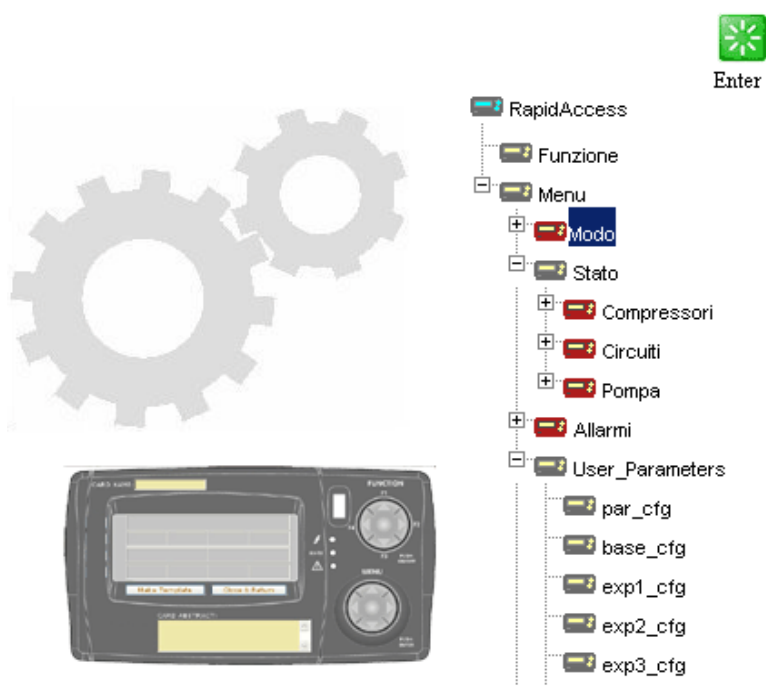


ENERGY XT

XT MenuMaker ver 1.2

MenuMaker



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2 INSTALLATION

2.1 System requirements

2.1.1 Hardware

MINIMUM CONFIGURATION

- Pentium 133 MHz
- RAM: 128 MB
- Free HDU: 300MB

RECOMMENDED CONFIGURATION

- Processor: Pentium 733 Mhz or above
- RAM: 256MB or above
- Free HDU: 500MB or above

2.1.2 Software

- Operating system:
 - Windows 2000 Professional
 - Windows 2000 Server
 - Windows XP PRO
 - Windows Server 2003 Family

2.1.3 Database Engine

One of the following [DataBase Engines](#):

- SQL 2000 (recommended)
- MSDE 2000

2.1.4 Internet Information Server

- IIS 4.0 or above (this is a component supplied with Windows' CD)

2.2 Content of the product

The setup CD comprises the following directories:

- MSDE
Contains the setup program of Microsoft MSDE
- XTMM
Contains the setup program of XT MenuMaker

The CD also includes the User's Manual in .pdf format.

2.3 Installation

To be able to install MenuMaker, it is necessary to access the system with administrator's rights.

Select directory MenuMaker on the supplied CD.
Run "setup.exe".

2.3.1 Verification of pre-requirements

The setup program verifies that the [database engine](#) is present on the system (SQL Server 2000 or MSDE).
If the [database engine](#) is not found, the program displays a message informing the user that the MSDE 2000 setup program will be started with the following parameters:

- Instance: default
- Administrator's access = "sa"
- Password : none

Continue with the [installation](#) of MSDE and restart the program if required.

AFTER THE [INSTALLATION](#) OF THE [DATABASE ENGINE](#), REPEAT THE [INSTALLATION](#) OF XT MENUMAKER.

After the [installation](#) of MSDE, the setup program verifies whether IIS 4.0 or an upper version is present.
If no version is found, the program displays an error message aborting the operation.
In this case, install IIS as described below.

[Internet Information Server](#) is a Microsoft program supplied with Windows 2000, Windows 2000 PRO, Windows 2000 Server, Windows 2003 server family.

To install IIS:

- Select "Start" > "Control Panel".
- Select "Add/Remove Programs".



Verifying the
existence of the
DataBase Engine

Verifying the
existence of IIS 4.0
or above

Installing IIS

- Click "Install Windows components".
- Select "Internet Information Services (IIS)".
- Follow the instructions displayed in the prompts.

2.4 Installing XT MenuMaker

After verifying all the pre-requirements, the program displays the following windows:

- After the initial display, the program displays the License Agreement page that must be read very carefully. To continue, click radio button "I Accept".
- The third window displays the name of the virtual directory in which XT MenuMaker is installed along with the http port. Accept the parameters for the standard setup. These parameters may also be changed by expert users.
- Continue with the following windows to start the setup procedure, which may last several seconds.

2.4.1 Setup messages

The setup program may display the following messages:

- "Database just existing! " (if the database already exists)
This message displays if the system has already been installed.
The procedure detects the existence of XT MenuMaker, displaying a dialogue in which it is possible to choose whether to overwrite or maintain the existing database.



If you choose to overwrite the database, the old MDF database is not deleted but simply renamed. The following message that displays shows the new name assigned to the old database.

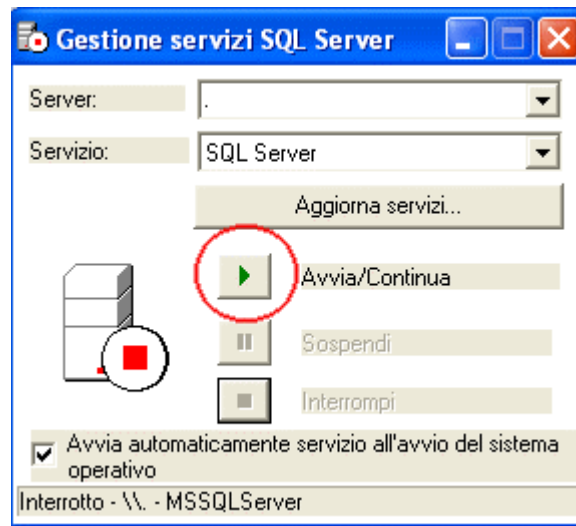
- "The use of XT Manager System needs the mixed mode authentication on MSDE Server."
XT MenuMaker can be used only if the SQL Server (MSDE) authentication system is set to "Mixed Mode". Select "Yes" to allow the setup program to automatically change the parameter.

In some [software](#) configurations, it is necessary to manually restart service MSDE. If the set-up does not continue within a few seconds after confirming the change of mode to "Mixed Mode", it is possible to perform the following operations to restart the MSDE service without quitting the set-up.

- Start the MSDE service by double clicking the icon in the lower right.



- Click Start/Continue.



- Close the window.
- If the MSDE service restarts (the icon in the lower right displays the green Play button), the setup ends successfully.

The setup program may display other error messages indicating that the setup has failed. In this case, it is necessary to contact the supplier, specifying the error code and message.

2.5 End of installation

At the end of the [installation](#), the setup program copies the XT MenuMaker icons on the desktop, in the list of programs of menu Start and in the favourite bookmarks of Internet Explorer.

2.6 Uninstall



To be able to **uninstall** the system, it is necessary to access the system with administrator's rights!

To **uninstall** XTMenuMaker, follow the procedure below:

- Select "Start" > "Control Panel".
- Select XT MenuMaker.
- Select "Remove".
- Follow the instructions displayed in the prompts.



The procedure removes all the files, directories, registry entries and any other **item** required for the use of MenuMaker.

The procedure does not however **delete** the database files of XT MenuMaker that contain all the client's data. These files must be deleted directly.

To **delete** the database of XT MenuMaker, it is necessary to **delete** directory "c:\Programs\XTMenuMaker"

2.6.1 Uninstall messages

The following messages may appear during the **uninstall** procedure:

- "Unable to disconnect XT_db, the database is in use"
This message (or a similar one) indicates that the database is still used by XT MenuMaker and can therefore be uninstalled only after all the applications of XT MenuMaker have been closed.

The program may also display an error message like "The memory cannot be read". This error is not relevant and does not affect the **uninstall** procedure.

2.7 Starting the system



- Verify that SQL/MSDE Server and IIS Server are running.
- Start XT MenuMaker by clicking the icon on the desktop or selecting it from the Programs menu.

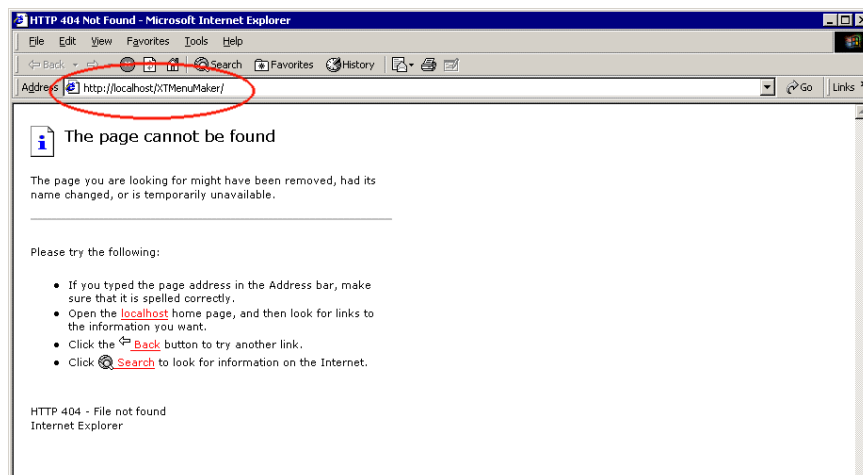
FOR A CORRECT OPERATION, MICROSOFT IE 5.5 OR A HIGHER VERSION MUST BE INSTALLED ON THE PC.

2.8 Start-up problems

XT MenuMaker is generally installed in a "virtual directory" under the main root of the default Web site of the PC (localhost):

- <http://localhost/XTMenuMaker>

If the program is installed on a server with multihosting, the "localhost" address may not correspond to the IP address of the Web site on which MenuMaker has been installed. This causes the display of a message like "Page not found".



In this case, it is necessary to change the browser address as specified below:

- <http://<Your IP Address>/XTMenuMaker>

Where <Your IP Address> represents the IP address of the Web site associated to the PC in use (which often corresponds to the network's IP).

3 INTRODUCTION

MenuMaker is a [software](#) specifically developed to allow the management of Energy XT controller's menus. Its main functions are:

- Graphical display of the logical layout of screens ([decks](#), [cards](#) and [items](#))
- Options to edit, [delete](#), [copy](#) and move the existing [decks](#)
- Creation of personalised menus
- Automatic creation of files for the update of Energy XT controller's firmware
- Automatic creation of a user's manual of each menu
- Creation and management of the glossaries (languages) of the menus

3.1 Multi-language system

MenuMaker can support an unlimited number of languages, depending on the needs of users. For further information, see chapter [Glossary](#).

This option enables to display the same [items](#) in several languages.

Example: [deck](#) "Funzioni" in Italian will be displayed as [deck](#) "Functions" in English.

Users may change the display language at any time by selecting "[Current Language](#)".



This button is available in all the screens of MenuMaker.

Current language

The [current language](#) is the currently selected one.

Default language

MenuMaker always offers the "[default language](#)" that is the base language in which all the [items](#) are displayed.

[Items](#) that don't have a translation in the [current language](#) are displayed in the [default language](#). In this case, the text is highlighted in blue to underline that the text has no translation.

To translate an [item](#), it is sufficient to [delete](#) the blue [string](#), enter the new translated text and save it. The operation is confirmed when the blue highlight is removed from the text.

Example. Translation of a name and of a [deck](#) description:



When MenuMaker starts, it always displays the [default language](#).

Manuals are always created in the currently selected language, while for firmware files it is possible to select the desired language. For further information, see chapters Firmware and Creation of a user's manual.

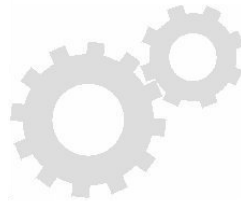
Some fields do not support the display in multiple languages and are therefore always displayed in orange.

3.2 Start-up

When MenuMaker starts, it displays the Logon page.

MenuMaker

ver.2.5 Beta 6



At this point, it is possible to click Enter to open the following main menus:



Menus



Glossary Setup

- **Menus**
This is the main section of the [software](#), which contains the options for the management of the menus, the creation of firmware codes and manuals.
- **Glossary Setup**
This section contains the options for the management of Energy XT's [glossary](#) and language groups.

4 MENU LIST

Click XT_Menu List to open the initial screen that displays the list of available menus.

ADD		Display Pages 1 2 3 4		Current Language Default	
Menu ID	Menu Name	Abstract	Manual	Firmware	
XTMENU178	Machine 1	This is my first XT Machine			MOD COPY DEL
XTMENU186					MOD COPY DEL
XTMENU187					MOD COPY DEL
XTMENU188					MOD COPY DEL
XTMENU189	Another XT Machine	This is another XT Machine			MOD COPY DEL
XTMENU193					MOD COPY DEL
XTMENU200					MOD COPY DEL
XTMENU202					MOD COPY DEL
XTMENU204					MOD COPY DEL
XTMENU210					MOD COPY DEL
XTMENU211					MOD COPY DEL

The following *items* are displayed in sequence:

- Menu ID: Progressive ID of the menu
- Name Menu: Name of the menu
- Abstract: Brief description of the menu
- Manual: Icon that enables to create the manual of the selected menu
- Firmware: Icon that enables to create the firmware files of the selected menu

Hold the cursor for a few seconds over the icon on the left of each "Menu ID" to display the screen showing the date/time of the last change.

Click Menu ID to open the menu and edit its layout.

4.1.1 Sorting the menus

The displayed menus can be sorted by one the following three *items*: Menu ID, Menu Name and Abstract. To perform the sorting operation, click the desired field (Menu ID, Menu Name or Abstract). Once the sorting has been completed, the icon changes shape depending on the option selected. Icons can acquire the following shape:

Ascending order

Descending order

The upper section of the screen indicates whether the menu is divided into several pages. Field "Display Pages" shows the number of additional pages that can be displayed (12 menus are displayed for each page). The current page is highlighted in dark blue while the available ones are displayed in orange.

Display Pages 1 2 3

To display the next and/or previous page, click on one of the orange digits.

4.1.2 Editing the name and description of a menu

Each menu displays the following button:

MOD

"MOD" enables to edit the NAME and DESCRIPTION of each displayed menu.

4.1.3 Deleting a menu

Each menu displays the following button:

DEL

"DEL" enables to *delete* a menu. This operation always requires a confirmation.

The deletion of a menu is irreversible and causes the loss of all the *deck cards* and related *items*!



The deletion operation may require a few seconds, depending on the performance of the PC and the dimensions of the menu. A message is displayed at the end of the operation.

4.1.4 Copying a menu

Each menu displays the following button:

COPY

"Copy" enables to perform a complete *copy* of the menu (*deck*, *card*, *item* and translations in several languages).



The *copy* operation may require several seconds, depending on the performance of the PC and the dimensions of the menu. A message is displayed at the end of the operation.

4.1.5 Creating a menu

ADD

The user can create a new menu by clicking menu "Add". In this case, the *menu list* is displayed in a new menu that can be displayed as needed.

Main decks

After the creation of a new menu, the system automatically creates the first two initial *decks*:

- Rapid Access
This is the *deck* displayed when the controller is switched on. This *deck* provides information on the status of the system controlled (input/output temperature of water, power supplied...) and enables to open the Menu *deck*.
- Menu
This is the *deck* that contains the main menu and the related submenus. This *deck* also contains a *card* with all the main *items*:
 - Password
Enables to open the password entry *deck*.
 - Service: enables to open the service *deck* that comprises several functions, including the one required to enable the loading of the firmware for the user's menus update.

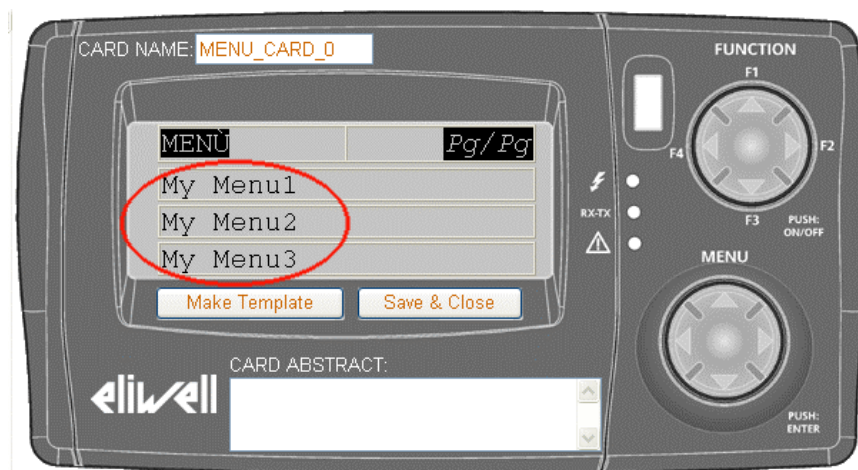
**These two *decks* must always be present for a correct operation of Energy XT.
This is why its deletion and editing is protected.**

Users may only:

- Edit/delete *card* MENU_CARD_x in the Menu *deck*.
- Add *decks* with Rapid Access or Menu.



Card MENU_CARD_x is the starting point from which users may create a personalised menu *treeview*. Each line represents an entry point for additional personalised *decks* (three lines are available for each *card*). Users may edit the MENU_CARD_0 and add other *cards* of the same type, as detailed in the next chapters.



4.1.6 Base XT Machine

XT MenuMaker is supplied as standard with the full *treeview* pre-loaded on Energy XT. This can be used for further changes. Users can in fact duplicate this *treeview* and *apply* the necessary changes.



Base XT Machine cannot be edited.

5 DECKS

Deck tree

The *Menu List* enables to view the *deck tree* display.

This term identifies the logical structure used to organise *decks*.

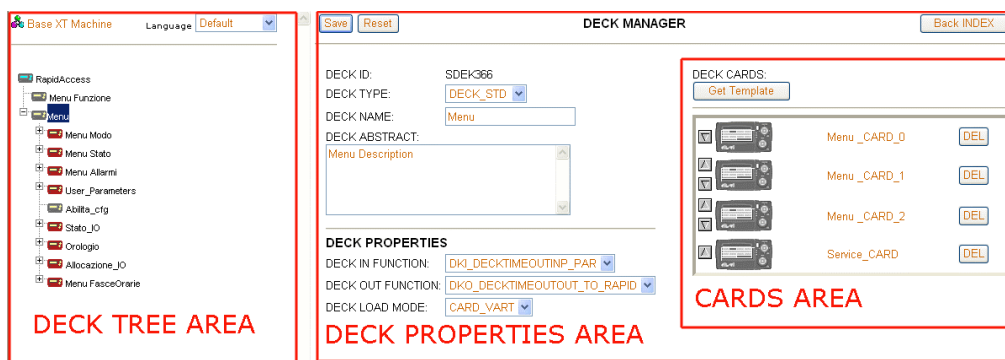
This structure is identical to the what is mathematically defined a tree, i.e. a set of *items* (*deck*) linked to one another by a parent-child relation.

The tree originates from a "root" (*Deck* Rapid Access); each single *item* (*deck*) can have several children, but always has one parent only.

Two *items* (*decks*) are "brothers" when they are the children of the same parent.

Each *deck* may have one or more *cards*, i.e. one or more displays (screens) that can be scrolled using arrow keys up/down on Energy XT's keyboard.

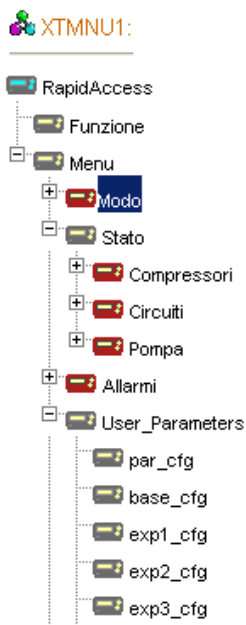
5.1 Deck tree



Section "Deck Tree Area" displays the *treeview* of the *decks* of the selected menu.

The name of the menu (if entered) is displayed in the upper section of the tree. It is sufficient to click it to return to the list of available menus.

5.1.1 Treeview





Icons are displayed in three different colours:

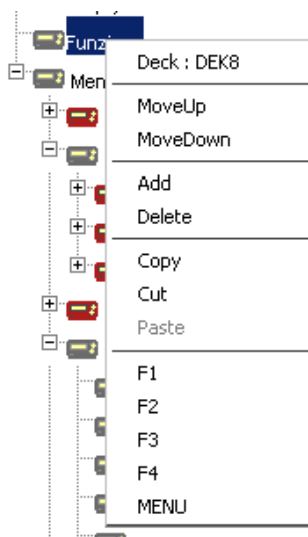
- Blue
Identifies the root *deck* of the tree (Rapid Access).
- Red
Identifies a *deck* with children that are not displayed (closed *deck*).
- Grey
Identifies a terminal *deck* (leaf) or a *deck* with displayed children (open *deck*).

Click button + to expand the display of a *deck* (the *deck* opens).

Click button – to compress the *deck* (the *deck* is closed).

5.1.2 Editing the treeview

To edit the *treeview*, right click one of the *decks* and select one of the displayed *items*.



The first line displays the *deck* ID.

It is useful to remember that function "Paste" is generally disabled (greyed) because it can be used only after functions "Cut" or "Copy" have been used.

The following functions are available (see previous image):

Function	Description
MoveUp	Moves the selected <i>deck</i> (and its sub-tree, when present) up by one level among the <i>decks</i> of the SAME level. This <i>deck</i> does not work if it is the first of its brothers.
MoveDown	Moves the selected <i>deck</i> (and its sub-tree, when present) down by one level among the <i>decks</i> of the SAME level. This <i>deck</i> does not work if it is the first of its brothers.
Add	Adds a child <i>deck</i> to the selected <i>deck</i> .
Delete	Deletes the selected <i>deck</i> with all its sub-trees. Attention: the deletion operation is irreversible.
Copy	Copies the sub-tree generated by the selected <i>deck</i> .
Cut	Cuts (deletes) the sub-tree generated by the selected <i>deck</i> .
Paste	Pastes the selected sub-tree (with "Copy" or "Cut") in the selected <i>deck</i> .
F1	Links the selected <i>deck</i> to a selection of button F1 of Energy XT for more than 2 seconds *.
F2	Links the selected <i>deck</i> to a selection of button F2 of Energy XT for more than 2 seconds *.
F3	Links the selected <i>deck</i> to a selection of button F3 of Energy XT for more than 2 seconds *.
F4	Links the selected <i>deck</i> to a selection of button F4 of Energy XT for more than 2 seconds *.
MENU	Links the selected <i>deck</i> to a selection of one of the buttons F1..F4 for less than 2 seconds *.

*Indicates that the linked *deck* is displayed if this button is clicked on the keyboard of Energy XT.

The function of buttons F1..F4 and MENU must be specified in all menus.

If they are not specified (red icons on the tree), the buttons will implicitly point to *deck* "Rapid Access".

5.2 Deck property area

Deck properties can be configured by means of the fields displayed in the "*Deck Property Area*".

To display a *deck* property (section "*Deck* Properties Area"), it is sufficient to select the corresponding *deck* from the tree (by clicking the left button of the mouse).

The changes applied to one or more fields must be stored by saving the date, which can be done by clicking button "Save".

5.2.1 Selecting the deck type

There are two main types of *decks*:

- Standard *deck*
This is the only *deck* that can be entirely configured by the user; the viewer can be defined by means of the related *cards* and *items*.
- Pre-configured *decks*
These are *decks* in which the operating mode and layout have already been preset by the manufacturer and that allow users to select only the areas that have to be displayed.

Field "DECK TYPE" enables to select one of the following available *deck* types:

DECK_STD

- Standard *deck*
This is the *deck* configured by the user.

DECK_PAR

- Parameter *deck*
This is a predefined *deck* for the display of parameters.
The user may specify one of the parameter areas of list AREA.

DECK_ALA

- Alarms *deck*
This is a predefined *deck* for the display of alarms.
The user may specify one of the parameter areas of list AREA.

DECK_STO

- History *deck*
This is a predefined *deck* for the display of the history of alarms.
There is one area only.

DECK_IO

- I/O
This is a predefined *deck* for the display of the I/O allocations.

The user may specify one of the parameter areas of list AREA.

If the selected *deck* is a standard one (DECK_STD is the default value), the properties of the *deck* also include the "Card Area" in which it is possible to create, edit and *delete* the *cards* linked to the analysed *deck*. For further information, see paragraph *Cards*.



A standard *deck* must contain at least one *card*.

With other types of *decks*, the "Card Area" (*cards* are typical *items* of standard *decks*) is replaced by an another field ("AREA"), which enables to select the Parameters/Alarms/History/Inputs_Outputs Area that can be linked. For further information, see next figure.

5.2.2 Deck: shared fields

All fields, except "Area" and the area reserved to *cards*, are shared by all types of *decks*. The fields are analysed in detail in the following paragraphs.

DECK NAME Enables to specify the name of the *deck*, which, if defined, is displayed directly in the tree. This occurs only after the *deck* has been saved.

DECK ABSTRACT Enables to enter a short description of the functions of the analysed *deck* (max. 1,000 characters).



The description entered in this section will be used as descriptive text of the *deck* during the creation of the user's manual.

DECK IN FUNCTION

Enables to select the function that has to be run when the *deck* is started. In particular, it specifies whether a timer should be enabled after the exit of a *deck* due to a timeout.

- DK1_NULLFUNC4
No timeout is enabled; the user can continue to work with the current *deck* without time limits.
- DK1_DECKTIMEOUTINP_PAR
A timer is enabled to detect the timeout after which the specified function will be enabled.
- *DECK_OUT_FUNCTION*;
The timeout value can be set by the user with the following Energy XT parameter:
 - N_TIMEOUT_MENU (configuration parameter) (see the documentation of Energy XT).

In other words, if the user does not perform any operations on the current *deck* for an interval of time above the predefined timeout, the *deck* is closed automatically, as specified in *DECK_OUT_FUNCTION*.

- DK1_DECKTIMEOUTINP_PAR_AND_RES_RTC_ALARMS
Loads the page timeout when the menu is opened.
Resets alarms N_RTCSUPPLYVOLTERROR and N_RTCVALUEERROR and re-enables the reading of RTC.



This parameter must be used if the *deck cards* contain one of the following "cooked *items*" (see chapter *Items*):

Group R_OSItems o W_OSItems

- GG Clock
- MM Clock
- AA Clock
- HH Clock
- MIN Clock

Otherwise, the specified functions will not operate correctly.

This is not relevant in all other cases.



These *items* are typically used for the clock setting *decks*.

DECK OUT FUNCTION

Enables to select the function that has to be carried out when the timeout set with *DECK_IN_FUNCTION* elapses.

- DKO_NULLFUNC3
No function is carried out when the timeout expires.
- DKO_DECKTIMEOUTOUT_TO_RAPID
Deck Rapid Access is automatically displayed after the timeout expires.
- DKO_DECKTIMEOUTOUT_TO_PREV
The previous *deck* is automatically displayed after the timeout expires.



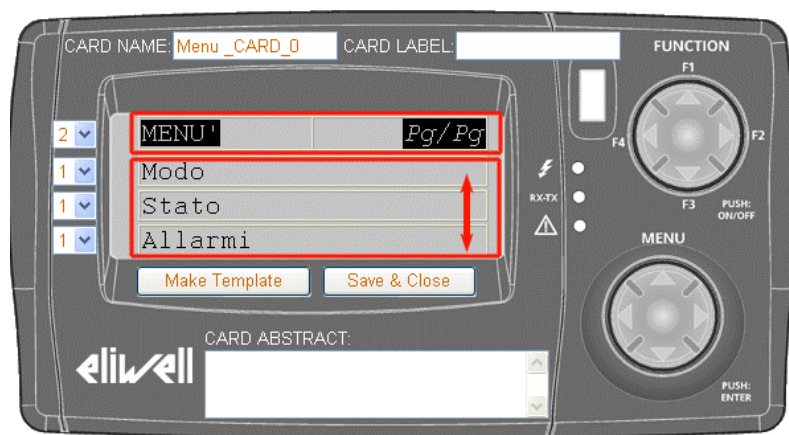
A previous *deck* is the parent *deck* in the *treeview*.

DECK LOAD MODE

Enables to select the [deck](#) loading mode.
In particular, it defines how the [cards](#) (screens) are displayed within the [deck](#).

Three options are available:

- [CARD_VAR](#)
If an [item](#) is not visible (see chapter [Visibility](#)), the [items](#) of the next lines are moved up.
- [CARD_INV](#)
If an [item](#) is not visible (see chapter [Visibility](#)), a blank space is inserted.
- [CARD_VART](#)
This is the mode with title: the first line of the first [card](#) is always visible during the scrolling of the other [card](#) lines.
If an [item](#) is not visible (see chapter [Visibility](#)), the [items](#) of the next lines are moved up.



These [cards](#) are typically used for menu [decks](#) or to display list of values.

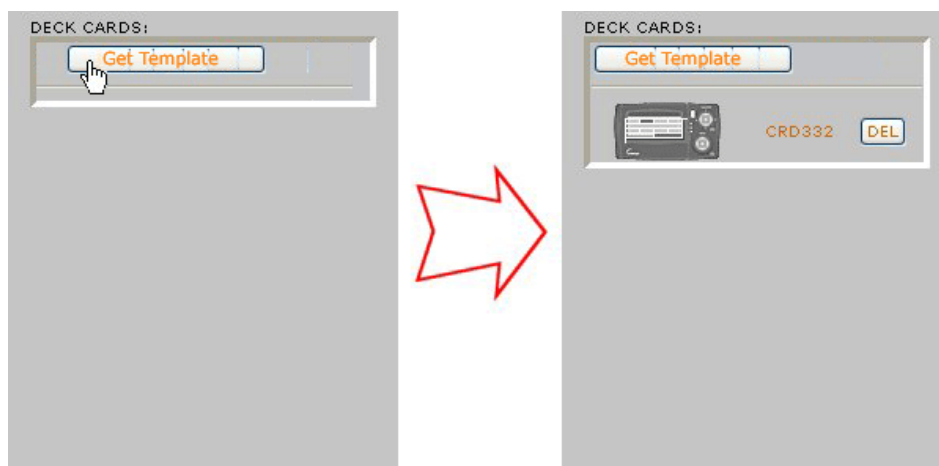
6 CARDS

The *cards* of standard (default) *decks* can be managed through an area called "*Card Area*".

6.1 Creating a card

Button "Get Template" enables to link the currently selected *deck* to a new *card*.

The program displays a list of "*templates*" (*default templates*) that can be used to select the source template in order to create a personalised *card*. For further information, see chapter *Templates*.



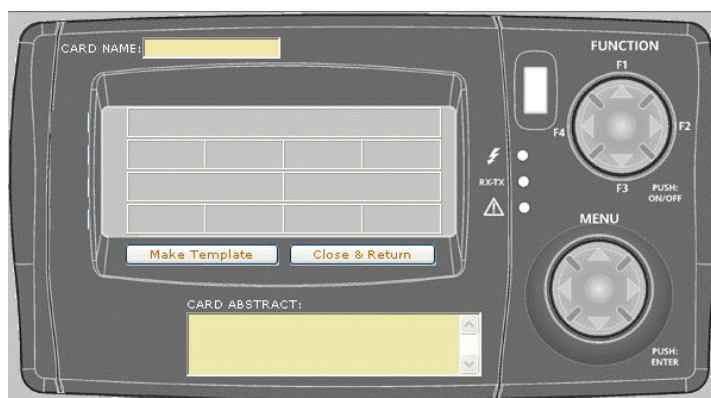
For a correct operation of the displays of Energy XT, it is always advisable to link HOMOGENOUS *CARDS*, i.e. based on the same template, to each *deck*.

6.2 Card property

To display the properties of a *card*, it is sufficient to click the image or name of the *card*. It is useful to remember that at this stage the name has not yet been defined (see following paragraph). The name is constituted by the ID code assigned automatically.

Card Viewer

The *Card Viewer* is displayed. This offers a graphical simulation of the display shown on the screen of Energy XT.



Each line of the viewer is divided into several columns (1, 2, 4), depending on the selected template. Each cell of the viewer defines an *item*. *Items* can be defined by the user, as explained in chapter *Items*.

A name and abstract with the following fields can be defined for each *card*:

Property	Field name	Description
Name	<i>CARD NAME</i>	Defines the <i>card</i> name
Abstract	<i>CARD ABSTRACT</i>	Displays a brief description of the <i>card</i> (max. 1,000 characters)



The content of the Abstract section is used as descriptive text of the *card* during the creation of the user's manual.

These three parameters are stored automatically when the page is closed with button "Close & Return".

Button "Make Template" enables to add the current *card* to the list of *default templates*.
This enables users to add personalised *templates* to the basic (default) *templates* of MenuMaker.

6.3 Deleting a card

To *delete* a *card*, it is sufficient to press "DEL" next to each *card*.



Attention! The deletion of a *card* is irreversible and causes the deletion of all the *items* it contains.

6.4 Sorting cards

If the *deck* contains one or more *cards*, it is possible to change the position of two adjacent *cards*. This operation can be performed with the "sorting buttons" displayed next to the *cards*.



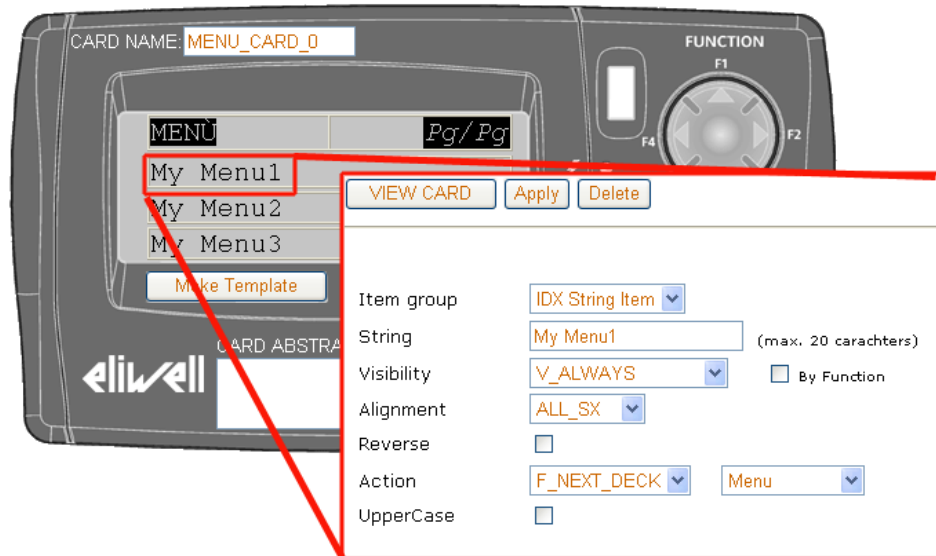
The order of the *cards* corresponds to the sequence in which the *cards* will be scrolled with arrow keys up/down within the *deck*.

7 ITEMS

7.1.1 Entering an item

To edit an *item* of a *card* cell, it is sufficient to click the cell.
The *Item Management* screen displays:

Item management



This page enables to set the parameters of the *item*.

The upper section of the screen (menu) displays 3 buttons that enable to perform the following operations:



Apply

Enables to save the currently displayed settings.

Delete

Enables to *delete* the displayed *item*.

Attention! The deletion of an *item* is irreversible. Deleted *items* cannot be reused.

VIEW CARD

Enables to return to the screen of the Viewer.



All unsaved information (with button "*Apply*") will be lost.

The section below the menus displays the fields that enable to personalise the displayed *item*.

Field "*Item* Group" enables to select the source group of the *item*.

The number and type of subsequent fields vary according to the selection of this field.

Some fields are shared, regardless of the selections:

- *Visibility*
- *Alignment*
- *Reverse*

Optional fields are:

- *String*
This field displays only for *items* belonging to group "*IDX String*".
- *Uppercase*
This field displays only for *items* belonging to group "*IDX String*".
- "Cooked"
This field displays only for *items* that do not belong to group "*IDX String*".

7.1.2 Shared fields

VISIBILITY

Visibility

Defines the level of *visibility* of the *item*.

There are 2 types of *visibility* levels:

Static visibility

Visibility is a constant.
4 options are available:

- V_ALWAYS
The *item* is always visible.
- R_PSW
The *item* is visible after the entry of the read-only password.
- RW_PSW
The *item* is visible after the entry of reading and writing password.
- RW_SERIAL_ONLY

This *item* CANNOT be displayed from the keyboard, but only by means of the serial communication (Param Manager or MODBUS).

Dynamic visibility

Visibility is dynamically dependant on the result of a function: the *item* is displayed only if the result of the function is positive (TRUE).



To set the *dynamic visibility*, select checkbox "By function", then choose the function that has to be calculated.

Example: if the *item* refers to a value that is applicable only to reversible units, it may be useful to select function DV_MACHINEREVERSAL. By doing so, the *item* is automatically displayed only for reversible units.

The *Appendix* provides a table with the available *visibility* functions along with a brief description.

ALIGNMENT

Alignment

3 options are available:

- ALL_SX
Alignment to the left of the cell.
- ALL_CEN
Centring within the cell.
- ALL_DX
Alignment to the right of the cell.

REVERSE

Reverse

Defines the *item* fonts in *reverse* mode (black on white).

7.1.3 Types of items

Items belong to two main types:

- *String item* (IDX *String Item*)
- "Cooked *Item*" (Energy XT data reading/writing *item*)
Cooked *items* are further divided into two sub-categories:
 - Read "cooked" (prefix R_)
These *items* read the status of an input/output or of a parameter.
 - Write "cooked" (prefix W_)
These *items* are used to write the values of a parameter.



The type of *item* is predefined for each template and cannot be changed by users. In other words, a *string item* cannot be converted into a "cooked" *item* and vice versa.

The same principle applies to "cooked *items*":

- A default writing *item* contains only options with prefix "W_".
- A default reading *item* contains only options with prefix "R_".

7.1.4 IDX String Items

IDX Strings are *string items* that can be entirely managed by users.

These *items* may contain descriptive strings like titles, memos, etc....

In this case, fields "*String*" "*Action*" and "*Uppercase*" are displayed:

STRING

String

This is the text *string* that will be displayed. The maximum length of the *string* varies according to the number of fields present in the line of the source *card*, as shown in the table below:

Number of fields of the line	Maximum number of characters of the <i>string</i>
1	20
2	10
4	5

The field enables to directly control the characters entered and prevents therefore users from exceeding the field length. For simplicity, the maximum length of the *string* is displayed next to field.

ACTION

Action

Defines the behaviour of Energy XT after the selection of an *item* (key ENTER of Energy XT).
Possible values are:

- F_NEXT_DECK
Defines the *deck* that has to be used when the specified *item* is selected.
The user can select the next *deck* from a list that displays all the current *decks* in the *deck tree*.
- F_FUNC
Defines the function that will be called with the specified *item* is selected.
The user can select the function from a list.
- The [Appendix](#) provides a list of the available functions.
- F_UNDEF
No *action* is performed when the specified *item* is selected.

Uppercase [UPPERCASE](#)
Defines the *item* characters in [UPPERCASE](#) even if they have been entered in lower case.

7.1.5 NON IDX String Items ("Cooked" items)

These *items* are generally predefined internally ("cooked").

These *items* are divided into several categories, which *range* from the number of page, to the reading of a compressor status, the current date and the writing of a specific parameter ...

In this case, fields "*String*" and "*Uppercase*" are replaced by field "Cooked".

This field enables to choose the "cooked *item*" (predefined *item*) that can be linked to the *item* being processed.

The selection of "cooked" *items* varies according to the options chosen in field "*Item Group*".



The selection of a "cooked" *item* is MANDATORY, as it is not possible to save the information of an *item* if none of the options available have been selected.

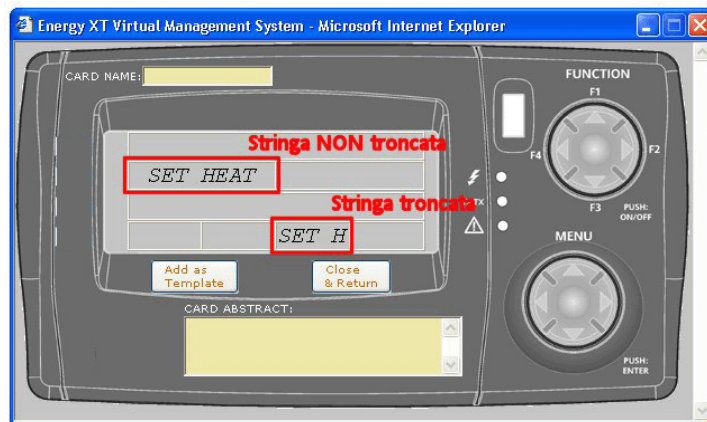
The selected "cooked" *item* influences the content ("MARKER") displayed in the relevant field of the display.

This "MARKER" will obviously be replaced with the actual value in Energy XT's Viewer.

All the *items* of field "Cooked" that contain a "MARKER" with a length above the number of characters available for the selected display will be highlighted in grey. Although these *items* can be selected, the related "MARKERS" will be truncated for display purposes. An example is provided in the figure that follows: the two *items* represent two different types of displays, though they contain the same *item*. This is because the *item* of the fourth line only has 5 characters and cannot therefore contain the whole "MARKER" of the linked "cooked" *item*.



To avoid unexpected results, it is always advisable to enter an *item* with a length suitable to the size of the cell.



The selected "cooked" *item* influences the other fields that change automatically depending on the default setting (recommended).

The user may change the parameters at any time.

7.2 Displaying the items of a card

Each *item* of a *card* can acquire different formats depending on its characteristics. The possible formats and related characteristics are the following:

- An *item* without a label is a undefined *item*.
- An *item* with a label (i.e. not in *italics*) is a "IDX *String Item*".
- An *item* with a "ITMnumero" label is a "IDX *String Item*" without value.
- An *item* with a label in *italics* is a non "IDX *String Item*", which represents the "MARKER" of the selected "cooked" *item*.





8 TEMPLATES

[Page Templates](#) enables to manage the "template [cards](#)", i.e. the default [cards](#) that can be loaded into a standard [deck](#) ([DECK_STD](#)).

The page can be opened in two ways:

- By selecting "Menus" and "[Templates](#) List" from the initial page of XTMenuMaker
- By selecting "Get Template" (see chapter [Decks](#)) from the [deck](#) editing page (type [DECK_STD](#))

Page Templates

ADD	Card Template found: 3	CARD TEMPLATE MANAGER			Back INDEX
	Template ID 	Template Name	Abstract		
	TCRD751	Template 1	This is the first template	DEL	
	TCRD757	Template 2	This is the second template	DEL	
	TCRD758	Template 3	This is the third template	DEL	

This page displays a list of all the available [templates](#), organised in the following fields:

- Template icon
- Template ID: unique template identifier
- Template Name: name assigned to the template
- Template Abstract: brief description of the template

The list can be sorted in ascending or descending order by each field, as for the [Menu List](#) page.

If there are several [templates](#), the list is organised in pages, as for the [Menu List](#) page.

8.1.1 Loading a template

If [page Templates](#) has been opened from a [deck](#) management page ([Deck](#) Manager) with button "Get Template", the right section of the page displays button "Add To [Deck](#)".

By clicking this button, the [card](#) is returned to the "calling [deck](#)".

All the changes subsequently applied to the [deck](#) do not alter the content of the template.

8.1.2 Deleting a template

To [delete](#) a template [card](#), it is sufficient to click button "DEL".

The [software](#) is supplied with a set of standard [templates](#) that cannot be deleted or edited. For further information, see chapter [Appendix](#).

8.1.3 Editing a template

To edit a template, it is sufficient to click the related icon.

Energy XT's Viewer opens in the lower section of the display to allow users to [apply](#) the changes, as described in chapters [Cards](#) and [Items](#).

The [software](#) is supplied with a set of standard [templates](#) that cannot be edited. For further information, see chapter [Appendix](#).

8.1.4 Creating a template

To create a template, it is sufficient to click button "Add".

8.1.5 Closing a Template page

To exit from a Template page, it is possible to use one of the three following buttons:

- "Back Index": returns to the initial selection page
- "Add To [deck](#)": this button is present only if the page has been opened from the [Deck](#) Manager
- "Back [Deck](#) Manager": this button is present only if the page has been opened from the [Deck](#) Manager

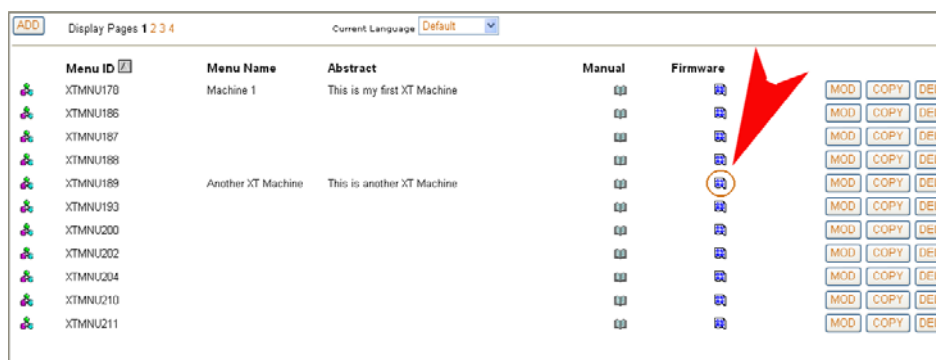
9 FIRMWARE DOWNLOAD

After its definition, the menu (*decks, cards, items*) can be downloaded to Energy XT's controller. This implies performing two main operations:

- Creating the firmware files
- *Downloading the files to Energy XT's controller*

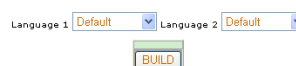
9.1 Creating firmware files

To create the files for the menu download, it is sufficient to click icon "Firmware" referred to the menu to be downloaded in the *Menu List* screen.



The following Language Selection screen displays:

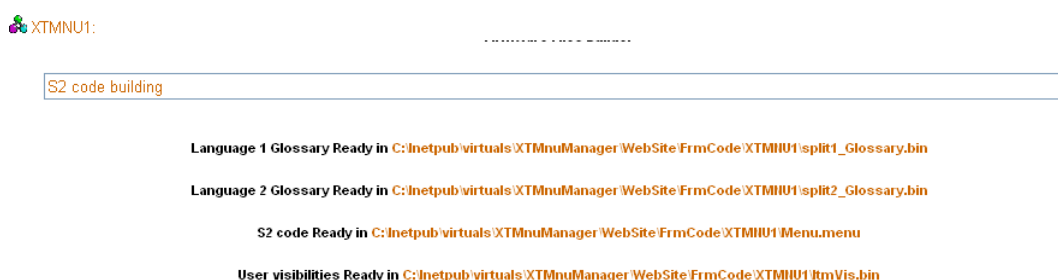
Output Files Selector



This screen enables to select the two languages that have to be downloaded to Energy XT's controller. The system displays the *default language*.

To start the download, click button "Build".

At the end of the operation, the system displays the created files and the directory in which they have been saved. The files can now be downloaded to Energy XT's controller.



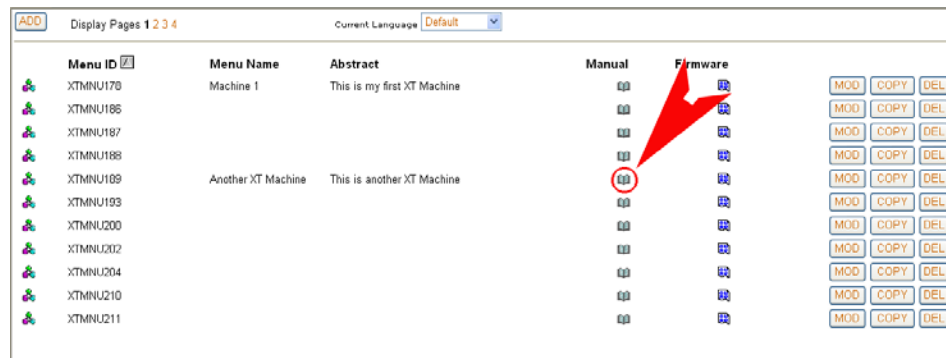
The firmware creation operation may require from several seconds to a few minutes, depending on the performance of the PC and the dimensions of the menu.

9.2 Downloading the files to Energy XT's controller

The firmware can be downloaded to the controller only with the special "Apploder" tool. For further instructions, refer to the related User's Manual.

10 USER MANUAL CREATION

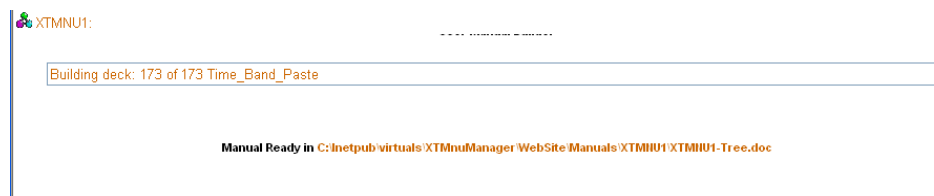
To create a user's manual of a menu, it is sufficient to click icon "User Manual" in the [Menu List](#) page.



Menu ID	Menu Name	Abstract	Manual	Firmware	
XTMNU170	Machine 1	This is my first XT Machine			
XTMNU185					
XTMNU187					
XTMNU188					
XTMNU109	Another XT Machine	This is another XT Machine			
XTMNU193					
XTMNU200					
XTMNU202					
XTMNU204					
XTMNU210					
XTMNU211					

The creation procedure opens.

At the end, the program displays the product file and the directory in which the document has been saved.



The product file is a Word 2000 file and can therefore be displayed correctly only with Microsoft Word 2000 or a higher version (Windows XP).

The display language is the currently selected one.

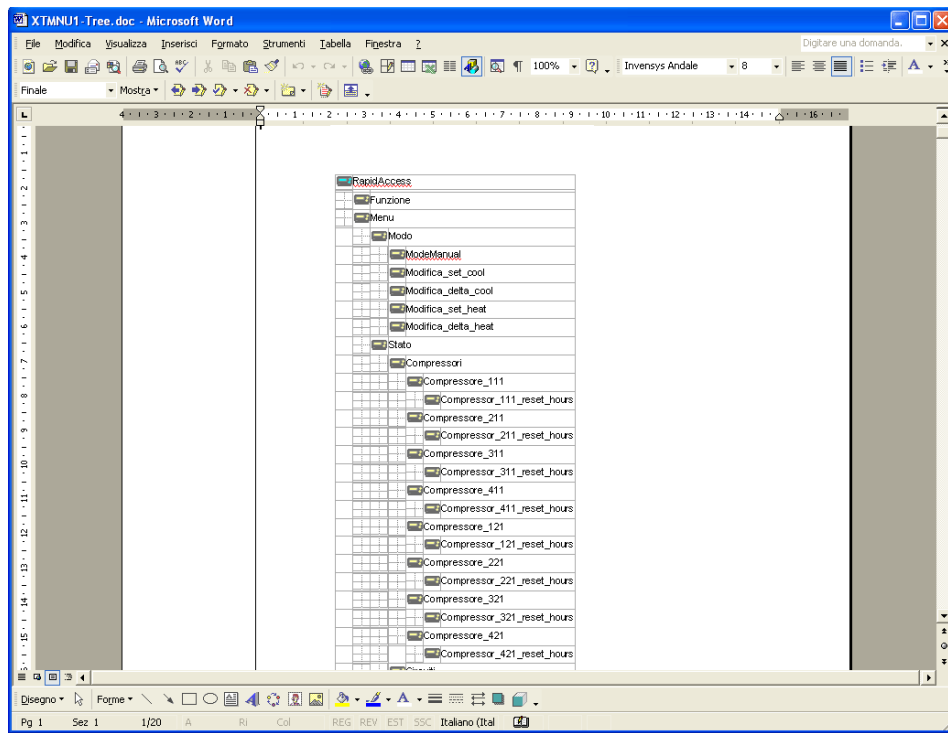
10.1 Manual structure

The manual is organised hierarchically into two main sections:

- [Treeview table](#)
- [Description of decks](#)

10.1.1 Treeview table

This is a graphical table that contains the [treeview](#) in a format that is similar to the one displayed in the [Deck](#) Manager page.



10.1.2 Description of decks

This section lists all the [decks](#) in the same order in which they appear in the [treeview](#).

Each [deck](#) represents a sub-chapter.

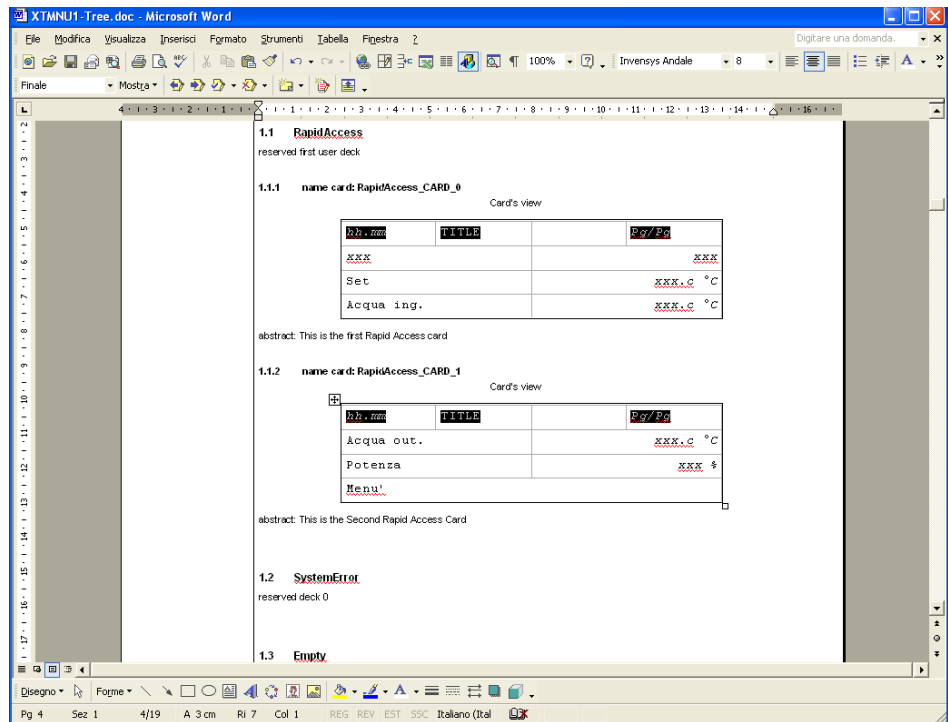
The descriptive text is acquired from field "[Deck Abstract](#)" edited by the user in the [Deck Manager](#) page.

If the [deck](#) is a [string](#) (IDX [STRING](#)), the chapter contains additional subchapters that describe each single [card](#).

Card sub-chapters

Each [card](#) sub-chapter is constituted by:

- Viewer graphical table
This is the graphical representation of what is displayed on Energy XT's Viewer.
This display is similar to the one shown on video in the [Card Manager](#) (XT Viewer) page.



- Descriptive text
The descriptive text is acquired from field "[Card](#) Abstract" edited by the user in the [Card](#) Manager page.



If field "[Deck Abstract](#)" of a [deck](#) has not been edited, the related chapter is not included in the user's manual. The same applies to the [Card sub-chapters](#).



This option enables users to decide which descriptions of the [decks](#) and/or [cards](#) to include in the manual.

10.1.3 Related icons

The icons used to represent the [treeview](#) are included in the manual. Therefore, to [copy](#) or move the files of the manual in/to another directory, it is necessary to [copy](#) all the files of the source directory (IconXt01.gif, IconXT02.gif).

11 GLOSSARY MANAGEMENT

Option "[Glossary](#) Setup" in the main selection page enables to display the [glossary management](#) options.
3 [items](#) are available:

- [Glossary Groups](#)
- [Internal Glossary](#)
- [Transcode Strings](#)

Both pages display the values in a [standard table](#), similar to the one described below.

11.1 Standard table

Standard table A [standard table](#) has the following format:

Items per Page:

GLOSSARY NAME	GLOSSARY DESCRIPTION	COPY	DELETE
My Glossary	This is mine	<input checked="" type="checkbox"/>	<input type="checkbox"/>
English	This is English	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		SAVE	DELETE
ADD SECTION			
		Add	Reset

SAVE

DEL

ADD

In each table it is possible to:

Adding an item

- Populate the blank fields at the end of the table (Add Section) as needed
- Click "ADD"

COPY

To duplicate an existing [item](#), it is possible to use button [COPY](#) that displays the fields of the related line in section ADD.

Editing items

Edit all the desired fields (even when displayed on different lines).
Click "SAVE".



The process may require several seconds if a large volume of data is being edited.

Deleting items

Select the checkbox of the lines you wish to [delete](#).
Click "[DELETE](#)".



The deletion operation is irreversible.

11.1.1 Page layout

Items per page

[Items](#) may be arranged on several pages if they do fit on a single page.
The number of [items per page](#), displayed in the upper left section of the display, can be edited by the user.
To change the number of [items per page](#), enter the new number and click any point in the external area next to the box that displays the number.

11.2 Glossary groups

This section displays all the language groups available in MenuMaker (glossaries).

GLOSSARY NAME	GLOSSARY DESCRIPTION	COPY	DELETE
My Glossary	This is mine	<input type="checkbox"/>	<input type="checkbox"/>
English	This is English	<input type="checkbox"/>	<input type="checkbox"/>
		SAVE	DELETE
ADD SECTION			
		Add	Reset

Each language group represents a line of the [standard table](#).

Each line has 2 fields:

- [Glossary](#) Name : name assigned to the language group
- [Glossary](#) Description: brief description of the language group

The user may edit, create and [delete](#) any language group.

All the language groups of this table are displayed in the language dropdown list that appears in the MenuMaker pages.

11.3 Internal glossary

The [internal glossary](#) includes all the strings related to the internal parameters of Energy XT. These strings are used to create non standard [decks](#) (non [DECK_STD](#)).

Example: a parameter [deck](#) lists all the parameters of a specific area.

The strings used for display purposes are included in this [standard table](#).

STRING	LIMIT
	20
Antigelo	20
Delta Allarme	20
Delta allarme temp.	20
Delta allarme pres.	20
Allarme Term. Comp.	20
Allarme Flussostato	20
Set Allarme	20
Set allarme temp.	20
Bypass Salto Termico	20
SAVE	

Retrieved Pages

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Each line of the table represents a different [string](#).

Each line has 2 fields:

- [String](#) : [string](#) that will be used by Energy XT
- Limit : maximum number of characters that can be used

Users may edit the content of the strings or translate them into a different language.

Users cannot [delete](#) or add [items](#).



When editing the content of a [string](#) or translating it, it is important not to exceed the number of characters specified in field LIMIT.

Failure to do so may affect the operation of Energy XT.

Specified limits cannot be edited.

Glossary translation

To create a version of Energy XT in a different language, follow this procedure:

- Create a new language group in section “*Glossary* Setup/*Glossary Groups*”.
- Open the table of the *internal glossary* (“*Glossary* Setup/*Internal Glossary*”).
- Select the new language from the dropdown list displayed in the upper section of the display (*current language*).
- All strings (that have not yet been translated) are displayed in the *default language* and highlighted in blue.
- Edit field *String* line by line (the blue highlight is removed from each edited line).

11.4 Transcode strings

These are additional strings used in several displays of Energy XT.
Follow the same instructions provided for the *internal glossary*.

12.1 Dynamic visibility functions

Label	Description
0 DV_NULLFUNC5	No function
1 DV_EXTFLASHERROR	Not used
2 DV_RTCSUPPLYVOLTERROR	Start-up diagnostics – Low RTC battery
3 DV_EXTRAMERROR	Not used
4 DV_E2CRCERROR	Start-up diagnostics – Faulty external EEPROM CRC
5 DV_RTCACKERROR	Start-up diagnostics – RTC communication error
6 DV_RTCVALUEERROR	Start-up diagnostics – Incongruent RTC registers
7 DV_INTERNAL_ALARM_IS_ACTIVE	Active internal alarm
8 DV_REGULATION_ALARM_IS_ACTIVE	Active control alarm
9 DV_ENABLEHIDEMENU	Enable hidden menus
10 DV_ENABLESERVICEMENU	Enable Service menu
11 DV_NO_IS_AVAILABLE	Digital output configured
12 DV_AO_IS_AVAILABLE	Analogue output configured
13 DV_AI_IS_AVAILABLE	Analogue input configured
14 DV_ID_IS_AVAILABLE	Digital input configured
15 DV_ENABLEIOALLOCATIONMENU	Enable I/O allocation menu
16 DV_FATAL_STARTUP_ERR1	Start-up diagnostics - Err1
17 DV_FATAL_STARTUP_ERR2	Start-up diagnostics - Err2
18 DV_FATAL_STARTUP_ERR3	Start-up diagnostics - Err3
19 DV_FATAL_STARTUP_ERR4	Start-up diagnostics - Err4
20 DV_FATAL_STARTUP_ERR5	Start-up diagnostics - Err5
21 DV_EXP0	Enable display if an internal expansion module is present
22 DV_EXP1	Enable display if external expansion module 1 is present
23 DV_EXP2	Enable display if external expansion module 2 is present
24 DV_EXP3	Enable display if external expansion module 3 is present
25 DV_EXP4	Enable display if external expansion module 4 is present
26 DV_EXP1_MODEL	Enable display if template XTE1H of external expansion module 1 is present
27 DV_EXP2_MODEL	Enable display if template XTE1H of external expansion module 2 is present
28 DV_EXP3_MODEL	Enable display if template XTE1H of external expansion module 3 is present
29 DV_EXP4_MODEL	Enable display if template XTE1H of external expansion module 4 is present
30 DV_MACHINEREVERSAL	Enable display if the machine is reversible
31 DV_ITEM_ENABLED_IN_COOLING	Enable display if the unit is reversible in Cooling mode
32 DV_ITEM_ENABLED_IN_HEATING	Enable display if the unit is reversible in Heating mode
33 DV_HIGHPRES_IN_COOLING	Enable maximum circuit pressure display in Cooling mode
34 DV_HIGHPRES_IN_HEATING	Enable maximum circuit pressure display in Heating mode
35 DV_LOWPRES_IN_COOLING	Enable minimum circuit pressure display in Cooling mode
36 DV_LOWPRES_IN_HEATING	Enable minimum circuit pressure display in Heating mode
37 DV_PUMPGROUP	Enable display if the pump group is present
38 DV_PUMP1	Enable display if one pump is present
39 DV_PUMP2	Enable display if two pumps are present
40 DV_COMPRESSOR_0	Enable display if compressor 0 is present
41 DV_COMPRESSOR_1	Enable display if compressor 1 is present
42 DV_COMPRESSOR_2	Enable display if compressor 2 is present
43 DV_COMPRESSOR_3	Enable display if compressor 3 is present
44 DV_COMPRESSOR_4	Enable display if compressor 4 is present
45 DV_COMPRESSOR_5	Enable display if compressor 5 is present
46 DV_COMPRESSOR_6	Enable display if compressor 6 is present
47 DV_COMPRESSOR_7	Enable display if compressor 7 is present
48 DV_CIRCUIT_0	Enable display if circuit 0 is present
49 DV_CIRCUIT_1	Enable display if circuit 1 is present
50 DV_CIRCUIT_2	Enable display if circuit 2 is present
51 DV_CIRCUIT_3	Enable display if circuit 3 is present
52 DV_CIRCUIT_4	Enable display if circuit 4 is present
53 DV_CIRCUIT_5	Enable display if circuit 5 is present
54 DV_CIRCUIT_6	Enable display if circuit 6 is present
55 DV_CIRCUIT_7	Enable display if circuit 7 is present
56 DV_TIMEBANDDAILY	Enable setting of daily time bands
57 DV_TIMEBANDWEEKLY	Enable setting of weekly time bands
58 DV_TIMEBAND52	Enable setting of 5+2 time bands

0:SUPPORT FUNCTION

Return value: RW_ALWAYS

Function: used for [items](#) that are always visible.**1:NOT USED**

Return value:

Function:**2:START-UP DIAGNOSTICS – LOW RTC BATTERY**

Return function: RW_ALWAYS if an alarm is present; otherwise RW_SERIAL_ONLY.
Function: verifies if a low RTC battery alarm is present after *start-up*.

3:NOT USED

Return value:

Function:

4:START-UP DIAGNOSTICS – INCORRECT EXTERNAL EEPROM CRC

Return value: RW_ALWAYS if an alarm is present; otherwise RW_SERIAL_ONLY.

Function: verifies whether an external EEPROM CRC error alarm is present after *start-up*.

5:START-UP DIAGNOSTICS – RTC COMMUNICATION ERROR

Return value: RW_ALWAYS if an alarm is present; otherwise RW_SERIAL_ONLY.

Function: verifies that there is no RTC communication error after *start-up*.

6:START-UP DIAGNOSTICS – INCONGRUENT RTC REGISTERS

Return value: RW_ALWAYS if an alarm is present; otherwise RW_SERIAL_ONLY.

Function: verifies that no incongruent RTC register alarms are present after *start-up*.

7:ACTIVE INTERNAL ALARM

Return value: RW_ALWAYS if an alarm is present; otherwise RW_SERIAL_ONLY.

Function: verifies whether an internal alarm is present.

8:ACTIVE CONTROL ALARM

Return value: RW_ALWAYS if an alarm is present; otherwise RW_SERIAL_ONLY.

Function: verifies whether a control alarm is present.

9:ENABLE HIDDEN MENUS

Return value: RW_ALWAYS if the hidden menus display is enabled; otherwise RW_SERIAL_ONLY.

Function: verifies whether the HW password has been entered correctly. The enabling is not active when the default menu RAPID_ACCESS is selected.

10:ENABLE SERVICE MENU

Return value: : RW_ALWAYS if the Service menu display is enabled; otherwise RW_SERIAL_ONLY.

Function: verifies whether the HW password has been entered correctly and if the configuration mode is active. The enabling is not active when the default menu RAPID_ACCESS is selected.

11:DIGITAL OUTPUT CONFIGURED

Return value: RW_ALWAYS if the digital output is configured; otherwise RW_SERIAL_ONLY.

Function: verifies whether the digital output has been allocated statically or dynamically.

12:ANALOGUE OUTPUT CONFIGURED

Return value: RW_ALWAYS if the analogue output is configured; otherwise RW_SERIAL_ONLY.

Function: verifies whether the analogue output has been allocated statically or dynamically.

13:ANALOGUE INPUT CONFIGURED

Return value: RW_ALWAYS if the analogue input is configured; otherwise RW_SERIAL_ONLY.

Function: verifies whether the analogue input has been allocated statically or dynamically.

14:DIGITAL INPUT CONFIGURED

Return value: RW_ALWAYS if the digital input is configured; otherwise RW_SERIAL_ONLY.

Function: verifies whether the digital input has been allocated statically or dynamically.

15:ENABLE I/O ALLOCATION MENU

Return value: RW_ALWAYS if the I/O allocation menu can be displayed; otherwise RW_SERIAL_ONLY.

Function: Verifies if:

- The configuration mode is active
- A system timeout error is active (communication timeout of expansion module, external EEPROM CRC error, bytecode execution error, low RTC battery, RTC communication error, incongruent RTC registers, unsupported I/O number, system limits not met, drive opening or writing error)
- The simulation mode is active

If one of the conditions is present, the I/O allocation menu cannot be displayed.

16:START-UP DIAGNOSTICS - ERR1

Return value: RW_ALWAYS if error Err1 is detected after *start-up*; otherwise RW_SERIAL_ONLY.

Function: verifies whether the ID and manufacturer's code of the external FLASH correspond to the specified ones.

17:START-UP DIAGNOSTICS – ERR2

Return value: RW_ALWAYS if error Err2 is detected after *start-up*; otherwise RW_SERIAL_ONLY.

Function: verifies that the external RAM access operations are performed correctly during *start-up*.

18:START-UP DIAGNOSTICS – ERR3

Return value: RW_ALWAYS if error Err3 is detected after *start-up*; otherwise RW_SERIAL_ONLY.

Function: verifies whether the bytecode (control) instructions have been regularly programmed in the external RAM during *start-up*.

19:START-UP DIAGNOSTICS – ERR4

Return value: RW_ALWAYS if error Err4 is detected after *start-up*; otherwise RW_SERIAL_ONLY.

Function: verifies whether the menu descriptions have been regularly programmed in the external RAM during *start-up*.

20:START-UP DIAGNOSTICS – ERR5

Return value: **RW_ALWAYS** if error Err5 is detected after **start-up**; otherwise **RW_SERIAL_ONLY**.

Function: verifies whether an incorrect CRC is present in the external EEPROM areas. If an error is present, the corrupted area is **reset** with the default values.

21:ENABLE DISPLAY IF AN INTERNAL EXPANSION IS PRESENT

Return value: **RW_ALWAYS** if the internal expansion module is configured; otherwise **RW_SERIAL_ONLY**.

Function: verifies whether the internal expansion module has been configured as per parameter.

22:ENABLE DISPLAY IF EXTERNAL EXPANSION MODULE 1 IS PRESENT

Return value: **RW_ALWAYS** if the internal expansion module is configured; otherwise **RW_SERIAL_ONLY**.

Function: verifies whether the external expansion module 1 has been configured as per parameter.

23:ENABLE DISPLAY IF EXTERNAL EXPANSION MODULE 2 IS PRESENT

Return value: **RW_ALWAYS** if the internal expansion module is configured; otherwise **RW_SERIAL_ONLY**.

Function: verifies whether the external expansion module 2 has been configured as per parameter.

24:ENABLE DISPLAY IF EXTERNAL EXPANSION MODULE 3 IS PRESENT

Return value: **RW_ALWAYS** if the internal expansion module is configured; otherwise **RW_SERIAL_ONLY**.

Function: verifies whether the external expansion module 3 has been configured as per parameter.

25:ENABLE DISPLAY IF EXTERNAL EXPANSION MODULE 4 IS PRESENT

Return value: **RW_ALWAYS** if the internal expansion module is configured; otherwise **RW_SERIAL_ONLY**.

Function: verifies whether the external expansion module 4 has been configured as per parameter.

26:ENABLE DISPLAY IF TEMPLATE XTE1H OF EXTERNAL EXPANSION 1 IS PRESENT

Return value: **RW_ALWAYS** if the template of the external expansion module 1 is XTE1H; otherwise **RW_SERIAL_ONLY**.

Function: verifies if the external expansion module 1 is of template XTE1H, as specified in the related parameter.

27:ENABLE DISPLAY IF TEMPLATE XTE1H OF EXTERNAL EXPANSION 2 IS PRESENT

Return value: **RW_ALWAYS** if the template of the external expansion module 2 is XTE1H; otherwise **RW_SERIAL_ONLY**.

Function: verifies if the external expansion module 2 is of template XTE1H, as specified in the related parameter.

28:ENABLE DISPLAY IF TEMPLATE XTE1H OF EXTERNAL EXPANSION 3 IS PRESENT

Return value: **RW_ALWAYS** if the template of the external expansion module 3 is XTE1H; otherwise **RW_SERIAL_ONLY**.

Function: verifies if the external expansion module 3 is of template XTE1H, as specified in the related parameter.

29:ENABLE DISPLAY IF TEMPLATE XTE1H OF EXTERNAL EXPANSION 4 IS PRESENT

Return value: **RW_ALWAYS** if the template of the external expansion module 4 is XTE1H; otherwise **RW_SERIAL_ONLY**.

Function: verifies if the external expansion module 4 is of template XTE1H, as specified in the related parameter.

30:ENABLE DISPLAY IF THE MACHINE IS REVERSIBLE

Return value: **RW_ALWAYS** if the unit is reversible; otherwise **RW_SERIAL_ONLY**.

Function: verifies if the unit has been configured as reversible, as specified in the related parameter.

31: ENABLE DISPLAY IF THE UNIT IS REVERSIBLE IN COOLING MODE

Return value: **RW_ALWAYS** if the unit is reversible and in Cooling mode; otherwise **RW_SERIAL_ONLY**.

Function: verifies if the unit has been configured as reversible and if the Cooling mode has been set as current operating mode, as specified in the related parameter.

32: ENABLE DISPLAY IF THE UNIT IS REVERSIBLE IN HEATING MODE

Return value: **RW_ALWAYS** if the unit is reversible and in Heating mode; otherwise **RW_SERIAL_ONLY**.

Function: verifies if the unit has been configured as reversible and if the Heating mode has been set as current operating mode, as specified in the related parameter.

33:ENABLE MAXIMUM CIRCUIT PRESSURE DISPLAY IN COOLING MODE

Return value: **RW_ALWAYS** if the unit is running in Cooling mode and if a maximum pressure probe is present; otherwise **RW_SERIAL_ONLY**.

Function: verifies if the unit has maximum pressure sensors and if the Cooling mode has been set as current operating mode, as specified in the related parameter.

34:ENABLE MAXIMUM CIRCUIT PRESSURE DISPLAY IN HEATING MODE

Return value: **RW_ALWAYS** if the unit is running in Heating mode and if a maximum pressure probe is present; otherwise **RW_SERIAL_ONLY**.

Function: verifies if the unit has maximum pressure sensors and if the Heating mode has been set as current operating mode, as specified in the related parameter.

35:ENABLE MINIMUM CIRCUIT PRESSURE DISPLAY IN COOLING MODE

Return value: **RW_ALWAYS** if the unit is running in Cooling mode and if a minimum pressure probe is present; otherwise **RW_SERIAL_ONLY**.

Function: verifies if the unit has minimum pressure sensors and if the Cooling mode has been set as current operating mode, as specified in the related parameter.

36:ENABLE MINIMUM CIRCUIT PRESSURE DISPLAY IN HEATING MODE

Return value: **RW_ALWAYS** if the unit is running in Heating mode and if a minimum pressure probe is present; otherwise **RW_SERIAL_ONLY**.

Function: verifies if the unit has minimum pressure sensors and if the Heating mode has been set as current operating mode, as specified in the related parameter.

37:ENABLE DISPLAY IF THE PUMP GROUP IS PRESENT

Return value: **RW_ALWAYS** if the unit has a pump group; otherwise **RW_SERIAL_ONLY**.

Function: verifies if the unit has a pump group, if the pumps are controlled individually and if at least one pump is present.

38:ENABLE DISPLAY IF ONE PUMP IS PRESENT

Return value: **RW_ALWAYS** if the unit has one pump only; otherwise **RW_SERIAL_ONLY**.

Function: verifies the number of pumps present, as specified in the related parameter.

39:ENABLE DISPLAY IF TWO PUMPS ARE PRESENT

Return value: **RW_ALWAYS** if the unit has two pumps; otherwise **RW_SERIAL_ONLY**.

Function: verifies the number of pumps present, as specified in the related parameter.

40-47:ENABLE DISPLAY IF COMPRESSORS 0-7 ARE PRESENT

Return value: **RW_ALWAYS** if the specified compressor exists; otherwise **RW_SERIAL_ONLY**.

Function: verifies if the specified compressor is present using the configuration of the unit.

The compressor index must take into account the maximum number of compressors per circuit, the maximum number of circuits per evaporator and the maximum number of evaporators.

The maximum number of compressors is expressed by the following relation:

$EVAPORATORS_MAX_NO * CIRCUITS_MAX_NO * COMPRESSORS_MAX_NO$

48-55:ENABLE DISPLAY IF CIRCUITS 0-7 ARE PRESENT

Return value: **RW_ALWAYS** if the specified circuit exists; otherwise **RW_SERIAL_ONLY**.

Function: verifies if the specified circuit is present using the configuration of the unit.

The circuit index must take into account the maximum number of circuits per evaporator and the maximum number of evaporators. The maximum number of circuits is expressed by the following relation:

$EVAPORATORS_MAX_NO * CIRCUITS_MAX_NO$

56:ENABLE SETTING OF DAILY TIME BANDS

Return value: **RW_ALWAYS** if the daily time bands have been set; otherwise **RW_SERIAL_ONLY**.

Function: verifies whether the daily time bands have been displayed and set with the relevant parameter.

57:ENABLE SETTING OF WEEKLY TIME BANDS

Return value: **RW_ALWAYS** if the weekly time bands have been set; otherwise **RW_SERIAL_ONLY**.

Function: verifies whether the weekly time bands have been displayed and set with the relevant parameter.

58:ENABLE SETTING OF 5+2 TIME BANDS

Return value: **RW_ALWAYS** if the "5+2" time bands have been set; otherwise **RW_SERIAL_ONLY**.

Function: verifies whether the "5+2" time bands have been displayed and set with the relevant parameter.

12.2 Item selection functions

ID	Description
0 F_LOCALPLANTONOFF	System On/Off
1 F_COMPRESSOR_0_SELECTION	Select compressor 0
2 F_COMPRESSOR_1_SELECTION	Select compressor 1
3 F_COMPRESSOR_2_SELECTION	Select compressor 2
4 F_COMPRESSOR_3_SELECTION	Select compressor 3
5 F_COMPRESSOR_4_SELECTION	Select compressor 4
6 F_COMPRESSOR_5_SELECTION	Select compressor 5
7 F_COMPRESSOR_6_SELECTION	Select compressor 6
8 F_COMPRESSOR_7_SELECTION	Select compressor 7
9 F_COMPRESSOR_0_RESET_HOURS	Reset hours of compressor 0
10 F_COMPRESSOR_1_RESET_HOURS	Reset hours of compressor 1
11 F_COMPRESSOR_2_RESET_HOURS	Reset hours of compressor 2
12 F_COMPRESSOR_3_RESET_HOURS	Reset hours of compressor 3
13 F_COMPRESSOR_4_RESET_HOURS	Reset hours of compressor 4
14 F_COMPRESSOR_5_RESET_HOURS	Reset hours of compressor 5
15 F_COMPRESSOR_6_RESET_HOURS	Reset hours of compressor 6
16 F_COMPRESSOR_7_RESET_HOURS	Reset hours of compressor 0
17 F_ABILITA_MODALCFG	Enable configuration mode
18 F_CIRCUIT_0_SELECTION	Select circuit 0
19 F_CIRCUIT_1_SELECTION	Select circuit 1
20 F_CIRCUIT_2_SELECTION	Select circuit 2
21 F_CIRCUIT_3_SELECTION	Select circuit 3
22 F_CIRCUIT_4_SELECTION	Select circuit 4
23 F_CIRCUIT_5_SELECTION	Select circuit 5
24 F_CIRCUIT_6_SELECTION	Select circuit 6
25 F_CIRCUIT_7_SELECTION	Select circuit 0
26 F_PUMP_1_RESET_HOURS	Reset hours of pump 0
27 F_PUMP_2_RESET_HOURS	Reset hours of pump 1
28 F_RESET_ALLARMI	Reset alarms
29 F_PUMP1TEST_ENABLE	Enable testing of pump 0
30 F_PUMP2TEST_ENABLE	Enable testing of pump 1
31 F_RESET_STORICO_ALLARMI	Reset history of alarms
32 F_TB_PASTE_SOURCE_DAY_TO_DOM	Copy settings of selected time band to Sunday
33 F_TB_PASTE_SOURCE_DAY_TO_LUN	Copy settings of selected time band to Monday
34 F_TB_PASTE_SOURCE_DAY_TO_MAR	Copy settings of selected time band to Tuesday
35 F_TB_PASTE_SOURCE_DAY_TO_MER	Copy settings of selected time band to Wednesday
36 F_TB_PASTE_SOURCE_DAY_TO_GIO	Copy settings of selected time band to Thursday
37 F_TB_PASTE_SOURCE_DAY_TO_VEN	Copy settings of selected time band to Friday
38 F_TB_PASTE_SOURCE_DAY_TO_SAB	Copy settings of selected time band to Saturday

0:SYSTEM ON/OFF

Function: switches the system on and off in "toggle" mode, saving the new status in the EEPROM. The function is not active if :

- The powering down is still in progress
- The configuration mode is active
- A system timeout error is active (communication timeout of expansion module, external EEPROM CRC error, bytecode execution error, low RTC battery, RTC communication error, incongruent RTC registers, unsupported I/O number, system limits not met, drive opening or writing error)
- The remote on/off digital input has been configured, enabled and assigned a low logical level

1-8:SELECT COMPRESSORS 0-7

Function: selects or deselects the specified compressor in "toggle" mode, saving the new status in the EEPROM. A deselected compressor is always off. The compressor index must take into account the maximum number of compressors per circuit, the maximum number of circuits per evaporator and the maximum number of evaporators. The maximum number of compressors is expressed by the following relation:

$$\text{EVAPORATORS_MAX_NO} * \text{CIRCUITS_MAX_NO} * \text{COMPRESSORS_MAX_NO}$$

9-16:RESET HOURS OF COMPRESSORS 0-7

Function: resets the hours of operation of the specified compressor, saving the new status in the EEPROM. The function is active only in configuration mode. The compressor index must take into account the maximum number of compressors per circuit, the maximum number of circuits per evaporator and the maximum number of evaporators. The maximum number of compressors is expressed by the following relation:

$$\text{EVAPORATORS_MAX_NO} * \text{CIRCUITS_MAX_NO} * \text{COMPRESSORS_MAX_NO}$$

17:ENABLE CONFIGURATION MODE

Function: enables the configuration mode. The function is active only if a valid password has been entered and if the unit is off. After exiting the configuration mode, the external EEPROM CRC error is [reset](#).

18-25:SELECT CIRCUITS 0-7

Function: selects or deselects all the compressors of the specified circuit in "toggle" mode, saving the new status in the EEPROM. A circuit is selected if at least one compressor of the circuit has been selected. The circuit index must take into account the maximum number of circuits per evaporator and the maximum number of evaporators. The maximum number of circuits is expressed by the following relation:

$EVAPORATORS_MAX_NO * CIRCUITS_MAX_NO$

26-27: **RESET HOURS OF PUMPS 0-1**

Function: resets the hours of operation of the specified pump, saving the new status in the EEPROM. The function is active only in configuration mode.

28: **RESET ALARMS**

Function: resets all the manual or "bounded" alarms with a "resettable" status.

29-30: **ENABLE TESTING OF PUMPS 0-1**

Function: manually enables the specified pump in "toggle" mode. The function is active if the unit has already been switched off and if the configuration mode or one of the following alarms are not active:

- Communication timeout of expansion modules
- External EEPROM CRC error
- Bytecode execution error
- Low RTC battery
- RTC communication error
- Incongruent RTC registers
- Unsupported I/O number
- System limitations not met
- Drive opening or writing

31: **RESET ALARM HISTORY**

Function: resets the history of alarms stored in the EEPROM.

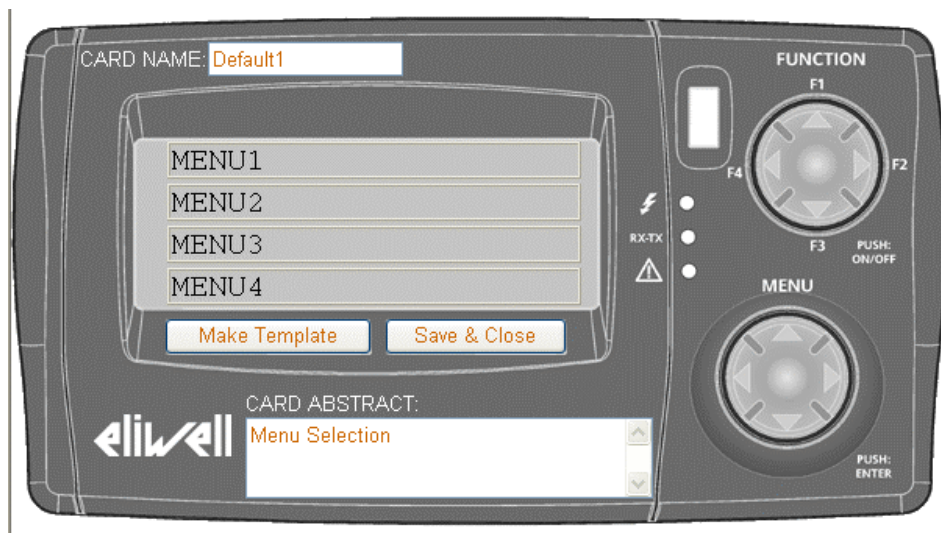
32-38: **COPY TIME BAND SETTINGS TO SUNDAY→SATURDAY**

Function: copies all the time band settings of the selected day to the Sunday→Saturday settings.

12.3 Default Templates

The section that follows list the template *cards* supplied.

12.3.1 Default 1: Untitled Menu

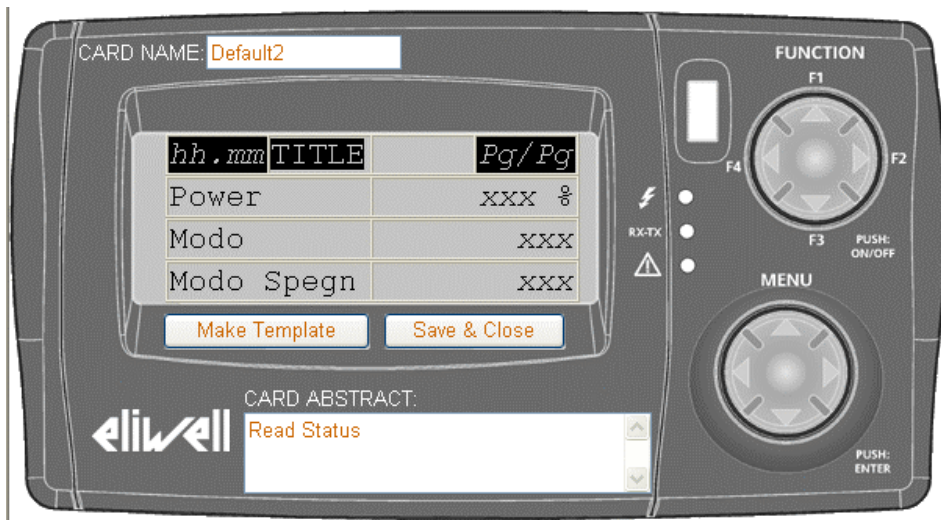


This is generally used to create sub*menu lists*; it is sufficient to select one of the *items* available to open the linked *decks*.

Recommended "LOAD_MODE" *deck* type:

- **CARD_VAR**

12.3.2 Default 2: Value Reading



This is generally used to read some values: the left section contains a descriptive *string*, the right section the value to be read. The selection of a line opens the linked *deck*.

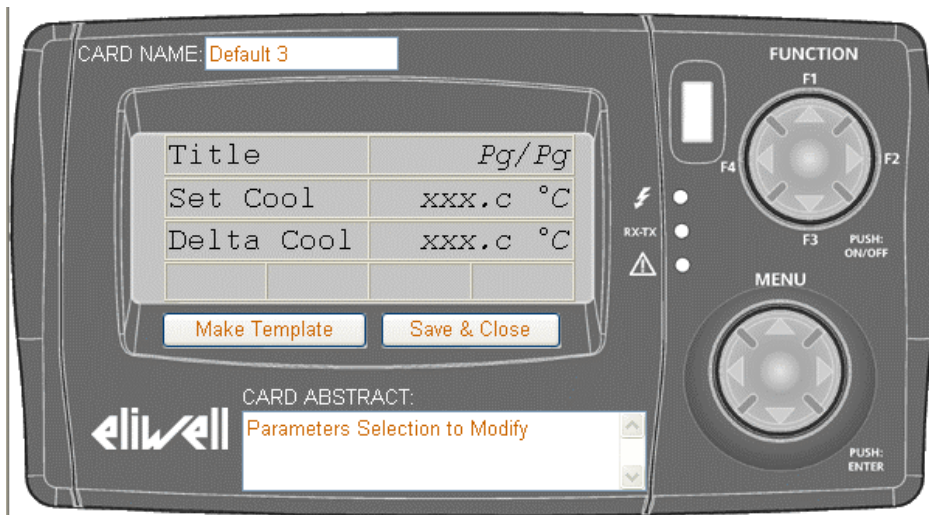
Recommended "LOAD_MODE" *deck* type:

- *CARD_VART*



The *item* in the upper left shows the current time, while the one of the right shows the number of pages that can be modified.

12.3.3 Default 3: Value Reading for editing



This is generally used as a parameter change *deck*: the left section contains the descriptive *string*, while the right section shows the value to read. The selection of a line opens the value editing *deck*.

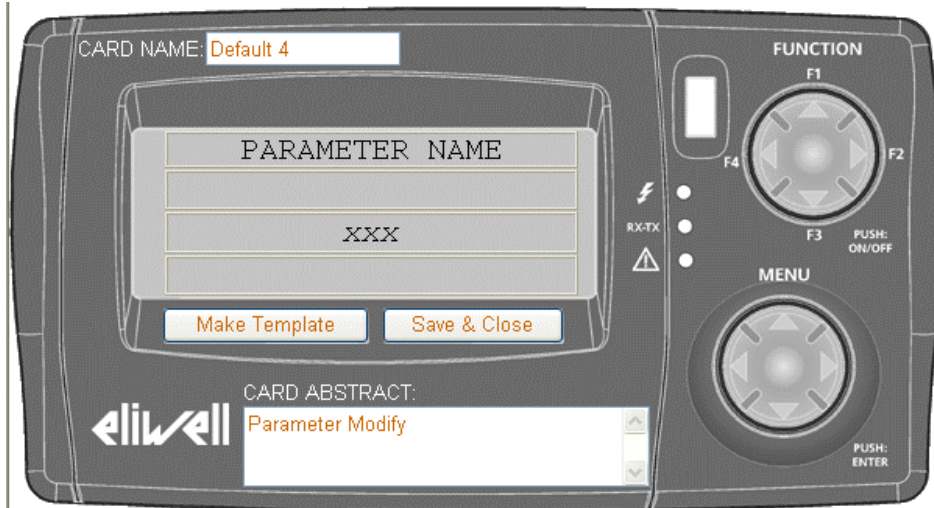
Recommended "LOAD_MODE" *deck* type:

- *CARD_VAR*



Blank *items* cannot be changed.

12.3.4 Default 4: Parameter Change



This is used as a value change *deck*: the upper section shows the *string* with the descriptive name while the central section displays the value to be edited. Values can be changed with the keys of Energy XT.

Recommended "LOAD_MODE" *deck* type:

- *CARD_INV*

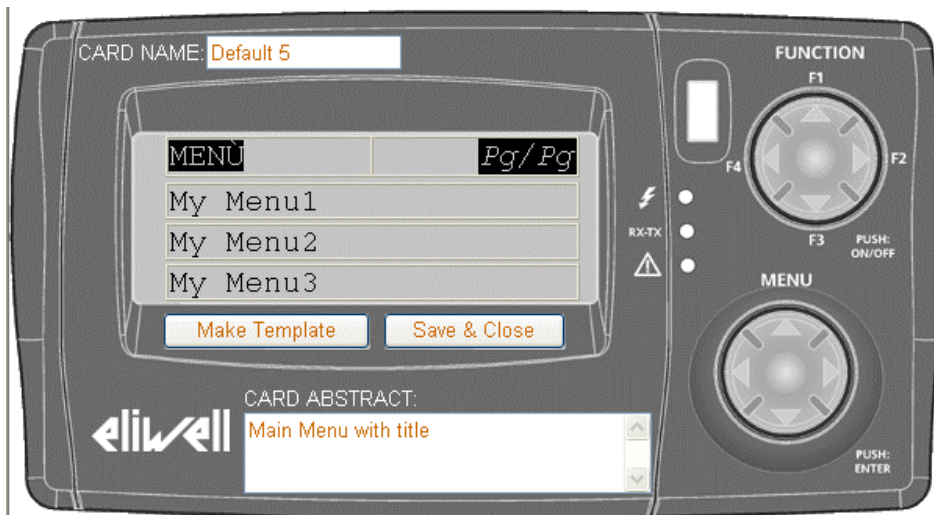


THIS IS THE ONLY TEMPLATE THAT ENABLES PARAMETERS TO BE CHANGED.



Blank *items* cannot be changed.

12.3.5 Default 5: Menu With Title



This is generally used to create sub*menu lists*: the selection of the *items* enables to open the linked *decks*. THE FIRST LINE HAS A FIXED TITLE.

Recommended "LOAD_MODE" *deck* type:

- *CARD_VART*



The *item* in the upper right section shows the page number that cannot be changed.



Blank *items* cannot be changed.

12.4 Areas that can be associated to decks

This chapter lists the areas that can be associated to the predefined *decks*, divided by type of *deck*.

12.4.1 Parameters Areas (DECK_PAR)

If the user selects a Parameter *Deck* ("*DECK_PAR*"), the following list of *areas that can be associated to decks* displays:

LABEL	DESCRIPTION
ADV_IGNITION	Parameters that control the ignition of the system
ALARM	Parameters that control the alarms
ANTIFREEZE	Parameters that control the antifreeze function
BASE_CFG	Parameters that control the basic functions of Energy XT
CHILLER_FANS_STEP	Parameters that control the operation of the fans in Cooling mode
CIRCUIT	Parameters that control the circuits
COMPRESSOR	Parameters that control the compressors
DAT_PAR_COM	Parameters that control the communication channels of Energy XT
DAT_TIME_BAND_DAILY_PROG_DOM	Parameters that control the Sunday time band
DAT_TIME_BAND_DAILY_PROG_GIO	Parameters that control the Thursday time band
DAT_TIME_BAND_DAILY_PROG_LUN	Parameters that control the Monday time band
DAT_TIME_BAND_DAILY_PROG_LUN_VEN	Parameters that control the Monday to Friday time band
DAT_TIME_BAND_DAILY_PROG_MAR	Parameters that control the Tuesday time band
DAT_TIME_BAND_DAILY_PROG_MER	Parameters that control the Wednesday time band
DAT_TIME_BAND_DAILY_PROG_SAB	Parameters that control the Saturday time band
DAT_TIME_BAND_DAILY_PROG_SAB_DOM	Parameters that control the weekend time band
DAT_TIME_BAND_DAILY_PROG_VEN	Parameters that control the Friday time band
DAT_TIME_BAND_DAILY_PROG_WEK	Parameters that control the week time band
DEFROST	Parameters that control the defrost function
EXP1_CFG	Parameters that control expansion module 1
EXP2_CFG	Parameters that control expansion module 2
EXP3_CFG	Parameters that control expansion module 3
EXP4_CFG	Parameters that control expansion module 4
EXP5_CFG	Parameters that control expansion module 5
FANS	Parameters that control the fans
FANS_CONT	Parameters that control the fans running in continuous mode
FANS_CONT_FUNC	Parameters that control the fan functions in continuous mode
FREECOOLING	Parameters that control the Freecooling function
HEAT_FANS_STEP	Parameters that control the operation of the fans in Heating mode
HEATRECOVERY	Parameters that control the heat recovery function
HIGHLEVEL	Parameters that control the advanced functions of Energy XT
INTEGRATION_HEATING	Parameters that control the electric heaters in integration mode
PAR_CFG	Parameters that control the configuration of Energy XT
PUMPDOWN	Parameters that control the pump down
PUMPGROUP	Parameters that control the pump group
REVERSIBLE	Parameters that control the reversible units
STRUCTURAL	Parameters that control the configuration of the system
TREG	Parameters that control the regulation <i>set point</i>
TREG_ALARMS	Parameters that control the alarm regulation
TREG_CHILLER	Parameters that control the regulation <i>set point</i> in Cooling mode
TREG_HEAT	Parameters that control the regulation <i>set point</i> in Heating mode
TREG_PI	Parameters that control the regulation <i>set point</i> of the PID algorithm

12.4.2 Alarms Areas (DECK_ALA)

If the user selects a Parameter *Deck* ("*DECK_ALA*"), the following list of *areas that can be associated to decks* displays:

LABEL	DESCRIPTION
DAT_UI_ALARMS	Area of regulation alarms
DAT_UI_INTERNAL_ALARMS	Area of system alarms

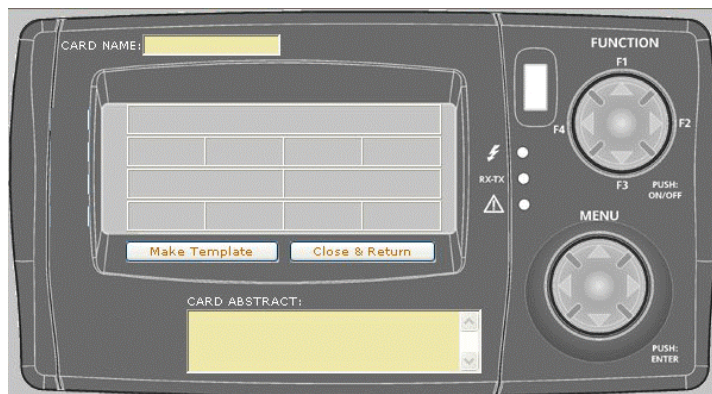
12.4.3 I/O Areas (DECK_IO)

If the user selects a Parameter *Deck* ("*DECK_IO*"), the following list of *areas that can be associated to decks* displays:

LABEL	DESCRIPTION
DAT_DEF_MAP_ANALOGINPUTS	Area related to the status of analogue inputs
DAT_DEF_MAP_ANALOGOUTPUTS	Area related to the status of analogue outputs
DAT_DEF_MAP_DIGITALINPUTS	Area related to the status of digital inputs
DAT_DEF_MAP_DIGITALOUTPUTS	Area related to the status of digital outputs

13 GLOSSARY

Logical OR	Several inputs that are linked in an OR relation are equivalent to a single input with the following status: <ul style="list-style-type: none"> • Active if at least one input is active • Inactive if no input is active
Scroll up	Scrolling up a menu means viewing in sequence all the parameters from the bottom to the top (08 -> 09 -> 10).
Stand-by	Means that the unit is in waiting mode and that all the functions are temporarily interrupted.
Reset	Means to restore to zero.
Scroll down	Scrolling down a menu means viewing in sequence all the parameters from top to bottom (10 -> 09 -> 08).
BLINK	This term generally refers to LEDs.
Loads	These identify the various devices in a system such as compressors, fans, hydraulic pump and anti-freeze electric heaters.
Set point	This represents the reference value (that can be set by users) that defines the operating status of the system. A typical example is the thermostat that controls the temperature in our homes: to maintain a temperature of 20°C, we must set a <i>set point</i> of 20°C (the heating system will start if the ambient temperature measured is below 20°C and will switch off otherwise).
Range	This represents a set of values; i.e. <i>Range</i> 1...100 includes all the values between 1 and 100.
Hysteresis	<i>Hysteresis</i> is generally defined in connection with a <i>set point</i> to avoid frequent oscillations in the status of the controlled load. Example: let's define a <i>set point</i> of 20°C on a probe that detects ambient temperature so that the compressor starts every time the limit value is exceeded. When ambient temperature reaches values that are close to the <i>set point</i> (20°C), a phase of instability occurs during which the relay, which starts the compressor, frequently changes its status from ON to OFF. This condition can severely damage the system's operation. To prevent this problem, <i>hysteresis</i> is defined as a tolerance <i>range</i> in which no status change occurs; in our specific case, if <i>hysteresis</i> is set to 1°C, the compressor starts at 21°C (<i>set point</i> + <i>hysteresis</i>) and stops at 19°C (<i>set point</i> - <i>hysteresis</i>).
Non volatile memory	This memory stores the data even when the unit is turned off (as opposed to a volatile memory that deletes the data as soon as the unit is turned off).
Deck	A <i>deck</i> is a set of <i>cards</i> that describe the same logical function. Example: the set of screens that enable to manage compressor 1 of circuit 1 form a <i>deck</i> ; the menu that displays when a device is switched on is a <i>deck</i> (Rapid Access).
Card	A <i>card</i> represents a single screen. Example:



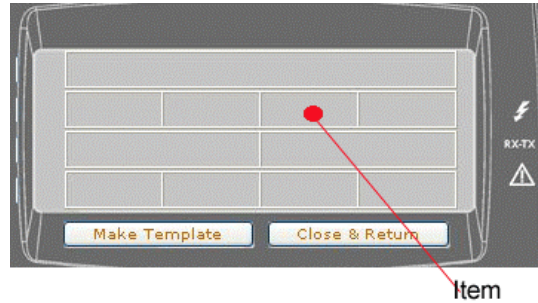
This is the first *card* (screen) of *deck* Rapid Access, that is of the *deck* that displays when the unit is switched on.

Each *card* is made of 4 lines; each line has a column number ranging from 1, 2, 4
A *card* may contain from 1 to 16 objects called *items*.

If the *deck* contains several *cards*, the user can browse the lines of the Viewer with arrow keys up/down within a *deck* in order to scroll them.

Item An *item* is the main element of a *card*. *Items* can be constituted by:

- A *string*
- An input value
- The status of an input/output
- A function of the operating system (date, time, page number...)
- The value of a parameter



14 LIMITED LIABILITY

ELIWELL & CONTROLLI srl shall not be liable for damages originating from the *installation*/use of the *software* that do not comply with the instructions of this manual.

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