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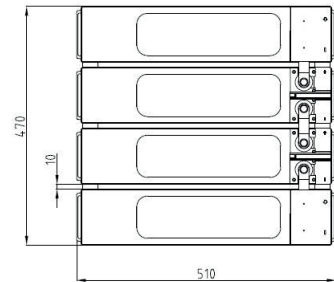
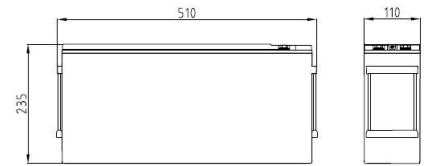
BATTERIEN

CH-QUALITÄT IN BEWEGUNG

Version 01.09.2018



12MVR110F



12MVR110F Art.-Nr. 823000

FRONT TERMINAL AGM VRLA

⊕ 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-proof operation
- Delivered ready for use
- Non-hazardous cargo for ground, sea and air transport
- Fully recyclable product

ⓘ Mechanical properties:

length:	510 mm
Width:	110 mm
Height:	235 mm
Wight:	34.5 kg

ⓘ Electrical specifications:

Nominal voltage:	12V
Number of cells:	6
Rated capacity:	105 Ah (10 h rate to 1.80 V _{pc} at 20 °C)
Rated capacity:	104 Ah (8 h rate to 1.75 V _p at 25 °C)
Internal resistance:	5.84 mOhm (IEC 60 896 -21/22)
Short circuit current:	2 145 A (IEC 60 896 21/22)
Float charge voltage:	2.27 V per cell (V _{pc}) 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 (maximum)
	+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:	99%
Flame arrestor:	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:	Schock 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
Carrying Handles:	Available (2)
connector and bolts:	Supplied as standard

ⓘ Applicable standards:

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

ⓘ Manufacture standards:

- ISO 9001, ISO 14001, OHSAS 18001, AQAP 2110

Performance characteristics:

BATTERY DISCHARGE PERFORMANCE AT 20 °C												
Battery capacity at constant current discharge (Ah) for battery 12MVR110F at 20 °C												
Uf, Vpc	5 min	15 min	30 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
1.60	22	38	54	65.9	76.8	84.3	89.8	94.1	97.3	103.8	108.2	115.7
1.65	22	38	54	65.6	76.4	84.0	89.4	93.7	96.9	103.3	107.6	115.1
1.70	21	37	54	65.3	76.0	83.6	88.9	93.1	96.4	102.8	107.1	114.6
1.75	21	37	53	64.7	75.3	82.7	88.0	92.3	95.4	101.9	106.1	113.4
1.80	21	37	53	64.1	74.6	81.9	87.2	91.4	94.5	100.8	105.0	112.4
1.85	20	36	51	62.5	72.7	79.8	85.1	89.0	92.2	98.3	102.4	109.5

Discharge performance at constant current discharge (A) for battery 12MVR110F at 20 °C												
Uf, Vpc	5 min	15 min	30 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
1.60	266	151	108	65.9	38.4	28.1	22.4	18.8	16.2	13.0	10.8	5.79
1.65	262	151	108	65.6	38.2	28.0	22.3	18.7	16.2	12.9	10.8	5.75
1.70	257	150	107	65.3	38.0	27.9	22.2	18.6	16.1	12.8	10.7	5.73
1.75	255	149	106	64.7	37.6	27.6	22.0	18.5	15.9	12.7	10.6	5.67
1.80	252	147	105	64.1	37.3	27.3	21.8	18.3	15.8	12.6	10.5	5.62
1.85	246	143	102	62.5	36.3	26.6	21.3	17.8	15.4	12.3	10.2	5.48

Discharge performance at constant power discharge (W per cell) for battery 12MVR110F at 20 °C												
Uf, Vpc	5 min	15 min	30 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
1.60	532	302	216	131.9	76.8	56.2	44.9	37.6	32.4	26.0	21.6	11.57
1.65	517	302	215	131.3	76.4	56.0	44.7	37.5	32.3	25.8	21.5	11.51
1.70	513	300	214	130.6	76.0	55.4	44.5	37.3	32.1	25.7	21.4	11.46
1.75	509	297	212	129.4	75.3	54.9	44.0	36.9	31.8	25.3	21.2	11.34
1.80	504	294	210	128.1	74.6	54.6	43.6	36.5	31.5	25.2	21.0	11.24
1.85	491	286	205	125.0	72.7	53.2	42.5	35.6	30.7	24.6	20.48	10.95

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	
From 5 to 59 minutes	0.70	0.80	0.90	0.95	1	1.05	1.10	1.13	1.15	1.16	
From 1 to 20 hours	0.82	0.88	0.94	0.97	1	1.03	1.05	1.08	1.09	1.10	

BATTERY CHARGE CONDITIONS AT 20 °C			
Charge regime: constant voltage and limited current (IU)			
Charge current limit	Float charge voltage	Equalization charge voltage	Boost charge voltage
0.1 – 0.25C ₁₀ A Recommended: 0.20C 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: 0.20C ₁₀ A / 2.27 V per cell at 20 °C		Cycling applications: 0.20C ₁₀ A / 2.40 V per cell at 20 °C; Recharge Ah input at least 105% from previous discharge Ah	

