

# TIME SERVER OPTION CARDS

## OPTION CARDS NETSILON 9 / 11



## Installation guide



[www.bodet-time.com](http://www.bodet-time.com)

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On receipt, ensure that the product has not been damaged during transportation and report any concerns to the carrier.

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## SAFETY INFORMATION AND PROTECTIVE MEASURES

The following symbols and pictograms are used to illustrate a source of danger during installation, use, and maintenance of this device.

Symbol	Description
	<i>IEC60417 - 1641</i> Operating instructions
	<i>IEC60417 - 5031</i> Direct current
	<i>IEC60417 - 5032</i> Alternating current
	<i>IEC60417 - 6042</i> Caution, risk of electric shock
	<i>IEC60417 - 6151</i> Caution, infrared radiation
	<i>IEC60417 - 6172</i> Disconnection, all power plugs
	<i>IEC60417 - 0434b</i> Caution

## 1. GENERAL POINTS

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Thank you for choosing an option card for BODET Netsilon time server. This product has been carefully designed for your satisfaction according to the rules of our ISO9001 and ISO14001 quality system.

We recommend that you read this manual carefully before opening Netsilon or installing an option card.

The illustrations show a Netsilon 9 / 11 by itself (with no option card) then with option cards installed.

Retain this manual throughout the lifespan of your product so that you can refer to it when necessary.

Failure to observe these instructions may cause irreversible damage and invalidate the warranty. BODET shall not be responsible for any damage arising due to non-observance of these instructions.

Non-contractual data. Bodet reserves the right to make changes to equipment, including functional, technical and aesthetic changes, without notice.

This manual is subject to change without notice. To obtain the most recent version of this document, please refer to our website: [www.bodet-time.com](http://www.bodet-time.com).

### 1.1 Using the guide

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Be sure to follow the indications given by the pictograms in this manual. The main pictograms are identified below:



: indicates advice, a recommendation or a technical explanation.



: indicates that special attention needs to be paid.



: indicates that misuse or failure to follow the instructions could result in a electrical danger.

This information must be taken into account when installing or using the product.

### 1.2 Introduction

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Netsilon offers customisation and scalability through the addition of a range of option cards.

Up to 4 option cards can be adapted to offer a variety of time signals.

6 models of option cards are available:

- > NETWORK option card (RJ45), ref. 907 920.
- > NETWORK FIBER option card (2 SFP), ref. 907 921.
- > PTP option card, ref. 907 922.
- > IRIG INPUT option card, ref. 907 947.
- > IRIG OUTPUT option card, ref. 907 930.
- > ASCII option card, ref. 907 926.

### 1.3 Recommendations list

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To install Netsilon option cards, we recommend that you:



- > Back up your configuration before adding an option card.



- > Switch off Netsilon and unplug the power cord(s) before working on the product.



- > Remove the frame cover and install the option card according to the instructions in this manual.

- > Reassemble the product completely before connecting it to the mains and starting it up. There should be no surplus parts.

## 2. INTRODUCTION

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This guide concerns the installation of one or more option cards.

The operation and use of these option cards is presented in the full Netsilon 9/11 guide (available from the website [www.bodet-time.com](http://www.bodet-time.com)).

### 2.1 Checking the package

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Carefully unpack and check the contents of the package. These should include:


- The option card(s),
- Accessories for mounting the option card(s).

### 2.2 Saving the configuration

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We recommend that you save the current Netsilon configuration before installing an option card.

To save a configuration via the Netsilon web server, follow these steps:

- 1) SYSTEM menu > Tools > Updating and backup.
- 2) Click , and a file named “export.nets” will download to your PC.

### 2.3 Safety

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Netsilon can be equipped with several power supply sources: if both AC and DC power supply options are present, turning off the switch on the rear panel will not disconnect all power supply sources.



**Ensure that all power supply sources have been removed from the Netsilon device before taking off the cover and opening the product.**

Only open the device in order to add or change option cards:

- Never open the product with the power supply or supplies connected.
- Ensure that all power supply sources are removed from the device before installing the option cards: unplug the AC and/or DC power supplies connected to the equipment (or dual mains power supply according to your model).



**The switch is of functional type. It is not a power supply disconnect switch. Disconnect the power supply and relay circuits before any intervention.**



**Fibre optic: risk to your eyes.**

**When inspecting a connector, make sure that the light sources are turned off. The light source in the fibre optic cables may damage your eyes.**

### 3. MECHANICAL INSTALLATION

The installation method is identical regardless of the option card installed. However, there are some specific operations to be performed depending on the option card to install. Please note the following slots compatibility:

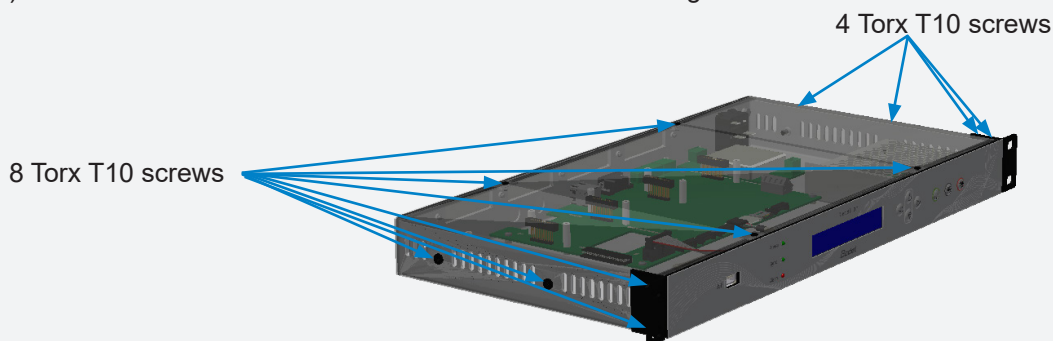
- Slot A / B / C : NETWORK (port RJ45) and NETWORK FIBRE (port SFP) option cards,
- Slot A / B / C / D : ASCII, PTP (RJ45 + SFP), IRIG INPUT and IRIG OUTPUT option cards.



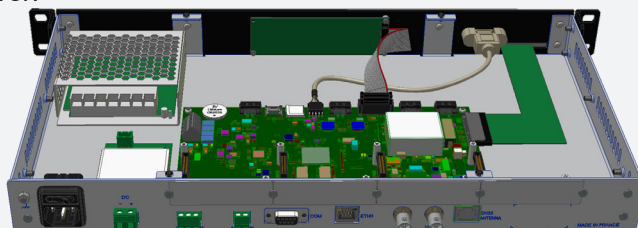
If the new option card is installed in place of an existing option card (involving removal of the latter), it is necessary to uninstall the removed option card via the web server (see Chapter 5.5 Removing an option card). Once this uninstallation has been completed, the product will redetect the option card with its new slot number.

#### > OPEN NETSILON

- 1) Loosen and remove the 12 screws as shown below using a Torx T10 screwdriver:



- 2) Remove the black cover:



#### > INSTALL AN OPTION CARD

- 3) Determine the location of the option card (respect slot compatibility).  
4) Remove the aluminium cover from the desired location (slot) using the Torx T10 screwdriver:



- 5) Fit the option card, ensuring that the output(s) of the option card are aligned with the opening:



For IRIG INPUT and IRIG OUTPUT option cards, unscrew and remove the nut and the washer on the BNC connector(s) (hexagonal socket spanner 14).

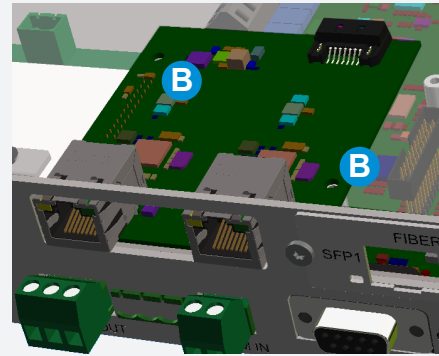
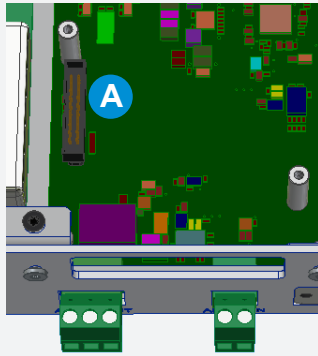


IRIG INPUT card

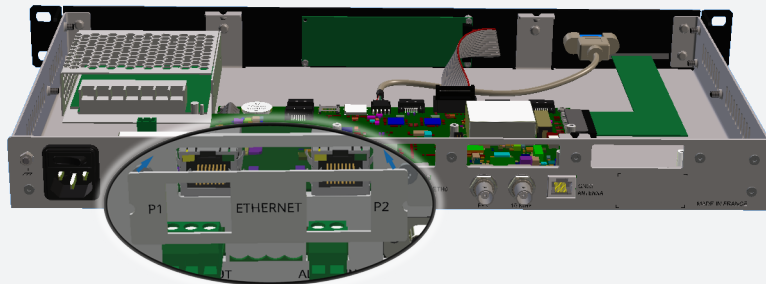


IRIG OUTPUT card

6) Clip the electronic card onto the connector **A** , then fix it in place using the two Torx T8 screws **B** :



7) Attach the aluminium cover in order to close up the space around the option card:



Repeat these 5 steps for each option card you wish to install.



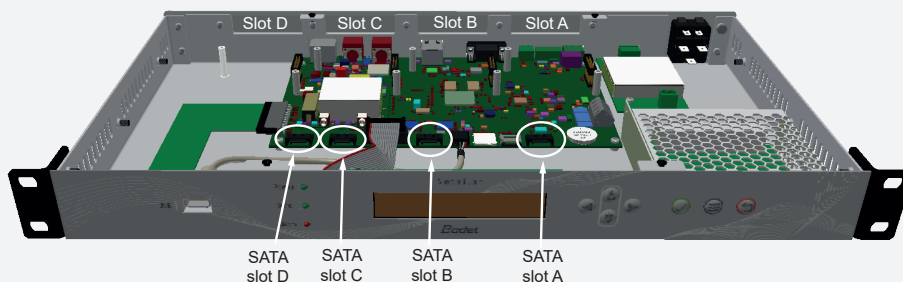
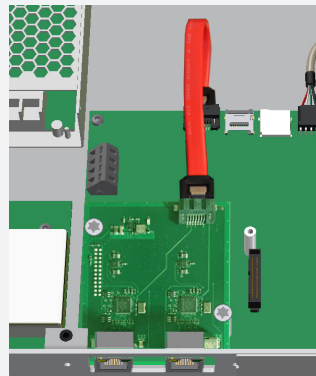
Do not use screws other than those supplied, as inappropriate lengths may damage some components.



For the IRIG INPUT and IRIG OUTPUT option cards, replace the washer and screw the nut back onto the BNC connector(s) to tighten it onto the aluminium cover.

8) Perform the following operations:

- Ethernet RJ45 / Ethernet SFP / PTP option card : connect the SATA cable linking the Network card(s) or PTP to the Netsilon motherboard :

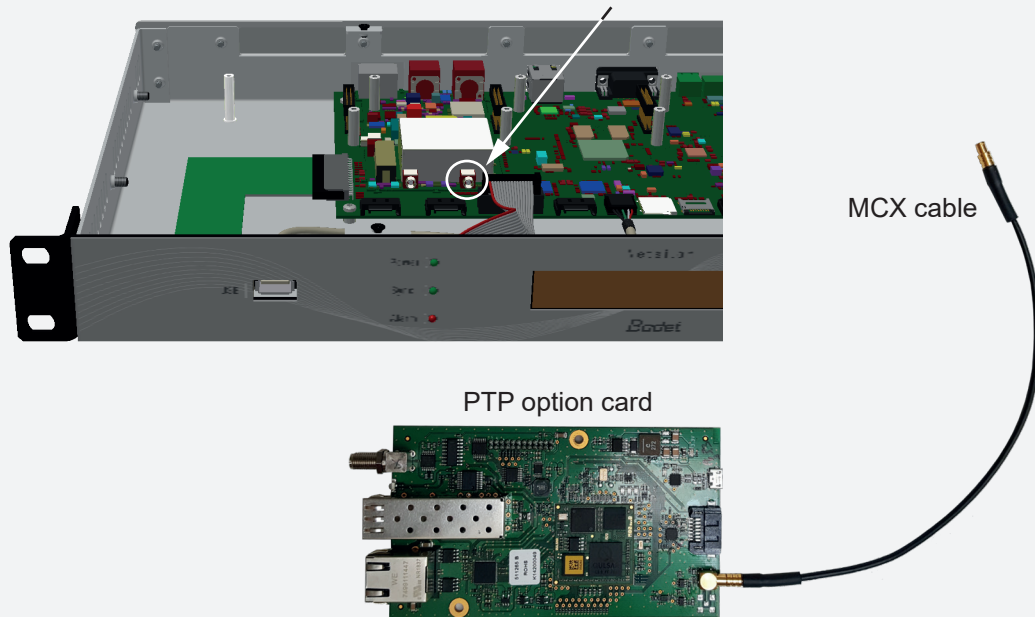



This operation is valid for the Network option card (RJ45), the Network Fiber option card (SFP) and the PTP option card (RJ45 / SFP).

Be sure to connect the SATA cable to the correct connector on the motherboard corresponding to the slot where the option card is installed.

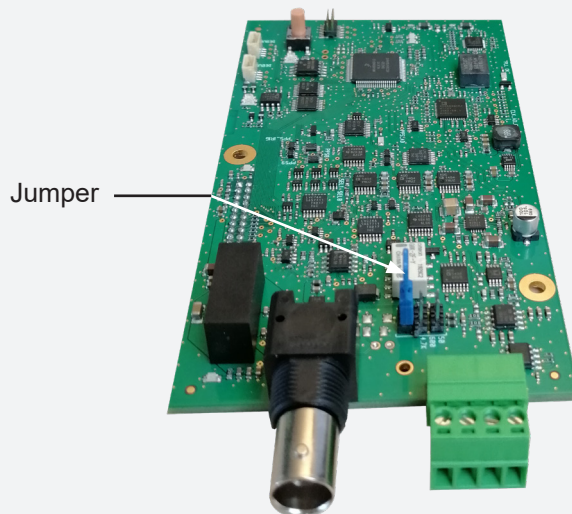
- For the PTP option card, connect a MCX cable between the option card and Netsilon:


The MCX coaxial cable of the PTP card must be connected here



 **This operation is only valid for the PTP option card.**

- For the IRIG INPUT option card, position the jumper to select the input impedance: 4.7K / 600 / 50 Ohms or high impedance (no jumper). By default, the jumper is positioned on the option card for 600 Ohms.



 **This operation is only valid for the IRIG INPUT option card.**

- 9) Close up the Netsilon device by refitting the black cover identically to its original condition.
- 10) Connect the power supply and turn the switch to ON (I).
- 11) Connect the network cable to the ETH0 port to access the web server.



4. ELECTRICAL CONNECTIONS

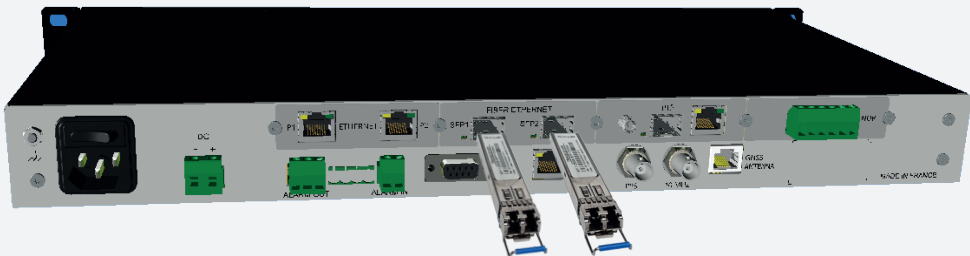
4.1 Option cards

> NETWORK option card, ref. 907 920



- > Ports 1 and 2 can be used to assign two separate Ethernet networks via the web server.
- > A maximum of two network option cards may be installed.
- > These option cards must be installed in slots A, B or C.
- > Network port: RJ45, 1000BASE-T (Gigabit).

> Option card NETWORK FIBER (port SFP), ref.: 907 921




- > Ports 1 and 2 can be used to assign two separate Ethernet networks via the web server.
- > A maximum of two option cards can be installed.
- > These option cards must be installed in slots A, B or C.
- > Connectors: 2 SFP:

Module types	Description
SX.....	Colour: black 1000 BaseSX LC-Duplex Fiber connector Wavelength = 850 nm
LX.....	Colour: blue 1000 BaseLX LC-Duplex Fiber connector Wavelength = 1310 nm

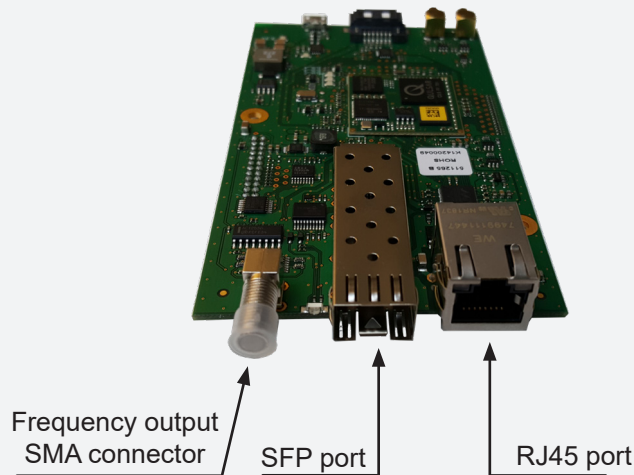
We recommend using BODET modules SX and LX. Other SFP MSA-compatible (Multi-Source Agreement) modules can be used but there is no guarantee that they will work (module RJ45 not compatible).

- > Status of the LED (at the bottom to the left of the port):
  - Red: fibre optic link not established
  - Green: fibre optic link OK (flashes following activity)

 **Risk to your eyes: when inspecting a connector, make sure that the light sources are turned off. The light source in the fibre optic cables may damage your eyes.**

### > PTP Option card (RJ45 + SFP), ref.: 907 922

The PTP option card can be installed in any slot, of course if slots A and B are populated by network cards the PTP card will have to be installed in slot C or D.



The PTP option card is equipped with one RJ45 port and one SFP port but only one can be used at a time.

Ethernet Interface Combo port:

- 1 x 10 / 100 / 1000BASE-T RJ45
- 1 x GBIT SFP

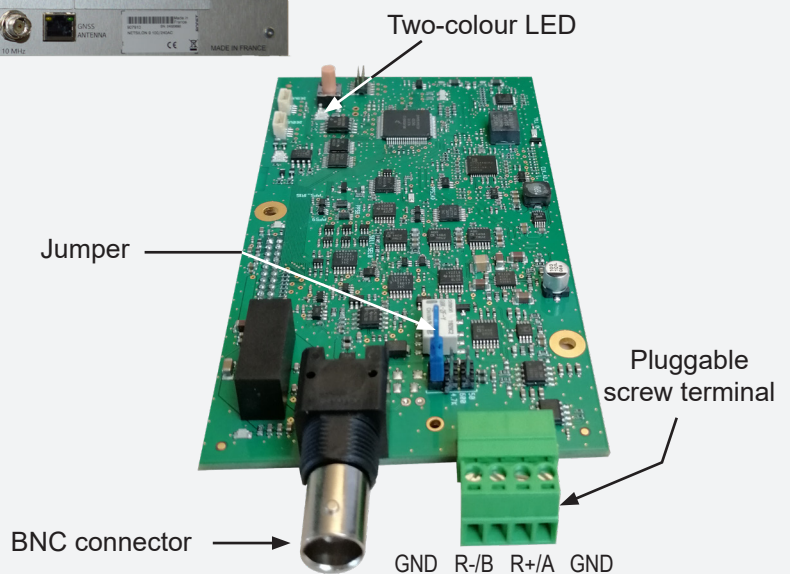
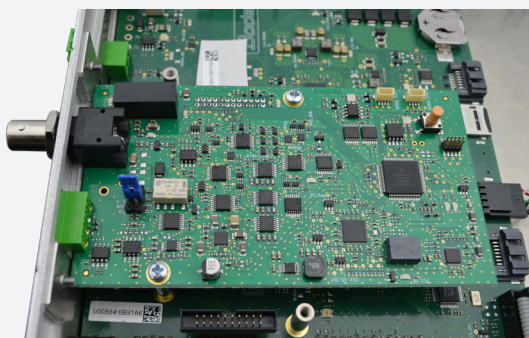
Customisable frequency output on SMA connector.

### > IRIG INPUT Option card, ref.: 907 947

The IRIG INPUT option card can be installed in any slot.



> One option card maximum per Netsilon.



> Connections :

- IRIG AM and DCLS : BNC connector (+ core, - shield),
- DCLS - RS422 : pluggable screw terminal (3.81 mm).

> Status of the two-colour LED (bottom right of the option card) :

- Green: active,
- Red: IRIG signal decoding indicator:  
 OFF: the signal is correctly decoded and sent to the main board,  
 ON: the signal is not decoded correctly.  
 Reactivity time: 30s for IRIG-E, 3s for other formats.

### > IRIG OUTPUT Option card, ref.: 907 930

The IRIG OUTPUT option card can be installed in any slot.

- > The 2 outputs are independent.
- > The card is fully configurable from the web server.



- > Up to 4 cards per Netsilon.



#### > Connections :

- IRIG AM and DCLS : BNC connectors (+ core, - shield),
- DCLS - RS422 : pluggable screw terminal (3.81 mm).

#### > Each output is programmable as either :

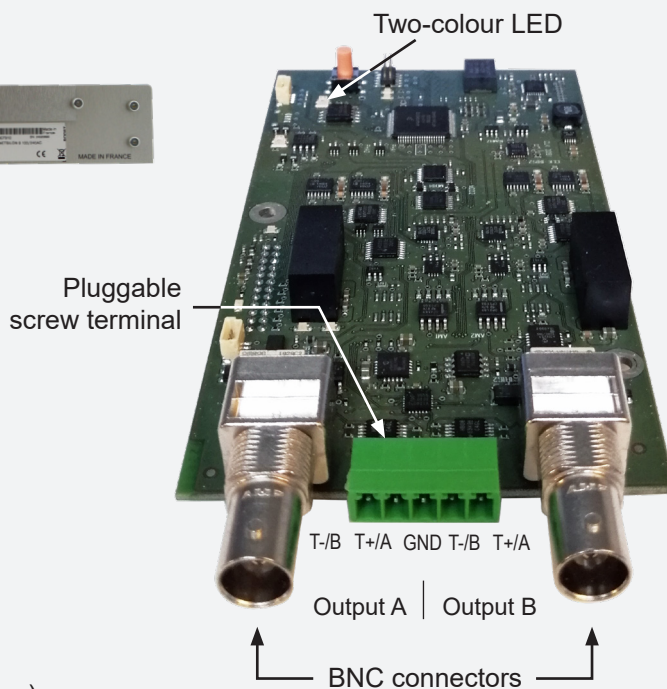
AM : output on BNC, DCLS : output on BNC, DCLS-RS422 : output on pluggable screw terminal.

#### > Status of the two-colour LED (bottom right of the option card) :

- Red flashing: card disciplining / no transmission,
- Green flashing: transmission in progress (at least on one output).



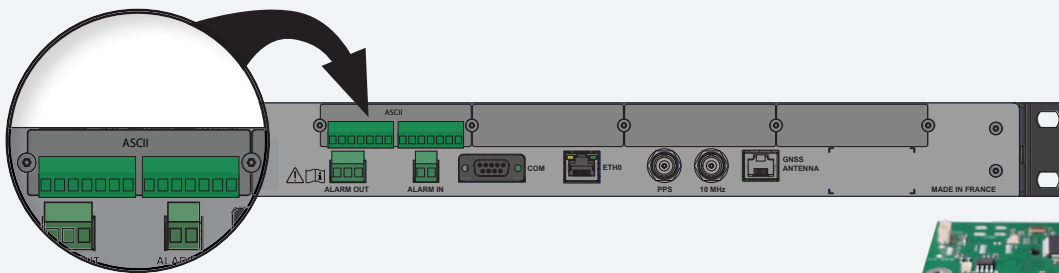
**After setting the parameters, the activation of the outputs can take up to 40s.**



### > ASCII option card, ref.: 907 926.

The ASCII option card can be installed in any slot.

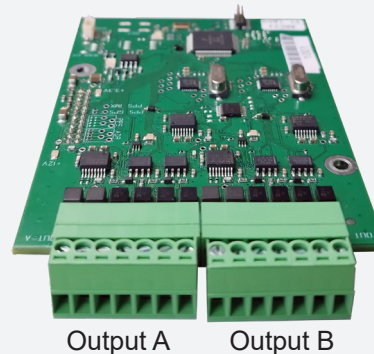
- > Outputs A and B can distribute two different serial links (RS232/422/485).
- > Both outputs are dependent.
- > Configuration of the output frame via the embedded Netsilon web server.



- > Connectors: Removable 7-pin terminal block (pitch of 3.81 mm).

Output A				Output B			
RS232	RS422/485	RS232	RS422/485	RS232	RS422/485	RS232	RS422/485
Tx Rx GND	T+/A R+ T-/B R-	Tx Rx GND	T+/A R+ T-/B R-	Tx Rx GND	T+/A R+ T-/B R-	Tx Rx GND	T+/A R+ T-/B R-

- > Up to 4 cards per Netsilon.



## 5. QUICK CONFIGURATION

### 5.1 Access to the web server

> To access the Netsilon web server, follow these steps:

1) Note the Netsilon IP address.

To obtain the Netsilon IP address, see the full product guide.

2) Open a web browser page (Google Chrome®, Mozilla Firefox or Microsoft Edge®).

3) Enter the IP address into the browser's address bar.

4) Enter your username and associated password to access the web server.


> For more information on the product and its configuration via the web server, download the full guide from:

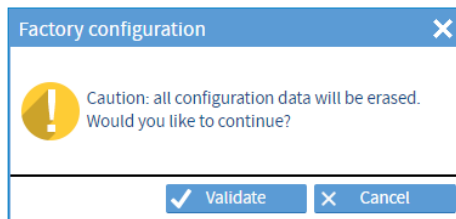
<http://www.bodet-time.com/support/documentations.html>

### 5.2 Factory configuration

To perform a factory configuration reset via the Netsilon web server, follow these steps:

1) SYSTEM menu > Tools > Updating and backup.

2) Click , and the following window will appear



**All configurations will be lost in the event of a factory configuration reset.**

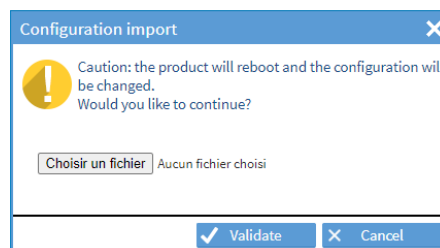
The link to the web server will be broken because the IP address is lost: it is necessary to reconfigure the network settings to access the web server (refer to the full Netsilon guide).

### 5.3 Loading the configuration

To load a configuration from the Netsilon web server, follow these steps:

1) SYSTEM menu > Tools > Updating and backup.

2) Click , and the following window will appear for selection of the file to import:



The file to be imported must have a "FileName.nets" extension

## 5.4 Option card detection

To view the detection of an option card from the Netsilon web server, proceed as follows:


1) SYSTEM menu > Tools > Option cards:

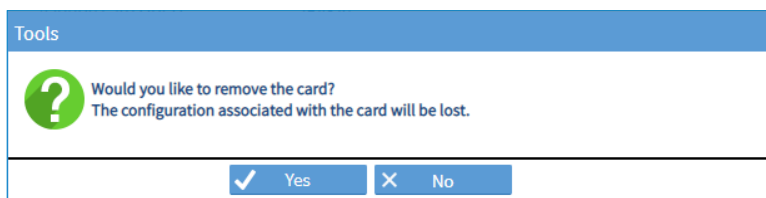
Option cards	
No.	Type
Option card slot A	Ethernet
Option card slot B	Fiber ethernet
Option card slot C	PTP
Option card slot D	.....

## 5.5 Removing an option card

If it is necessary to transfer or physically remove an option card from the Netsilon device, it is essential that it is also removed from the web server so as not to generate false alarms.

To remove an option card from the Netsilon software, follow these steps:

- 1) SYSTEM menu > Tools > Option cards.
- 2) Select the option card to be removed.
- 3) Click , and the following window will appear:



**If this removal is performed but the option card is still present or moved to another slot, it will be detected again when the user returns to this menu. The product may restart.**

## 6. SUPPORT

> To request technical support for this equipment, fill in the contact form at:

<http://www.bodet-time.com/en/customer-support.html>

Telephone support is available Monday to Friday from 8.00 to 12.00 am and 1.30 to 5.00 pm.

To speed up your Netsilon diagnosis, back up the system and note the Netsilon MAC address.