MONBAT®
BATTERIES

SOURCE OF POWER

№ TDS-205, Issue date: 01.2024

12UPM4500T TOP TERMINAL AGM VRLA

PRODUCT CHARACTERISTICS:

- Valve-regulated lead-acid battery
- UPS and reserve power applications
- EUROBAT design life definition: Long Life 10 - 12 years
- Extremely long float life performance
- Superior cycling endurance
- Compact design with high energy density
- ETSI Rack integration
- Low installation cost, maintenance free product
- Sealed for leak-proof operation
- Delivered ready for use
- Non-hazardous cargo for ground, sea and air transport
- Fully recyclable product



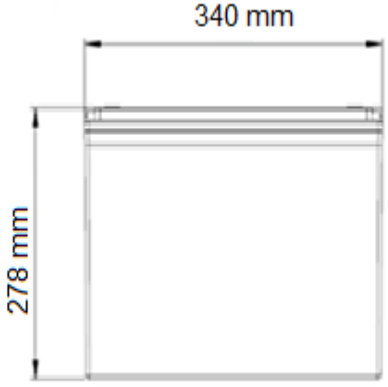
TECHNICAL SPECIFICATIONS:

Electrical specifications:	
Nominal voltage:	12V
Number of cells:	6
Rated capacity:	125 Ah (10 h rate to 1.80 Vpc at 25 °C)
Internal resistance:	3.7 mOhm (IEC 60 896 -21/22)
Short circuit current:	3400 A (IEC 60 896 -21/22)
Float charge voltage:	2.27 V per cell (Vpc) at 25 °C
Design features:	
Design life at 20 °C:	Long Life 10 - 12 years
Plates:	Tick Flat Pasted
Active material:	Very high purity virgin lead
Grid alloy:	Lead-Calcium-Tin alloy
Electrolyte:	Sulphuric acid, Analytical grade
Separator:	Absorbing Glass Mat (AGM)
Operating temperature:	-20 °C to +60 °C
	+15 °C to +25 °C (recommended)
Venting valve:	Rubber, one way, self resealing
	Opening pressure: 1.7 PSI
	Resealing pressure: 1.5 PSI
Internal gas recombination efficiency:	more than 99%
Flame arrestor:	Available
Storage temperatures:	-10 °C to +40 °C
Self discharge:	Less than 2.0% per month at 20°C
Storability without recharging:	Up to 6 months at 20°C
Shelf life:	Up to 1 year
Container / lid material:	Shock resistant ABS FR; flammability class UL94 V0
Terminal position:	Top
Terminal sealing:	Mechanical + epoxy double sealing
Terminal type:	Brass; Female; M8 thread
Terminal torque:	7 Nm
Transport terminal cover:	Available
Carrying Handles:	Available
Connectors and bolts:	Supplied as standard
Applicable standards and recommendations:	
IEC 60896 - 21/22; EN 50272 - 2; IEC 61427 – 1/2; IEC 61056 - 1; BS 6290 - 4 IEEE 1184; IEEE 1187; IEEE 1188	
Manufacture standards:	
ISO 9001; ISO 14001; OHSAS 18001; AQAP 2110	

PHYSICAL CHARACTERISTICS:

	SI Units	US Units
Length	340 mm	13.4 inches
Width	173 mm	6.8 inches
Height	278 mm	10.9 inches
Weight	46.5 kg	102.5 lbs

DRAWINGS:





PERFORMANCE CHARACTERISTICS

DISCHARGE PERFORMANCE AT CONSTANT CURRENT DISCHARGE (A) FOR BATTERY 12UPM4500T AT 25˚C

Uf, Vpc	5 min	10 min	15 min	30 min	45 min	1 h	2h	3 h	4 h	5 h	6 h	8 h	10 h
1.6	516.7	351.4	278.3	163.2	112.5	91.6	50.0	34.4	27.1	22.6	19.5	14.9	12.9
1.65	481.6	342.0	276.0	161.1	105.8	89.6	49.6	34.2	27.0	22.5	19.3	14.8	12.8
1.7	452.1	324.9	270.7	154.3	103.5	89.0	49.3	34.1	26.9	22.4	19.2	14.7	12.7
1.75	431.6	308.4	258.8	152.8	103.0	88.9	48.8	33.8	26.6	22.3	19.1	14.6	12.6
1.8	403.6	286.9	238.7	149.4	101.8	84.9	48.2	33.7	26.4	22.1	19.0	14.5	12.5
1.85	359.9	264.0	216.3	141.8	95.2	81.5	45.9	30.5	25.1	21.3	18.5	14.4	12.2

DISCHARGE PERFORMANCE AT CONSTANT POWER DISCHARGE W (PER CELL) FOR BATTERY 12UPM4500T AT 25˚C

Uf, Vpc	5 min	10 min	15 min	30 min	45 min	1 h	2h	3 h	4 h	5 h	6 h	8 h	10 h
1.6	1033.4	702.9	556.5	326.4	225.1	183.1	99.9	68.9	54.3	45.3	38.9	29.7	25.8
1.65	963.2	684.1	552.0	322.2	211.7	179.3	99.1	68.4	54.0	45.0	38.7	29.6	25.6
1.7	904.2	649.7	541.5	308.5	207.0	178.0	98.6	68.1	53.8	44.8	38.4	29.5	25.5
1.75	863.1	616.8	517.7	305.7	206.0	177.7	97.6	67.6	53.3	44.5	38.2	29.4	25.3
1.8	807.1	573.7	477.4	298.8	203.6	169.7	96.3	67.4	52.8	44.3	38.0	29.3	25.0
1.85	719.7	527.9	432.6	283.6	190.3	163.0	91.7	61.1	50.1	42.6	37.0	28.7	24.4

DISCHARGE PERFORMANCE AT CONSTANT POWER DISCHARGE W (PER BLOCK) FOR BATTERY 12UPM4500T AT 25˚C

Uf, Vpc	5 min	10 min	15 min	30 min	45 min	1 h	2h	3 h	4 h	5 h	6 h	8 h	10 h
1.6	6210.9	4224.4	3344.6	1961.7	1352.8	1100.7	600.4	413.9	326.1	272.0	234.0	178.4	149.2
1.65	5789.1	4111.4	3317.3	1936.5	1272.2	1077.4	595.8	411.0	324.7	270.6	232.5	178.3	149.1
1.7	5434.5	3905.0	3254.3	1854.3	1244.1	1069.7	592.8	409.5	323.2	269.1	231.1	178.2	149.0
1.75	5187.3	3706.8	3111.2	1837.0	1237.8	1068.1	586.6	406.6	320.3	267.6	229.6	177.0	147.7
1.8	4850.9	3448.0	2869.2	1795.9	1223.7	1020.1	578.9	405.1	317.4	266.2	228.2	175.0	146.3
1.85	4325.5	3172.8	2700.0	1704.3	1143.9	979.8	551.3	367.1	301.3	255.9	222.3	172.6	141.9

TEMPERATURE CORRECTION FACTOR OF CAPACITY AT CONSTANT CURRENT DISCHARGE

Discharge time	-10 °C	0 °C	10 °C	15 °C	20 °C	25 °C	30 °C	35 °C	40 °C	50 °C
From 5 to 59 minutes	0.70	0.80	0.90	0.95	0.97	1.00	1.05	1.10	1.13	1.15
From 1 to 20 hours	0.82	0.88	0.94	0.97	0.98	1.00	1.03	1.05	1.07	1.08

BATTERY CHARGE CONDITIONS AT 25˚ CONSTANT VOLTAGE AND LIMITED CURRENT (IU)

Charge current limit	Float charge voltage	Equalization charge voltage	Boost charge voltage
0.1 – 0.25C10 A Recommended: 0.20C10 A	2.27 V per cell at 25 ˚C; Temperature correction: -3 mV / cell / oC	2.32 V per cell at 25 ˚C Recommended: every 3 months for 24h during long time float operation	2.40 V per cell at 25˚C Temperature correction: -4 mV / cell / oC
Float application: 0.20C10 A / 2.27 V per cell at 25 ˚C		Cycling applications: 0.20C10 A / 2.40 V per cell at 25 ˚C; Recharge Ah input at least 105% from previous discharge Ah	

