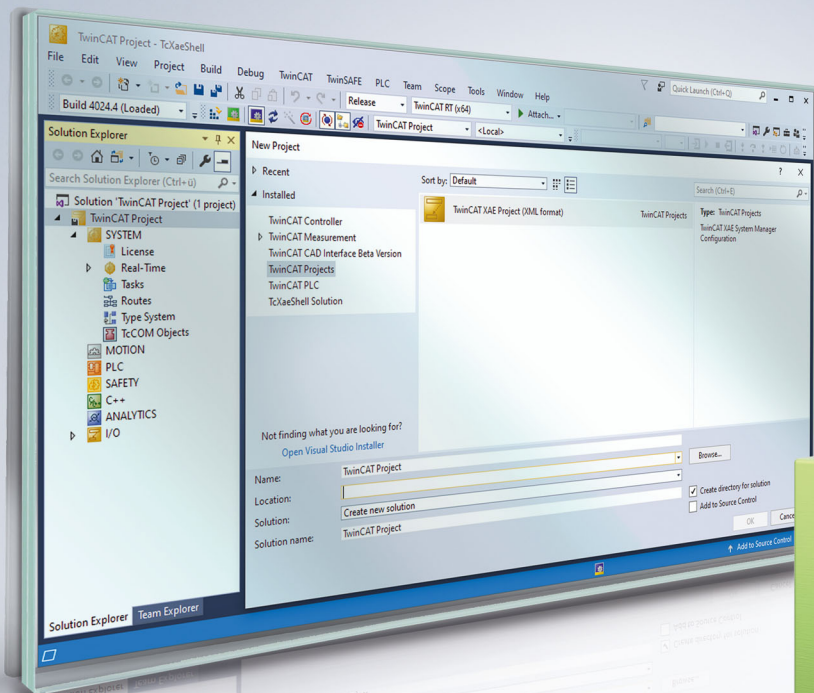


Manual | EN

## TwinCAT 3

Folder and file types





# Table of contents

<b>1 Foreword</b> .....	<b>5</b>
1.1 Notes on the documentation .....	5
1.2 Safety instructions .....	6
1.3 Notes on information security.....	7
<b>2 TwinCAT PLC project files</b> .....	<b>8</b>
2.1 Port_xxx.app .....	8
2.2 Port_xxx.autostart .....	8
2.3 Port_xxx.cid.....	8
2.4 Port_xxx.crc .....	8
2.5 Port_xxx.occ.....	9
2.6 Port_xxx.oce .....	9
2.7 Port_xxx.ocm .....	9
2.8 Port_xxx_boot.tizip.....	10
2.9 Port_xxx_act.tizip .....	10
2.10 Port_xxx.bootdata .....	10
2.11 Port_xxx.bootdata-old .....	10
2.12 PLC_Name.tpzip .....	11
2.13 PLC_Name.tmc.....	11
2.14 PLC_Name.tpy.....	11
<b>3 TwinCAT C++ project files</b> .....	<b>13</b>
<b>4 TwinCAT project files</b> .....	<b>16</b>
4.1 CurrentConfig.xml .....	16
4.2 CurrentConfig.tszip .....	16
<b>5 PLC HMI files</b> .....	<b>17</b>
5.1 Port_xxx.textlistname.txt .....	17
5.2 Port_xxx Folder .....	17
<b>6 PLC HMI files (Target Visualization)</b> .....	<b>18</b>
6.1 tc3plchmi.ini .....	18
<b>7 PLC HMI Web files</b> .....	<b>19</b>
7.1 port_xxx.imagepoolcollection.csv.....	19
7.2 webvisu.cfg.json.....	19
7.3 webvisu.htm .....	19
7.4 webvisu.js.....	19



# 1 Foreword

## 1.1 Notes on the documentation

This description is only intended for the use of trained specialists in control and automation engineering who are familiar with applicable national standards.

It is essential that the documentation and the following notes and explanations are followed when installing and commissioning the components.

It is the duty of the technical personnel to use the documentation published at the respective time of each installation and commissioning.

The responsible staff must ensure that the application or use of the products described satisfy all the 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 prior announcement. No claims for the modification of products that have already been supplied may be made on the basis of the data, diagrams and descriptions in this documentation.

### Trademarks

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### Patent Pending

The EtherCAT Technology is covered, including but not limited to the following patent applications and patents:

EP1590927, EP1789857, EP1456722, EP2137893, DE102015105702  
with corresponding applications or registrations in various other countries.



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## 1.2 Safety instructions

### Safety regulations

Please note the following safety instructions and explanations!  
Product-specific safety instructions can be found on following pages or in the areas mounting, wiring, commissioning etc.

### Exclusion of liability

All the components are supplied in particular hardware and software configurations 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 engineering who are familiar with the applicable national standards.

### Description of symbols

In this documentation the following symbols are used with an accompanying safety instruction or note. The safety instructions must be read carefully and followed without fail!

#### **DANGER**

##### **Serious risk of injury!**

Failure to follow the safety instructions associated with this symbol directly endangers the life and health of persons.

#### **WARNING**

##### **Risk of injury!**

Failure to follow the safety instructions associated with this symbol endangers the life and health of persons.

#### **CAUTION**

##### **Personal injuries!**

Failure to follow the safety instructions associated with this symbol can lead to injuries to persons.

#### **NOTE**

##### **Damage to the environment or devices**

Failure to follow the instructions associated with this symbol can lead to damage to the environment or equipment.



##### **Tip or pointer**

This symbol indicates information that contributes to better understanding.

## 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 TwinCAT PLC project files

### 2.1 Port\_xxx.app

Binary file of the PLC project

#### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\Plc\	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a PLC project</li> <li>• Recreating a PLC project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> <li>• Activate boot project</li> <li>• PLC login with boot project update</li> </ul>
<b>Requirement</b>	-	-

### 2.2 Port\_xxx.autostart

Empty file that activates the Autostart option

#### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\Plc\	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a PLC project</li> <li>• Recreating a PLC project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate Autostart option (project-independent system setting)</li> </ul>
<b>Requirement</b>	-	-

### 2.3 Port\_xxx.cid

File containing the Compileinfo\_IDs

#### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\Plc\	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a PLC project</li> <li>• Recreating a PLC project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> <li>• Activate boot project</li> <li>• PLC login with boot project update</li> </ul>
<b>Requirement</b>	-	-

### 2.4 Port\_xxx.crc

File containing the checksum of the PLC project

#### Storage location



	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\Plc\	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a PLC project</li> <li>• Recreating a PLC project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> <li>• Activate boot project</li> <li>• PLC login with boot project update</li> </ul>
<b>Requirement</b>	-	-

## 2.5 Port\_xxx.occ

Symbolics of the PLC project

- The file contains the changes of the symbolics of the PLC project for an online change.
- If the **Symbolic Mapping** option is not activated, this file also contains the changes of the mapping configuration for an activate/update boot project.
- On activating the configuration the occ file is reset in both directories.

### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\Plc\	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a PLC project</li> <li>• Recreating a PLC project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> <li>• Activate boot project</li> <li>• PLC login with boot project update</li> </ul>
<b>Requirement</b>	-	-

## 2.6 Port\_xxx.oce

The file contains the changes of the event classes at the time of an OnlineChange, which are used in a PLC project.

### Storage location

	Project directory	TwinCAT boot directory
<b>Path</b>	-	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	-	When changing the event classes used and OnlineChange
<b>Requirement</b>	-	-

## 2.7 Port\_xxx.ocm

Description file of the mapping configuration

- If the **Symbolic Mapping** option is activated, this file contains the changes of the mapping configuration of the PLC project for an activate/update boot project.
- On activating the configuration the ocm file is reset in both directories.

### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\Plc\	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a TwinCAT project</li> <li>• Recreating a TwinCAT project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> <li>• Activate boot project</li> <li>• PLC login with boot project update</li> </ul>
<b>Requirement</b>	-	-

## 2.8 Port\_xxx\_boot.tizip

Archive folder containing the COMPILEINFO file of the boot project

The COMPILEINFO file contains the compilation information and the login information of the PLC project.

### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\Plc\	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a PLC project</li> <li>• Recreating a PLC project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> <li>• Activate boot project</li> <li>• PLC login with boot project update</li> </ul>
<b>Requirement</b>	-	-

## 2.9 Port\_xxx\_act.tizip

Archive folder containing the COMPILEINFO file of the currently running PLC project

### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	-	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	-	<ul style="list-style-type: none"> <li>• PLC login with change</li> </ul>
<b>Requirement</b>	-	-

## 2.10 Port\_xxx.bootdata

Boot file that saves the persistent data

Once the TwinCAT system has started and the PLC has been loaded, the file extension .bootdata is renamed .bootdata-old.

### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	-	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	-	<ul style="list-style-type: none"> <li>• Stop the TwinCAT system</li> <li>• Use of FB_WritePersistentData</li> </ul>
<b>Requirement</b>	-	-

## 2.11 Port\_xxx.bootdata-old

Backup file for the persistent data

The file is deleted once the new boot file has been completely written.

**Storage location**

	Project Directory	TwinCAT boot directory
<b>Path</b>	-	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	-	<ul style="list-style-type: none"> <li>• Activate configuration</li> <li>• Restarting the TwinCAT system</li> </ul>
<b>Requirement</b>	-	-

## 2.12 PLC\_Name.tpzip

Archive folder of the PLC project

The scope of the content is configurable in the project properties.

**Storage location**

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\CurrentConfig\	C:\TwinCAT\3.1\Boot\CurrentConfig\
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a PLC project</li> <li>• Recreating a PLC project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> <li>• Activate boot project</li> <li>• PLC login with boot project update</li> </ul>
<b>Requirement</b>	-	-

## 2.13 PLC\_Name.tmc

TC3 module description file

**Storage location**

	Project Directory	TwinCAT boot directory
<b>Path</b>	A)..\<Solution name>\<Project name>\<PLC name>\ B)..\<Solution name>\<Project name>\_Boot\<Platform>\Plc\	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a PLC project</li> <li>• Recreating a PLC project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> <li>• Activate boot project</li> <li>• PLC login with boot project update</li> </ul>
<b>Requirement</b>	A) - B) TMC activated as target file	<ul style="list-style-type: none"> <li>• TMC activated as target file</li> </ul>

## 2.14 PLC\_Name.tpy

TC2 PLC description file

**Storage location**

	<b>Project Directory</b>	<b>TwinCAT boot directory</b>
<b>Path</b>	A)..\<Solution name>\<Project name>\<PLC name>\ B)..\<Solution name>\<Project name>\_Boot\<Platform>\Plc\	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a PLC project</li> <li>• Recreating a PLC project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> <li>• Activate boot project</li> <li>• PLC login with boot project update</li> </ul>
<b>Requirement</b>	A) - B) TPY activated as target file	<ul style="list-style-type: none"> <li>• TPY activated as target file</li> </ul>

# 3 TwinCAT C++ project files

File	Description	Further Information
<b>Engineering / XAE</b>		
*.sln	Visual Studio Solution file, hosts TwinCAT and non-TwinCAT projects	
*.tsproj	TwinCAT project, collection of all nested TwinCAT projects, such as TwinCAT C++ or TwinCAT PLC project	
_Config/	Folder contains further configuration files (*.xti) that belong to the TwinCAT project.	See menu Tools  Options  TwinCAT  XAE-Environment  File Settings
_Deployment/	Folder for compiled TwinCAT C++ drivers	
*.tmc	TwinCAT Module Class file (XML-based)	See TwinCAT Module Class Editor (TMC)
*.rc	Resource file	See Set version/vendor information
*.vcxproj.*	Visual Studio C++ project files	
*ClassFactory.cpp/.h	Class Factory for this TwinCAT driver	
*Ctrl.cpp/.h	Upload and remove drivers for TwinCAT UM platform	
*Driver.cpp/.h	Upload and remove drivers for TwinCAT RT platform	
*Interfaces.cpp/.h	Declaration of the TwinCAT COM interface classes	
*W32.cpp./def/.idl		
*.cpp/.h	One C++/Header file per TwinCAT module in the driver. Insert user code here.	
Resource.h	Required by *.rc file	
TcPch.cpp/.h	Used for creating precompiled headers	
%TC_INSTALLPATH%\Repository\<Vendor>\<PrjName>\<Version>\<Platform>\*.tmx	Compiled driver that is loaded via the TcLoader. <i>C:\TwinCAT\3.x\Repository\C++ Module Vendor\Untitled1\0.0.0.1\TwinCAT RT *Untitled1.tmx</i>	See Versioned C++ Projects
%TC_INSTALLPATH%\CustomConfig\Modules\*	Published TwinCAT driver package usually C: <i>\TwinCAT\3.x\CustomConfig\Modules\*</i>	See Export modules
<b>Runtime / XAR</b>		
%TC_BOOTPRJPATH%\CurrentConfig\*	Current configuration setup <i>Windows: C:\TwinCAT\3.x\Boot TwinCAT/BSD: /usr/local/etc/TwinCAT/3.x/Boot</i>	
%TC_DRIVERAUTOINSTALLPATH%\*.sys/pdb	Compiled, platform-specific driver that is loaded via the operating system. <i>Windows: C:\TwinCAT\3.x\Driver\AutoInstall (system loaded) TwinCAT/BSD: &lt;not available&gt;</i>	
%TC_INSTALLPATH%\Boot\Repository\<Vendor>\<PrjName>\<Version>\*.tmx	Compiled platform-specific driver that is loaded via the TcLoader. <i>Windows: C:\TwinCAT\3.x\Boot\Repository\C++ Module Vendor\Untitled1\0.0.0.1\Untitled1.tmx TwinCAT/BSD: /usr/local/etc/TwinCAT/3.x/Boot\Repository\C++ Module Vendor\Untitled1\0.0.0.1\Untitled1.tmx</i>	

File	Description	Further Information
%TC_BOOTPRJPATH%\TMI\OBJECTID.tmi	TwinCAT Module Instance file Describes variables of the driver File name is <i>ObjectID.tmi</i> Windows: C:\TwinCAT\3.x\Boot\TMI\OTCID.tmi TwinCAT/BSD: /usr/local/etc/TwinCAT/3.x/Boot/TMI/OTCID.tmi	
<b>Temporary files</b>		
*.sdf	IntelliSense Database	
*.suo / *.v12.suo	User-specific and Visual Studio-specific files	
*.tsproj.bak	Automatically generated backup file from <i>tsproj</i>	
ipch/	Intermediate directory created for precompiled headers	

## 4 TwinCAT project files

### 4.1 CurrentConfig.xml

Description file of the current configuration.

#### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\	C:\TwinCAT\3.1\Boot\
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a TwinCAT project</li> <li>• Recreating a TwinCAT project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> </ul>
<b>Requirement</b>	-	-

### 4.2 CurrentConfig.tszip

Archive folder containing the tsproj file and all referenced xti files.

#### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\	C:\TwinCAT\3.1\Boot\
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a TwinCAT project</li> <li>• Recreating a TwinCAT project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> </ul>
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Auto Save &lt;TwinCAT project name&gt; to Target as Archive is active</li> </ul>	



## 5 PLC HMI files

### 5.1 Port\_xxx.textlistname.txt

For each text list existing in the project, a file is created containing all the entries in this text list.

#### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\Plc\Port_xxx\Visu	C:\TwinCAT\3.1\Boot\Plc\Port_xxx\Visu
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a PLC project</li> <li>• Recreating a PLC project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> <li>• Online Change / Download</li> </ul>
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Target and/or web visualization object added</li> </ul>	

### 5.2 Port\_xxx Folder

In this folder a further folder "Visu" is automatically created in which the files and the images of the PLC HMI are saved in turn.

#### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\ Plc\	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a PLC project</li> <li>• Recreating a PLC project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> </ul>
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Target and/or web visualization object added</li> </ul>	

## 6 PLC HMI files (Target Visualization)

### 6.1 tc3plchmi.ini

Configuration file containing the settings of the target visualization client

#### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\ Plc	C:\TwinCAT\3.1\Boot\Plc\
<b>Time of creation</b>	<ul style="list-style-type: none"><li>• Creating a PLC project</li><li>• Recreating a PLC project</li></ul>	<ul style="list-style-type: none"><li>• Activate configuration</li><li>• Online Change / Download</li></ul>
<b>Requirement</b>	<ul style="list-style-type: none"><li>• Target visualization object added</li></ul>	

## 7 PLC HMI Web files

### 7.1 port\_xxx.imagepoolcollection.csv

File containing a list of the entries of all image pools available in the PLC project

#### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\Plc\Port_xxx\Visu	C:\TwinCAT\3.1\Boot\Plc\Port_xxx\Visu
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a PLC project</li> <li>• Recreating a PLC project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> <li>• Online Change / Download</li> </ul>
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Web visualization object added</li> </ul>	

### 7.2 webvisu.cfg.json

Configuration file containing the settings of the web visualization object

#### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\Plc\Port_xxx\Visu	C:\TwinCAT\3.1\Boot\Plc\Port_xxx\Visu
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a PLC project</li> <li>• Recreating a PLC project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> <li>• Online Change / Download</li> </ul>
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Web visualization object added</li> </ul>	

### 7.3 webvisu.htm

HTML page used to display the visualization in the internet browser

#### Storage location

	Project Directory	TwinCAT boot directory
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\Plc\Port_xxx\Visu	C:\TwinCAT\3.1\Boot\Plc\Port_xxx\Visu
<b>Time of creation</b>	<ul style="list-style-type: none"> <li>• Creating a PLC project</li> <li>• Recreating a PLC project</li> </ul>	<ul style="list-style-type: none"> <li>• Activate configuration</li> <li>• Online Change / Download</li> </ul>
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Web visualization object added</li> </ul>	

### 7.4 webvisu.js

File containing the Java Script logic that is used in the visualization

#### Storage location

	<b>Project Directory</b>	<b>TwinCAT boot directory</b>
<b>Path</b>	..\<Solution name>\<Project name>\_Boot\<Platform>\Plc\Port_xxx\Visu	C:\TwinCAT\3.1\Boot\Plc\Port_xxx\Visu
<b>Time of creation</b>	<ul style="list-style-type: none"><li>• Creating a PLC project</li><li>• Recreating a PLC project</li></ul>	<ul style="list-style-type: none"><li>• Activate configuration</li><li>• Online Change / Download</li></ul>
<b>Requirement</b>	<ul style="list-style-type: none"><li>• Web visualization object added</li></ul>	



More Information:  
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