

# NETx Voyager 5.0



Member of: KNX Association | OPC Foundation BACnet Interest Group Europe







### **Contents**

1.		Product description			
	1.1.	Main criteria	. 5		
	1.2.	System overview	. 6		
		1.2.1. Visualization structure	. 6		
		1.2.2. Visualization modes	. 7		
		1.2.3. Versions	. 8		
		1.2.4. Main/backup solution	. 9		
	1.3.	Disambiguation	. 10		
		1.3.1. Project/workspace	. 10		
		1.3.2. Page	. 10		
		1.3.3. Layer	. 10		
		1.3.4. Control	. 10		
		1.3.5. Group	. 10		
		1.3.6. Server Item	. 10		
		1.3.7. Visualization user	. 10		
		1.3.8. Visualization designer	. 10		
2.		ing started	11		
		Installation			
	2.2.	First steps			
		2.2.1. Create a new workspace			
		2.2.2. Connect to a server			
		2.2.3. Adding a new page			
		2.2.4. Placing a Control	12		
۸	۸nn	endix	13		
Α.		Tables			
		Acronyms			
		Licensing			
	۸.٥.	A.3.1. Hard lock			
		A.3.2. Soft lock			
		A.3.2.1. Software Licensing			
		A.3.2.2. Software Unlicensing			
		A.3.3. License Count			
		A.3.3.1. Feature Explaination			
	Λ 1	Support and Contact			
		System Requirements			
	A.5.	A.5.1. Hardware			
		A.5.1. Hardware			
		A.5.2.1. OPC/UD Version			
		A.5.2.2. Direct(KNX) Version			
		,			
		A.5.3. Other	. 19		

NETx Voyager 5.0.10 Page 2 of 19

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NETx Voyager 5.0.10 Page 3 of 19

### 1. Product description

### **NETx Voyager 5.0**

The visualization software NETx Voyager 5.0 is used to control and visualize smart homes and buildings. Being part of the technical building management, the NETx Voyager 5.0 acts as a client of an OPC server (OPC version). Alternatively, the NETx Voyager 5.0 can directly communicate with a KNX installation (Direct(KNX) version). The building automation system is represented through a comfortable graphical user interface which provides a multitude of different management functions dedicated to the use within the building management.

The field of application ranges from small residential buildings and homes up to large hotel and office buildings, hospitals, commercial buildings, and airports. A complex and widespread installation can be controlled and maintained from a central point in a reliable and comfortable way.

Usability and scalability are of utmost importance for NETx Voyager 5.0 Thanks to the used concepts based on Drag & Drop and the powerful engine, professional visualizations for large-scale projects can be created in a fast and easy way. The user is able to freely choose the level of detail and the appearance at the display – NETx Voyager 5.0 provides a multitude of possibilities. Background images, figures, and any web based content (e.g. web cams) can be included. The integrated mechanisms of NETx Voyager 5.0 provide a broad range of possible applications like the integration of multimedia devices and hotel management systems.

Traditional visualization concepts have been enhanced with new functionality. It is possible to include web based services and animated figures. Additional modules like the integrated scene manager, the embedded calendar, the flexible processor, or the alarm management module offer new opportunities for professional visualizations.

NETx Voyager 5.0.10 Page 4 of 19

### 1.1. Main criteria

- Reliability The NETx Voyager can be combined with a NETx Main/Backup server solution (e.g. NETx BMS Server, NETx KNX OPC Server). If the main server fails, the visualization is able to switch to the backup server immediately without being noticed by the end user.
- **Versatile** Datapoints can be integrated within the visualization independently from the underlying automation system. Using this approach, datapoints originating from different technologies (e.g. KNX, BACnet, Modbus, ...) can be represented and controlled within a single visualization.
- Look & Feel Individual layouts can be defined by using a master page and customized components. By reusing the own design, it is possible to create an individual Look & Feel.
- Drag & Drop Using Drag & Drop, the datapoints can be linked to the controls very simply. This approach
  provides the possibility to create and modify professional visualizations with just a few clicks and in a short
  amount of time.
- **Multi-language support** The language of the editor as well as of the visualization itself can be customized. Therefore, it is possible to provide country-specific solutions.
- Unique editor The editor that is used to create NETx Voyager projects is identical to the one that is used to design other NETx visualizations. The use of this unique tool minimizes the effort for training and learning.
- Button editor The NETx Voyager includes an integrated button editor. Using this button editor, buttons with a user-specific layout (icons, text, appearance, ...) can be created. To reuse them, these button layouts can be stored as templates.
- Advanced Controls In addition to standard graphical elements like buttons, sliders, and images, enhanced and professional Controls are available (e.g. Graph, Multi-Internet, RGB Control...).
- **Library** User-defined control elements can be grouped and stored as components of a library. This approach provides the opportunity to reuse components in other visualization projects.
- Scene manager With the help of the integrated scene manager, scenes can be configured and maintained directly within the visualization. Saving and replaying of defined scenes can not only be done by the visualization designer but also by the visualization user.
- Metering Chart The metering chart provides the possibility to integrate smart meters. Using the metering
  chart, it is possible to visualize the current and historical consumption values of smart meters in an easy and
  user-friendly way.
- Historical data chart In combination with the NETx BMS Server, the past data values of any datapoint within the building automation system can be shown. This historical data can be visualized using different chart types (lines, bars, areas, ...) or using a table view. Printing and exporting to PDF or Excel is also possible.
- Alarm management The integrated alarm module provides the opportunity to define and maintain user-specific alarms. The end user is able to confirm, acknowledge, or suppress an alarm. All changes of alarm states are logged accordingly.
- Client Calendar The embedded client calendar module enables the definition and management of client-based timer events which are only available within the corresponding visualization. Using a Look & Feel that is similar to Microsoft Outlook, the visualization designer as well as the end visualization user are able to maintain these events even at runtime.
- Server Calender In combination with the NETx BMS Server, server based calendar events can be used. These server based calendar events are independent of the visualization since they are defined and running within the NETx BMS Server. Using a Look & Feel that is similar to Microsoft Outlook, server based calendar events can visualized and modified within the visualization even by the end user at runtime.
- Eventor, Processor Using the built-in eventor and/or processor, control functionality that is not available within the field and automation level can directly be added within the visualization.

NETx Voyager 5.0.10 Page 5 of 19

### 1.2. System overview

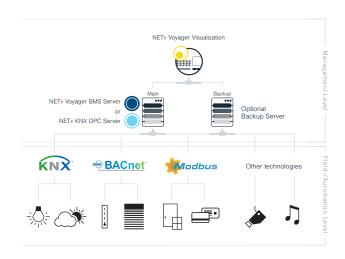


Figure 1.1.: NETx Voyager within a building automation system

The NETx Voyager is part of the technical building management. The information that is collected by the OPC server is represented in a user-friendly way. The user gets a global view of the whole building automation system and its datapoints.

Due to the use of the standardized OPC Data Access 2.0 interface, the NETx Voyager is able to connect to any OPC server that supports this specific interface. Thus the user is independent of vendors and can freely choose the field of application.

In addition to the OPC version of NETx Voyager, a so called Direct(KNX) version is available. The Direct(KNX) version provides the possibility to directly communicate with a KNX system without using an OPC server in between. Compared to the unrestricted OPC version, the Direct(KNX) version is limited to KNX systems with a single interface. Therefore, it is only recommended for small KNX projects. For large-scale projects where different technologies are used, the OPC version has to be preferred.

As it is common for all NETx solutions, the NETx Voyager provides a lot of benefits when comparing it to other products. NETx Voyager guarantees a high data throughput and is able to handle a large amount of datapoints while still providing a reliable communication to the underlying building automation system. Thanks to the high reliability and scalability, NETx Voyager can be used even within the largest building automation projects of the world.

### 1.2.1. Visualization structure

The NETx Voyager is designed for the use in building automation systems of any type and any size – from smart homes up to large enterprise buildings. To be able to fulfill the requirements of large-scale visualization projects, a flexible, modular, and clear visualization structure is of utmost importance.

To provide this scalability, the NETx Voyager is based on the concepts of visualization pages, controls, and layers. A visualization page is simply a side that is shown to the visualization user. While the visualization user only sees one visualization page at a time, a NETx Voyager project (also referred to as a NETx Voyager workspace) can contain multiple different visualization pages (depending on the used license 1,000 pages and more are possible). Depending on the design of the visualization, the user can navigate through different visualization pages using dedicated control elements. Using this approach, a (hierarchical) structure can be defined. A typical example would be a start page that is linked to a building page that shows an overview of all floors. This building page is in turn linked to different floor pages where each floor page shows a floor plan. These floor pages can in turn be used to navigate to room pages that show a more detailed view of each room.

NETx Voyager 5.0.10 Page 6 of 19

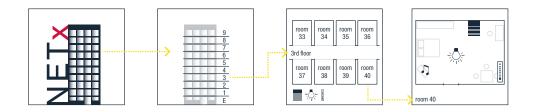


Figure 1.2.: Visualization Example

Each visualization page contains different Controls that are placed by the visualization designer. Controls are used for visualization and/or control purposes. Typical examples of simple controls are images, labels, and buttons. Images are used to display pictures. Labels can be used to show static text information or the current value of a datapoint. Buttons can be used to show the current value of a datapoint and to change it. In addition to these simple control elements, more advanced ones are available, too. Consider, for example, the Historical Data Chart that can be used to visualize past values of datapoints.

Another key feature of the NETx Voyager is the concept of layers. This concept is similar to the layer concept of well-known CAD software applications. Control elements can be assigned to a layer independently from the page where they are used. This assignment to layers helps the visualization designer to organize the visualization. Using special controls, layers can be shown or hidden as well as activated or deactivated even at runtime. In combination with the integrated user management, the layer management is an efficient mechanism to define views for different visualization users.

In addition to these standard concepts, the NETx Voyager provides so called modules. Modules help to implement advanced visualization and control functionality. In NETx Voyager 5.0, the following modules are supported:

- Scene Manager
- Alarm Module
- Client Calendar
- Server Calendar
- Eventor
- Processor

### 1.2.2. Visualization modes

The NETx Voyager can be used in three different modes: Editor Mode, Visualization Mode, and Full Screen Visualization Mode. These three different modes can be started by clicking the corresponding icon at the Desktop or by selecting the corresponding entry within the start menu of the operating system.

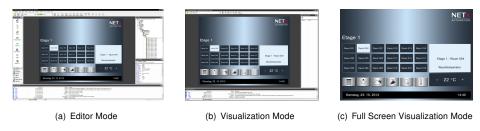


Figure 1.3.: Different modes of NETx Voyager

Using the editor, the visualization designer is able to create new visualization projects as well as modifying existing ones. Within this mode, different visualization pages can be created, control elements can be placed on these pages, the different modules can be configured, and the control elements can be linked to datapoints within the

NETx Voyager 5.0.10 Page 7 of 19

building automation system. Within the OPC version, the connection to the OPC server can be configured, too. Within the Direct(KNX) version, the ETS project can be imported and the connection to the KNX network can be configured.

After having finished the design process of the visualization project, the NETx Voyager can be started in Visualization Mode. In this mode, the visualization is online. This means that the values of the datapoints of the building automation systems are visualized by the different control elements of the visualization. Furthermore, inputs from the visualization user (e.g. pressing a button or clicking on a slider) are processed and the configured actions (e.g. changing a datapoint value) are initiated. In other words, the Visualization Mode is the mode that is seen by the visualization user i.e. the end customer.

As shown in figure 1.3(b), some graphical user interface elements (e.g. the menu bar, the window border, the item property window, the system messages, ...) are still shown. To hide these elements, the Visualization Fullscreen Mode can be used. Like the Visualization Mode, the visualization is online – however, the graphical user interface elements mentioned before are hidden from the visualization user.

### 1.2.3. Versions

The NETx Voyager is available in two different versions: Direct(KNX) and OPC. These two versions differ in their used drivers. While the Direct(KNX) version is based on the Falcon driver that is provided by the KNX Association, the OPC variant uses an OPC client driver that has been implemented by NETxAutomation Software GmbH.

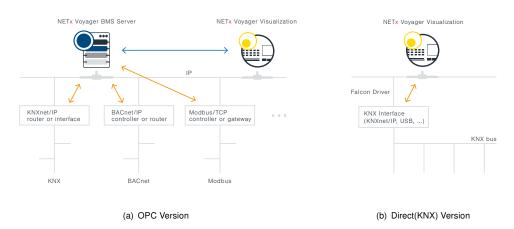


Figure 1.4.: Versions of NETx Voyager

### Features OPC version:

- Simultaneous use of different technologies (KNX, BACnet, Modbus, and more)
- Direct access to data via OPC server
- Multiple visualization clients
- For visualization projects with any OPC servers
- Main/Backup solution possible
- In combination with NETx BMS Server: access to historical data and use of NETx MaRS Chart possible

### Features Direct(KNX) version:

- Only for KNX projects
- Direct connection to KNX network without needing an OPC server
- · Supports all official KNX protocols
- Simple import of configuration from ETS
- For one KNX interface only (e.g. USB or IP Router)

NETx Voyager 5.0.10 Page 8 of 19

### 1.2.4. Main/backup solution

Reliability is one of the most important requirements within the building automation domain. Therefore, the NETx Voyager can be combined with a NETx Main/Backup server solution. The visualization is able to communicate with the main and backup server at the same time. If the network connection to the main server is interrupted, the connection to the backup server becomes active. By communicating with the backup server, the NETx Voyager is still able to retrieve the data from the building automation system. Switching between main and backup server is done automatically – without the need of manual interaction of the end user.

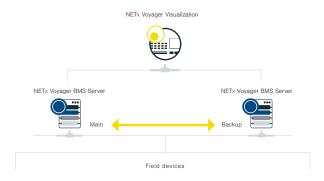


Figure 1.5.: Main/Backup solution

A main/backup solution not only increases the reliability of the system but also eases the maintainability. If the configuration of a building automation system has to be changed during runtime, the main server can simply be turned off in order to adapt the configuration. In the meantime, the backup server can remain online and the end user can still use the visualization. Again, the switching between main and backup is done automatically without any user intervention.

NETx Voyager 5.0.10 Page 9 of 19

### 1.3. Disambiguation

### 1.3.1. Project/workspace

A NETx Voyager project is a collection of visualization pages, Controls (connected to Server Items), and layers to display and manage a building automation system in a user-friendly way. The sum of configuration files and directories containing a project are referred to as workspace.

### 1.3.2. Page

Pages in a workspace display dedicated areas of the building automation system in different levels of detail (e.g. a single room or a whole floor). While the visualization user sees one visualization page at the same time, the user is able to switch between them.

### 1.3.3. Layer

In the NETx Voyager, Controls can be assigned to a layer independently from the page where they are used. This assignment to layers helps the visualization designer to organize the visualization. Using special Controls, layers can be shown or hidden as well as activated or deactivated even at runtime.

### 1.3.4. Control

A Control is a single object (e.g. a button to display or control a light switch) that can be placed on a page. Controls are used for visualization and/or control purposes. To show or control datapoint values, Controls are connected to one or more Server Items.

### 1.3.5. Group

Controls can be grouped together. These groups can be named, graphically fixed, or can even represent a pop up control.

### 1.3.6. Server Item

Server Items represent datapoints (e.g. KNX group addresses, BACnet objects, Modbus registers) of the building automation system. They can be assigned to Controls. The Server Item ID is unique within the server and therefore it is used as a reference when the Server Item is assigned to a Control.

### 1.3.7. Visualization user

A visualization user is a person (usually the end customer) that uses the visualization when it is online.

### 1.3.8. Visualization designer

A visualization designer is a person (e.g. a system integrator) who creates, modifies, or configures a visualization project.

NETx Voyager 5.0.10 Page 10 of 19

### 2. Getting started

### 2.1. Installation

Insert the disk into the optical drive.

Either the installation software will start at autorun or the user will need to execute it manually.

The setup will guide the user through the installation. During this process it is possible to make a few specifications such as a different installation path other than the default one.

Inside the directory – either specified by the user or the default one – a sub folder "Workspaces" will be created. The latter one will not be deleted when deinstalling the software. It has a special role in saving workspaces and also contains the default workspace, from which all new workspaces will derive.

! Note that under Microsoft Windows server systems the installation of Microsoft .NET Framework 3.5 might need to be done manually by installing the according server feature.

!Attention: All anti virus software and anti malware has to be deactivated. The user installing the software has to have appropriate rights to do so. Make sure the necessary exceptions are set in your security software so that NETx Voyager is working properly.

### 2.2. First steps

First start the NETx Voyager Editor 5.0. This can be accomplished by either clicking the icon on the desktop or one can run the program out of the start menu. When the software is run the first time and there is no valid hard-lock (Universal Serial Bus (USB) stick) connected to the system, a window will be prompted to either license the software with a soft-lock or to continue the evaluation period of 30 days. For now it is fully sufficient to continue with the evaluation. If there is more detailed information needed about licensing the software, please refer to section A.3.

Again assuming the software is run the first time it will ask, which demo workspace should be opened. Once a workspace is chosen and the software was closed with a still open workspace, it will reopen the last workspace used on a new start.

Now that a workspace is opened, the software will ask to log in. For all demo projects user name "admin" and password "aaa" will work. Now the user can start working on the opened project. For creating a new one please refer to the next section.

### 2.2.1. Create a new workspace

To create a new workspace it is possible to either select the menu "Workspace" and then "New workspace..." or to use the shortcut [Ctrl] + [N].

The first screen of a wizard will appear and a few global settings about the new project can be made. The name shall not include any special characters since it will be used as the name of the directory where all information of the project will be stored in.

The two most important settings besides the name are the project type and the default page size. For the first project it is enough to keep default settings. .

The next screen of the wizard will ask about the administrative user for the project. Name, password, and password confirmation are mandatory. Optionally an email address can be entered. Below the text fields there is a check box to declare this user as the default one for the visualization. When the application starts in visualization mode, the default user will be logged in automatically and the login dialog will be suppressed.

### 2.2.2. Connect to a server

This chapter is directly related to creating a new workspace since the third screen of the wizard will ask for the details of the connection to the server. In case there is the need for designing parts of the new project without being connected to a server it is possible to skip this step and setting the connection information later.

NETx Voyager 5.0.10 Page 11 of 19

Assuming the server to connect to is situated on the same machine the quickest way to create a working connection is to click "Search" right after the list appears.

After listing the available servers it is possible to select the one to connect to. If the server to connect to is one developed by NETxAutomation Software GmbH it is possible to connect via VNET protocol. Check the according check box and set the communication port to the default 4530 or the one the server was adjusted to.

If at a later time it is needed to connect to a different server it is possible to call this dialog by clicking the traffic light symbol in the toolbar.

The connection parameters are saved inside the workspace. Multiple connections to different servers at a time are not supported.

### 2.2.3. Adding a new page

This dialog can be reached via menu item "Page" selecting "New page...".

The first text box contains a default name of the page. It can be useful to change this one into something more descriptive (e.g. "First Floor" or "Temperature Regulation").

By hitting the OK button a new page is successfully created.

### 2.2.4. Placing a Control

To place a Control onto a page it is simply dragged out of the object catalog and dropped onto the page.

After placing the control onto the page a Server Item can be assigned to it by the same simple method. Every Server Item can be dragged out of the Item Tree and dropped directly onto a Control.

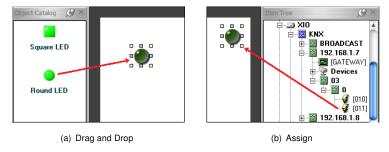


Figure 2.1.: Assigning a 2-state KNX actuator to the switch control

By clicking the green arrow in the toolbar(Run) the application will switch to the visualization mode. Given the fact that the connection to the server is properly established it will be possible to turn the switch on and off already.

NETx Voyager 5.0.10 Page 12 of 19

## A. Appendix

### A.1. Tables

Table A.1.: String Format

Key	Encoding
{General Number}	Displays the number as entered, with no rounding and no commas.
{Currency}	Displays the number with a currency symbol in front of the comma (if appropriate), and two digits to the rigi
	of the decimal point. Negative numbers are displayed according to the local settings (with leading minus of
	set in parentheses).
{Fixed}	Displays the number with at least one digit to the left of the decimal separator and two digits to the right.
{Standard}	Displays the number with at least one digit to the left of the decimal separator and two digits to the right ar
(Standard)	
-	commas (if appropriate).
{Percent}	Multiplies the value by 100 and displays the result with two digits to the right of the decimal point and
	percent sign at the end.
{Scientific}	Uses standard scientific notation.
{Yes/No}	Any nonzero numeric value is Yes. Zero is No.
{True/False}	Any nonzero numeric value is True. Zero is False.
{On/Off}	Any nonzero numeric value is On. Zero is Off.
· ,	,
{General Date}	Shows date and time if expression contains both. If expression is only a date or a time, the missing information
	is not displayed.
{Long Date}	Uses the Long Date format specified in the Regional Settings dialog box of the Microsoft Windows Contr
	Panel.
{Medium Date}	Uses the "dd-mmm-yy" format to display a date according to the local settings.
{Short Date}	Uses the Short Date format specified in the Regional Settings dialog box of the Windows Control Panel.
{Long Time}	Shows the hour, minute, second, and "AM" or "PM" using the "hh:mm:ss" format.
	•
{Medium Time}	Shows the hour, minute, and "AM" or "PM" using the "h:mm AM/PM" format.
{Short Time}	Shows the hour and minute using the "hh:mm format".
{0}	Mandatory digit placeholder – Display a digit or a zero. If the expression has a digit in the position where the
	0 appears in the format string, display it; otherwise, display a zero in that position. If the number has few
	digits than there are zeros (on either side of the decimal) in the format expression, display leading or trailir
	zeros. If the number has more digits to the right of the decimal separator than there are zeros to the right
	the decimal separator in the format expression, round the number to as many decimal places as there are
	zeros. If the number has more digits to the left of the decimal separator than there are zeros to the left of the
	decimal separator in the format expression, display the extra digits without modification.
{#}	Optional digit placeholder - Display a digit or nothing. If the expression has a digit in the position where the
	appears in the format string, display it; otherwise, display nothing in that position. This symbol works like the
	0 digit placeholder, except that leading and trailing zeros are not displayed if the number has the same
	fewer digits than there are # characters on either side of the decimal separator in the format expression.
( )	· · ·
<b>{.}</b>	In some locales, a comma is used as the decimal separator. The decimal placeholder determines how mar
	digits are displayed to the left and right of the decimal separator. If the format expression contains on
	number signs to the left of this symbol, numbers smaller than 1 begin with a decimal separator. If alway
	a leading zero has to be displayed with fractional numbers, use 0 as the first digit placeholder to the left
	the decimal separator instead. The actual character used as a decimal placeholder in the formatted outpi
	depends on the number format recognized by the system.
{%}	
{70}	The expression is multiplied by 100. The percent character (%) is inserted in the position where it appears
	the format string.
{,}	In some locales, a period is used as a thousand separator. The thousand separator separates thousand
	from hundreds within a number that has four or more places to the left of the decimal separator. Standar
	use of the thousand separator is specified if the format contains a thousand separator surrounded by dig
	placeholders (0 or #). Two adjacent thousand separators or a thousand separator immediately to the left
	the decimal separator (whether or not a decimal is specified) means "scale the number by dividing it by 100
	rounding as needed." Large numbers can be scaled using this technique. For example, this format string ca
	be used "##0," to represent 100 million as 100. Numbers smaller than one million are displayed as 0. Tw
	adjacent thousand separators in any position other than immediately to the left of the decimal separator a
	treated simply as specifying the use of a thousand separator. The actual character used as the thousan
	separator in the formatted output depends on the Number Format recognized by the system.
{-}, {+}, {\$}, {(}, {)}, {[space]}	Displays the character as is, in the position specified by the format string. To display a character other that
( ), ( · ), ( + ), ((), (), ([opaco])	one of those listed, precede it with a backslash (\).
	If the format expression contains at least one digit placeholder (0 or #) to the right of E-, E+, e-, or e+, the
(E) (E) (a) (a)	
{E-}, {E+}, {e-}, {e+}	
{E-}, {E+}, {e-}, {e+}	number is displayed in scientific format and E or e is inserted between the number and its exponent. The
{E-}, {E+}, {e-}, {e+}	
{E-}, {E+}, {e-}, {e+}	number is displayed in scientific format and E or e is inserted between the number and its exponent. The
{E-}, {E+}, {e-}, {e+}	number is displayed in scientific format and E or e is inserted between the number and its exponent. The number of digit placeholders to the right determines the number of digits in the exponent. Use E- or e- to place a minus sign next to negative exponents. Use E+ or e+ to place a minus sign next to negative exponents are
	number is displayed in scientific format and E or e is inserted between the number and its exponent. The number of digit placeholders to the right determines the number of digits in the exponent. Use E- or e- to place a minus sign next to negative exponents. Use E+ or e+ to place a minus sign next to negative exponents are a plus sign next to positive exponents.
	number is displayed in scientific format and E or e is inserted between the number and its exponent. The number of digit placeholders to the right determines the number of digits in the exponent. Use E- or e- to place a minus sign next to negative exponents. Use E+ or e+ to place a minus sign next to negative exponents are a plus sign next to positive exponents.  Time separator. In some locales, other characters may be used to represent the time separator. The time
	number is displayed in scientific format and E or e is inserted between the number and its exponent. The number of digit placeholders to the right determines the number of digits in the exponent. Use E- or e- to place a minus sign next to negative exponents. Use E+ or e+ to place a minus sign next to negative exponents are a plus sign next to positive exponents.  Time separator. In some locales, other characters may be used to represent the time separator. The time separator separates hours, minutes, and seconds when time values are formatted. The actual character uses
	number is displayed in scientific format and E or e is inserted between the number and its exponent. The number of digit placeholders to the right determines the number of digits in the exponent. Use E- or e- to place a minus sign next to negative exponents. Use E+ or e+ to place a minus sign next to negative exponents are a plus sign next to positive exponents.  Time separator. In some locales, other characters may be used to represent the time separator. The time
<b>(</b> 3)	number is displayed in scientific format and E or e is inserted between the number and its exponent. The number of digit placeholders to the right determines the number of digits in the exponent. Use E- or e- to place a minus sign next to negative exponents. Use E+ or e+ to place a minus sign next to negative exponents are a plus sign next to positive exponents.  Time separator. In some locales, other characters may be used to represent the time separator. The time separator separates hours, minutes, and seconds when time values are formatted. The actual character uses
<b>{</b> :}	number is displayed in scientific format and E or e is inserted between the number and its exponent. The number of digit placeholders to the right determines the number of digits in the exponent. Use E- or e- to place a minus sign next to negative exponents. Use E+ or e+ to place a minus sign next to negative exponents are a plus sign next to positive exponents.  Time separator. In some locales, other characters may be used to represent the time separator. The time separator separates hours, minutes, and seconds when time values are formatted. The actual character use as the time separator in formatted output is determined by the system settings.  Date separator. In some locales, other characters may be used to represent the date separator. The date separator.
<b>{</b> :}	number is displayed in scientific format and E or e is inserted between the number and its exponent. The number of digit placeholders to the right determines the number of digits in the exponent. Use E- or e- to place a minus sign next to negative exponents. Use E+ or e+ to place a minus sign next to negative exponents are a plus sign next to positive exponents.  Time separator. In some locales, other characters may be used to represent the time separator. The time separator separates hours, minutes, and seconds when time values are formatted. The actual character use as the time separator in formatted output is determined by the system settings.  Date separator. In some locales, other characters may be used to represent the date separator. The data separator separates the day, month, and year when date values are formatted. The actual character used as
{E-}, {E+}, {e-}, {e+} {:}	number is displayed in scientific format and E or e is inserted between the number and its exponent. The number of digit placeholders to the right determines the number of digits in the exponent. Use E- or e- to place a minus sign next to negative exponents. Use E+ or e+ to place a minus sign next to negative exponents are a plus sign next to positive exponents.  Time separator. In some locales, other characters may be used to represent the time separator. The time separator separates hours, minutes, and seconds when time values are formatted. The actual character use as the time separator in formatted output is determined by the system settings.  Date separator. In some locales, other characters may be used to represent the date separator. The date separator separates the day, month, and year when date values are formatted. The actual character used at the date separator in formatted output is determined by the system settings.
<b>(</b> 3)	number is displayed in scientific format and E or e is inserted between the number and its exponent. The number of digit placeholders to the right determines the number of digits in the exponent. Use E- or e- to place a minus sign next to negative exponents. Use E+ or e+ to place a minus sign next to negative exponents are a plus sign next to positive exponents.  Time separator. In some locales, other characters may be used to represent the time separator. The time separator separates hours, minutes, and seconds when time values are formatted. The actual character used as the time separator in formatted output is determined by the system settings.  Date separator. In some locales, other characters may be used to represent the date separator. The date separator separates the day, month, and year when date values are formatted. The actual character used as the date separator in formatted output is determined by the system settings.  Display the date as ddddd and display the time as ttttt, in that order. Display only date information if there
{:} {/}	number is displayed in scientific format and E or e is inserted between the number and its exponent. The number of digit placeholders to the right determines the number of digits in the exponent. Use E- or e- to place a minus sign next to negative exponents. Use E+ or e+ to place a minus sign next to negative exponents are a plus sign next to positive exponents.  Time separator. In some locales, other characters may be used to represent the time separator. The time separator separates hours, minutes, and seconds when time values are formatted. The actual character use as the time separator in formatted output is determined by the system settings.  Date separator. In some locales, other characters may be used to represent the date separator. The data separator separates the day, month, and year when date values are formatted. The actual character used as

NETx Voyager 5.0.10 Page 13 of 19

Table A.1.: String Format

Key	Encoding
{d}	Display the day as a number without a leading zero (1 - 31).
{dd}	Display the day as a number with a leading zero (01 - 31).
{ddd}	Display the day as an abbreviation (Sun - Sat).
{dddd}	Display the day as a full name (Sunday - Saturday).
{ddddd}	Display the date as a complete date (including day, month, and year), formatted according to the system's short date format setting. The default short date format is m/d/yy.
{dddddd}	Display the date as a complete date (including day, month, and year) formatted according to the long date setting recognized by the system. The default long date format is mmmm dd, yyyy.
{w}	Display the day of the week as a number (1 for Sunday through 7 for Saturday).
{ww}	Display the week of the year as a number (1 - 53).
{m}	Display the month as a number without a leading zero (1 - 12). If "m" immediately follows "h" or "hh", the
(···)	minute rather than the month is displayed.
{mm}	Display the month as a number with a leading zero (01 - 12). If "mm" immediately follows "h" or "hh", the
,	minute rather than the month is displayed.
{mmm}	Display the month as an abbreviation (Jan - Dec).
{mmmm}	Display the month as a full month name (January - December).
{q}	Display the quarter of the year as a number (1 - 4).
{y}	Display the day of the year as a number (1 - 366).
{yy}	Display the year as a 2-digit number (00 - 99).
{yyyy}	Display the year as a 4-digit number (100 - 9999).
{h}	Displays hours in 24hour format numeric without leading zeros (0 - 23). When any Ante/Post Meridian
• •	formatting is involved it is switched to 12hour format.
{hh}	Displays hours in 24hour format numeric with leading zeros (00 - 23). When any Ante/Post Meridian formatting
	is involved it is switched to 12hour format.
{n}	Display the minute as a number without leading zeros (0 - 59).
{nn}	Display the minute as a number with leading zeros (00 - 59).
{s}	Display the second as a number without leading zeros (0 - 59).
{ss}	Display the second as a number with leading zeros (00 - 59).
{ttttt}	Display a time as a complete time (including hour, minute, and second), formatted using the time separator
	defined by the time format recognized by the system. A leading zero is displayed if the leading zero option is
	selected and the time is before 10:00 A.M. or P.M. The default time format is h:mm:ss.
{AM/PM}	Use the 12-hour clock and display an uppercase AM with any hour before noon; display an uppercase PM
	with any hour between noon and 11:59 P.M.
{am/pm}	Use the 12-hour clock and display a lowercase AM with any hour before noon; display a lowercase PM with
	any hour between noon and 11:59 P.M.
{A/P}	Use the 12-hour clock and display an uppercase A with any hour before noon; display an uppercase P with
	any hour between noon and 11:59 P.M.
{a/p}	Use the 12-hour clock and display a lowercase A with any hour before noon; display a lowercase P with any
	hour between noon and 11:59 P.M.
{AMPM}	Use the 12-hour clock and display the AM string literal as defined by the system with any hour before noon;
	display the PM string literal as defined by the system with any hour between noon and 11:59 P.M. AMPM can
	be either uppercase or lowercase, but the case of the string displayed matches the string as defined by the
	system settings. The default format is AM/PM.

NETx Voyager 5.0.10 Page 14 of 19

### A.2. Acronyms

**USB** Universal Serial Bus

NETx Voyager 5.0.10 Page 15 of 19

### A.3. Licensing

Two different possibilites are available:

- Hard lock Hardware based (USB Dongle) security system
- Soft lock Software based security system

### A.3.1. Hard lock

One of the solutions is hard lock. Just insert the USB-Dongle into any USB port in your system and let the hardware driver get installed. The software will automatically recognize and read your license from the USB dongle. It might be necessary to restart the software to make it recognize the license.

! The USB dongle has to be connected at all times from start of the application on. If it is disconnected the correct work of the software will stop after two warnings (which is approximately after 15 minutes).

### A.3.2. Soft lock

In this case the software license is assigned to a local code that depends on a checksum of the local hard- and software.

! The local code of the soft lock license can be changed by any major change of hardware (e.g. network adapter) or software (e.g. operating system). After such change it might be necessary to license the software again.

### A.3.2.1. Software Licensing

The licensing is processed during start-up of the program. You can either continue in demo mode or press "Enter license tool . . . " to view all necessary information to get a License Code.

Should you decide to continue in demo mode the licensing process can be initiated by starting the "License Manager" from the "Help" menu.



Figure A.1.: Licensing Software

The License Manager will show up with several fields:

NETx Voyager 5.0.10 Page 16 of 19

- License ID This block consists of 4 fields. Please fill in the License ID from your invoice.
- License Type According to your invoice select the type here. Page count and count of displayed eliments will depend on it.
- Local Code This code is calculated from the license type and the existing hard- and software. It is generated automatically.

Once the above listed fields are all filled out with the correct information send an email directly to NETxAutomation Software GmbH by clicking the according link. If there is no access to the Internet, choose the link "copy to clipboard". Open a text file in which the clipboard content needs to be inserted (usually via [Ctrl]+[V] or "Edit" and "Paste"). Now send it from any other computer by mail to register@netxautomation.com.

The following entries shall be in your clipboard or in your Email:

- License ID
- License Type
- License Code
- Local Code
- Date

Transmit this data to NETxAutomation Software GmbH to receive your "Unlock Code". Once you got the unlock information insert the code into the bottom field and click "OK". Make sure you copy the "Unlock Code" without any blanks, tabs or other white spaces. If you receive an error message after the process, check the given data and try the registration again.

! The user executing the licensing software must be local administrator. The program needs to be started as administrator.

### A.3.2.2. Software Unlicensing

When it is planned to move the NETx Voyager 5.0 from one system to another or the system will change (hardware upgrade), it is useful to unlicense the software. The unlicensing process can be initiated by starting the "Registration..." from the "Help" menu of the NETx Voyager Editor.

Press the "Transfer/Remove License" button to gain the removal code. Send this code to NETxAutomation Software GmbH to receive the new "Unlock Code" to license the software on the new or upgraded system.

### A.3.3. License Count

The NETx Voyager is purchasable in four different main licenses; Home, Basic, Professional, and Enterprise. Each of them features different amounts of Elements, Pages, Elements per page, Eventor Elements, Calendar Elements, Alarm Elements, Scene Elements, and Virtual Devices.

The following table lists the amounts of included features according to the license:

Feature Basic Professional Enterprise Home Elements 400 2500 10000  $\infty$ 20 100 Pages 200  $\infty$ Elements per page 400 500 1000 1000 **Eventor Elements** 50 500  $\infty$  $\infty$ Calendar Elements 50 500  $\infty$  $\infty$ Alarm Elements 50 500 Scene Elements 10 500  $\infty$  $\infty$ Virtual Devices 500 0  $\infty$  $\infty$ 

Table A.2.: Licensed features

NETx Voyager 5.0.10 Page 17 of 19

### A.3.3.1. Feature Explaination

### **Elements**

The amount of Controls (e.g. buttons, images, etc.) possible to use in the application.

#### Pages

The maximum count of pages the visualization designer may use inside a visualization project.

### Elements per page

The maximum number of Controls the visualization designer may use on a single page.

### **Eventor Elements**

The maximum count of events inside the Eventor module.

### **Calendar Elements**

The maximum count of events inside the Calendar module.

### **Alarm Elements**

The maximum count of alarm definitions the visualization designer may implement into one and the same NETx Voyager Project.

### **Scene Elements**

The maximum count of scenes allowed within a NETx Voyager Project.

### **Virtual Devices**

The maximum count of virtual devices possible to use in the Processor module. If it is 0 (zero) the Processor module is not available in this license type.

NETx Voyager 5.0.10 Page 18 of 19

### A.4. Support and Contact

Please send all your support questions to:

### support@NETxAutomation.com

If you have general questions regarding the product and service please send your email to:

info@NETxAutomation.com

### A.5. System Requirements

### A.5.1. Hardware

• Processor: Intel or AMD 1.6GHz (Multicore recommended)

• System Memory: 2048MB

• Harddisk Space: 4GB (8GB recommended)

• Network Adapter: 100 MBit/s

• Screen Resolution: 1280 x 1024 Pixel (for Editor)

### A.5.2. Supported Operating Systems

### A.5.2.1. OPC/UD Version

• Microsoft Windows XP Professional 32bit Servicepack 3

- Microsoft Windows 7 32bit Servicepack 1
- Microsoft Windows 7 64bit Servicepack 1
- Microsoft Windows 8 64bit
- Microsoft Windows Server 2008 32bit Servicepack 2
- Microsoft Windows Server 2008 64bit Servicepack 2
- Microsoft Windows Server 2008 Release 2 64bit Servicepack 1
- Microsoft Windows Server 2012 64bit

### A.5.2.2. Direct(KNX) Version

- Microsoft Windows XP Professional 32bit Servicepack 3
- Microsoft Windows 7 32bit Servicepack 1
- Microsoft Windows 7 64bit Servicepack 1
- Microsoft Windows Server 2008 32bit Servicepack 2
- Microsoft Windows Server 2008 64bit Servicepack 2
- Microsoft Windows Server 2008 Release 2 64bit Servicepack 1

### A.5.3. Other

• .NET Framework: 3.5 or higher

NETx Voyager 5.0.10 Page 19 of 19