

The logo for WATTECO, featuring the word "WATTECO" in white, uppercase, sans-serif font centered within a black rectangular box. This box is flanked by two horizontal orange bars, one above and one below.

# TRIPHAS'O TOOL

## 50-70-105

# INSTRUCTIONS MANUAL

Version 1.1

DATE	REVISION	OBJET	Author
02/12/2022	1.0	Creation	POUILLOT M..
29/08/2023	1.1	Add RS485 activating only the first 5 minutes	POUILLOT M..

## INTRODUCTION

This manual contains the information necessary to install and use the **Triphas'O Tool** software.

### 1 WHAT IS THE PURPOSE OF THE VISUALIZATION TOOL ?

The Triphas'O Tool software allows to consult the Triphas'O measurements in real time via an RS485 link. The data transfer is done by using the RS485 link of the sensor with a UART-RS485 to USB converter. The software is intended for professional use only. It is available, free of charge, on the Watteco support site.

### 2 CHARACTERISTICS

Necessary elements to use Triphas'O Tool :

- A Triphas'O sensor
- A USB - RS485 converter
- The software « triphasotool.exe»

### 3 SETTING UP

To download the software, go to the support site, in the "DOWNLOAD" section. Click on the link of the Triphas'O Tool software.

<https://support.nke-watteco.com/downloads/>

Run triphasotool.exe from the directory where it was previously downloaded.


An installation window should open.


Continue until the software is completely installed.

## 4 USE

### 4.1 TRIPHAS'O AND PC CONFIGURATION

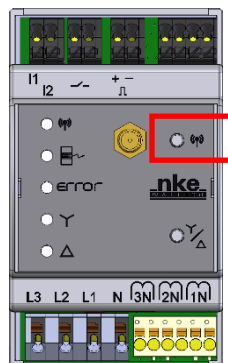
Connect the RS485 - USB converter to the Triphas'O as follows:

Data + (A) Signal Orange Wire 

Data - (B) Signal Yellow Wire 

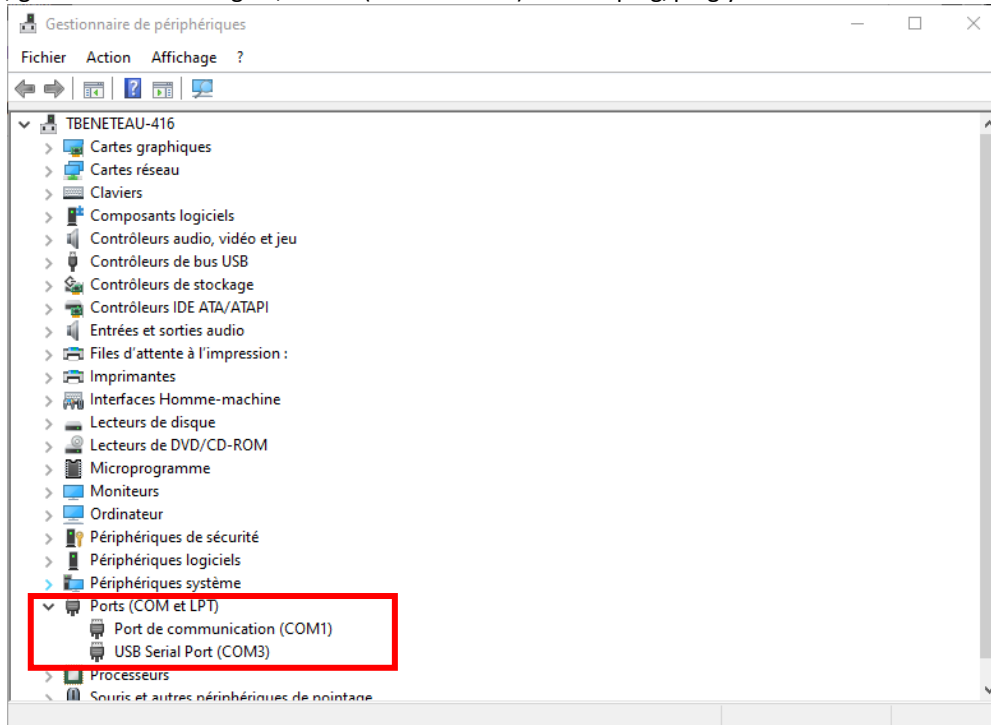


**The RS485 output is activated only the first 5 minutes.** It is possible to activated by pressing the configuraion button on Triphas'O :

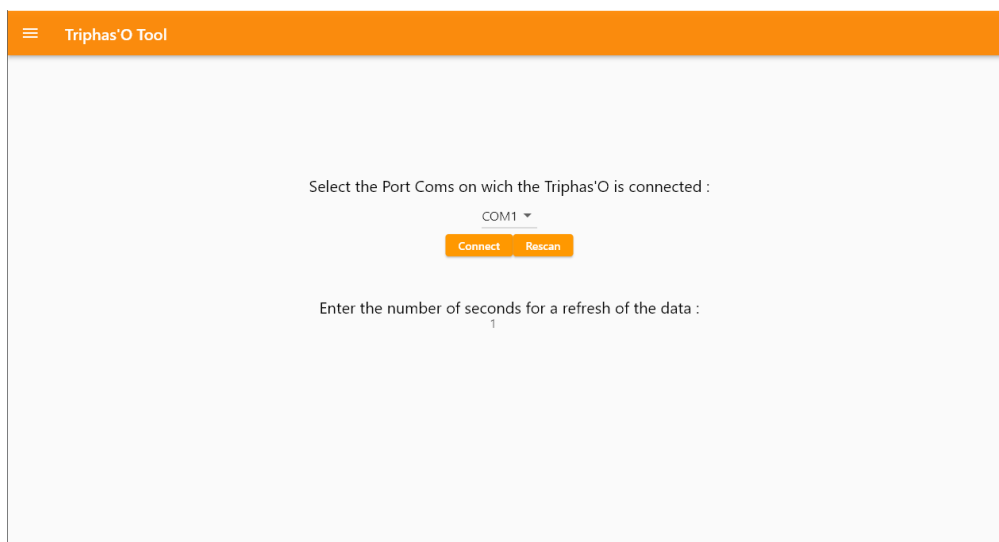


Connect the USB plug of the converter to your computer and check to which COM port the converter corresponds.

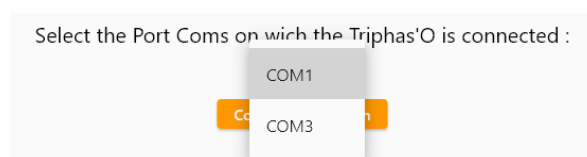
To do this, go to "Device Manager", "Ports (COM and LPT)" and unplug/plug your converter to find it in the list.



You can now launch the Triphas'O Tool software. The following window should appear:



Select the COM port corresponding to your converter:



And configure the refresh time of the data displayed on the software:

Enter the number of seconds for a refresh of the data :  
5

You can then click on the "Connect" button.

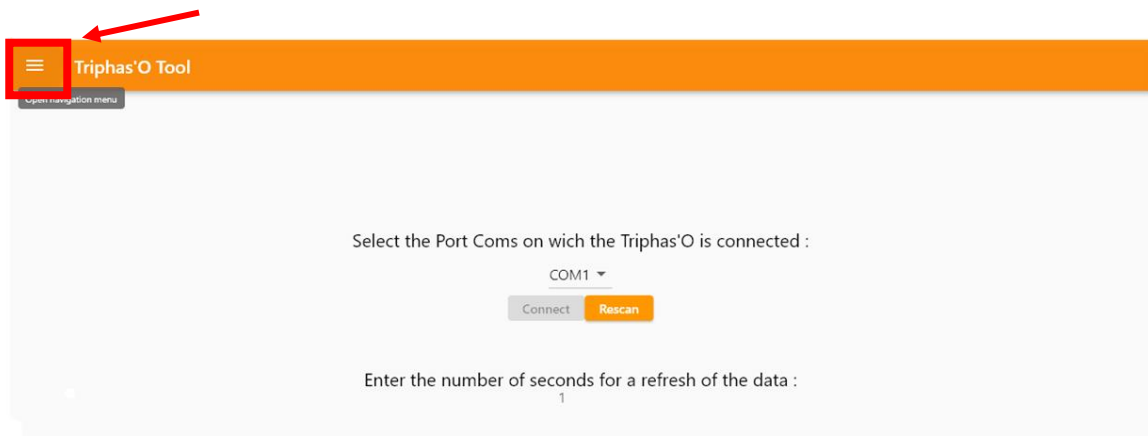
Select the Port Coms on wich the Triphas'O is connected :

COM1 ▾

Connect Rescan

Enter the number of seconds for a refresh of the data :  
1

Once the "Connect" button is grayed out as below you can start your navigation by clicking on the menu button at the top left of the window.



Navigation Menu:



## 4.2 DATA NAVIGATION AND VISUALIZATION

### 4.2.1 Data

By clicking on "Data", the software will display all the data measured by the Triphas'O. On each window the software displays the mode in which the sensor is located (see blue box)

- On each window the software displays the mode in which the sensor is located (see [Blue box](#))
- It is possible to display the data of the 3 phases and the sum in a single window, or to select the phase that interests you (see [Red box](#))

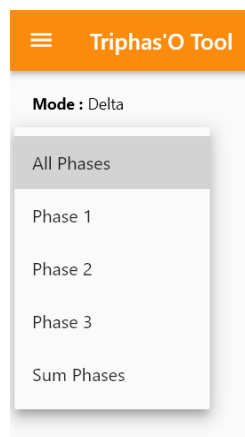
The screenshot shows the 'Triphas'O Tool' interface. At the top, there is a blue header with a menu icon and the text 'Triphas'O Tool'. Below the header, there is a blue box containing the text 'Mode : Delta'. Below that, there is a red box containing a dropdown menu with the text 'All Phases'. The main content area is divided into four sections: 'Phase 1', 'Phase 2', 'Phase 3', and 'Sum Phases'. Each section displays a table of data. The 'Phase 1' and 'Phase 3' sections have two columns of data, while 'Phase 2' and 'Sum Phases' have one column. The data includes voltage (V), current (I), active power (Active Power), reactive power (ReActive Power), active energy (Active Energy), and reactive energy (ReActive Energy). The 'Sum Phases' section provides a summary of the total active power, reactive power, and active energy.

Phase 1				Phase 3			
V	239.9 V			V	241.2 V		
I	4.6 A	Active Power	1478 W	I	4.6 A	Active Power	1698 W
(I1,V1)	7 °	ReActive Power	1115 Var	(I3,V3)	5 °	ReActive Power	-783 Var
(I1, U12)	37 °	Active Energy	69102 W.h	(I3, U32)	335 °	Active Energy	88090 W.h
U12	415.5 V	ReActive Energy	18286 Var.h	U32	417.8 V	ReActive Energy	-9897 Var.h

Phase 2				Sum Phases		
V	239.7 V			Active Power	3176 W	3176 W
I	4.5 A	Active Power	- W	ReActive Power	332 Var	332 Var
(I2,V2)	7 °	ReActive Power	- Var	Active Energy	157192 W.h	
(I2, U13)	97 °	Active Energy	- W.h	ReActive Energy	8389 Var.h	
U13	415.1 V	ReActive Energy	- Var.h			

Menu for selecting the desired display:



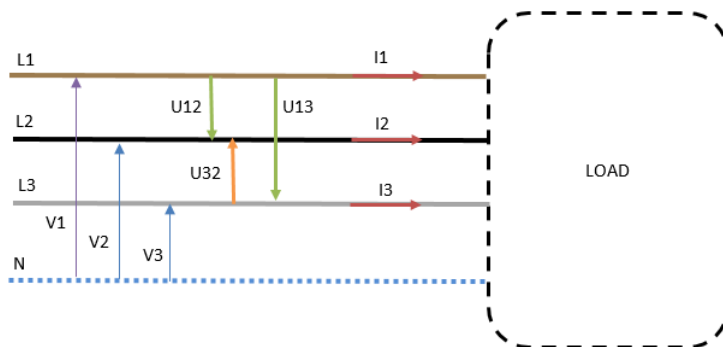
## 4.2.2 Graphical representation

If necessary, you can display the values of the 3 phases in graphic mode (over 20s):



For the voltage and angle values you can select either V or U for the Delta mode.

*As a reminder, the values of U and V:*



*And the angles :*

$$(I1, V1) = (I1, U12) - 30^\circ$$

$$(I2, V2) = (I2, U13) - 90^\circ$$

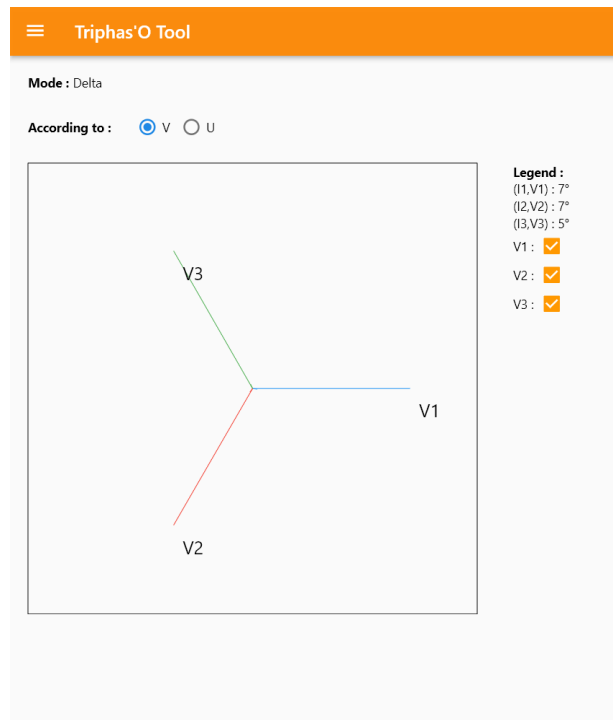
$$(I3, V3) = (I3, U32) + 30^\circ$$

### 4.2.3 Fresnel diagram

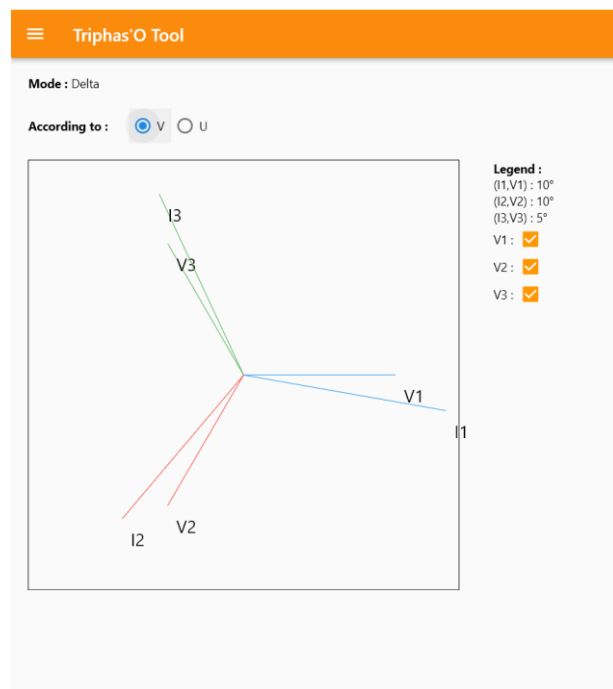
You will also find a graphical representation of the measured angles in the « Fresnel Diagram » tab.

**Warning:** If the measured current is too low, the vectors representing these intensities may not be visible.

For example, here with currents of about 4.5A:



Here with currents measured by the TOR of about 210 A:





In display with the voltage U: (Cf Reminder of the angle values).

