended Charging Rate Float Charging Voltage	NEVIDE
(i)		
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC
(ii)	Float Charging Current	75 Amps (Max)
(iii)	Trickle Charging Voltage	NA
(iv)	Trickle Charging Current	NA
(v)	Boost Charging Voltage	2.35 Volts
(vi)	Boost Charging Current	100 Amps.
(vii)	Time taken to full charge from 100%	72 Hrs (Min)
	discharge state by constant voltage	2.1 volts(ocv)
	charging & voltage at the end of this charge	
	Equalising Charging Current; Voltage	NA
()	- 1	
17	Guaranteed efficiencies at 10 hrs rate	
17		2021
	(a) Ampere-hour efficiency	90%
	(b) Watt-hour efficiency	80%
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)
	r menasie renage nippie	0.5 % RMS of the charging voltage(Float charging)
-	Internal Resistance of each cell at	
	Fully Charged Condition	0.44 milli ohms min
00		Denendian en un of colle
20	Total Resistance of Battery ; milliohms	Depending on no. of cells
21	Overall Dimensions of each complete	Length 634 +/- 5, Width 580 +/- 5, Height 420 +/- 5
	module (LxWxH) in mm	(6 cell module)
		```
22	Weight of unpacked and complete module	236.6 +/- 5% Kgs (Single 6 cell module)
	with electrolyte ; Kgs	
23	Material of Modules	Powder coated MS
23	Material of Modules	Powder coated MS
	Material of Modules Whether explosion vents are offered	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor
24	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor
24		
24 25	Whether explosion vents are offered Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
24 25	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C
24 25 26	Whether explosion vents are offered Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
24 25 26	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C
24 25 26	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored
24 25 26	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning
24 25 26	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored
24 25 26	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning
24 25 26	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
24 25 26 27	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
24 25 26 27	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
24 25 26 27	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
24 25 26 27 27	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
24 25 26 27 27	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
24 25 26 27 28	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
24 25 26 27 28 29	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
24 25 26 27 28 29	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually
24 25 26 27 28 29	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles
24 25 26 27 28 29	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles
24 25 26 27 28 29	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles
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24 25 26 27 28 29	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles
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24 25 26 27 28 29	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1800 cycles 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22,
24 25 26 27 28 29 30	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD Expected Life of Battery in years	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1800 cycles 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998
24 25 26 27 28 29	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 ANSI T1 330,
24 25 26 27 28 29 30	Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD Expected Life of Battery in years	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually 4000 cycles 1800 cycles 1800 cycles 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998

UPST/NMST 600



SL. NO.	DESCRIPTION	DETAILS		
1 (a) (i) (ii) (iii)	Capacity in Ah At 27 ° C Initial Rated End of Life		600 600 480	
(b)	Rated Capacity(in Ah) at minimum ambient temperature of ( as per IS 15549 : 2005)		Formula : Ct = { 1+ 0.0043 (t-27) }	
(c)	Rated Capacity(in Ah) at maximum ambient temperature of ( as per IS 15549 : 2005)		Formula : Ct = { 1+ 0.0043 (t-27) }	
2	Capacity at Various Discharge Rates at 27°C <i>Period of Discharge</i>	Ah capacities	Discharge Current (Amps)	End Cell Voltage (Volts )
3	10Hr         9Hr         8Hr         7Hr         6Hr         5Hr         4Hr         3Hr         2Hr         1Hr         50 min         40 min         30 min         20 min         15 min         10 min         5 min         1 min	600.00 587.40 570.00 550.20 527.40 499.80 469.20 430.20 379.80 300.00 280.20 258.00 240.00 216.00 179.22 130.98 73.74 22.02	60.0 65.3 71.3 78.6 87.9 100.0 117.3 143.4 189.9 300.0 336.4 387.4 480.0 648.6 716.9 789.0 885.2 1326.5	1.75 1.75 1.75 1.75 1.75 1.75 1.74 1.74 1.74 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7
	Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals		3600 5 Sec	Amps
6	Type/No. of Negative Plates per cell		Flat pasted;11	
	Type/No. of Positive Plates per cell		Flat pasted;10	
	Size of negative plates, mm		440(L) x 140(W) x 3.2 (+/-1) (Thk)	
	Size of positive plates, mm		440(L) x 140(W) x 5.3 (+/-1) (Thk)	
	Type of Connection between cells		Bolted rigid copper connectors	
	Type of Separators		Absorptive glass mat	
	Thickness of Separators		5.3 (2 layers of 2.65 mm each)	
	Dimensison of 2 volts cell (LXWXH), mm		189 (+/-3) mm x 172 (+/-3) mm x 50	7 (+/- 5) mm
	Clearance between the bottom of the plates and container		5 mm	· ′
15	Material of Container		Polypropylene Co-polymer	

16 (i)		
(i)	Recommended Charging Rate	
(.)	Float Charging Voltage	<b>EXIDE</b>
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC
<i>(</i> )	•	
(ii)	Float Charging Current	90 Amps (Max)
(iii)	Trickle Charging Voltage	NA
(iv)	Trickle Charging Current	NA
(v)	Boost Charging Voltage	2.35 Volts
(vi)	Boost Charging Current	120 Amps.
	Time taken to full charge from 100%	72 Hrs (Min)
	discharge state by constant voltage	2.1 volts(ocv)
	charging & voltage at the end of this charge	
(viii)	Equalising Charging Current;Voltage	NA
17	Guaranteed efficiencies at 10 hrs rate	
	(a) Ampere-hour efficiency	90%
		80%
	(b) Watt-hour efficiency	00%
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)
		0.5 % RMS of the charging voltage(Float charging)
19	Internal Resistance of each cell at	
	Fully Charged Condition	0.40 milli ohms min
	r diry onarged oondition	
20	Total Resistance of Battery ; milliohms	Depending on no. of cells
21	Overall Dimensions of each complete	Length 634 +/- 5, Width 580 +/- 5, Height 420 +/- 5
	module (LxWxH) in mm	( 6 cell module)
~~~		$240.0 \pm 1/100$ (Kee (Single C = 1) $= -100$
	Weight of unpacked and complete module	249.8 +/- 5% Kgs (Single 6 cell module)
	with electrolyte ; Kgs	
23	Material of Modules	
		Powder coated MS
		Powder coated MS
24	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor
24	Whether explosion vents are offered	
		Yes, self re-sealing rubber safety valve with flame arrestor
	Whether explosion vents are offered Loss of capacity due to self discharge	
25	Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
25 26	Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C
25 26	Loss of capacity due to self discharge	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once
25 26	Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C
25 26	Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored
25 26	Loss of capacity due to self discharge The period for which the battery should be	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning
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25 26	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
25 26 27	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
25 26 27	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
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25 26 27	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
25 26 27 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
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25 26 27 28	Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
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		IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998
31	Applicable standard	ANSI T1 330,
		GR/BAT-01/03-MARCH 2004,
		IS 15549 : 2005

GENERAL TECHNICAL PARTICULARS

NMST/UPST 800



				INDUSTRIES LIMITED
SL. NO.	DESCRIPTION		DETAILS	
1	Capacity in Ah			
(a)	At 27 ° C			
(i)	Initial		800	
(ii)	Rated		800	
(iii)	End of Life		640	
(1-)	Detect Operative Ability and estimates		Formula ( Or and a second second	
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct = C27{ 1+ 0.0043 (t-27) }	
	ambient temperature of ( as per IS 15549 : 2005)			
(0)	Roted Consolt/(in Ab) at maximum		Formula : Ct = C27 { 1+ 0.0043 (t-27) }	
(c)	Rated Capacity(in Ah) at maximum ambient temperature of ( as per IS 15549 : 2005)		Formula: $Ct = C27 \{ 1+0.0043 (t-27) \}$	
2	Capacity at Various Discharge Rates at 27°C			
2	Capacity at various Discharge Mates at 27 C			
	Period of Discharge	Ah capacities	Discharge Current	End Cell
	i eneu er zieenaige	, in capacinee	(Amps)	Voltage
			(********	(Volts)
				(10110)
	10Hr	800.00	80.0	1.75
	9Hr	783.20	87.0	1.75
	8Hr	760.00	95.0	1.75
	7Hr	733.60	104.8	1.75
	6Hr	703.20	117.2	1.75
	5Hr	666.40	133.3	1.75
	4Hr	625.60	156.4	1.74
	3Hr	573.60	191.2	1.74
	2Hr	506.40	253.2	1.7
	1Hr	400.00	400.0	1.7
	50 min	373.60	448.5	1.7
	40 min	344.00	516.5	1.7
	30 min	320.00	640.0	1.7
	20 min	288.00	864.9	1.7
	15 min	238.96	955.8	1.7
	10 min	174.64	1052.0	1.7
	5 min 1 min	98.32 29.36	1180.3 1768.7	1.7 1.7
				1
	Maximum Momentary Current for 1 min upto cut off voltage of		2400	Amps
3	1.6 V			
4	Expected Fault at bus due to battery		4800	Amps
5 (i)	Short Circuit Current at Battery terminals		4800	Amps
5 (ii)	Time for which the battery can withstand		5 Sec	
	short circuit at terminals			
6	Type/No. of Negative Plates per cell		Flat pasted;15	
(	Type/No. of Positive Plates per cell		Flat pasted;14	
8	Size of negative plates, mm		440(L) x 140(W) x 3.2 (+/-1) (Thk)	
9	Size of positive plates, mm		440(L) x 140(W) x 5.3 (+/-1) (Thk)	
10	Type of Connection between cells		Bolted rigid copper connectors	
11	Type of Separators		Absorptive glass mat	
	Thickness of Separators		5.3 (2 layers of 2.65 mm each)	
	Dimensison of 2 volts cell (LXWXH), mm		303 (+/-3) mm x 172 (+/-3) mm x 507 (+/- 5) mm	
14	Clearance between the bottom of the plates and container		5 mm	
			Polypropylene Co-polymer	
15	Material of Container			

16	Recommended Charging Rate		. EVIDE
(i)	Float Charging Voltage	0.07.1 0.00 \/DO	
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC	INDUSTRIES CINITED
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC	
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC	
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC	
(ii)	Float Charging Current	120	Amps (Ma
			Amps (ina
(iii)	Trickle Charging Voltage	NA	
(iv)	Trickle Charging Current	NA	
(v)	Boost Charging Voltage	2.35	Volts
(vi)	Boost Charging Current	160	Amps.
	aken to full charge from 100%	72 Hrs (Min)	
	ge state by constant voltage	OCV 2.1 volts (Min.)	
chargin	ng & voltage at the end of this charge		
(viii)	Equalising Charging Current;Voltage	NA	
17 Guarant	teed efficiencies at 10 hrs rate		
		00%	
	pere-hour efficiency	90%	
(b) Wa	att-hour efficiency	80%	
18 Allowab	le voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)	
		0.5 % RMS of the charging voltage(Float charging)	
19 Internal	Resistance of each cell at		
(i) Fully	Charged Condition	1.60	milli ohms
(ii) Fully	Discharged Condition	1.80	milli ohms
20 Total Re	esistance of Battery ; milliohms	Depending on no. of cells	
21 Overall	Dimensions of each complete	Length 462 +/- 5, Width 510 +/- 5, Height 363 +/- 5 (m	nm)
module	( LxWxH) in mm	( 2 cell module)	,
module			
00	-f		
	of unpacked and complete module	121.7 +/- 5% Kgs (Single 2 cell module)	
with ele	ctrolyte ; Kgs		
23 Material	l of Modules	Powder coated MS	
24 Whethe	r explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arre	stor
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
25 Loss of	capacity due to self discharge	< 0.5% per week of c-10 capacity	
26 The per	iod for which the battery should be	If stored in Indian ambient temp of 30 deg C	
stored a	after supply in charged conditions	cells will need freshning charge once	
		in every three months, however if stored	
		at higher or lower temperature freshning	
		charge to be provided as recommended.	
27 Amount	of Hydrogon ovolvod during pormal	Loss than 200nnm	
	of Hydrogen evolved during normal	Less than 200ppm	
normal	float charging	normal float condition	
	mended interval at which battery	Once annually	
should b	be discharged at 10 hr discharge rate		
20 N/	harra diasharra ayala hattany aon		
	harge-discharge cycle battery can ring its entire life		
give du		4000 evelop	
	at 20% DOD	4000 cycles	
	at 50% DOD	1800 cycles	
	at 80% DOD	1400 cycles	
30 Expecte	ed Life of Battery in years	20 Yrs at 27 deg C in ideal float condition.	
30 Expecte	ed Life of Battery in years	20 Yrs at 27 deg C in ideal float condition.	
30 Expecte	ed Life of Battery in years	20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22,	

IEC 60896 - 21 & 22,           JIS : C 8704-2, : 1998           31         Applicable standard           ANSI T1 330,	
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GEN	NERAL TECHNICAL PARTICULARS	<u>NMST 850</u>		EXIDE
SL. NO.	DESCRIPTION		DETAILS	INDUSTRIES LIMITED
1 (a) (i) (ii) (iii) (b)	Capacity in Ah At 27 ° C Initial Rated End of Life Rated Capacity(in Ah) at minimum ambient temperature of ( as per IS 15549 : 2005)		850 850 680 Formula : Ct = C27( 1+ 0.0043 (t-27) )	
(c)	Rated Capacity(in Ah) at maximum ambient temperature of ( as per IS 15549 : 2005)		Formula : Ct = C27 { 1+ 0.0043 (t-27) }	
2 Capa	city at Various Discharge Rates at 27°C Period of Discharge	Ah capacities	Discharge Current (Amps)	End Cell Voltage (Volts )
	<b>10Hr</b> 9Hr 8Hr 7Hr 6Hr 5Hr 2Hr 2Hr 1Hr 50 min 30 min 30 min 20 min 15 min 10 min 5 min 1 min 1 min	<b>850.00</b> 832.15 807.50 779.45 747.15 708.05 664.70 609.45 538.05 425.00 396.95 365.50 340.00 306.00 253.90 185.56 104.47 31.20	<b>85.0</b> 92.5 100.9 111.4 124.5 141.6 166.2 203.2 269.0 425.0 476.5 548.8 680.0 918.9 1015.6 1117.8 1254.1 1879.2	1.75 1.75 1.75 1.75 1.75 1.75 1.75 1.75
Maxir 3 1.6 V	mum Momentary Current for 1 min upto cut off voltage of		2550	Amps
5 (i) Short 5 (ii) Time	cted Fault at bus due to battery t Circuit Current at Battery terminals for which the battery can withstand t circuit at terminals		5100 5100 5 Sec	Amps Amps
7 Type/ 8 Size c 9 Size c 10 Type 11 Type 12 Thick 13 Dimei	/No. of Negative Plates per cell /No. of Positive Plates per cell of negative plates, mm of positive plates, mm of Connection between cells of Separators ensison of 2 volts cell (LXWXH), mm rance between the bottom		Flat pasted;15 Flat pasted;14 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk) Bolted rigid copper connectors Absorptive glass mat 5.3 (2 layers of 2.65 mm each) 303 (+/-3) mm x 172 (+/-3) mm x 507 (+/- 5) mm	
	e plates and container rial of Container		5 mm Polypropylene Co-polymer	

10			
16	Recommended Charging Rate		A EVIDE
(i)			
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC	INDUSTRIES LINITED
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC	
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC	
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC	
(ii)	Float Charging Current	127.5	Amps (Ma
		NA	Anips (ind
(iii)	Trickle Charging Voltage		
(iv)	Trickle Charging Current	NA	
(v)	Boost Charging Voltage	2.35	Volts
(vi)	Boost Charging Current	170	Amps.
	Time taken to full charge from 100%	72 Hrs (Min)	
(•)	discharge state by constant voltage	OCV 2.1 volts (Min.)	
	charging & voltage at the end of this charge		
(viii)	Equalising Charging Current;Voltage	NA	
17	Guaranteed efficiencies at 10 hrs rate		
	(a) Ampere-hour efficiency	90%	
	(b) Watt-hour efficiency	80%	
	(-)		
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)	
		0.5 % RMS of the charging voltage(Float charging)	
19	Total Resistance of Battery ; milliohms	Depending on no. of cells	
20	Overall Dimensions of each complete	Length 462 +/- 5, Width 527 +/- 5, Height 363 +/- 5	(mm)
20	module (LxWxH) in mm	( 2 cell module)	)
	Weight of unpacked and complete module	121.7 +/- 5% Kgs (Single 2 cell module)	
	with electrolyte ; Kgs		
22	Material of Modules	Powder coated MS	
23	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame an	restor
24	Loss of capacity due to self discharge	< 0.5% per week of c-10 capacity	
25	The period for which the battery should be	If stored in Indian ambient temp of 30 deg C	
	stored after supply in charged conditions	cells will need freshning charge once	
		in every three months, however if stored	
		at higher or lower temperature freshning	
		charge to be provided as recommended.	
26	Amount of Hydrogen evolved during normal	Less than 200ppm	
	Amount of Hydrogen evolved during normal normal float charging	Less than 200ppm normal float condition	
	normal float charging	normal float condition	
27	normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	normal float condition	
27	normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can	normal float condition	
27	normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life	normal float condition Once annually	
27	normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	normal float condition	
27	normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life	normal float condition Once annually 4000 cycles 1800 cycles	
27	normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	normal float condition Once annually 4000 cycles	
27	normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	normal float condition Once annually 4000 cycles 1800 cycles	
27	normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	normal float condition Once annually 4000 cycles 1800 cycles	
27	normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles	
27	normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles 20 Yrs at 27 deg C in ideal float condition.	
27	normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD	normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles 20 Yrs at 27 deg C in ideal float condition.	
27 28 29	normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD Expected Life of Battery in years	normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998	
27	normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD Expected Life of Battery in years	normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998 ANSI T1 330,	
27 28 29	normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD at 80% DOD Expected Life of Battery in years	normal float condition Once annually 4000 cycles 1800 cycles 1400 cycles 20 Yrs at 27 deg C in ideal float condition. IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998	

## GENERAL TECHNICAL PARTICULARS UPST/NMST 925

. NO.	DESCRIPTION		DETAILS	
1	Capacity in Ah			
(a)	At 27 ° C			
(i)	Initial		925	
(ii)			925	
(iii)			740	
( )				
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct ={ 1+ 0.0043 (t-27) }	
(~)	ambient temperature of ( as per IS 15549 : 2005)			
(c)	Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (t-27) }	
(0)	ambient temperature of ( as per IS 15549 : 2005)			
2	Capacity at Various Discharge Rates at 27°C			
2	Capacity at valious Discharge Nates at 21 C			
	Period of Discharge	Ah capacities	Discharge Current	End Ce
	Teriod of Discharge	An capacities	-	Voltag
			(Amps)	
				(Volts
	10Hr	925.00	92.5	1.75
	9Hr	905.58	100.6	1.75
	8Hr	878.75	109.8	1.75
	7Hr	848.23	121.2	1.75
	6Hr	813.08	135.5	1.75
	5Hr	770.53	154.1	1.75
	4Hr	723.35	180.8	1.74
	3Hr	663.23	221.1	1.74
	2Hr	585.53	292.8	1.7
	1Hr	462.50	462.5	1.7
	50 min	431.98	518.6	1.7
	40 min	397.75	597.2	1.7
	30 min	370.00	740.0	1.7
	20 min	333.00	1000.0	1.7
	15 min	276.30	1105.2	1.7
	10 min	201.93	1216.4	1.7
	5 min	113.68	1364.7	1.7
	1 min	33.95	2045.0	1.7
	Maximum Momentary Current for 1 min upto cut off voltage		2775	Amps
~	of 1.6 V		EIIO	
3				, unpo
3				, inpo
3				, inpo
_			5550	Amps
_	Expected Fault at bus due to battery		5550	
4	Expected Fault at bus due to battery			Amps
4 5 (i)	Expected Fault at bus due to battery Short Circuit Current at Battery terminals		5550	
4 5 (i)	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand			Amps
4 5 (i)	Expected Fault at bus due to battery Short Circuit Current at Battery terminals		5550	Amps
4 5 (i) 5 (ii)	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand		5550	Amps
4 5 (i) 5 (ii) 6	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell		5550 5 Sec Flat pasted;18	Amps
4 5 (i) 5 (ii) 6	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals		5550 5 Sec Flat pasted;18 Flat pasted;17	Amps
4 5 (i) 5 (ii) 6 7	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell		5550 5 Sec Flat pasted;18	Amps
4 5 (i) 5 (ii) 6 7 8	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell		5550 5 Sec Flat pasted;18 Flat pasted;17	Amps
4 5 (i) 5 (ii) 6 7 8 9	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell Size of negative plates, mm		5550 5 Sec Flat pasted;18 Flat pasted;17 440(L) x 140(W) x 3.2 (+/-1) (Thk)	Amps
4 5 (i) 5 (ii) 6 7 8 9 10	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell Size of negative plates, mm Size of positive plates, mm		5550 5 Sec Flat pasted;18 Flat pasted;17 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk)	Amps
4 5 (i) 5 (ii) 6 7 8 9 10 11	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell Size of negative plates, mm Size of positive plates, mm Type of Connection between cells Type of Separators		5550 5 Sec Flat pasted;18 Flat pasted;17 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk) Bolted rigid copper connectors Absorptive glass mat	Amps
4 5 (i) 5 (ii) 6 7 8 9 10 11 12	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell Size of negative plates, mm Size of positive plates, mm Type of Connection between cells Type of Separators Thickness of Separators		5550 5 Sec Flat pasted;18 Flat pasted;17 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk) Bolted rigid copper connectors Absorptive glass mat 5.3 (2 layers of 2.65 mm each)	Amps
4 5 (i) 5 (ii) 6 7 8 9 10 11 12 13	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell Size of negative plates, mm Size of positive plates, mm Type of Connection between cells Type of Separators Thickness of Separators Dimensison of 2 volts cell (LXWXH), mm		5550 5 Sec Flat pasted;18 Flat pasted;17 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk) Bolted rigid copper connectors Absorptive glass mat	Amps
4 5 (i) 5 (ii) 6 7 8 9 10 11 12 13	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell Size of negative plates, mm Size of positive plates, mm Type of Connection between cells Type of Separators Thickness of Separators Dimensison of 2 volts cell (LXWXH), mm Clearance between the bottom		5550 5 Sec Flat pasted;18 Flat pasted;17 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk) Bolted rigid copper connectors Absorptive glass mat 5.3 (2 layers of 2.65 mm each) 303 (+/-3) mm x 172 (+/-3) mm x 507 (+/- 5) mm	Amps
4 5 (i) 5 (ii) 6 7 8 9 10 11 12 13	Expected Fault at bus due to battery Short Circuit Current at Battery terminals Time for which the battery can withstand short circuit at terminals Type/No. of Negative Plates per cell Type/No. of Positive Plates per cell Size of negative plates, mm Size of positive plates, mm Type of Connection between cells Type of Separators Thickness of Separators Dimensison of 2 volts cell (LXWXH), mm		5550 5 Sec Flat pasted;18 Flat pasted;17 440(L) x 140(W) x 3.2 (+/-1) (Thk) 440(L) x 140(W) x 5.3 (+/-1) (Thk) Bolted rigid copper connectors Absorptive glass mat 5.3 (2 layers of 2.65 mm each)	Amps

(1)	Recommended Charging Rate	
(i)	Float Charging Voltage	
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC
(ii)	Float Charging Current	138.75 Amps (Max)
(iii)	Trickle Charging Voltage	NA
(iv)	Trickle Charging Current	NA
(v)	Boost Charging Voltage	2.35 Volts
(vi)	Boost Charging Current	185 Amps.
(vii)	Time taken to full charge from 100%	72 Hrs (Min)
	discharge state by constant voltage	OCV 2.1 volts (Min.)
	charging & voltage at the end of this charge	
(viii)	Equalising Charging Current;Voltage	NA
17	Guaranteed efficiencies at 10 hrs rate	000/
	(a) Ampere-hour efficiency	90%
	(b) Watt-hour efficiency	80%
10	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)
10	Allowable voltage lipple	0.5 % RMS of the charging voltage(Float charging)
19	Internal Resistance of each cell at	
	Fully Charged Condition	0.30 milli ohms n
20	Total Resistance of Battery ; milliohms	Depending on no. of cells
21	Overall Dimensions of each complete	Length 462 +/- 5, Width 510 +/- 5, Height 363 +/- 5 (mm)
	module (LxWxH) in mm	( 2 cell module)
22	Weight of unpacked and complete module	142.1 +/- 5% Kgs (Single 2 cell module)
	Weight of unpacked and complete module with electrolyte ; Kgs	142.1 +/- 5% Kgs (Single 2 cell module)
		142.1 +/- 5% Kgs (Single 2 cell module) Powder coated MS
23	with electrolyte ; Kgs Material of Modules	Powder coated MS
23	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor
23	with electrolyte ; Kgs Material of Modules	Powder coated MS
23 24 25	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor
23 24 25 26	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
23 24 25 26	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C
23 24 25 26	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once
23 24 25 26	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored
23 24 25 26	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
23 24 25 26 27	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
23 24 25 26 27	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
23 24 25 26 27	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
23 24 25 26 27 27	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
23 24 25 26 27 27 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
23 24 25 26 27 28 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
23 24 25 26 27 28 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually
23 24 25 26 27 28 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life	Powder coated MS         Yes, self re-sealing rubber safety valve with flame arrestor         < 0.5% per week of c-10 capacity
23 24 25 26 27 28 28	with electrolyte ; Kgs <u>Material of Modules</u> Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition Once annually
23 24 25 26 27 28 29	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharge dat 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	Powder coated MS         Yes, self re-sealing rubber safety valve with flame arrestor         < 0.5% per week of c-10 capacity

	JIS : C 8704-2, : 1998
31 Applicable standard	ANSI T1 330, GR/BAT-01/03-MARCH 2004, IS 15549 : 2005

## GENERAL TECHNICAL PARTICULARS UPST/NMST 1000

. NO.	DESCRIPTION		DETAILS	INDUSTRIES LINITE
. 110.	DECONTINUA		DEIMEO	
1	Capacity in Ah			
(a)	At 27 ° C			
(i)	Initial		1000	
(ii)	Rated		1000	
(iii)	End of Life		800	
(b)	Rated Capacity(in Ah) at minimum		Formula : Ct ={ 1+ 0.0043 (t-27) }	
	ambient temperature of (as per IS 15549 : 2005)			
(c)	Rated Capacity(in Ah) at maximum		Formula : Ct = { 1+ 0.0043 (t-27) }	
	ambient temperature of ( as per IS 15549 : 2005)			
2	Capacity at Various Discharge Rates at 27°C			
				- 10
	Period of Discharge	Ah capacities	Discharge Current	End Ce
			(Amps)	Voltag
				(Volts
	10Hr	1000.00	100.0	1.75
	9Hr	979.00	108.8	1.75
	8Hr	950.00	118.8	1.75
	7Hr	917.00	131.0	1.75
	6Hr	879.00	146.5	1.75
	5Hr	833.00	166.6	1.75
	4Hr	782.00	195.5	1.74
	3Hr	717.00	239.0	1.74
	2Hr	633.00	316.5	1.7
	1Hr	500.00	500.0	1.7
	50 min	467.00	560.6	1.7
	40 min	430.00	645.6	1.7
	30 min	400.00	800.0	1.7
	20 min	360.00	1081.1	1.7
	15 min	298.70	1194.8	1.7
	10 min	218.30	1315.1	1.7
	5 min	122.90	1475.4	1.7
	1 min	36.70	2210.8	1.7
	Maximum Momentary Current for 1 min upto cut off voltage			
	of 1.6 V		3000	Amps
Ũ				
4	Expected Fault at bus due to battery		6000	Amps
				,po
5 (i)	Short Circuit Current at Battery terminals		6000	Amps
	Time for which the battery can withstand		5 Sec	,po
0 (11)	short circuit at terminals		0.000	
6	Type/No. of Negative Plates per cell		Flat pasted;18	
7	Type/No. of Positive Plates per cell		Flat pasted;17	
8	Size of negative plates, mm		440(L) x 140(W) x 3.2 (+/-1) (Thk)	
			440(L) x 140(W) x 5.3 (+/-1) (Thk)	
9	Size of positive plates, mm			
	Size of positive plates, mm Type of Connection between cells		Bolted rigid copper connectors	
10	Type of Connection between cells			
10 11	Type of Connection between cells Type of Separators		Absorptive glass mat	
10 11 12	Type of Connection between cells Type of Separators Thickness of Separators		Absorptive glass mat 5.3 (2 layers of 2.65 mm each)	
10 11 12	Type of Connection between cells Type of Separators		Absorptive glass mat	
10 11 12 13	Type of Connection between cells Type of Separators Thickness of Separators Dimensison of 2 volts cell (LXWXH), mm Clearance between the bottom		Absorptive glass mat 5.3 (2 layers of 2.65 mm each) 303 (+/-3) mm x 172 (+/-3) mm x 507 (+/- 5) mm	
10 11 12 13	Type of Connection between cells Type of Separators Thickness of Separators Dimensison of 2 volts cell (LXWXH), mm		Absorptive glass mat 5.3 (2 layers of 2.65 mm each)	
10 11 12 13 14	Type of Connection between cells Type of Separators Thickness of Separators Dimensison of 2 volts cell (LXWXH), mm Clearance between the bottom		Absorptive glass mat 5.3 (2 layers of 2.65 mm each) 303 (+/-3) mm x 172 (+/-3) mm x 507 (+/- 5) mm	

(')	Recommended Charging Rate	C EVI
(i)	Float Charging Voltage	
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC
(ii)	Float Charging Current	150 Amps (Ma
(iii)	Trickle Charging Voltage	NA
(iv)	Trickle Charging Current	NA
(v)	Boost Charging Voltage	2.35 Volts
(vi)	Boost Charging Current	200 Amps.
(vii)	Time taken to full charge from 100%	72 Hrs (Min)
	discharge state by constant voltage	OCV 2.1 volts (Min.)
	charging & voltage at the end of this charge	
(viii)	Equalising Charging Current;Voltage	NA
17	Guaranteed efficiencies at 10 hrs rate	
	(a) Ampere-hour efficiency	90%
	(b) Watt-hour efficiency	80%
18	Allowable voltage ripple	1.5 % RMS of the charging voltage(Bulk charging)
		0.5 % RMS of the charging voltage(Float charging)
19	Internal Resistance of each cell at	
	Fully Charged Condition	0.30 milli ohms
20	Total Resistance of Battery ; milliohms	Depending on no. of cells
21	Overall Dimensions of each complete	Length 462 +/- 5, Width 510 +/- 5, Height 363 +/- 5 (mm)
	module (LxWxH) in mm	( 2 cell module)
22	Weight of unpacked and complete module	142.1 +/- 5% Kas (Sinale 2 cell module)
22	Weight of unpacked and complete module with electrolyte ; Kgs	142.1 +/- 5% Kgs (Single 2 cell module)
		142.1 +/- 5% Kgs (Single 2 cell module) Powder coated MS
23	with electrolyte ; Kgs	
23	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor
23 24 25	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity
23 24 25	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C
23 24 25	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once
23 24 25	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored
23 24 25	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once
23 24 25 26	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended.
23 24 25 26 27	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning
23 24 25 26 27	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
23 24 25 26 27 27	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm
23 24 25 26 27 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
23 24 25 26 27 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate	Powder coated MS Yes, self re-sealing rubber safety valve with flame arrestor < 0.5% per week of c-10 capacity If stored in Indian ambient temp of 30 deg C cells will need freshning charge once in every three months, however if stored at higher or lower temperature freshning charge to be provided as recommended. Less than 200ppm normal float condition
23 24 25 26 27 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharge dat 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	Powder coated MS         Yes, self re-sealing rubber safety valve with flame arrestor         < 0.5% per week of c-10 capacity
23 24 25 26 27 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharged at 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD at 50% DOD	Powder coated MS         Yes, self re-sealing rubber safety valve with flame arrestor         < 0.5% per week of c-10 capacity
23 24 25 26 27 28	with electrolyte ; Kgs Material of Modules Whether explosion vents are offered Loss of capacity due to self discharge The period for which the battery should be stored after supply in charged conditions Amount of Hydrogen evolved during normal normal float charging Recommended interval at which battery should be discharge dat 10 hr discharge rate No. of charge-discharge cycle battery can give during its entire life at 20% DOD	Powder coated MS         Yes, self re-sealing rubber safety valve with flame arrestor         < 0.5% per week of c-10 capacity

31	Applicable standard	IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998
		ANSI T1 330, GR/BAT-01/03-MARCH 2004, IS 15549 : 2005