

Version update



JetSym Version update V.6.0.4 to V.6.1.0

Bucher Automation AG

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Bucher Automation AG

Thomas-Alva-Edison-Ring 10
71672 Marbach/Neckar, Germany
T +49 7141 2550-0
info@bucherautomation.com

Technical support
T +49 7141 2550-444
support@bucherautomation.com

Sales
T +49 7141 2550-663
sales@bucherautomation.com

www.bucherautomation.com

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Table of Contents

1	New additions	6
1.1	General	6
1.1.1	Program download only when the switch is set to Stop	6
1.1.2	Rename identifier	6
1.1.3	New option for copying external files to the project directory	6
1.1.4	64KB limit removed	6
1.1.5	Extension Compare and Download	6
1.1.6	Introduction of new node "OPC UA Client"	6
1.1.7	Error message redeclaration	6
1.1.8	PDOs from default modules	6
1.1.9	EtherCAT Array Types	6
1.1.10	Version number with dots	6
1.1.11	Loading projects with invalid configurations	6
1.1.12	Copy protection for the program	7
1.1.13	Configuration Page for 3rd-Party EtherCAT Devices	7
1.1.14	Demo version	7
1.1.15	External Signing Program	7
1.1.16	Sample projects have been added	7
1.1.17	Selecting an alternative controller	7
1.1.18	New interface PDO	7
1.1.19	Copy and KnowHow Protection	7
1.1.20	New license mechanism	7
1.2	Libraries	8
1.2.1	Encrypting user-defined libraries	8
1.3	STX	8
1.3.1	When declaring a located variable, assign a value immediately	8
1.3.2	Extension for overloaded functions	8
1.3.3	New date and time constants	8
1.3.4	Case-sensitivity for certain keywords	8
1.3.5	New STX attributes	9
1.4	Motion Setup	9
1.4.1	New Motion Libraries	9
1.4.2	EtherCAT diagnostics	9
1.4.3	New Motion-Setup	9
1.5	Setup file	9
1.5.1	Highlighting of Boolean values	9
1.5.2	Filtering by favorites	9
1.6	Editor	9
1.6.1	Search/replace dialog	9

- 1.6.2 Windows clipboard history support..... 10
- 1.6.3 Code navigator 10
- 1.6.4 Cancel search in files 10
- 1.6.5 Regex expressions when searching/replacing 10
- 1.7 Hardware..... 10
 - 1.7.1 JX4-BN-EC and Modules 10
 - 1.7.2 Controller configuration Displays MCX version 10
 - 1.7.3 New mobile controller JVM-105..... 10
- 1.8 EtherCAT 10
 - 1.8.1 Manually changing the status of individual devices..... 10
- 2 Fixed Software bugs 11**
 - 2.1 General 11
 - 2.1.1 Possible crash when changing the file structure of a library 11
 - 2.1.2 Comments on axes when copying a hardware configuration..... 11
 - 2.1.3 JetSym hung up when starting the compiler 11
 - 2.1.4 EtherCAT devices with PDOs with the same name 11
 - 2.1.5 JetSym not operable after file upload 11
 - 2.1.6 JetSym not operable when saving large oscilloscope files 11
 - 2.2 Setup/Monitor 11
 - 2.2.1 Possible JetSym crash in connection with JX3 module 11
 - 2.2.2 Display of local variables/parameters for overloaded functions in the "Monitor" 11
 - 2.3 Oszilloscope 12
 - 2.3.1 Uploading recorded channels..... 12
 - 2.3.2 Forced type reset after start 12
 - 2.3.3 JetSym Hanging at High Load..... 12
 - 2.3.4 JetSym Hanging with Files on Network Drive 12
 - 2.4 STX 12
 - 2.4.1 %VL in BitNum instruction 12
 - 2.4.2 Pointer to Located..... 12
 - 2.4.3 Const pointer to structured constants..... 12
 - 2.5 Editor..... 12
 - 2.5.1 Colors set in the program editor were not adopted 12
 - 2.5.2 Comparison with located variables 12
 - 2.5.3 Embedded types with OPC-UA 12
 - 2.5.4 Search term was not marked correctly "Search in files" 13
 - 2.5.5 Autotext editor..... 13
 - 2.5.6 No Intellisense selection for autotext entries 13
 - 2.5.7 Possible crash after double-click 13
 - 2.5.8 Intellisense after function calls with round brackets 13
 - 2.6 Compiler..... 13

- 2.6.1 Possible JetSym crash after build abort 13
- 3 Important notes 14**
 - 3.1 Extension STX SemaphoreX and SemaphoreC..... 14
 - 3.2 CodeMeter runtime 14

1 New additions

1.1 General

1.1.1 Program download only when the switch is set to Stop

There is a new checkbox in the project settings under General/Download options. If this checkbox is set, a program download is only possible if the switch on the controller is set to Stop.

1.1.2 Rename identifier

When renaming identifiers, functions that are exported via OPC-UA can now also be renamed.

1.1.3 New option for copying external files to the project directory

There is a new option that allows you to copy files that are not in the project directory to the project directory when inserting them. This can be found in the Options dialog under Workspace.

1.1.4 64KB limit removed

Functions, subroutines and tasks can now be larger than 64 KB. This can be particularly useful in connection with automatically generated code, such as with OPC-UA.

1.1.5 Extension Compare and Download

Extension Compare and Download to include configuration data for OPC-UA Client.

1.1.6 Introduction of new node "OPC UA Client"

Introduction of new node OPC UA Client in the hardware tree.

1.1.7 Error message redeclaration

In the case of a redeclaration, e.g. of a variable, the compiler's error message did not refer to the original declaration.

1.1.8 PDOs from default modules

JetSym did not recognize PDOs from default modules.

1.1.9 EtherCAT Array Types

Array types from the EtherCAT area are now evaluated and displayed by the live view and the monitor.

1.1.10 Version number with dots

In the settings of a project, the version number can now be entered with dots.

1.1.11 Loading projects with invalid configurations

Projects that contain configurations with unknown controls can now be opened. The invalid configurations are marked accordingly and cannot be edited.

1.1.12 Copy protection for the program

A new Signature field has been introduced in the Project settings > General > Target. The signature issued by an external tool can be entered in this field. If a corresponding signature is entered, JetSym adds this signature to the .es4 file during download.

1.1.13 Configuration Page for 3rd-Party EtherCAT Devices

The configuration page for 3rd-party EtherCAT devices has been redesigned.

1.1.14 Demo version

Additional restrictions apply with the "Free Edition" license:

- Maximum permitted number of hardware per bus node (e.g. JX3 or EtherCAT) is limited to 3.
- A maximum of 1 project can be created in the workspace.
- The project may contain a maximum of 1 configuration.

Workspaces or projects that contain more than the permitted number are opened, but no further additions are permitted.

1.1.15 External Signing Program

The tool SecureDownloadBuilder for signing controller programs is installed in the folder Tools in the JetSym installation directory.

1.1.16 Sample projects have been added

There are new STX sample projects in the samples directory of the JetSym installation folder. These are two projects which represent a state machine for an elevator. The project can be simulated using the internal JetSTX VM.

1.1.17 Selecting an alternative controller

If a project with a controller that is no longer supported is opened in JetSym, a dialog for selecting an alternative controller opens.

1.1.18 New interface PDO

The I/O mapping view has been revised and now allows configuring the process image on PDO level for subdevices that support this.

1.1.19 Copy and KnowHow Protection

The copy and knowhow protection works in combination with an external tool (Secure Download Builder), which is delivered in the Tools folder of the JetSym installation.

1.1.20 New license mechanism

The new license mechanism is an interaction of JetSym with the cloud solution LicenseSpring: <https://licensespring.com/>.

1.2 Libraries

1.2.1 Encrypting user-defined libraries

User-defined libraries can now be passed on in encrypted form; their source code is then unreadable. A password can also be entered so that only authorized users can use (compile) the library in an application. If no password is entered, the library can be compiled by all users but cannot be read.

1.3 STX

1.3.1 When declaring a located variable, assign a value immediately

When declaring a located variable, a value can be assigned to it immediately:

```
var  
bl_blinker: located bool at &bo_OUTPUT;  
end_var;
```

1.3.2 Extension for overloaded functions

In STX, functions and methods can be overloaded, i.e. several functions and methods can have the same name, but must differ in the number and/or the types of their parameters. The types of the parameters of the functions are now also differentiated and the function that best matches the call parameters is selected. Best match in this context means with little type conversion.

1.3.3 New date and time constants

In this version, there are new date and time constants in STX, e.g. DT#2024-02-10 or TM#11:41:00.123).

1.3.4 Case-sensitivity for certain keywords

The STX constants 'Null', 'False', 'True' and the STX keywords 'This' and 'Base' are now displayed in the Intellisense dialog according to the case-sensitive option.

1.3.5 New STX attributes

The following new attributes are available in STX to provide symbols with additional information:

- Deprecated
- Experimental
- Beta
- Error (the compiler aborts the translation process in the event of an error).

The attributes can be prefixed or suffixed to the following symbols:

- Data types
- Functions
- Subroutines
- classes
- Methods
- Tasks
- Structured and simple variablesMotion-Setup

1.4 Motion Setup

1.4.1 New Motion Libraries

This version includes new Motion Libraries 1.3.2.1 and 2.2.2.1.

1.4.2 EtherCAT diagnostics

On the EtherCAT diagnostics page, the registers containing the EtherCAT diagnostics data from the controller are displayed in the tooltip.

1.4.3 New Motion-Setup

There is a new motion setup for path and technology groups.

1.5 Setup file

1.5.1 Highlighting of Boolean values

Values of the type Boolean are now highlighted in green for values true and gray for values false.

1.5.2 Filtering by favorites

Entries can be marked with a star in the favorites column. These entries can be filtered and displayed using the star symbol in the toolbar.

1.6 Editor

1.6.1 Search/replace dialog

Updated the search/replace dialog.

1.6.2 Windows clipboard history support

The Windows clipboard history is supported by the source code editor. The clipboard history is available from Windows 10 onwards and is activated and used by pressing the Windows key and V (WIN-V).

1.6.3 Code navigator

The code navigator now has the following functions:

- Hold the left mouse button and scroll to scroll in the code navigator
- Left mouse click to jump page by page
- Double-click with the left mouse button to jump to the corresponding position in the code

1.6.4 Cancel search in files

The search in files can now be canceled with the key combination Ctrl + Shift + Q.

1.6.5 Regex expressions when searching/replacing

Regular expressions can now also be used as search patterns when searching/replacing in one or more files.

1.7 Hardware

1.7.1 JX4-BN-EC and Modules

New device JX4-BN-EC and JX4 modules can be selected in the Hardware Manager.

1.7.2 Controller configuration Displays MCX version

The MCX version is now also displayed in the configuration window of the controller. If you switch between two OS versions that use different MCX cores, a warning message is displayed.

1.7.3 New mobile controller JVM-105

The new mobile controller JVM-105 is now available in JetSym.

1.8 EtherCAT

1.8.1 Manually changing the status of individual devices

The status of all or individual SubDevices can now be changed via the MainDevice on the Ethercat diagnostics page.

2 Fixed Software bugs

2.1 General

2.1.1 Possible crash when changing the file structure of a library

JetSym could crash if an attempt was made to delete, add or rename files or folders via the context menus of files and folders of a library. These options are now grayed out in the context menus.

2.1.2 Comments on axes when copying a hardware configuration

When creating a new hardware configuration by copying an existing one ("Add Project Configuration" dialog), the comments on the axis configuration pages were not copied as well.

2.1.3 JetSym hung up when starting the compiler

When starting the compiler, JetSym hung up if an Intellisense update was still active in the background.

2.1.4 EtherCAT devices with PDOs with the same name

If an EtherCAT device has PDOs with the same name, the PDO entries are underscored and numbered consecutively so that they do not have the same names. This has an effect on the Intellisense and the PDO table. In the PDO table, there is a new column called Offset which can be used to recognize the position of the PDO entry in the memory image.

2.1.5 JetSym not operable after file upload

When loading a file from the controller to the PC using the JetSym file explorer, JetSym got stuck and could no longer be operated.

2.1.6 JetSym not operable when saving large oscilloscope files

If oscilloscope files have been saved to a network drive, the saving process of a compressed file takes a very long time. As a user, this means that the program hangs completely and no longer responds. Saving has now been adapted so that compression takes place locally in the Windows Temp folder and the compressed file is copied to the network drive. This has significantly accelerated the process.

2.2 Setup/Monitor

2.2.1 Possible JetSym crash in connection with JX3 module

JetSym could crash if register contents of a JX3-BN-ETH module were displayed in the setup, but there was no connection to the JX3-BN-ETH.

2.2.2 Display of local variables/parameters for overloaded functions in the "Monitor"

When debugging overloaded functions, the JetSym monitor used to display the local variables and parameters of the first overload instead of those of the actually selected variant of the function.

2.3 Oszilloscope

2.3.1 Uploading recorded channels

When uploading recording data (context menu Upload data...) in device-internal mode, channels were also uploaded for which uploading was not desired (checkboxes in the Upload column were deselected).

2.3.2 Forced type reset after start

In the oscilloscope's live mode, if a register was specified directly (no variable) and the type was forced, e.g. float, the type was reset to auto after the oscilloscope was started.

2.3.3 JetSym Hanging at High Load

When recording with several oscilloscope files at the same time (higher system load), JetSym could hang.

2.3.4 JetSym Hanging with Files on Network Drive

When modifying/saving large oscilloscope files on a network drive, JetSym could hang.

2.4 STX

2.4.1 %VL in BitNum instruction

If a structure was localized with %VL and the BitNum function was applied, the result was a 0. The expected result is a 4 as with %rl and without localization.

2.4.2 Pointer to Located

Compiler error at Pointer to Located.

2.4.3 Const pointer to structured constants

Const pointers to structured constants did not work.

2.5 Editor

2.5.1 Colors set in the program editor were not adopted

When installing a new JetSym version for the first time, the colors set in the previous version were not adopted for the program editor.

2.5.2 Comparison with located variables

If a located variable was compared with a pointer variable (SPDOAddr Pointer), this caused error 3602.

2.5.3 Embedded types with OPC-UA

OPC-UA did not support data types that were created within another type or class.

2.5.4 Search term was not marked correctly "Search in files"

The editor scrolls normally automatically with each replacement so that the user can see the context of the next hit. However, the editor did not scroll and remained at the position of the first search hit.

2.5.5 Autotext editor

There were errors in IntelliSense with user-defined autotexts.

2.5.6 No Intellisense selection for autotext entries

Newly created user-defined autotexts were not displayed in the Intellisense list.

2.5.7 Possible crash after double-click

If a double-click was performed after the last character of a program file in the program editor, the editor window crashed.

2.5.8 Intellisense after function calls with round brackets

Intellisense no longer works for more complex entries, including function calls with round brackets.

2.6 Compiler

2.6.1 Possible JetSym crash after build abort

If a build run was aborted immediately after it had been started, JetSym could crash.

3 Important notes

3.1 Extension STX SemaphoreX and SemaphoreC

The bytecode has changed due to internal adjustments. This leads to a difference in the program comparison.

3.2 CodeMeter runtime

As of version 6.0.0 JetSym does no longer require the CodeMeter runtime.