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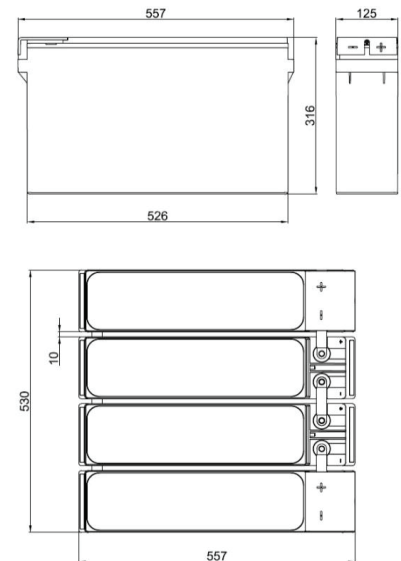
BATTERIEN

CH-QUALITÄT IN BEWEGUNG

Version 01.07.2020



12HVR190C



12HVR190C Art.-Nr. 824040

FRONT TERMINAL CARBON VRLA Battery

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:	557 mm
Width:	125 mm
Height:	316 mm
Weight:	60.0 kg

ⓘ Electrical specifications:

Nominal voltage:	12V
Number of cells:	6
Rated capacity:	190 Ah (10 h rate to 1.80 Vpc at 20 °C)
Internal resistance:	3.9 mOhm (IEC 60 896 -21/22)
Short circuit current:	3 250 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
Additives:	Modified Carbon NAM
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:	more than 99%
Central degassing system:	Available
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 12HVR190C 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	40	68	98	119.3	138.9	152.6	162.5	170.2	176.1	187.9	195.7	209.4
1.65	39	68	97	118.8	138.3	152.0	161.7	169.5	175.4	187.0	194.8	208.2
1.70	39	68	97	118.2	137.6	151.2	160.9	168.5	174.4	186.0	193.8	207.3
1.75	38	67	96	117.0	136.2	149.7	159.2	167.0	172.7	184.3	191.9	205.2
1.80	38	67	95	115.9	134.9	148.2	157.7	165.3	171.0	182.4	190.0	203.3
1.85	37	65	93	113.1	131.5	144.4	153.9	161.1	166.8	177.8	185.3	198.2

Discharge performance at constant current discharge (A) for battery 12HVR190C 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	481	274	196	119.3	69.4	50.9	40.6	34.0	29.4	23.5	19.6	10.47
1.65	473	273	195	118.8	69.2	50.7	40.4	33.9	29.2	23.4	19.5	10.41
1.70	465	271	194	118.2	68.8	50.4	40.2	33.7	29.1	23.3	19.4	10.36
1.75	461	269	192	117.0	68.1	49.9	39.8	33.4	28.8	23.0	19.2	10.26
1.80	456	266	190	115.9	67.5	49.4	39.4	33.1	28.5	22.8	19.0	10.17
1.85	445	259	185	113.1	65.7	48.1	38.5	32.2	27.8	22.2	18.5	9.91

Discharge performance at constant power discharge (W per cell) for battery 12HVR190C 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	962	547	391	238.6	138.9	101.7	81.2	68.1	58.7	47.0	39.1	20.94
1.65	935	546	390	237.5	138.3	101.3	80.9	67.8	58.4	46.7	39.0	20.82
1.70	928	543	388	236.4	137.6	100.3	80.5	67.4	58.1	46.5	38.8	20.73
1.75	921	538	384	234.1	136.2	99.3	79.6	66.8	57.6	45.9	38.4	20.52
1.80	912	532	380	231.8	134.9	98.8	78.9	66.1	57.0	45.6	38.0	20.33
1.85	889	518	371	226.1	131.5	96.3	77.0	64.4	55.6	44.5	37.05	19.82

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	

