

BECKHOFF New Automation Technology

General Information | EN

TF5400

TwinCAT 3 | Advanced Motion Pack

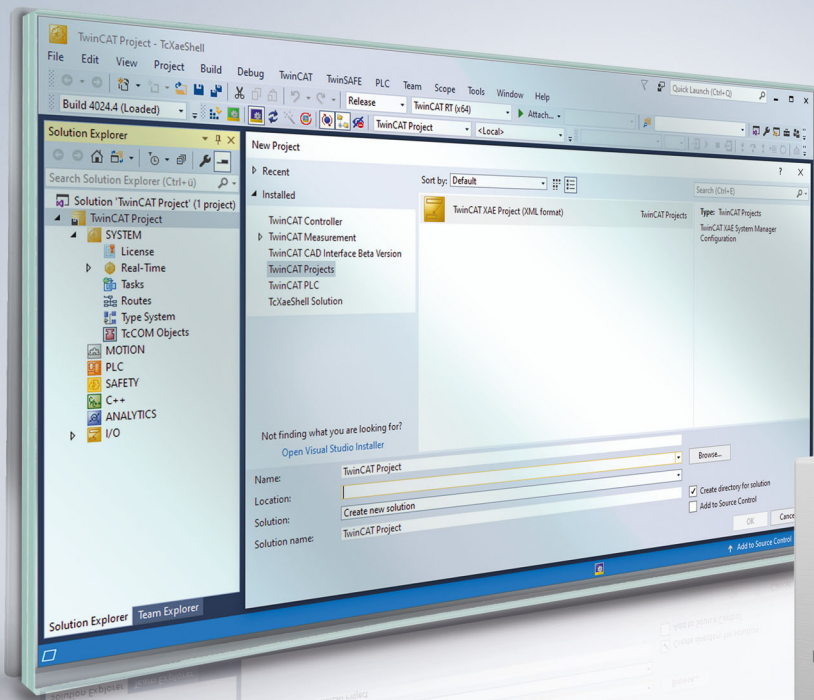


Table of contents

1 Foreword	5
1.1 Notes on the documentation	5
1.2 For your safety	5
1.3 Notes on information security.....	7
2 The TF5400 Advanced Motion Pack Documentation	8
3 Installation	9
4 Support and Service	10

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.

Trademarks

Beckhoff®, TwinCAT®, TwinCAT/BSD®, TC/BSD®, EtherCAT®, EtherCAT G®, EtherCAT G10®, EtherCAT P®, Safety over EtherCAT®, TwinSAFE®, XFC®, XTS® and XPlanar® are registered and licensed trademarks of Beckhoff Automation GmbH.

If third parties make use of designations or trademarks used in this publication for their own purposes, this could infringe upon the rights of the owners of the said designations.

Patents

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

EP1590927, EP1789857, EP1456722, EP2137893, DE102015105702
and similar applications and registrations in several other countries.

EtherCAT®

EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany

Copyright

© Beckhoff Automation GmbH & Co. KG, Germany.

The distribution and reproduction of this document as well as the use and communication of its contents without express authorization are prohibited.

Offenders will be held liable for the payment of damages. All rights reserved in the event that a patent, utility model, or design are registered.

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 The TF5400 Advanced Motion Pack Documentation

The TF5400 Advanced Motion Pack Documentation is subdivided into:

- [TF511x TwinCAT 3 Kinematic Transformation](#),
- [TF5410 TwinCAT 3 Motion Collision Avoidance](#),
- [TF5420 TwinCAT 3 Motion Pick-and-Place](#),
- [TF5430 TwinCAT 3 Planar Motion](#).

3 Installation

The installation package TF5400 TwinCAT 3 Advanced Motion Pack contains the necessary components for the TwinCAT functions TF5110 - TF5113 TwinCAT 3 Kinematic Transformation, TF5410 TwinCAT 3 Motion Collision Avoidance, TF5420 TwinCAT 3 Motion Pick-and-Place and TF5430 TwinCAT 3 Planar Motion.



Make sure that you install the Advanced Motion Pack both on the development computer and on the target system.

Installation requirements

The installation requires TwinCAT 3.

Target system

Windows 7 / Windows 10

- Up to TF5400 v3.1.10.x: x86 and x64
- From TF5400 v3.2.x: only x64

Function level for TF5110-TF5113

The function TF5110 - TF5113 TwinCAT 3 Kinematic Transformation is subdivided into four different levels, depending on the number of transformation axes. A higher level includes all sublevels.



A separate installation file is required for Level 4, which you can obtain from Support on request.

Level 1: Supports the static transformation. This includes a translation and rotation of the coordinate system.

Level 2: Supports Level 1 and simple (mainly 2D) kinematic transformations such as H-Bot and 2D parallel kinematics.

Level 3: Supports Level 2 and more complex (3D, 4D) kinematic transformations such as delta robots.

Level 4: Supports Level 3 and complex kinematic transformations (up to 6D).

4 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

Hotline: +49 5246 963-157
e-mail: support@beckhoff.com

Beckhoff Service

The Beckhoff Service Center supports you in all matters of after-sales service:

- on-site service
- repair service
- spare parts service
- hotline service

Hotline: +49 5246 963-460
e-mail: service@beckhoff.com

Beckhoff Headquarters

Beckhoff Automation GmbH & Co. KG

Huelshorstweg 20
33415 Verl
Germany

Phone: +49 5246 963-0
e-mail: info@beckhoff.com
web: www.beckhoff.com

More Information:
www.beckhoff.com/motion

Beckhoff Automation GmbH & Co. KG
Hülshorstweg 20
33415 Verl
Germany
Phone: +49 5246 9630
info@beckhoff.com
www.beckhoff.com

