

ThySetter

PC SOFTWARE
 PARAMETER SETTING AND CONFIGURATION
 GRAPHICAL USER INTERFACE FOR THYTRONIC
 PROTECTIVE RELAYS

The screenshot displays the ThySetter V3.4.8 software interface. The main window is divided into several sections:

- Tree View (Left):** A hierarchical tree structure showing the configuration for various relay parameters such as "Base current IB", "Undervoltage - 27", "Thermal image - 49", "Phase overcurrent - 50/51", "Residual overcurrent - 50N(1)/51N(1)", "Residual overcurrent - 50N(2)/51N(2)", "Residual overcurrent - 50N(Comp)/51N(Comp)", "Overvoltage - 59", "Residual overvoltage - 59N", "Directional phase overcurrent - 67", "Directional earth fault overcurrent - 67N", "Second Harmonic Restraint - 2ndh-REST", "Trip circuit supervision - 74TCS", "Selective block - BLOCK2", "Internal selective block - BLOCK4", "Breaker failure - BF", and "Profile B".
- Parameter Table (Right):** A table listing parameters with their descriptions, values, units, and states.

Description	Parameter	Value	Um	State
> Enable	> Enable	OFF		Updated
> Curve type	> Curve	DEFINITE		Updated
ICLP> Mode	ICLP> Mode	OFF		Updated
ICLP> Activation time	tCLP>	0.10	s	Updated
Value				Updated
> Reset time delay	t>RES	0.00	s	Updated
Value				Updated
> Logical block	>BLK1	OFF		Updated
> Input selective block	>BLK2IN	OFF		Updated
> Output selective block	>BLK2OUT	OFF		Updated
> Internal selective block	>BLK4	OFF		Updated
> Second harmonic restraint	>2ndh-REST	OFF		Updated
> Breaker failure	>BF	OFF		Updated
> Start relays	>ST-K	None		Updated
> Trip relays	>TR-K	None		Updated
> Start LEDs	>ST-L	None		Updated
> Trip LEDs	>TR-L	None		Updated
- Oscilloscope Window (Bottom Left):** Titled "Visualizzazione file oscillogr.", it shows five waveforms: IL1(A), uL1(V), IL2(A), IL1(A), and IL2(A). The x-axis represents time from 0 to 1500. Below the waveforms is a table of indicators and markers.

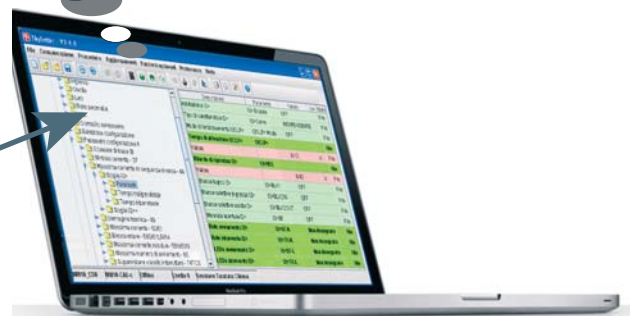


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ThySetter



WARNING

For safety reasons, a change of the following parameters become active only after an hw reset:

- Relay nominal frequency (f_n) and nominal voltages (U_n , UE_n)
- Ethernet communication parameters (IP host address, IP net mask, Autonegotiation).

Preface

The ThySetter sw is a “browser” of data (setting, measure, etc.); it implements an engine that is afford to rebuild the menu set up and the relationships to data concerning all Thytronic protective relays by means of XML files.

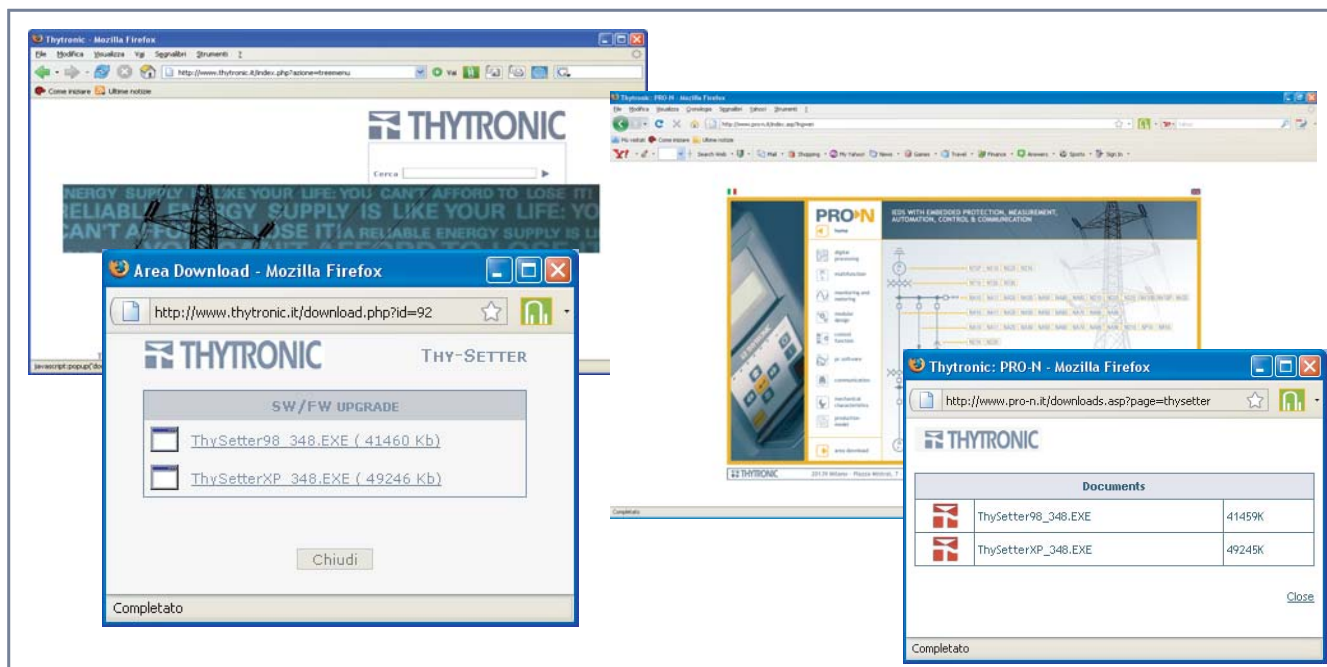
Following operations are performed by means ThySetter:

- Open-store of setting files;
- ASCII or Excel export reports;
- Open/close communication;
- Send settings, read settings and oscillography reading;
- Firmware upgrades;
- Session level selection and log enabling (log files);

After the device selection Thysetter allows to:

- Set the relay reference data;
- Set the communication parameters (Modbus address, TCP-IP address and parameters);
- Set the rated nominal values (relay nominal current, primary CTs nominal currents, etc.);
- Set the common parameters (self-test relays, circuit breaker commands and diagnostic, CT monitoring, binary input allocation, relays and LEDs configuration);
- Set profiles (A e B);
- Read info, measures, etc... (protections state, binary input states, output relays state, counters, etc...);
- Read oscillography;
- Acquire data concerning stored Faults and Events;
- Run commands (reset, send default setting, clock, etc.);
- Start-stop settings.

The latest release of ThySetter can be downloaded free of charge from the www.thytronic.it site (PRODUCT/SOFTWARE APPLICATIONS/THY-SETTER/download area), or from www.pro-n.it site (Software pc - area download).



Installation

Minimum requirements:

- CPU Pentium 450 MHz
- RAM > 128 MB.
- Hard disk space > 10 GB.
- SVGA 800 x 600, 256 colors.
- Serial port. Windows operating system (98^[1] e subsequent).^[2]

Note 1 The optional functions (PLC and oscillography) are non available for Windows 98 version

Note 2 Windows 95, Windows 98 first edition or Millennium edition are not supported.

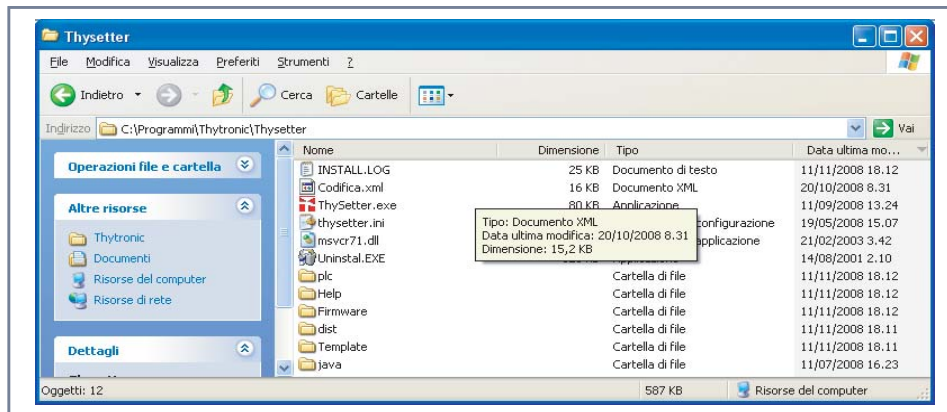
Setup

As soon as the right version is available, the setup may be start (eg: ThySetterXP_348.exe for Windows XP operating system).

If an older version is already present, a suitable message will ask user to remove the oldest before proceeding.

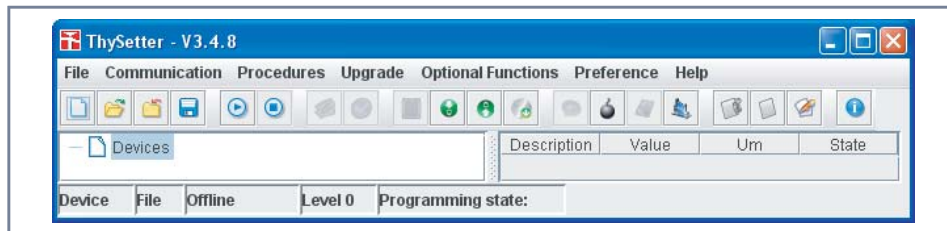
All the components are installed (inclusive of the Java(TM) Platform, Standard Edition Runtime Environment).

After completion the following directory was created: \Programs\Thytronic\Thysetter



Working with ThySetter

A similar window opens



Two operating modes are available:

- On line (with device connection),
- Off line (building of setting file without connection to device).

On line mode

The following operation may be performed when the communication with device is active:

- In standing connection mode an automatic communication session is activated; the configuration file stays open until the "Save" or "Close" commands are issued.
- In Upload or Download data an automatic communication session is activated only for a short time required for send or receive data to/from device; at the end of the data transfer all the files are closed.

Standing connection

The communication must be open with the *Communication->Open* command or with a click of the button.

The communication port must be configured (**Procedure** upper panel):

- **RS232** whenever the serial port (RS232 or RS485) is used.
- **Network** whenever the Ethernet network is used.

Correspondingly, a subsequent windows is proposed for the concerning parameters; if the Automatic procedure is selected only the COM serial number for the serial port and the IP address for the Ethernet port are required, whereas, with Manual selection (removing the tick on the Automatic parameter) the followings may be adjusted:

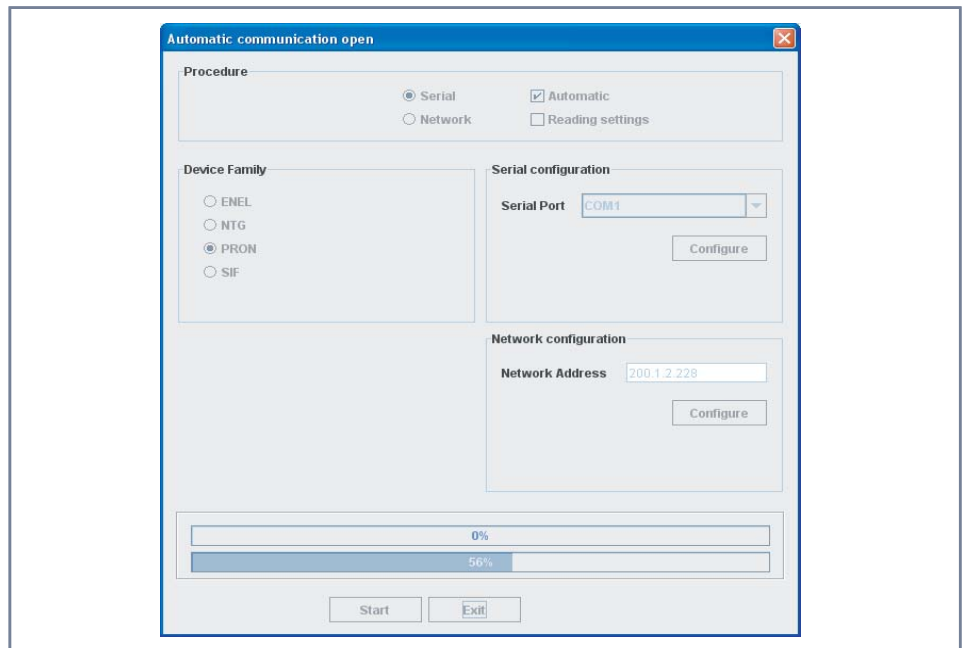
- data rate, data bit number, stop bit number, Modbus address, as well as several timer parameters useful for RS485 communication,
- IP address, TCP port, as well as several timer parameters useful for network communication.

Moreover, inside the **Procedure** upper panel, is possible to select (tick on the Reading settings) if the settings must be updated.

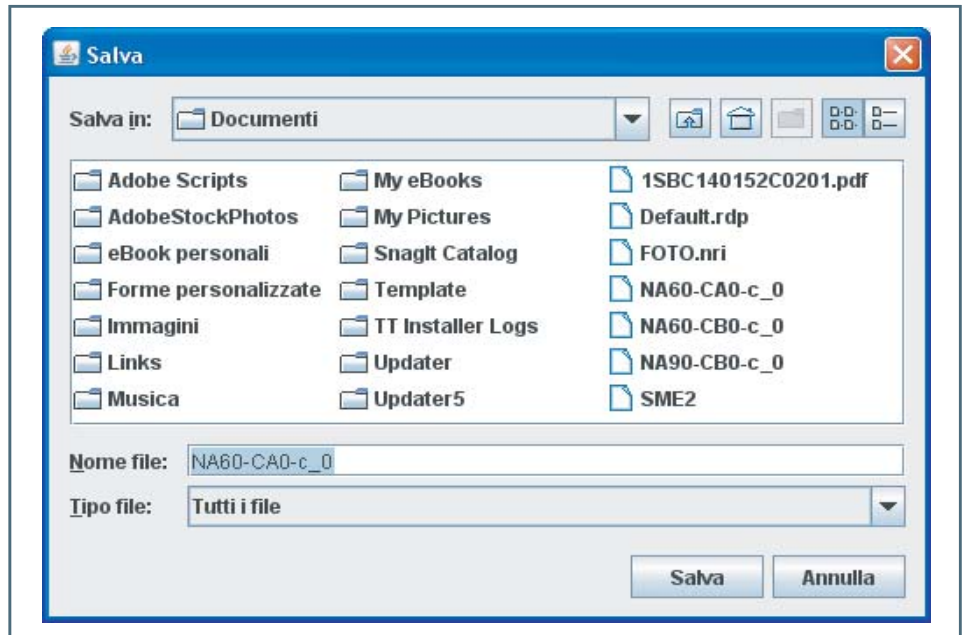
- With "Reading settings" selection the communication session starts and the reading progress is shown with a status bar; at last the device type is highlighted (left side on the bottom of desktop); by means of the Windows commands the menu may be resized as much you like.^[1]

- Without "Reading settings" selection the communication session starts without reading the settings; they are updated when the relative menus are accessed. This operating mode is very fastest and so it is advantageous when the settings updating is not needed.

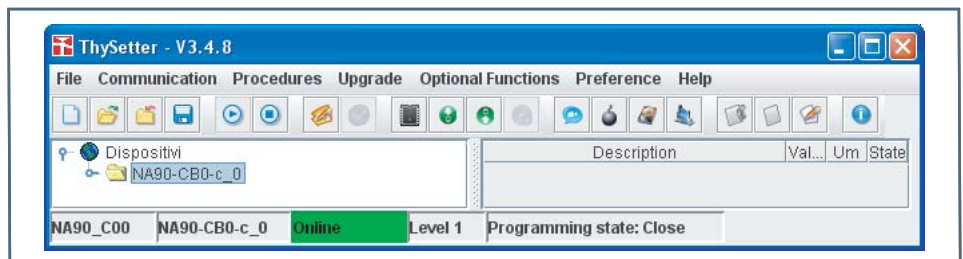
Note 1 The shown images explain some menu levels; all examples are indicatives and unrealistic.




For both the operating modes the configuration file must be saved (e.g.: NA60-CA0-c_0xxxxx" where xxxxxx stands for the serial number).



At last the device type is highlighted (left side on the bottom of desktop, e.g.NA90-CB0-c_0); the "Online" session is highlighted over a green field.



The communication session may be closed by means the *Communication->Close* command or with a click of the  button.

Download or Upload data

The operating mode allows the automatic data transfer from and towards the linked device.

Upload data

The operating procedure is started with the *Procedures->Upload Data* command or with a click of the  button (Upload data from device).

The communication port must be configured (**Procedure** upper panel):

- **RS232** whenever the serial port (RS232 or RS485) is used.
- **Network** whenever the Ethernet network is used.

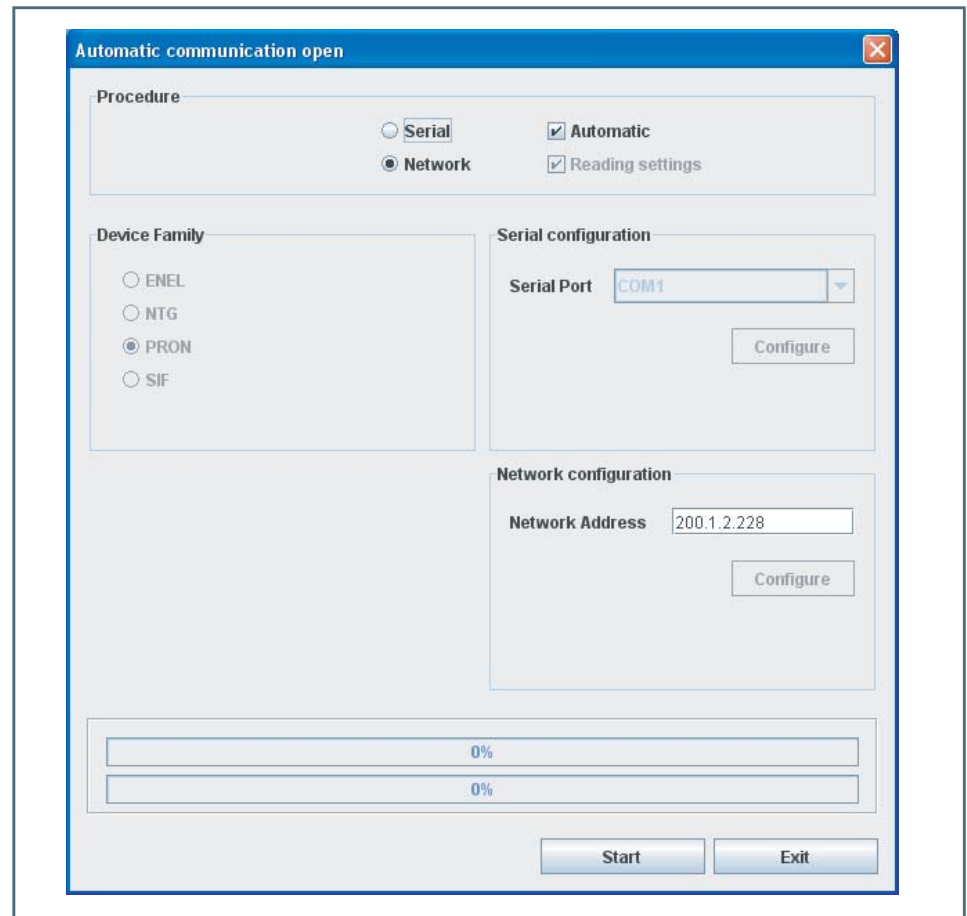
Correspondingly, a subsequent windows is proposed for the concerning parameters; if the Automatic procedure is selected only the COM serial number for the serial port and the IP address for the Ethernet port are required, whereas, with Manual selection (removing the tick on the Automatic parameter) the followings may be adjusted:

- data rate, data bit number, stop bit number, Modbus address, as well as several timer parameters useful for RS485 communication,
- IP address, TCP port, as well as several timer parameters useful for network communication.

Inside the **Procedure** upper panel the Reading setting option is forced (tick on the Reading settings). the configuration file must be saved

With "Start" command the configuration file name is asked, so the communication session starts and the reading progress is shown with a status bar.

The file name is temporarily shown inside the "device" area of ThySetter but then it is cleared to show the transfer session fulfilment.

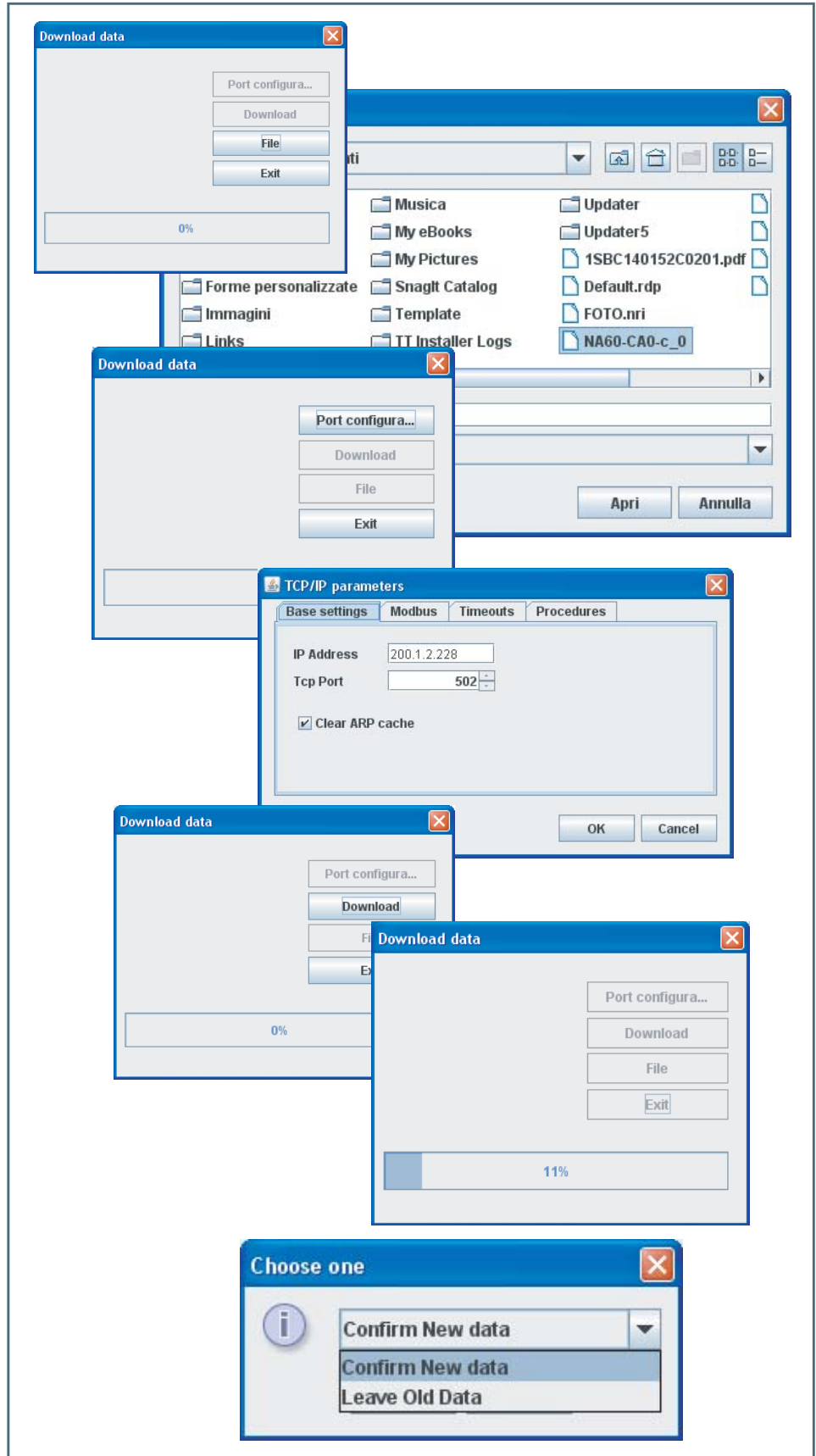


Download data

The operating procedure is started with the *Procedures->Download Data* command or with a click of the button (Download data to device).


To start transfer it is need:

- select the file (*File-> Open*)
 - configure the communication port ("Port Configuration")
 - click the "Download" button
- at the end of the data transfer, the new setting data must be confirmed.



Offline mode

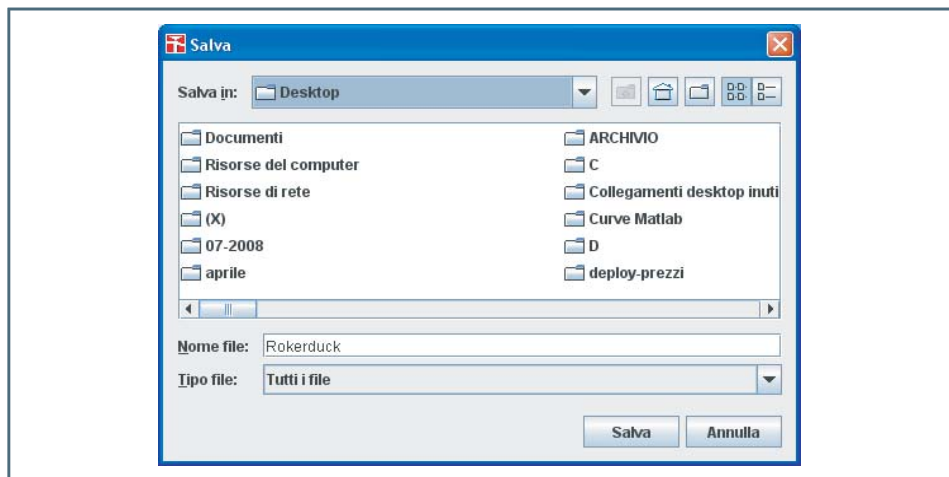
In off-line mode (without link to device), it is possible to modify settings through the generating one or more files containing the desired settings, which can then be transferred over the relay by means of the *Download data* command.

The file may be constructed by creating it from scratch, by starting from a file already present on a Personal Computer, or from a file taken from a relay by means of the *Upload data* command which can be activated from the Procedures menu or by means of the  button (Upload data from device) in the upper command bar.


At the end the file may be saved with the Windows-like procedures.

To build up a new file, the **"File New"** command must be activate, so the protection device must be select inside a window.

By means of the usual Windows-like commands a user defined name and the destination folder must be entered (Paperduck in the example).

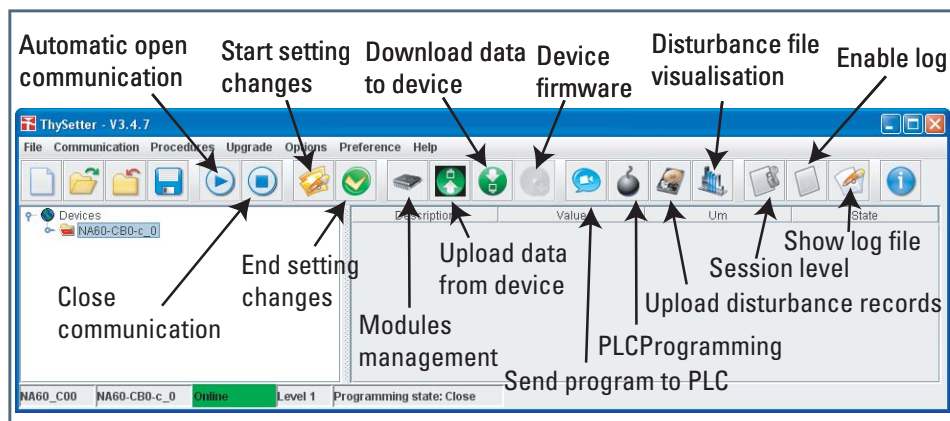


The "Paperduck" file can be modified with Thysetter commands, with the well-described procedures for Online mode (except for the Start/End change setting commands not required).

After having completed construction of the desired file, with the device connected, it is possible to download it over the relay by means of the *Download data* command which may be accessed from the Procedures menu, or by means of the  button (Download data to device) in the upper command bar (see previous paragraph).

Drop down menu

Some general-use drop-down menus are provided; for some there is also a button (icon) with the same function.





File

Within the **File** drop down menu, besides all the usual "Windows" commands for opening and saving files, there is the command which allows exporting data relating to readings reports in ASCII and Excel formats ("Export Report File in ASCII Format" or "Export Report File in Excel Format").


Communication

Within the **Communication** drop down menu are available the open and close communication commands.

Procedure

Within the **Procedures** drop-down menu, or by means of the  button (Download data to Device),  button (Upload data from Device) buttons, the settings files from a Personal computer to the relay may be transferred and vice versa.

Upgrade

The *Upgrade->Device firmware* command or by means of the  button (Device firmware) allows upgrading the relay firmware.

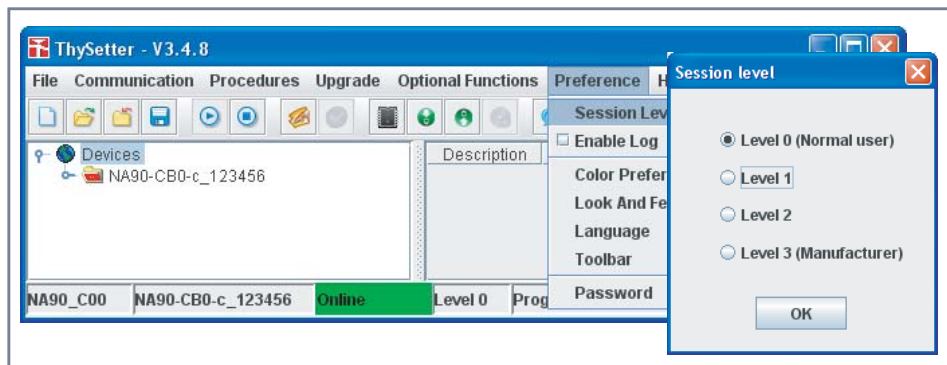
Optional functions

Inside the **Optional functions** menu the Disturbance and PLC options are available (inclusive of licences activation).

Preference

Inside the **Preference** menu, the following submenus are available:

Session level



The Level 0 (User), normally used, don't require password.

The Level 1 is available through password. The following operation which are forbidden al Level 0, are allowed:^[1]

- Send default configuration
- Serial number setting
- Counters reset: through a single command all counters are cleared (the partial counters can be cleared even from level 0 session)



The Level 2 is planned for future use only.

The Level 3 (Manufacturer) is available through a reserved password (Thytronic ownership) for calibration purposes.

Enable Log

When the log is enabled all operation are recorded.

With the intent that to make easier the file hint, it is advisable to:

- Erase the old file; the file ThySetter.log is located inside the same directory of the Thysetter (c:\Programs\Thytronic\ThySetter).
- Start ThySetter
- Tick on the Enable log command The operating procedure is started with the *Preference->Enable log* command or with a click of the  button (Enable log).
- Run all ThySetter functions; all operations are automatically recorded (file ThySetter.log); the file may be shown by means any text editor, or with a click of the  button (Show log file).

To ask for technical support it is advisable to send by e-mail the log file.

Color Preference

Color layout may be customized.

Look and feel

The Graphical User Interface may be selected.

Language

The menu language may be selected.

Toolbar

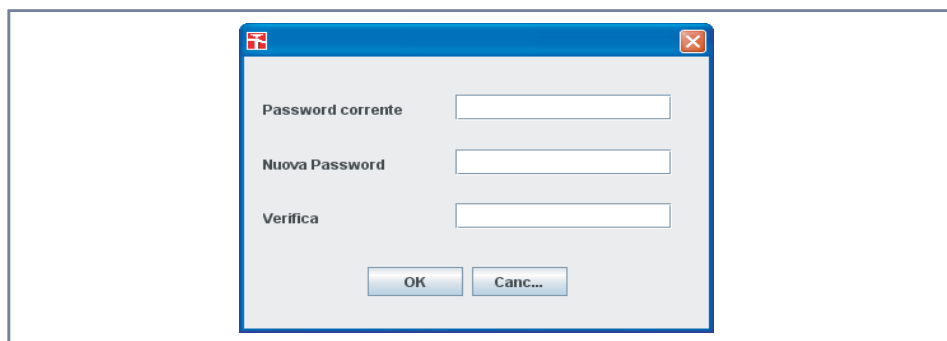
The icon dimensions may be adjusted.

Password

The level 1 password may be changed.

It is necessary to enter the old and the new password and to confirm it.

The default password is "level1" (enter without "")^[2]



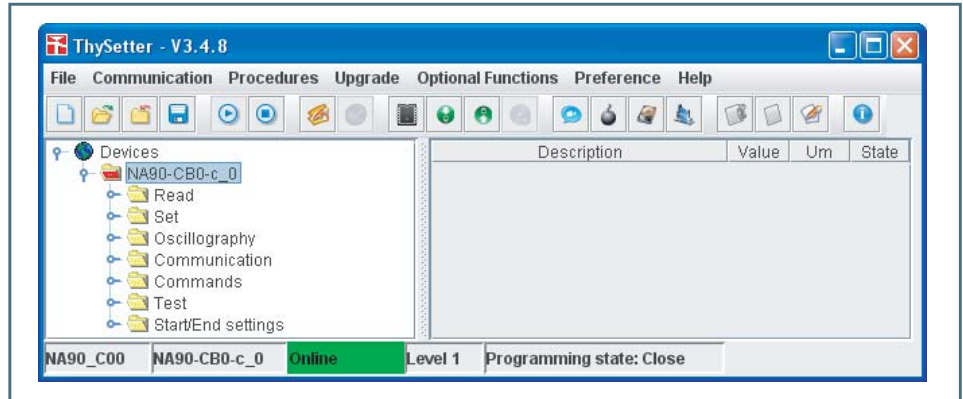
Nota 1 The session level is concerning the Thysetter sw; for network connections, the session level is common for all devices on the same net

Nota 2 If the password is lost, a new installation of the ThySetter must be performed

Menu

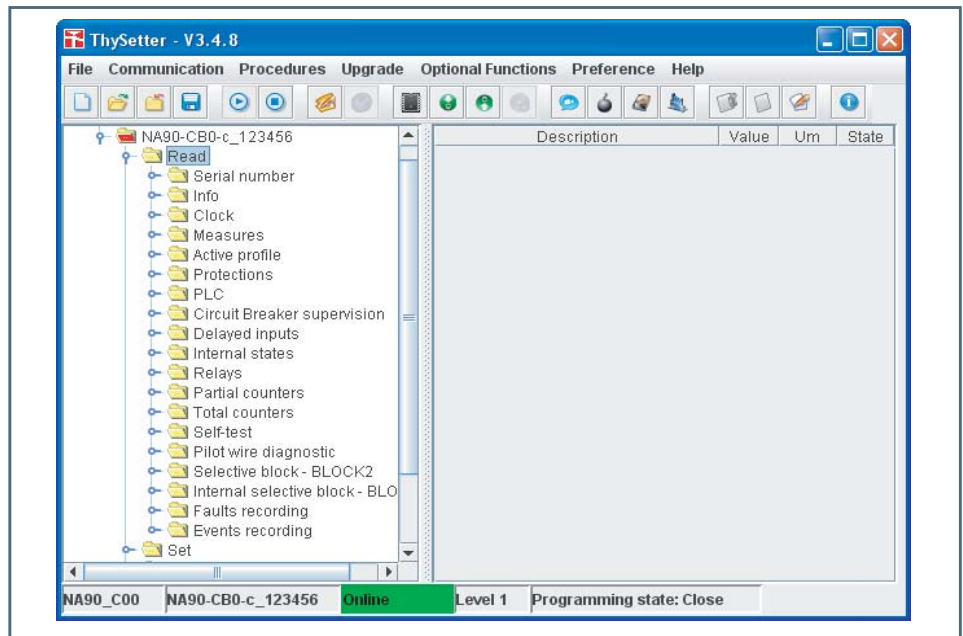
For any operating mode (Online or Offline), the following elements are provided inside the menu tree, common for all the Pro-N devices:^[1]

- Read
- Set
- Oscillography
- Communication
- Commands
- Test
- Start/End settings.



Read

Inside the Read menu all states and measurements are available.

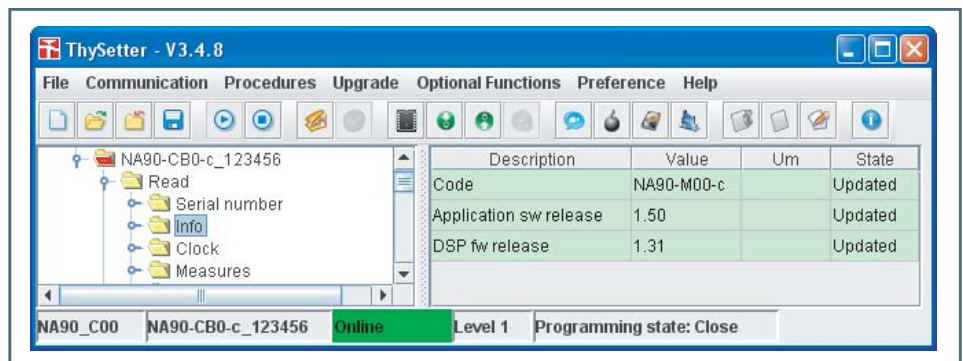


Read \ Serial number

Inside the submenu the serial number can be displayed.

Read \ Info

Inside the submenu the device code, the firmware and software release are available.



Note 1 The shown images explain some menu levels; all examples are indicative and unrealistic.

