

BECKHOFF New Automation Technology

Manual | EN

TF6000

TwinCAT 3 | ADS Comm Lib

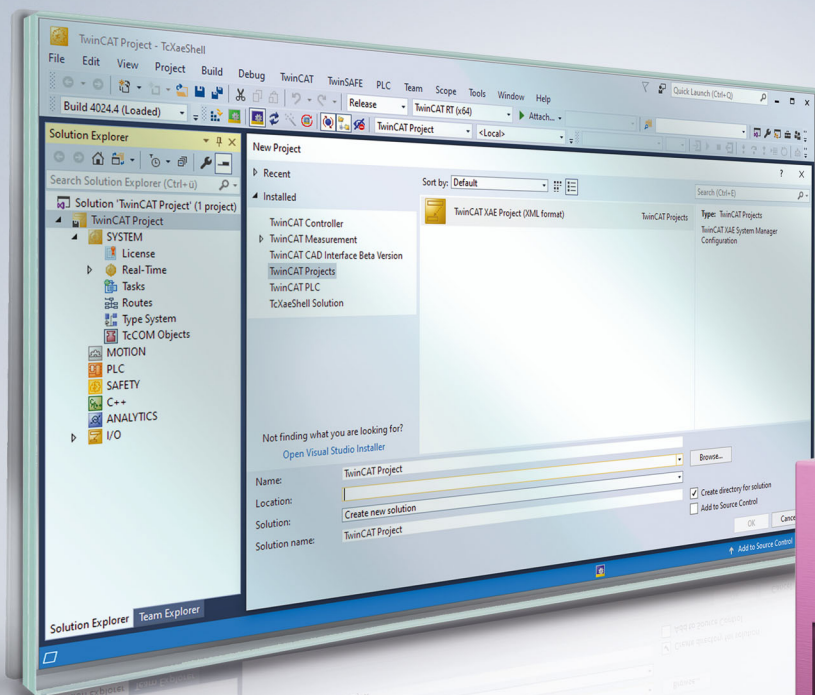


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1 Foreword

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.

The documentation and the following notes and explanations must be complied with when installing and commissioning the components.

The trained specialists must always use the current valid documentation.

The trained specialists must ensure that the application and use of the products described is in line with all safety requirements, including all relevant laws, regulations, guidelines, and standards.

Disclaimer

The documentation has been compiled 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.

Claims to modify products that have already been supplied may not be made on the basis of the data, diagrams, and descriptions in this documentation.

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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 Overview

The "**TF6000 TwinCAT 3 ADS Communication Library**" is delivered with the TwinCAT installation. It enables you to develop your own applications (e.g. visualizations, measured value acquisition) that can communicate with TwinCAT devices (e.g. PLC, NC, or IO devices).

Alternatively, our free **TC1000 | TwinCAT 3 ADS** setup provides you with the libraries and the ADS router if you just require ADS functions.

Components of the "TwinCAT ADS API"

Following successful installation, the components can be found in the "*..\TwinCAT\AdsApi*" directory .

ADS libraries are available for the following target systems and technologies:

Windows (32-bit/64-bit)

Windows CE

Web service

Windows (32-bit/64-bit)

Name	Programming language / technology	Operating system	Description	Path	Reference	Samples
TwinCAT.Ads.dll	.NET (C#, VB .Net)	Windows 10/11	ADS.NET components for the different versions of the .NET framework (1.0 / 1.1 / 2.0 / 4.0)	NuGet or ..\TwinCAT\AdsApi*.NET	Link	C#
TwinCAT.Ads Reactive Extensions	.NET (C#, VB .Net)	Windows 10/11	.Net Framework >= .NET 4.6	NuGet or ..\TwinCAT\AdsApi*.NET		
TcAdsDll	C/C++	Windows 10/11	The ADS components (DLL / Header / Library) for creating C/C++ applications	..\TwinCAT\AdsApi\TcAdsDll	Link	C++
AdsOcx	VB, VBA, COM	Windows 10/11	The ADS OCX is implemented as an ActiveX control element, and is based on Microsoft's COM technology.	..\TwinCAT\AdsApi\AdsOcx		
AdsToJava	Java	Windows 10/11	TcJavaToAds.jar library, which uses the AdsToJava.dll-Wrapper for x86 and x64 systems.	..\TwinCAT\AdsApi\AdsToJava		
TwinCAT ADS Management (TcXaeMgmt) module	PowerShell	Windows 10/11		..\TwinCAT\AdsApi\PowerShell		

Windows CE

Name	Programming language / technology	Operating system	Description	Path	Reference	Samples
TwinCAT.Ads.dll	.NET Windows CE	Windows CE	ADS.NET components for the different versions of the .NET <i>Compact</i> framework (1.0 / 2.0) for Windows CE	..\TwinCAT\AdsApi*.NET\CompactFramework	Link	
TcAdsDllCe	C/C++	Windows CE	CE-based ADS installations (cab files) for use in CE with the headers and libraries for the different CE platforms	..\TwinCAT\AdsApi\TcAdsDll\CE	Link	

Web service

Name	Programming language / technology	Operating system	Description	Path	Reference	Samples
TcAdsWcf	.NET, HTML, JavaScript	Windows 10/11	Windows Communications Foundation (WCF) - web service that is part of the .NET Framework.	..\TwinCAT\AdsApi\TcAdsWcf	Link	C#
TcAdsWebService	HTML, JavaScript	Windows 10/11	Extension for the Internet Information Server (IIS)	..\TwinCAT\AdsApi\TcAdsWebService	Link	JavaScript

Further information:

[ADS introduction](#)

3 Support and Service

Beckhoff and their partners around the world offer comprehensive support and service, making available fast and competent assistance with all questions related to Beckhoff products and system solutions.

Download finder

Our download finder contains all the files that we offer you for downloading. You will find application reports, technical documentation, technical drawings, configuration files and much more.

The downloads are available in various formats.

Beckhoff's branch offices and representatives

Please contact your Beckhoff branch office or representative for local support and service on Beckhoff products!

The addresses of Beckhoff's branch offices and representatives round the world can be found on our internet page: www.beckhoff.com

You will also find further documentation for Beckhoff components there.

Beckhoff Support

Support offers you comprehensive technical assistance, helping you not only with the application of individual Beckhoff products, but also with other, wide-ranging services:

- support
- design, programming and commissioning of complex automation systems
- and extensive training program for Beckhoff system components

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e-mail: support@beckhoff.com

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- repair service
- spare parts service
- hotline service

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