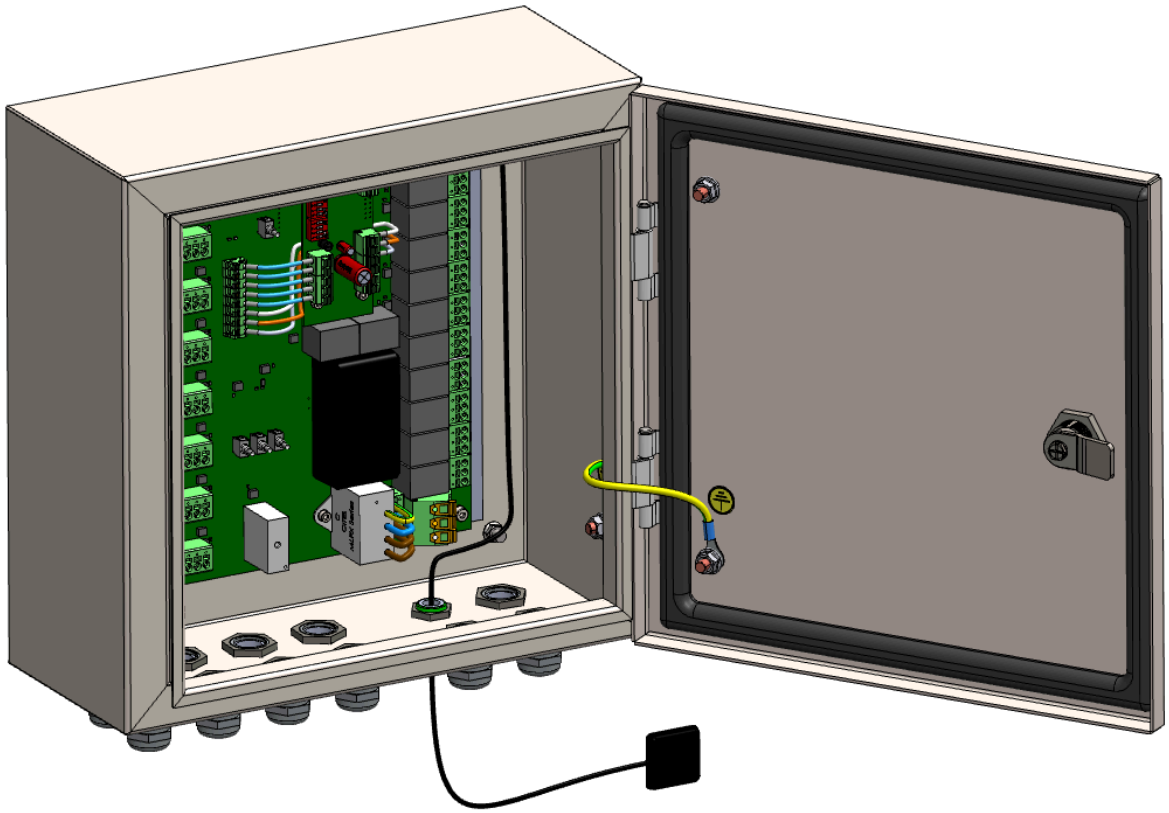
RELIABILITY IN OBSTRUCTION LIGHTING
BALISAGE AÉRIEN

OFC-CTR-048 // 113176-048
OFC-CTR-240 // 113176-240
OFC-CTR-048-G // 113176-048-G
OFC-CTR-240-G // 113176-240-G



Obsta
3, impasse de la blanchisserie
51052 Reims CEDEX - FRANCE

1. Product name and part number

Description	Norm	Power supply	Article code (P/N)	QR code
OFC-CTR-048	IP66	48 Vdc ±5%	113176-048	
OFC-CTR-240	IP66	120-240 Vac ±10%	113176-240	
OFC-CTR-048-G	IP66	48 Vdc ±5%	113176-048-G	
OFC-CTR-240-G	IP66	120-240 Vac ±10%	113176-240-G	

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2. Be careful

- 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. General information

4.1 Scope

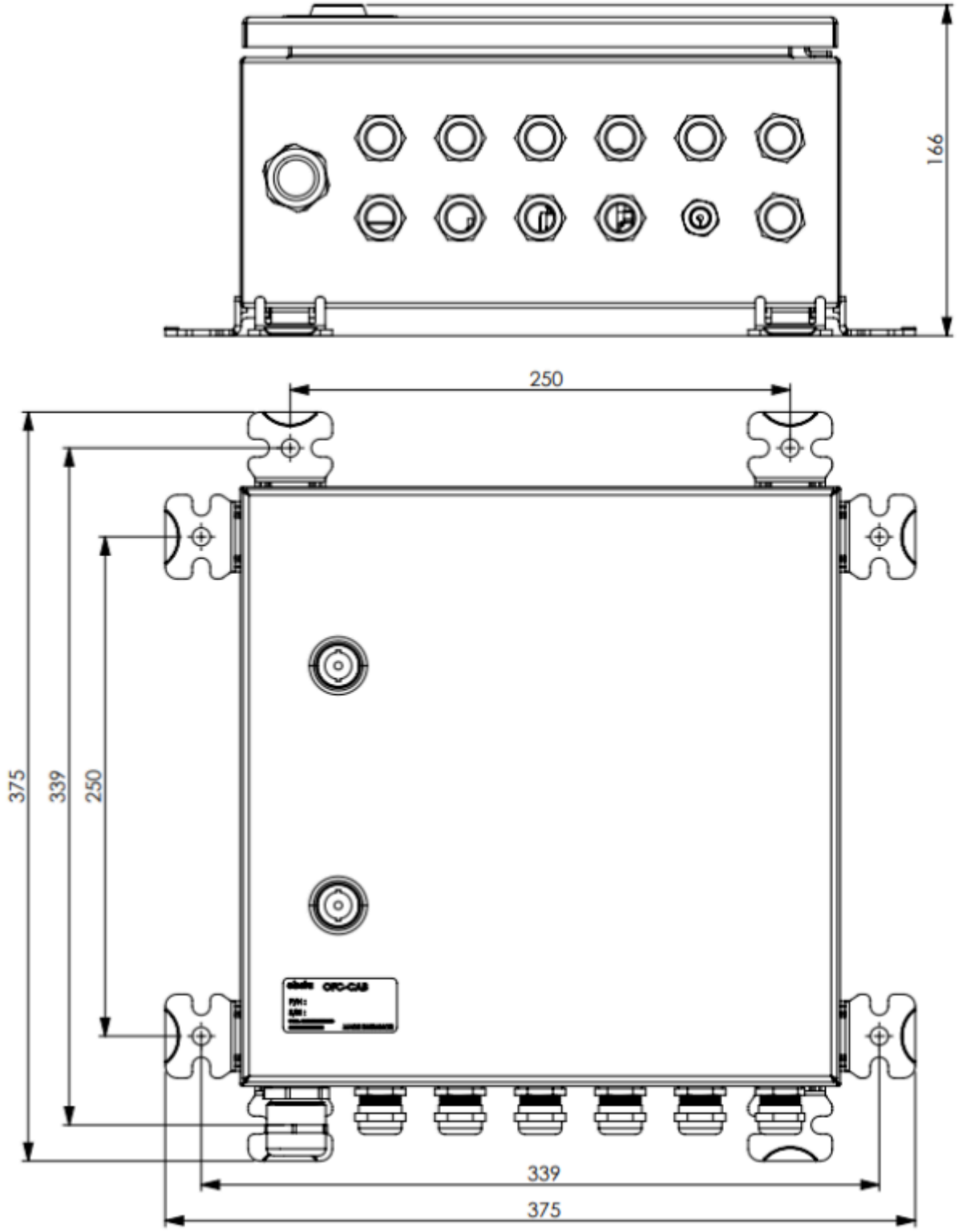
The OFC-CTR is a control box for easy installation and monitoring of OBSTA medium-intensity and/or low-intensity lamps. These metal housings are suitable for EMC environments and are IP66 certified.

4.2 General description

OFC-CTR is a stainless steel control cabinet that can manage up to 8 devices simultaneously. The controller consists of:

- Power supply (all connected devices must have the same supply voltage)
- Fault feedback (via LED)
- Synchronization with GPS card only available for “-G” version.
- Day/Night toggle

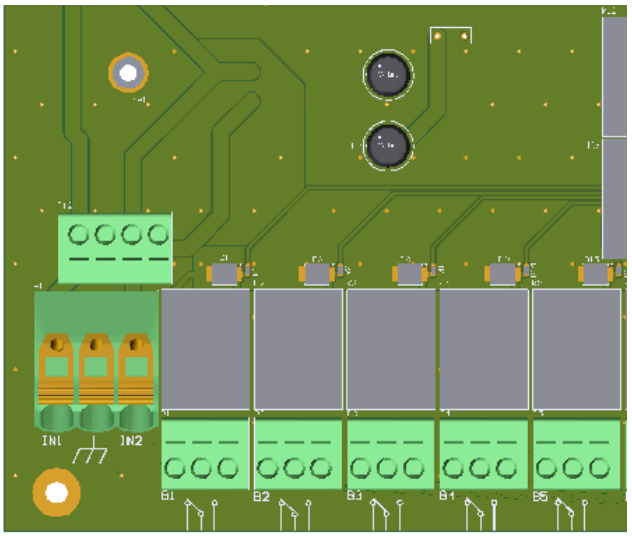
4.3 Dimension



5. Operating voltage

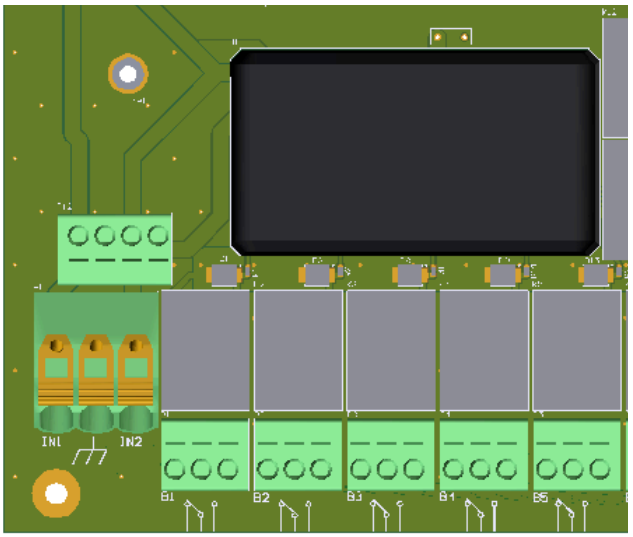
Two product references are available. Connected devices will be powered by the OFC-CTR input voltage. The maximum current allowed for this product is 10A.

5.1 48Vdc



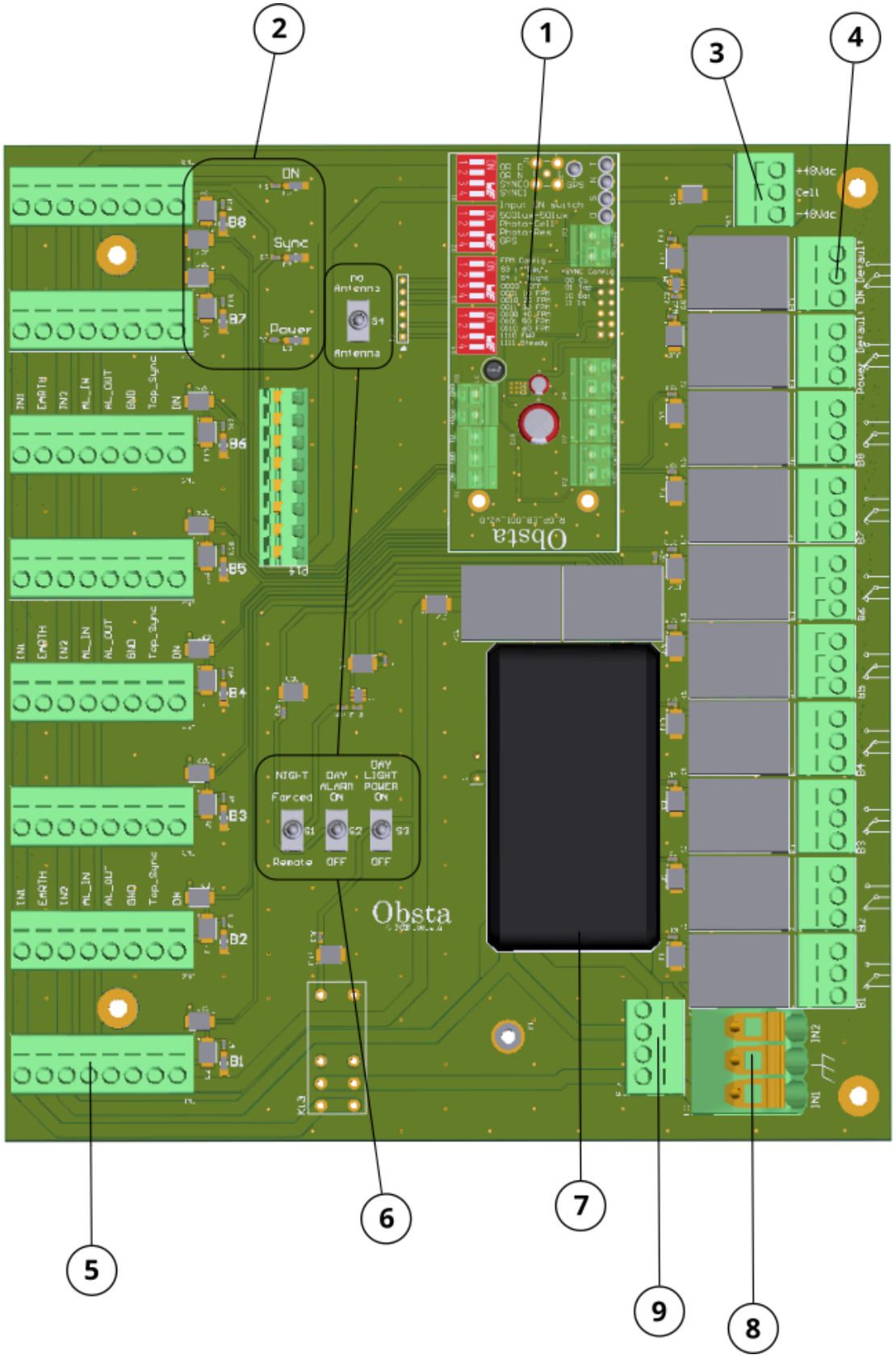
The 48Vdc card has no converter. Each product connected to the board must match the card's voltage rating.

5.2 110/240 Vac



The 240Vac card has an AC/DC converter. Each product connected to the board must match the card's voltage rating.

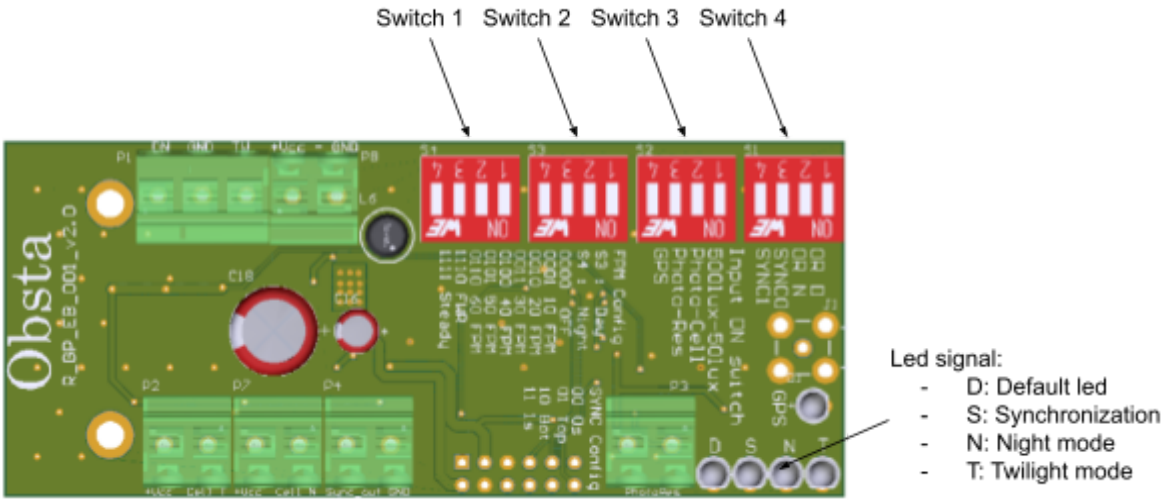
6. Card features



Nbr	Designation
1	GPS card (option for “-G” version)
2	Led signal
3	Photocell terminal block
4	Alarm terminal block
5	Light terminal block
6	Switches
7	AC/DC supply (only for 240 Vac version)
8	Power supply terminal block
9	Surge protection terminal block

6.2 GPS card (optional)

The GPS card is only available for the “-G” version (113176-048-G and 113176-240-G). All dipswitches are factory configured. Do not change the configuration without OBSTA's approval.



6.2.1 Dipswitch 1 (SW1)

Switch SW1 is used to configure the following bits, which describe the synchronization setting relative to GMT time provided by the GPS:

SW1				
	1	**2**	**3**	**4**
ON (I)	Force day mode	Force night mode	GPS I	GPS I
OFF (0)	-	-	GPS 0	GPS 0

SW1.1	**SW1.2**	**Behavior**
0	**0**	Set to exact GMT time, first flash on second 0
I	**0**	Set to GMT +⅓ of the period
0	**I**	Set to GMT $+^{3}/_{13}$ of the period
I	**I**	Set to GMT +1 sec

6.2.2 Dipswitch 2 (SW2)

If the card does not have the GPS option, synchronization is performed using the default photocell.The SW2 is used to set the method used for synchronizing the beacons.

SW2				
	1	**2**	**3**	**4**
ON (I)	500 lux	Photocell active	Photoresistance active	GPS active
OFF (0)	50 lux	Photocell inactive	Photoresistance inactive	GPS inactive

6.2.3 Dipswitch 3 and 4 (SW3 and SW4)

SW3 and SW4 are configurable and describe the flash frequency to be executed.SW3 correspond to day frequency and S correspond to night frequency.

	SW3 (Day freq)				**SW4 (Night freq)**			
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**
ON (I)	Freq	Freq	Freq	Freq	Freq	Freq	Freq	Freq
OFF (0)	Freq	Freq	Freq	Freq	Freq	Freq	Freq	Freq

SW3.1	**SW3.2**	**SW3.3**	**SW3.4**	**Behavior**
0	**0**	**0**	**0**	OFF
0	**0**	**0**	**1**	10 FPM
0	**0**	**1**	**0**	20 FPM
0	**0**	**1**	**1**	30 FPM
0	**1**	**0**	**0**	40 FPM
0	**1**	**0**	**1**	50 FPM
0	**1**	**1**	**0**	60 FPM
1	**1**	**1**	**0**	2 flash (1500ms apart)
1	**1**	**1**	**1**	Steady: light permanently on

6.2.4 GPS default

The default can be identified by the different sequences produced by the “D” led (see PCB). The following faults are defined in order of priority.

Error condition	Default led sequence
Under or Overvoltage	Continuous
Incorrect configuration	····· Fast flashing
The active channel sequence is neither a continuous flash nor an OFF sequence, and the last valid GPS signal was more than 15 minutes ago (or the GPS signal was never valid).	—·· 1 long and 2 short
No change in DTN mode detected for 48h	——— Long signal
The sequence of the active channel is neither a continuous flash nor an OFF sequence, the GPS signal is invalid and the last valid GPS signal is less than 15 minutes old.	Flash at the same time as “S” led (Sync)

During initialization after start-up, the GPS chip waits for a precise signal. When preliminary signals are received, the GPS status LED may blink or light up (Default led).

Once the preliminary signals have been received, it may take up to 15 minutes for the card to receive a complete, valid signal, enabling the product to synchronize correctly. During this phase, synchronization may not be fully valid and a GPS fault may occur. We recommend waiting at least 20 minutes before considering the synchronization valid. If a GPS default led is still activated after 20 minutes, the product is not receiving signals correctly.

6.3 Led signal

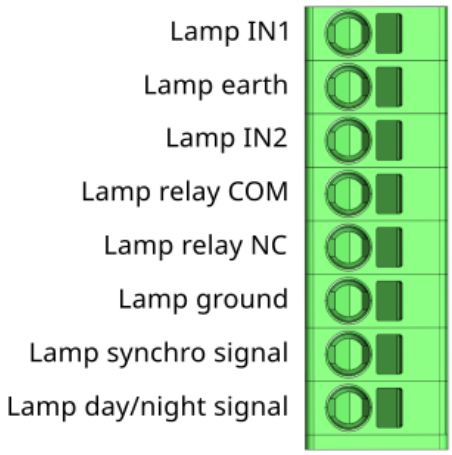
DN: Day / Night status (ON during Night)
Sync: Synchronization, the led blink at each flash
Power: Power supply status
B1…B8: Light states. On when light is OK.

When the board receives a valid GPS signal, the fault indicator (fault LED) switches to OFF. After this detection, a 15-minute timeout is initiated to allow the card to perform time synchronization.

If, at the end of this time, synchronization has not been achieved correctly, the fault indicator returns to the ON state and the scheduled alert sequence is automatically triggered.

6.4 Light terminal connection

The terminal connection can be connected with 1.5mm² wire (except for the power supply terminal block (6mm²)).



6.5 Switches

- S1 : Night : FORCED for a light always in night mode and REMOTE if the light uses the GPS card.
- S2 : Day Alarm ON : In case of S3 is “OFF” (Lamp unpowered during day) lamps will generate a default. Putting S2 “ON” disables Lamp default during the day.
- S3 : Day light power: Lamps remain powered during the day.
- S4 : No antenna / antenna: Sends a signal to the GPS to use the antenna or not. No antenna means that GPS will act as an autonomous time generator and not emit the signal loss or synchronization default.

7. Installation

7.1 Unpacking

Carefully unpack each item and remove any internal packing material from the power supply and the lamp. Examine each item for obvious physical damage. Report any claims to the carrier immediately.

7.2 Mounting and preparation

Any manual intervention must be performed on a NON-POWERED product. Human or material issues could occur inducing injury or permanent damage to the product.

Depending on the application multiple flash units may be required. OBSTA recommends that each unit has its own support (one supports the kit : Flashhead + Cabinet). Cabinet or Flashhead must be installed in a fixed position. OBSTA also recommends that the cabinet shall be in an easy access position/orientation for maintenance purposes. Each part of the kit must be correctly fixed to the structures.

The Cabinet must be levelled using a spirit level and the cable gland must face downwards. Cable shall be installed with cable clamp to avoid any oscillation movement due to wind pressure.

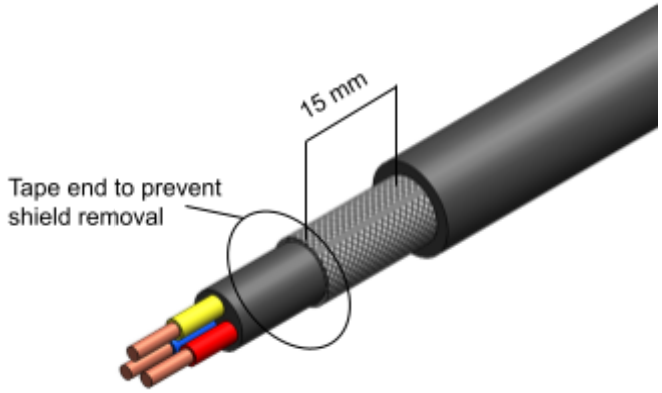
1. Verify that the mounting surface is free of debris.
2. Align the four mounting holes of the cabinet with the holes in the structure mounting plate. The cabinet has 4 holes 9 mm in diameter
3. Fit the screw of the cabinet loosely. Do not tighten up screws yet.
4. Ensure that the cabinet is installed horizontally by using the level provided (air bubble shall be centered).
5. If the cabinet is not leveled, add stainless steel shim material or washers (stainless steel or galvanized) as necessary to level the flash-head.
6. Once leveled, firmly secure the hardware once the cabinet, using the same torque on each screw. Verify that the cabinet is level when the hardware is fully tightened. If not leveled, then loosen the mounting hardware and repeat Step 5 until the beacon is firmly secured horizontally.

In some specific cases with high electromagnetic fields an additional shield is required to ensure proper operating. Obsta may provide or suggest additional equipment to improve stability and durability of the kit. Please contact Obsta if the product may be exposed to this kind of perturbation.

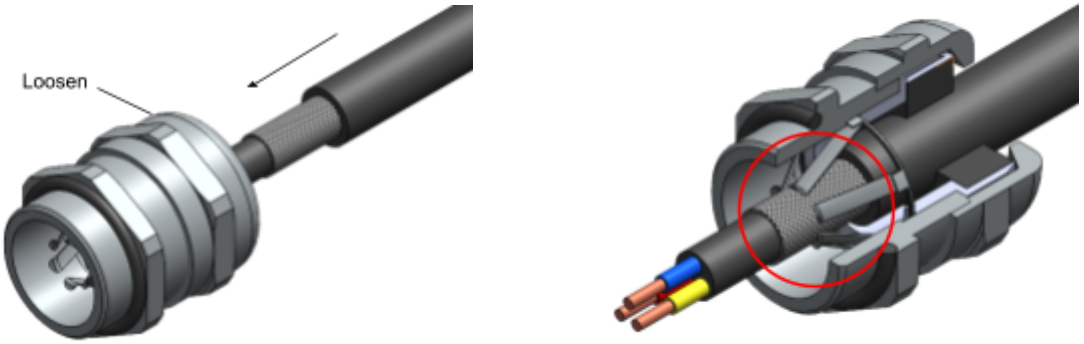
7.2 Cable gland installation

As a reminder, all shielded cables must be earthed at both ends. It is the installer's responsibility to check that OBSTA cabinets and lamps are correctly wired.

- Strip excess cable length to expose shielding.
- Leave 15mm of shielding, strip the rest.



- Thread the cable through the cable gland (the ring is loosened but not removed) so that the shield is in contact with the gland springs.
- The gasket must be correctly positioned flat and in its housing for optimum sealing.



- Tighten the gland ring with the appropriate wrench.
- Once the cable has been clamped in the cable gland, cut and strip the wires to the length required to connect the terminal blocks (don't forget to fit cable ferrules before connection).

CEM	Cable diam min (mm)	Cable diam max (mm)	Pressure nut wrench	Locknut wrench
M16	4.5	10	20	20
M20	7	13	24	24
M25	9	17	29	29
M32	11	21	36	36
M40	19	28	45	45

8. Maintenance

8.1 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 the water leak	Water infiltration Short circuit Lamp in default mode (or light off)
Clamping	Annual	Checking tightness	Cabinet falling Water infiltration
Aspect (rust, dust…)	Annual	Exterior cleaning	Malfunction

9. Typical wiring