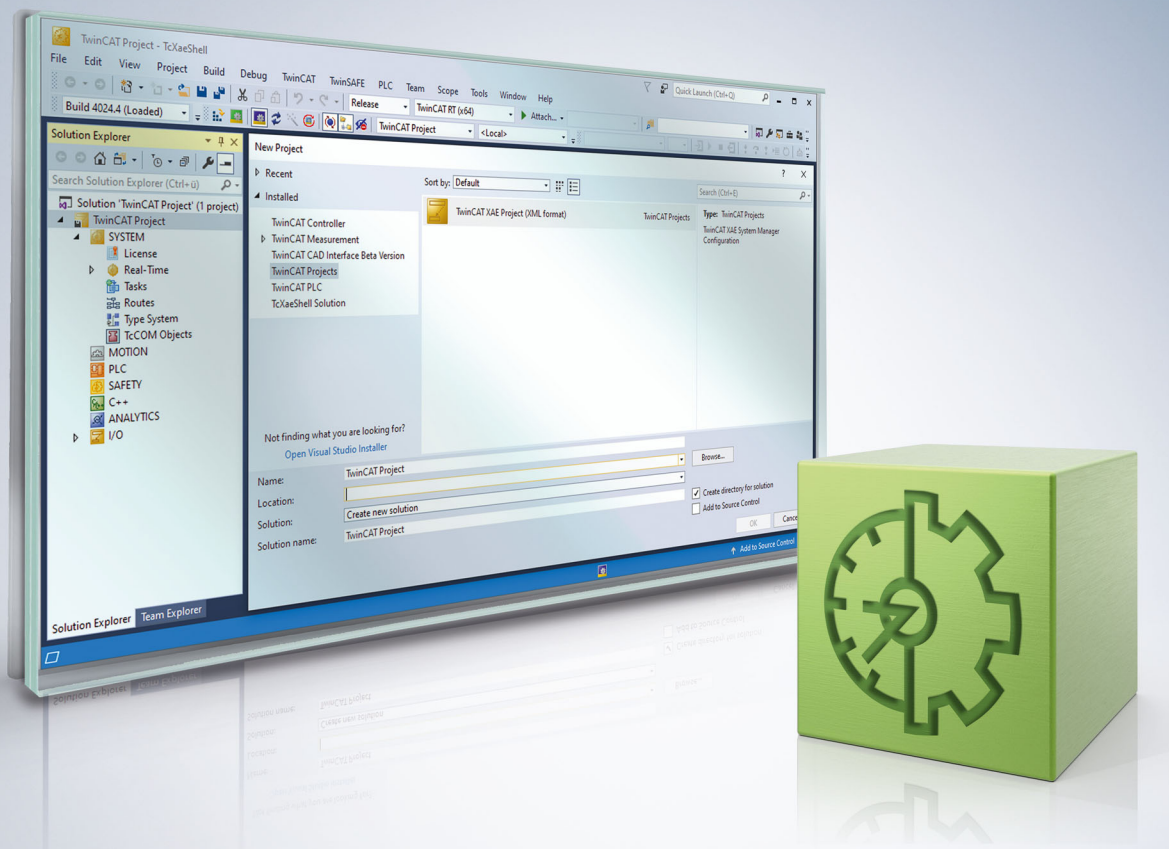
BECKHOFF New Automation Technology

Manual | EN

TE1000

TwinCAT 3 | Remote Manager



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1 Foreword

1.1 Notes on the documentation

This description is intended exclusively for trained specialists in control and automation technology who are familiar with the applicable national standards.
For installation and commissioning of the components, it is absolutely necessary to observe the documentation and the following notes and explanations.
The qualified personnel is obliged to always use the currently valid documentation.

The responsible staff must ensure that the application or use of the products described satisfies all requirements for safety, including all the relevant laws, regulations, guidelines, and standards.

Disclaimer

The documentation has been prepared with care. The products described are, however, constantly under development.
We reserve the right to revise and change the documentation at any time and without notice.
No claims to modify products that have already been supplied may be made on the basis of the data, diagrams, and descriptions in this documentation.

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The EtherCAT Technology is covered, including but not limited to the following patent applications and patents:
EP1590927, EP1789857, EP1456722, EP2137893, DE102015105702
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1.2 For your safety

Safety regulations

Read the following explanations for your safety.
Always observe and follow product-specific safety instructions, which you may find at the appropriate places in this document.

Exclusion of liability

All the components are supplied in particular hardware and software configurations which are appropriate for the application. Modifications to hardware or software configurations other than those described in the documentation are not permitted, and nullify the liability of Beckhoff Automation GmbH & Co. KG.

Personnel qualification

This description is only intended for trained specialists in control, automation, and drive technology who are familiar with the applicable national standards.

Signal words

The signal words used in the documentation are classified below. In order to prevent injury and damage to persons and property, read and follow the safety and warning notices.

Personal injury warnings

⚠ DANGER

Hazard with high risk of death or serious injury.

⚠ WARNING

Hazard with medium risk of death or serious injury.

⚠ CAUTION

There is a low-risk hazard that could result in medium or minor injury.

Warning of damage to property or environment

NOTICE

The environment, equipment, or data may be damaged.

Information on handling the product

This information includes, for example:
recommendations for action, assistance or further information on the product.

1.3 Notes on information security

The products of Beckhoff Automation GmbH & Co. KG (Beckhoff), insofar as they can be accessed online, are equipped with security functions that support the secure operation of plants, systems, machines and networks. Despite the security functions, the creation, implementation and constant updating of a holistic security concept for the operation are necessary to protect the respective plant, system, machine and networks against cyber threats. The products sold by Beckhoff are only part of the overall security concept. The customer is responsible for preventing unauthorized access by third parties to its equipment, systems, machines and networks. The latter should be connected to the corporate network or the Internet only if appropriate protective measures have been set up.

In addition, the recommendations from Beckhoff regarding appropriate protective measures should be observed. Further information regarding information security and industrial security can be found in our https://www.beckhoff.com/secguide.

Beckhoff products and solutions undergo continuous further development. This also applies to security functions. In light of this continuous further development, Beckhoff expressly recommends that the products are kept up to date at all times and that updates are installed for the products once they have been made available. Using outdated or unsupported product versions can increase the risk of cyber threats.

To stay informed about information security for Beckhoff products, subscribe to the RSS feed at https://www.beckhoff.com/secinfo.

2 Introduction

The maintenance or extension of the control code of machines already located in the field is a central use case that must be provided for by the machine controller development environments. It is particularly important to be able to generate compatible configurations or compatible control code for the respective target system – even after several years. The challenge here lies in the fact that the development environment is usually much newer than the target system.

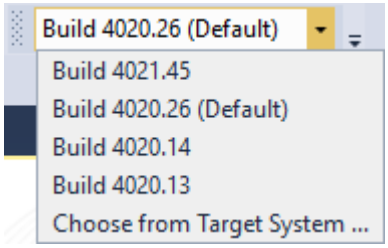
The TwinCAT3 Remote Manager enables the handling of various versions of the TwinCAT 3 development environment on the same computer.

3 TwinCAT integration

This section describes the settings that have been specially added for the Remote Manager functionality in TwinCAT.

TwinCAT XAE Remote Manager Toolbar

Use the TwinCAT XAE Remote Manager Toolbar to manually select the used TwinCAT version. This lists all installed TwinCAT 3 versions that can be loaded to the opened Visual Studio Shell.

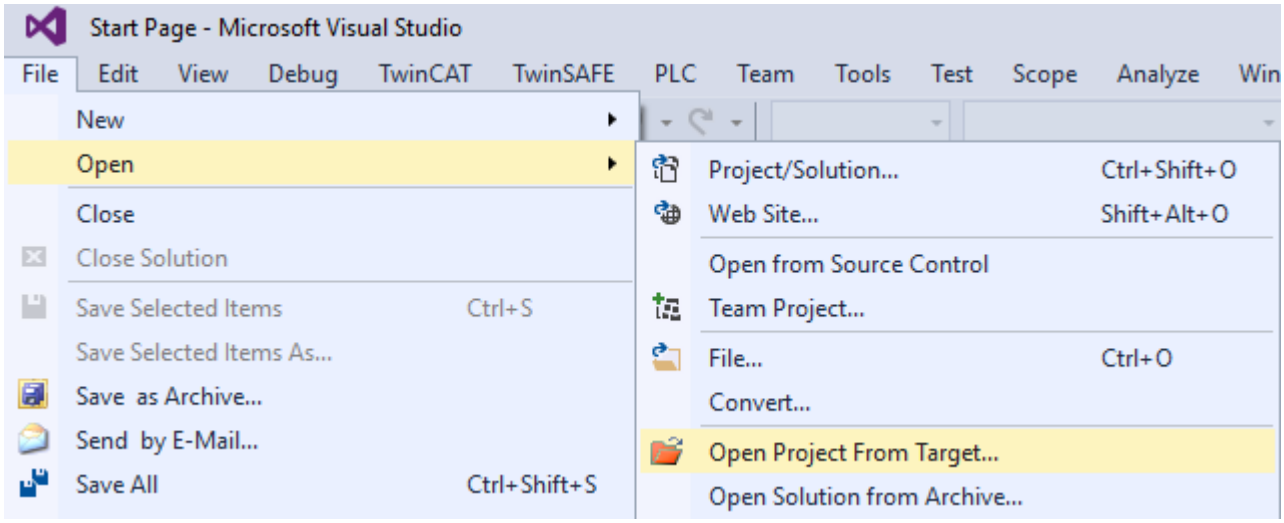


Remote Manager versions can be installed later. You can find them in the download area of our homepage.

Open from Target

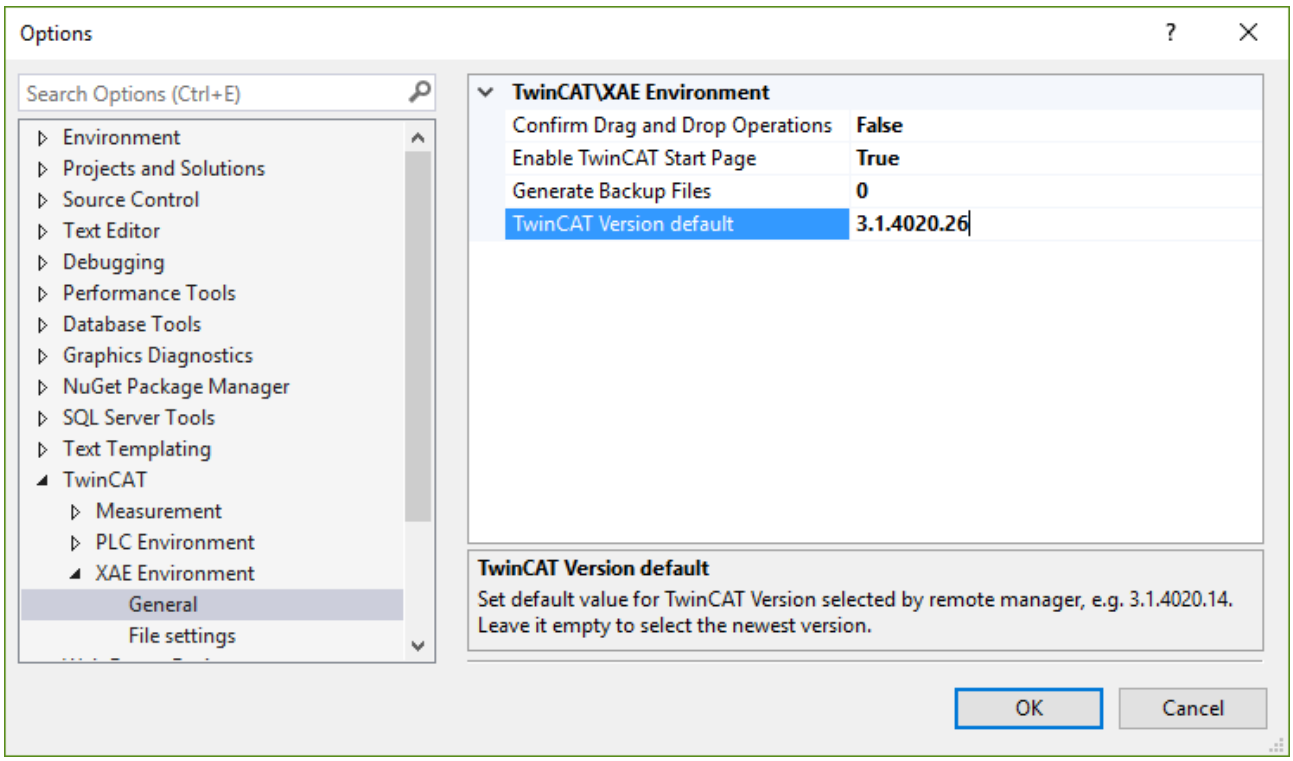
To load a project from the target system, use the option **Open Project From Target…** from the menu **File->Open**. After selecting this menu item, the project is downloaded from the target system, unpacked and subsequently opened in the TwinCAT version with which the project was last activated on the target system.

In older TwinCAT 3.1.4020 versions the TwinCAT version of the target is used to open the project.



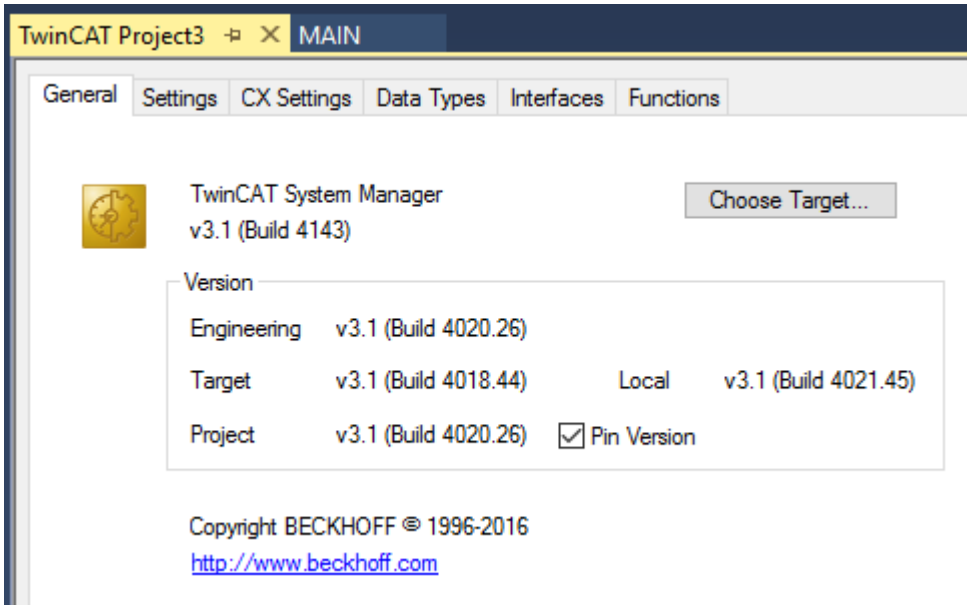
Setting the TwinCAT default version

So as not to open the wrong version of the TwinCAT 3 development environment by mistake, you can set the entry **TwinCAT Version default** in the TwinCAT options **TwinCAT -> XAE Environment -> General** to the value that is to be used as standard.



Project setting: Pin Version

To set the version with which a project is to be opened, you can use the option **Pin Version** on the **General** tab of the TwinCAT project node. If this option is activated, the TwinCAT 3 version set in the project will be used automatically when double-clicking on the project file.

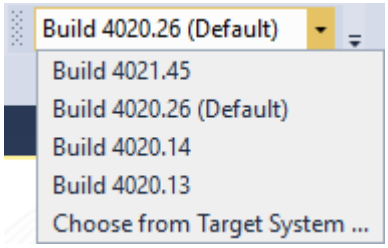


4 Applications

Selection of a TwinCAT 3 version before loading a project

If the TwinCAT version is to be set before loading a project, proceed as follows:

1. Open the Visual Studio Shell.
2. Select the TwinCAT 3 version to be loaded in the TwinCAT XAE Remote Manager Toolbar.



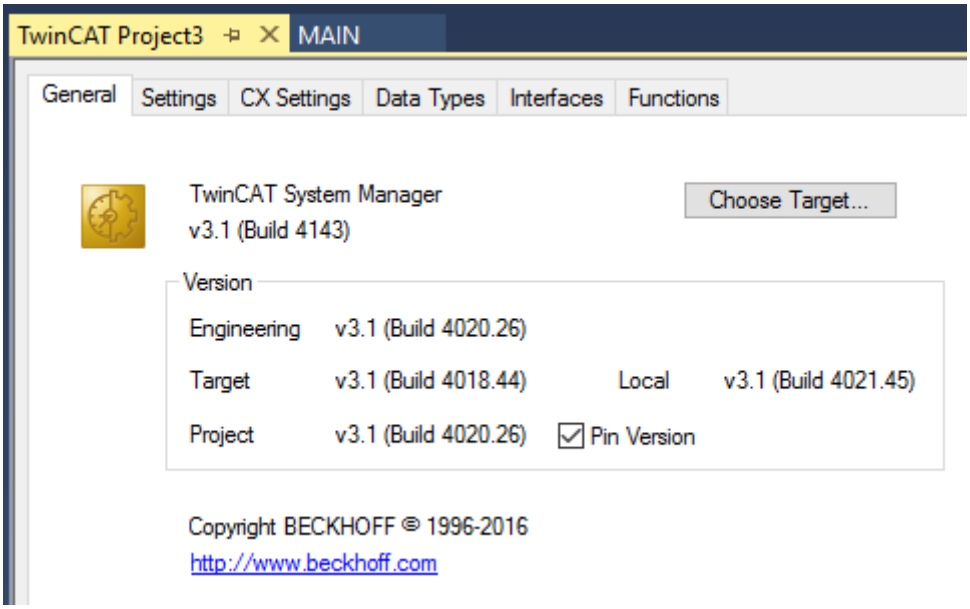
   ⇨ Once the TwinCAT 3 components have been completely loaded, this will be indicated in the TwinCAT XAE Remote Manager Toolbar by the text "Loaded" after the loaded TwinCAT 3 version.
3. Open the project via the dialog *File -> Open -> Project folder*.

⇨ The project is now open in the selected TwinCAT 3 version.

Opening the TwinCAT 3 version with which a project was saved

If a TwinCAT 3 project is to be opened in the version in which it was saved, there are two options.

Case 1: the TwinCAT 3 version is fixed (pinned) in the project.



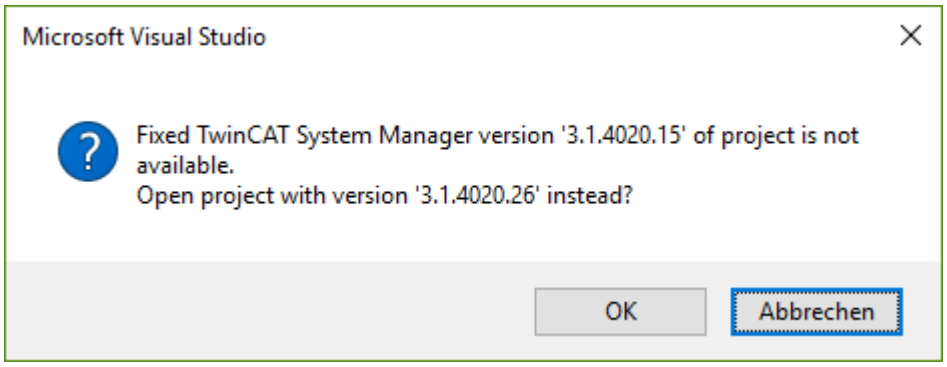
This means that not only the version with which the project was last edited and saved is stored in the project file, but also a flag indicating that this project should only be edited with precisely that version.

Proceed as follows to open the project:

1. Double-click on the TwinCAT 3 project file.

⇨ If the TwinCAT 3 version pinned in the project is installed, the project will be opened with precisely this version.

⇨ If the TwinCAT 3 version pinned in the project is **not** installed, the following dialog appears, offering to open the project with the latest version of the same release.



In this case, a TwinCAT 3 project should be opened in which TwinCAT 3 version 4020.15 is pinned. The TwinCAT 3 versions with the build numbers 4020.14, 4020.26 and 4021.45 are installed on this system. Since version 4020.26 is the latest revision of build 4020, this is offered for opening the project even if a newer version (build 4021) is available.

If the project is to be loaded with a newer TwinCAT 3 version because the version pinned in the project does not exactly correspond to the version installed on the system, please proceed as described in the section “Opening a project with a newer TwinCAT 3 version”.

Case 2: the TwinCAT 3 version is not pinned in the project.

In this case you must manually determine the TwinCAT version with which the project was last saved. Carry out the following steps to do this:

1. Double-click on the project folder or the TwinCAT 3 project file.
   ⇨ Once the project has been opened, you can determine the TwinCAT 3 version with which the project was last saved by double-clicking on the *System* node in the TwinCAT 3 project tree. It is located behind the *Project* field in the *Version* section on the *General* tab.
2. If the opened version doesn't already match the TwinCAT 3 version with which the project was last saved, please close the Visual Studio Shell.
3. Open the Visual Studio Shell.
4. Select the TwinCAT 3 version to be loaded in the TwinCAT XAE Remote Manager Toolbar.
5. Select the project again with the aid of the option File -> Open -> Working folder/Project.

⇨ The project is now open in the selected TwinCAT 3 version.

Open the TwinCAT 3 version of the connected target system

If the TwinCAT 3 version used on the target system is to be loaded, proceed as follows:

1. Open the Visual Studio Shell.
2. Select the option "Choose from Target System…" in the TwinCAT XAE Remote Manager Toolbar.

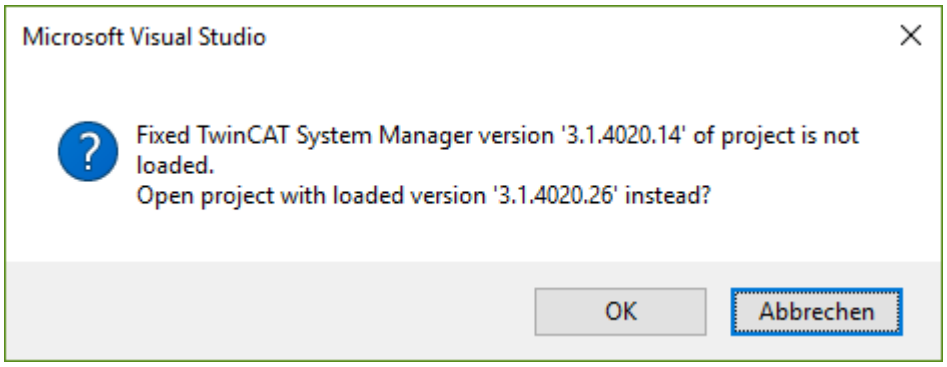
⇨ The loaded TwinCAT 3 version is displayed in the TwinCAT XAE Remote Manager Toolbar with the suffix "Loaded".

Opening a project with a newer TwinCAT 3 version

If a project is to be opened with a newer TwinCAT 3 version (even if the TwinCAT 3 version is pinned in the project), proceed as follows:

1. Open the Visual Studio Shell.
2. Select the TwinCAT 3 version with which the project is to be opened in the TwinCAT XAE Remote Manager Toolbar.
3. Select the project with the aid of the option File -> Open -> Working folder/Project.

4. Confirm the dialog asking whether the project is to be opened with the loaded version.



⇨ The project is now open in the selected TwinCAT 3 version.

Creating a project with an older TwinCAT version

If a new TwinCAT 3 project is to be created with an older TwinCAT 3 version, proceed as follows:

1. Open the Visual Studio Shell.
2. Select the TwinCAT 3 version with which the project is to be opened in the TwinCAT XAE Remote Manager Toolbar.
   ⇨ Once the TwinCAT 3 components have been completely loaded, this will be indicated in the TwinCAT XAE Remote Manager Toolbar by the text "Loaded" after the loaded TwinCAT 3 version.
3. Create the new project.

Older library versions

When selecting an older TwinCAT version, the older library versions will not automatically be used for new projects. If these are to be used they must be explicitly selected.

5 Application notes

The following points should be observed when using the TwinCAT 3 Remote Manager:

- The Remote Manager installation must be older than the TwinCAT 3 development environment that it is installed on. As a result, the installer for the respective versions of the TwinCAT 3 Remote Manager is only made available on our website with the subsequent TwinCAT 3.1 version.
- The Remote Manager version for each TwinCAT 3 version is also always included in the full setup and will remain on the computer even if a newer TwinCAT version is installed on top of it.
- Once selected, a TwinCAT 3 version can no longer be unloaded in an opened instance of the Visual Studio Shell. If you wish to work with a different TwinCAT version, you will need to open a new instance of the Visual Studio Shell or of TwinCAT.
- Not all installed Remote Manager versions are available in all Visual Studio Shells. The following table lists the supported Visual Studio Shells.

TwinCAT 3 version	Supported VS Shells
TwinCAT 3.1.4016	VS2010 – VS2013
TwinCAT 3.1.4018	VS2010 – VS2013, VS2017 (for versions >= TC 3.1.4018.58)
TwinCAT 3.1 4020	VS2010 – VS2015, VS2017 (for versions >= TC 3.1.4020.56)
TwinCAT 3.1 4022.0 – 4022.4	VS2010 – VS2015
TwinCAT 3.1 >=4022.14	VS2010 – VS2017
TwinCAT 3.1 4024.0	VS2013 – VS2017
TwinCAT 3.1 >=4024.10	VS2013 – VS2019

More Information:
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