TABLE OF CONTENTS

VERSION 3.1 – APRIL 2002

1. FIRST STEPS

1.1 INTRODUCTION

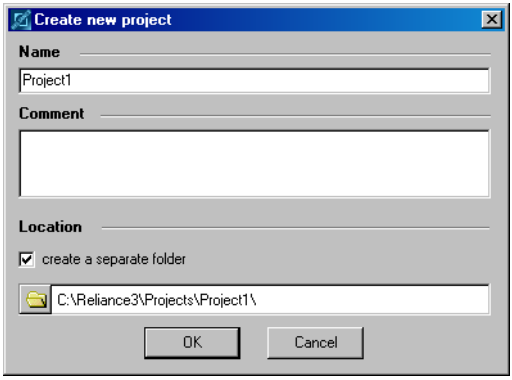
This manual's aim is to lead users during their first encounter with development environment of the visualizing system *Reliance*. It explains to them how to create a new project, define a station, add variables, design a window and run the project.

A detailed description of all functions, objects and parameters that are available with *Reliance* system is in appropriate manuals.

1.2 CREATING A NEW PROJECT

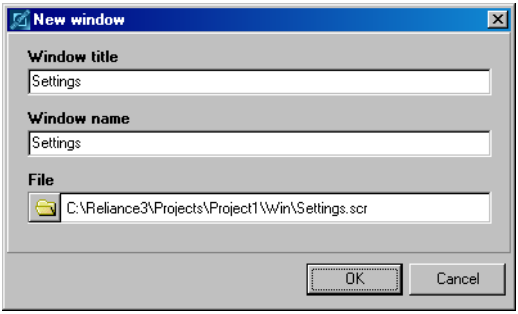
After start of development environment *Reliance design* select in menu ▸ ***File*** ▸ ***New project...***.

In dialog window ***Create new project*** enter *Name* of new project and select *Location* of the project on the hard drive of your computer. By activating the parameter *create a separate folder* you can locate the new project in its own directory. The name of the new directory is the same as the name of the project. You can check or alter the full path of the new project in the editable bottom line. Field *Comment* is optional.



After confirmation of the dialog a new project is created (if project's name and its path are valid).

The last step of creating a new project is the establishment of its first window (this window is then set as the first one to appear after start of the project in runtime mode).

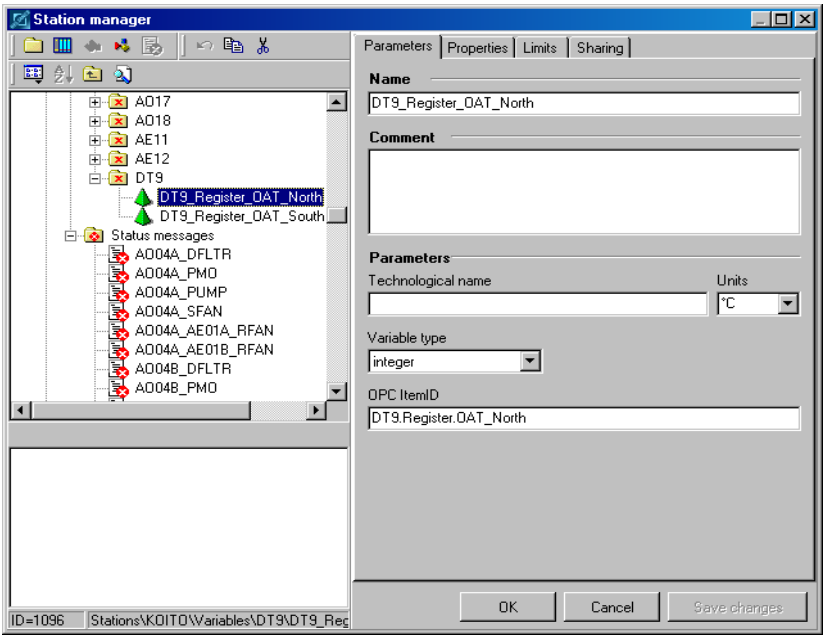


After entry and confirmation of window's title, its name and the name of the file, you can already run the project by selecting ▸ ***Runtime*** ▸ ***Start***; after the start of the project in runtime mode a window (which is now empty) is opened.

1.3 CREATING A PROJECT

1.3.1 Station manager – definition of stations, variables and status messages

The ***Station manager*** can be found in menu ▸ ***Managers***.



A newly created project already contains the station *System*. As its name suggests, it is a station that serves for the location of system variables and status messages generated from these variables. System variables may serve to execute auxiliary operations – e.g. in scripts. Unlike variables from other stations, the variables from the station *System* are not added to the total number of tags used in the visualizing project.

Adding a new *Station* can be done from the local menu of tree structure or by means of a button in the toolbar. Parameters of stations differ according to the selected type. By default the station contains folders *Variables and*

Status messages, some types of stations can also have a folder called *Communication zones*.

Adding a *Variable* to a station can be done from the local menu of tree structure, by pressing the button *Ins* or the button in the toolbar, only if there is a selected (marked) object of the folder of variables type or an object subordinated to this folder e.g. a variable. Parameters of variable differ according to the type of station. They determine e.g. the address, type and format of the variable, they define units or they set critical and warning limits. Variables can also be imported to the station.

Adding a *Status message* can be done from the local menu of tree structure, by pressing the button *Ins* or the button in the toolbar, only if there is a selected (marked) object of the folder of status messages type, or an object subordinated to this folder e.g. a status message. Parameters define e.g. link to a variable, character of event causing the message, type of message, access rights required for acknowledgement of the message, other events that should occur during the origin and end or acknowledgement of the message etc.

Adding a *Communication zone* to a station can be done from the local menu of tree structure, by pressing the button *Ins* or the button in the toolbar, only if there is a selected (marked) object of the folder of communication zones type or an object subordinated to this folder e.g. a communication zone. Parameters of the communication zone differ according to the type of communication protocol of the station. Communication zones of the station should be parameterized so that the rolled out address space covers all variables of the station. Due to the optimization of communication sometimes it may be more suitable to adapt addressing of variables to the communication zone.

1.3.2 Other managers – definition of databases, trends and other objects

In a visualizing project you can define other objects enhancing its function. You can find tools for the definition of these objects in menu ▸ ***Managers***.

Database is a group of items that are to be archived. The items are called database fields. *Database field* has a link to the variable whose value should be archived. Parameters of the database define the way of storing selected data – e.g. the recording interval, data format etc.

Trend is a tool for graphic presentation of data stored in the database. *Trend series* shows progression of values of the selected database item. Parameters of trend and its series define the characteristics of presentation – e.g. displaying of axes, time scale, colors etc.

Real-time trend is a tool for graphic presentation of current values. *Real-time trend series* shows progression of values of the selected variable. Parameters of real-time trend and its series define the characteristics of presentation – e.g. displaying of axes, time scale, colors etc.

Report is a tool for presentation of data from the database in tabular form. *Report item* shows values of the selected database item. Parameters of report define characteristics of presentation – e.g. the width of columns, title of the report, colors, fonts etc.

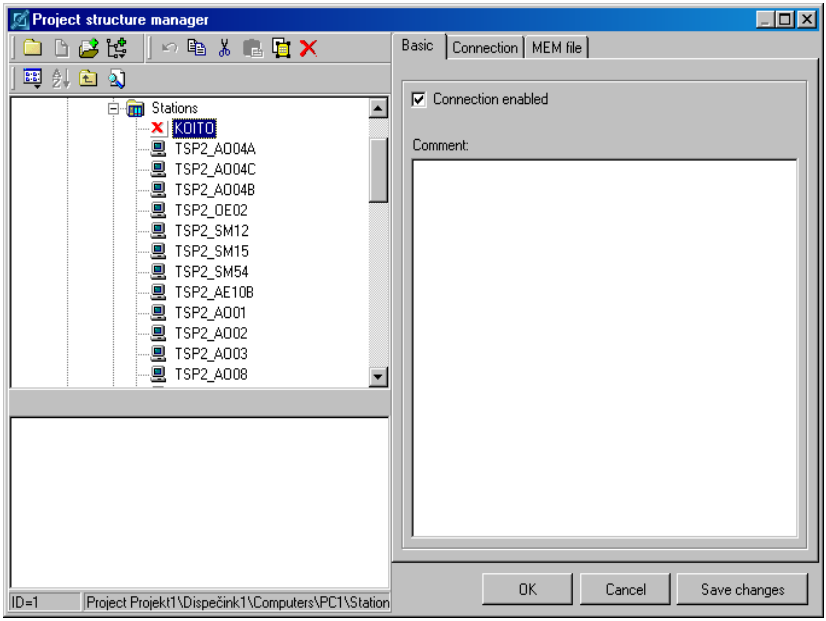
Print report is a tool for presentation of current data in a pre-defined form. *Print report item* is the link between variable and marked space in the form.

Recipe is a group of variables whose values can be stored in a disk file. The recipe can be loaded into respective stations from the file later.

1.3.3 Project structure manger – definition of control areas

The control area is an area comprising one or more computers. Within its framework you can also define one or more users. More complex projects can comprise several control areas.

Control areas can be defined in the ***Project structure manager***. You can find it in the menu ▸ ***Managers***.



A newly created project comprises one control area with one computer. The computer has not been allotted any tasks yet. The allotment of tasks can be done by connecting previously created objects to the computer. If the given computer is to read data from a station (e.g. a PLC), we have to connect the station (previously defined in the ***Station manager***) to the computer. It can be done by the command *Connect stations* from the local menu of tree structure if folder named *Stations* is selected. The same procedure applies also to other created objects. If, for example, the computer is to archive read data or is to have these data available, we need to connect respective databases (previously defined in the ***Database manager***) to the computer.

If the connected objects are to function correctly, they must have their parameters set – e.g. the communication speed with the station, to which folder the data are to be stored etc.

1.3.4 Design of project windows

Window is the foundation base of a visualizing project. Its area comprises visual objects called components showing current values of variables (displays, active pictures etc.), components serving to execute operations (displays, buttons etc.) and static components (pictures, texts, frames etc.).

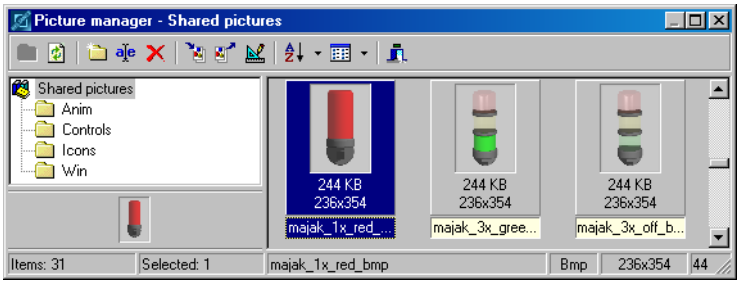
Project windows are managed by the ***Window manager*** (which can be activated from the menu ▸ ***Show***). Each project contains at least one window that has originated from creating a project. A new window may be added from the local menu of the ***Window manager***, or by means of a button in the toolbar of the ***Window manager***.

Parameters of a window can be edited in the ***Component manager*** (which can be activated from the menu ▸ ***Show***). At this point it is more convenient to use the window ***Window properties*** (called from the local menu of window – unless any component is marked, or by double-click on the area of the window) to edit window's properties. Properties are sorted here according to their meaning in well-arranged tabs. You can set e.g. the title, background, size and location of the window etc.

A *component* can be inserted by selection from the *Component palette*. Its properties can be edited in the ***Component manager*** or in the component's property editor (called from the local menu of the component or by double-click on the component) – at this point the latter way is more convenient for editing component's properties.

Properties differ according to the type of component. They determine visage, location and behaviour of the component on the area of the window or they define connection between some characteristics and variables (then components change their characteristics in runtime mode dynamically according to the current values of these variables). Some components may

use a picture for their visage. If the picture is stored in the database of the window's pictures, it can only be used in that particular window. If it is stored in the database of shared pictures, it can be used in any window of the project. To import a picture into the database of the window's pictures, use the ***Window picture manager***. It can be found in the local menu of the window. If you want to import a picture that you are going to use in more windows, use the ***Shared picture manager***. It can be found in the menu ▸ ***Managers***.



1.3.5 Parameters and start of the project in runtime mode

You have created a station and a control area with computer and you connected the station to the computer. Now you can run the project.

The last step before starting the project is checking or, eventually, altering the parameters for running the project. The parameters can be found in the menu ▸ ***Runtime***. Their default setting enables the start of a project without the necessity of making any changes to them.

To run project in runtime mode, select in menu ▸ ***Runtime*** ▸ ***Start***.

1.4 EXAMPLE

1.4.1 Creating a project

1. Select in menu ▸ ***File*** ▸ ***New project...***.
2. In dialog window ***Create new project*** select name and location of the project, or use the default setting.

   Recommendation: Leave the default setting *Create separate folder* active.
3. Create a new window – select its title, its name and name and location of project's file, or use the default setting.

   Recommendation: Keep the default setting of the location of window in the folder »...\Win«.

1.4.2 Adding a station and a variable

1. Select the ▸ ***Managers*** ▸ ***Station manager*** command from the main menu.
2. Press the *New station* button and select the Virtual station command from the popup menu to add a virtual station.
3. Enter the name of the new station in the ***Parameters*** tab.

   Recommendation: Keep the default name "Virtual1".
4. Mark the *Variables* folder of the new station in the tree structure.
5. Add a new variable by pressing the *New variable* button.
6. Enter the name and select the type of the variable in the ***Parameters*** tab.

   Recommendation: name "Required Temperature", units "°C", type "integer".
7. Enter the number of characters and number of decimal places in the ***Properties*** tab.

   Recommendation: number of characters 5, number of decimal places 1.
8. Close the ***Station manager*** by pressing the *OK* button.

1.4.3 Connecting a station to a computer

1. Select in menu ▸ ***Managers*** ▸ ***Project structure manager***.
2. In tree structure mark the folder *Stations*.
3. By means of the button *Connect Objects,* select the station *Virtual1*.

   Note: If you have chosen a different name of station in the ***Station manager***, select the station with the chosen name.
4. Close the ***Project structure manager*** by pressing the button *OK*.

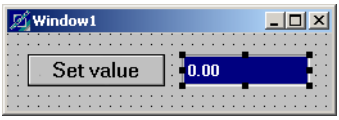
1.4.4 Location and parameterization of components

1. From the Component palette, place the component *Display* on the area of the window.
2. By left button mouse double-click on the area of the display, bring up the window ***Display properties***.
3. In tab ***Functions*** set the reference to the variable *Virtual1.Required Temperature*.

   Note: If you have chosen a different name of station or variable in the ***Station manager***, the reference will be different
4. In tab ***Units*** mark the parameter *Show.*
5. Close the property editor by clicking the button *OK*.
6. From the component palette place the component *Button* on the area of the window.
7. By left button mouse double-click on the area of the button, bring up the window ***Button properties***.
8. In tab ***Functions*** set the reference to variable *Virtual1.Reqired Temperature*.

   Note: If you have chosen a different name of station or variable in the ***Station manager*** the reference will be different
9. In tab ***States/State0*** change *Text* of the button to “Change Value”.
10. Close the window of parameters by clicking *OK*.
11. Widen the button so that the whole text on it is visible.

Tip: You can make objects wider or narrower by means of mouse or by marking the object and pressing *Shift+right arrow* or *Shift+left arrow* respectively.



1.4.5 Start of the project in runtime mode

1. Select in menu ▸ ***Runtime*** ▸ ***Start***.

1.4.6 Test of created project

1. After a correct start of the project in runtime mode, in the upper part of the screen there appears menu and a toolbar, the rest of the screen is covered by the window of the project and inserted components. The display shows the value 0 °C.
2. By pressing button bring up the dialog window for setting the value of variable.
3. Set the new value and close the dialog by pressing *OK*.
4. The change of value is also shown on the display.
5. Exit the runtime module from menu by selecting ▸ ***Services*** ▸ ***Exit***.