AGM Valve Regulated Lead Acid Batteries

Upower
Unlimited power

UP Series
TF100-12

T E L E C O M A G M

Product Characteristics

- Valve-regulated lead-acid battery.
- Stationary and reserve power applications.
- EUROBAT design life definition: Very Long Life 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-free operation.
- Delivered ready for use.
- Non-hazardous cargo for ground, sea and air transport.
- Fully recyclable product.

Applicable Standards and Recommendations

IEC 60896 - 21/22; EN 50272 - 2; IEC 61427 - 1/2; IEC 61056 - 1; IEEE 1184; IEEE 1187; IEEE 1188

Manufacture Standards

ISO 9001; ISO 14001; OHSAS 18001; AQAP 2110

Technical Specifications

Electrical specifications	
Nominal Voltage	12 V
Number of Cells	6
Rated Capacity	100 Ah (10 h rate to 1.80 Vpc at 20°C)
Internal Resistance	6.5 mOhm (IEC 60 896 -21/22)
Short Circuit Current	1960 A (IEC 60 896 -21/22)
Float Charge Voltage	2.27 V per cell (Vpc) at 20°C
Design features	
Design Life at 20°C	Very Long Life 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 PS
Internal Gas Recombination Efficiency	More than 99%
Flame Arrestor	Available
Central Degassing System	Available
Storage Temperatures	-20°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	Front
Terminal Sealing	Mechanical + epoxy double sealing
Terminal Type	Brass; Female; M8 thread
Terminal Torque	7 Nm
Transport Terminal Cover	Available
Carrying Handles	Available (2)
Connectors and Bolts	Supplied as standard

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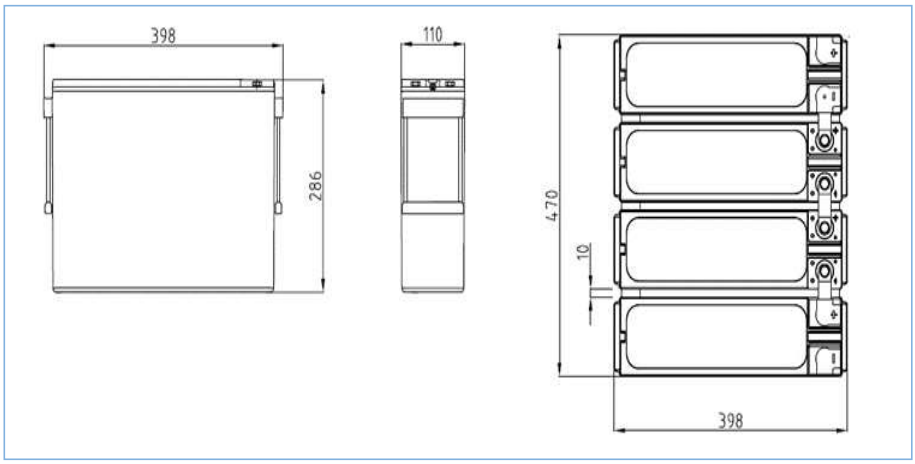
Drawings



Physical Characteristics

	SI Units	US Units
Length	398 mm	15.7 inches
Width	110 mm	4.3 inches
Height	286 mm	11.2 inches
Weight	32.9 kg	72.5 lbs

Performance Characteristics

Discharge Performance at Constant Current Discharge (Ah) for Battery 12 TF 100 at 20°C												
Uf, Vpc	5 min	15 min	30 min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.60	21.0	36.0	52.0	62.8	73.1	80.3	85.5	89.6	92.7	98.9	103.0	110.2
1.65	21.0	36.0	51.0	62.5	72.8	80.0	85.1	89.2	92.3	98.4	102.5	109.6
1.70	20.0	36.0	51.0	62.2	72.4	79.6	84.7	88.7	91.8	97.9	102.0	109.1
1.75	20.0	35.0	51.0	61.6	71.7	78.8	83.8	87.9	90.9	97.0	101.0	108.0
1.80	20.0	35.0	50.0	61.0	71.0	78.0	83.0	87.0	90.0	96.0	100.0	107.0
1.85	20.0	34.0	49.0	59.5	69.2	76.0	81.0	84.8	87.8	93.6	97.5	104.3

Discharge Performance at Constant Current Discharge (A) for Battery 12 TF 100 at 20°C												
Uf, Vpc	5 min	15 min	30 min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.60	253.0	144.0	103.0	62.8	36.6	26.8	21.4	17.9	15.5	12.4	10.3	5.5
1.65	249.0	144.0	103.0	62.5	36.4	26.7	21.3	17.8	15.4	12.3	10.3	5.5
1.70	245.0	143.0	102.0	62.2	36.2	26.5	21.2	17.7	15.3	12.2	10.2	5.5
1.75	242.0	142.0	101.0	61.6	35.9	26.3	21.0	17.6	15.2	12.1	10.1	5.4
1.80	240.0	140.0	100.0	61.0	35.5	26.0	20.8	17.4	15.0	12.0	10.0	5.4
1.85	234.0	136.0	98.0	59.5	34.6	25.3	20.3	17.0	14.6	11.7	9.8	5.2

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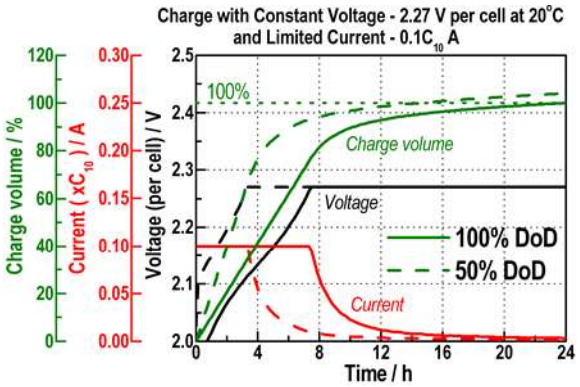
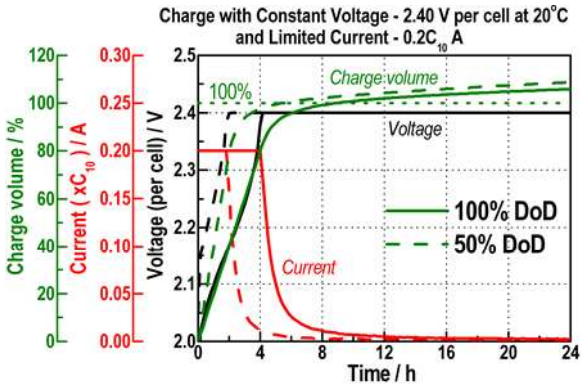
Discharge Performance at Constant Power Discharge W (Per Cell) for Battery 12 TF 100 at 20°C												
Uf, Vpc	5 min	15 min	30 min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.60	506.0	288.0	206.0	125.6	73.1	53.5	42.8	35.8	30.9	24.7	20.6	11.0
1.65	492.0	287.0	205.0	125.0	72.8	53.3	42.6	35.7	30.8	24.6	20.5	11.0
1.70	488.0	286.0	204.0	124.4	72.4	52.8	42.4	35.5	30.6	24.5	20.4	10.9
1.75	485.0	283.0	202.0	123.2	71.7	52.3	41.9	35.2	30.3	24.1	20.2	10.8
1.80	480.0	280.0	200.0	122.0	71.0	52.0	41.5	34.8	30.0	24.0	20.0	10.7
1.85	468.0	273.0	195.0	119.0	69.2	50.7	40.5	33.9	29.3	23.4	19.5	10.4

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	45°C	50°C	55°C
From 5 to 59 minutes	0.72	0.77	0.82	0.87	0.91	0.95	0.98	1.00	1.02	1.03	1.04	1.045
From 1 to 20 hours	0.80	0.84	0.88	0.91	0.94	0.97	0.99	1.00	1.01	1.02	1.03	1.033

Battery Charge Conditions at 20° Constant Voltage and Limited Current (IU)			
Charge current limit	Float charge voltage	Equalization charge voltage	Boost charge voltage
0.1 - 0.25 C 10 A Recommended: 0.20 C 10 A	2.27 V per cell at 20°C; Temperature correction: -3 mV / cell / °C	2.32 V per cell at 20°C Recommended: every 3 months for 24h during long time float operation	2.40 V per cell at 20°C; Temperature correction: -4 mV / cell / °C
Float application: 0.20 C 10 A / 2.27 V per cell at 20°C		Cycling applications: 0.20 C 10 A / 2.40 V per cell at 20°C Recharge Ah input at least 105% from previous discharge Ah	





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