

TwinCAT 3 PLC Training



Module 2 – Installation

Introduction and Quick Start

- **Modules 1 – 4**

Programming Basics

- Modules 5 – 13

Diagnostics and Hardware

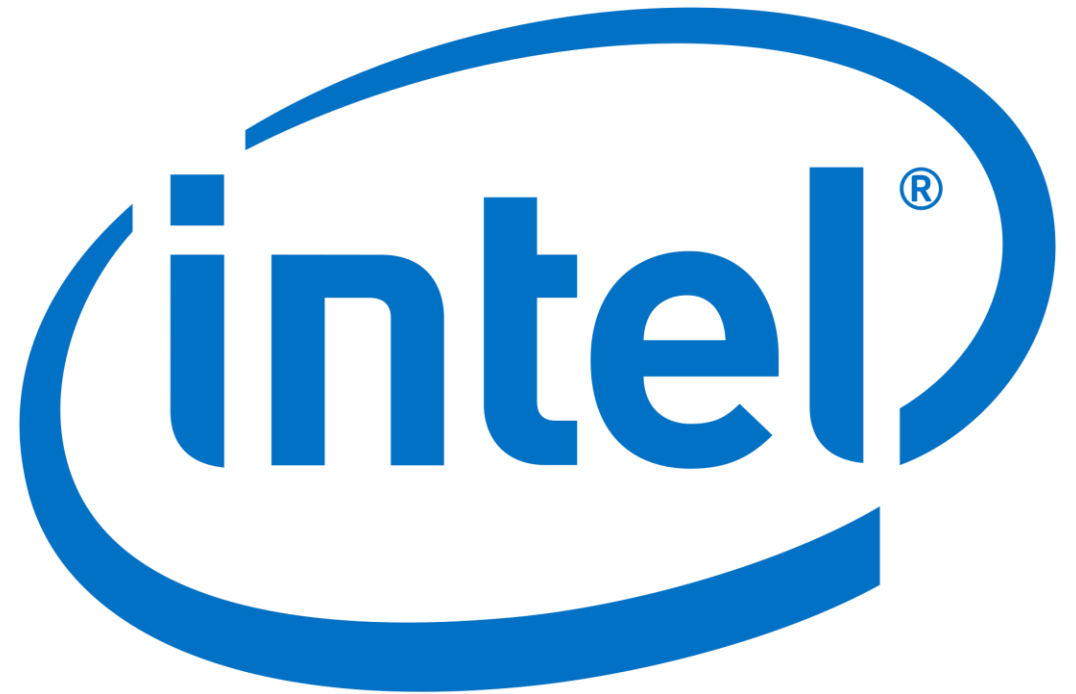
- Modules 14 – 16

1. General PLC Architecture
- 2. TwinCAT 3.1 Installation**
3. First Project
4. Setting the Cycle Time

2.1 System Requirements

BECKHOFF

- Only Intel processors are supported.
- You will need Administrator privileges to install TwinCAT 3.1.
- During installation, you will need to restart your computer.
- Access to network settings (IP address, etc.) is preferred after installation is complete.

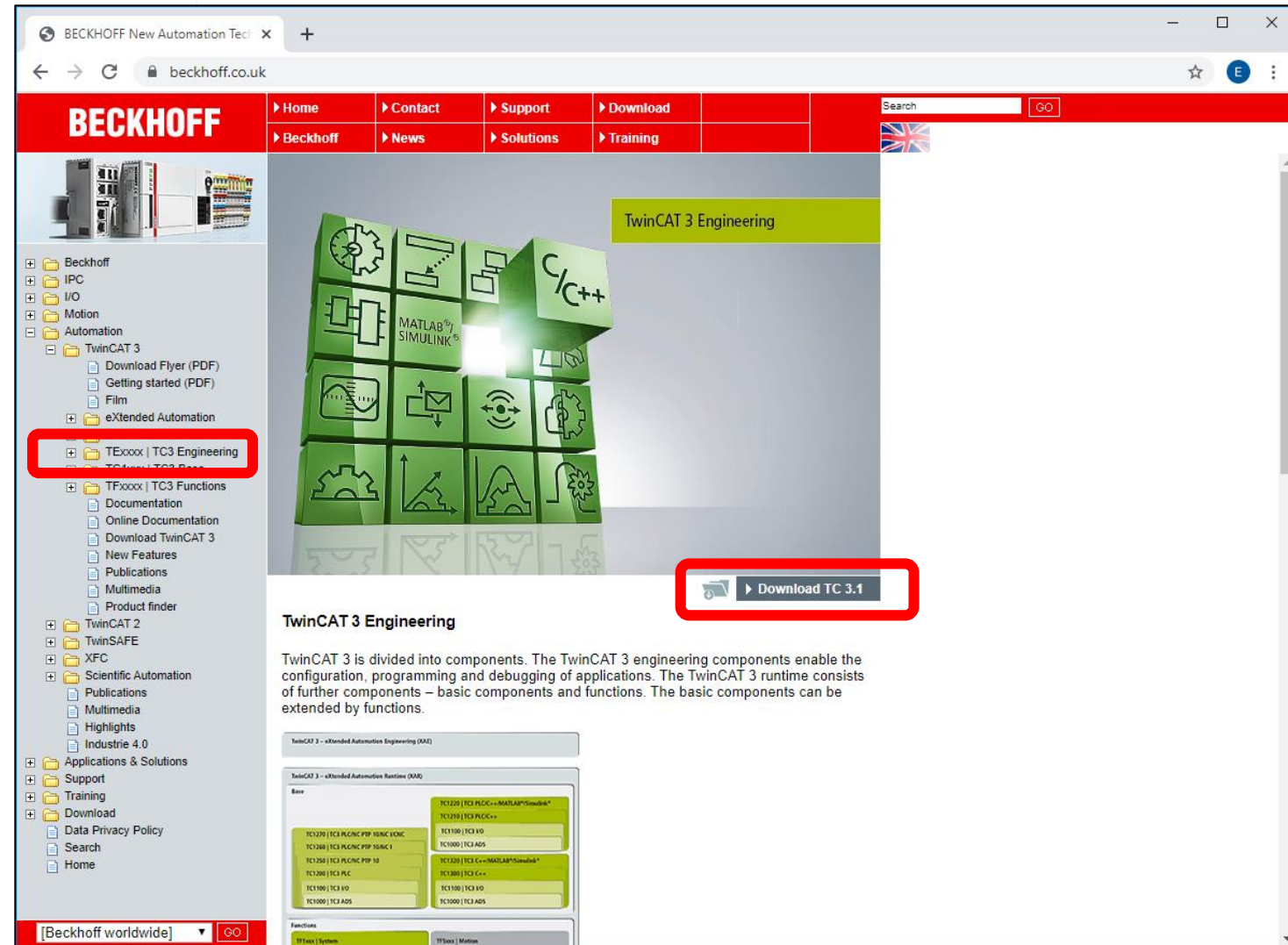


- All tools required for PLC development are free of charge and don't require a license.
- Latest version is available at www.beckhoff.co.uk

2.2 Download

BECKHOFF

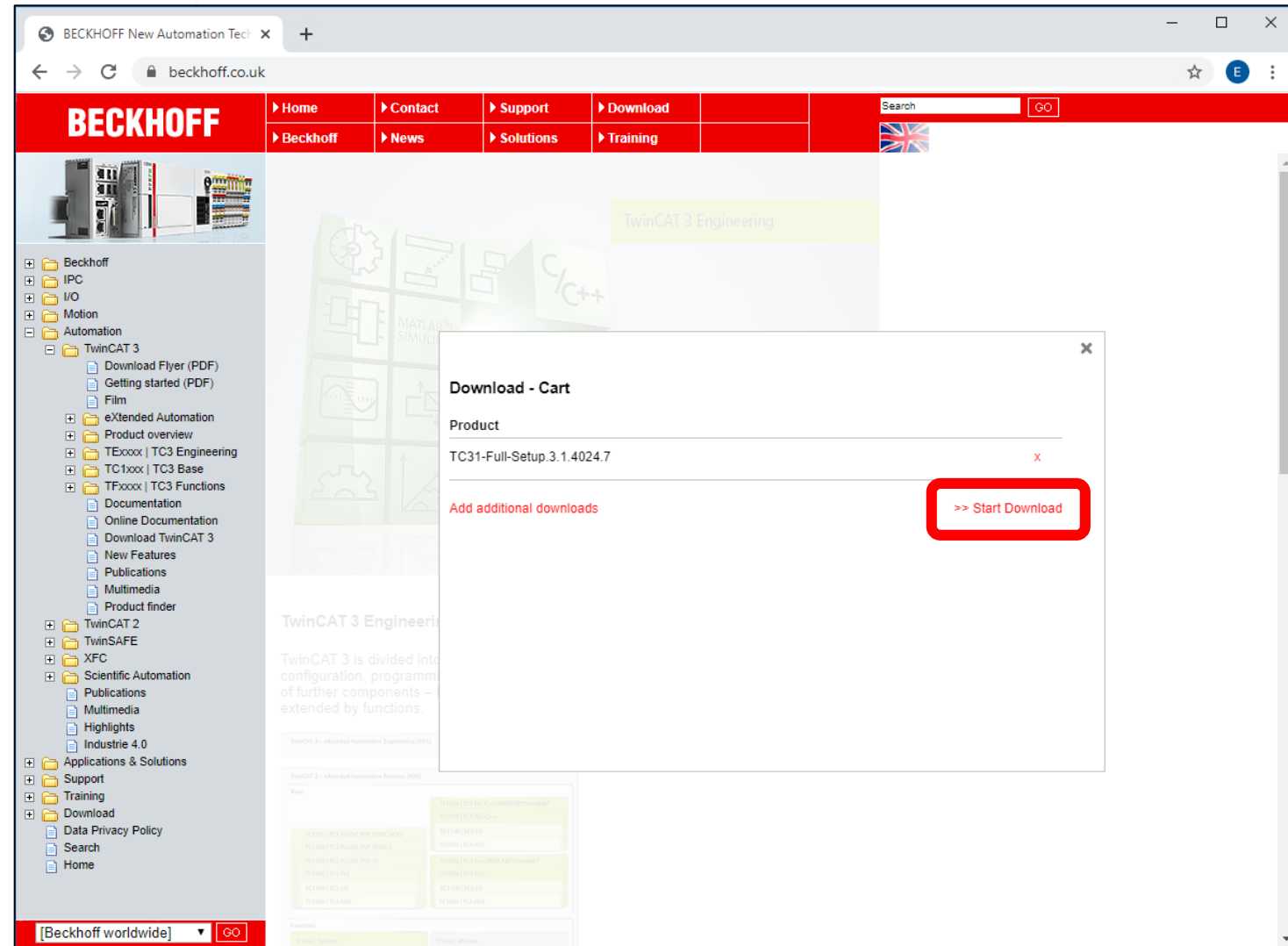
- Open www.beckhoff.co.uk in a web browser.
- In the folder structure on the left-hand side, navigate to
Automation
→ TwinCAT 3
→ TExxxx | TC3 Engineering
- Click on Download TC 3.1.



2.2 Download

BECKHOFF

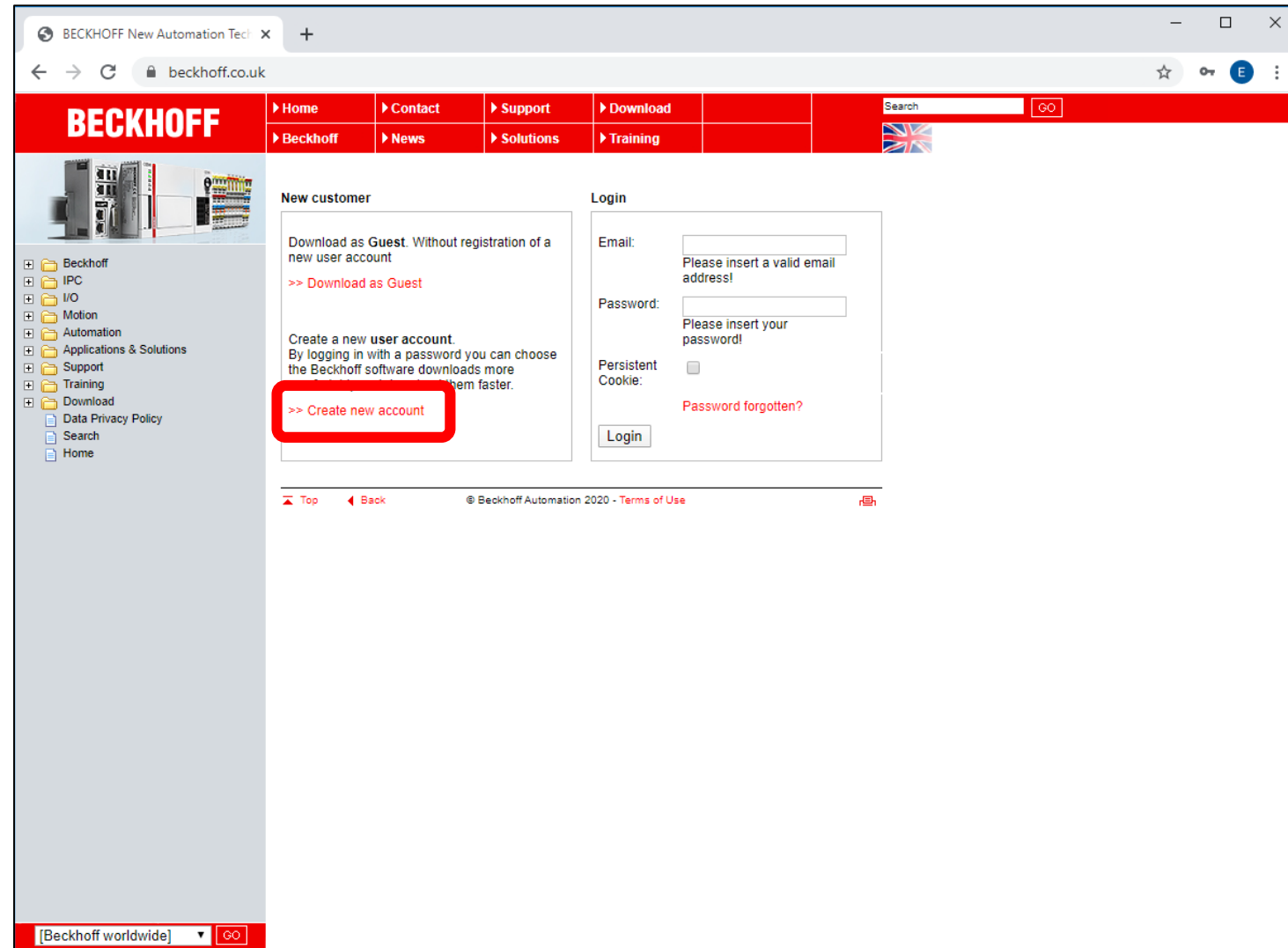
- This will open the Download Cart window.
- Click on
 >> Start Download link



2.2 Download


BECKHOFF

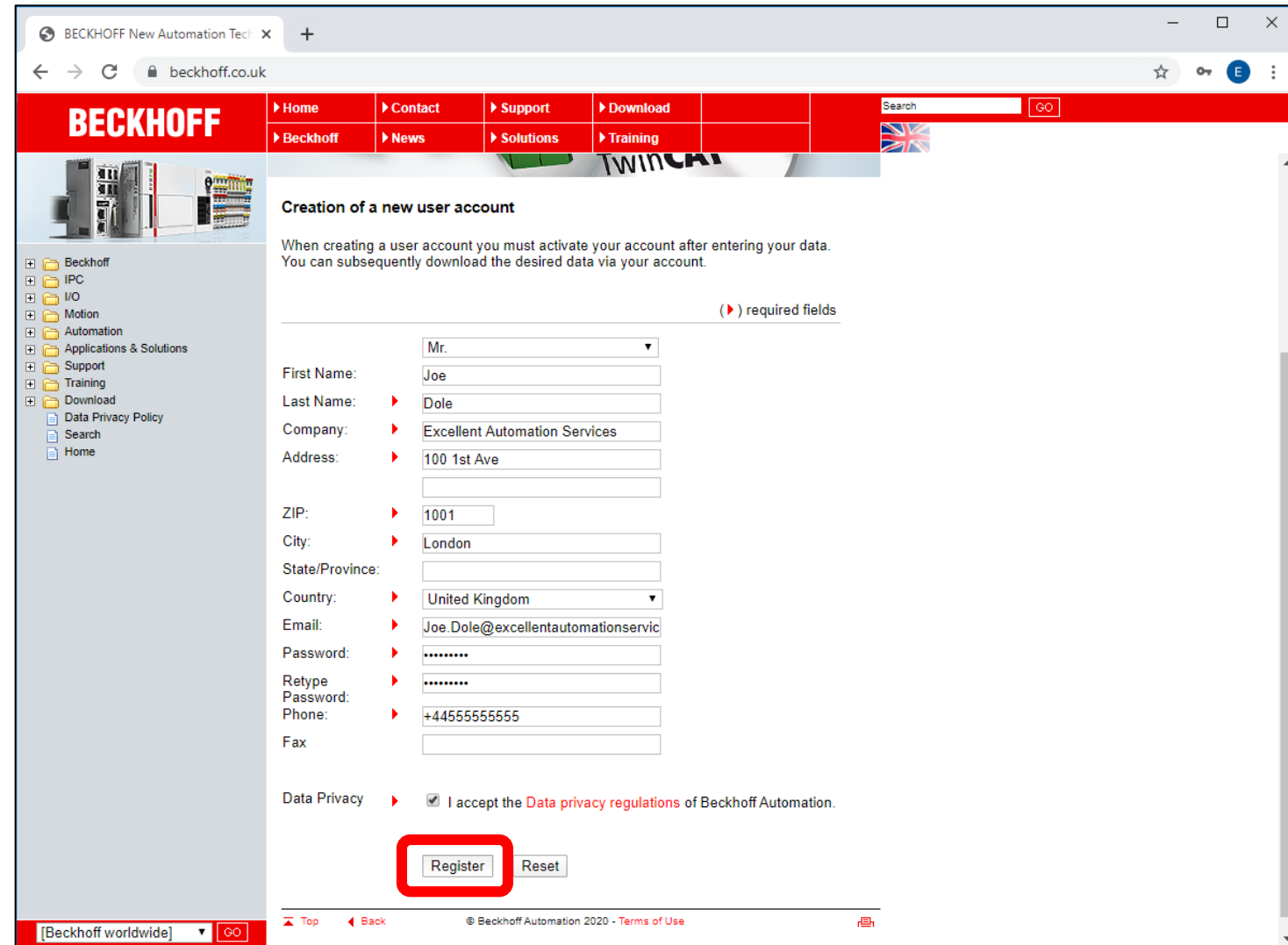
- If you have already created a website account, please log in.
- Otherwise, you can create one by clicking on
 >> Create new account
- Creating an account is free and only takes a few minutes.



2.2 Download

BECKHOFF

- Please fill in your contact details.
- The fields with the  next to them are mandatory .
- Please read the Data privacy regulations, and tick the box if you agree.
- Click on the Register button at the bottom.

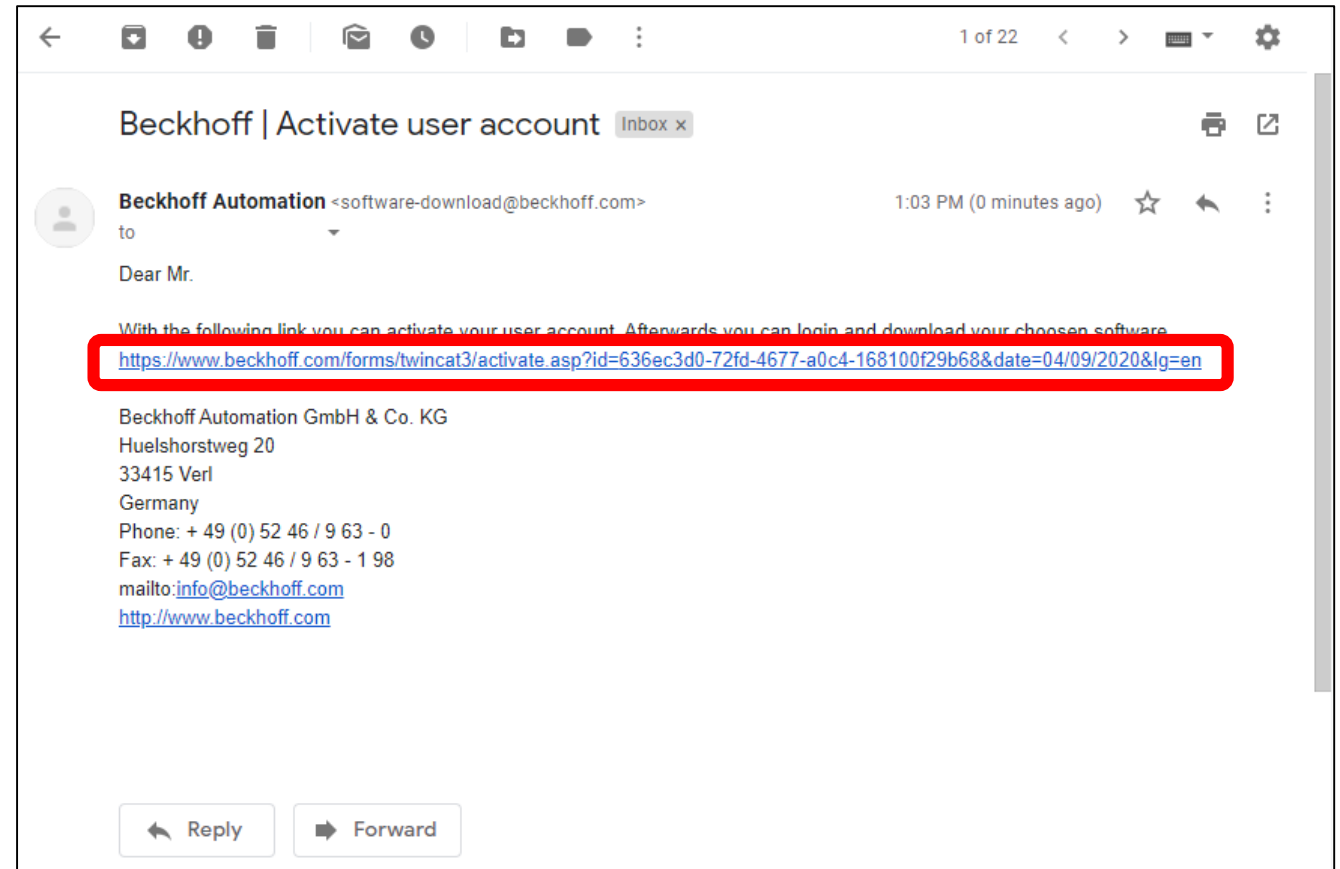


The screenshot shows the Beckhoff website's user registration page. The browser address bar shows 'beckhoff.co.uk'. The navigation menu includes Home, Contact, Support, Download, Beckhoff, News, Solutions, and Training. A search bar is located in the top right. The main heading is 'Creation of a new user account', followed by a note: 'When creating a user account you must activate your account after entering your data. You can subsequently download the desired data via your account.' A legend indicates that red arrows next to fields denote required fields. The form fields are: First Name (Mr. dropdown, Joe text), Last Name (red arrow, Dole text), Company (red arrow, Excellent Automation Services text), Address (red arrow, 100 1st Ave text), ZIP (red arrow, 1001 text), City (red arrow, London text), State/Province (empty), Country (red arrow, United Kingdom dropdown), Email (red arrow, Joe.Dole@excellentautomationservic text), Password (red arrow, masked with dots), Retype Password (red arrow, masked with dots), Phone (red arrow, +4455555555 text), and Fax (empty). A 'Data Privacy' section has a checked checkbox for 'I accept the Data privacy regulations of Beckhoff Automation.' At the bottom, the 'Register' button is highlighted with a red box, next to a 'Reset' button. The footer includes a language dropdown set to '[Beckhoff worldwide]', a 'GO' button, and copyright information: '© Beckhoff Automation 2020 - Terms of Use'.

2.2 Download

BECKHOFF

- Check the inbox of the supplied email address for a mail from Beckhoff Automation.
- Click on the link in the mail to confirm your registration.



2.2 Download

BECKHOFF

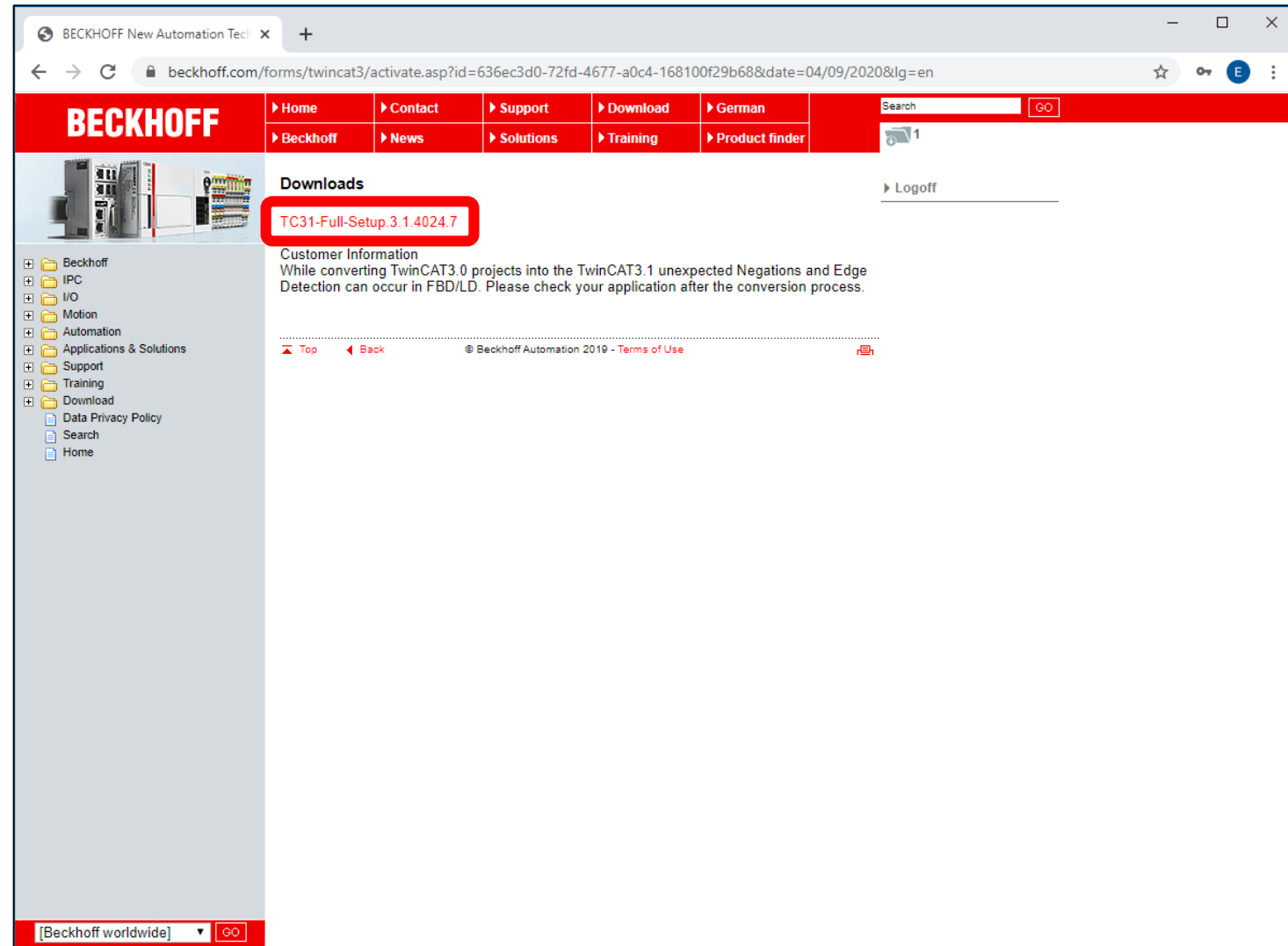
- Fill in the email address and password provided during account creation.
- Click on the Login button.

The screenshot shows the Beckhoff website's login page. The browser address bar displays the URL: `beckhoff.com/forms/twincat3/activate.asp?id=636ec3d0-72fd-4677-a0c4-168100f29b68&date=04/09/2020&lg=en`. The page features a red navigation bar with the Beckhoff logo and links to Home, Contact, Support, Download, German, Beckhoff, News, Solutions, Training, and Product finder. A search bar is also present. Below the navigation bar, a message states: "Aktivierung erfolgreich. Sie können sich jetzt einloggen". The main content area is divided into two sections: "New customer" and "Login". The "New customer" section includes a link to "Download as Guest" and a "Create a new user account" section. The "Login" section contains fields for "Email" (filled with "Joe.Dole@excellentautor") and "Password" (masked with dots), a "Persistent Cookie" checkbox, and a "Login" button highlighted with a red rectangle. A "Password forgotten?" link is also visible. The footer includes links for "Top" and "Back", the copyright notice "© Beckhoff Automation 2020 - Terms of Use", and a language selector set to "[Beckhoff worldwide]".

2.2 Download

BECKHOFF

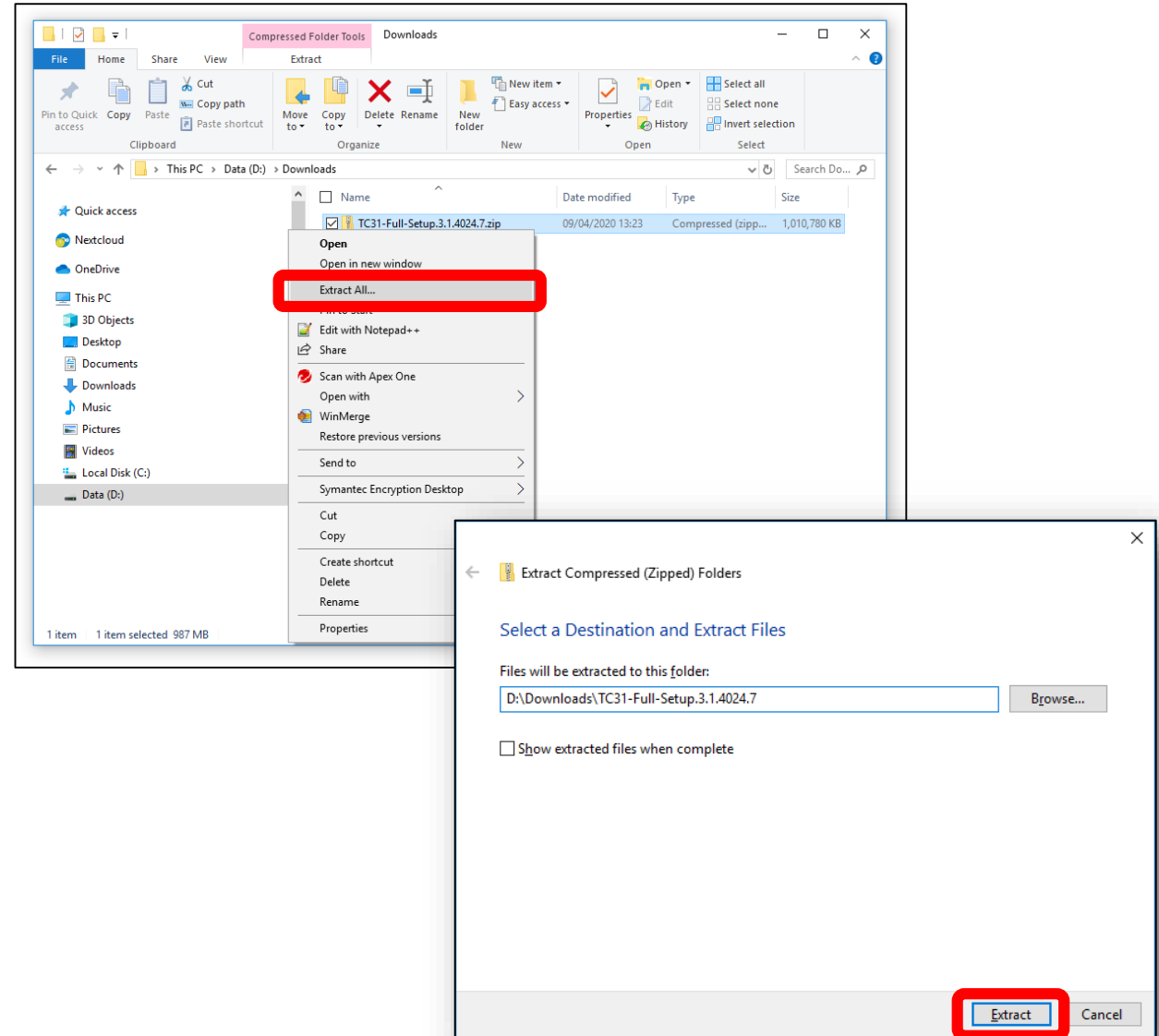
- Once logged in, your download cart is shown.
- Click on the link to download TwinCAT 3.1.



2.2 Download

BECKHOFF

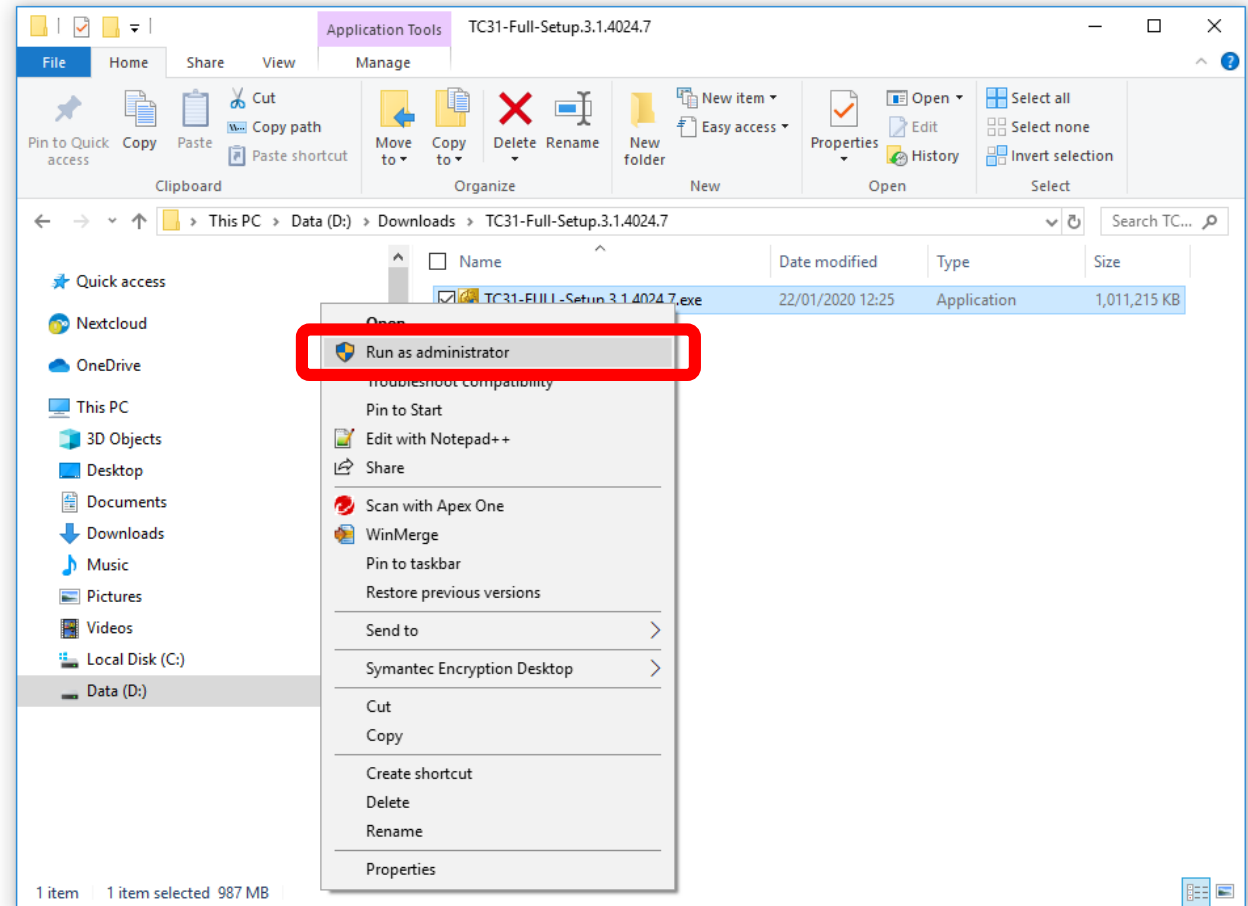
- Once downloaded, right click on the zip file and select Extract All...
- Then click the Extract button on the window that pops up.



2.3 Run Installer as Administrator

BECKHOFF

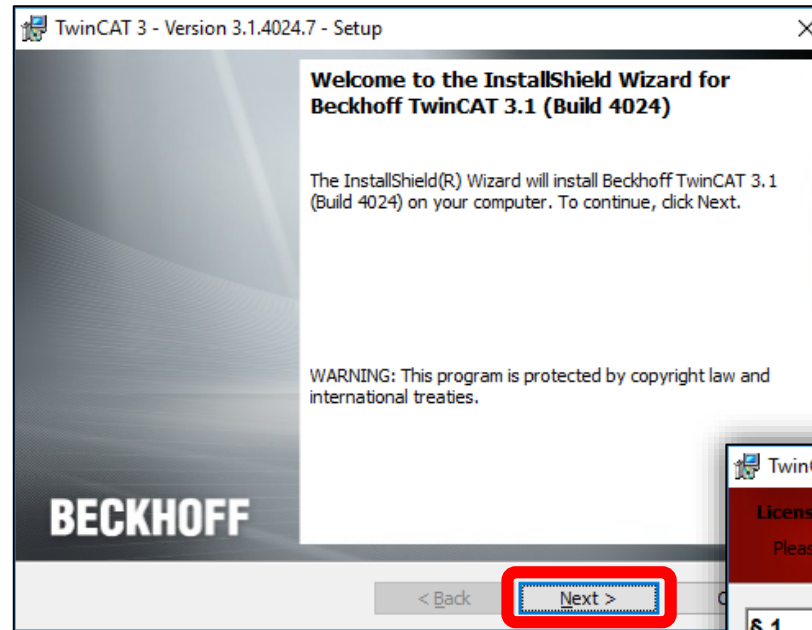
- Once extracted, open up the folder containing the TC3.1 installer.
- Right click on the installer and select
Run as Administrator...
- When prompted to allow application to make changes to your system, agree.



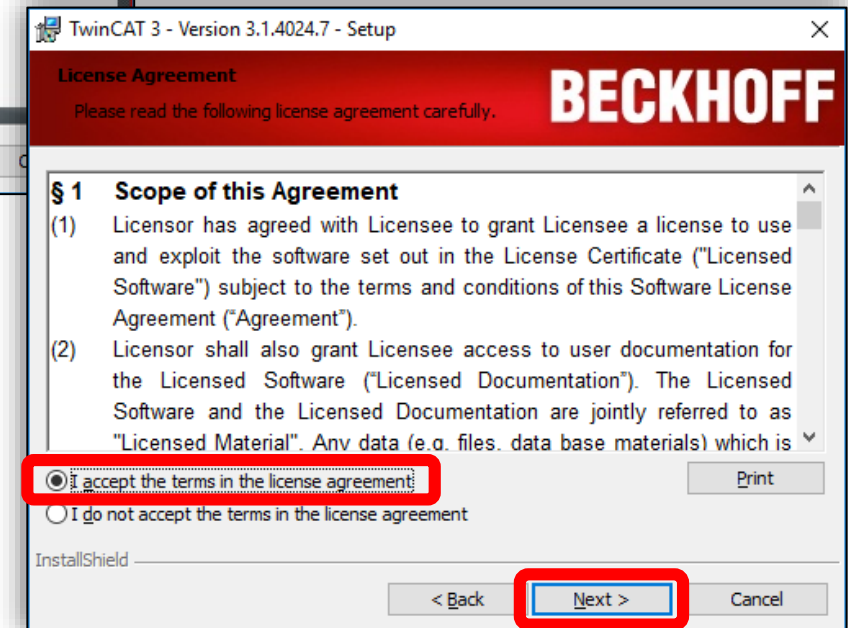
2.3 Run Installer as Administrator

BECKHOFF

- Click Next.



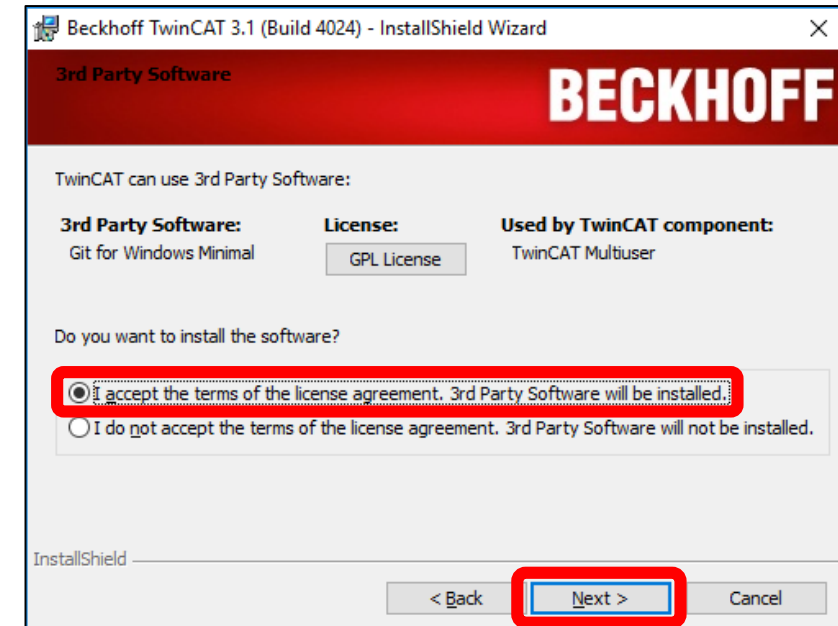
- Then read and accept the license agreement.
- Click Next again.



2.3 Run Installer as Administrator

BECKHOFF

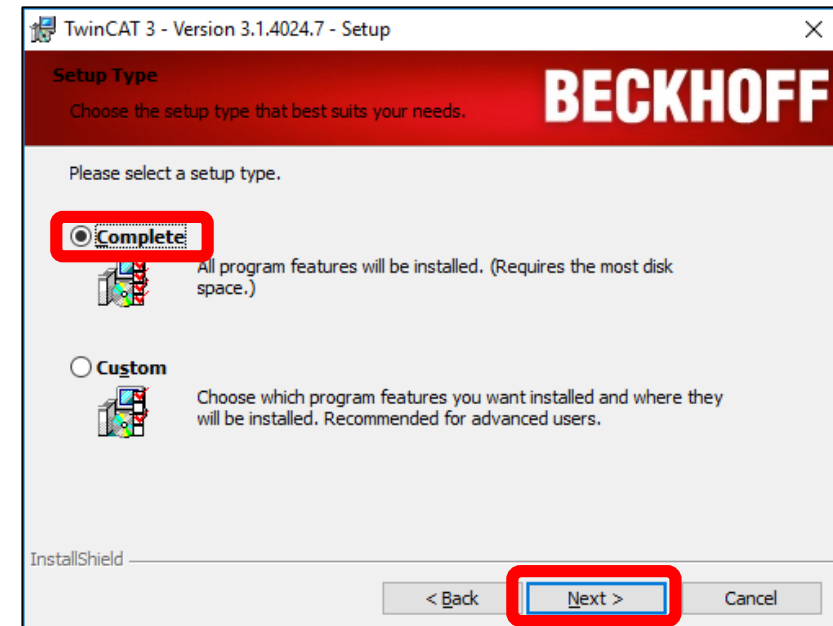
- In order to support multi-user login to the PLC, the installer will need to include Git, which is covered by the GPL License.
- Although a very useful feature, it is not critical to the operation of TwinCAT and can be excluded from the installation if required.



2.3 Run Installer as Administrator

BECKHOFF

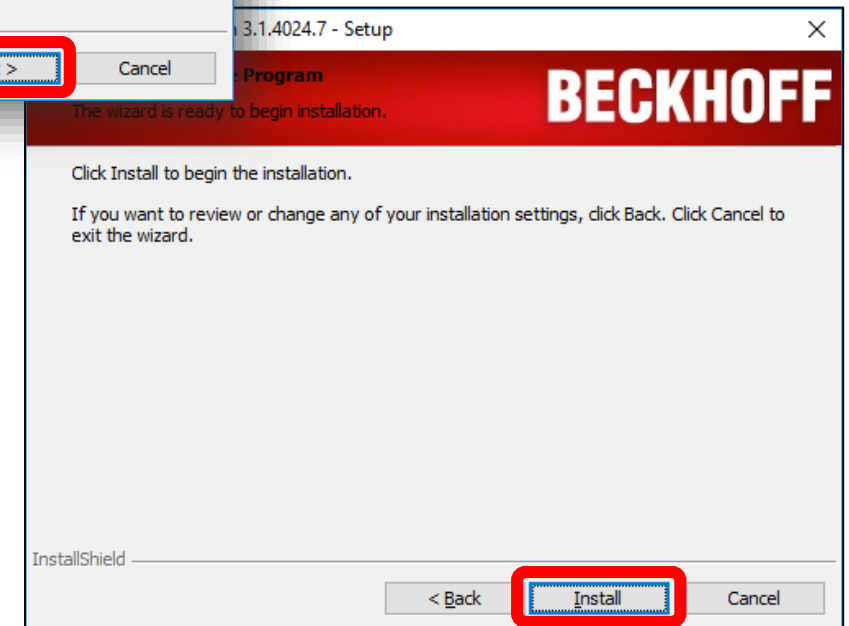
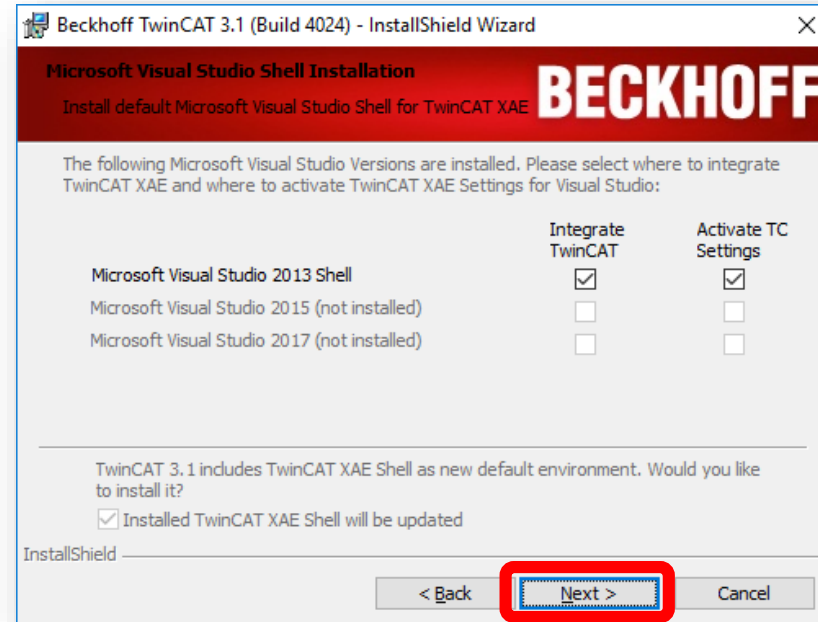
- A complete installation is recommended.



2.3 Run Installer as Administrator

BECKHOFF

- If an existing installation of Visual Studio 2013/15/17 Shell or Full is detected, TwinCAT can be integrated into it. This is optional.
- In addition, TwinCAT XAE Shell is installed, and will be used for this course.
- Click on Install to start the installation of TwinCAT 3.1, which may take up to 30 minutes.

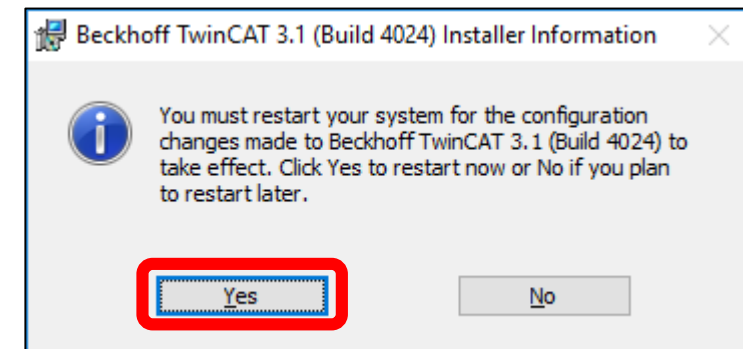
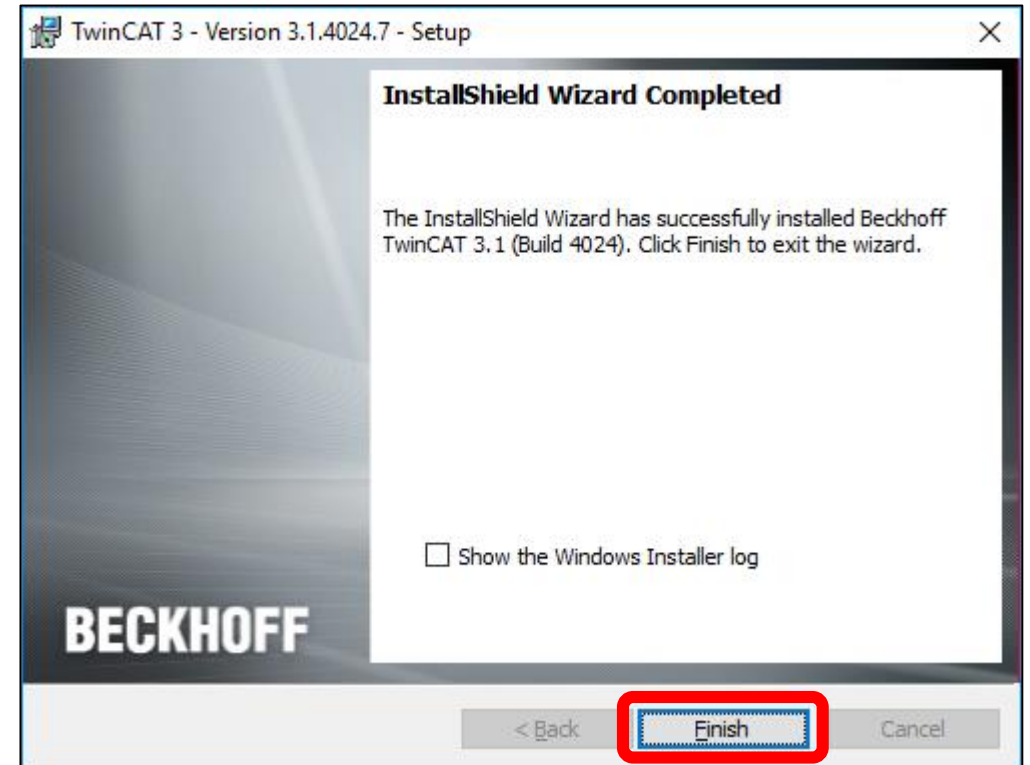


2.3 Run Installer as Administrator

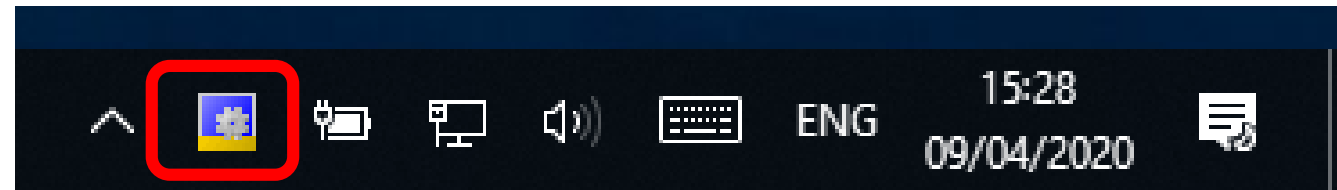
BECKHOFF

Once complete, your computer will need to reboot in order to complete the installation.

Your computer must be restarted before continuing with the next step.



- After rebooting, The Cog should be visible in the System tray.
- This indicates that TwinCAT was installed successfully, and that the background service is running.



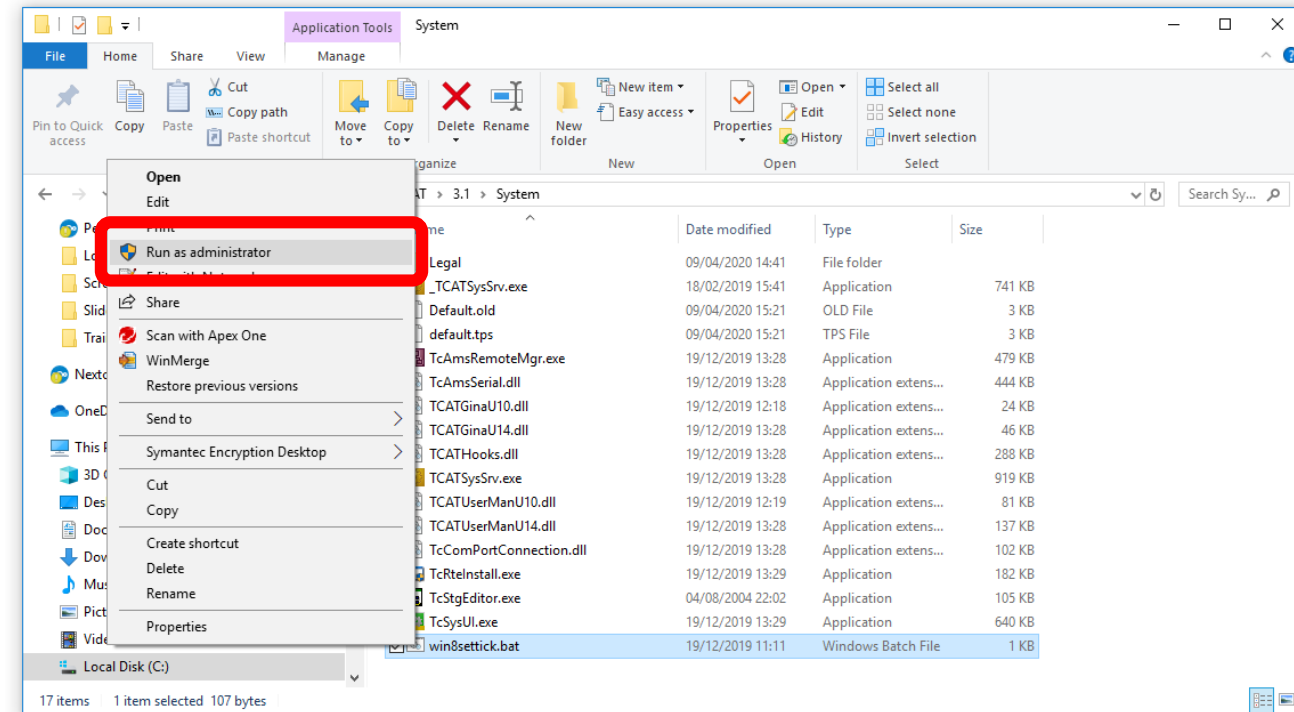
2.4 Finish Installation

BECKHOFF

One last task remains on Windows 8 and Windows 10 computers to allow simulation on your computer: please run

`C:\TwinCAT\3.1\System\win8settick.bat`

as Administrator, and allow it make changes to your system, then reboot again.



- TwinCAT 3.1 is now installed on your computer, allowing you to:
 - Write PLC applications,
 - Simulate PLC programs on your computer without any hardware,
 - Connect to an IPC and remotely debug your PLC program whilst running on real hardware.
- No licenses are required to run, deploy and debug TwinCAT 3.1 PLC applications.

Beckhoff Automation Ltd.

The Boathouse
Station Rd
Henley-on-Thames
RG9 1AZ
Great Britain

Phone : +44 1491 410 539
E-mail : info@beckhoff.co.uk
Web : www.beckhoff.co.uk

© Beckhoff Automation GmbH & Co. KG

April 2020

All images are protected by copyright. The use and transfer to third parties is not permitted.

Beckhoff®, TwinCAT®, EtherCAT®, EtherCAT G®, EtherCAT G10®, EtherCAT P®, Safety over EtherCAT®, TwinSAFE®, XFC®, XTS® and XPlanar® are registered trademarks of and licensed by Beckhoff Automation GmbH. Other designations used in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owners.

The information provided in this presentation contains merely general descriptions or characteristics of performance which in case of actual application do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.