Installation manual

Rechargeable lead-acid battery 18Ah/12V

ZS-18

ZEUS

AAT SYSTEMY BEZPIECZEŃSTWA Sp. z o.o.
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The rechargeable batteries are lead-lead dioxide systems. The dilute sulfuric acid electrolyte is absorbed by separators and plates and thus immobilized. Should the battery be accidentally overcharged producing hydrogen and oxygen, special one-way valves allow the gases to escape thus avoiding excessive pressure build-up. Otherwise, the battery is completely sealed and is, therefore, maintenance-free, leak proof and usable in any position.

Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper/Pug	Fiberglass	Sulfuric acid

General Features

- Absorbent Glass Mat (AGM) technology for efficient gas recombination of up to 99% and freedom from
- electrolyte maintenance or water adding.
- Not restricted for air transport-complies with IATA/ICAO Special Provision A67.
- UL-recognized component.
- Can be mounted in any orientation.
- Computer designed lead, calcium tin alloy grid for high power density.
- Long service life, float or cyclic applications.
- Maintenance-free operation.
- Low self discharge.

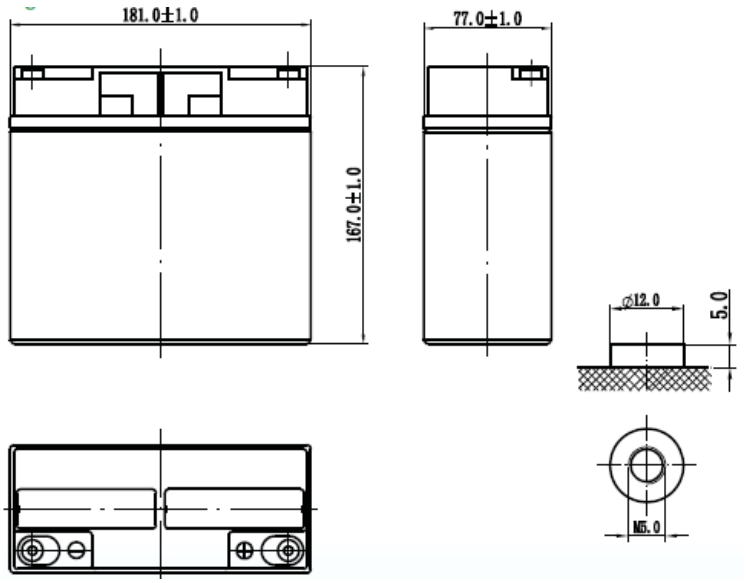
Battery Specification

Nominal Voltage	**12V**
Number of cell	**6**
Design life	**5 lat**
Nominal Capacity 77°F (25°C)	
20 hour rate (1,00 A; 10,5 V)	**20,00 Ah**
10 hour rate 1,85 A; 10,5 V)	**18,50 Ah**
5 hour rate (3,45 A; 10,5 V)	**17,25 Ah**
1 hour rate (13,4 A; 9,6 V)	**13,40 Ah**
Internal Resistance	
Fully Charged battery 77°F (25°C)	**≤16,5 mOhm**
Self-Discharge	
3% of capacity declined per month at 20°C (average)	
Operating Temperature Range	
Discharge	**-20°C—60°C**
Charge	**-10°C—60°C**
Storage	**-20°C—60°C**
Max. Discharge Current 77°F (25°C)	**240 A (5 s)**
Short Circuit Current	**1000 A**
Charge Methods: Constant Voltage Charge 77°F (25°C)	
Cycle use	**14.4—14.7 V (2,40—2,45 VPC)**
Maximum charging current	**7,2 A**
Temperature compensation	**-30 mV/°C**
Standby use	**13,38—13,8 V (2,23—2,3 VPC)**
Temperature compensation	**-20 mV/°C**

Dimensions and Weight

Length (mm / inch)	**181 / 7,13**
Width (mm / inch)	**77 / 3,03**
Height (mm / inch)	**167 / 6,57**
Total Height (mm / inch)	**167 / 6,57**
Approx. Weight (Kg / lbs)	**5,3/ 11,66**

*** Weight devation: ± 5%**



Discharge Constant Current (Amperes at 77°F (25°C))

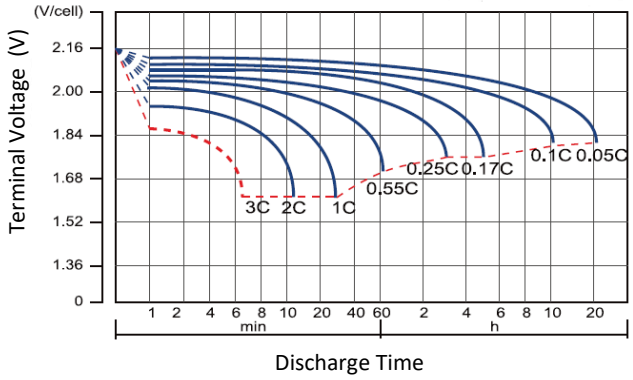
End Point Volts/Cell	5 min	10 min	15 min	30 min	1 h	3 h	5 h	10 h	20h
1,60 V	72,8	49,7	38,4	21,7	13,0	5,20	3,50	1,79	0,92
1,65 V	71,1	48,4	37,5	21,4	12,8	5,12	3,44	1,76	0,91
1,70 V	69,3	47,2	36,7	21,0	12,6	5,04	3,37	1,73	0,90
1,75 V	67,6	46,0	35,8	20,7	12,4	4,96	3,31	1,69	0,85
1,80 V	65,9	44,7	34,9	20,4	12,2	4,88	3,24	1,65	0,84

Discharge Constant Power (Watts at 77°F (25°C))

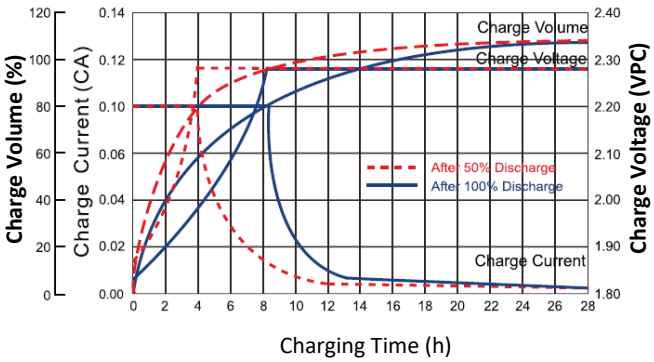
End Point Volts/Cell	5min	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h
1,60 V	147	102	81,5	44,6	34,2	26,6	14,9	10,3	7,05
1,65 V	143	100	80,1	43,9	33,8	26,3	14,7	10,2	6,96
1,70 V	138	98,2	78,7	43,3	33,4	26,0	14,5	10,1	6,88
1,75 V	133	96,3	77,3	42,7	33,0	25,8	14,4	10,0	6,79
1,80 V	128	94,9	76,0	42,0	32,6	25,5	14,2	9,9	6,78

Note! The above characteristics data are average values abtained within threecharge / discharge cycles.
All data shall be changed without notice, AAT SYSTEMY BEZPIECZEŃSTWA sp. z o.o. reserves the right to explain and updated the information.

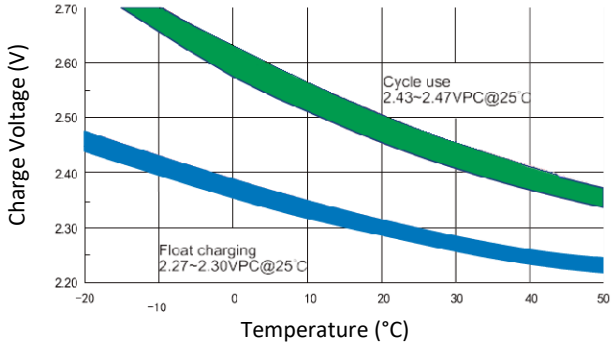
Discharge Characteristics Curve (25°C)



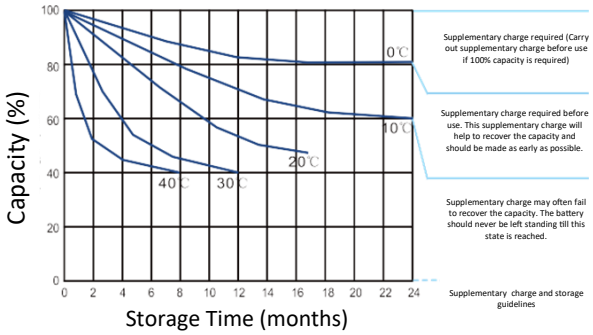
Charge Characteristic Curve For Standby Use (25°C)



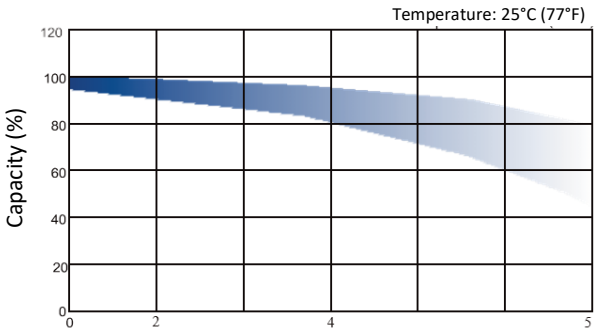
Relationship Between Charging Voltage And Temperature



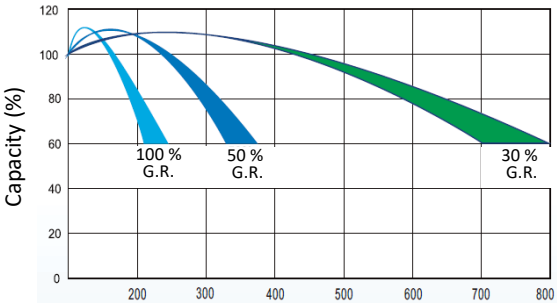
Storage Characteristics



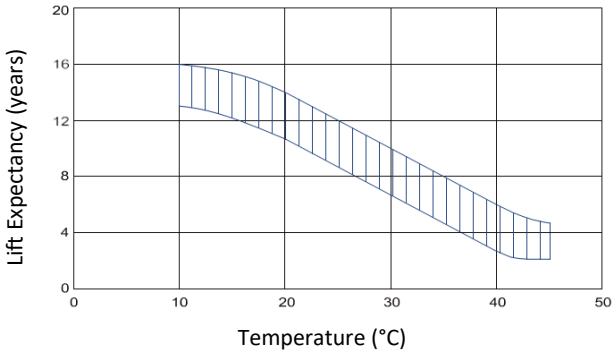
Life Characteristics Of Standby Use



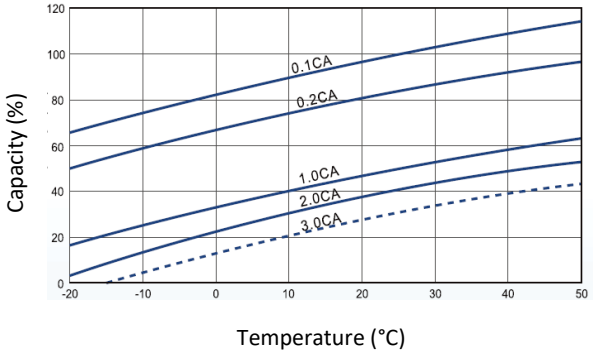
Cycle Life in Relation To Depth Of Discharge



Effect Of Temperature On Long Term Life



Temperature Effects On Capacity



Notes

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