



Batteries



PANACEA ALLOYS PVT. LTD.

Who we are:

Panacea Alloys Pvt Ltd acquired the “UNION “brand, to enter the business of storage batteries. Our products cover a variety of applications, globally having clients across 15 countries. The manufacturing facility is accredited with TUV 9001-2015 certification by TUV – nord, Germany.

“Union Batteries, a brand of repute since 1984, has been serving a variety of industries in India and Internationally. The product range comprises of- Traction batteries, Stationary Batteries, and Semi - Traction Batteries all meeting the BS, DIN and IS standards.

Traction batteries are used in Material handling equipment such as Pallet Trucks, Forklifts, and Stackers etc. Stationary batteries find applications in Telecom, Network, Power Substations, Solar industry and all standby power back-up applications. Compact & mono block batteries cater to the UPS/inverter segments. Our batteries are poised to serve E- rickshaws, the future environmentally responsible transportation.

We are also supplying Lithium ion batteries for E-bike, Material Handling equipment, BOPT AGV etc.

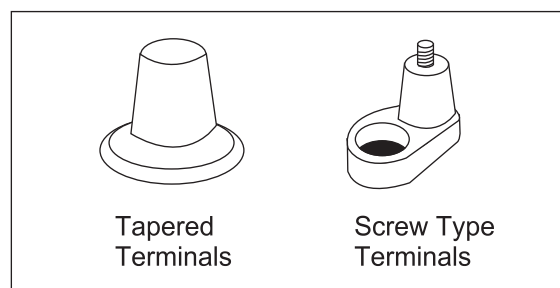
As a part of our commitments to a green environment, We undertake the buy-back of old batteries to ensure proper recycling/ destruction.



SEMI TRACTION BATTERIES Technical Specifications

TECHNICAL SPECIFICATIONS						
Battery model	Volts	Capacity @C-5	Battery dimensions (mm)		Height	Weights (Kg)
			Length	Width		
SEMI TRACTION BATTERIES (TUBULAR)						
GN-11	12 V	85 AH	313	175	225	28.8
GN-13	12 V	100 AH	345	173	240	29.4
GN 15	12 V	115 AH	345	173	295	37.9
DEEP CYCLE BATTERIES (TUBULAR)						
Battery model	Volts	Capacity @C-20	Battery dimensions (mm)		Height	Weight (Kgs)
			Length	Width		
TW-6	6 V	250 AH	245	190	283	30.2
TW-105	6 V	225 AH	260	180	275	29.9
TW-16	6 V	330 AH	296	176	366	46
TW-18	6 V	390 AH	300	174	425	55
TW-20	6 V	435 AH	300	174	425	60
W-875	8 V	180 AH	260	180	275	29
ERIKSHAW BATTERIES (TUBULAR)						
ER-1	12 V	125 AH	345	173	295	30
ER-2	12 V	150 AH	345	173	295	37

Optional Terminals



Weights of batteries are subject to $\pm 5\%$ tolerance

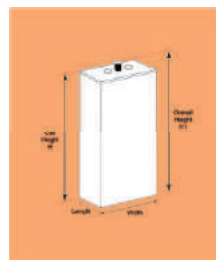
We reserve the rights to change, modify, cancel the technical specifications without prior notice

TECHNICAL SPECIFICATIONS DIN Width (198MM) Tubular Traction Cells

Overall Height - H (mm) max				295	365	425	490	570	600	710	745
Cell Height - H (mm) max				270	340	400	465	545	575	680	720
Width in MM	Length in MM	No. of positive Plates	Capacity weight	DT 50	DT 60	DT 80	DT 90	DT 115	DT 125	DT 140	DT 150
198	47	2	ah/c5 kg.	$\frac{100}{6.6}$	$\frac{120}{8.4}$	$\frac{160}{10.1}$	$\frac{180}{12.1}$	$\frac{230}{14.4}$	$\frac{250}{14.8}$	$\frac{280}{17.4}$	$\frac{300}{18.2}$
198	65	3	ah/c5 kg.	$\frac{150}{9.6}$	$\frac{180}{11.9}$	$\frac{240}{14.4}$	$\frac{270}{17.2}$	$\frac{345}{20.5}$	$\frac{375}{21.0}$	$\frac{420}{25.7}$	$\frac{450}{26.1}$
198	83	4	ah/c5 kg.	$\frac{200}{12.4}$	$\frac{240}{15.6}$	$\frac{320}{18.6}$	$\frac{360}{21.8}$	$\frac{460}{26.3}$	$\frac{500}{27.1}$	$\frac{560}{33.2}$	$\frac{600}{33.9}$
198	101	5	ah/c5 kg.	$\frac{250}{16.2}$	$\frac{300}{19.0}$	$\frac{400}{23.1}$	$\frac{450}{26.6}$	$\frac{575}{32.1}$	$\frac{625}{33.3}$	$\frac{700}{40.3}$	$\frac{750}{41.4}$
198	119	6	ah/c5 kg.	$\frac{300}{18.0}$	$\frac{360}{22.4}$	$\frac{480}{27.3}$	$\frac{540}{31.4}$	$\frac{690}{38.3}$	$\frac{750}{39.6}$	$\frac{840}{47.7}$	$\frac{900}{49.6}$
198	137	7*	ah/c5 kg.	$\frac{350}{20.8}$	$\frac{420}{26.0}$	$\frac{560}{31.6}$	$\frac{630}{36.5}$	$\frac{805}{44.2}$	$\frac{875}{46.0}$	$\frac{980}{55.3}$	$\frac{1050}{57.5}$
198	155	8*	ah/c5 kg.	$\frac{400}{23.7}$	$\frac{480}{29.6}$	$\frac{640}{35.9}$	$\frac{720}{41.4}$	$\frac{920}{50.3}$	$\frac{1000}{52.3}$	$\frac{1120}{62.9}$	$\frac{1200}{65.4}$
198	173	9*	ah/c5 kg.	$\frac{450}{23.6}$	$\frac{540}{32.4}$	$\frac{720}{39.7}$	$\frac{810}{45.9}$	$\frac{1035}{57.3}$	$\frac{1125}{58.5}$	$\frac{1260}{69.7}$	$\frac{1350}{73.2}$
198	192	10*	ah/c5 kg.	$\frac{500}{29.4}$	$\frac{600}{37.0}$	$\frac{800}{44.0}$	$\frac{900}{50.8}$	$\frac{1150}{62.1}$	$\frac{1250}{64.6}$	$\frac{1400}{78.9}$	$\frac{1500}{81.1}$

* = Also available In Double Post

All dimensions are subject to usual production tolerances. Weights mentioned are filed weights, subject to tolerance of + 5%



CHARGING RECOMMENDATIONS Single Rate Taper Charger

For Tropical Climate

Starting Current : 12.5 % of C5 Amps
Finishing Current : 6 % of C5 Amps Approx.
Charging Time : 10 Hours.

For Temperate Climate

Starting Current : 22 % of C5 Amps
Finishing Current : 6 % of C5 Amps Approx.
Charging Time : 7 Hours.



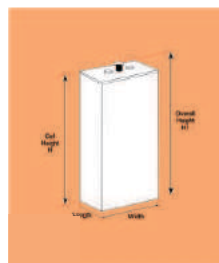
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TECHNICAL SPECIFICATIONS BS Width (158MM) Tubular Traction Cells

Overall Height - H (mm) max				235	285	350	425	480	540	595	630	715
Cell Height - H (mm) max				210	260	325	400	455	515	570	605	690
Width in MM	Length in MM	No. of positive Plates		BT 21	BT 30	BT 42	BT 55	BT 65	BT 75	BT 86	BT 100	BT 110
158	61	3	ah/c5 kg.	$\frac{63}{4.9}$	$\frac{90}{6.6}$	$\frac{126}{8.5}$	$\frac{165}{10.4}$	$\frac{195}{11.8}$	$\frac{225}{13.5}$	$\frac{258}{14.8}$	$\frac{300}{16.5}$	$\frac{330}{19.0}$
158	77	4	ah/c5 kg.	$\frac{84}{6.4}$	$\frac{120}{8.2}$	$\frac{168}{10.9}$	$\frac{220}{13.4}$	$\frac{260}{15.3}$	$\frac{300}{17.5}$	$\frac{344}{19.2}$	$\frac{400}{21.2}$	$\frac{440}{24.4}$
158	93	5	ah/c5 kg.	$\frac{105}{7.7}$	$\frac{150}{10.3}$	$\frac{210}{13.2}$	$\frac{275}{16.4}$	$\frac{325}{18.7}$	$\frac{375}{21.4}$	$\frac{430}{23.4}$	$\frac{500}{26.0}$	$\frac{530}{30.0}$
158	109	6	ah/c5 kg.	$\frac{126}{9.1}$	$\frac{180}{12.1}$	$\frac{252}{15.7}$	$\frac{330}{19.4}$	$\frac{390}{22.0}$	$\frac{450}{25.3}$	$\frac{516}{27.7}$	$\frac{600}{30.7}$	$\frac{660}{35.5}$
158	125	7*	ah/c5 kg.	$\frac{147}{10.5}$	$\frac{210}{13.9}$	$\frac{294}{18}$	$\frac{385}{22.3}$	$\frac{445}{25.5}$	$\frac{525}{29.2}$	$\frac{602}{31.9}$	$\frac{700}{35.6}$	$\frac{770}{40.9}$
158	141	8*	ah/c5 kg.	$\frac{168}{11.9}$	$\frac{240}{15.9}$	$\frac{336}{20.4}$	$\frac{440}{25.4}$	$\frac{520}{28.9}$	$\frac{600}{33.1}$	$\frac{688}{36.3}$	$\frac{800}{40.6}$	$\frac{880}{46.8}$
158	157	9*	ah/c5 kg.	$\frac{189}{13.3}$	$\frac{270}{17.8}$	$\frac{378}{22.8}$	$\frac{495}{28.4}$	$\frac{585}{32.3}$	$\frac{675}{37.1}$	$\frac{774}{40.8}$	$\frac{900}{45.5}$	$\frac{990}{52.3}$
158	173	10*	ah/c5 kg.	$\frac{210}{14.9}$	$\frac{300}{19.8}$	$\frac{420}{25.7}$	$\frac{550}{31.6}$	$\frac{650}{36.0}$	$\frac{750}{41.2}$	$\frac{860}{45.1}$	$\frac{1000}{50.2}$	$\frac{1100}{57.8}$
158	189	11*	ah/c5 kg.	$\frac{231}{16.3}$	$\frac{330}{21.7}$	$\frac{462}{28.1}$	$\frac{605}{34.5}$	$\frac{715}{39.4}$	$\frac{825}{45.1}$	$\frac{946}{49.4}$	$\frac{1100}{54.9}$	$\frac{1210}{63.2}$
158	205	12*	ah/c5 kg.	$\frac{252}{17.7}$	$\frac{360}{24.0}$	$\frac{504}{30.4}$	$\frac{660}{37.6}$	$\frac{780}{42.7}$	$\frac{900}{49.0}$	$\frac{1032}{53.6}$	$\frac{1200}{59.7}$	$\frac{1320}{68.7}$

* = Also available In Double Post

All dimensions are subject to usual production tolerances. Weights mentioned are filed weights, subject to tolerance of + 5%



CHARGING RECOMMENDATIONS Single Rate Taper Charger

For Tropical Climate
Starting Current : 12.5% of C5 Amps
Finishing Current : 6% of C5 Amps Approx.
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For Temperate Climate
Starting Current : 22% of C5 Amps
Finishing Current : 6% of C5 Amps Approx.
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STATIONARY BATTERIES Low MAINTENANCE (LM)

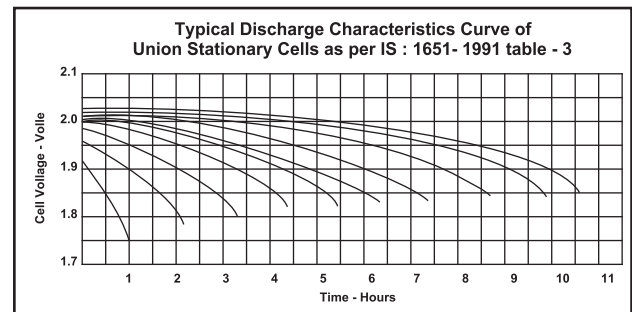
UNION' LM Stationary Batteries are designed with utmost care, to minimize a host of maintenance and operational problems, The low Antimony Lead Selenium alloy (<2%) used in the manufacture of these batteries result in reduced gassing there by yielding Low maintenance characteristics most effectively. These batteries are available in single cell design in SAN Transparent containers offering wide range for a variety of applications.

Ideally, these batteries are well suited for the following applications:

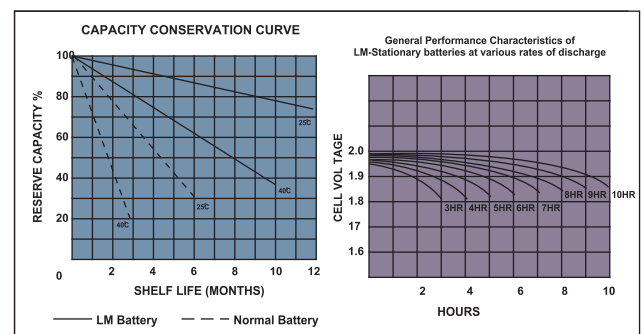
- Stand by in Generating Power Stations (Hydroelectric, Thermal & Nuclear)
- Stand by in Substations (of all Kvs)
- Large Uninterrupted Power Systems (for all system voltages & KVA ratings)
- Inverter Power Supply Applications
- Power Line Carrier Communication systems
- Switching Systems
- Main Telephone Exchanges
- Cathodic Protection Systems
- Microwave, Optical Fibre & co-axial Repeater Stations
- Rural Automatic Telephone Exchanges
- Signaling & Telecommunication Systems
- Satellite Communication Systems
- Solar Photovoltaic Power, Generation Systems (Thermal Power, Refrigeration, street Lighting, Power Plants in Various configuration)
- Power Supply for Instrumentation

Useful Characteristics

- Less topping up frequency, instant installation and eco-friendly
- Minimum loss of capacity on stand-by
- Excellent charge acceptance ability
- Long service life on float charging mode
- Compact and sleek design, occupies less space
- Reliable power supply
- Transparent containers for easy inspection & maintenance (Visible Electrolyte Level)
- Safe in service
- 'High Discharge Performance' cell will be offered on request
- Excellent Appearance



CAPACITIES AT VARIOUS RATES OF DISCHARGE - IS 1651 - 91 TABLE-3										
Hours	10	9	8	7	6	5	4	3	2	1
Capacity %	100	97.8	95.0	91.7	87.9	83.3	78.2	71.7	63.3	50.0
End Volts, V	1.85	1.84	1.84	1.83	1.83	1.82	1.81	1.80	1.78	1.75



TECHNICAL SPECIFICATIONS (As per IS specifications) (NDP)

Our Cell Designation	Capacity @ 10 Hr. Rate	Overall Dimensions			Weight (Approx.)		First Charge Current	Recharge Current	
		L Tol 5 mm	W Tol 5 mm	H Tol 5 mm	With Acid	Without Acid		Upto 2.4 V	Till Full Charge
1	2	3	4	5	6	7	8	9	10
	Ah	mm	mm	mm	Kgs.	Kgs.	Amps.	Amps.	Amps.
1 DS 60	60	103	206	430	13.3	7.8	6.0	6.0	3.0
2 D5 40	80	103	206	430	14.0	8.6	8.0	8.0	4.0
3 DS 40	120	103	206	430	15.6	10.7	12.0	12.0	6.0
4 DS 40	150	103	206	430	17.5	12.5	15.0	15.0	8.0
5 DS 40	200	124	206	430	22.5	15.5	20.0	20.0	10.0
4 DS 63	250	124	206	580	25.3	18.0	25.0	25.0	13.0
5 DS 63	300	145	206	580	30.5	20.8	30.0	30.0	15.0
6 DS 63	350	166	206	580	30.5	24.0	35.0	35.0	18.0
5 DS 80	400	145	206	730	40.0	26.0	40.0	40.0	20.0
7 DS 63	450	166	206	580	38.0	27.1	45.0	45.0	23.0
6 DS 80	500	145	210	730	45.8	31.0	50.0	50.0	25.0
7 DS 80	550	191	210	730	59.5	43.0	55.0	55.0	28.0
8 DS 80	600/650	191	210	730	63.5	45.5	60.0	60.0	30.0
9 DS 80	700	191	210	730	66.2	48.5	70.0	70.0	35.0
10 DS 80	800	275	210	730	75.5	53.5	80.0	80.0	40.0
12 DS 80	1000	275	212	730	83.8	59.0	100.0	100.0	50.0
12 DS 100	1200	275	212	880	106.8	75.0	120.0	120.0	60.0
15 DS 100	1500	397	212	880	141.6	97.0	150.0	150.0	75.0
16 DS 100	1600	397	212	880	147.4	102.0	160.0	160.0	80.0
20 DS 100	2000	487	212	880	187.0	131.0	200.0	200.0	100.0
26 DS 100	2500	576	212	880	217.4	149.0	250.0	250.0	125.0
28 DS 100	3000	576	212	880	232.0	168.0	300.0	300.0	150.0
28 DS 125	"3500	576	212	880	234.4	168.0	350.0	350.0	175.0

Filling acid specific gravity 1.180 ± 0.005 at 27°C
 Final operational specific gravity 1.200 ± 0.005 at 27°C

We reserve the right to change, modify, cancel the technical specifications without prior notice

" Final Sp gravity 1.245 + 0.005

IMPORTANT INFORMATION :

- All Accessories like stands, insulators, electrolyte and maintenance tools will be suitably designed and supplied if required.
- You could furnish the Duty cycle for cell and we size it for you to choose most appropriate AH capacity.
- Installation, Erection, Commissioning & Testing of cells are provided at site if desired.
- Apt Battery room size and ventilation requirement would be provided if you furnish the available dimension (volume) at site.

NOTE :

- Filling Sp.gr. of Sulphuric Acid at 27°C : 1.180/ 1.230
- Final Sp. gr of sulphuric Acid after full charge at 27°C : 1.200 ± 0.005 / 1.245 ± 0.005 as per DIN specification
- Duration of First Charge : 15 hrs (Approx.) as column 8 above
- Duration, of Recharge in two steps : 15 hrs (Approx.) as per column 9 & 10 above
- AH' capacity indicated is at 10 hrs. Discharge rate at 1.200 Sp.gr. ± 0.005 of acid to an end Voltage of 1.85 VPC/at 1.245 Sp.gr. ± 0.005 to 1.80 VPC as per DIN specification
- Voltage/cell at the end of full charge : 2.5 to 2.7 V
- Higher Recharging current under Constant Potential Charging is allowed subject to controlling the temperature within 55°C Most preferred Temperature is within 43 C for deriving maximum life Frequent recharging at a temperature above 43 C would drastically bring down useful service life.
- Cells are assembled in SAN transparent container and supplied in dry-charged condition.
- The above data is subject to change any time without notice as we constantly endeavour to improve the performance.
- Abbreviations used :

TOL	Tolerance	A	Ampere	hrs./hr.	: Hours/hour
AH	Ampere Hour	V	: Volts	L	: Length
mm	Millimeter	Approx	Approximately	W	: Width
Kgs.	Kilograms	VPC	: Volts/Cell	H	: Height
Sp. gr	Specific Gravity	C	Centigrade	Deg	: Degree

UNION HDP DISCHARGE PERFORMANCE TYPE TUBULAR LOW MAINTENANCE LEAD ACID(LMLA) BATTERIES

UNION HDP LMLA (STATIONARY TUBULAR LEAD ACID) batteries are designed with specialty materials that minimize a host of maintenance and operational problems generally associated with stationary batteries.

The low antimony selenium alloy used results in reduced gassing, thereby resulting in low maintenance characteristics (less water-top-up) and **minimum loss of capacity on standby**

The high impact strength transparent SAN (Styrene Acrylo Nitrile) polymer containers enables the cells to be self-supporting, and, at the same time allowing easy inspection of the battery plates and elements inside

The ingredients in the grids and low impurities in active materials are so chosen that the cells give a long float life

The rubber bushings are designed to accommodate the positive plate growth and also to survive more than the decade long float life

The lead alloy poles are designed sturdy to hold the heavy active plates and to take care of the current requirement

The micro porous extruded Poly Ethylene Separators offer very low resistance and takes care of the duty cycle current throughout the designed float and cyclic life

The low internal resistance of the cell augments good charge acceptance ability

The COMPACT design of the cells permits use of minimum floor space Thus the above features makes **UNION CELLS, a reliable power supply with long service life**

HDP cells are type tested as per last amended BIS Specification – **IS:1651:2013**

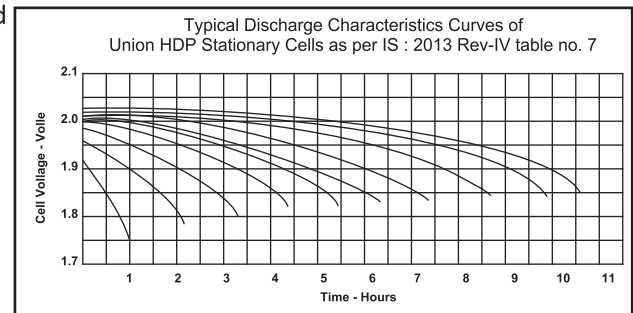
Their discharge performance is identical with PLANTE type cells, which is governed by **IS:1652**, as the current at different discharge ratings and end of discharge voltages mentioned are same as **IS:1651**

Whereas PLANTE TYPE Lead acid cells/batteries are costlier due to higher pre-formation energy needs coupled with higher lead content and twice or thrice separator replacement in a life time, HDP cells are cheaper and sturdier than PLANTE cells

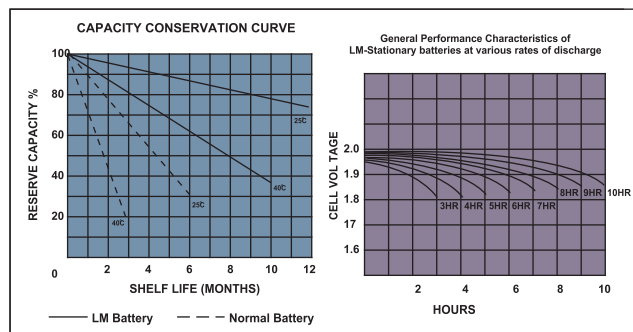
PLANTE cells are being replaced in many places by HDP type cells due low cost and ease of operation considerations

Thus, ideally, these LMLA batteries are suited for the following applications

- i. Small and large UPS systems
- ii. Power back-up source for Telecommunication and telephone exchanges
- iii. Emergency lighting and Switch tripping
- iv. Railway signaling



1. Capacities at various rates of discharge as per IS:1961 : 2013 Rev-IV table no. 7										
Hours	10	9	8	7	6	5	4	3	2	1
Capacity %	100	98.8	97.1	95.1	93.0	90.0	86.2	81.1	73.8	60
End Volts, V	1.85	1.84	1.84	1.83	1.83	1.82	1.81	1.80	1.78	1.75



TECHNICAL SPECIFICATIONS (As per IS specifications) (HDP)

Model name as per IS Specification	UBPL MODEL	C ₁₀ Cap. Discharge to 1.85V	Cell Dimension.mm (H1-height up to lid top) (H2-Overall max. height)			Weight, Kgs		Elect. Volume app. litres
			L	W	H1/H2	Dry	Filled	
IS:1651 : 201	Model	Ah	L	W	H1/H2	Dry	Filled	litres
T 65S HDP	2DS40	65	103	206	345/450	8.6	13.6	4.05
T 80S HDP	2DS50	80	103	206	345/450	8.6	13.6	4.05
T 100S HDP	3DS40	100	103	206	345/450	10.7	15.1	3.60
T 150S HDP	4DS40	150	103	206	345/450	12.5	16.5	3.40
T 175S HDP	5DS40	175	124	206	345/450	15.0	19.8	4.10
T 200S HDP	4DS63	200	124	206	460/580	18.4	25.3	6.40
T 250S HDP	5DS63	250	145	206	460/580	20.8	30.1	7.70
T 300S HDP	6DS63	300	166	206	460/580	24.2	35.2	9.60
T 350S HDP	7DS63	350	166	206	460/580	28.1	36.6	7.80
T 450S HDP	6DS80	450	191	210	636/730	31.1	43.0	11.0
T 500S HDP	7DS80	500	191	210	636/730	41.0	57.5	13.8
T 550S HDP	8DS80	550	191	210	636/730	43.5	59.5	13.0
T 650S HDP	9DS80	650	191	210	636/730	47.1	62.5	12.0
T 750S HDP	10DS80	750	203	210	636/730	53.0	87.0	17.8
T 850S HDP	12DS100	850	275	210	636/730	71.5	95.5	20.5
T 1000S HDP	11DS100	1000	275	210	762/880	80.0	108.0	23.5
T 1100S HDP	12DS100	1200	275	210	762/880	82.0	110.0	25.8
T 1400S HDP	15DS100	1400	397	212	762/880	108.0	152.0	36.5
T 1800S HDP	20DS100	1800	487	212	762/880	130.0	185.0	45.5
T 2000S HDP	22DS100	2000	487	212	762/880	142.0	193.2	43.0
T 2200S HDP	24DS100	2200	576	212	762/880	163.0	228.0	54.5
T 2400S HDP	26DS100	2300	576	212	762/880	168.0	240.0	53.5
T 2500S HDP	28DS100	2500	576	212	762/880	181.0	243.0	52.0

IMPORTANT INFORMATION:

- All Accessories like stands, insulators, electrolyte and maintenance tools will be suitably designed and supplied if required.
- You could furnish the Duty cycle for cells and we size it for you to choose most appropriate AH capacity.
- Installation, Erection, Commissioning & Testing of cells are provided at site if desired.
- Apt Battery room size and ventilation requirements would be provided if you furnish the available dimension (volume) at site.

NOTE :

- The calls could be supplied in wet charged or dry charged condition
- Filling electrolyte specific gravity (for cells supplied with Formed positive plates and cured dry negative plates) 1.190 ± 0.005 corrected to 27°C
- Commissioning charge (for cells supplied with formed positive plates and cured dry negative plates) : Charge the battery with a current of 10% of C₁₀ Ah for 12 to 16 hours Top up and adjust sp. gr to 1.200 ± 0.005 corrected to 27°C at the end.
- Recharging current: By constant current in two stages - Starting with a charging current of 10% of C₁₀ Ah and after reaching the gassing voltage of 2.4V per cell, reducing the current to 5% of C₁₀ Ah and continue charging till the cell voltage reaches $2.65 \pm 0.02\text{V/cell}$
- Recommended float voltage: $2.18 \pm 0.02\text{V/cell}$
- Operating specific gravity of fully charged cells: 1.205 ± 0.005 corrected to 27°C
- All dimensions are subject to usual production tolerances
- Weight tolerance Specified weight $\pm 5\%$
- We reserve the right to make technical modifications without prior notification

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PANACEA ALLOYS PVT. LTD.

**UNION TBS
OPzS TYPE LOW MAINTENANCE LEAD
ACID BATTERIES**

This manual will enable you to select and specify batteries using OPzS lead-acid signal cells. OPzS is a range of vented tubular cells designed for stationary battery applications where reliability and long service life are of almost importance.

OPzS batteries are used in standby power systems for telecommunication, control and safety system, power plants and power distribution application, emergency lighting installations and photovoltaic solar systems. OPzS batteries are suitable for all stationary applications that require a safe and reliable battery with long life.

The cells are designed for an expected life of at least 15 years when operated in normal float charge conditions at 20 C. The OPzS has a long proven track record.

Parallel Battery Strings

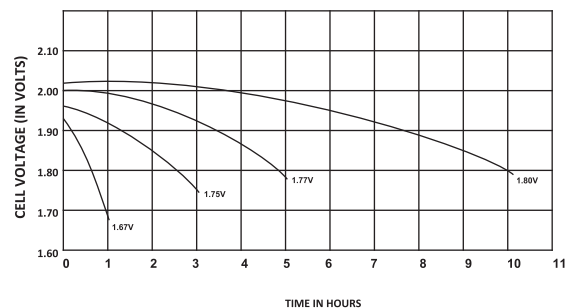
OPzS batteries can be used parallel connected in two or more strings.

Advantages :

One battery string can be disconnected for repair or test while the other(s) still can supply power in an installation may be arranged for a desired and lighter cells to handle during installation



TYPICAL DISCHARGE CHARACTERISTIC CURVES OF STATIONARY CELL IN SAN CONTAINER



TECHNICAL SPECIFICATIONS (As per IS specifications) (TBS)											
2V TBS CELLS IN SAN TRANSPARENT CONTAINER AS PER 1651:2013											
Sr. No	Cell Type	PAPL Model no	Nominal voltage of cell	Capacity (Ah)	Dimensions in mm (± 5 mm)				Weight in Kgs		Volume of electrolyte (Ltrs)
				10 Hrs 1.80V/Cell	L	W	H	H1	Dry	Acid Filled	
1	2 TBS 100	2 DS 50	2V	100	103	206	345	450	8.6	13.6	4
2	3 TBS 150	3 DS 50	2V	150	103	206	345	450	10.7	15.1	3.6
3	4 TBS 200	4 DS 50	2V	200	103	206	345	450	12.5	17.0	3.7
4	5 TBS 250	5 DS 50	2V	250	124	206	345	450	14.9	20.0	4.4
5	6 TBS 300	6 DS 50	2V	300	145	206	345	450	17.7	23.2	4.5
6	5 TBS 350	5 DS 70	2V	350	124	206	460	555	20.6	27.6	5.7
7	4 TBS 400	4 DS 100	2V	400	145	206	636	730	23.5	32.3	8.4
7	6 TBS 420	6 DS 60	2V	420	145	206	460	555	23.5	32.3	7.3
8	7 TBS 490	7 DS 70	2V	490	166	206	460	555	28.1	38.4	8.4
9	6 TBS 600	6 DS 100	2V	600	145	206	636	730	31.1	43.5	13.1
10	7 TBS 700	7 DS 100	2V	700	191	210	636	730	41	58	13.8
11	8 TBS 800	8 DS 100	2V	800	191	210	636	730	45.5	62.4	13.6
12	9 TBS 900	9 DS 100	2V	900	233	210	636	730	48	69	16
13	10 TBS 1000	10 DS 100	2V	1000	233	210	636	730	51	71	16.5
14	12 TBS 1200	12 DS 100	2V	1200	275	210	762	880	66.6	90	19.6
15	12 TBS 1500	12 DS 125	2V	1500	275	210	762	880	86	118	25.6
16	14 TBS 1700	14 DS 120	2V	1700	397	212	762	880	103	149.5	37.5
17	15 TBS 1800	15 DS 120	2V	1800	397	212	762	880	107	151	34.9
18	16 TBS 2000	16 DS 125	2V	2000	397	212	762	860	108	153	36.5
19	20 TBS 2500	20 DS 100	2V	2500	487	212	862	860	130	185	45.4
20	24 TBS 3000	24 DS 125	2 V	3000	576	212	762	860	203	279	53.5

IMPORTANT INFORMATION:

1. All accessories like Stands, insulators, electrolyte and maintenance tools will be suitably designed and supplied if required
2. You could furnish Duty cycle for cells and we size if for you to choose most appropriate AH capacity.
3. Installation, Erection, Commissioning & Testing of cells are provided at site if desired.
4. As per the battery room size and ventilation requirements would be provided if you furnish the available dimension.

NOTE:

1. The cells should be supplied in wet charged OR dry charged condition Commissioning charge: 10% of C 10 for 12 to 16 Hours

- Recharging current : By constant current in two stages- Starting with a charging current of 10% of C-10 Ah and after recharging the gassing voltage of 2.4V per cell, reducing the current to 5% of C10Ah and continue charging till the cell voltage reaches 2.65 ± 0.05 VPC
- Recommended floating voltage: 2.16-2.23 V/Cell
- For dry charged cells-filling electrolyte Sp.Gr. 1.230 ± 0.005 corrected to 27°C
- Operating Sp.Gr. of fully charged cell 1.240 ± 0.005 corrected to 27°C
- Weights mentioned are subject to tolerance of $\pm 5\%$
- All above conforms to IS 1651:2013 (Rev IV)

1. H-Indicates container height

2. H1-Indicates overall maximum cell height

All dimensions are subject to usual production tolerances

We reserve the rights to change, modify, and cancel the technical specifications without prior notice



Batteries



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