

INCREMENTAL READOUT UNIT ESTRUDAT

User manual

SIN

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ESTRUDAT – User Manual

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INTRODUCTION

The data acquisition system ESTRUDAT is a compact electronic device used to measure and record data from the incremental probe DS850.

It allows to record up to 30 readings with up to 200 meters each tube.

With the readout unit are provided the following connection cables:

- ▶ **power supply cable to recharge the internal batteries**
- ▶ **trigger cable**
- ▶ **serial cable to download/set data**
- ▶ **connection cables to the incremental probe**



SOFTWARE

The program **ESTRUDAT MANAGER** is used to set the data acquisition system and to download the recorded data.

INSTALLATION:

The program **ESTRUDAT MANAGER** is stored into a CD.

To start the installation click:

Start

My computer

ESTRUDAT MANAGER (D:)

In the CD two files can be found, click twice on **estrudat_mang_setup** (pic. 1)

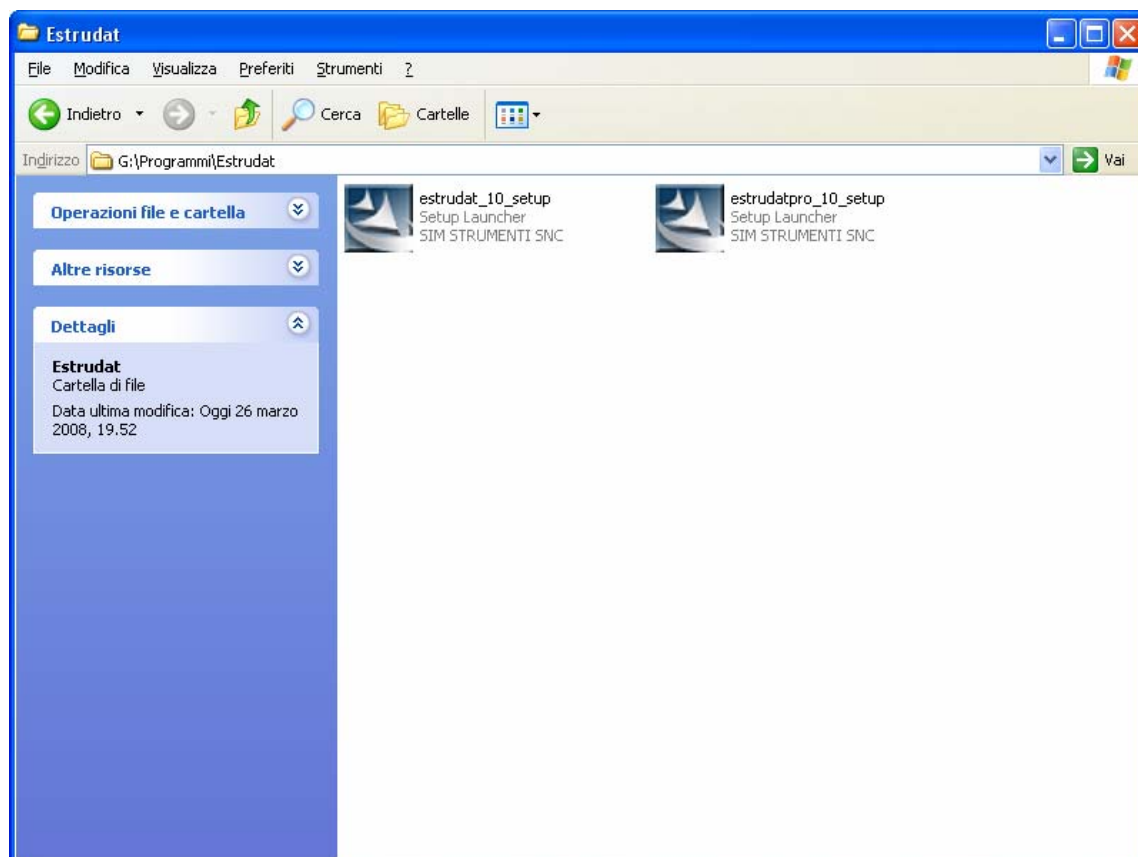
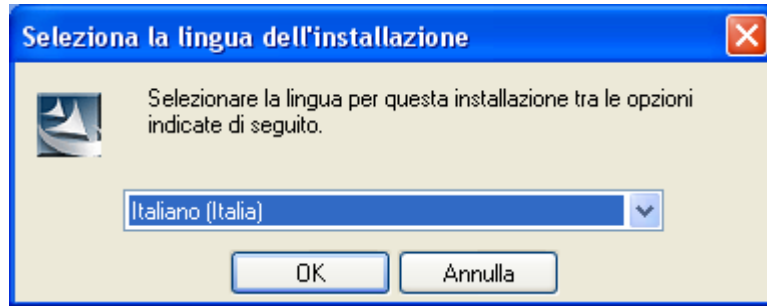


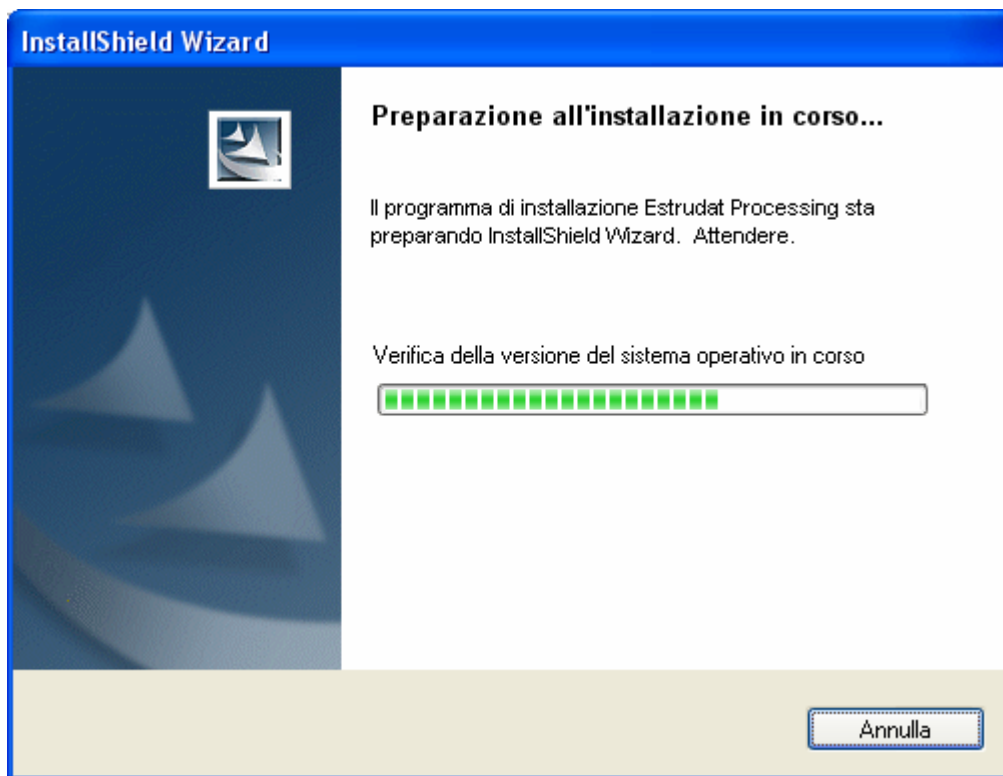
fig 1

A window will open (pic. 2) where the language can be selected, press **OK** to continue.



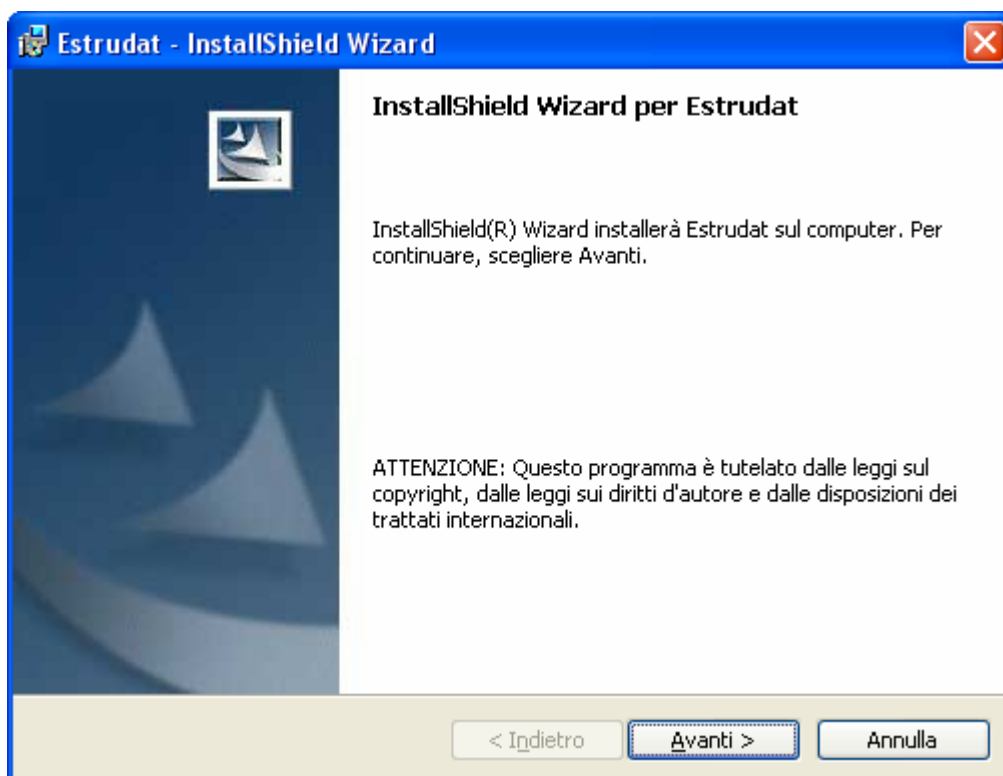
pic. 2

The install window will follow (pic. 3).



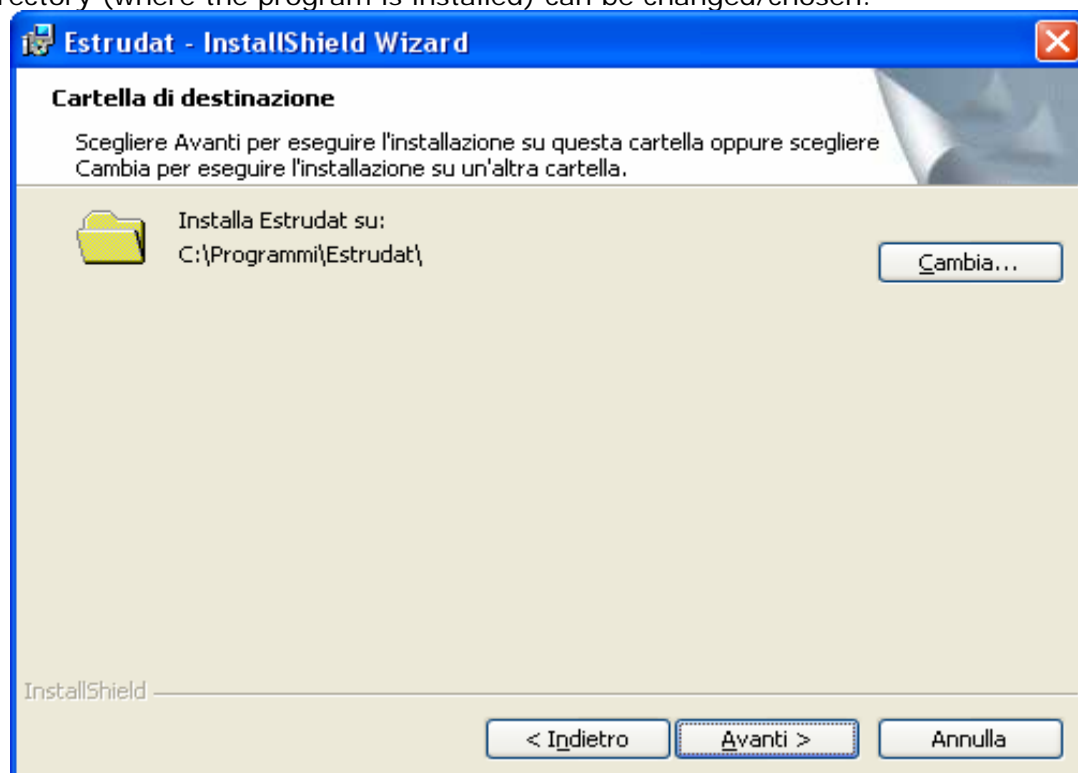
pic. 3

Press **Next** (pic. 4) to continue the installation or press **Cancel** to stop.



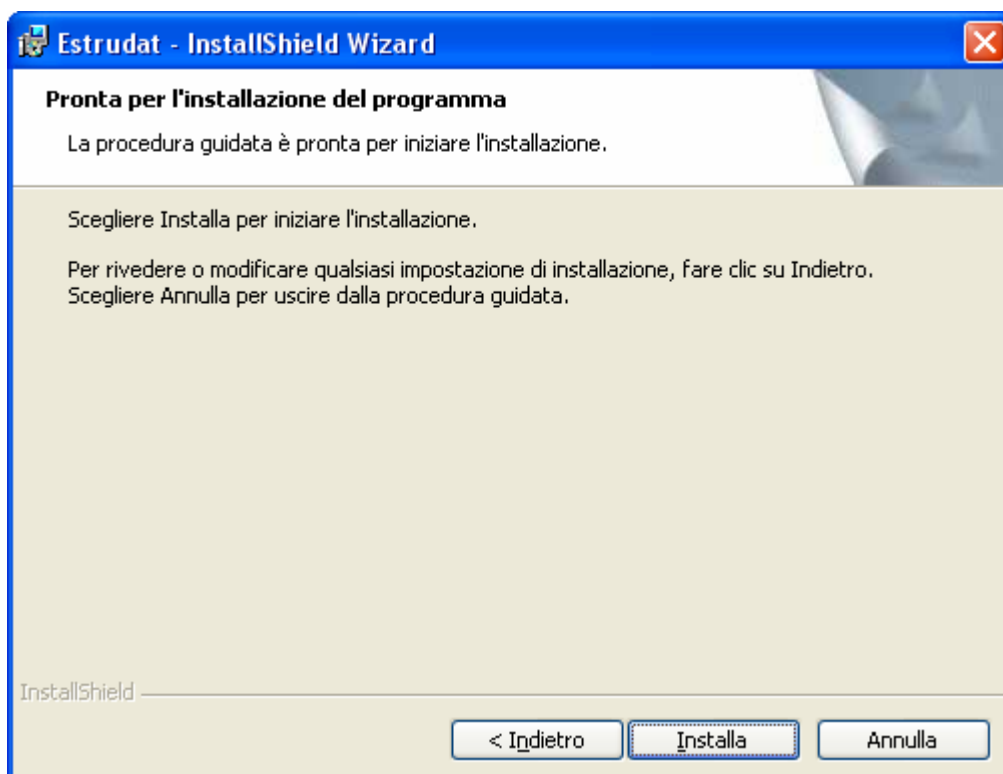
pic. 4

By clicking Next a communication window will be displayed (pic. 5) where the local directory (where the program is installed) can be changed/chosen.

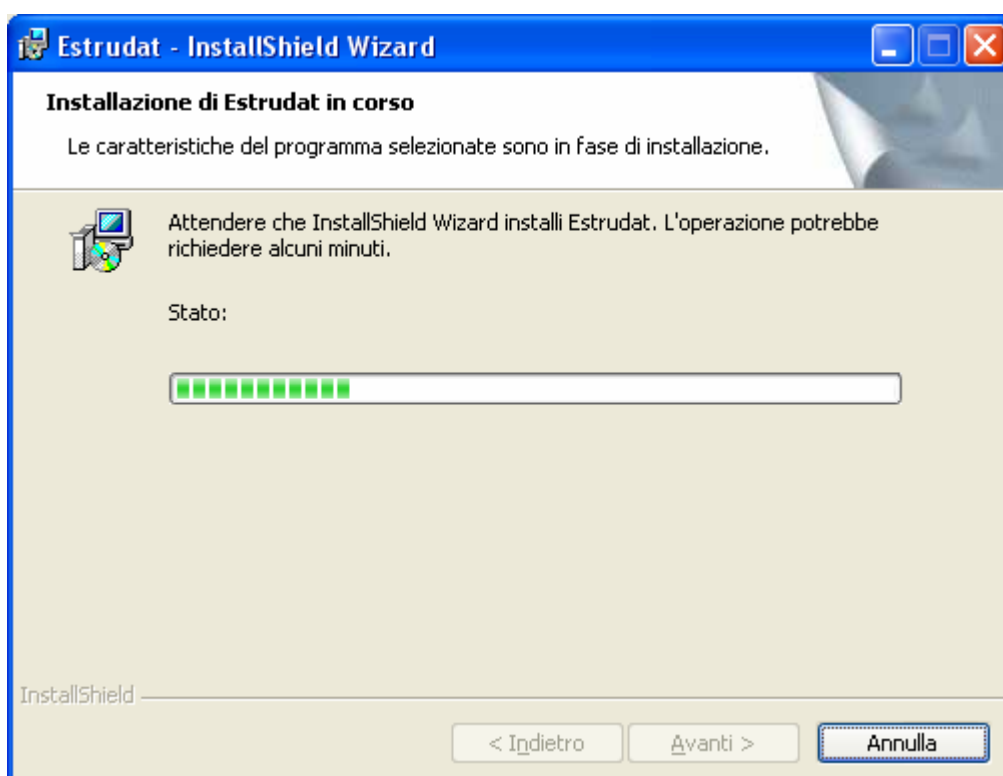


pic. 5

By pressing **Next** (pic. 5) another window will pop up (pic. 6); press **Install** to install the program in the directory previously chosen. During installation of the files a window with a progress bar is visible (pic. 7). To stop the installation process press **Cancel**.



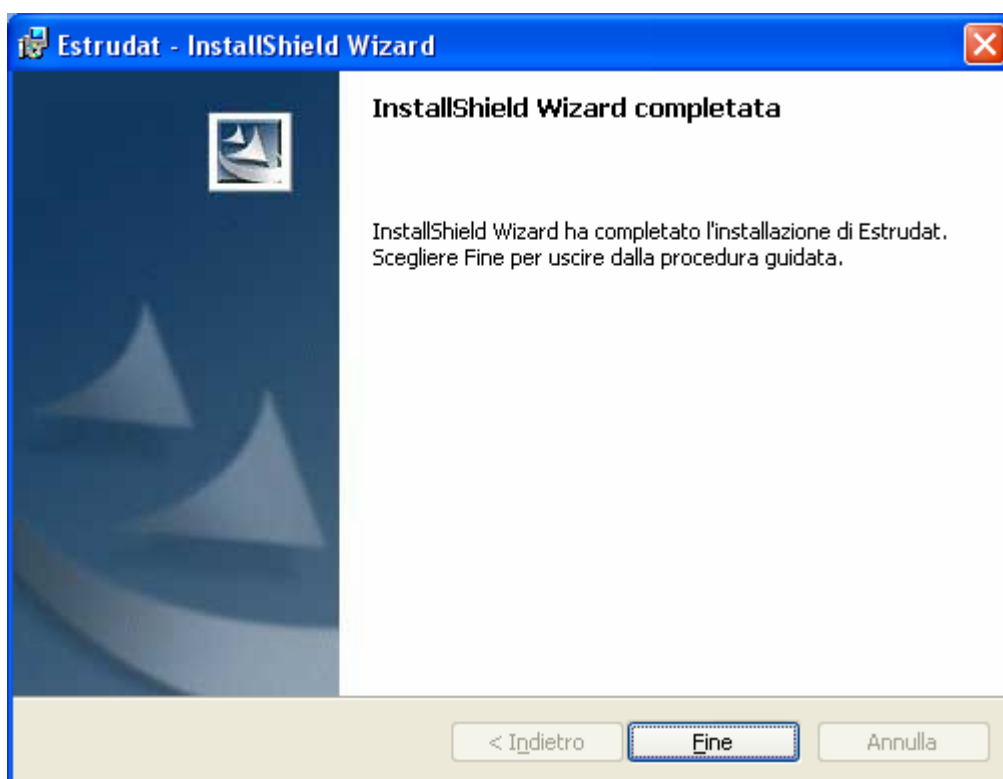
pic. 6



pic. 7



At the end of the installation the final window is shown (pic. 8).

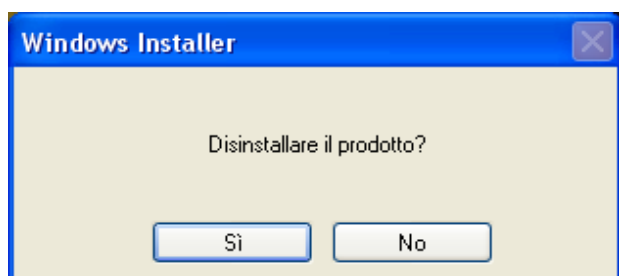


pic. 7a

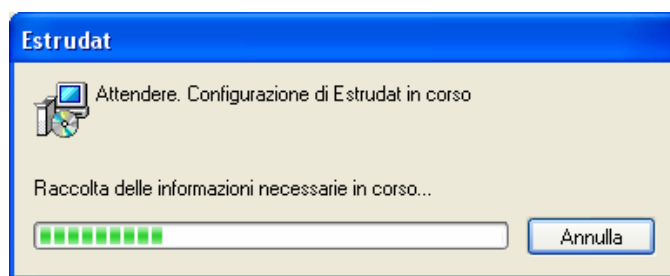
UNINSTALL:

During installation an uninstallation program was inserted, which can be launched by clicking **Uninstall ESTRUDAT MANAGER**. To run it press:

START → PROGRAMS → MINILOG → UNINSTALL ESTRUDAT MANAGER



pic. 9



pic. 10

For the program uninstall a window is displayed (pic. 9). Click **Yes**, to start removing all files, a window with a progress bar is visible (pic. 10).

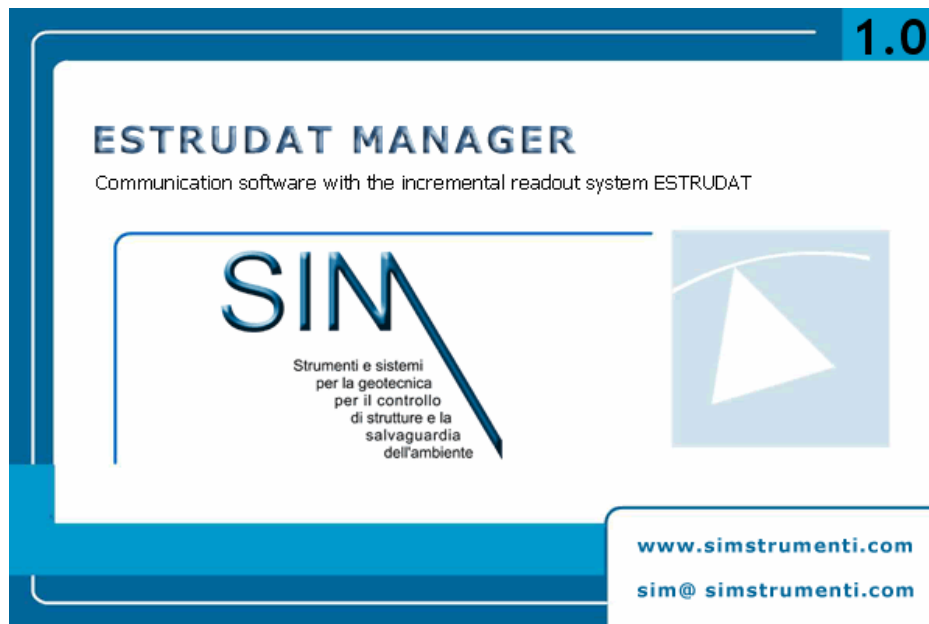


THE PROGRAM:

To start the application click **ESTRUDAT MANAGER**.

START → PROGRAMS → ESTRUDAT → ESTRUDAT MANAGER

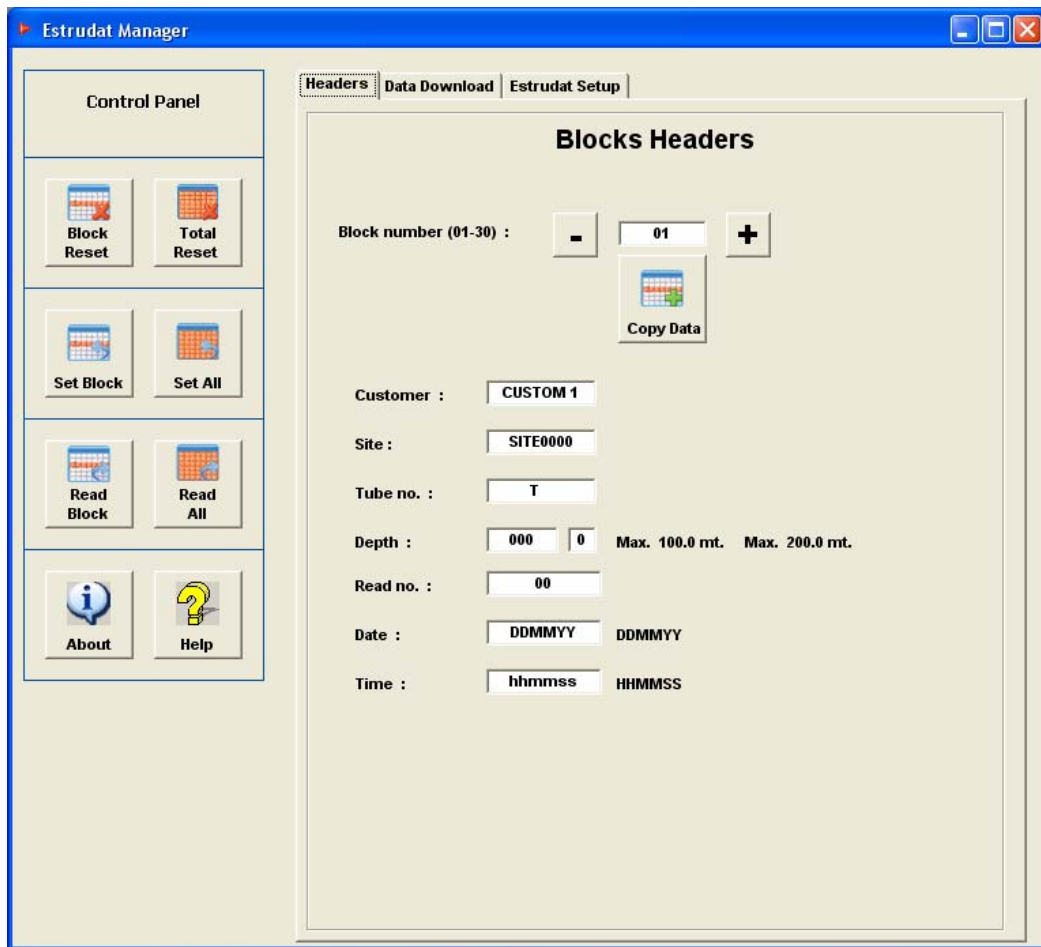
While the application is loading a splash screen is visible (pic.8) followed by the main program window (pic.9).



pic. 8

The program **ESTRUDAT MANAGER** allows the user to set the readout unit very fast and easily without the need to insert the data manually and in addition is used to download the data stored in the system.

In order to communicate with the data acquisition system is necessary to connect the serial cable and that the system will be on. (see page 15).



pic. 9

In the central part of the screen is located the tab window with the following topics:

- ▶ **Headers**
- ▶ **Data Download**
- ▶ **Estrudat Setup**

To switch between them click on the requested tag.

On the left part of the window is located the control panel where are all the buttons:

- ▶ **Block Reset**
- ▶ **Total Reset**
- ▶ **Set Block**
- ▶ **Set All**
- ▶ **Read Block**
- ▶ **Read All**



- ▶ **About**
- ▶ **Help**

The following list is the header of each measurement/tube:

- ▶ **Customer**
- ▶ **Site**
- ▶ **Tube no.**
- ▶ **Depth**
- ▶ **Read N.**
- ▶ **Date**
- ▶ **Time**

Control Panel

Reset Block:

By pressing the button **Block Reset** all the data inside the selected block will be erased (the header data as well as the measurement).

Reset All:

By pressing **Reset All** the data inside all blocks, between 1 and 30, will be erased (the header data as well as the measurement).

Set Block :

By pressing **Set Block** the relative header data will be transferred from the form to the system.

Set All :

By pressing **Set All** the headers data of all blocks, between 1 and 30, will be transferred from the form to the system.

Read Block :

By pressing **Read Block** all header data of the selected block will be transferred from the system to the form.

Read All :

By pressing **Read All** the headers data will be transferred to the form.



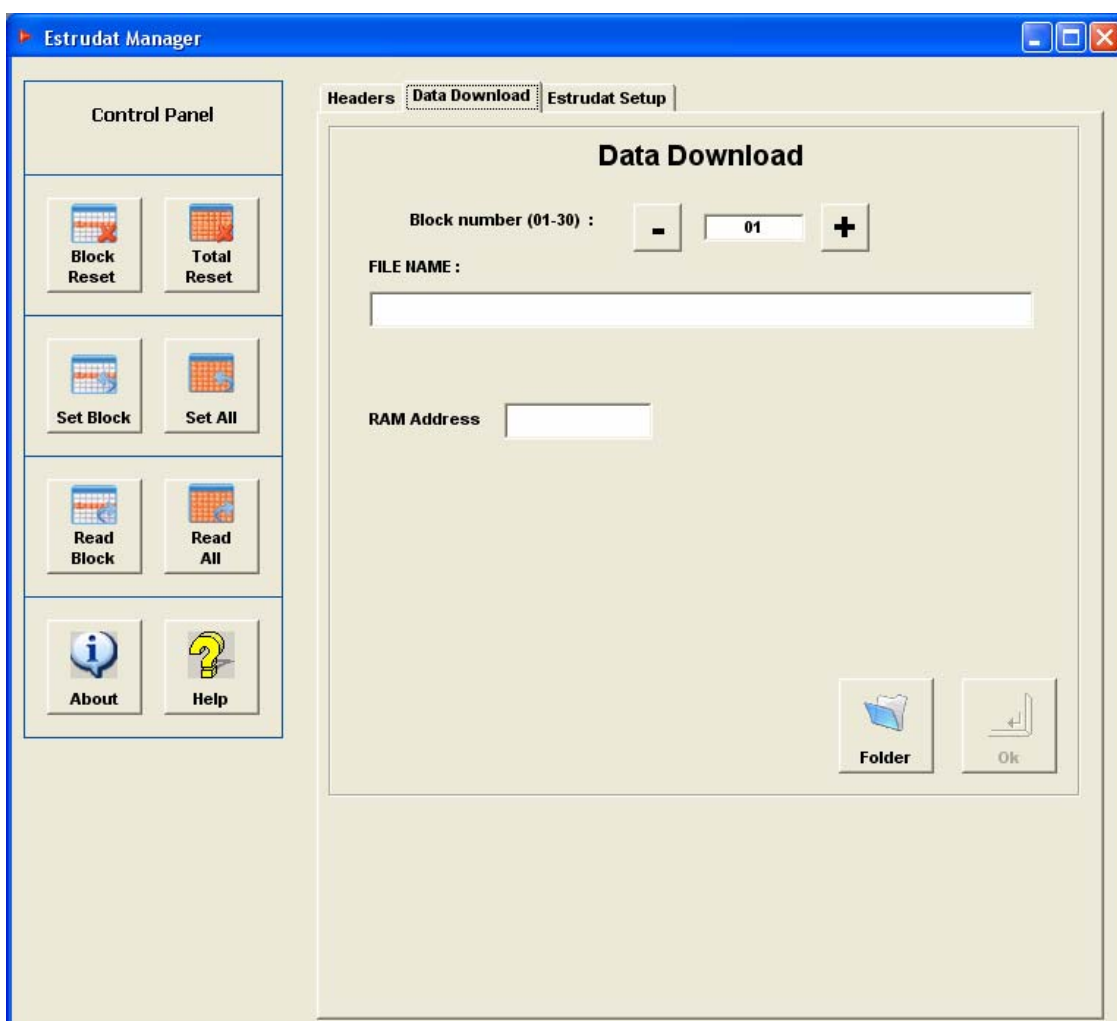
Block Headers

By pressing the buttons + - it's possible to choose the block no to change.

By pressing the button **Copy data** the data of the actual block will be copied to the next block, in order that the user will not have to type again all data. This could be helpful in case we would have to measure the same tube several time a day or if we would have a site with different tubes, in this case it would be possible to copy the data from one block to the other and changing only the tube name.

Data Download

By pressing the window tab **Data Download** it will appear the following screen (pic.10)

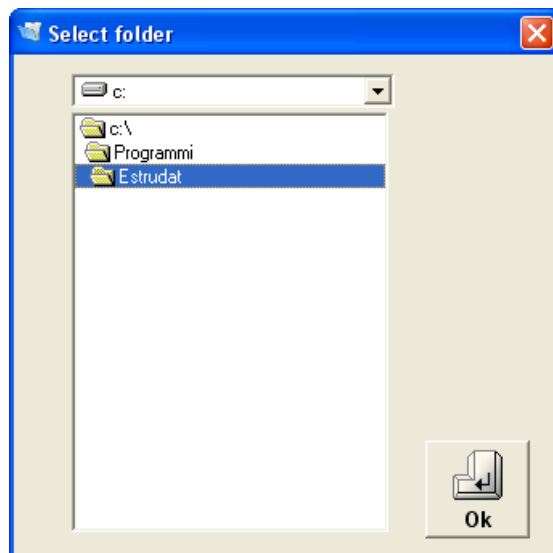


pic. 10



In the Data Download window it's possible to retrieve the data that was stored in the system.

In order to download the data, select the block increasing or decreasing with the buttons + - and then choose the folder where to save the file, a window will pop up (pic.11).



pic. 11

Click twice on the desired folder and then click **OK**.

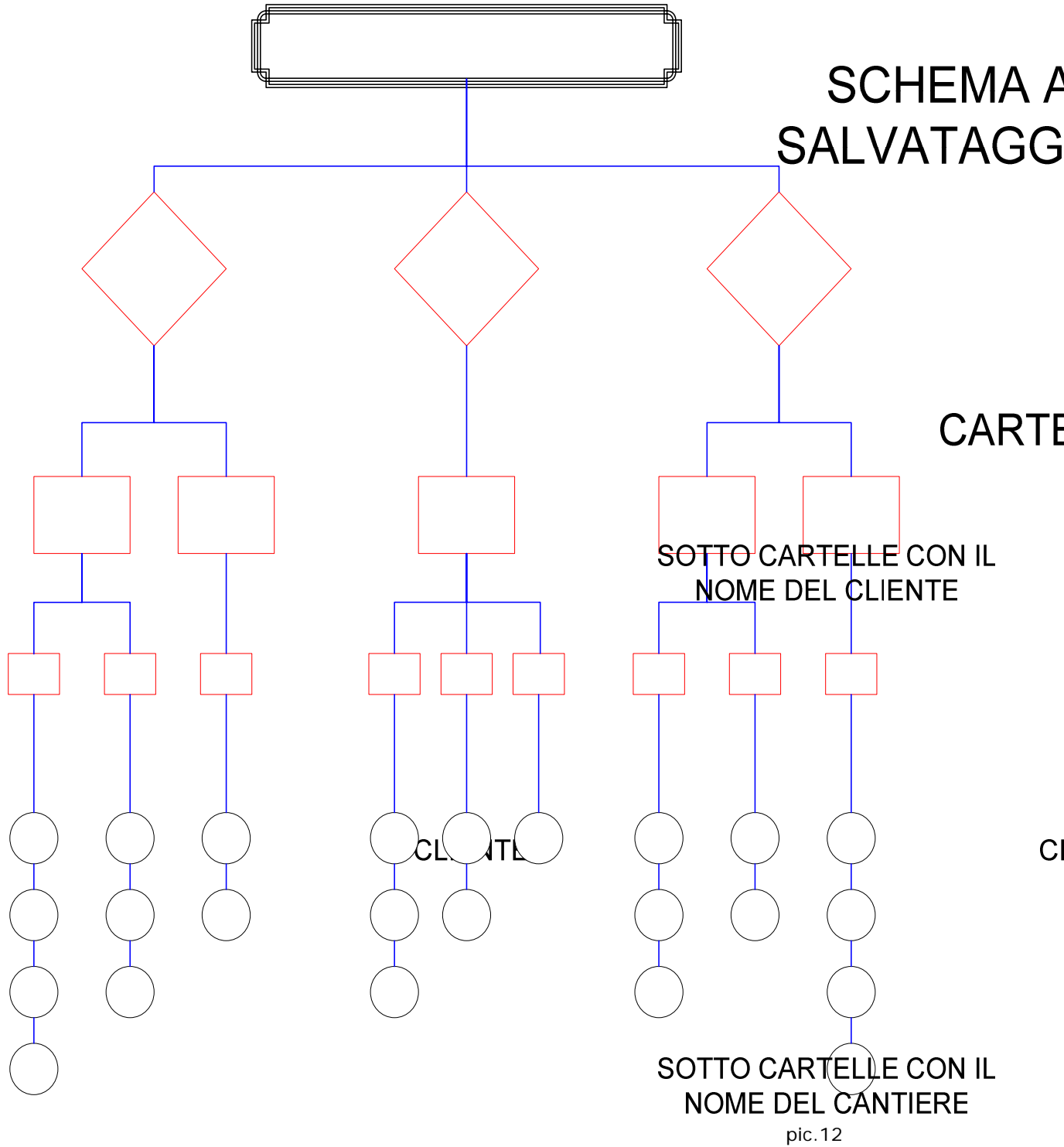
At this point the program will download the data and it will create two files with the following text:

▶ **customer name + site name + tube name + read no.**

One file will have the extension .DAT, in this file will be stored the header data of the tube, another file will have the extension .NUM where the measurement will be stored.

This method is used in order to allow the user to identify easily, by the name of the file, when it was done.

The program ESTRUDAT opens a folder, called Dati, for the downloaded data under C:\ where the user could download the field data. SIM advises to keep under the main folder a folder for each site and under this level a folder for each tube where the measurement can be saved (pic.12).

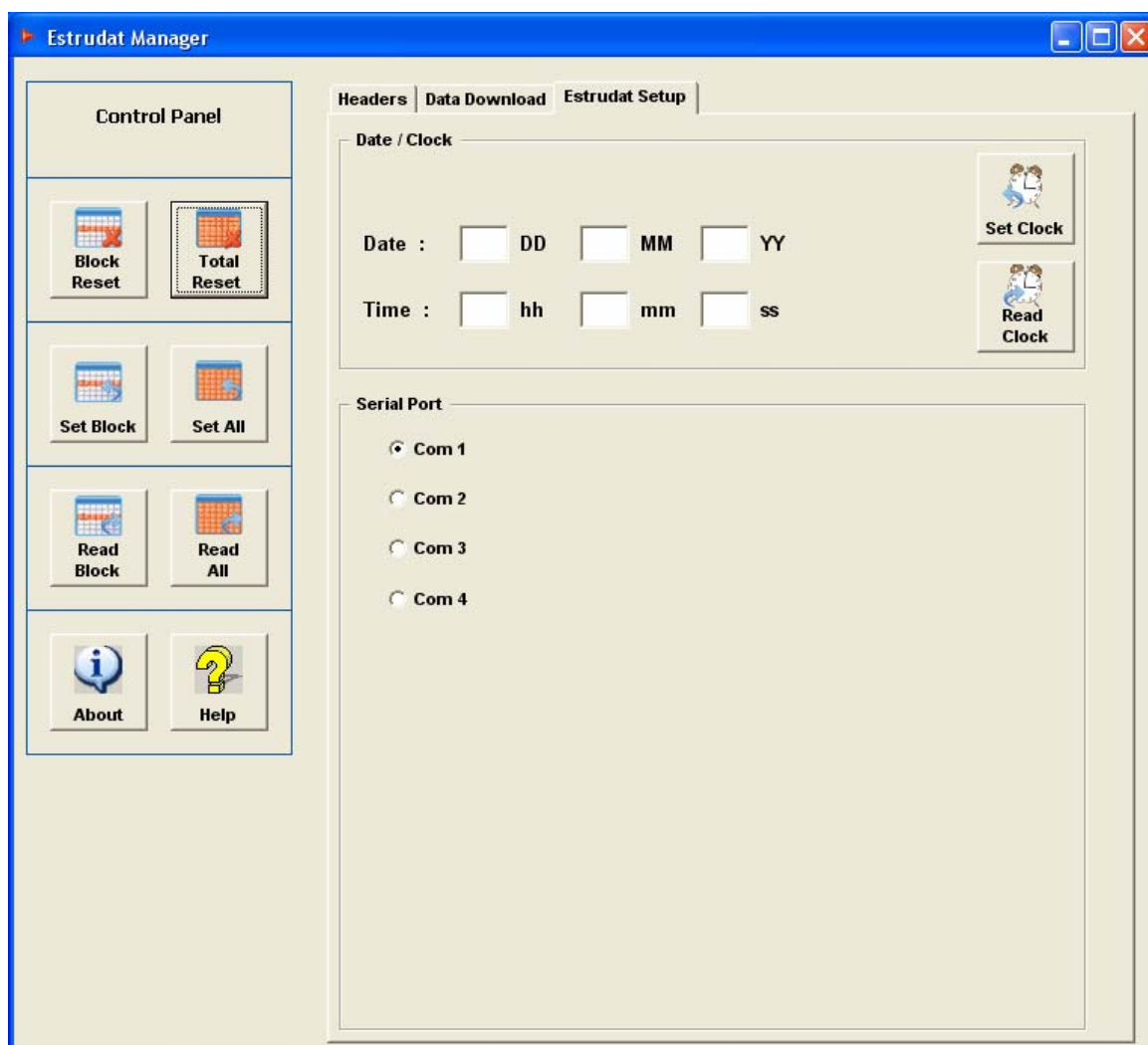




Setup ESTRUDAT

Under the tab **Setup ESTRUDAT** (pic.13) we can find the following settings:

- ▶ **Date & Time**
- ▶ **Serial Port**



pic. 13



Date & Time :

In the **Clock** frame it's possible to read, modify the time and date of the internal clock of the data acquisition system. To read the clock press the button **Read Clock**, to set the time, insert the number in the relative text fields, then press **Write Clock**.

Serial Port :

In the serial port frame it can be chosen the number of the serial port.

About

By pressing **About** a window will appear (pic.16) with all SIM data and in addition the software version, needed for support reasons.



pic. 16

Help

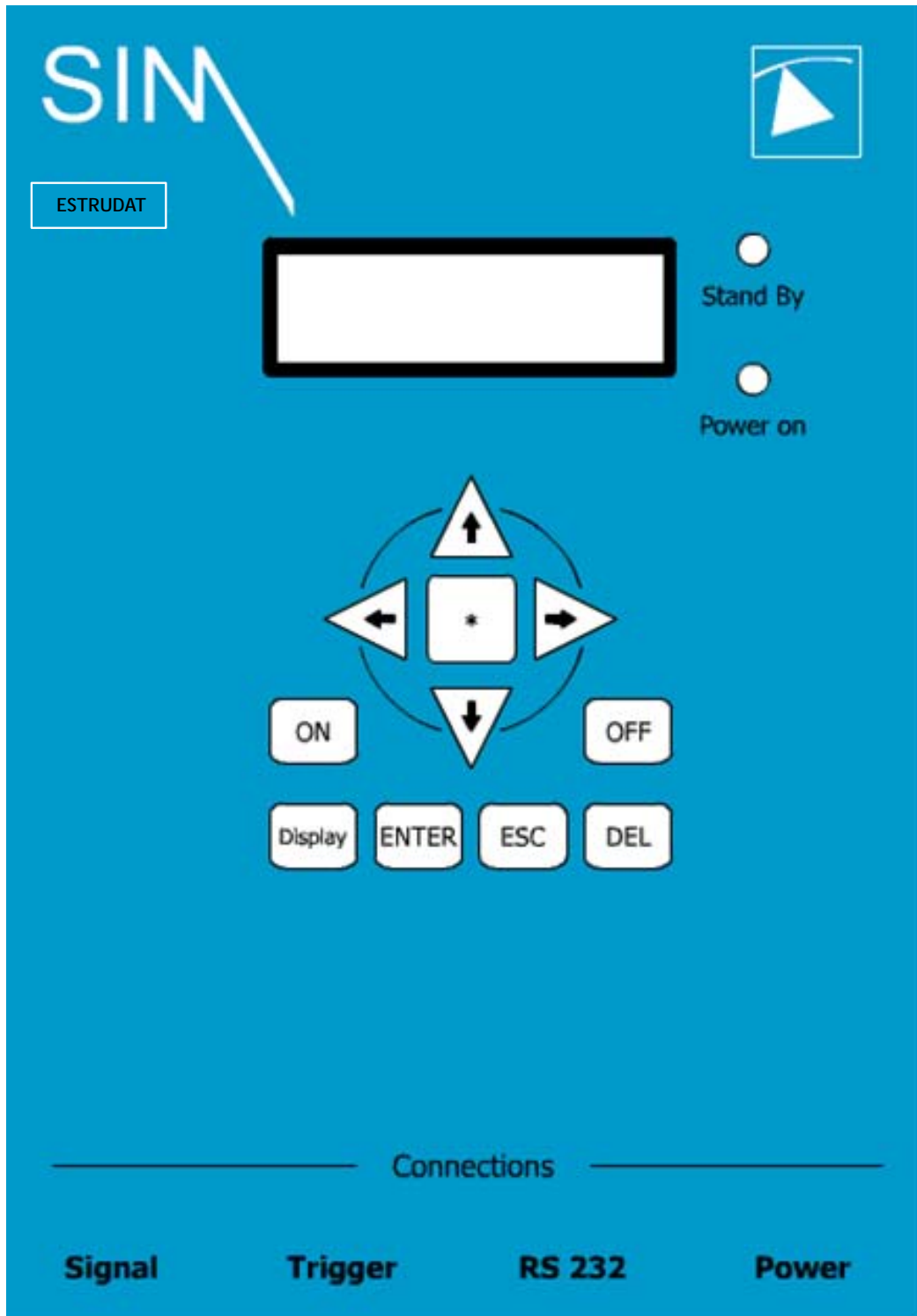
By pressing **HELP** the Acrobat® program will load with the user manual **ESTRUDAT MANAGER**.







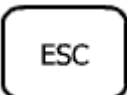






CONFIGURATION

THE KEYBOARD:

The following picture represents the control panel of the incremental readout unit **ESTRUDAT**:





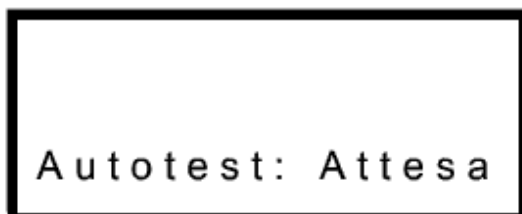
	System power on
	System power off
	Backlight display
	Accept modification
	Menu exit
	Changing of read method Automatic/Manual
	Selection and navigation inside the menu
	
	
	
	



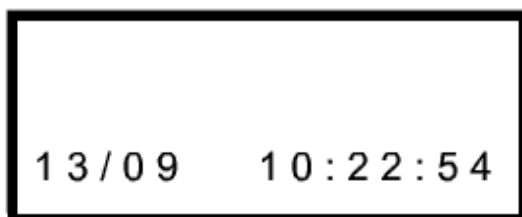
Power on and initialization



Press this button to turn on the readout unit, the system will start the auto-check procedure. The display will show the following screen:



After the autotest the display will show the message



Press these buttons to access the main menus UTILITY
READINGS PARAMETERS



To enter into those menus, press this button

ESTRUDA

ESTRUD



Menu UTILITY



Select utility and followed by this button. The screen will display:



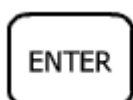
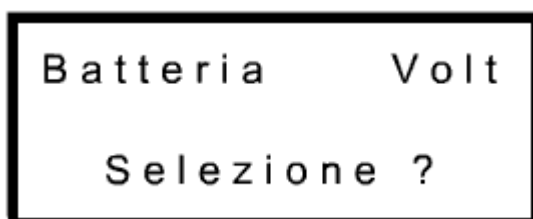
By pressing these buttons it's possible to navigate inside the menu



Press this button, the display will show:



By pressing this button the screen will show the message:



By pressing this button the message will show the level of the battery:

ESTRUI



```
Batteria      Volt
  6.2         00.0
```



Press to exit



Press again the display will show:

```
01  Zero  02
     Selezione?
```



By pressing this button the system will write the zero values:

```
01  Zero  02
+0.0000 +0.0000
```



Press these buttons to change position of the cursor and select the character to change



Press these buttons to change the numbers and/or the sign



Once the new zero values are entered press this button to accept. The following screen will be displayed:



Comando
eseguito



Press to exit



Press again the display will show:

01 Gain 02
Selezione ?



Press this button to modify the gain values (signal amplification).
The screen will display:

01 Gain 02
+1.0000 +1.0000



Press these buttons to change position of the cursor and select the character to change

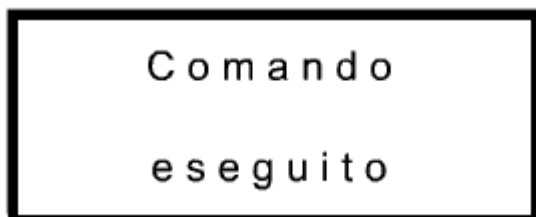


Press these buttons to change the numbers and/or the sign





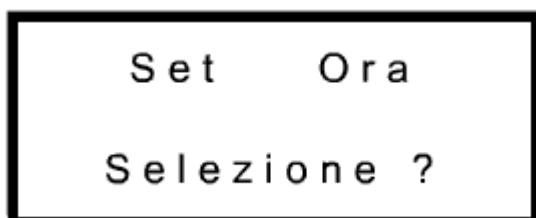
Once the new gain values are entered press this button to accept.
The following screen will be displayed:



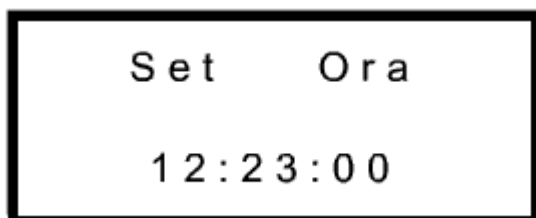
Press to exit



Press again the display will show:



Press this button to display the time, the display will show:



Press these buttons to change position of the cursor and select the character to change

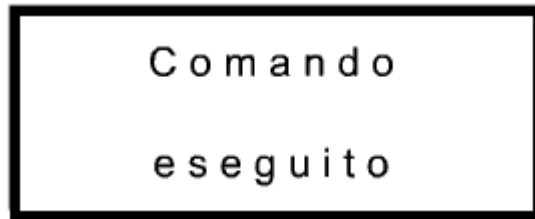


Press these buttons to change the numbers





Once the operation is terminated press this button to accept.
The following screen will be displayed:



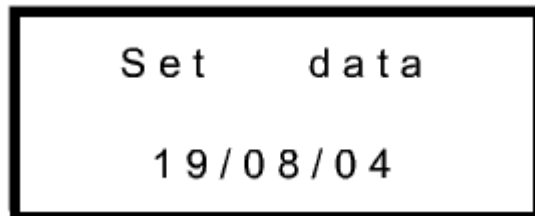
Press to exit



Press again the display will show:



Press this button to display the date, the display will show:



Press these buttons to change position of the cursor and select the character to change

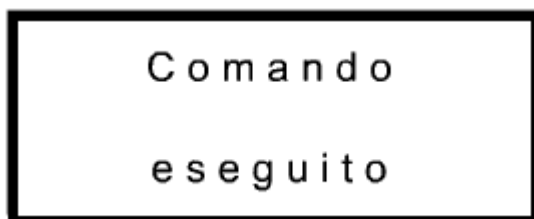


Press these buttons to change the numbers





Once the operation is terminated press this button to accept.
The following screen will be displayed:



Press to exit

Menu PARAMETERS



Select PARAMETERS from the main menus and press this button to enter in the menu. The following screen will appear:



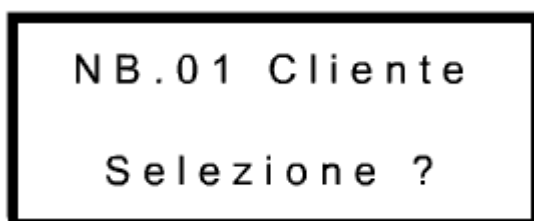
By pressing these buttons it's possible to change the block number (there are 30 blocks selectable that correspond to 30 measurements recordable)



By pressing these buttons it's possible to navigate inside the menu.



Press this button to enter in the selection mode:





Press this button to select the customer name, the display will show:

```
NB.01 Cliente
      CLIENTE1
```



Press these buttons to change position of the cursor and select the character to change



Press these buttons to change the character and insert the customer name (max 8 character selectable between upper and lower case and numbers)



Once the operation is terminated press this button to accept. The following screen will be displayed:

```
Comando
      eseguito
```



Press to exit



By pressing this button the screen will display:

```
NB.01 Cantiere
      Selezione ?
```



Press this button to select the site name, the display will show:

NB.01 Cantiere
CANT0000



Press these buttons to change position of the cursor and select the character to change



Press these buttons to change the character and insert the customer name (max 8 character selectable between upper and lower case and numbers)



Once the operation is terminated press this button to accept. The following screen will be displayed:

Comando
eseguito



Press to exit



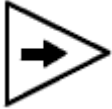
By pressing this button the screen will display:

NB.01 N.Tubo
Selezione ?



Press this button to select the site name, the display will show:

```
NB.01 N.Tubo
      T
```



Press these buttons to change position of the cursor and select the character to change

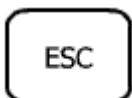


Press these buttons to change the character and insert the customer name (max 4 character selectable between upper and lower case and numbers)



Once the operation is terminated press this button to accept. The following screen will be displayed:

```
Comando
eseguito
```



Press to exit

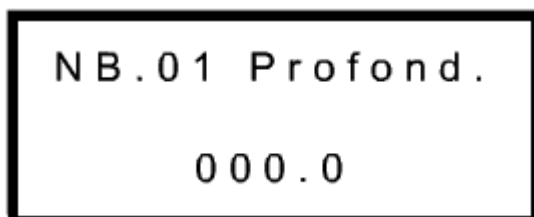


By pressing this button the screen will display:

```
NB.01 Profond.
Selezione ?
```



Press this button to select the site name, the display will show:



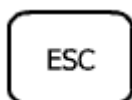
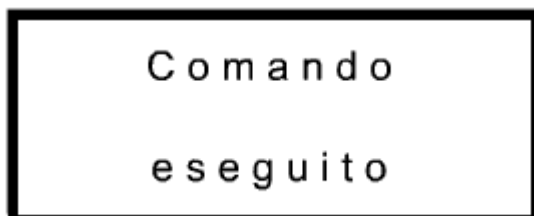
Press these buttons to change position of the cursor and select the character to change



Press these buttons to modify the depth of the tube (the max depth is 200 meters with 1 meter step)



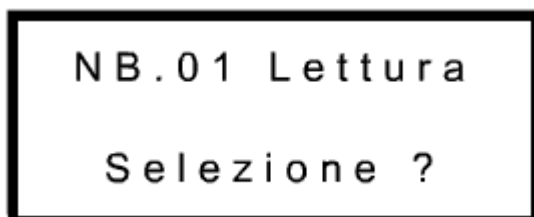
Once the operation is terminated press this button to accept. The following screen will be displayed:



Press to exit

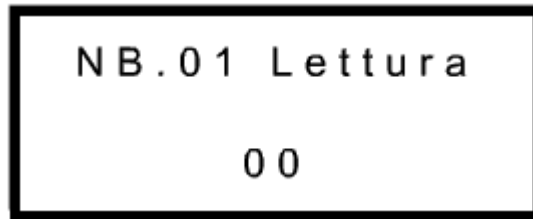


By pressing this button the screen will display:





Press this button to select the site name, the display will show:



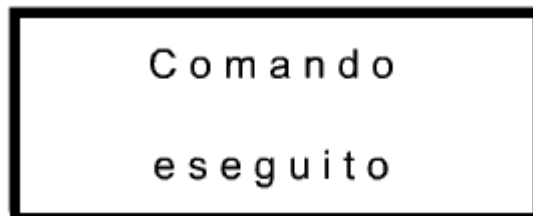
Press these buttons to change position of the cursor and select the character to change



Press these buttons to change the change the sequential measurement number (selectable between 0 and 25)



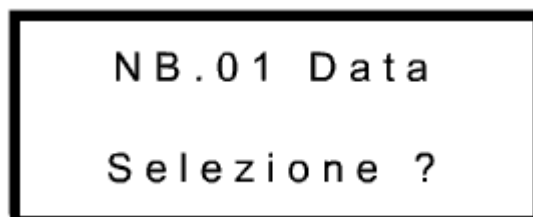
Once the operation is terminated press this button to accept. The following screen will be displayed:



Press to exit

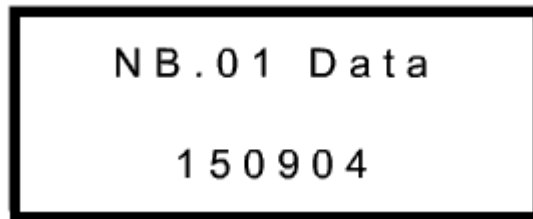


By pressing this button the screen will display:

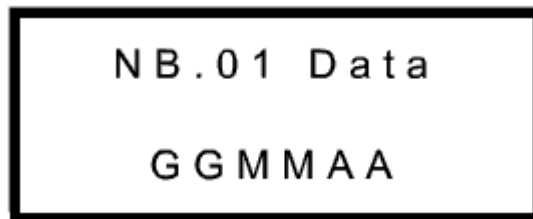




Press this button to display the date when the readout was done, the screen will show the message:



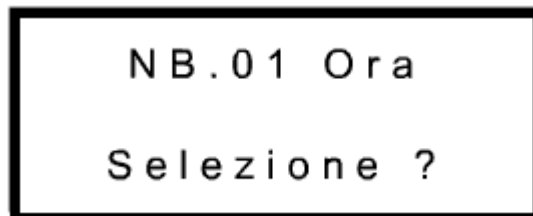
In case the measurement was not yet done the screen will display the following message:



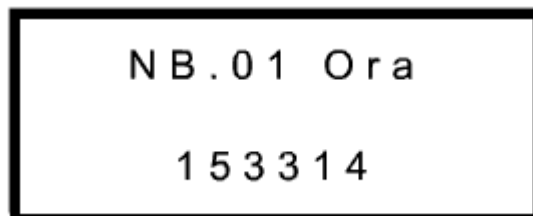
Press to exit



By pressing this button the screen will display:



Press this button to display the time when the readout was done, the screen will show the message:



In case the measurement was not yet done the screen will display the following message:



NB.01 Ora
h h m m s s



Press this button twice to exit to the main menu

Menu READINGS



Select READING in the main menu and press this button to enter in the menu. The display will show:

Selezione
Letture ?



Press this button to enter in the TEST mode:

TEST



Press this button to enter in the menu. The system will start reading the channels continuously (this option is needed to check the functionality of the probe)

TEST
+05600 +00340



Press to exit



Go back to the menu READING as explained previously.
Press this button to select the manual reading mode:



By pressing this button the screen will display:

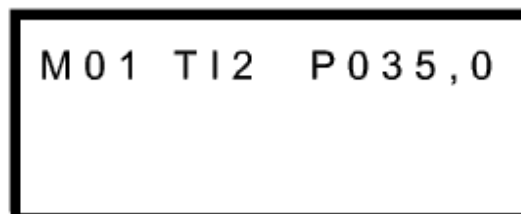


- M Represents the manual mode
- 01 the block number where the data will be stored, to change the number use the up and down arrows.
- T Display the tube name where the measurement are done
- P Shows the depth, this field changes every time the probe is moved



Press this button only after checking that the data such as depth, tube name, block no. and the position of the probe displayed are correct.

The system will begin the measurement loop showing the first reference sensor



By pressing the trigger button (external cable button) the readout unit will display simultaneously both sensors, by pressing again the trigger button the system will save the data and making a double bip sound. At this point the user can change the depth of the probe.



M01 T12 P035,0

At the end of the reading the system will announce it by making a triple bip sound, and will return to the previous menu.

LETTURA

MANUALE

+03750



CONNESSIONI

CONNECTOR POWER

PIN1	=	+ SUPPLY 12-13,8Vcc external battery
PIN2	=	- SUPPLY
PIN3	=	+ SUPPLY 6-7Vcc battery charger
PIN4	=	- SUPPLY

Consumption without backlight 120 mA , with backlight 220 mA with an autonomy of 24 / 12 hours.

The system is equipped with a security circuit to preserve the battery lifetime calibrated at 5,5 Vcc. To recharge the readout unit having empty batteries, it is necessary, a charging time of, at least 12 hours.

CONNECTOR RS232

PIN1	=	COMMON	(AL PIN 5 P.C.)
PIN2	=	TX	(AL PIN 2 P.C.)
PIN3	=	RX	(AL PIN 3 P.C.)

CONNECTOR TRIGGER

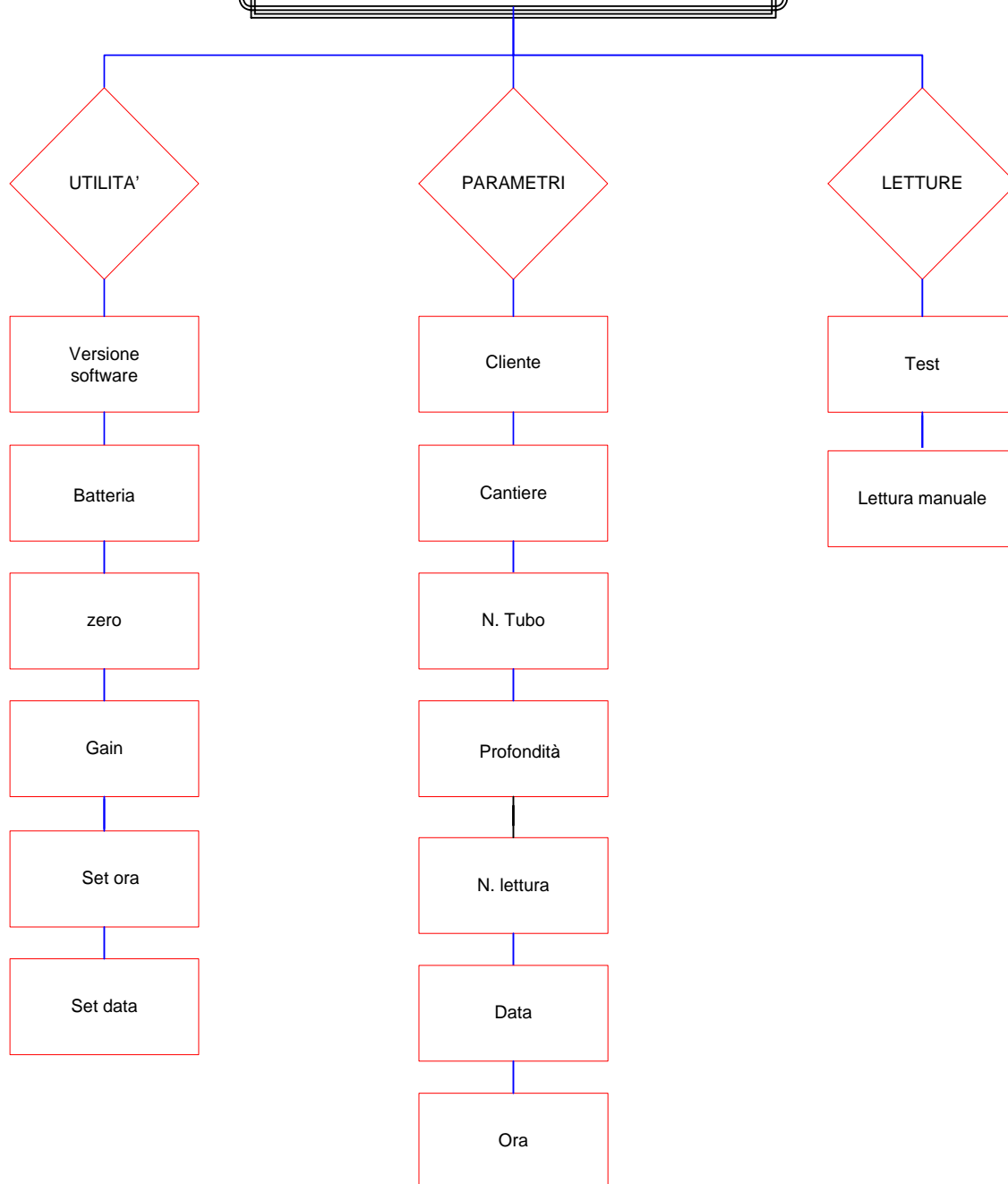
PIN1	=	CONTACT BUTTON MANUAL START
PIN4	=	CONTACT BUTTON MANUAL START

CONNECTOR SIGNAL

PIN1	=	INPUT + CHANNEL 1
PIN2	=	INPUT - CHANNEL 1
PIN3	=	INPUT + CHANNEL 2
PIN4	=	INPUT - CHANNEL 2
PIN5	=	N.C.
PIN6	=	+ 30 Vcc sensors supply
PIN7	=	N.C.



SCHEMA A BLOCCHI MENU ESTRUDAT





NOTE



PICTURE

The readout unit:





DICHIARAZIONE DI CONFORMITÀ



Questa apparecchiatura è stata progettata secondo le seguenti Norme:

- EN 50082-1 (Electromagnetic Compatibility - Generic immunity standard – Part 1: Residential, commercial and light industry).
- En 55011 (Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment).
- IEC 801-2 (Electromagnetic compatibility for industrial process measurement and control equipment – part 2: Electrostatic discharge requirements).
- IEC 801-3 (Electromagnetic compatibility for industrial process measurement and control equipment – part 3: Radiated electromagnetic field requirements).
- IEC 801-4 (Electromagnetic compatibility for industrial process measurement and control equipment – part 4: Electrical fast transient/burst requirements).

Risponde quindi ai requisiti di Compatibilità Elettromagnetica previsti dalla seguente direttiva:

- 89/336/CEE del 3 Maggio 1989 e successive modifiche (92/31/CEE del 28 aprile 1992 e 93/68/CEE del 22 Luglio 1993)



La presenza della marcatura **CE** garantisce la conformità della nostra apparecchiatura ai suddetti requisiti

Il sottoscritto Busel Yehuda titolare o legale rappresentante dell'impresa Sim Strumenti SNC operante nel settore geotecnica con sede in Via Palestro 15 MAGENTA (MI)

Firma.....*Busel Y*.....

Si declina ogni responsabilità per sinistri a persone o a cose derivanti da manomissione dell'impianto da parte di terzi ovvero da carenze di manutenzione o riparazione.

Data.....16 / 10 / 2006.....