



# TwinCAT Library: Upgrading 2.2.8 to 3.0.2

## Software Change Notification

Version	Date	Editor	Comment
001	2014-03-31	mvx	Initial document based on 3.0.2
<u>002</u>	<u>2014-04-29</u>	<u>mvx</u>	<u>TcEventEnable, intellisense problem</u>

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### Table of Contents

1 Summary.....	1	3.2 General configuration parameters .....	2
2 Products affected.....	2	3.3 Reference parameters.....	3
3 Description of change.....	2	3.4 Reference setPosition input.....	3
3.1 New parameters.....	2	4 Consequences and Suggestions.....	3

## 1 Summary

The interface of the major release 3 has been simplified, but at the expense of some impact on customer code, especially the configuration part. This release supports code migration to TwinCAT 3 by providing libraries for TC2 and TC3 with identical features.

## 2 Products affected

Any customer code that used TwinCAT triamec library 2.2.8 or older that is to be upgraded to newer versions. Affected hardware

- TS350, TS351, TS150, TS151 revision B to D
- TIOB
- TSP350 and TSP700 revision A.

## 3 Description of change

The old library does not support TwinCAT 3. Before migration to TwinCAT 3 we propose to upgrade the TwinCAT 2 code to the TwinCAT 2 library 3.0.2 using this guide. Then switch to TwinCAT 3 and use our corresponding TwinCAT 3 library 3.0.2.

The configuration part of the new library was simplified with the following changes, where axes[1] is an object of type TL\_AxisSlow and Trialink is the object of type TL\_Trialink.

### 3.1 New parameters

- Trialink.Config.RootFolder := 'C:\Machine\';  
Use this to activate error file logging into a newly generated subfolder: 'triamecLog'
- There is a new hook "TL\_Config" for configuration constants, see below.

### 3.2 General configuration parameters

Old libraries:

- Trialink.Config.ActivateBeckhoffErrors := FALSE;
- axes[1].simulate := FALSE;
- axes[1].MC\_axis.station := 17;
- axes[1].MC\_axis.secondAxis := FALSE;
- axes[1].MC\_axis.gear\_factor := 180/PI;
- axes[1].MC\_axis.mod\_wrap := 360;

New libraries:

- Trialink.Config.TcEventEnable := FALSE; (\* Enable TwinCAT events \*)
- axes[1].Config.Simulate := FALSE;
- axes[1].Config.Station := 17; (\* The drive's Trialink address \*)
- axes[1].Config.SubAxis := TL\_Config.SubAxis.FirstAxis;  
(\* is this the second axis of a TS150 dual drive? \*)
- axes[1].Config.GearFactor := 180/PI;  
(\* multiplication factor drive to PLC position units \*)
- axes[1].Config.ModuloWrap := 360; (\* modulo wrap for rotation axes \*)

### 3.3 Reference parameters

See application note AN108 for details on the homing procedures.

Old libraries

- axes[1].MC\_axis\_Home.Homing.Method:=TL\_C.AxisPar.Environment.ReferenceMethod.Immediate;
- axes[1].MC\_axis\_Home.homing.FirstMask := 16#01;
- axes[1].MC\_axis\_Home.Homing.FirstDistance := -370.0;
- axes[1].MC\_axis\_Home.Homing.FirstVelocity := 30.0;
- axes[1].MC\_axis\_Home.Homing.IndexDistance := 20.0;
- axes[1].MC\_axis\_Home.Homing.IndexVelocity := 10.0;

New libraries

- axes[1].Config.ReferenceMethod := TL\_Config.ReferenceMethod.SetPosition;
- axes[1].Config.ReferenceFirstMask := TL\_Config.ReferenceFirstInput.AuxIn1;  
(\* IO mask for homing first search \*)
- axes[1].Config.ReferenceFirstDistance := -370.0; (\* maximum distance of first move\*)
- axes[1].Config.ReferenceFirstVelocity := 30.0; (\* velocity of first search \*)
- axes[1].Config.ReferenceIndexDistance := 20.0;
- axes[1].Config.ReferenceIndexVelocity := 10.0;

### 3.4 Reference setPosition input

Old libraries

- axes[1].MC\_axis\_Home.Position := ...;

New libraries

- axes[iAxis].referencePosition := ...;

## 4 Consequences and Suggestions

Migration requires the following changes to the user code:

In the ConfigurationManager function block replace the configuration settings as shown above and add a path definition to the Trialink object as shown above to activate the error-log-file feature.

In the reference control function replace the setPosition input as shown above.

The current TwinCAT has a bad intellisense function. We suggest the following work-around to find the required options of an input: Check for the data-type of the input using right click on References/Triamtec and choose "Details". The most important sources are:

- [POUs/Public/PLCopen/TL\\_AxisSlow](#)
- [Data types/T\\_Trialink/TL\\_TrialinkConfig\\_Type](#)