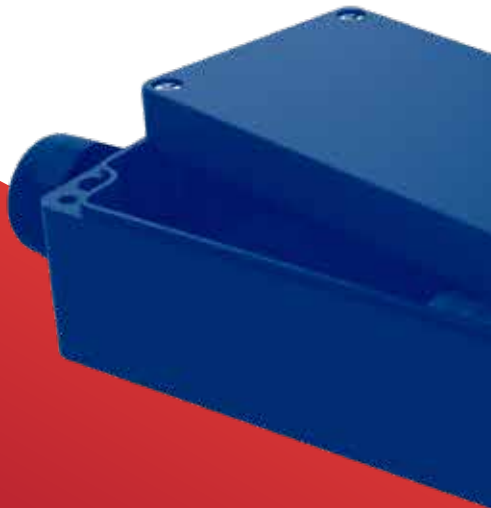




USER MANUAL

VEDO Minilog



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General Description

1

The VEDO software has been developed for the management of MINILOG and MYLOG data acquisition units.

VEDO is easy to install and to use. Thanks to its block interface, it allows to manage every aspect of data reading and acquisition in a rapid, precise and intuitive way.

VEDO enables to control all the parameters that are relative to the reading channels, data acquisition methods, possible alarms and much more. Moreover, with VEDO, it is possible to manage the acquired data both on site and on another place.

The software is provided by SIM STRUMENTI on the USB flash drive, inside the COMMUNICATION KIT or through SIM STRUMENTI website, in the DOWNLOADS page:

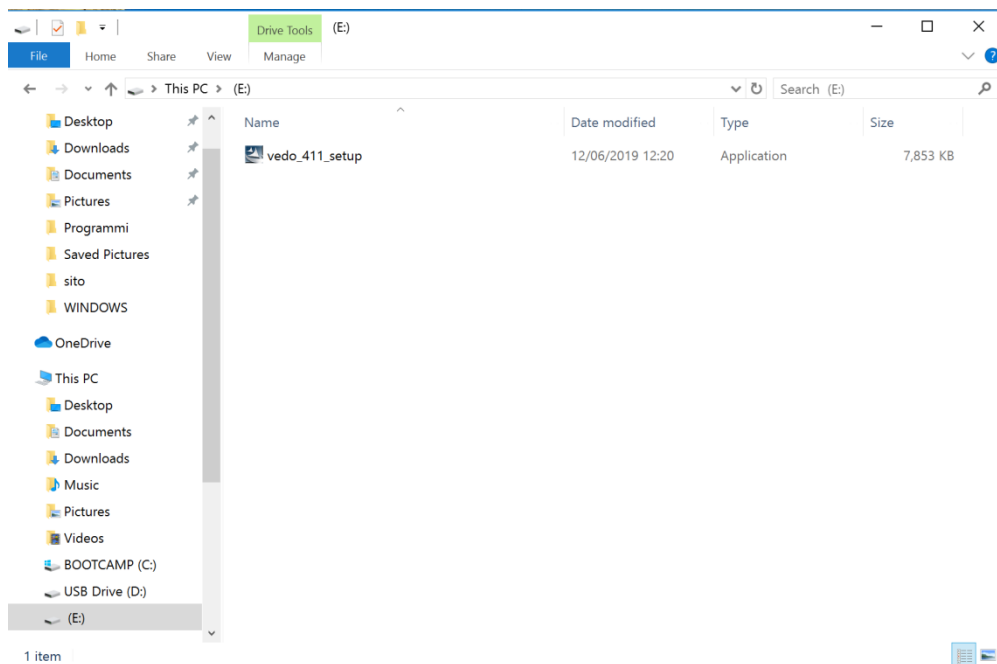
<https://www.simstrumenti.com/en/downloads/software/>



Installation

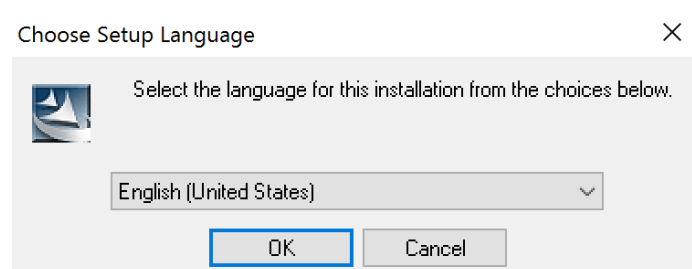
2

To start the installation, click twice on the icon  vedo_411_setup (img.1).



img.1

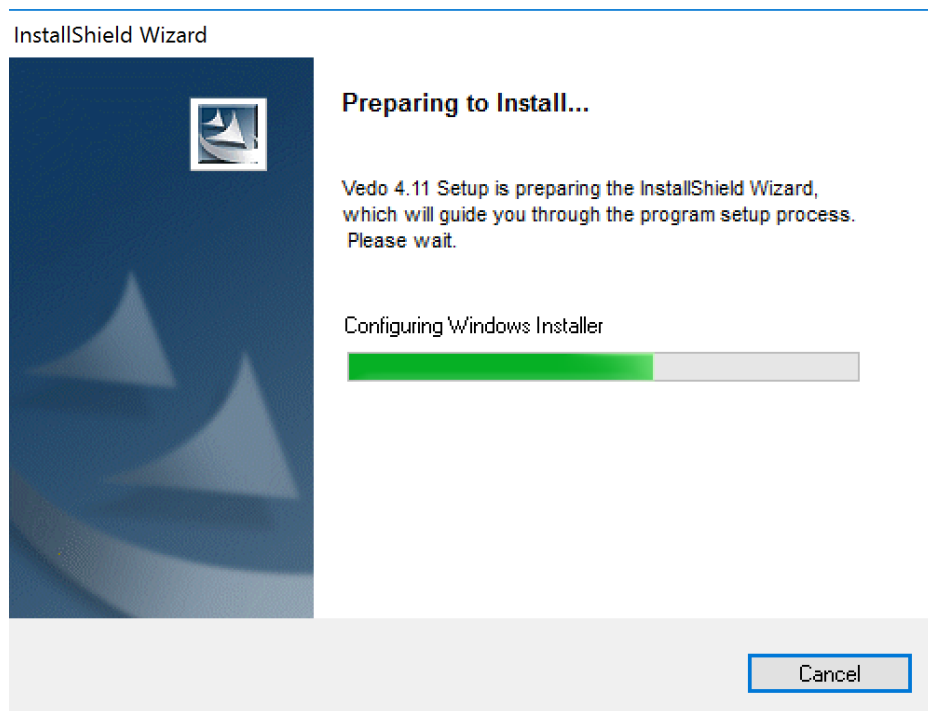
A communication window (img.2) will open, and here it will be possible to select the language for the installation. Therefore select the desired language among the available options and then click **OK** to move on.



img.2

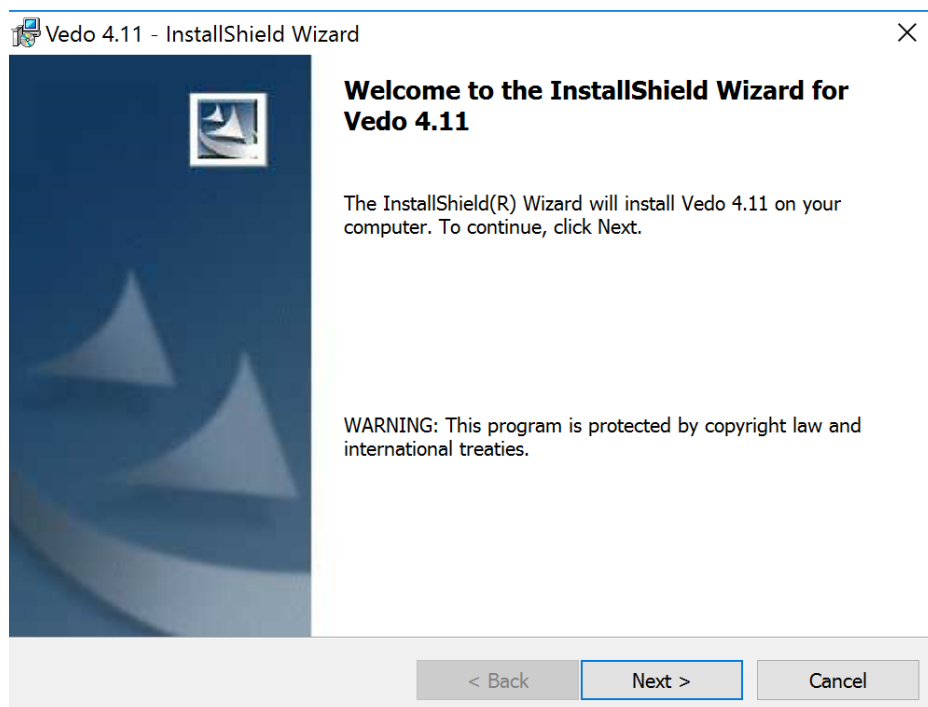


An installation window will open and there will be the need to wait that the *Preparing to install* will be completed (img.3).



img.3

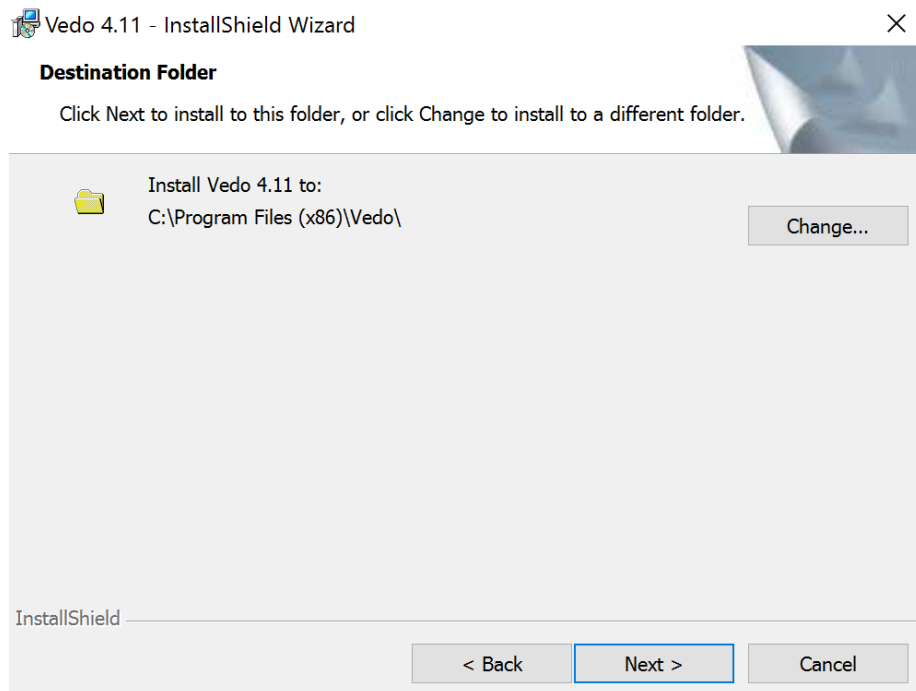
On the following window (img.4), click on **Next** to proceed with the installation, or on **Cancel** to interrupt it.



img.4

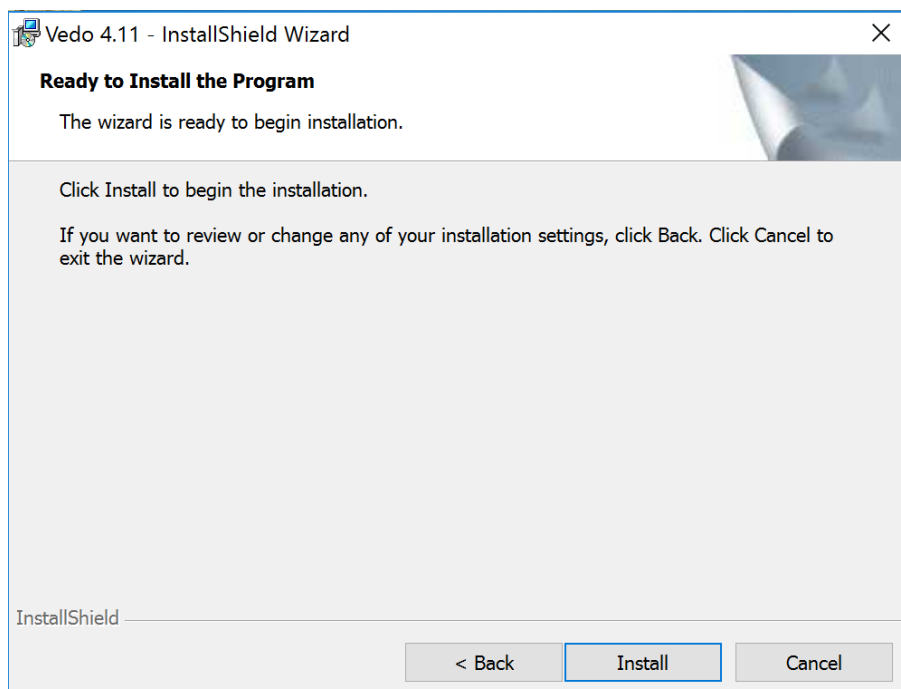


By continuing with the installation (img.5) in which it will be possible to change the destination folder for the VEDO software. To keep going, click on **Next**.



img.5

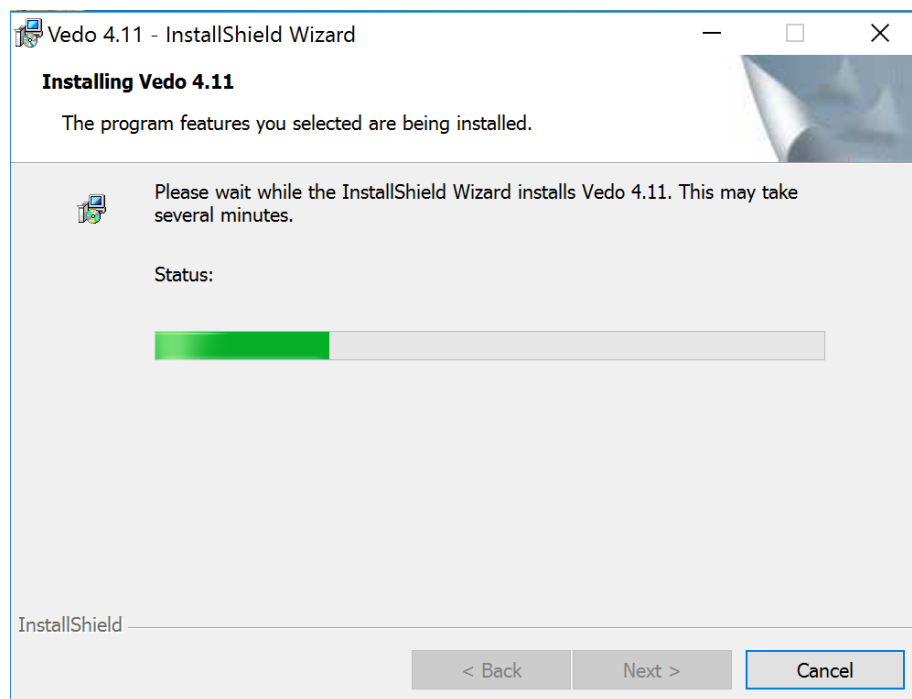
On the next window (img.6) click on **Install** to proceed with the actual installation.



img.6

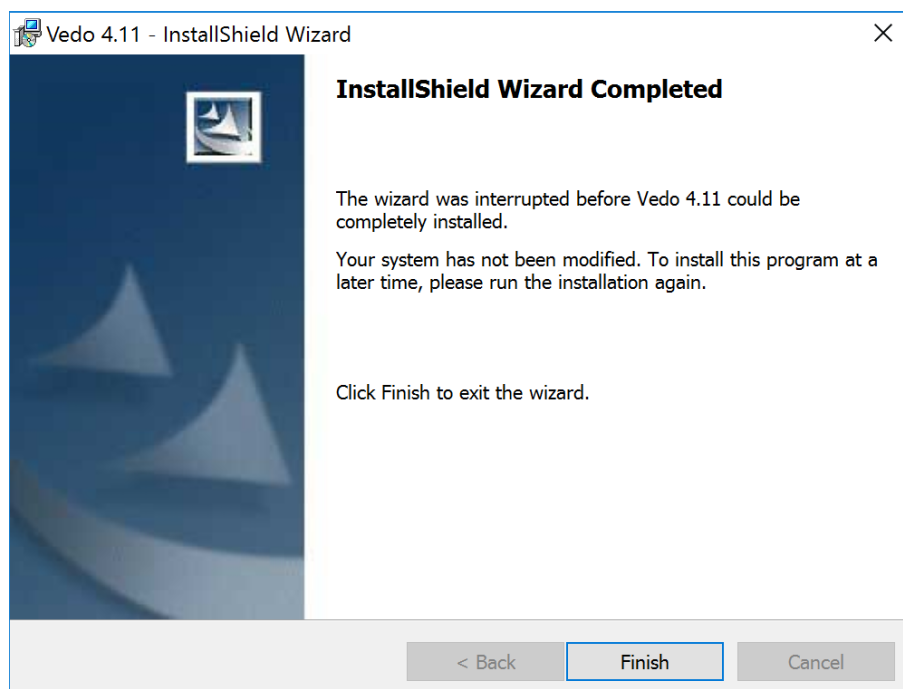


During the installation, a communication window will appear in which it will be possible to undo the operation by clicking on **Cancel**.



img.7

At the end, another window (img.8) will show up to confirm the VEDO installation. Click now on **END**.



img.8



Uninstall VEDO

3

In the case there will be the need to uninstall VEDO, there is a special program called UNINSTALL VEDO x.x.

To uninstall, proceed in the following way:

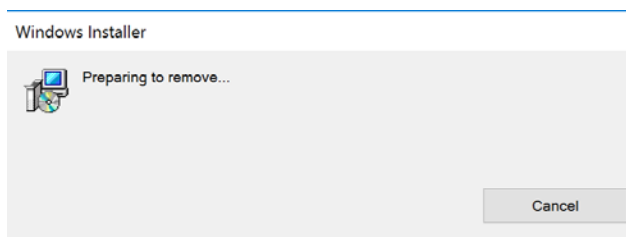
PROGRAMS ➡ VEDO ➡ UNINSTALL VEDO x.x

For the uninstall procedure of the software, a window will come up where there will be the need to confirm the uninstall process (img.9). Click on **YES** to do so.



img.9

When the next window (img.10) will appear, wait for the cancellation of all the software files.



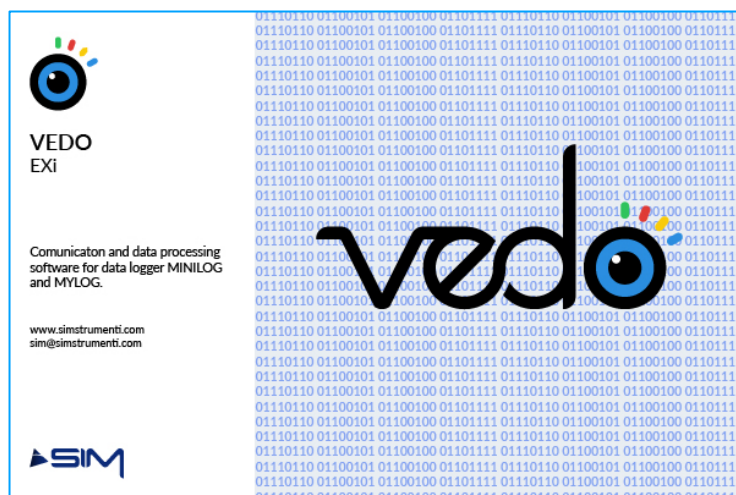
img.10



Start

4

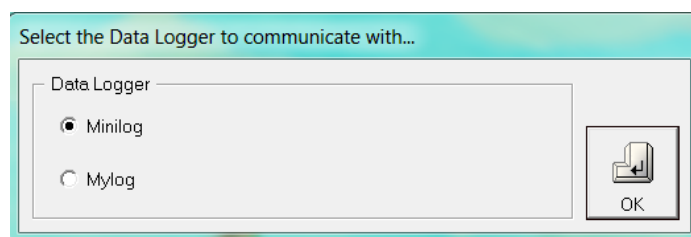
To start the VEDO program, proceed in the following way:
PROGRAMS ➡ VEDO ➡ VEDO x.x



img.11

During the loading of the program, it will be visible the boot screen (img.11) and after it will appear a window to choose the Data Logger with which the user wants to connect.

Select **Minilog** and press on the **OK** button.



img.12



VEDO x MINILOG

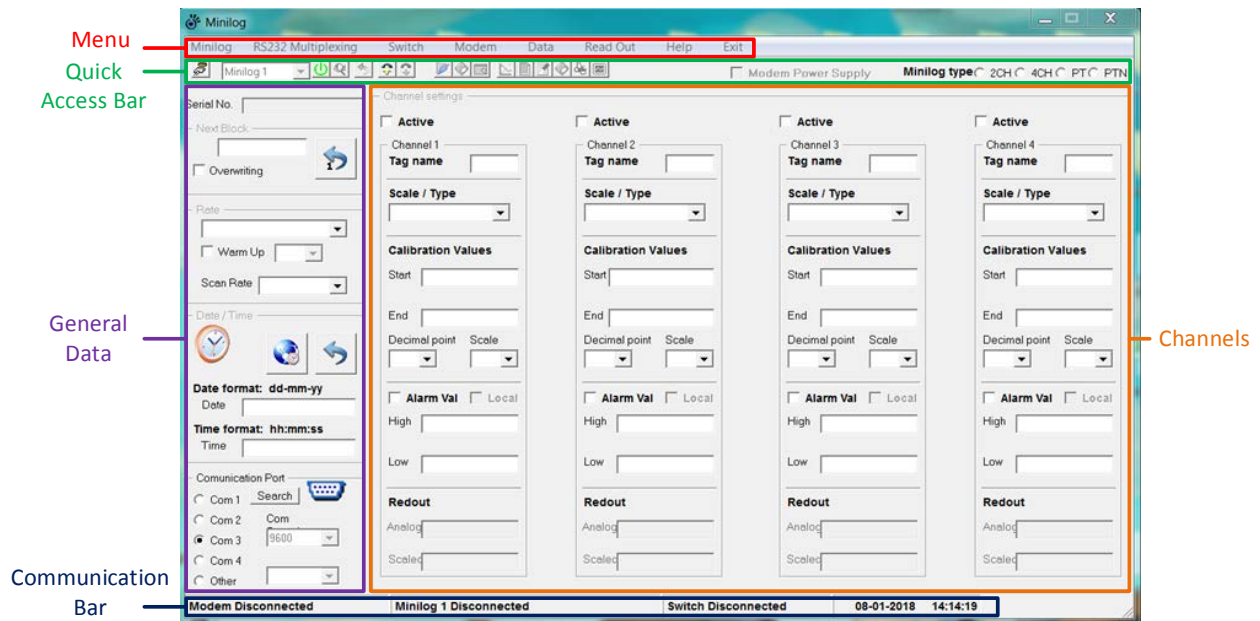
5



Main Screen

5.1

After starting the program and selecting **Minilog** as data-logger to connect to, the main screen for the MINILOG unit will appear.



img.13

VEDO main screen is divided in 5 primary sections:

- Menu
- Quick Access Bar
- Communication Bar
- General Data
- Channels



Menu

The menu bar (img.14) has the following structure:

Minilog	RS232 Multiplexing	Switch	Modem	Data	Read Out	Help	Exit
---------	--------------------	--------	-------	------	----------	------	------

img.14

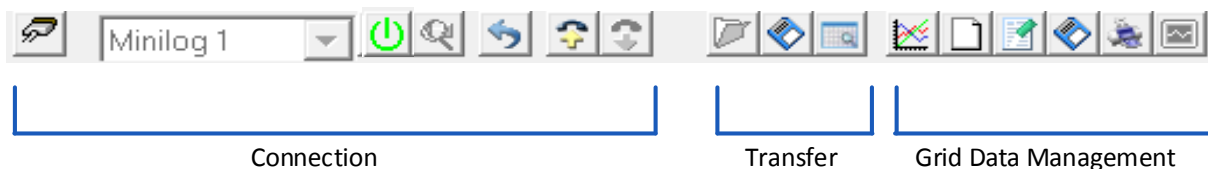
- Minilog
 - o Channel Setting
 - o Connect
 - o Disconnect
 - o Reset
 - o Limit Alarm
 - o Gain Alarm
 - o Set Start Recording
 - o Progressive Rate
- RS232 Multiplexing
 - o Setup
 - o Connect
- Switch
 - o On
 - o Off
 - o Autodetect
- Modem
 - o Setting
 - o Dial Up
 - o Hang Up
 - o SMS / Allarm
 - o FTP Data
- Data
 - o View
 - o Load
 - o Save
 - o Transfer
- Read Out
 - o Real Time Data
 - Start w/o Graph
 - Start with Graph
 - Stop
 - o Channel 1



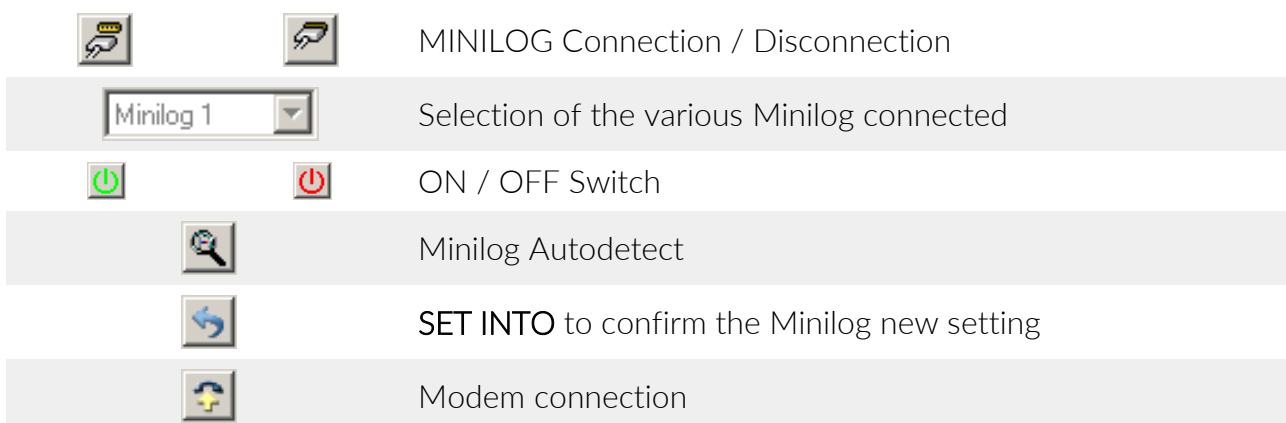
- Start
 - Stop
- o Channel 2
 - Start
 - Stop
- o Channel 3
 - Start
 - Stop
- o Channel 4
 - Start
 - Stop
- Help
 - o Contents
 - Italiano
 - English
 - o About
- Exit

Quick Access Bar

The quick access bar is divided in 3 categories: Connection, Transfer and Grid Data Management. The icons are the following:
(when you on hover the icon, the corresponding name is shown)



img.15



	Modem disconnection
	LOAD to load a data file, previously downloaded
	Direct saving of stored data
	Transfer of the data stored on the grid
	Guided graph creation
	To delete the contents of the selected rows on the grid
	To delete the selected rows in the grid
	To save data from the grid
	Print data
	Graph in real time, if the Real Time Data option is active

On the quick access bar, on the right section, there are the following information:

Minilog type	Model of the connected MINILOG
Modem Power Supply	It indicates if the modem power is connected to the sensor power supply

Communication Bar

Modem Disconnected	Minilog 1 Disconnected	Switch Disconnected	11-20-2018 18:03:56
Modem connection status	MINILOG connection status	SWITCH connection status	Date and time of the computer

img.16

The communication bar (img.16), at the bottom of the VEDO main screen, contains the following information:

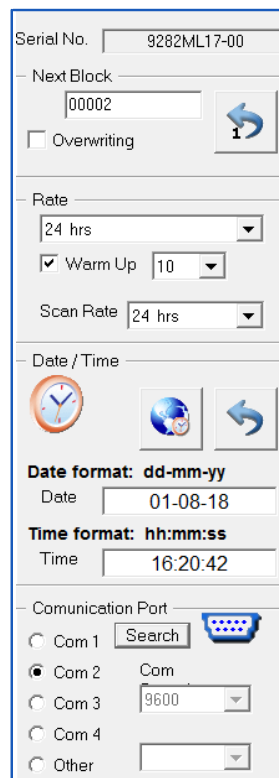
- Modem connection status
- MINILOG connection status
- SWITCH connection status
- Date and time of the computer



General Data

The first column on the left (img.17) contains all the general data, such as:

Serial No.	MINILOG serial number (the last two digits indicate the type of alarm)
Next Block	Next block of memory that will be used
Overwriting	Active / inactive cyclic storage
Rate	Settings regarding the acquisition and storage interval
Date / Time	Date and time of the control unit at the connection
Communication Port	Communication port (COM) of the computer



The screenshot shows a software window titled 'General Data' with the following sections:

- Serial No.:** 9282ML17-00
- Next Block:** 00002, with a refresh button (circular arrow) and a small '1' icon.
- Overwriting:** An unchecked checkbox.
- Rate:**
 - Rate: 24 hrs (dropdown menu)
 - ☒ Warm Up: 10 (dropdown menu)
 - Scan Rate: 24 hrs (dropdown menu)
- Date / Time:**
 - Icons for clock, globe, and refresh.
 - Date format: dd-mm-yy**
Date: 01-08-18
 - Time format: hh:mm:ss**
Time: 16:20:42
- Communication Port:**
 - Com 1: Search button and a serial port icon.
 - ☒ Com 2: Com (dropdown menu)
 - ☐ Com 3: 9600 (dropdown menu)
 - ☐ Com 4: (dropdown menu)
 - ☐ Other: (dropdown menu)

img.17



Channels

The columns related to the channels (img.18) contain the following information:

Active	Active / inactive channel
Tag name	Name to associate to the channel
Scale / Type	Analogic access related to the connected instrument
Start	Start scale value
End	End scale value
Decimal point	Decimal point (from 0 to 4)
Scale	Relative physical unity
Alarm Val	Active/ inactive alarm option (SMS)
Local	Active/ inactive local alarm option
High	High alarm threshold
Low	Low alarm threshold
Readout Analog	During the real-time reading, it shows the value of the analog output
Readout Scaled	During the real-time reading, it shows the value in the set scale

Channel settings

☒ **Active**

Channel 1

Tag name CH1

Scale / Type
0...+20 mA

Calibration Values

Start +0.0000

End +2.0000

Decimal point 4 Scale V

☐ **Alarm Val** ☐ **Local**

High +2.0000

Low +0.0000

Redout

Analog

Scaled

img.18



Connection and Disconnection

5.2

Before connecting, check that the USB stick is correctly installed (see the relative user manual) and that the COM port is the correct one. Also check if the connection is for:

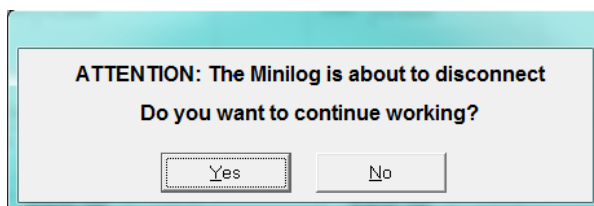
- Single MINILOG
- SWITCH



If the MINILOG or the SWITCH are connected to a modem, disconnect the serial cable from the modem to avoid interferences in the connection.

If you do not know which port to set, you can press the **Search** button in the **Communication Port** section. In this way the program will search all the active COM ports on the computer and it will find the one connected to the control unit, which will then remain as the default port.

The MINILOG and the SWITCH are equipped with an automatic shutdown system in order to reduce the battery consumption. In the Communication bar, in the **Minilog Connected** box, if you are not communicating with the MINILOG, a blue bar will gradually start to increase and then to flash, acting as an indicator of the MINILOG turning off. In case the communication is not used for about 80 seconds, a message will appear (img.19) to warn the user that the MINILOG is going to switch off and will therefore ask the user to choose between keep working or not: by pressing the **Yes** button, the control unit will remain on, pressing the **No** button it will switch off.



img.19



Once this message appears, if no button is pressed within about 8 seconds, the Minilog will automatically turn off.



Connection and Disconnection – single MINILOG

By clicking the **Connect** button  (or from the **Minilog** menu ➡ **Connect**) the program will start the connection procedure. Once the connection is made, the button will change the function to **Disconnect** and the program will show the configuration of the connected MINILOG. In the Communication bar at the bottom, the messages of successful connection (*Minilog Connected*) and disconnection (*Minilog Disconnected*) will be shown.

By pressing the **Disconnect** button  (or from the **Minilog** menu ➡ **Disconnect**) the program will start disconnecting from the control unit.



During the connection with the data-logger, the battery consumption is higher, so it is advisable to disconnect, whenever the communication with the Minilog is not necessary.

Connection and Disconnection – SWITCH

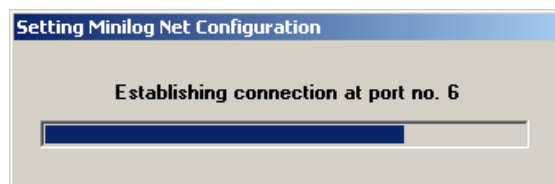
Clicking on the **Switch On** button  in the Quick Access Bar (or from the **Switch** menu ➡ **On**) it will enable the drop-down selection of the various MINILOGs. Once connected, the system configuration will appear (Minilog Net Configuration = MNC), and it will then show which MINILOGs are connected.

The **Switch On** button will change its function and it will become **Switch Off**. In the Communication Bar at the bottom, the messages of successful connection and disconnection will be shown.

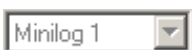
Clicking on the **Switch Off** button  in the Quick Access bar, the SWITCH will disconnect.

If some MINILOGs have been connected or disconnected from the SWITCH or the SWITCH is programmed for the first time:

click the icon  in the Quick Access Bar, the Com Switch will check all the ports and it will display / enable only those connected to a Minilog (img.19). It will also set its memory according to its new MNC, so that at the next start, it will recognize automatically the linked Minilog.



img.20

From the drop-down box  in the Quick Access Bar, it is possible to select the Minilog to connect with.



Once connected, the MINILOG will send all the data about the sensor and system settings:

- Related to the system
 - MINILOG serial number
 - Type of connected MINILOG
 - Modem power supply (if fed continuously or only during reading)
 - Memory status (Next Block and Overwriting)
 - Acquisition intervals (Rate, Scan Rate)
 - Date and time of the control unit
- Related to the sensors
 - active or inactive channel
 - Tag name
 - Scale
 - Calibration values
 - Decimal point
 - Physical scale
 - Alarms

It is possible to modify all the data related to the system settings (except the serial number and the type of MINILOG) and also the sensors. To make the desired changes on the MINILOG, click the **Set Into** icon  to confirm them.

System

Serial No. – The two digits after the dash indicate the type of selected alarm.
Ex: 9340ML68-XX (Limit or Gain Alarm)

Minilog Type – MINILOG model: 2-channel **ML-2CH** (no longer in production), 4-channel **ML-4CH**, **ML-PT** Rain gauge and temperature, **ML-PTN** 32bit pulse counter.

Modem Power Supply – If the box is checked and the modem is correctly connected to the MINILOG terminal board, the modem will switch on only just when the channels are read and it will switch off after sending the data to the site and / or sending messages from the alarm via SMS.



Next Block – It indicates the next block number that will be used (max 8000); each block contains: date, time, Ch1, Ch2, Ch3, Ch4.

By checking the **Overwriting** box, the data-logger (once that the last block of memory (8000) has been reached) will begin to overwrite the data starting from block number 1. Otherwise, if the box is not checked, the data-logger will block at block 8000.

To delete the data, click on the icon  and then on the Quick Access bar, click on the **Set Into** icon  to confirm. In this way, only the counter will be reset and, in case of error, the data that has not been overwritten will still be recoverable.

To edit the block number, just write the desired number in the **Next Block** text box and click on the **Set Into** icon  to confirm.

Date – Time

When connected, the data-logger will display the date and time of its system. By clicking the

button  the date and time of the computer in use will appear in the relative text boxes. To edit the date and time of the data-logger, enter the data manually in the appropriate text boxes or use the date and time of the system.

To update the data-logger, in the Date / Time section click the button  to confirm.

Minilog Channel

N.B. For mod. ML-PT go to [step 5.7](#) and for mod.ML-PTN go to [step 5.8](#).

Active - by checking the box, the channel will be read and the data stored.

Tag name - name (max 5 characters) with which the channel / sensor can be identified

Scale / Type - select from the drop-down menu the output (signal) related to the instrument connected to that channel. There are 11 different scales available (Table 1).

SIM STRUMENTI provides for each instrument a calibration sheet where the output is indicated, Moreover, if the instrument is supplied with the MINILOG control unit, the setting will already be preset.

Table 1	
1	-2...+2V
2	0...+2V
3	-1...+1V
4	-200...+200mV
5	0...+200mV



6	-100...+100mV
7	-20...+20mV
8	0...+20mV
9	-10...+10mV
10	0...+20mA
11	+4...+20mA

Calibration Values - values expressed in physical quantity, in order to download the readings acquired by the MINILOG directly into physical units.

- **Start** - enter the physical quantity relative to the zero value of the instrument
- **End** - enter the physical quantity relative to the full scale of the instrument.



When entering the Start and End data, take into account the chosen scale (see the examples below)

Decimal Point - amount of digits after the comma/point, which will have the data downloaded from the data-logger. In total the MINILOG stores up to a maximum of 5 digits. To set this, select the desired option from the drop-down menu: 0 to 4.

Scale - physical unit that will have the reading processed and downloaded by the MINILOG. To set, select the desired one from the drop-down menu.

Ex.1

For a 0-6 bar pressure sensor with 4-20mA output, enter the following data:

Scale / Type	+4...+20mA
Calibration Values	
Start	+000.00
End	+006.00
Decimal Point	2
Scale	bar

N.B.

- The values of Start and End depend on the fact that we have chosen only 2 decimal points.
- There is no need to insert the zeros before the Start/ End value (+006.00), the control unit inserts them automatically.



Ex.2

In this example we will also take into account the chosen scale: **Scale / Type**.

For a 1000KN load cell , with a 2mV / V output and that it is powered at 5V, the full scale output (1000KN) would be 10mV, so if we chose the scale "-20 ... + 20mV", we should calculate the virtual value in KN that corresponds to -20mV (*Start*) and + 20mV (*End*):

$$\begin{aligned}10\text{mV} &= 1000\text{KN} \\ \text{multiply by 2 the value of 10mV to get to 20mV of the scale} \\ 2 \times 10\text{mV} &= 2 \times 1000\text{KN} \\ 20\text{mV} &= 2000\text{KN}\end{aligned}$$

In this case at + 20mV we would have 2000KN

Although the instrument has as a scale start 0mV (= 0 KN), we should consider that the chosen scale starts at -20mV, so:

$$\begin{aligned}20\text{mV} &= 2000\text{KN} \\ \text{multiply by -1 the value of 20mV to arrive at -20mV on the scale} \\ -1 \times 20\text{mV} &= -1 \times 2000\text{KN} \\ -20\text{mV} &= -2000\text{KN}\end{aligned}$$

In this case, at -20mV we would have -2000KN, so the values to insert would be:

Scale / Type	-20...+20mV
Calibration Values	
Start	-2000.0
End	+2000.0
Decimal Point	1
Scale	KN



VEDO provides the possibility of: connecting remotely via a GSM modem and / or sending data via FTP with a GSM / GPRS modem.

To send data via FTP, it is sufficient to:

- Connect to the MINIOLOG a modem mod. MDS-FTP provided by SIM STRUMENTI
- Have a FTP address where to send data
- Fill the FTP Data window correctly (img.21) in VEDO.

The screenshot shows the 'FTP Data' configuration window. It is divided into three main panels. The 'Data' panel on the left contains two radio button options: 'Always' and 'During SMS data is not sent'. The 'Save' panel in the middle contains three radio button options: 'Never', 'Reading Rate', and 'Scan Rate'. The 'Site information' panel on the right contains four text input fields labeled 'FTP Site:', 'Username:', 'Password:', and 'Folder:'. At the bottom of the window, there is a 'Provider:' text input field, an 'Enable Get:' checkbox, and two buttons labeled 'Get' and 'Set' with circular arrows.

img.21

The FTP Data window has the following structure:

- **Data**
 - o **Always** – MINIOLOG will always send data to the site even in case of alarm
 - o **During SMS data is not sent** – MINIOLOG will not send data to the site in case of alarm
- **Save**
 - o **Never** – MINIOLOG will never send data to the server
 - o **Reading Rate** – MINIOLOG will send data only during the Reading Rate procedure (reading and saving data)

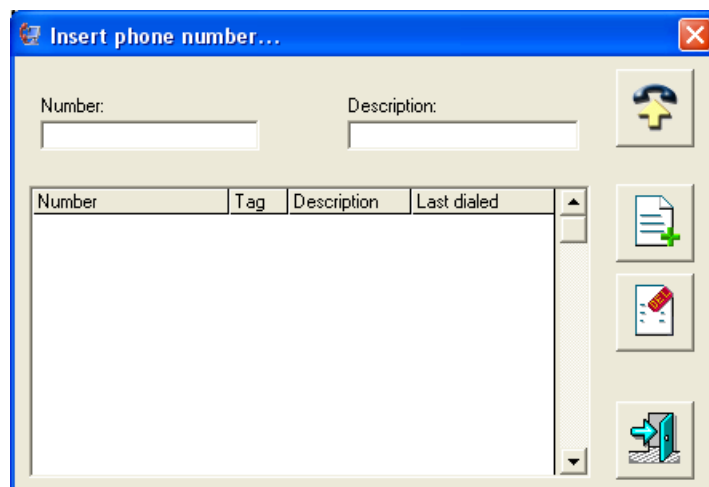


- o **Scan Rate** – In case of alarm, the MINILOG will send the data with the frequency set in the Scan Rate box
- **Provider** – The APN address related to the SIM card (e.g. for TIM: ibox.tim.it, for Vodafone: web.omnitel.it)
- **Site information**
 - o **FTP site** – FTP address (it can also be an IP address)
 - o **Username** – Credential for FTP address (Username)
 - o **Password** – Credential for FTP address
 - o **Folder** – The path and the name file (N.B. file extension should be .TXT)
- **Enable Get** – For security reasons (to avoid unauthorized users to get username and password to enter the site), the **Get** button does not appear. Only those who have the password (provided by the SIM STRUMENTI), which it is different for each MINILOG, can enter it in the text box and so making the **Get** button appear.
- **Get** - to see the stored data in the MINILOG
- **Set** – to send data to the MINILOG

Remote modem connection

To connect to the MINILOG remotely proceed as follows:

- Switch on the modem (N.B. in case of a GSM modem, SIM STRUMENTI provides the MDS-BSE or an analog modem)
- Connect the modem to the computer (verifying that the COM port is correct)
- In VEDO select from the menu **Modem > Dial Up** or click on the icon  from the Quick Access Bar.



img.22

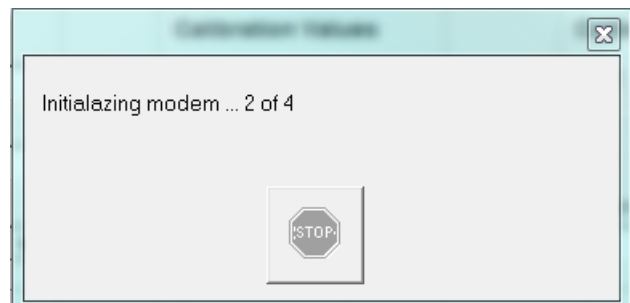


- The **Insert phone number** window will open (img.22). Double click on the desired number and then press the button  to connect to the modem. If the number does not appear on the list, proceed as follows:
 - - Enter the phone number in the **Number** text box, enter an identifier in the **Description** box and press the key  to save it.

N.B. To delete a phone number from the list, click on the number by highlighting it and then press the button 

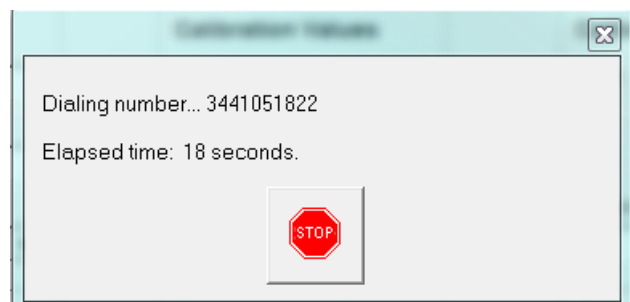
- By pressing the button , the program will start the modem initialization procedure (img.23), then it will dial the entered number (img.24) and it will establish the communication with the remote modem (img.25). Furthermore, the first 4 numbers related to the serial number of the MINILOG, the date and time of the last connection will be stored in the **Insert phone number** window.

1st phase: the program sets up the modem correctly



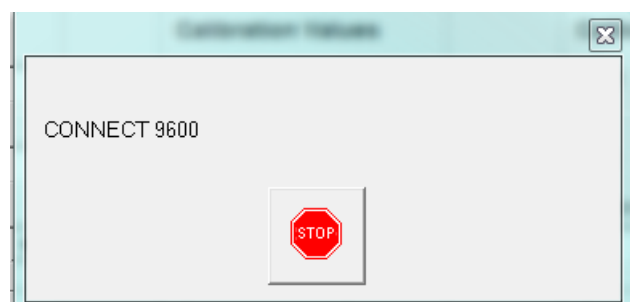
img.23

2nd phase: the program is composing the number (normally the positive response of the remote modem comes within 20-30Sec.)



img.24

3rd phase: the confirm of the successful connection



img.25



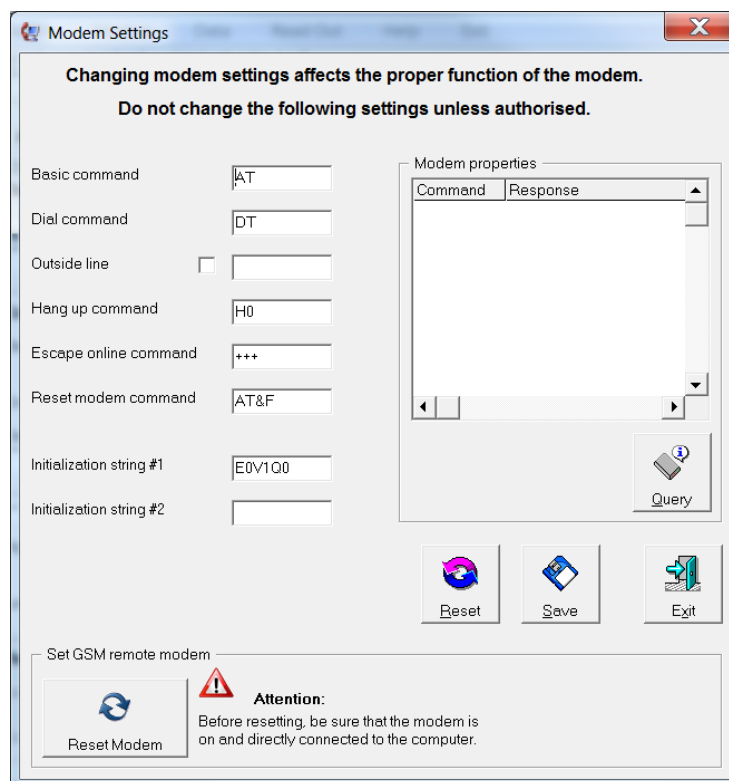
Once connected, the communication will be the same of the cable connection.

When all operations have been completed, before disconnecting the modem, check that MINIOLOG and SWITCH are not connected (see the Communication bar at the bottom of the main screen). Then, from the **Modem** menu, select **Hang Up** or click on the icon  from the Quick Access Bar to disconnect the modem and close the communication.

N.B. At the bottom of the Communication bar, check that the modem is actually disconnected, giving the *Modem Disconnected* message.

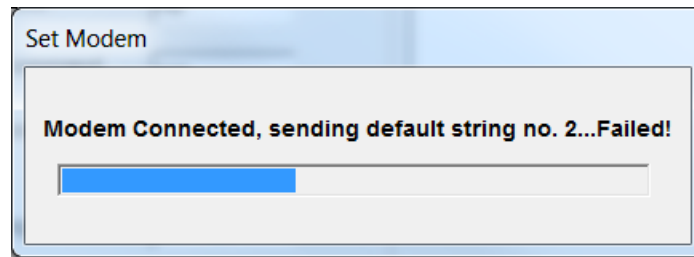
The GSM modem is supplied by the already programmed SIM STRUMENTI, ready to be installed remotely; if necessary, it is possible to reset it by proceeding as follows:

- Connect the modem to the computer
- From the **Modem** menu on the VEDO main screen, select **Setting**
- In the window that appears (img.26) click on the **Reset Modem** button
- VEDO will reset the modem and a window will appear (img.27) to communicate the success / failure of the reset performed.



img.26





img.27

The modem can have continuous power supply or it will be powered by the MINILOG only during the readings, in this way there will be a considerable energy saving, but the control unit will not be able to be interrogated by an external modem. For the connection, see the MINILOG user manual.

Alarms

N.B. For mod. ML-PT go to [step 5.7](#) and for mod.ML-PTN go to [step 5.8](#).

The alarms in the MINILOG can be of two types: **Limit alarm** or **Gain alarm**. These can then be remote or local. In addition, an **Alarm Velocity** speed alarm is also provided.

Limit alarm – In this case the minimum and maximum values need to be set so that the sensor can oscillate in between without that the alarm procedure is triggered.

Ex. Given a 50.00mm displacement sensor with a reading of 20.00mm, we could insert the **High** limit at 40.00mm while the **Low** limit at 15.00mm. In this way the sensor can oscillate between 15.00 and 40.00mm without triggering the alarm.

Gain alarm – In this case, instead, an alarm and a pre-alarm are provided. The sensor can oscillate between absolute value, which depends on the stored reading, as a zero value. The **Low** value is the pre-alarm value while the **High** one is the alarm value.

To memorize the zero values for which the MINILOG will carry out the comparison, proceed as follows:

Read out menu > Zero Read for Alarm

Ex. Given a 50.00mm displacement sensor with a reading of 20.00mm, we could enter the 5.00mm value of **Low** pre-alarm while inserting the 10.00mm value as **High** alarm. In this way the sensor can oscillate to ± 5.00 mm (between 15.00 and 25.00mm) before the pre-alarm is triggered and to ± 10.00 mm (between 10.00 and 30.00mm) before the alarm is triggered.

Alarm Velocity – In many cases an alarm is required to control the movement over time.



For example during a landslide, even though the instruments have not reached the threshold of the alarm set yet, it is important to receive the message when there is an acceleration of the movement.

The MINILOG is supplied by default with the **Limit alarm** option, but it is possible to change the type of alarm by selecting the **Gain alarm** item from the **Minilog** menu. In the **Serial No.** box of the VEDO main screen, two digits will be added to the serial number as an indication for which alarm is set: **-00** for **Limit** alarm and **-99** for **Gain** alarm.

To configure the alarm, connect the **Alarm Val** box relating to the channel to be set and enter the values for **High** and **Low**. If a local alarm device (e.g. siren, semaphore, etc.) is connected to the channel, also check the **Local** box for the same channel.

If only **Alarm Val** is checked the MINILOG will send an SMS message via modem to the numbers entered in the **SMS / Alarm** window (img.29).

N.B. In the MINILOG the High value has to be at least one digit lower than the calibration End value and the Low value has to be at least one digit higher than the calibration Start value. (e.g. with a calibration end value of 50.00, the high value of the alarm can just be from 49.99 down).

To insert the **Alarm Velocity** alarm, proceed as follows:

- Select the **Alarm Velocity** option from the **Minilog** menu

img.28

- On the window that appeared (img.28), in the **Alarm Values** section, enter the alarm threshold values for each channel without points or commas (ex. for 1mm with two decimal points enter the value 100)
- For channels that do not require an alarm, enter a high value (for example 20000)
- In the **Rate** section, among the available options, choose the desired time interval related to the set thresholds. For example, choosing 1 hour for a 1mm threshold



(1mm / h), the alarm will sound if this movement (1mm) will occur in the range of set time (1 hour)..

- In the **Text Message** section, it is possible to write the message (SMS) that the modem will send in case of alarm, with a maximum of 32 characters
- Press the **Set** button to send the data to the MINIOLOG

The **Get** button is used to view the data stored in the MINIOLOG

The **Clear** key is used to delete the data on the window (N.B. does not delete those data already stored inside the MINIOLOG)

The **Exit** button is used to close the window (img.28).

N.B. The speed alarm will work only if the Alarm Val box is checked and it will send the message to the numbers entered in the SMS / Alarm window

To send messages, fill the **SMS / Alarm** window (img.29) which you can get to from the **Modem** menu

The screenshot shows a software window titled "SMS / Alarm". It is divided into three main sections:

- Phone Numbers:** A table with 6 rows, each with a "Pos." column (1-6) and a "Phone Number" column. Below the table, a note states: "The number must be inserted without '00' in the prefix but with '+' and with no spaces. Ex: +393351234567".
- Alarm Messages:** Four text input fields labeled "Main Message:", "Message CH 1:", "Message CH 2:", and "Message CH 3:". Each field has a placeholder text "Enter your message".
- Rate of messages sent:** A section containing a checkbox "Send data via SMS", a dropdown menu "Every" with a downward arrow, and a label "Set additional no. of SMS to be sent in case of alarm (Default 1 message)" with a dropdown menu showing "0".

At the bottom right, there are three buttons: "Clear" (with a document icon), "Get" (with a right-pointing arrow), and "Set" (with a left-pointing arrow).

img.29

- In the **Phone Numbers** section you can enter up to 6 phone numbers to send the alarm messages
(insert the prefix + the international one relative to the country, ex. for Italy +39)
- In the **Alarm Messages** section:
 - Enter an identification message related to the control unit in the **Main Message** space
 - In the boxes relating to the **Message CH 1...** channels, enter a message that identifies the instrument related to the channel.



- In the **Set additional no. of SMS...** section, select the number of alarm messages that the control unit will send. (ex. if we select **1**, the control unit will send two messages for the same alarm)
- In the **Rate of messages sent** section, select the frequency with which the modem will send SMS messages along with the readings (N.B. this option does not depend on the alarm)
- After completing the data entry, press the **Set** button to send them to the MINILOG
- The **Get** button is used to view the data stored in the MINILOG
- The **Clear** button is used to delete data on the window (N.B. does not delete data stored inside the MINILOG)

Acquisition

The MINILOG is equipped with two types of automatic acquisition: **Rate** and **Scan Rate** (see [img.17](#)). It can also be used as a data acquisition card in real time (**Real Time Data**) with which it is possible to view data on the computer (both in numerical and graphic format) and store them only via the computer itself.

The MINILOG mod. ML-4CHs has two additional acquisition options: **Progressive Rate** and **Start Recording**.

Rate – Data acquisition interval, in which the MINILOG performs the reading of the channels, checks possible alarms and stores the data.

The minimum interval is 10 seconds, the maximum interval is 24 hours. With the frequencies of 10, 20 or 30 seconds, the MINILOG is always on, while from the interval of 1 minute upwards, the MINILOG is switched off when the procedure is finished (see Table 2).

Table 2			
Interval	Shutdown	Rate	Scan Rate
10 Sec	NO	●	●
20 Sec	NO	●	●
30 Sec	NO	●	●
1 Min	SI	●	●
2 Min	SI	●	●
5 Min	SI	●	●
10 Min	SI	●	●
30 Min	SI	●	●
1 H	SI	●	●
2 H	SI	●	●
4 H	SI	●	●
6 H	SI	●	●
12 H	SI	●	●
24 H	SI	●	●



Scan Rate – Interval in which the MINIOLOG performs the reading of the channels and in case of alarm, it proceeds with the activation of the local alarm, the sending of alarm SMS messages and, if optioned, also the sending of data via FTP. Otherwise the MINIOLOG switches off (N.B. this mode should only be used in case of active alarm system, in order not to acquire unnecessary data; if you do not use the alarm option, leave the Scan Rate mode at 24 hours).

Real Time Data - In this mode the control unit functions as a memory card without memory. There are two available options: **w/o Graph** (without graph) and **With Graph** (with graph).

To use **Real Time Data** mode, proceed as follows:

- From the **Data** menu select the **View** option.
- A window will appear with a grid (img.30): in the **Channels** section, at the bottom right, check the boxes of the channels you want to read.
- From the menu **Read out** select the **Real Time Data** and then choose an option between **Start W/o Graph** or **Start with Graph**:
 - Once chosen the **Start w/o Graph** option, a window will appear (img.31). Select the desired acquisition frequency and then press the **OK** button to start the acquisition.
 - Once chosen the **Start With Graph** option, the dialog boxes relative to the graphs will appear (see img.38, 39, 40, 41) and then the dialogue window as well (img. 31). Now select the desired acquisition frequency and then press on the **OK** button to start the acquisition.
- When the test is finished, from the **Read out** menu, choose the **Real Time Data** option and then the **Stop** one to interrupt the acquisition. (N.B. do not close the program before saving the data)
- Save the data by clicking on the icon  **Save data in grid to file**, a dialog window will appear where you will have to write the file name and the destination folder (N.B. do not write the extension in the file name, because VEDO assigns the extension TXT automatically).
- To return to the start page, choose the **Channel Setting** option from the **Minilog** menu

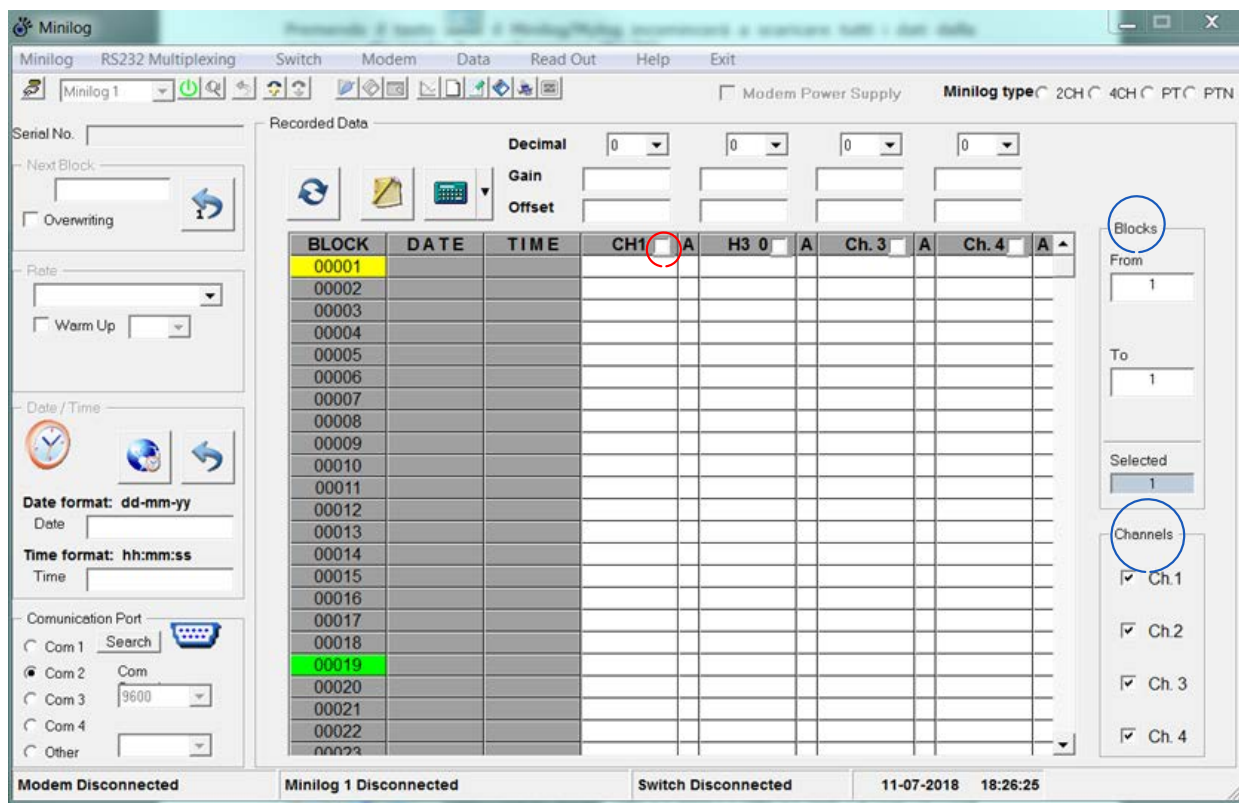


The saved blocks are selected in the **Blocks** section of the window with the grid (img.30): the program will save the data, from the block written in the **From** box, in the block written in the **To** box (only the channels selected in the **Channels** section).

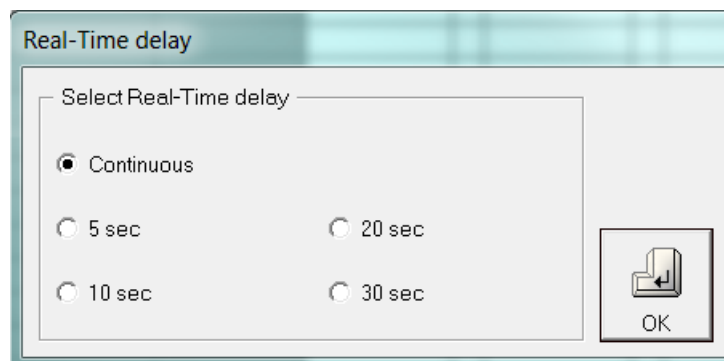
The blocks can be edited manually by writing the desired blocks in the **From** and **To** boxes and then clicking **ENTER** on the keyboard.

The **Warm Up** option (see img.17) sets the time in which the sensor, to stabilize itself, is powered by the MINIOLOG before being read. Ex. Ultrasonic sensors need 10-15 sec. from the switch on, before their conditioning electronics is stabilized.





img.30



img.31

For the acquisition, besides the **Rate** option that it is at a fixed interval, it is possible to use the **Progressive Rate** option in the **Minilog** menu. Choosing this option, a window will appear (img.32) where we can select two different intervals for the desired duration, then the MINILOG will continue to acquire with the frequency chosen in the **Rate**.

To enable the **Progressive Rate** option, in the window (img.32) select **Enable**, to disable select **Disabled**. By pressing the **Set** button, the settings will be sent to the MINILOG.



Ex.

First Rate 10 sec. for the duration of 1 hour

Second Rate 1 min for the duration of 3 hours

Subsequently the control unit will continue to acquire with the 6 hour frequency chosen in the **Rate**.



By choosing this option during the first intervals, the **Scan Rate** frequency and the alarms will not be active.

img.32

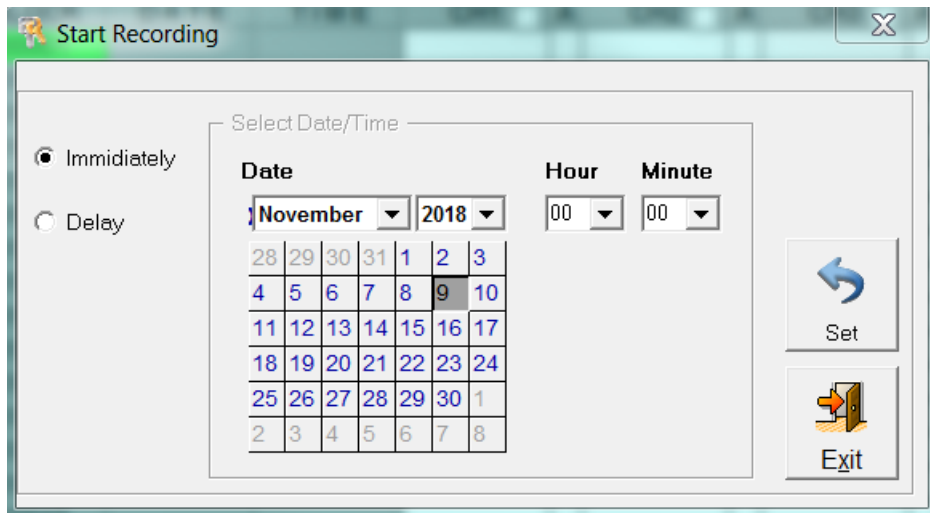
Set Start Recording – Mode to set the control unit in the office and to start the acquisition only a week later, when it will be installed on site.

To enable the option, proceed as follows:

(N.B. the MINILOG must be connected in order to set date and time)

- From the **Minilog** menu select the **Set Start Recording** option.
- A window will appear (img.33), on the left select **Delay** to enable the option or **Immediately** to disable it.
- Then set the date (**Date**) and the time (**Hour / Minute**) in which you want to start the data acquisition.
- Press **Set** to confirm, then press **Exit** to exit the window.





img.33

Manual reading of the channels - To check the instruments it is possible to read a single channel, verifying both the analog output and the scaled output in physical unit. Proceed as follows:

- From the **Read Out** menu select one of the channels (for example **Channel 1**).
- From the available options, press **Start** to activate the channel.
- In the activated channel column (in this case **Channel 1**), in the **Readout** in section below, both the analogue and the scaled value will appear.
- To stop the reading: **Read Out** menu > **Channel 1** > **Stop**.



When using the **Read Out** option, the MINILOG consumes more since it feeds all its parts and sensors.



Do not leave the MINILOG in this **Read Out** mode because, as long as it remains in this mode, the data-logger will no longer acquire data.



If you use this mode remotely via modem and the transmission will be interrupted for some reasons, you will need to restore the communication by calling back the MINILOG (see **Remote Modem Connection**, pg. 23). If the MINILOG will not answer, select the **Reset** option from the **Minilog** menu and then click on the **Connect** icon  in the Quick Access bar.



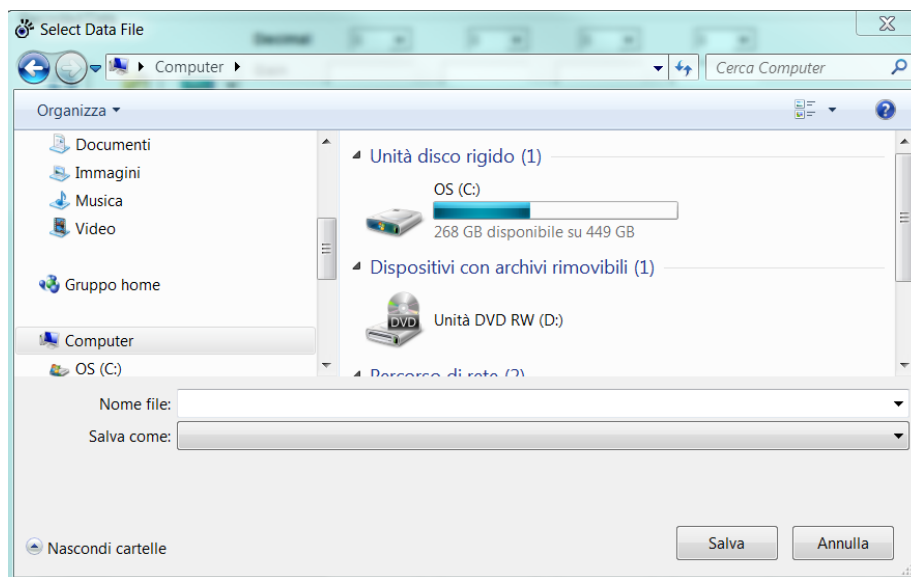
Transfer - Download Data

Transfer of on-site data can be performed in two different ways:

First method

After connecting the MINILOG, from the **Data** menu select the **Save** option or, directly from the Quick Access bar, click on the **Save** icon  in the *Transfer* section (see [img.15](#)). In the open window you can:

- write the name with which you want to save the file (N.B. do not write the extension in the file name, because VEDO assigns the TXT extension automatically)
- select the folder in which you want to save the file



img.34

Second method

After connecting the MINILOG, from the **Data** menu select the **Transfer** option or click on the **Transfer data to grid** icon  on the Quick Access bar.

The data-logger will send data from block 1 to the last block stored in the grid. A communication window will appear ([img.35](#)) and, at the end of the operation, the program will fill the grid with the downloaded data.



img.35



To save the data, from the Quick Access toolbar click on the **Save data in grid to file** icon



in the *Grid Data Management* section (see [img.15](#)).

In the open window you can:

- write the name with which you want to save the file (N.B. do not write the extension in the file name, because VEDO assigns the TXT extension automatically)
- select the folder in which you want to save the file

Selection among the various blocks

Only part of the blocks can be downloaded, saved or processed.

To transfer only a certain number of blocks, proceed as follows:

- From the **Date** menu choose the **View** option
- Enter the starting block number in the **From** box and press **ENTER** on the keyboard
- Enter the number of the final block in the **To** box and press **ENTER** on the keyboard

Or:

- From the **Date** menu choose the **View** option
- From the **BLOCK** column select a range of blocks by holding down the left mouse button, dragging the cursor from the initial block to the final one.

The **Selected** box will be automatically updated with the number of blocks inserted.

In the grid the first block will be marked in red while the final one in green.

To process the data in the grid, you can use the following options:

- It is possible to subtract a value of Zero from one or more columns, by entering a number in the **Offset** box related to the channel that has to be processed or, by



clicking on the icon, VEDO will write the value of the first line in the **Offset** box

- It is possible to multiply one or more columns by inserting a number in the **Gain** box
- By clicking on the calculator icon  all the 4 columns will be processed: if you want to process just a single channel, click on the arrow at the right of the icon to open the drop-down menu, where you can choose the channel to process.
- It is possible to change the scale by modifying the decimal point in the **Decimal** box of the channel to process
- If you deselect a channel in the **Channels** section and then you click on the icon  the data of the column relating to that channel will be erased.



- In case you want to go back to the initial numbers, click on the icon  and the software will reset the initial data even if they were processed several times.
- Only a part of the rows can be processed by inserting the desired rows in the **From** and **To** boxes.
- It is possible to delete the content in the selected lines by clicking on the Quick Access bar on the icon  or by deleting the selected lines by clicking on the Quick Access bar on the icon .



It is possible to save the processed data by clicking on the **Save data in grid to file** icon  (see [img.15](#)).

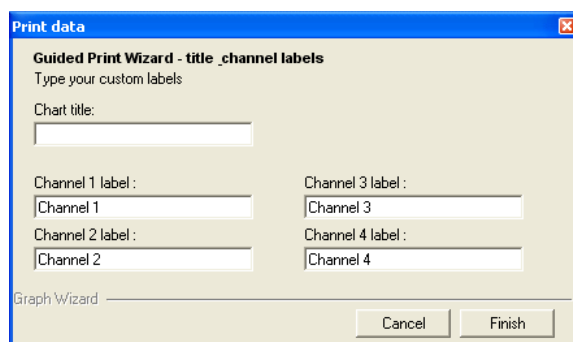
In the open window you can:

- write the name with which you want to save the file (**N.B. do not write the extension in the file name, because VEDO assigns the TXT extension automatically**)
- select the folder in which you want to save the file

To return to the start page, from the **Minilog** menu select the **Channel Setting** option.

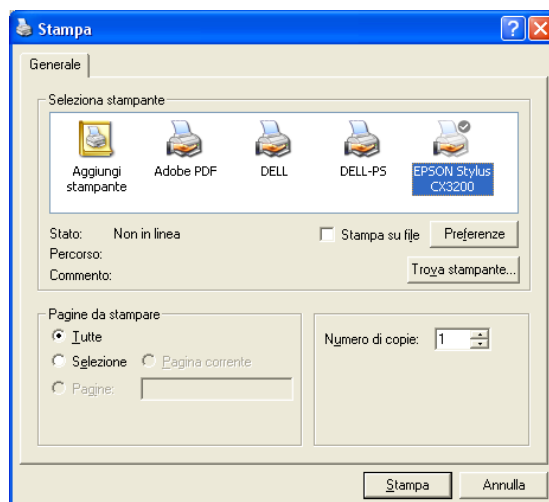
Print

In the Quick Access bar, by clicking on the icon  a window will appear ([img.36](#)) where we can: insert the title that will appear in the upper part of the sheet (**Chart title**) and modify the preset names of the various channels (**Channel 1 label, Channel 2 label** etc.).



[img.36](#)

Pressing the **Finish** button, a window will open ([img.37](#)) in which it is possible to choose the printing options.



[img.37](#)



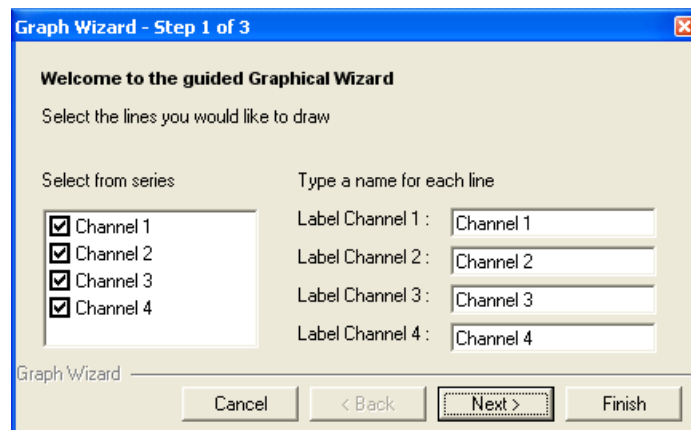
Graphs

By clicking on the icon  a window will appear for the guided creation of a graph, which is composed of three stages and in each of them you can set different parameters of the graph.

At any time the following operations are possible:

- press the **Finish** button to directly create the chart.
- press the **Cancel** button to exit the graph guided creation without running the chart.

Stage 1 - Step 1 of 3 (img.38)

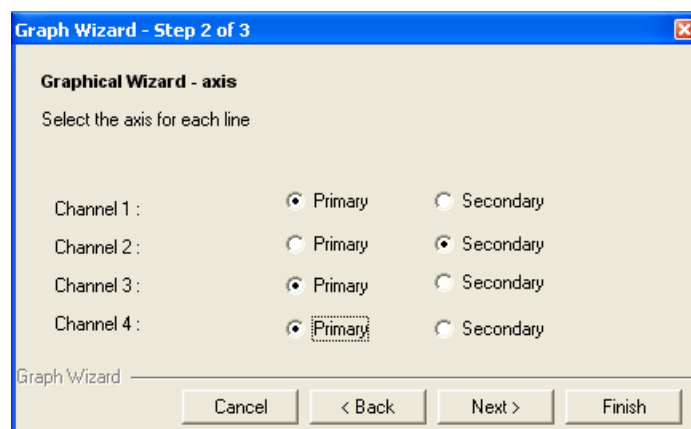


The dialog box is titled "Graph Wizard - Step 1 of 3". It contains a "Welcome to the guided Graphical Wizard" message and a prompt "Select the lines you would like to draw". Under "Select from series", there is a list box with four items: "Channel 1", "Channel 2", "Channel 3", and "Channel 4", all of which are checked. To the right, under "Type a name for each line", there are four text boxes labeled "Label Channel 1:", "Label Channel 2:", "Label Channel 3:", and "Label Channel 4:". Each text box contains the text "Channel 1", "Channel 2", "Channel 3", and "Channel 4" respectively. At the bottom, there are four buttons: "Cancel", "< Back", "Next >", and "Finish".

img.38

- By checking / unchecking the various channels, you can select the channels you want to display in the graph.
- You can change the preset name of each line/ channel in the respective text boxes that will then appear in the chart legend.

Stage 2 - Step 2 of 3 (img.39)



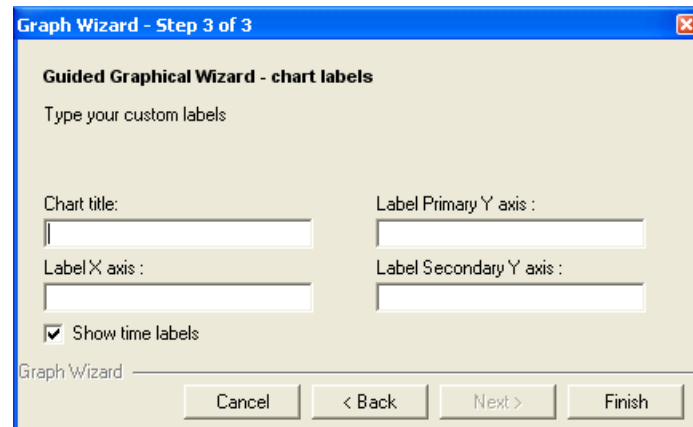
The dialog box is titled "Graph Wizard - Step 2 of 3". It contains a "Graphical Wizard - axis" message and a prompt "Select the axis for each line". There are four rows, each corresponding to a channel. Each row has a label "Channel 1:", "Channel 2:", "Channel 3:", or "Channel 4:". To the right of each label are two radio buttons: "Primary" and "Secondary". For Channel 1, Channel 3, and Channel 4, the "Primary" radio button is selected. For Channel 2, the "Secondary" radio button is selected. At the bottom, there are four buttons: "Cancel", "< Back", "Next >", and "Finish".

img.39



In the second stage of the graph guided creation, it is possible to choose, for each channel, whether the reference axis **y** is the primary or the secondary.

Stage 3 - Step 3 of 3 (img.40)



Graph Wizard - Step 3 of 3

Guided Graphical Wizard - chart labels

Type your custom labels

Chart title:

Label Primary Y axis :

Label X axis :

Label Secondary Y axis :

☒ Show time labels

Graph Wizard

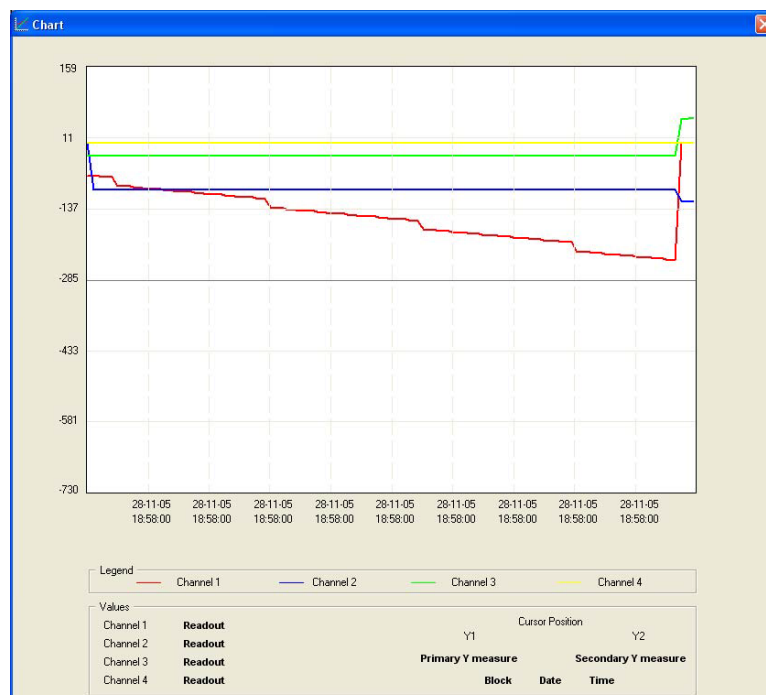
Cancel < Back Next > Finish

img.40

In the third stage window, you can insert some labels for:

- graph title (**Graph title**)
- x axis (**Label X axis**)
- primary y axis (**Label Primary Y axis**)
- if necessary, secondary y-axis (**Label Secondary Y axis**).

Press **Finish** to end the graph guided creation and so create the graph (img.41).

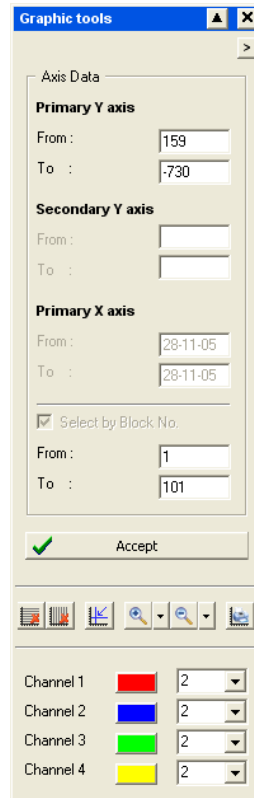


img.41



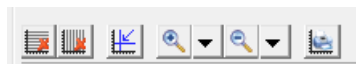
Graphic tools

After creating the chart, various tools will be available to control and manage it. The chart is equipped with an easy-to-use control panel. By pressing the **right mouse button** on the graph, a **Graphic tools** control panel will appear (img.42):



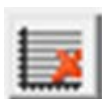
img.42

- **Axis Data** - In this section of the control panel, you can change the values of the x and y axes; press the **Accept** button to confirm the changes (N.B. If the entered data are not correct, the change will not be accepted and the values will not be replaced). In the **Select by Block No.** section, you can choose the x axis according some reference blocks: insert them in the **From** and **To** boxes.



img.43

- **Icon bar** (img.43) - There are 6 icons that can be used to check the data in the graph



Display of the horizontal grid





Display of the vertical grid



It activates a cursor that if it is moved over the graph, it shows in the **Values** section the data (channel reading, reading number, data and time) relative to the chosen point (x, y).



Plus Zoom - Click on the lens and on the graph the visual will get bigger (every single click corresponds to a zoom increase); or choose a preset value from the drop down menu



Minus Zoom - Click on the lens and on the graph the visual will get smaller (every single click corresponds to a zoom decrease); or choose a preset value from the drop down menu



Print the graph as it appears on the screen

Load

It is possible to load a previously saved file. Choose the **Load** option from the **Data** menu

or by clicking on the Quick access bar on the **Load data from file** icon  a window will appear where you can choose the file. Once the desired file has been selected, the grid will get filled with the data just uploaded.

MINILOG network

You can create a network of MINILOG, connected on 4 communication lines to a central unit. For each line, up to a maximum of 15 measuring points can be connected. Each measuring point can contain a SWITCH to which 8 MINILOG can be connected. In total the network can have up to 480 MINILOG for a total of 1920 channels.

To set all the measuring points, select the **Set Up** item from the **RS232 Multiplexing** menu. A window will appear (img.44) where we will be able to indicate each measuring point, so that they can be easily identified. To indicate a measuring point, enter the name in the desired text box.



Multiplexing RS232

RS232 Network 1		RS232 Network 2		RS232 Network 3		RS232 Network 4	
Network Name:		Network Name:		Network Name:		Network Name:	
RS232 Network 1		RS232 Network 2		RS232 Network 3		RS232 Network 4	
Section Network 1 Names:		Section Network 1 Names:		Section Network 1 Names:		Section Network 1 Names:	
1	Section1	1	Section1	1	Section1	1	Section1
2	Section2	2	Section2	2	Section2	2	Section2
3	Section3	3	Section3	3	Section3	3	Section3
4	Section4	4	Section4	4	Section4	4	Section4
5	Section5	5	Section5	5	Section5	5	Section5
6	Section6	6	Section6	6	Section6	6	Section6
7	Section7	7	Section7	7	Section7	7	Section7
8	Section8	8	Section8	8	Section8	8	Section8
9	Section9	9	Section9	9	Section9	9	Section9
10	Section10	10	Section10	10	Section10	10	Section10
11	Section11	11	Section11	11	Section11	11	Section11
12	Section12	12	Section12	12	Section12	12	Section12
13	Section13	13	Section13	13	Section13	13	Section13
14	Section14	14	Section14	14	Section14	14	Section14
15	Section15	15	Section15	15	Section15	15	Section15

img.44

RS232 Mux Connection

Select Section

Network: RS232 Network 1

Section: Section1

Reset All

Connect

Exit

img.45



Help

5.5

From the **Help** menu, select **Contents** and choose the language with which you want the manual to download to be displayed on the browser.

From the **Help** menu, select **About** to view the information about the program version and a telephone support number.

Exit

5.6

To close VEDO, click on the **X** of the program window or press the **Exit** menu. Then confirm by clicking on the **Yes** button or on the **No** one to cancel.

N.B. If the MINIOLOG or the SWITCH are still connected, the program will warn you that you have to disconnect before proceeding with the closing operation.



MINILOG

mod. ML-PT

5.7

The MINILOG mod. ML-PT has been designed to measure temperature and rainfall. This is why the setting of the instrumentation is very specific here.

Channels and Setting

- 1° The first channel is dedicated to the temperature meter mod. WE710-PT or to any PT100.
The scale is set between -20 and + 80 ° C and it cannot be changed.

The second, the third and the fourth channels are instead dedicated to the rain gauge.

- 2° The second channel must be set as follows:

Tag name - name (max 5 characters) to identify the rain gauge

Reset Counter after recording – (checked by default) if checked, every time the MINILOG stores a data, the counter will reset, otherwise the MINILOG will add the current reading with the previous ones.

Ex.

Checked - if the reading is done every hour, the MINILOG will memorize the rain relative to that time.

NOT checked - the MINILOG will add data every hour to previous readings, thus functioning as totalizer.

Conv. Value – This value is used to convert the impulses, that the MINILOG receives from the rain gauge, in millimeters of rain (by default 0.2).

Scale – Unit of measurement relative to **Conv. Value**, by default mm, but it can be modified by selecting the desired unit of measurement from the drop-down menu.

Reset – By clicking on the **Reset** icon  and then on the **Set Into** icon  the totalizer will reset.

N.B. the number of impulses between one reading and the other cannot exceed 256 (51.2mm of water). For this reason the Rate (img.17) in the General Data column must be set accordingly.



The third and the fourth channels depend on the second.

- 3° The third channel measures the rainfall of the solar day and it resets every day at 24.00.
- 4° The fourth channel measures every hour the rainfall of the last 24 hours, thus updating each reading with the data relative to the 24 hours of the last reading.

Ex. if the reading is scheduled every hour, at 12.00 the channel will give the rainfall from 12.00 of the previous day until 12.00 of the day of the last reading, while at 13.00 the channel will give the rainfall from 13.00 of the previous day until 13.00 of the day of the last reading.

Alarms

- 2° In the second channel, the mm rain alarm can be activated in units of time.
Ex. if the selected rate is 1 hour, you can enter in the High box a value in mm of rain that if exceeded it will trigger the alarm.
- 3° In the third channel you can activate the mm rain alarm of to the solar day.
- 4° In the fourth channel you can activate the mm rain alarm of the last 24 hours.

The screenshot displays the 'Channel settings' window with four channels configured. Each channel has a 'Tag name', 'Scale / Type', 'Calibration Values' (Start, End, Decimal point, Scale), 'Alarm Val' (High, Low), and 'Redout' (Analog, Scaled) sections.

- Channel 1 (Temperature):** Tag name: Temp, Scale / Type: PT 100, Start: -20.0, End: +80.0, Decimal point: 1, Scale: °C, Alarm Val: High: -0020.0, Low: -0020.0, Redout: Analog: , Scaled: .
- Channel 2 (Counter):** Tag name: Pluv, Scale / Type: Counter, Counter Properties: Reset counter after recording: , Counter Value: 0, Conv. Value: 0.2, Scale: mm, Alarm Val: High: +00000.0, Low: +00000.0, Redout: Analog: , Scaled: .
- Channel 3 (Channel 3):** Tag name: P Day, Scale / Type: , Calibration Values: Start: , End: , Decimal point: 1, Scale: mm, Alarm Val: High: +0000.0, Low: +0000.0, Redout: Analog: , Scaled: .
- Channel 4 (Channel 4):** Tag name: P 24H, Scale / Type: , Calibration Values: Start: , End: , Decimal point: 1, Scale: mm, Alarm Val: High: +0000.0, Low: +0000.0, Redout: Analog: , Scaled: .

img.46



MINILOG

mod. ML-PTN

5.8

The MINILOG mod. ML-PTN has been designed to measure impulses and to be used as a totalizer.

N.B. The third and the fourth channels cannot be used for this mode

- 1° The first channel is dedicated to the temperature meter mod. WE710-PT or to any PT100.
The scale is set between -20 and + 80 ° C and cannot be changed.
- 2° The second channel is dedicated to measure some impulses (clean contact) that can, for example, come from a flow meter and, therefore, it can measure the flow.

All the settings and the reset of the counter are the same as the ML-PT model.
Furthermore it is possible to modify the totalizer value by entering the desired value in the Counter Value box.

Channel settings

Channel 1	Channel 2	Channel 3	Channel 4
☒ Active	☒ Active	☐ Active	☐ Active
Temperature	Counter	Channel 3	Channel 4
Tag name: Temp	Tag name: Count	Tag name:	Tag name:
Scale / Type: PT100	Scale / Type: Counter	Scale / Type:	Scale / Type:
Calibration Values			
Start: -20.0	Start:	Start:	Start:
End: +80.0	End:	End:	End:
Decimal point: 1	Decimal point: 1	Decimal point: 1	Decimal point: 1
Scale: °C	Scale: imp	Scale: °C	Scale: °C
Alarm Values			
High: -0020.0	High: +00000.	High: +0000.0	High: +0000.0
Low: -0020.0	Low: +00000.	Low: +0000.0	Low: +0000.0
Redout			
Analog:	Analog:	Analog:	Analog:
Scaled:	Scaled:	Scaled:	Scaled:

img.47



NOTES

[illegible]

NOTES

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