



USER MANUAL

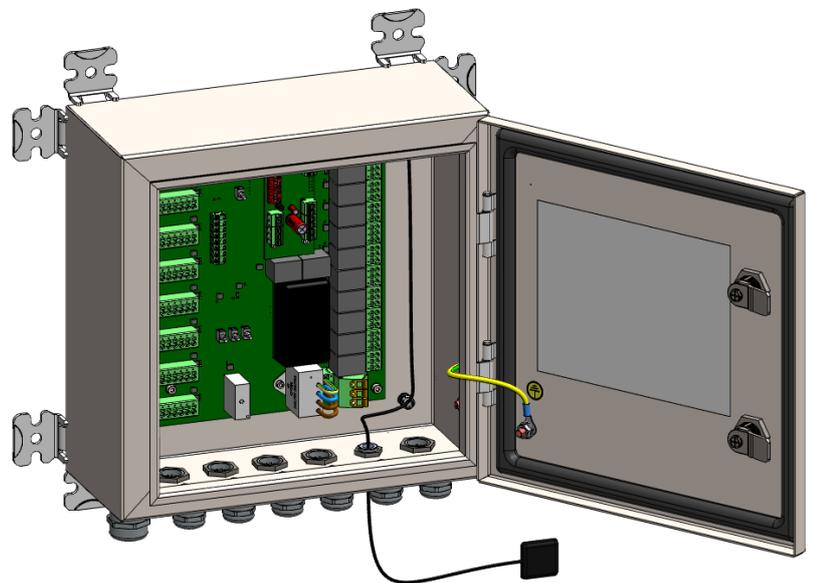
Control box for medium-intensity OFC beacon

OFC-CTR-048 // 113176-048

OFC-CTR-240 // 113176-240

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

OFC-CTR-240-G // 113-176-240-G



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1. Product name and part number

Description	Part number (P/N)	Power supply	QR code
OFC-CTR-048	113176-048	48 Vdc -5% +15%	
OFC-CTR-240	113176-240	120-240 Vac ±10%	
OFC-CTR-048-G	113176-240-G	48 Vdc -5% +15%	
OFC-CTR-240-G	113176-240-G	120-240 Vac ±10%	

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. General information

This manual provides information about the installation and maintenance of the OBCTA OFC controller series. The OFC-CTR is a control box for easy installation and monitoring of OBSTA medium-intensity and/or low-intensity lamps. These metal cabinets are suitable for EMC environments and are certified IP66.

4.2. Description

- 316L Stainless steel cabinet.
- Dimensions: 344 (height) x 346 (width) x 166 (depth).
- Nickel-plated brass cable gland, 1 M25 (cable diameter 9 to 17mm), 1 PG09 (cable diameter 4 to 8mm), 11 M20 (cable diameter 7 to 13mm).
- Possibility to connect to 8 medium-intensity and/or low-intensity lamps.
- Surge protection.
- 8 leds indicators (one for each lamp or group of lamps depending on the wiring).
- 8 alarm relays (one for each lamp or group of lamps).
- One alarm relay in case of power failure and/or photoelectric cell failure.
- Possibility of connecting a 48Vdc photoelectric cell (P/N: 100757).
- LED indicator for power supply presence or absence.
- Switches which allow the user to choose between the automatic mode (controller by photocell) or to force night mode or day mode.
- Only for the “-G” version, a GPS card for synchronization and DTN triggering of the lamps.
- Switch to select whether the GPS signal is received via antenna or not.

4.3. Operation

This cabinet is designed to control medium intensity lamp type OFC and/or low intensity lamp type NAVILITE which includes both a normally closed relay.

Two versions of the cabinet are available. This distinction ensures compatibility between the controller's power supply voltage and that of the associated lamps:

- 48Vdc power supply (48Vdc lamps must only be controlled by a 48Vdc controller)
- 230Vac power supply (230Vac lamps must only be controlled by a 230 Vac controller)

Simultaneous management of up to 8 lamps or groups of lamps, including:

- Power supply (the lamps and the controller must have the same supply voltage)
- Fault reporting
- Synchronization

Synchronization of flashes (MI type B, L-864, and L-810(F) lights):

- Via the GPS (optional)
- Via one of the lights configured in master mode

Day/night switch:

- Via the GPS (optional) using astronomical UTC clock or
- Via 48Vdc photoelectric cell (P/N 100757)

Alarm return

- Lamp failure (returned from their “normally close relay”)
- If there is a problem with the day/night status change (no status change for 48 hours, only with the GPS card).
- Power supply failure

Led indicator

- Presence of power supply
- One connection terminal block (indicating that the connected lamps are working properly)
- Day/night status

4.4. Compatibility

The OFC-CTR controller is compatible with 48Vdc and/or 230Vac lamps.:

For *OFC-CTR-048* and *OF-CTR-048-G*:

- **NAVILITE-48V* (P/N)113900
- **NAVILITE-48V-CABLE* (P/N)113905
- **NAVILITE-IR-48V-CABLE* (P/N)113905IR
- **NAVILITE-IR-48V-CABLE* (P/N) 113905IR2
- **NAVILITE-F-48V* (P/N)113965
- *NAVILITE-IR-NPT-48V* (P/N) 113965IRCH
- *OFC-RI-048* (P/N) 113790RI-048
- *OFC-RI-048-G* (P/N) 113790RI-048-G
- *OFC-RI-048-RG* (P/N) 113790RI-048-GR

For *OFC-CTR-240* and *OFC-CTR-240-G*:

- *OFC-RI-240* (P/N) 113790RI-240
- *OFC-RI-240-G* (P/N) 113790RI-240-G
- *OFC-RI-240-RG* (P/N) 113790RI-240-RG
- *NAVILITE-F-120-240V* (P/N) 113969
- *NAVILITE-IR-FAA-120-240V* (P/N) 113969IR
- *NAVILITE-120-240V* (P/N) 113908

***Remark:** Lamps that do not have an alarm contact will be flagged as “default” in the controller.

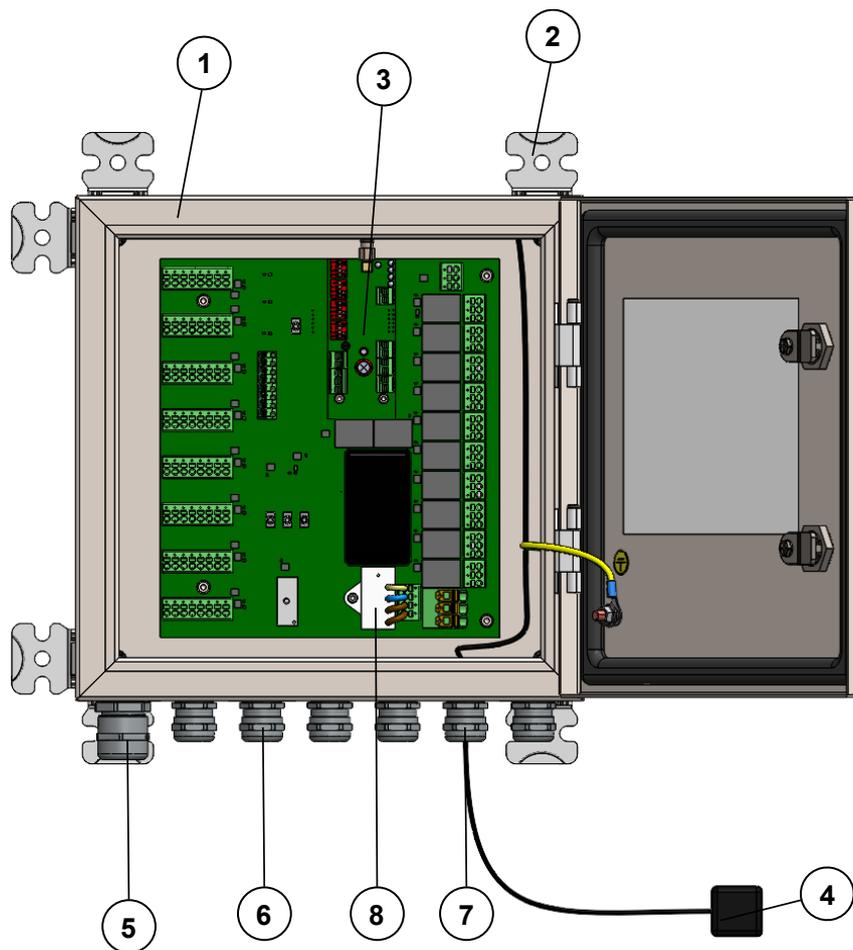
5. Installation

5.1. Unpacking

Carefully unpack the product and remove any internal packing material. Examine each item for obvious physical damage. Immediately report any claims to the carrier.

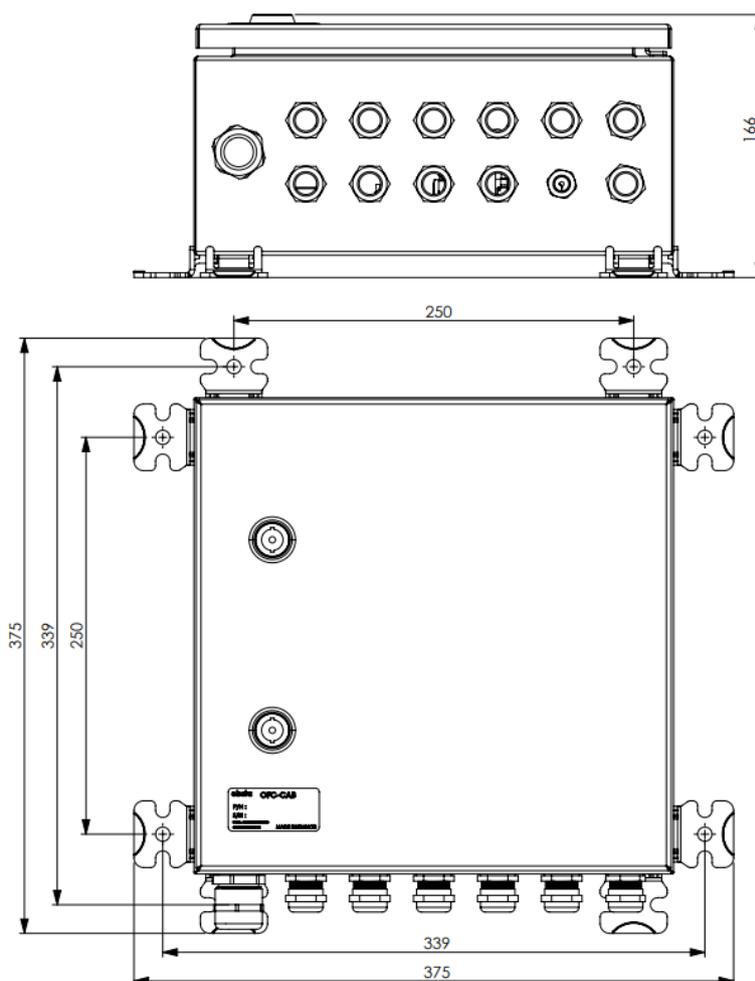
It is strongly recommended that you wire the product and check that it works correctly at ground level before final installation.

5.2. Overview



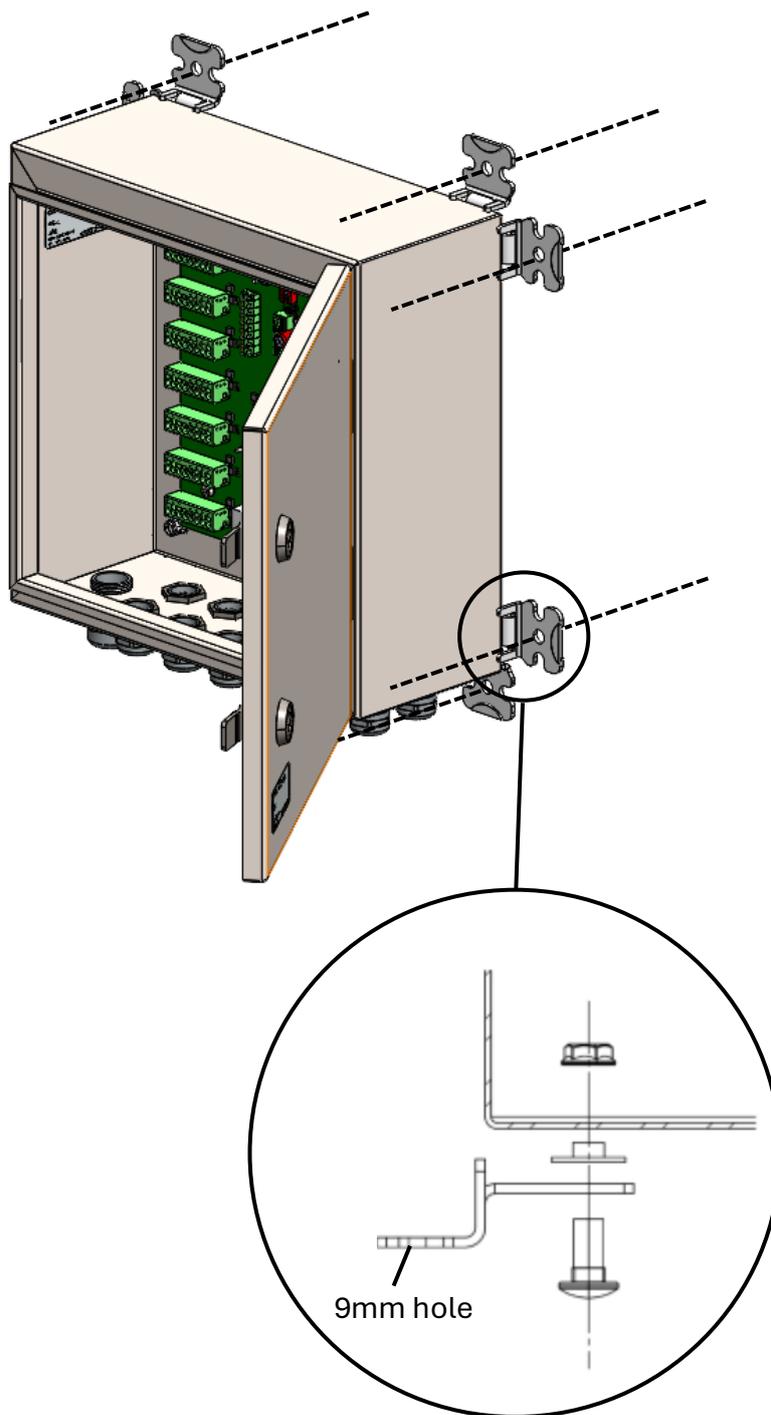
Nbr	Designation
1	Stainless steel enclosure
2	Mounting bracket (hole diameter 9 mm)
3	GPS card (option)
4	Antenna (option with GPS card)
5	M25 cable gland (x1)
6	M20 cable gland (x11)
7	PG09 cable gland (x1)
8	Surge protection

5.3. Mounting



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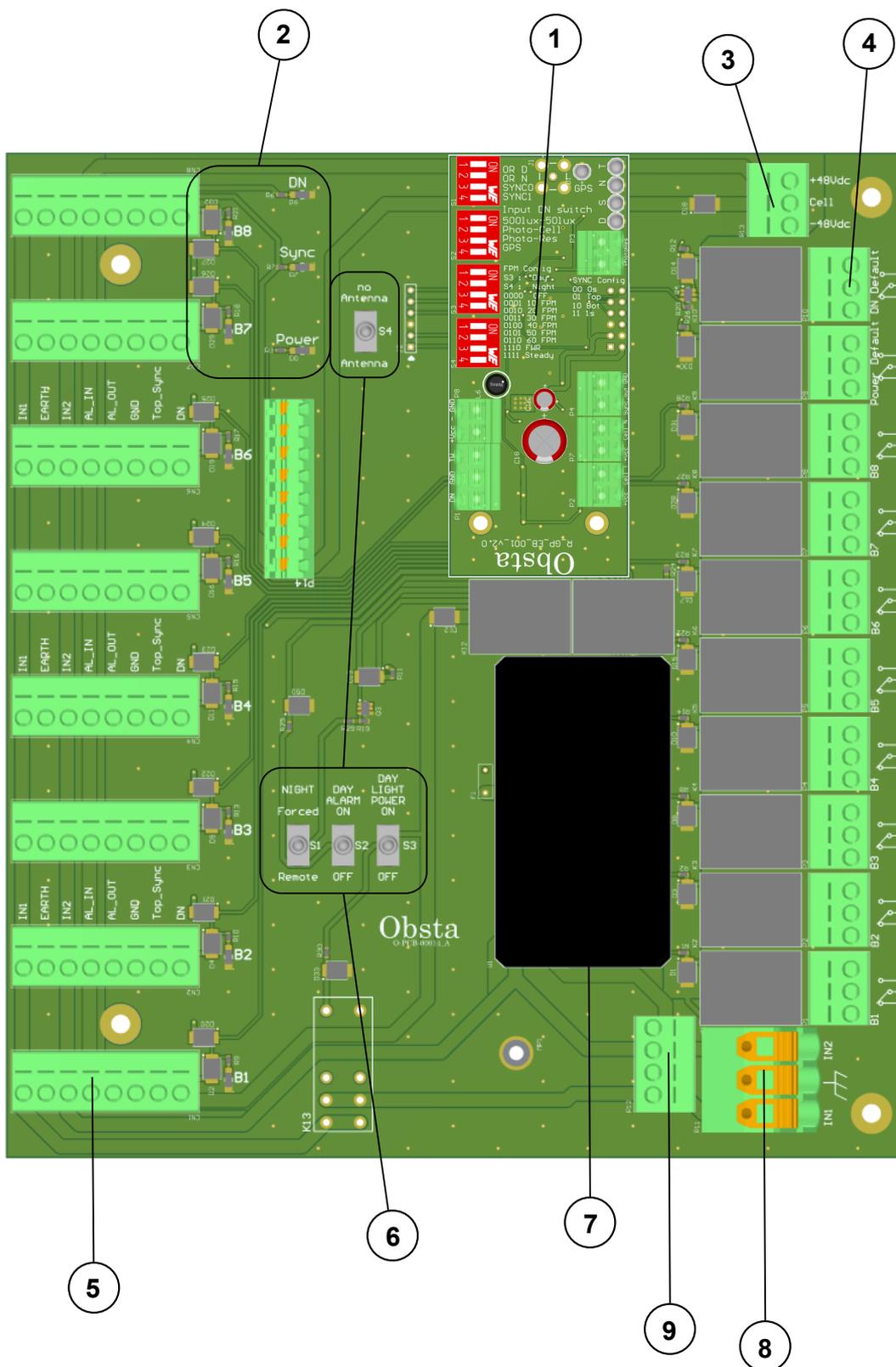


6. Wiring

6.1. Caution before wiring

- **Power OFF:** Always ensure the main power supply is completely turned off before starting any wiring work.
- **Verify voltage:** Confirm the voltage level of the circuit. Be aware of high-voltage hazards.
- **Use proper PPE:** Wear personal protective equipment (insulated gloves, safety glasses and safety shoes).
- **Secure the work area:** Ensure the area below is cordoned off to prevent injury from falling tools or components.
- **Check equipment ratings:** Confirm the product's voltage and current ratings match the installation circuit.
- **Inspect components:** Examine all parts (wires, connectors, terminals) for damage before wiring.
- **Proper tools:** Use insulated tools appropriate for electrical work.
- **Follow wiring diagram:** Refer to the OBSAT's schematic to ensure correct connections.
- **Grounding:** verify proper grounding/earthing for all metal parts and enclosures.
- **Secure wiring:** Fasten cable properly to prevent strain, chafing, or accidental disconnection.
- **Verify before powering:** Double check all connections before restoring power.
- **Shielded cable:** Cables must be shielded when used in electromagnetic fields.
- **Position:** The lamps shall be installed as close as possible from the command box from it using a 2x1.5mm² cable.
- **Number of lamps:** If more than 1 lamp is connected on "1st" or "2nd", all lamps must be wire in parallel.
- **Polarities:** The polarities must be correctly positioned on the DC power supply (for models 113915 and 113915-SOL). If reversed, the printed circuit board may be seriously damaged.
- **Configuration:** Do not forget to set the dipswitches as required by the warning lights: Unless specified, dipswitch settings configurations are factory preset in active redundancy (1 main light and 1 optional back-up light) at night operation only (photo sensor activated).
- **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.

6.2. Overview



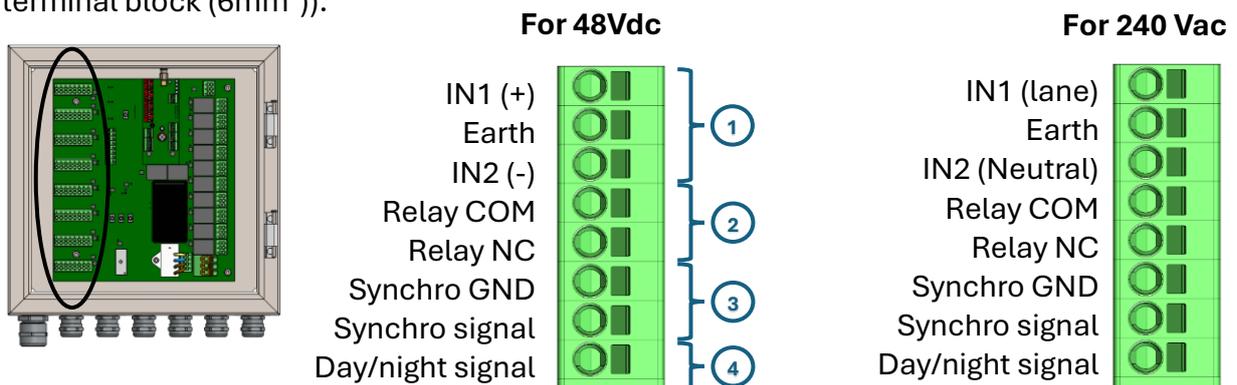
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Nbr	Designation
1	GPS card (option for “-G” version)
2	Led indicator
3	48Vdc photocell terminal block: the photocell is powered through 48Vdc, returns 0V during day time and +48Vdc during the night time.
4	Alarm terminal block
5	Lamps terminal block
6	Switches
7	AC/DC supply (only for 240 Vac version)
8	Power supply terminal block
9	Surge protection terminal block

6.3. Lamps terminal connection

The terminal connection can relate to 1.5mm² wire (except for the power supply terminal block (6mm²)).



All terminal connection IN1, Earth, IN2, COM, GND, Synchro and DN (Day/Night) are in commun except for the terminal NC that is unique for each terminal.

① Power supply: Ensure that the operating voltage of the installation is correct and that the operating voltages of the controller and lamps match.

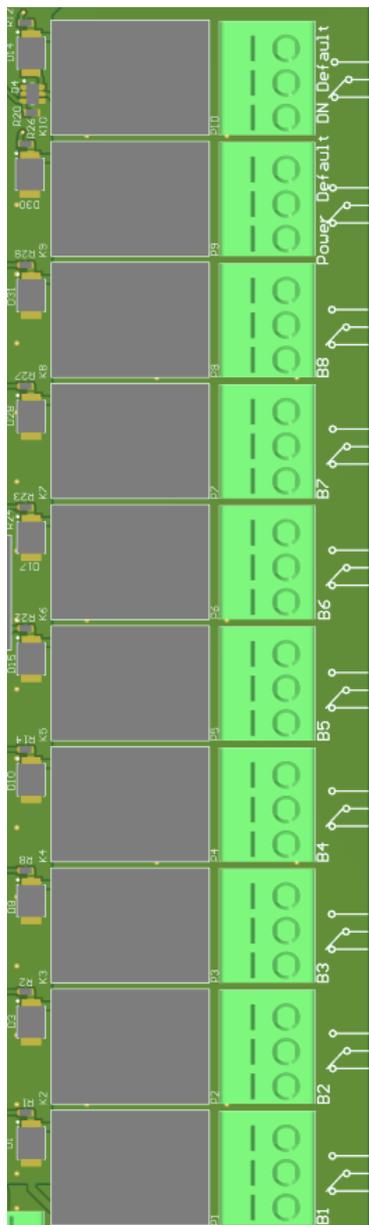
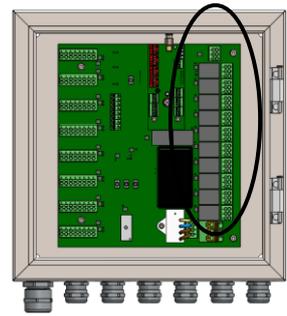
② Alarm: The NC fault contact is connected to each lamp (or group of lamps, depending on the wiring). The relay is activated in the event of a fault and the green indicator light corresponding to that channel (LED B1 to B8) goes out.

③ Synchronization: The “master” lamp or controller allows synchronization of all “slave” lamps via an electrical top. All beacons will flash at the same time.

④ Day/Night signal: For dual-color lamps, allow switching between day and night modes: 0V during daytime and +48Vdc during nighttime.

6.4. Alarm relay wiring

The controller monitors the 8 channels B1 to B8 of lamps, the cell, and the presence of voltage, and triggers the corresponding relay in the event of a fault. The relay output can be used to connect an external system for remote monitoring of faults. For outgoing alarms, two types are available: normally open (NO) and normally closed (NC).



DN default: Alarm relay for a 48Vdc photocell (100757) in absence of Day/Night switch after 48 hours

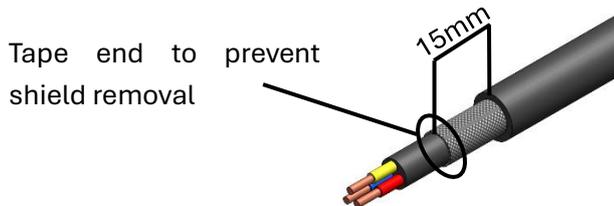
Power default: Alarm relay in case of power failure

B1 to B8, alarm output for lamps: Alarm relay in case of lamp failure.

6.5. 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.



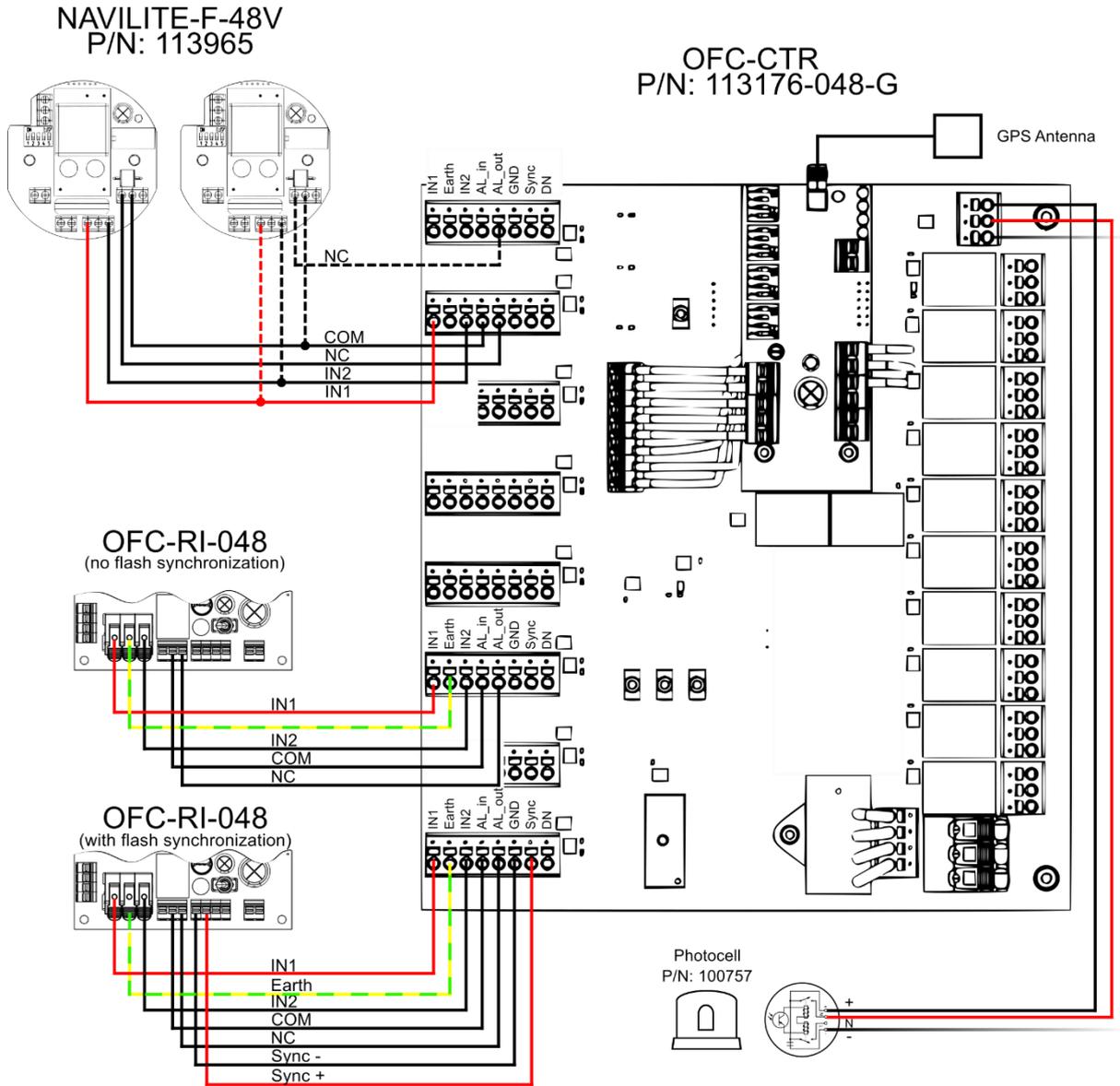
- Tighten the gland ring with the appropriate wrench.
- Once the cable has been clamped in the cable gland, cut and strip the wires to the length required to connect the terminal blocks (don't forget to fit cable ferrules before connection).

CEM	Cable diam min (mm)	Cable diam max (mm)	Pressure nut wrench	Locknut wrench
PG09	4	8	17	17
M20	7	13	24	24
M25	9	17	29	29

6.6. Typical wiring

The following typical wiring are provided for illustrative purposes only.

48 Vdc system



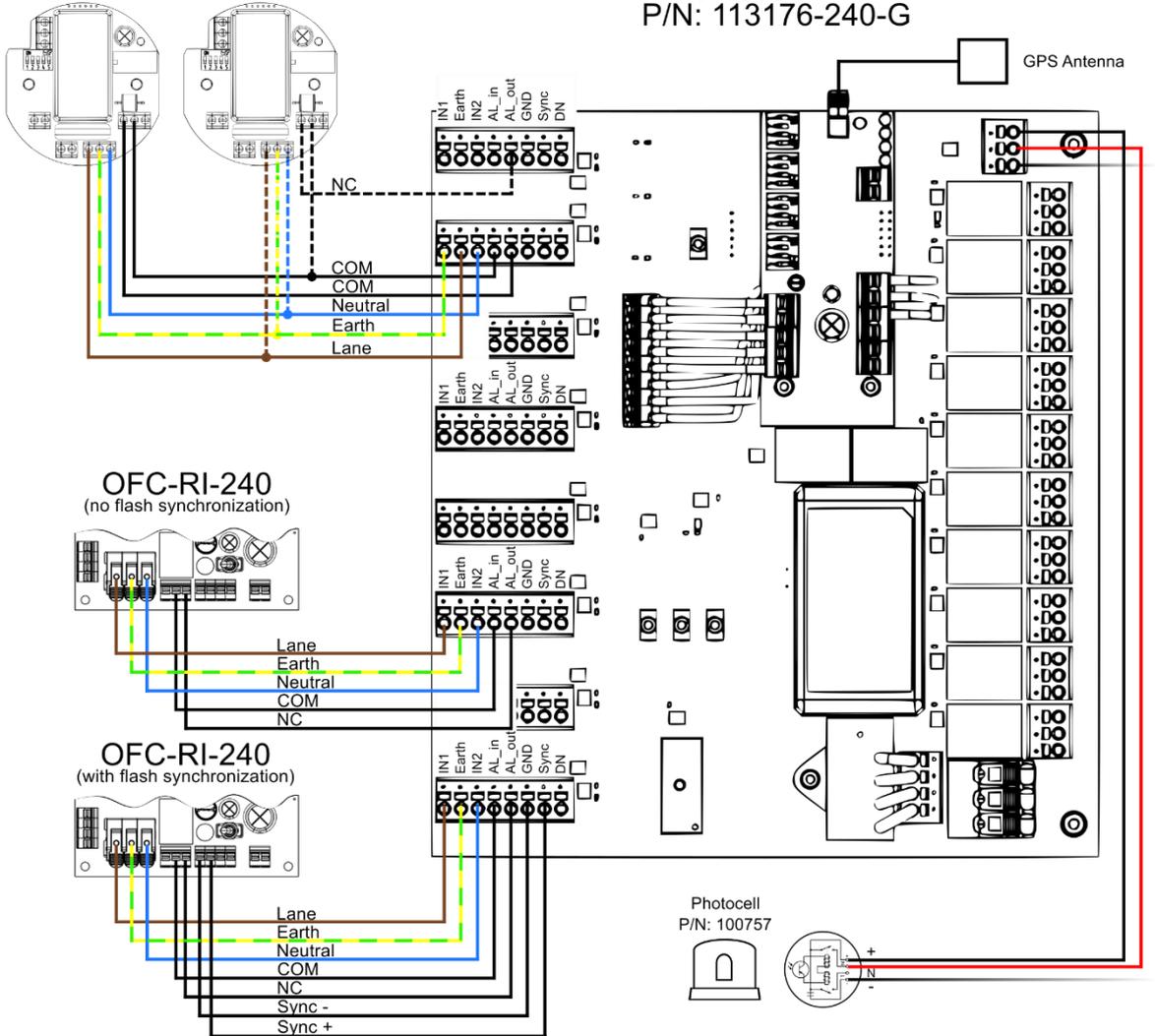
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110-240 Vac system

NAVILITE-IR-FAA-120-240V
P/N: 113969IR

OFC-CTR
P/N: 113176-240-G



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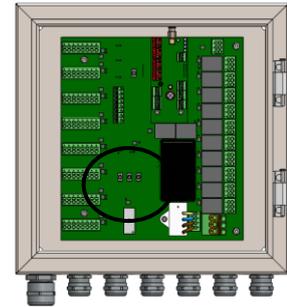
7. Startup and configuration

7.1. Power-up

Before turning on the power, ensure that all electrical connections are properly made and that the supply voltage matches the product specifications. Check that the wiring is secure and that there are no bare wires or conductive elements that could cause a short circuit.

7.1.1. Switches

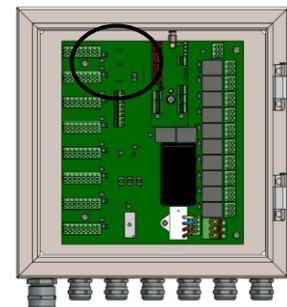
N°	S1	S2	S3	S4
ON	Night forced	Day alarm ON	Day light power ON	No antenna
OFF	Remote	Day alarm OFF	Day light power OFF	Antenna



- **S1:** Forced (ON) for a light always in night mode and REMOTE (OFF) if the lamp uses the GPS card (only for “-G” version).
- **S2:** In case of S3 is OFF (lamp unpowered during day) lamps will generate a default. Putting S2 “ON” disabled lamp default during the day.
- **S3:** ON for the lamp that remains covered during the day and OFF for the lamps that remains covered only during the night.
- **S4:** Send a signal to the GPS to use the antenna or not. No antenna (ON) means that GPS will act as an autonomous time generator and not emit the signal loss or synchronization default.

Operation led

- **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.

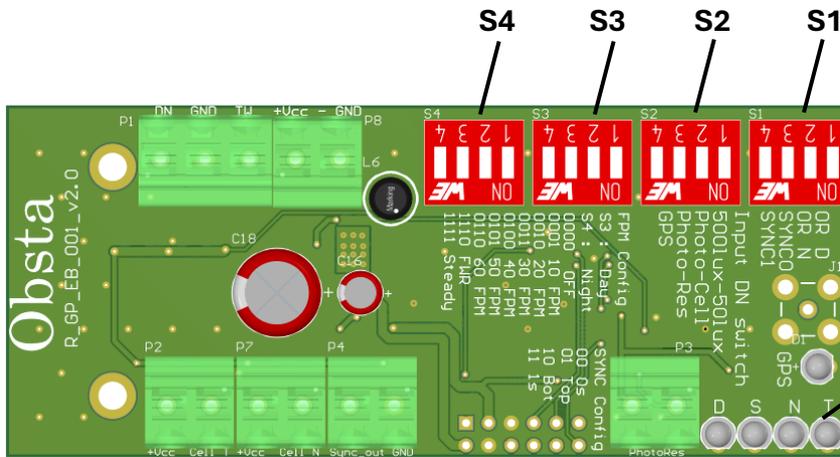
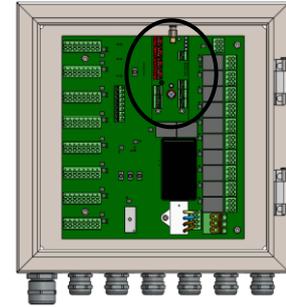
If, at the end of this time, synchronization has not been achieved correctly, the fault indicator returns to the ON state, and the scheduled alert sequence is automatically triggered.

7.2. GPS card (optional)

7.2.1. Overview

The GPS card provides a precise time reference that allows flashes (The GPS card is not used for steady-burning lights) for multiple lights/controllers to be synchronized and automatically controls the day/night mode and timing in accordance with standards.

The GPS card is only available for the “-G” version (113176-048-G and 113176-240-G).



- Operation leds:**
- D: Default led
 - S: Synchronization
 - N: Night mode
 - T: Twilight mode

The operation LEDs indicate the status and mode in which the card is operating.

7.2.2. Configuration

All dipswitches are factory configured. Do not change the configuration without OBSTA's approval.

Dipswitches S1 is used to configure the following bits, which describe the synchronization settings relative to GMT time provided by the GPS.

S1				
	1	2	3	4
ON (I)	Force day mode	Force night mode	GPS (I)	GPS (I)
OFF (0)	-	-	GPS (0)	GPS (0)

S1-3	S1-4	Behavior
0	0	Set to exact GMT time, first flash on second 0
I	0	Set to GMT + $\frac{1}{3}$ of the period
0	I	Set to GMT + $\frac{3}{13}$ of the period
I	I	Set to GMT +1 sec

If the card does not have the GPS option, synchronization is performed using the default photocell. The S2 is used to set the methos used to synchronize the beacons.

S2				
	1	2	3	4
ON (I)	500 lux	Photocell active	Photoresistance active	GPS active
OFF (0)	50 lux	Photocell inactive	Photoresistance inactive	GPS inactive

S3 and S4 are configurable and describe the flash frequency to be executed. S3 corresponds to day frequency and S4 corresponds to night frequency. The following table describes the configurations for S3 and S4.

S3 and/or S4				
1	2	3	4	Behavior
OFF (0)	0	0	0	OFF
OFF (0)	0	0	I	10 FPM
OFF (0)	0	I	0	20 FPM
OFF (0)	0	I	I	30 FPM
OFF (0)	I	0	0	40 FPM
OFF (0)	I	0	I	50 FPM
OFF (0)	I	I	0	60 FPM
ON (I)	I	I	0	2 flashes (1500ms apart)
ON (I)	I	I	I	Steady: light permanently ON

7.2.3. 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 Overcurrent	Continuous (Steady)
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 is still activated after 20 minutes, the product is not receiving signals correctly.

8. Maintenance

Test	Frequency	Preventive action	Risk
Wiring	Annual	Visual control Tightening PCB wires Tightening PCB wires	Cable degradation Poor contact Lamp in default mode
Waterproof	Annual	Visual verification	Water infiltration Short circuit Lamp off
Clamping	Annual	Checking tightness	Box falling Tightness degradation
Aspect (rust, dust...)	Annual	Exterior cleaning	Malfunction

9. Technical specifications

Designation	Comment	Min	Nominal	Max	Unit
Input voltage	For 48Vdc For 240Vac	43.2 110	48 90/240	55 264	Vdc Vdc Vac
Cable diameters	PG09 M16 M20	4 7 9	- - -	8 13 17	mm mm mm
Temperature		-20	-	55	°C
Alarm relay	DC	-	-	3	A
Alarm relay	AC	-	-	10	A
Connection	By terminal connection, wire cross section up to 1.5mm ²				