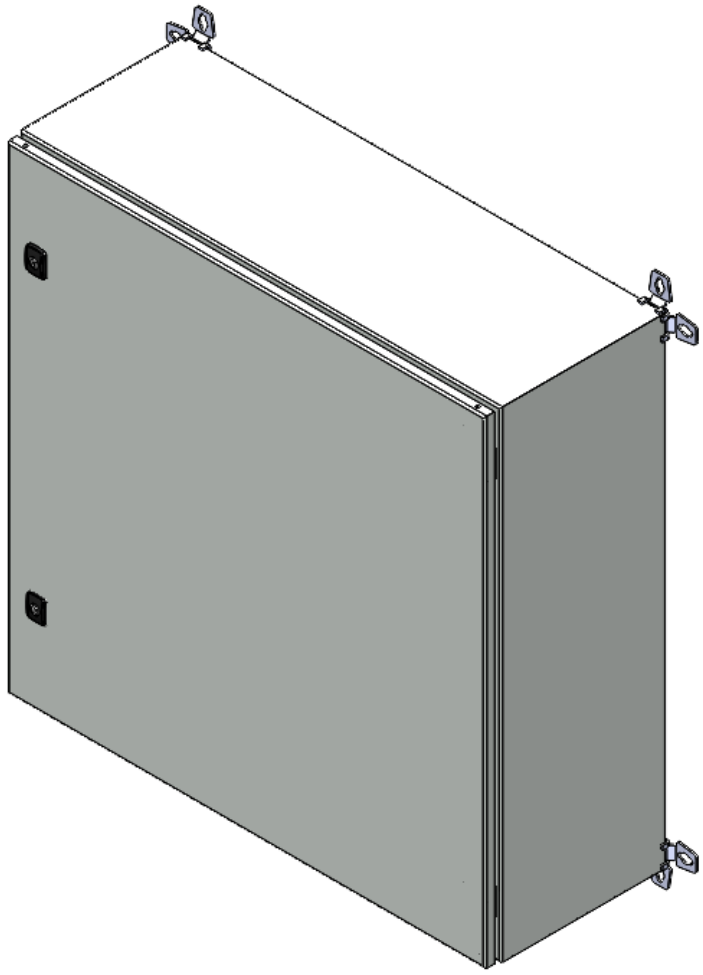
O-MAN-00014-BAT

USER MANUAL

OBSTA supply unit

48V-BAT-36Ah-W-SIT // 113957-W-SIT



www.obsta.com

1. Product name and part number

Description	Part number (P/N)	Power supply	QR code
48V-BAT-36Ah-W-SIT	113957-W-SIT	48Vdc -5% +15%	

2. Caution

- Do not proceed with any maintenance job when the product is under operation.
- Power supply must be shut down when opening the flash-head or the cabinet.
- Installation must be performed only by an electrically skilled operator and National electrical installation rules must be respected.
- Always wear appropriate Personal Protective Equipment (PPE) when installing, maintaining or servicing the system.
- Any installation or maintenance operation performed at height must be carried out in strict compliance with fall-protection procedures.
- Do not look directly at the projector while it is in operation: Led projectors produce brilliant flashes of lights which can result in temporary or permanent eye damage.
- OBSTA products may be affected by ESD, use state of the art precaution before manipulation.
- Unless otherwise specified, all cables must be shielded, and the shielding must be connected to ground.
- All cables connected to PCBs and terminal blocks must be equipped with a cable connector to prevent false contacts when connecting devices.

3. Warranty

OBSTA warrants the equipment described in the instruction manual and sold to purchasers to be free from defects in material and workmanship at the time of shipment. OBSTA's liability under this warranty being limited to repairing or replacing, at OBSTA's option, items which are returned to it prepaid within twenty-four (24) months from shipment to the original Purchaser, or twelve months from commissioning, and found, to OBSTA's satisfaction, to have been defective. In no event shall OBSTA be liable for consequential damages. NO PRODUCT IS WARRANTED AS BEING FIT FOR A PARTICULAR PURPOSE AND THERE IS NO WARRANTY OF MERCHANTABILITY.

This warranty applies only if: (I) the items are used solely under the operating conditions and in the manner recommended in OBSTA's instruction manual, specifications, or other literature; (II) the items have not been misused or abused in any manner or repairs attempted thereon; (III) written notice of the failure within the warranty period is forwarded to OBSTA and the directions received for properly identifying items returned under warranty are followed; and (IV) such return notice authorizes OBSTA to examine and disassemble returned products to the extent OBSTA deems necessary to ascertain the cause of failure. The warranties stated herein are exclusive.

THERE ARE NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, BEYOND THOSE SET FORTH HEREIN, and OBSTA does not assume, nor does OBSTA authorize anyone else to assume for it, any other obligation or liability in connection with the sale or use of said products. OBSTA's liability on any claim of any kind, including negligence, for loss or damages arising out of or connected with the manufacture, sale, delivery, repair or use of any equipment or services provided by OBSTA shall in no case exceed the price allocable to the item or service or part thereof which gives rise to the claim.

The integrity and reliability of OBSTA aviation obstruction lighting systems is dependent on the use of OBSTA parts and components. To ensure the optimum performance and reliability of your OBSTA system, it is strongly advised that only components and modules manufactured by OBSTA be used.

4. Introduction

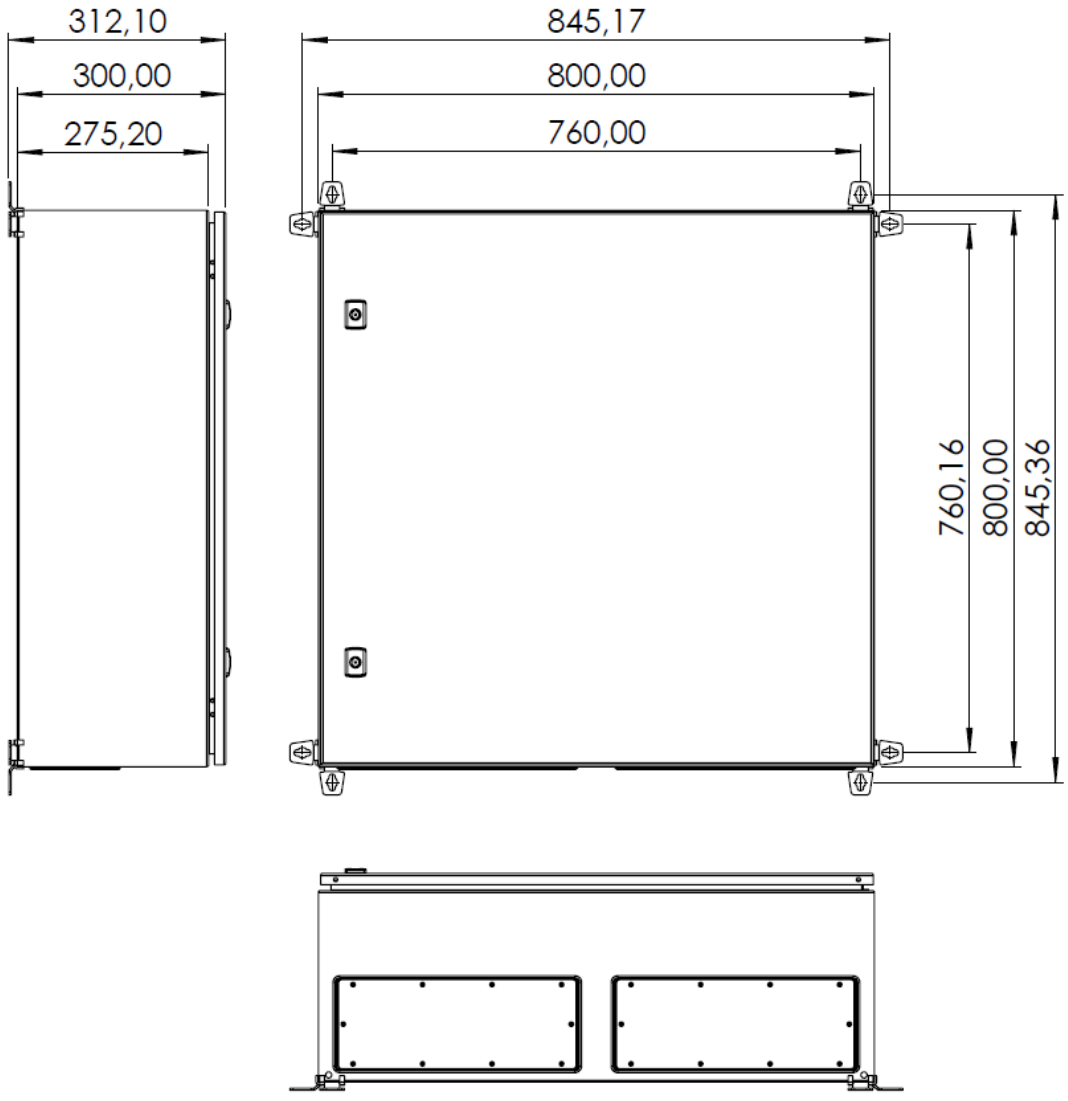
4.1. Scope

The OBSTA power supply unit ensures power supply to the light heads in the event of a power cut.

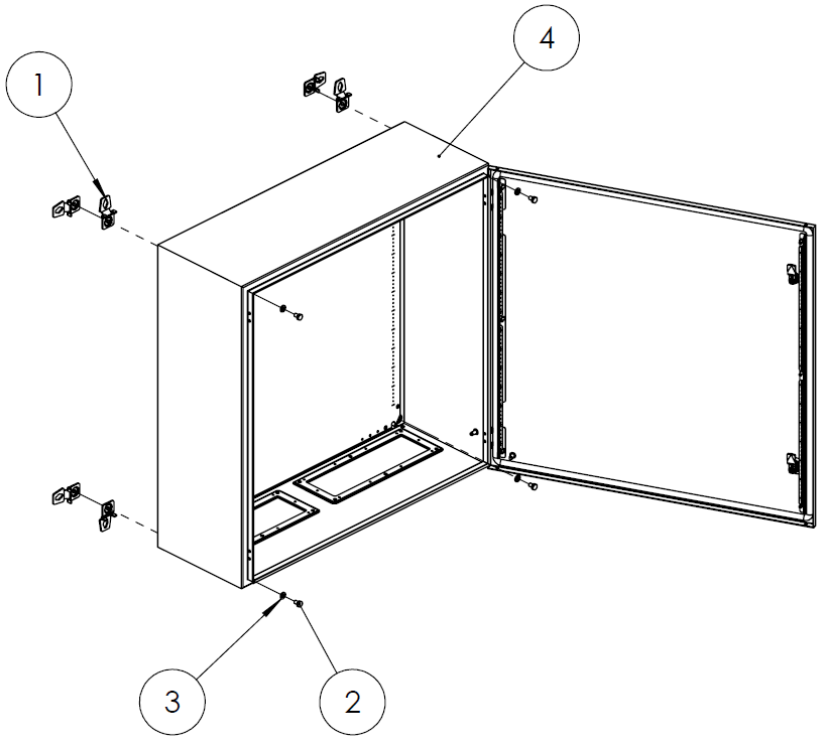
4.2. General description

The steel cabinet is connected to a 240Vac power supply, and contains input and output overvoltage protection, as well as 4 batteries to keep OBSTA lamps running for up to 12 hours in the event of a power supply.

4.3. Dimension

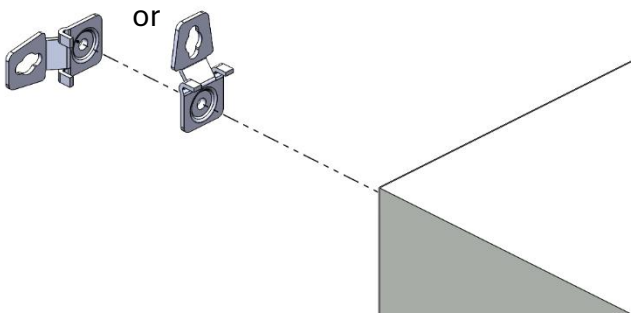


4.4. Mounting

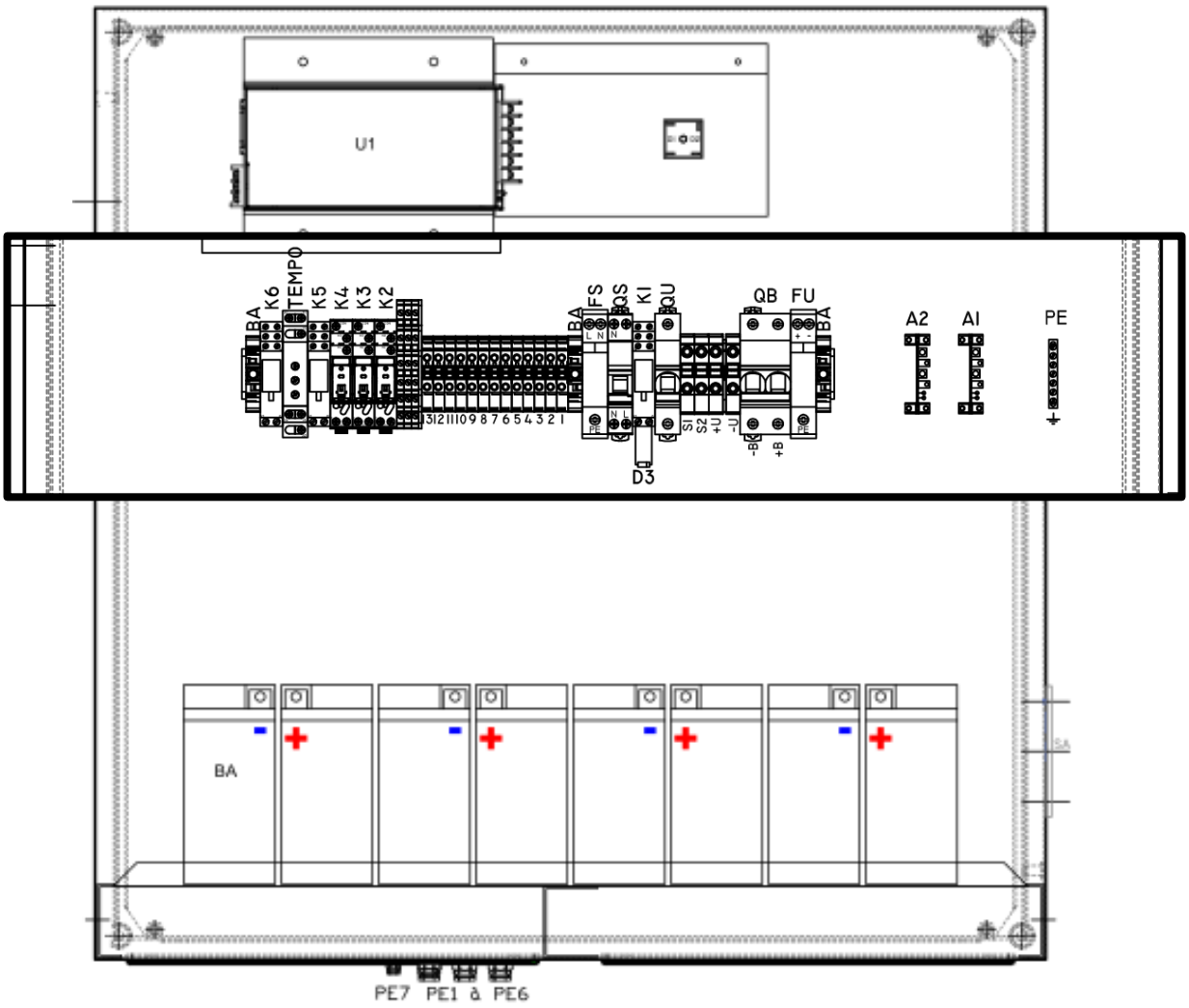


Nbr	Designation	Qty
1	SS304 wall mount	4
2	800x800x300 cabinet	1
3	M8 Plain washer	4
4	M8x12 screw	4

The wall mounting brackets are assembled using 4 M8x12 screws tightened to a maximum torque of 15Nm. The diameter of the screws used to attach the brackets to the wall must be 8mm.



4.5. Bill of materials



Reference	Designation	Qty
PE	Ground bar	1
QU	16A 1P circuit breaker	1
FU	Surge protector	1
FS	Para Surge protector foudre	1
BA	12V 18Ah battery	8
D3	Diode	1
D1-D2	Diode bridge	11
TEMPO	Time-delay relay	1
K5 -K6	48V Relay + Base	1
K4	48V Relay + Base	1
K3	48V Relay + Base	1
K2	48V Relay + Base	1
K1	48V Relay + Base	1
U1	48Vdc 600W power supply	1
A1 - A2	RVU card	1
A1 - A2	Card guide	2
QB	2P C16 circuit breaker	1
QS	Ph+N C16 circuit breaker	1
S1 S2 **+U -U**	ZS16 terminal	4
1 à 13	ZS10 terminal	13
BA	BAM4 stop block	3
PE6	PG09 cable gland	1
PE6	PG11 cable gland	1
PE1 à PE5	PG13 cable gland	5
SA	Ventilation grille	2
ENV	MAS0808030R5 cabinet	1
-	End flange	1
-	3-level terminal block	2
-	ES4 end flange	1
-	DIN rail	1
-	Box mounting bracket	4

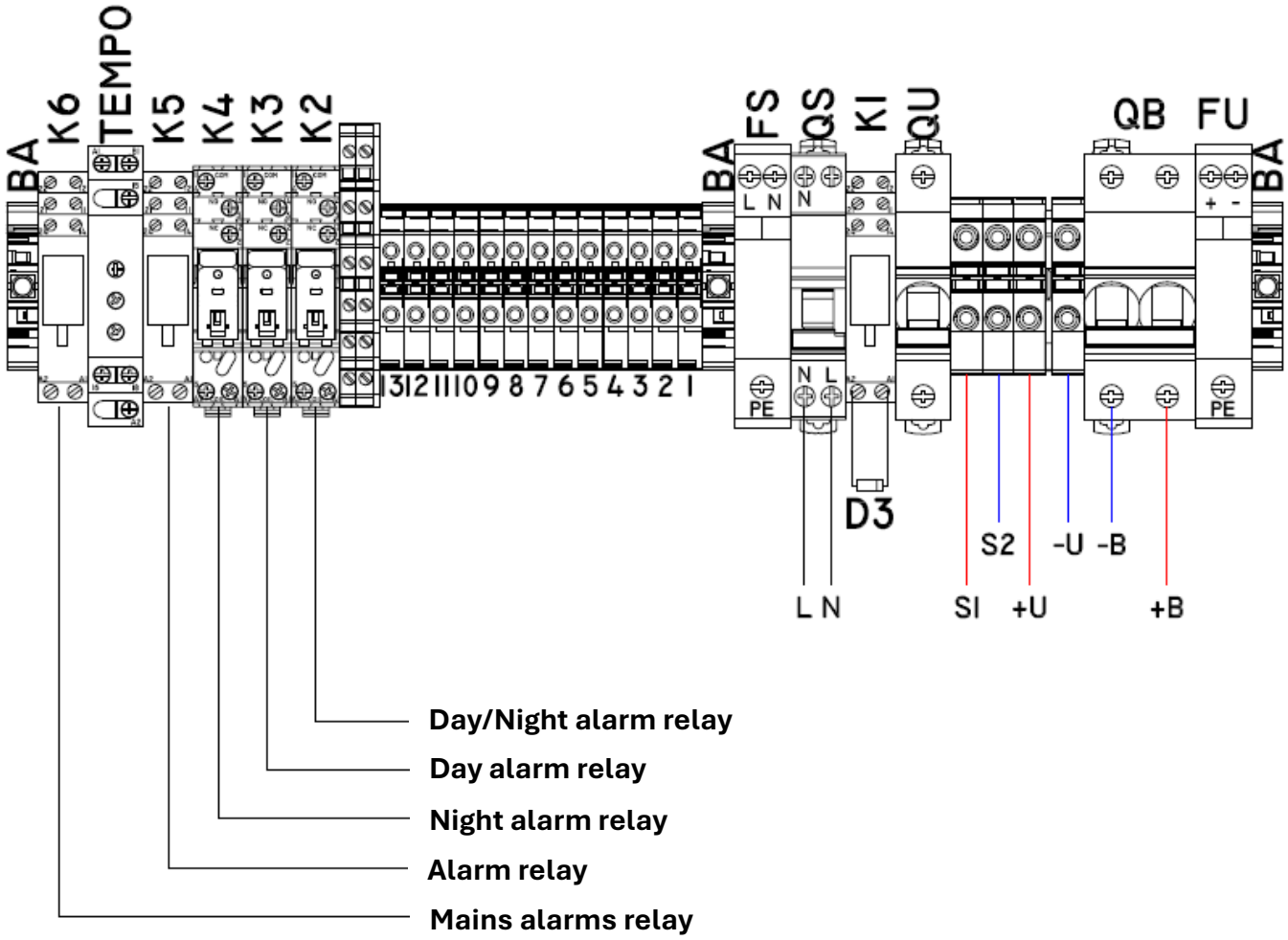
4.6. Power supply specifications

HRP-600:

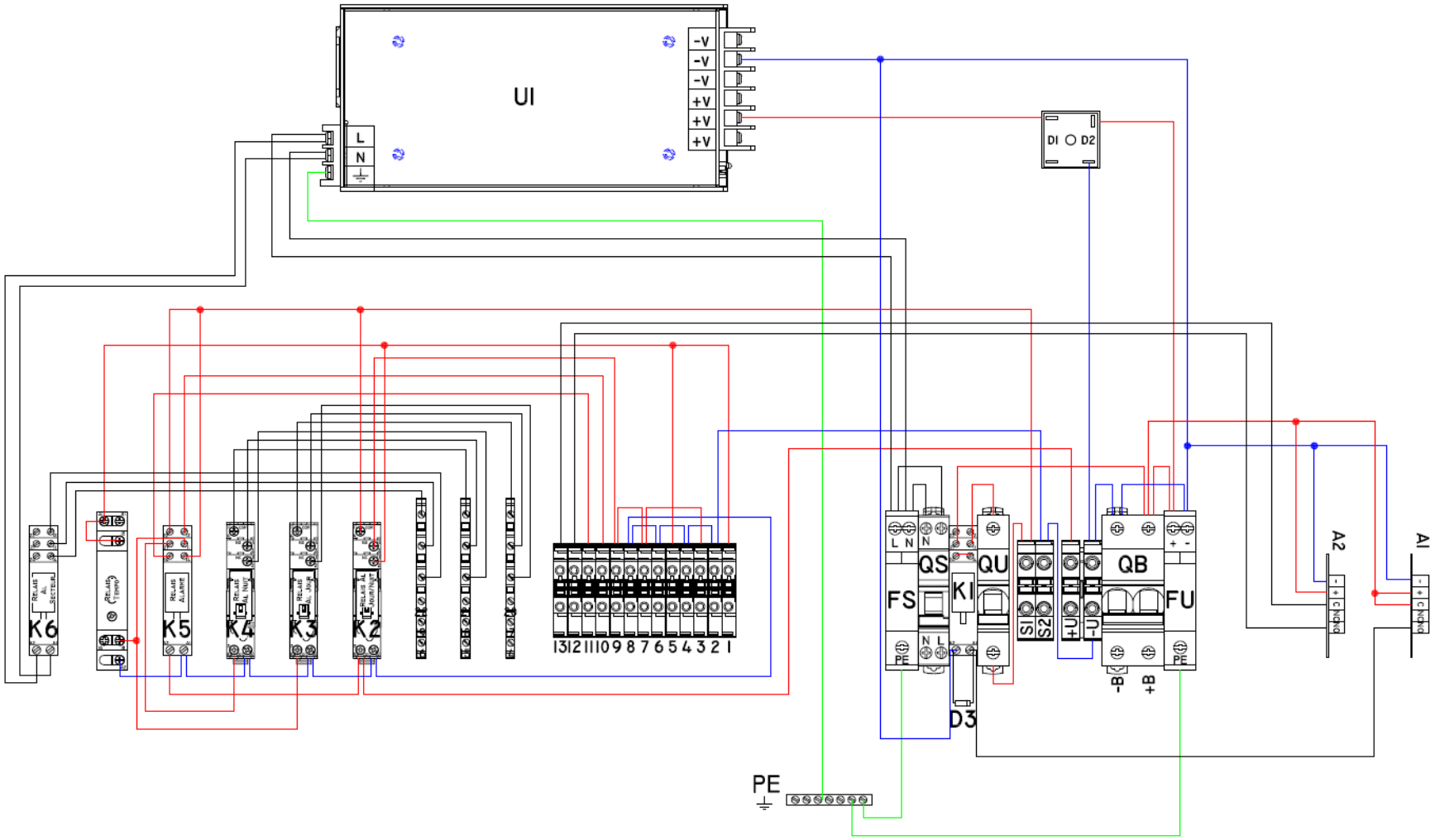
MODEL		HRP-600-3.3	HRP-600-5	HRP-600-7.5	HRP-600-12	HRP-600-15	HRP-600-24	HRP-600-36	HRP-600-48
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	15V	24V	36V	48V
	RATED CURRENT	120A	120A	80A	53A	43A	27A	17.5A	13A
	CURRENT RANGE	0 ~ 120A	0 ~ 120A	0 ~ 80A	0 ~ 53A	0 ~ 43A	0 ~ 27A	0 ~ 17.5A	0 ~ 13A
	RATED POWER	396W	600W	600W	636W	645W	648W	630W	624W
	RIPPLE & NOISE (max.) Note.2	120mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	2.8 ~ 3.8V	4.3 ~ 5.8V	6.8 ~ 9V	10.2 ~ 13.8V	13.5 ~ 18V	21.6 ~ 28.8V	28.8 ~ 39.6V	40.8 ~ 55.2V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1800ms, 50ms/230VAC 3600ms, 50ms/115VAC at full load							
	HOLD UP TIME (Typ.)	16ms/230VAC 16ms/115VAC at full load							
INPUT	VOLTAGE RANGE Note.5	85 ~ 264VAC 120 ~ 370VDC							
	FREQUENCY RANGE	47 ~ 63Hz							
	POWER FACTOR (Typ.)	PF>0.93/230VAC PF>0.99/115VAC at full load							
	EFFICIENCY (Typ.)	78.5%	82%	86%	88%	88%	88%	89%	89%
	AC CURRENT (Typ.)	7.6A/115VAC 3.6A/230VAC							
	INRUSH CURRENT (Typ.)	35A/115VAC 70A/230VAC							
	LEAKAGE CURRENT	<1.2mA/240VAC							
PROTECTION	OVERLOAD	105 ~ 135% rated output power							
		Protection type : Constant current limiting, recovers automatically after fault condition is removed							
	OVER VOLTAGE	3.96 ~ 4.62V	6 ~ 7V	9.4 ~ 10.9V	14.4 ~ 16.8V	18.8 ~ 21.8V	30 ~ 34.8V	41.4 ~ 48.6V	57.6 ~ 67.2V
		Protection type : Shut down o/p voltage, re-power on to recover							
	OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down							
FUNCTION	DC OK SIGNAL	PSU turn on : 3.3 ~ 5.6V ; PSU turn off : 0 ~ 1V							
	FAN CONTROL (Typ.)	Load 35±15% or RTH2≧50℃ Fan on							
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing							
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes							
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL62368-1, TUV BS EN/EN62368-1, AS/NZS62368.1, EAC TP TC 004 approved							
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH							
	EMC EMISSION	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020							
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55035, BS EN/EN61000-6-2, heavy industry level, EAC TP TC 020							
OTHERS	MTBF	1333.6K hrs min. Telcordia SR-332 (Bellcore) ; 140.7K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	218*105*63.5mm (L*W*H)							
	PACKING	1.5Kg;8pcs/13Kg/1.34CUFT							
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on http://www.meanwell.com) 5. Derating may be needed under low input voltages. Please check the derating curve for more details. 6. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft). ※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx								

5. Wiring

5.1. Alarm wiring



5.2. Internal wiring

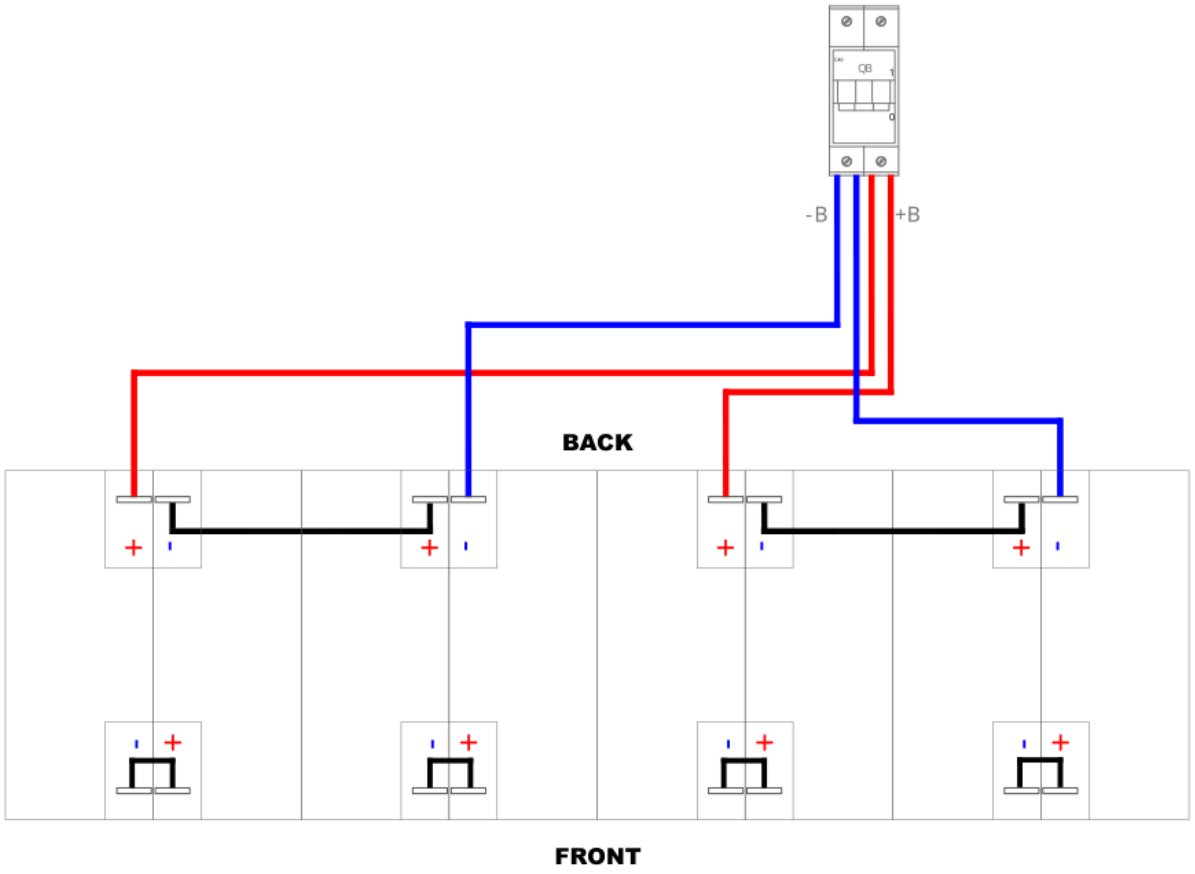


5.3. Battery

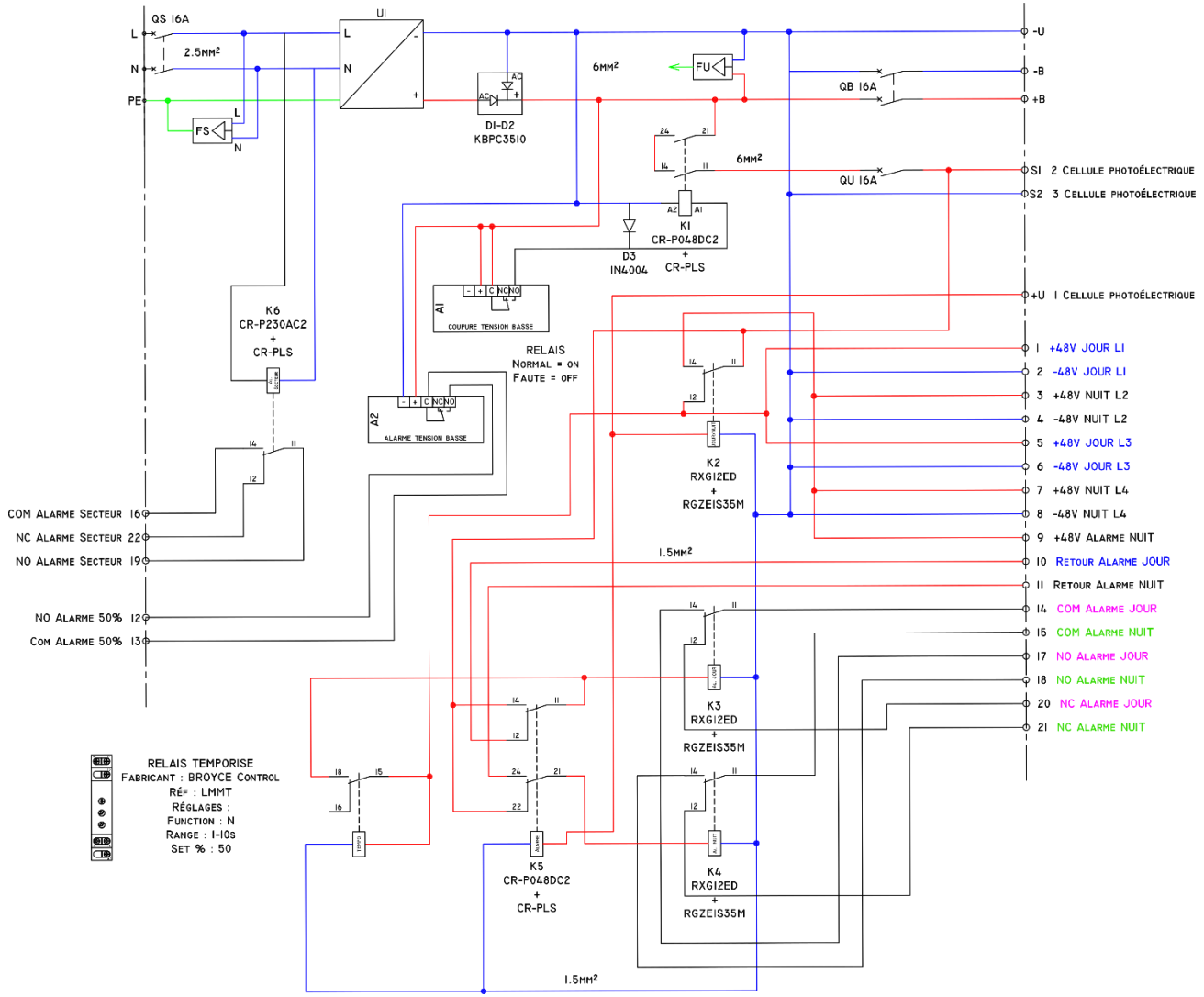
Storage: Always store batteries fully charged. If a battery is stored for a long period, it will top up every 6 months. Store batteries in a cool, dry place.

Temperature: Keep batteries at a temperature between -15°C and +50°C during charging and discharging. Avoid installing batteries near heat sources.

Recommendation: Avoid short-circuiting terminals. NEVER expose to flame. Avoid contact with any type of oil, solvent, petroleum-based detergent or ammonia solution, as this may damage the batteries.



5.4. Electrical diagram



6. Maintenance

6.1. Annual visit

Test	Frequency	Preventive action	Risk
Wiring	Annual	Visual control Tightening cable glands Tightening PCB wires	Water infiltration Poor circuit Cable degradation
Waterproof	Annual	Visual verification Search for the water leak	Water infiltration Short circuit Lamp in default mode (or light off)
Clamping	Annual	Checking tightness	Cabinet falling
Aspect (rust, dust…)	Annual	Exterior cleaning	Malfunction

7. Appendix

7.1. Battery specifications

SP Series

SSP12-18 12V18Ah

圣阳电源 SACRED SUN

SP series VRLA battery uses AGM technology and high-purity raw materials. Its good floating back up and large current discharge performance makes it optimal and economical choice for UPS/EPS.

Benefits

- Standard Commercial according to EUROBAT Classification
- Maximum charge efficiency
- High gas recombination efficiency
- Low self-discharge rate
- Easy installation and handling
- Vertical or horizontal installation

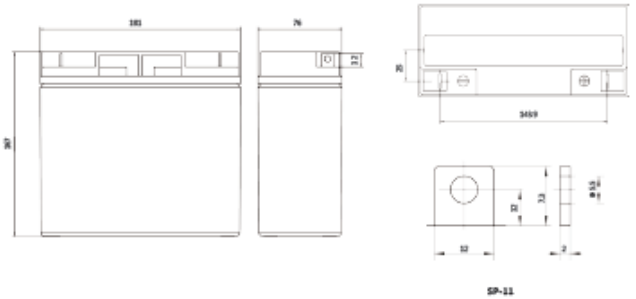
Applications

- UPS units
- Emergency power
- Starting generators
- EPS units

Standards

- IEC 61056-1/2
- JIS C8702-1/2
- EUROBAT guide

Drawing



Specifications

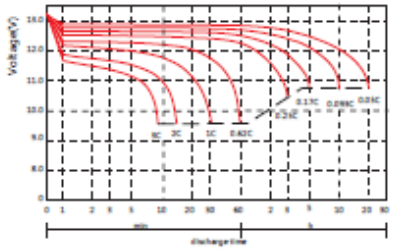
Battery Model	SSP12-18			
Design Life (years, 25℃)	5			
Capacity (Ah, 25℃)	20HR (0.90A, 1.75V)	10HR (1.67A, 1.75V)	5HR (3.204A, 1.75V)	1HR(11.45A, 1.70V)
	18	16.7	16.02	11.45
Dimensions (mm)	Length	Width	Height	Total Height
	181	76	167	167
Approx. Weight (kg)	5.4			
Reference Internal Resistance (mΩ)	14 (full charged @ 25℃)			
Maximum Discharge Current (A/5 Sec.)	270			
Self-Discharge (25℃)	<3% per month			
Charge Voltage (V/cell, 25℃)	Cycle use		Float use	
	2.45 (-3.5mV/℃/cell), max charge current: 5.4 A		2.27 (-3.5mV/℃/cell)	
Short Circuit Current (A)	460			

Discharge Data

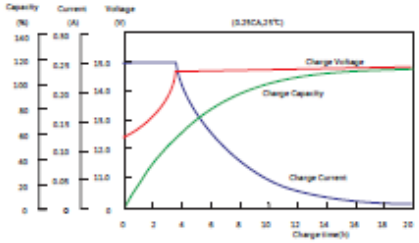
Constant Current Discharge Data (25℃, A)													
End Voltage (V/cell)	min						h						
	5	10	15	20	30	45	1	1.5	2	3	5	10	20
1.60	67.00	46.41	34.18	27.33	19.88	14.77	11.73	8.581	6.900	5.096	3.287	1.709	0.918
1.65	66.00	44.75	33.28	26.83	19.54	14.63	11.57	8.473	6.820	5.032	3.258	1.694	0.911
1.67	63.80	43.45	33.00	26.67	19.43	14.46	11.52	8.424	6.787	5.012	3.249	1.688	0.907
1.70	60.50	42.83	32.69	26.45	19.28	14.41	11.45	8.391	6.753	4.987	3.233	1.684	0.905
1.75	55.00	38.45	30.96	25.38	18.65	13.92	11.20	8.251	6.660	4.938	3.204	1.670	0.900
1.80	47.30	35.18	28.89	24.03	17.90	13.46	10.94	8.110	6.567	4.879	3.169	1.655	0.895

Constant Power Discharge Data (25℃, W/cell)													
End Voltage (V/cell)	min						h						
	5	10	15	20	30	45	1	1.5	2	3	5	10	20
1.60	118.9	84.61	64.37	52.36	38.43	28.79	23.00	16.89	13.628	10.102	6.537	3.405	1.830
1.65	117.7	82.45	63.05	51.55	37.87	28.59	22.73	16.73	13.500	9.997	6.492	3.383	1.823
1.67	115.0	80.47	62.74	51.38	37.73	28.30	22.65	16.66	13.46	9.968	6.481	3.374	1.817
1.70	109.9	79.60	62.39	51.04	37.51	28.23	22.55	16.61	13.41	9.930	6.455	3.370	1.816
1.75	101.3	72.03	59.37	49.13	36.41	27.38	22.12	16.37	13.25	9.850	6.412	3.349	1.808
1.80	87.8	66.55	55.68	46.75	35.06	26.53	21.68	16.12	13.094	9.749	6.353	3.326	1.800

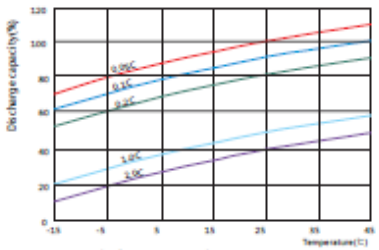
Performance Curve



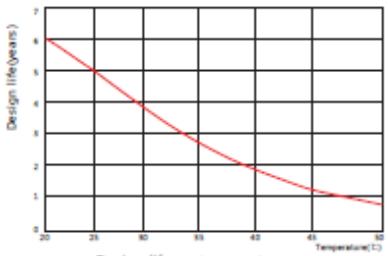
Discharge voltage vs. discharge time



Charge capacity vs. charge time



Discharge capacity vs. temperature



Design life vs. temperature

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