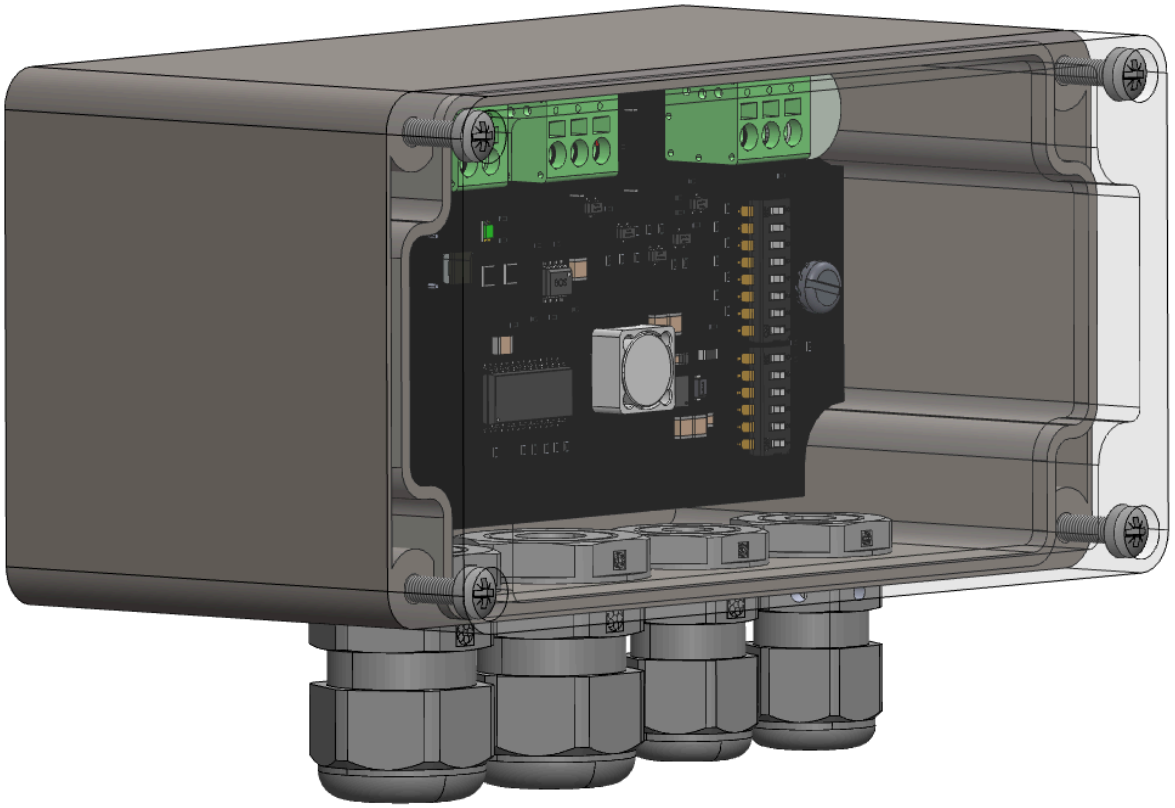
RELIABILITY IN OBSTRUCTION LIGHTING
BALISAGE AÉRIEN

# 48V-NAV-CMD-120/240 // 113912
# NAV-CMD-48-B // 113915
# NAV-CMD-SOL // 113915-SOL



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

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# 1. Product name and part number

| Description | Part number (P/N) | Power supply | QR code |
|---|---|---|---|
| **NAV-CMD-SOL** | 113915-SOL | 12 - 24 Vdc | |
| **NAV-CMD-48-B** | 113915 | 48 Vdc | |
| **48V-NAV-CMD-120/240** | 113912 | 110 - 240 Vac | |

# 2. Be careful


- Do not proceed 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
- 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.
- Otherwise specified all cable must be shielded.

# 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

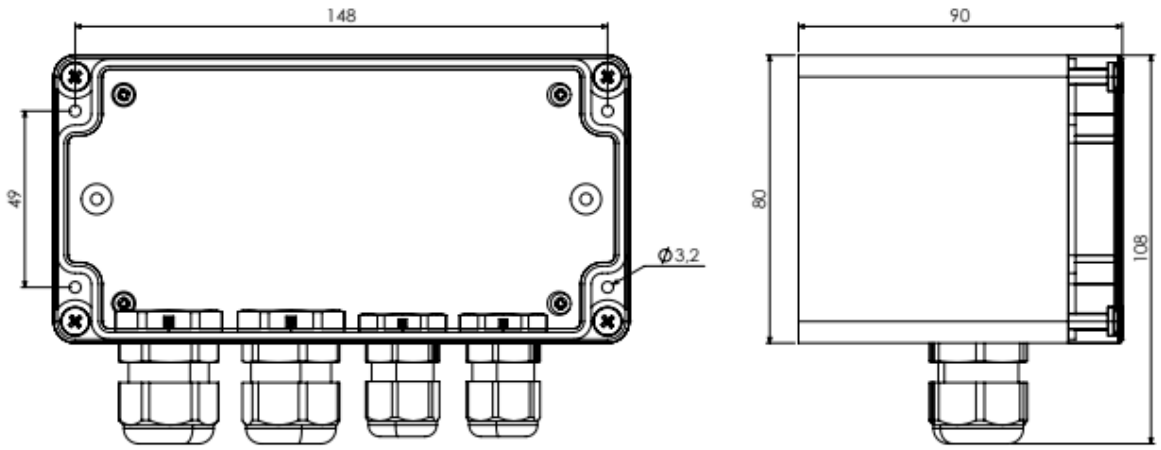
This manual provides information about the installation, operation and maintenance of the Comand box manufactured by OBSTA.

## 4.2 General description

The command box is a product consisting of a plastic box and an internal PC, which controls one to four NAVILITE 48Vdc lamps (or two with “main and backup” mode).

The Command box can be fixed by a  bracket (OBSTA - P/N 113920) using four M3 screws.

## 4.3 Size of the box




## 4.4 Compatibilities

The command box *NAV-CMD-SOL*, *NAV-CMD-48-B* and *48V-NAV-CMD-120/240,are compatible with 48Vdc NAVILITE* lamp:

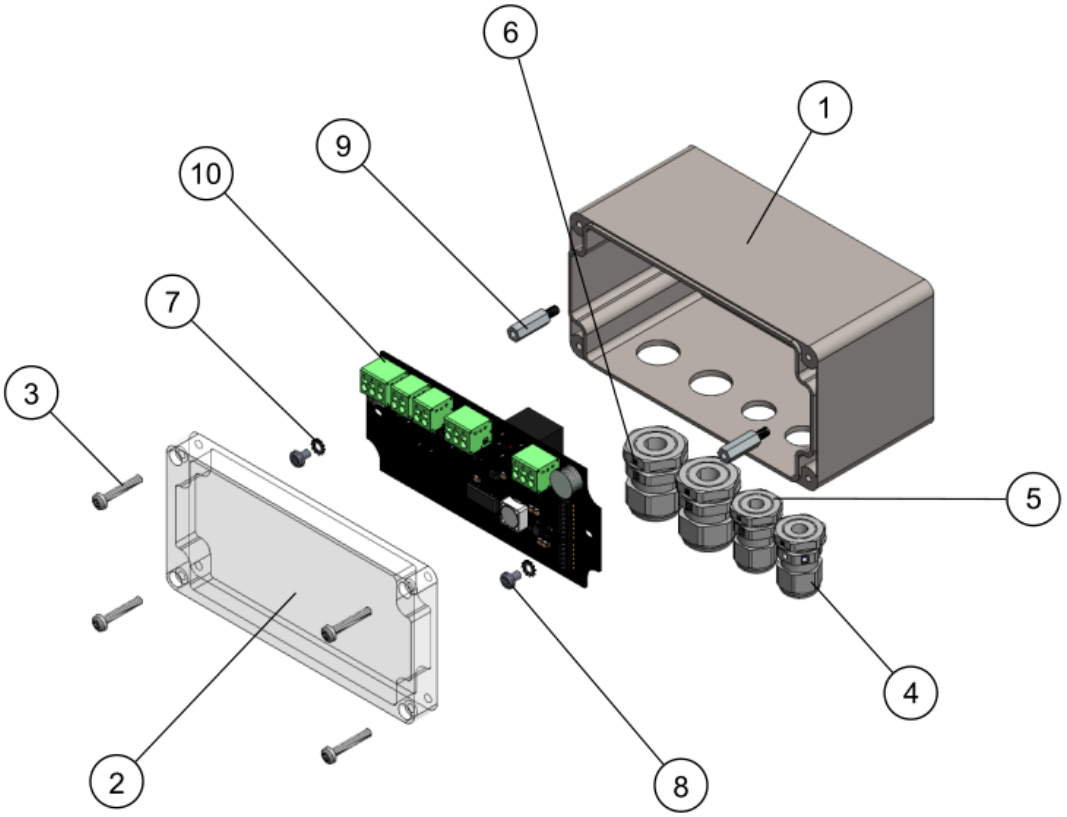
- *NAVILITE-48V* (P/N)113900
- *NAVILITE-48V-CABLE* (P/N)113905
- *NAVILITE-IR-48V-CABLE* (P/N)113905IR
- *NAVILITE-IR-48V-CABLE* (P/N) 113905IR2
- *NAVILITE-F-48V* (P/N)113965
- NAVILITE-IR-NPT-48V (P/N) 113965IRCH

# 5. Technical specifications

| Designation | Comment | Min | Typical | Max | Unit |
|---|---|---|---|---|---|
| **Input voltage** | 113915-SOL<br>113915<br>113912 | 10.8<br>43.2<br>110 | 12 / 24<br>48<br>90 / 240 | 27<br>55<br>264 | Vdc<br>Vdc<br>Vac |
| **Cable diameters** | M16<br>M20 | 5<br>7 | | 10<br>13 | mm<br>mm |
| **Temperature** | | -20 | | 55 | °C |
| **Alarm conditions** | - Power supply failure<br>- lamp failure<br>***To reset the alarm, switch off, then switch on again after one minute.*** | | | | |
| **Setting of the switches** | Night only operation (light sensor activated)<br>Day and night operation (light sensor disabled) | | | | |
| **Number of configuration of NAVILITE** | 1 to 4 light operating simultaneously<br>2 lights “main and backup” (main light “ON” and backup light “OFF”).<br>The backup light is switched on in case of failure on the main light. | | | | |
| **Connexion** | By terminal connexion, wire cross section up to 2.5mm | | | | |
| **Attachment** | By 4 M3 screws 148x150mm | | | | |

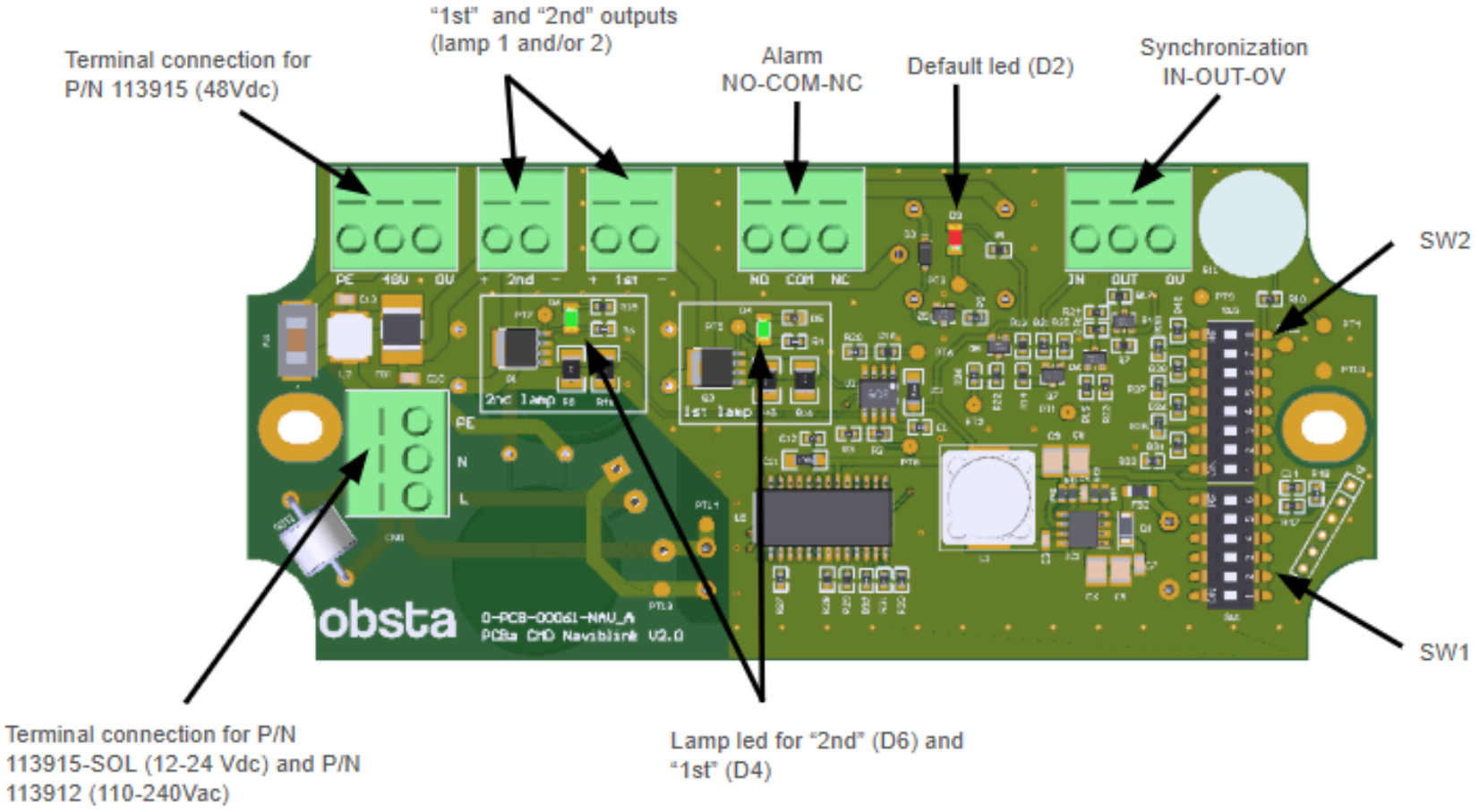
# 6. Operation

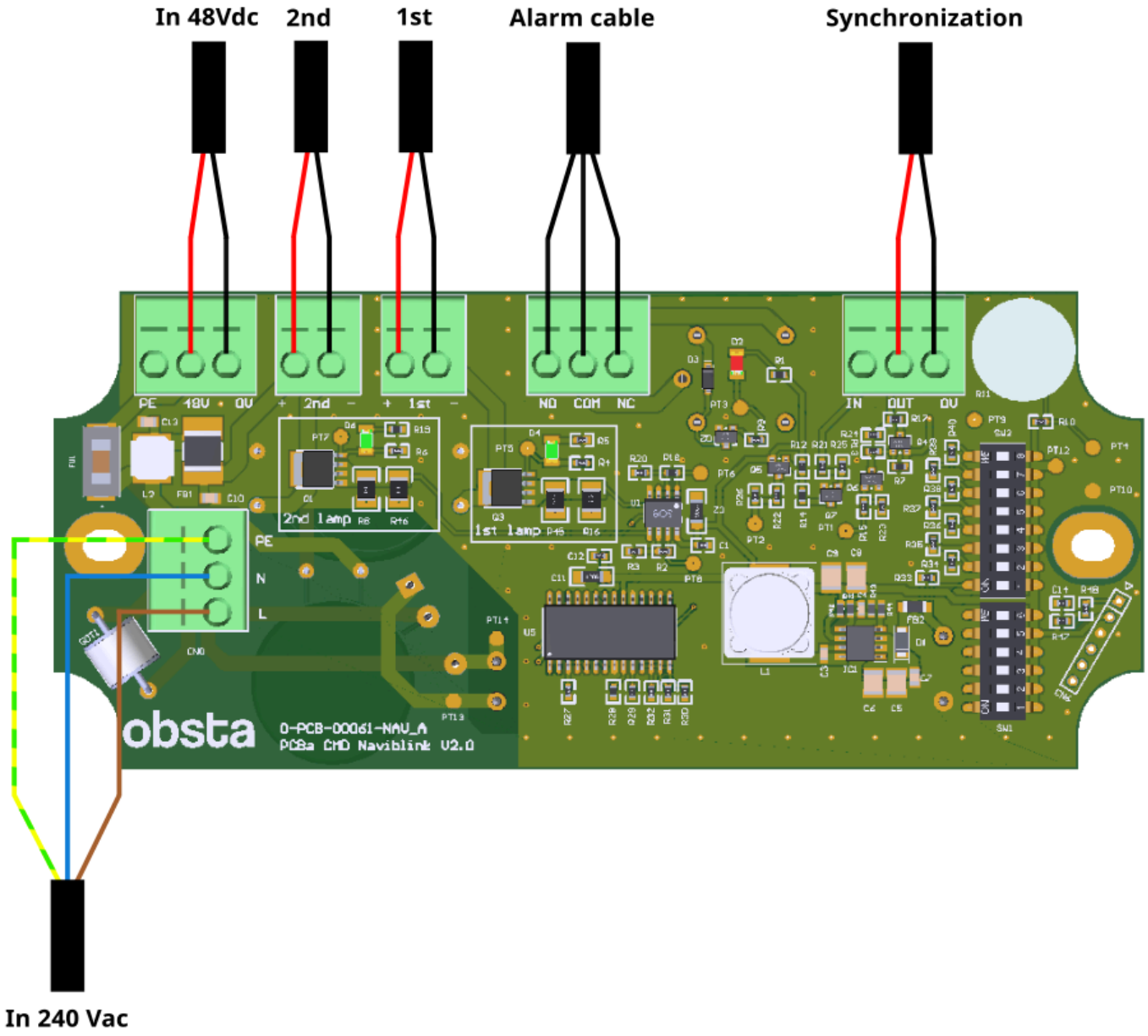
## 6.1 System component




| N° | Designation | Qty |
|---|---|---|
| **1** | Back of the case | 1 |
| **2** | Front of the case | 1 |
| **3** | Captive screw | 4 |
| **4** | M16x1.5 ventilated cable gland | 1 |
| **5** | M16x1.5 cable gland | 1 |
| **6** | M20x1.5 cable gland ventiled | 2 |
| **7** | M4 fan washer | 2 |
| **8** | M4x6 slotted cylindrical head screw | 2 |
| **9** | Column M/F M4 L20 | 2 |
| **10** | PCBa Naviblink | 1 |

## 6.2 Card feature




In 48Vdc
2nd
1st
Alarm cable
Synchronization
PE 48V + 0V
+ 2nd –
+ 1st –
NO COM NC
IN OUT 0V
2nd lamp
1st lamp
PE
N
L
obsta
0-PCB-00061-NAV_A
PCBa CMD Naviblink V2.0
In 240 Vac

## 6.2 Configuration

### 6.2.1 SW1

| SW1 | | | | | | |
|---|---|---|---|---|---|---|
| **N°** | **1** | **2** | **3** | **4** | **5** | **6** |
| **ON** | Nominal | Day and night | Alternate V1 and V2 flash<br>Flash duration 1s@ 30 FPM | Master | Main and backup | 125mA |
| **OFF** | Reset | Night only | NO Alternate | Slave | Simultaneous | 90mA |

### 6.2.2 SW2

| **SW2** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **N°** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| **ON** | Nb lamp I | Nb lamp I | - | Flash freq I | Flash freq I | Time I | Time I | V1 permanent and V2 flash |
| **OFF** | Nb lamp 0 | Nb lamp 0 | - | Flash freq 0 | Flash freq 0 | Time 0 | Time 0 | - |

***For SW2, the following bits are configurable and describe the number of lamps connected to each channel EXCEPT when SW1.5 is OFF (Simultaneous mode) and SW1.3 is OFF (Non-alternating mode), in which case the switch describes the TOTAL number of NAVILITES for all channels combined***

| **SW2.1** | **SW2.2** | **Number of lamps connected** |
|---|---|---|
| **0** | **0** | 1 lamp connected |
| **1** | **0** | 2 lamp connected |
| **0** | **1** | 3 lamp connected |
| **1** | **1** | 4 lamp connected |

**With 2 lamps main and backup st Number of lamps only set 1 lamp.**

The following bits describe the flash frequency (when the lamp is not in alternating mode)

| SW2.4 | SW2.5 | Flash frequency (FPM) |
|---|---|---|
| **0** | **0** | Continuous |
| **1** | **0** | 20 FPM |
| **0** | **1** | 30 FPM |
| **1** | **1** | 40 FPM |

The following bits describes the flash duration (when the lamp is not in alternating mode)

| SW2.6 | SW2.7 | Flash duration (ms) |
|---|---|---|
| **0** | **0** | 100ms flash |
| **1** | **0** | 200 ms flash |
| **0** | **1** | 300 ms flash |
| **1** | **1** | 400 ms flash |

### 6.2.3 Reset

If the SW1.1 is OFF, the programme goes into reset mode. In this mode :

- The “1st” and ”2nd” output default are cleared
- The first and second lamp are light off
- The program waits for the exit from reset mode
- The Alarm is off
- The led signalisation (D7) is off
- If the lamp is in slave mode (SW1.4 OFF and SW1.3 OFF), the ***SYNC_OUT*** signal is the same as ***SYNC_IN*** signal.

### 6.2.4 Alternated mode

If the SW1.1 (Nominal mode) and SW1.3 are ON (alternated mode), the programme goes into alternated and nominal mode. In this mode, except in the event of default:

- Alarm is off
- The active channel lamps light up for 1000ms 30 times a minute (alternating one lamp followed by the other).
- The associated channel led (D6 and D4) light up at the same time as the channels flash

#### 6.2.5 Master mode

If the SW1.3 is OFF (non alternate mode) and the SW1.1 (nominal mode) and SW1.4 is ON (master), the programme goes in master and nominal. In this mode, except in the event of default:

- Alarm and signalisation led are off
- The lamps of the active channels (“1st” and “2nd”) light up according to the settings of SW1 and SW2. If SW2.2 is ON, the sequence of 1st is replaced by a continuous flash.
- The associated channel led (D6 and D4) light up at the same time as the channels flash

#### 6.2.6 Slave mode

If the SW1.1 is on, the SW1.3 and SW1.4 is off, the programme goes in slave and nominal mode. In this mode, except in the event of default:

- Alarm is off
- The lamp of active channels light on:
    - Continuously if the sequence of the active channel is a continuous flash. If SW2.8 is ON, the sequence of “1st” is a continuous flash.
- The ***SYNC_OUT*** signal is the same as ***SYNC_IN*** signal.
- The leds of active channel (D6 and/or D4) flash at the same time as the lamp

### 6.3 Channel selection

The PCB contains two channels (“1st” and “2nd”)

#### 6.3.1 Day/Night transition

SW1.2:

- ON: The light switches from night mode to day mode depending on the value returned by the photoresistor, above a fixed threshold.
- OFF: The light is in night mode at all times.

### 6.3.2 Back-up mode

If the switches are configured as follows:

- SW 1.3 is OFF
- SW 1.5 is ON
- SW 2.8 is OFF

The PCB is configured in backup mode. In day mode, “1st” and “2nd” are disabled. Otherwise, the flashes are executed on “1st” as long as no default is detected.

If a default is detected on “1st”, it is deactivated, alarm is ON, the led is lit and “2nd” is activated. In this case:

- If an insufficient intensity fault is detected on “2nd”, the light operates in downgraded mode.
- If an excessive intensity fault is detected on “2nd”, this channel is deactivated.

### 6.3.3 Alternated mode

To configure alternate mode, the switches are positioned as follows:

- SW1.3 is ON
- SW2.8 is OFF

In alternated mode, successive flashes occur cyclically, first on “1st” output, then on “2nd” output.
If a default is detected on one of the two outputs, the alarm and signalling led (D2) are activated.

### 6.3.4 Simultaneous mode

To configure simultaneous mode, the switch are positioned as follow:

- SW1.3 is OFF
- SW1.5 is OFF
- SW2.8 is OFF

In simultaneous mode, flashes occur on “1st” and “2nd” output at the same time. If a default is detected on one of the two outputs, the alarm and signalling led (D2) are activated.

### 6.3.5 “Lamp 1 fix and lamp 2 flash” mode

To configure this mode, the switches are positioned as follow:

- SW2.8 ON

In this mode, the “2nd” output flashes and the “1st” output lights up continuously until a fault is detected.
When a slight drop of intensity is detected on one of the two outputs, the alarm and the led indicator (D2) goes ON.
When an over-intensity is detected on one of the two outputs, the alarm and the led indicator (D2) goes ON, and the “1st”and “2nd" outputs are disabled (lamps go off).

# 7. Defaults

The light manages fault conditions (short-circuit, led failure, etc…), resulting in a certain warning behaviour and also affecting its main function (flashes).

The card goes in default  mode when it detects an over or under-intensity on the “1st” and/or “2nd” output.

When one of those defaults are present, the alarm and the led (D2) goes on.

# 8. Installation

## 8.1 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. Installation drawings are included in the power supply carton.

It’s strongly recommended to supply the product and verify that it’s working properly at ground level before final installation.

## 8.2 Mounting and preparation

- Check the internal wiring before fixing the lamp.
- Use wire end ferrules
- Check the power cable on the terminal connection
- Check the ground is connected on the terminal connection
- Check the synchronisation cable (if used)

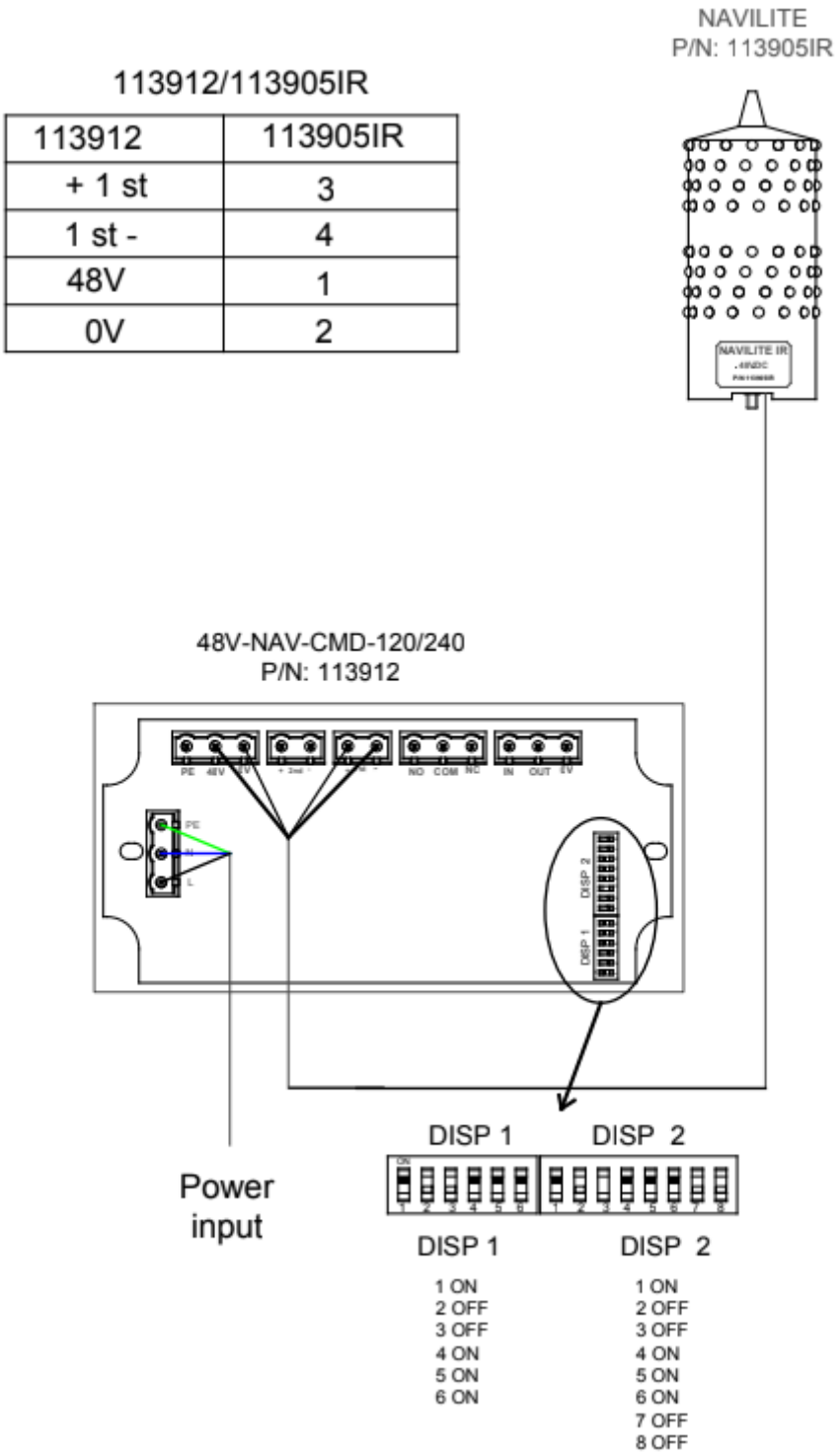
# 9. Maintenance

| Test | Frequency | Préventive action | Risk |
|---|---|---|---|
| **Wiring** | Annual | Visual control<br>Tightening cable glands<br>Tightening PCB wires | Cable dégradation<br>Poor contact<br>Lamp in fault mode |
| **Waterproof** | Annual | Visual verification | Water infiltration<br>Short circuit<br>Lamp off |
| **Clamping** | Annual | Checking tightness | Box falling<br>Tightness degradation |

# 10. Typical wiring

113912/113905IR

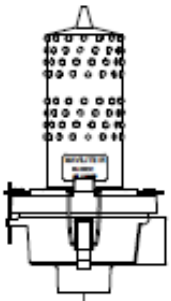
| 113912 | 113905IR |
|---|---|
| + 1 st | 3 |
| 1 st - | 4 |
| 48V | 1 |
| 0V | 2 |



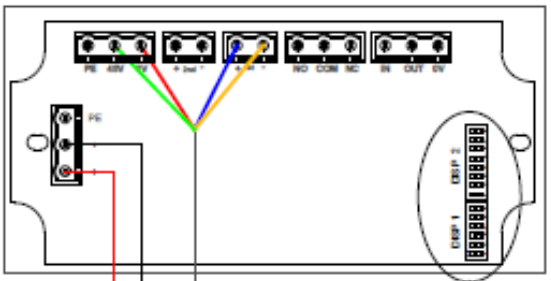
NAVILITE
P/N: 113965IRCH

113915-SOL/113965IRCH

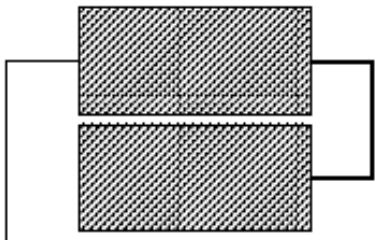
| 113915-SOL | 113965IRCH |
|---|---|
| + 1 st | + 48 |
| 1 st - | - 48 |
| 48V | + 48 |
| 0V | - 48 |

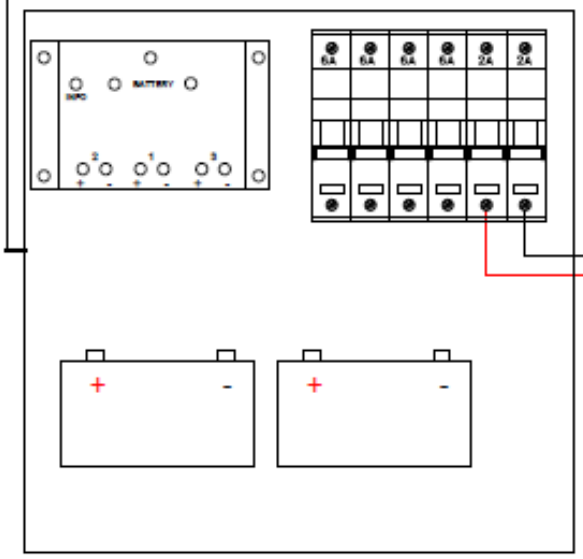


NAV-CMD-SOL
P/N: 113915-SOL



solar panel





DISP 1 DISP 2

DISP 1

1 ON
2 OFF
3 OFF
4 ON
5 ON
6 OFF

DISP 2

1 ON
2 OFF
3 OFF
4 ON
5 ON
6 ON
7 OFF
8 OFF