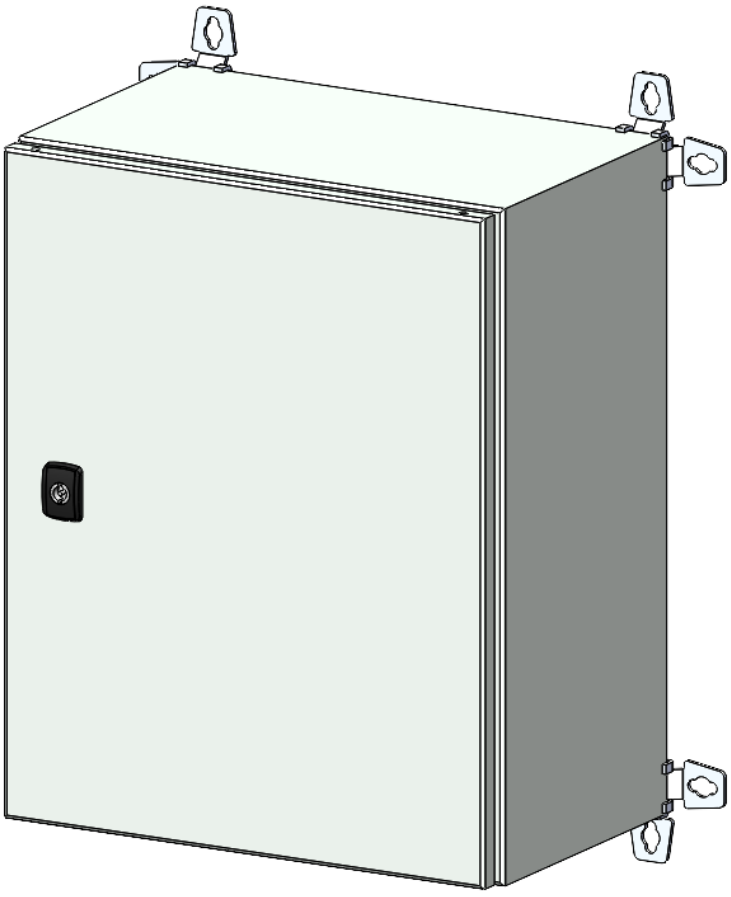
O-MAN-00019-BAT

USER MANUAL

OBSTA supply unit

48V-BAT-7Ah // 113952B



www.obsta.com

1. Product name and part number

Description	Part number (P/N)	Power supply	QR code
48V-BAT-7Ah	113952B	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

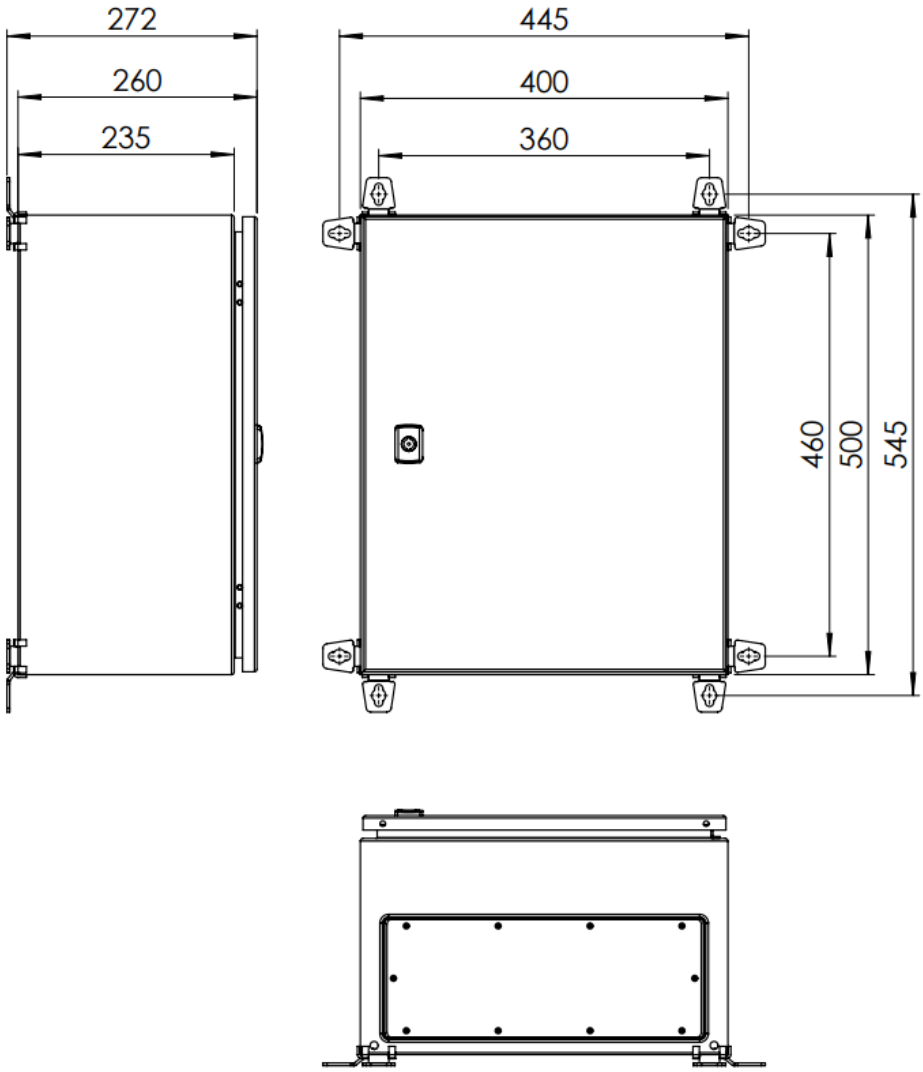
4.1. Scope

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

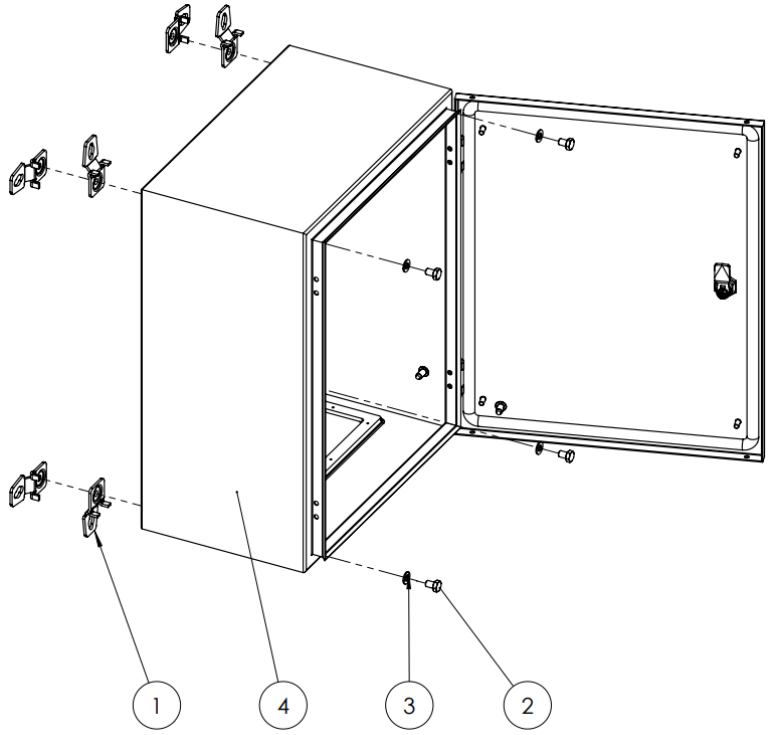
4.2. General description

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

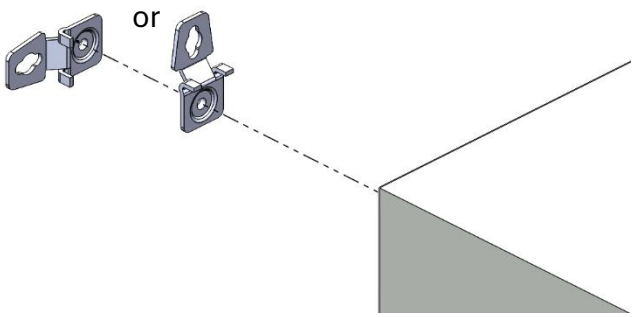


4.4. Mounting

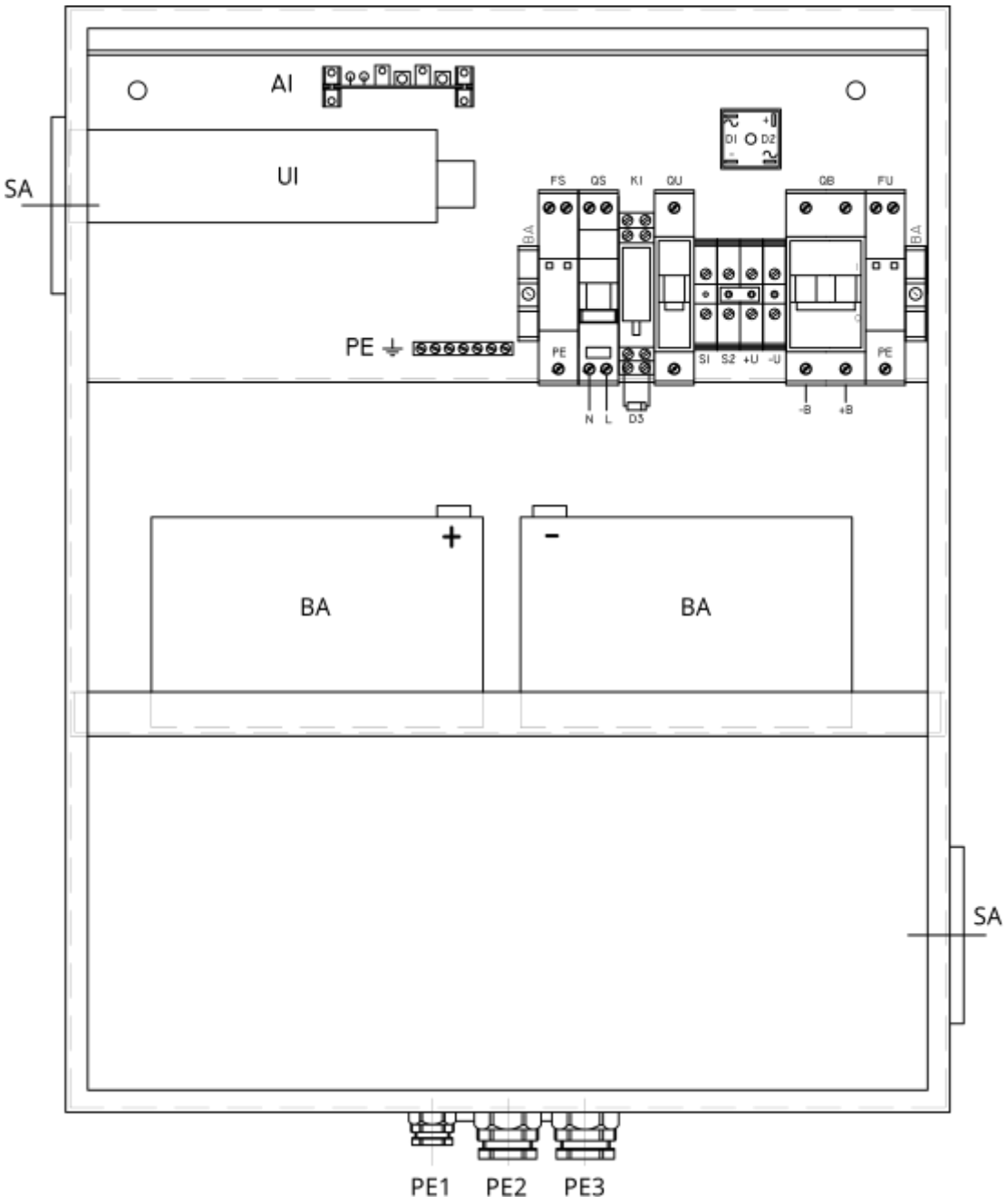


Nbr	Designation	Qty
1	SS304 wall mount	4
2	500x400x260 cabinet	1
3	M8 Plain washer	4
4	M8x12 screw	4

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	Grounding bar	1
FU	Surge protection DS230-48Vdc	1
FS	Surge protection DS215-230/G	1
B	Battery	4
	Rail DIN	1
D3	Diode	1
D1-D3	Diode bridge	1
K1	Relay	1
U1	48Vdc 150W HRP-150 power supply	1
A1	RVU card	1
QU	1P C4 circuit breaker	1
QB	2P C6 circuit breaker	1
QS	Ph+N C4 circuit breaker	1
-U	M10/10 N terminal	1
S1-S2-+U	M10/10 terminal	3
PE1	Cable gland	1
PE2 – PE3	Cable gland	2
SA	Ventilation hole	2

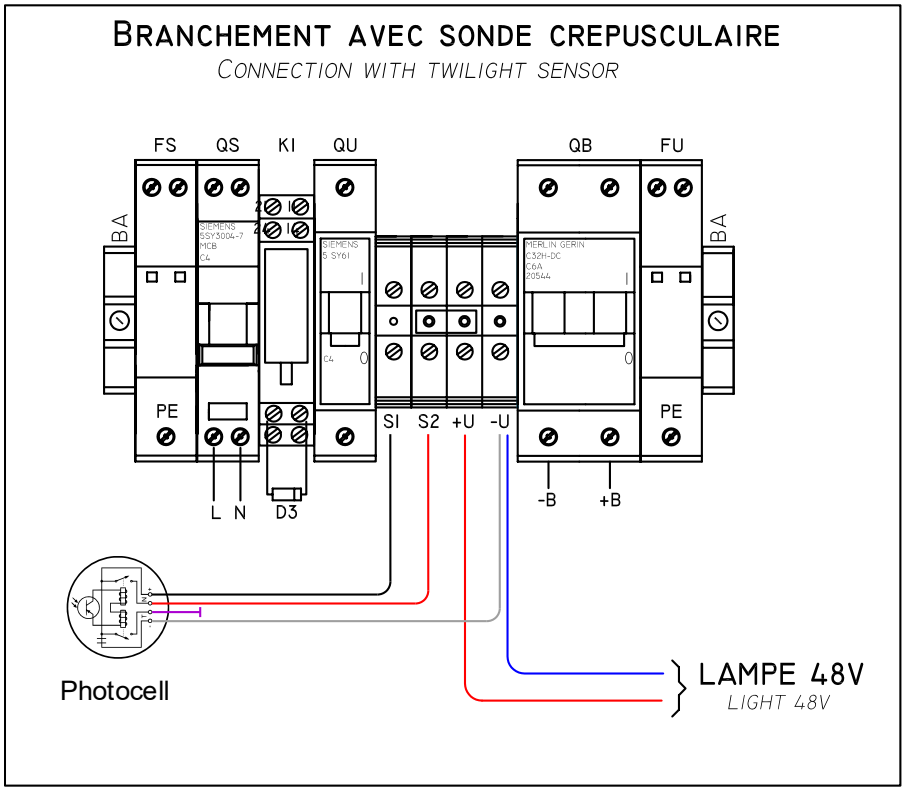
4.6. Power supply specifications

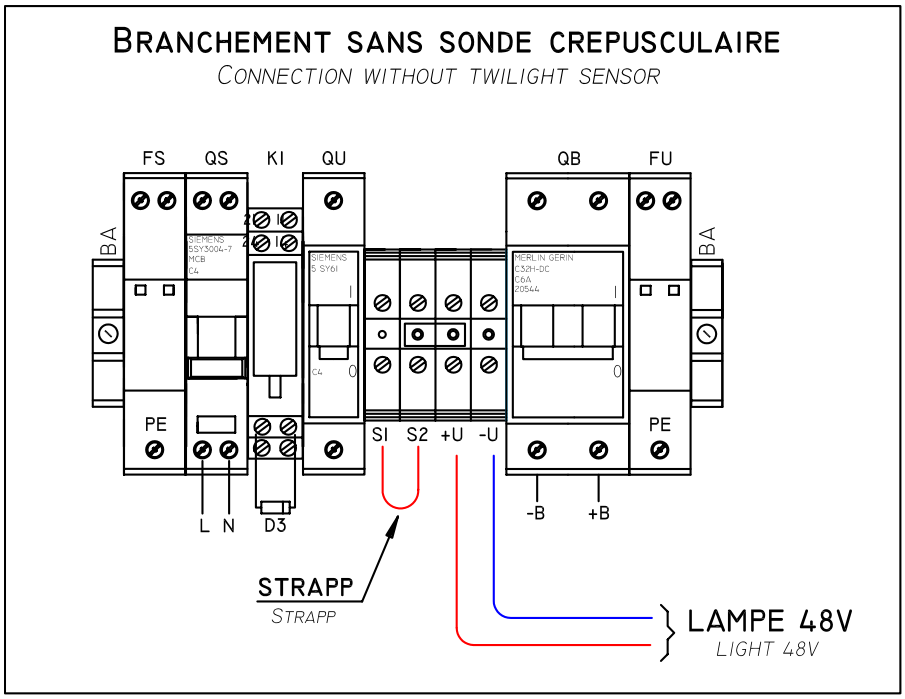
HRP-150:

MODEL		HRP-150-3.3	HRP-150-5	HRP-150-7.5	HRP-150-12	HRP-150-15	HRP-150-24	HRP-150-36	HRP-150-48
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	15V	24V	36V	48V
	RATED CURRENT	30A	26A	20A	13A	10A	6.5A	4.3A	3.3A
	CURRENT RANGE	0 ~ 30A	0 ~ 26A	0 ~ 20A	0 ~ 13A	0 ~ 10A	0 ~ 6.5A	0 ~ 4.3A	0 ~ 3.3A
	RATED POWER	99W	130W	150W	156W	150W	156W	154.8W	158.4W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	80mVp-p	100mVp-p	120mVp-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	±2.5%	±2.5%	±2.5%	±1.5%	±1.5%	±1.5%	±1.5%	±1.5%
	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	3000ms, 50ms/230VAC 3000ms, 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>0.95/230VAC PF>0.99/115VAC at full load							
	EFFICIENCY (Typ.)	78.5%	85%	87%	88%	88%	88%	89%	89%
	AC CURRENT (Typ.)	1.7A/115VAC 0.9A/230VAC							
	INRUSH CURRENT (Typ.)	35A/115VAC 70A/230VAC							
	LEAKAGE CURRENT	<1mA / 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							
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-50 ~ +85℃, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.04%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes							
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 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 EN55022 (CISPR22) Class B, EN61000-3-2,-3							
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2, heavy industry level, criteria A							
OTHERS	MTBF	238.8K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	159*97*38mm (L*W*H)							
	PACKING	0.61Kg; 24pcs/15.6Kg/0.76CUFT							
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. 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.								

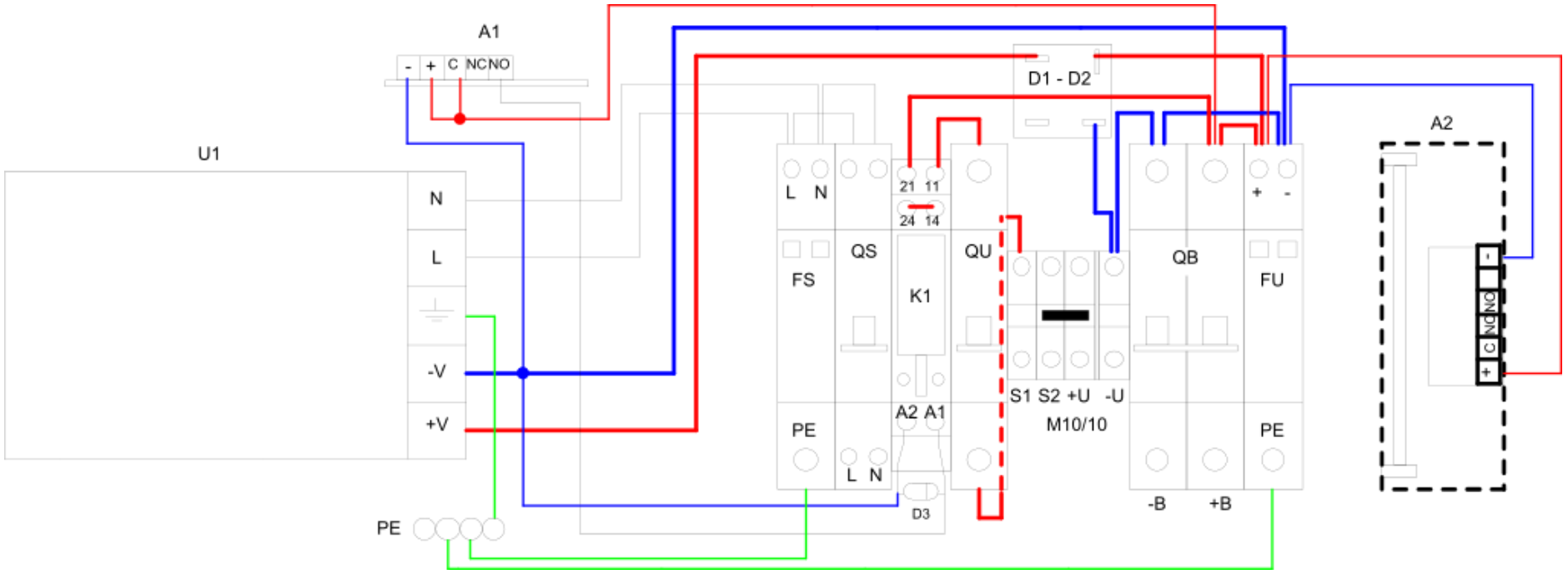
5. Wiring

5.1. Photocell wiring





5.2. Internal wiring

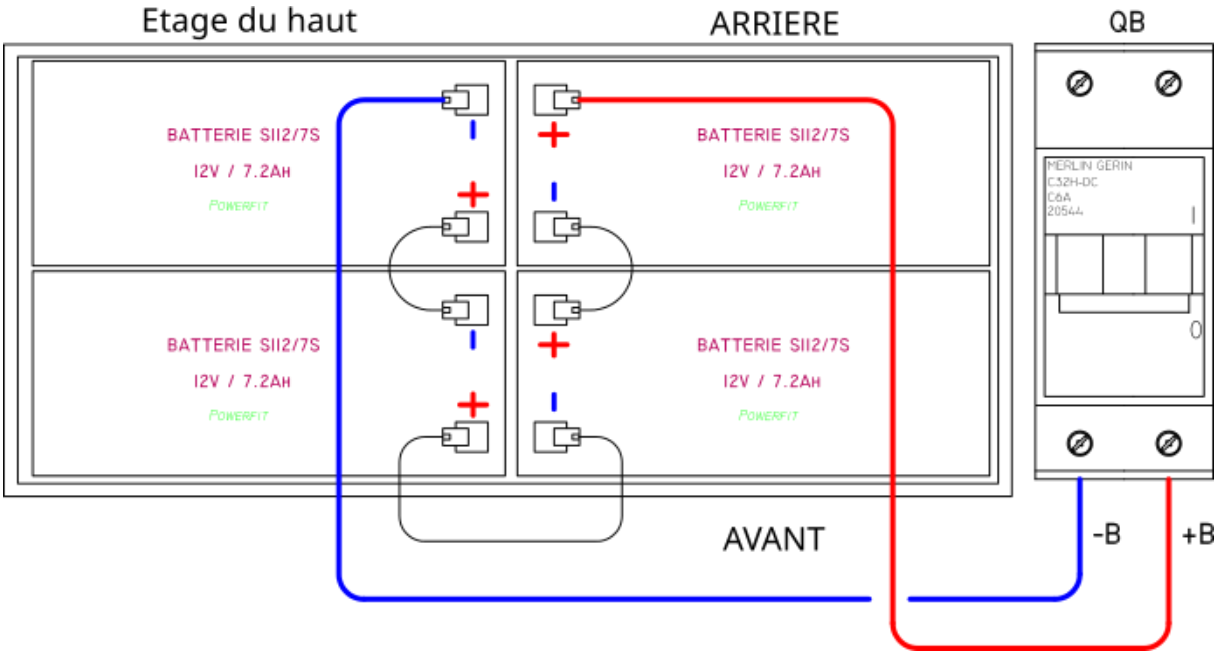


5.3. Battery

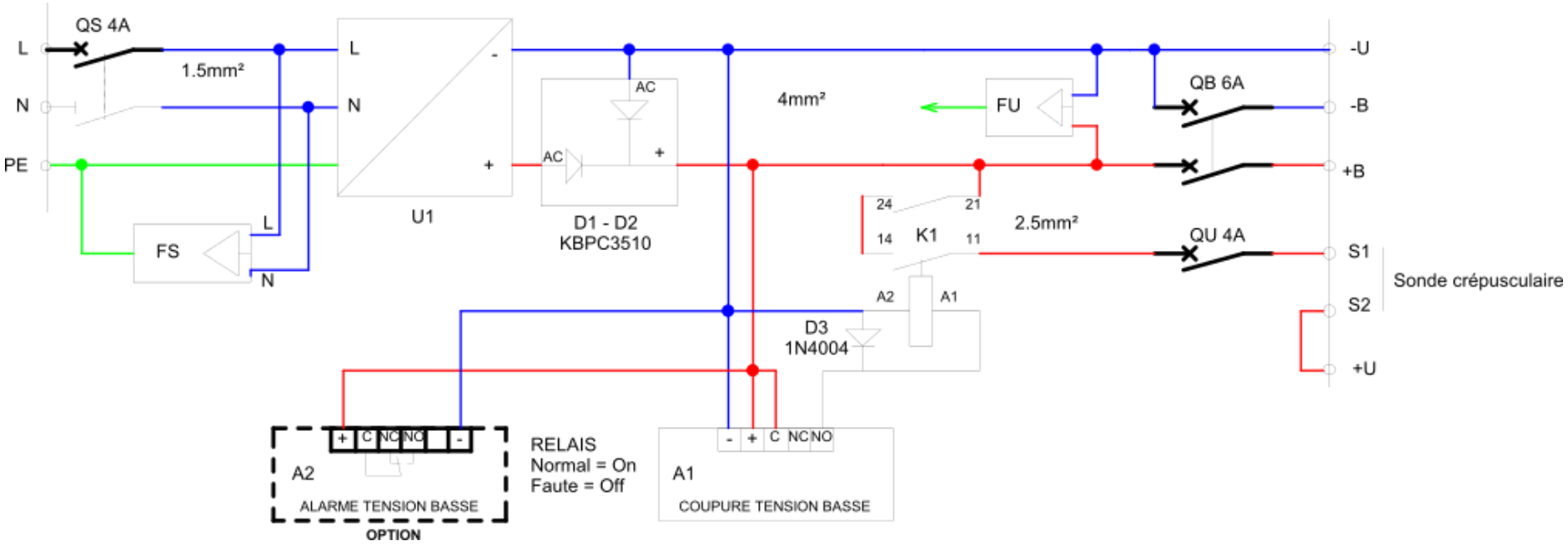
Storage: Always store batteries fully charged. If a battery is stored for a long period, it will top up every 6 months. Store batteries in a cool, dry place.

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

6.2. Spare part

Batterie lead crystal 12V 7.2Ah	**228615**
Carte RVU 1521-3	**113956B-RVU**
Parafoudre DC **- DS230-48DC**	**390401**
Parafoudre AC **- DS215-230/G**	**451721**

7. Appendix

7.1. Battery specifications

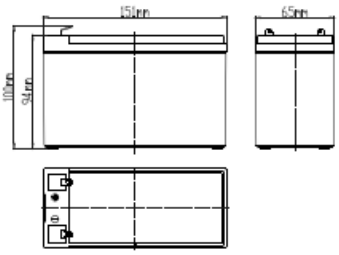
Data sheet / Fiche produit

Ref: **AMC9003**

NX LEAD CRYSTAL BATTERY

MAIN INFORMATION / INFORMATIONS GÉNÉRALES

BRAND	MARQUE	NX
TECHNOLOGY	TECHNOLOGIE	LEAD CRYSTAL
NOMINAL VOLTAGE	TENSION NOMINALE	12V
NOMINAL CAPACITY	CAPACITÉ NOMINALE 25°C	
C120		8,4AH
C20		7,8AH
C10		7,2AH
DIMENSIONS (±2mm)	DIMENSIONS (±2mm)	
• **Length** / Longueur		151mm
• **Width** / Largeur		65mm
• **Height** / Hauteur		94mm
• **TOTAL HEIGHT WITH TERMINALS** / Hauteur totale (avec cosses)		100mm
WEIGHT (±2%)	POIDS (±2%)	2,2Kg
POLARITY	POLARITÉ	+ -
TERMINAL	TYPE DE COSSES	F6-35

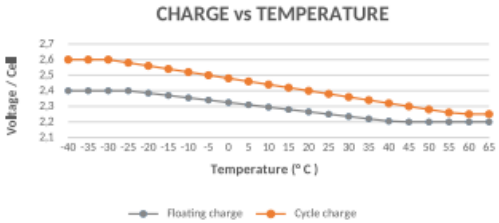


TECHNICAL INFORMATION / INFORMATIONS TECHNIQUES

MAX DISCHARGE CURRENT	COURANT DE DÉCHARGE MAX	72A (5S)
INTERNAL RESISTANCE	RÉSISTANCE INTERNE 25°C	42 mΩ
SELF DISCHARGE	AUTO DÉCHARGE	
3 months / 3 mois		95%
6 months / 6 mois		85%
12 months / 12 mois		80%
FLOAT CHARGING VOLTAGE	TENSION DE CHARGE EN FLOATING 25°C	13,5V - 13,6V
CYCLING CHARGING VOLTAGE	TENSION DE CHARGE EN CYCLAGE	14,4V - 14,5V

DISCHARGE CURRENT AND CUT OFF VOLTAGE / COURANT DE DECHARGE ET TENSION DE FIN DE DECHARGE

DISCHARGE CURRENT / COURANT DE DÉCHARGE (A)	DISCHARGE CUT OFF VOLTAGE / TENSION DE FIN DE DÉCHARGE (V)
0,01C	11,40
0,01C - 0,05C	11,10
0,05C - 0,1C	10,80
0,1C - 0,5C	10,50
0,5C - 1C	10,20
1C - 3C	9,60
3C - 6C	9,00
6C - 10C	7,80
10C	7,20



CONSTANT CURRENT DISCHARGE CHARACTERISTICS / CARACTÉRISTIQUES DE DÉCHARGE À COURANT CONSTANT

Cut off voltage per cell	5min	15min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	19.4	12.4	8.18	6.16	4.57	3.00	2.18	1.69	1.37	1.17	0.90	0.74	0.62	0.41	0.33
1.67V	16.7	11.2	7.58	5.83	4.53	2.86	2.07	1.67	1.36	1.16	0.89	0.74	0.62	0.40	0.33
1.70V	16.0	10.9	7.34	5.76	4.49	2.82	2.03	1.65	1.34	1.15	0.89	0.73	0.62	0.40	0.33
1.75V	14.5	10.2	7.05	5.53	4.41	2.71	1.97	1.62	1.32	1.14	0.89	0.73	0.62	0.40	0.33
1.80V	12.8	9.35	6.79	5.33	4.32	2.62	1.94	1.58	1.28	1.13	0.87	0.72	0.61	0.39	0.33
1.83V	11.2	8.54	6.27	4.95	4.12	2.50	1.87	1.52	1.23	1.09	0.85	0.69	0.59	0.38	0.32
1.85V	9.60	7.74	5.76	4.58	3.89	2.40	1.80	1.45	1.18	1.06	0.82	0.68	0.58	0.38	0.31

Units: Amperes (25°C, 77°F)

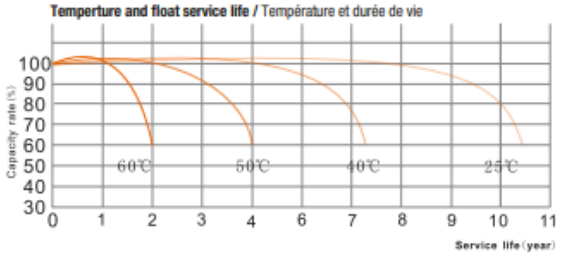
CONSTANT CURRENT DISCHARGE CHARACTERISTICS / CARACTÉRISTIQUES DE DÉCHARGE À COURANT CONSTANT

Cut off voltage per cell	5min	15min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	31.9	21.5	14.7	11.2	9.28	5.50	3.98	3.21	2.67	2.40	1.73	1.45	1.21	0.78	0.66
1.67V	28.5	20.0	13.8	10.7	9.06	5.41	3.92	3.20	2.62	2.37	1.73	1.43	1.20	0.78	0.66
1.70V	27.6	19.5	13.4	10.6	8.80	5.36	3.87	3.18	2.60	2.36	1.72	1.43	1.19	0.78	0.66
1.75V	23.6	18.3	12.9	10.3	8.56	5.18	3.78	3.13	2.54	2.32	1.71	1.41	1.19	0.78	0.65
1.80V	21.1	16.9	12.5	9.97	8.24	5.01	3.74	3.07	2.47	2.29	1.70	1.40	1.19	0.77	0.65
1.83V	19.9	15.6	11.7	9.35	7.83	4.82	3.61	2.97	2.39	2.22	1.67	1.36	1.17	0.77	0.63
1.85V	17.7	14.4	10.8	8.72	7.42	4.63	3.48	2.86	2.29	2.16	1.61	1.33	1.15	0.76	0.61

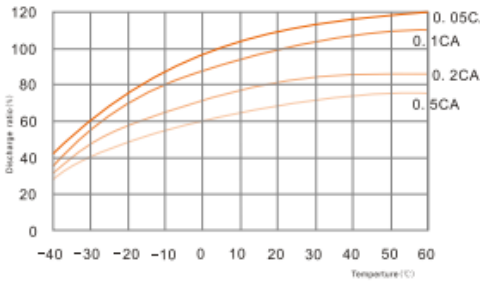
Units: Watts per cell (25°C, 77°F)

CHARGE AND DISCHARGE CURVES / COURBES DE CHARGE ET DÉCHARGE

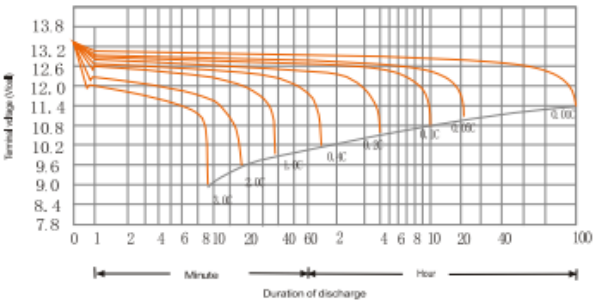
Temperture and float service life / Température et durée de vie



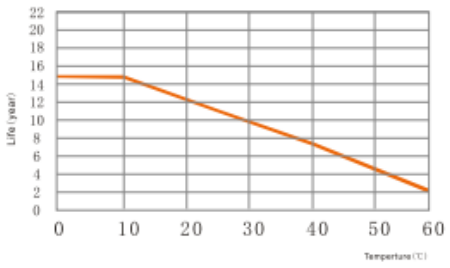
Temperture and discharge capacity / Température et capacité de décharge



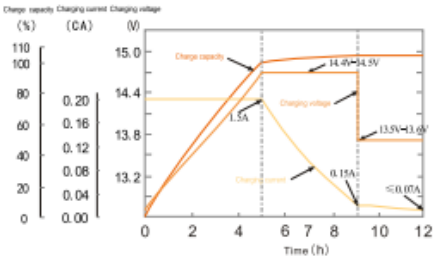
Discharge characteristics 77°F (25°C) / Caractéristiques de décharge 77°F (25°C)



Float service life / Durée de vie en floating



Charge characteristics 77°F (25°C) / Caractéristiques de charge 77°F (25°C)



Cycle life curves (25°C) / Courbes de cycle de vie (25°C)
Discharge at 0.1C /Cut off voltage 1.8V by cell