Beckhoff Servo Drive Error Diagnosis

How to use the Drive Manager tab on System Manager to view historical drive errors on Beckhoff drives

Contents

Drive Errors vs Axis Errors

TwinCAT2 vs TwinCAT3

Connecting to the Correct Project

Drive Errors: Navigate to the Drive Manger Diagnostics

Axis Errors: The Error List or Watch Window

TC2

TC3

Common Errors, Meanings and Actions

Comments

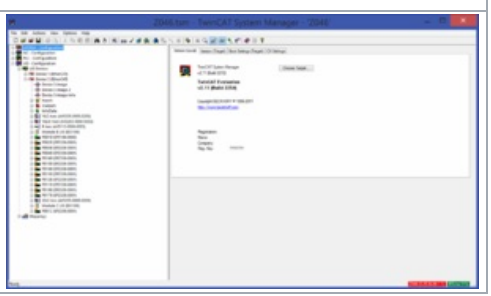
Drive Errors vs Axis Errors

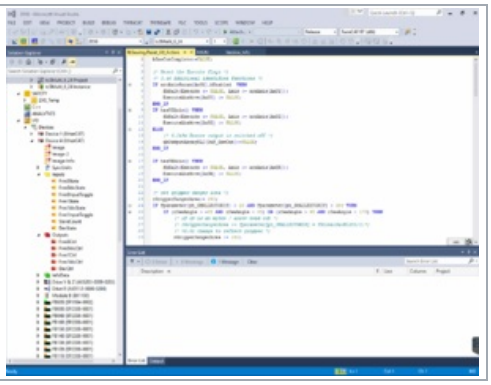
There is a distinct difference between a Drive Error and an Axis Error. The drive will store a history of drive errors internally in the drive itself. Axis errors are reported on the error watch window in system manager

Type	Description	Link to Beckhoff Infosys
Drive Errors	Errors that occur inside the drive electronics, eg • power overloads, • voltage low, • wiring issues	Beckhoff Drive Error Codes
Axis Errors	Errors due to the positional control of the axis, eg • Move beyond limits • Speed too fast • Following Error	Beckhoff Axis Error Codes Beckhoff Encoder Error Codes

TwinCAT2 vs TwinCAT3

Both TC2 and TC3 have the same system manager, but getting to the system manager uses a different program

Type	Program Used	Icon	ScreenShot
TC2	TwinCAT2 System Manager		

TC3	Visual Studio		

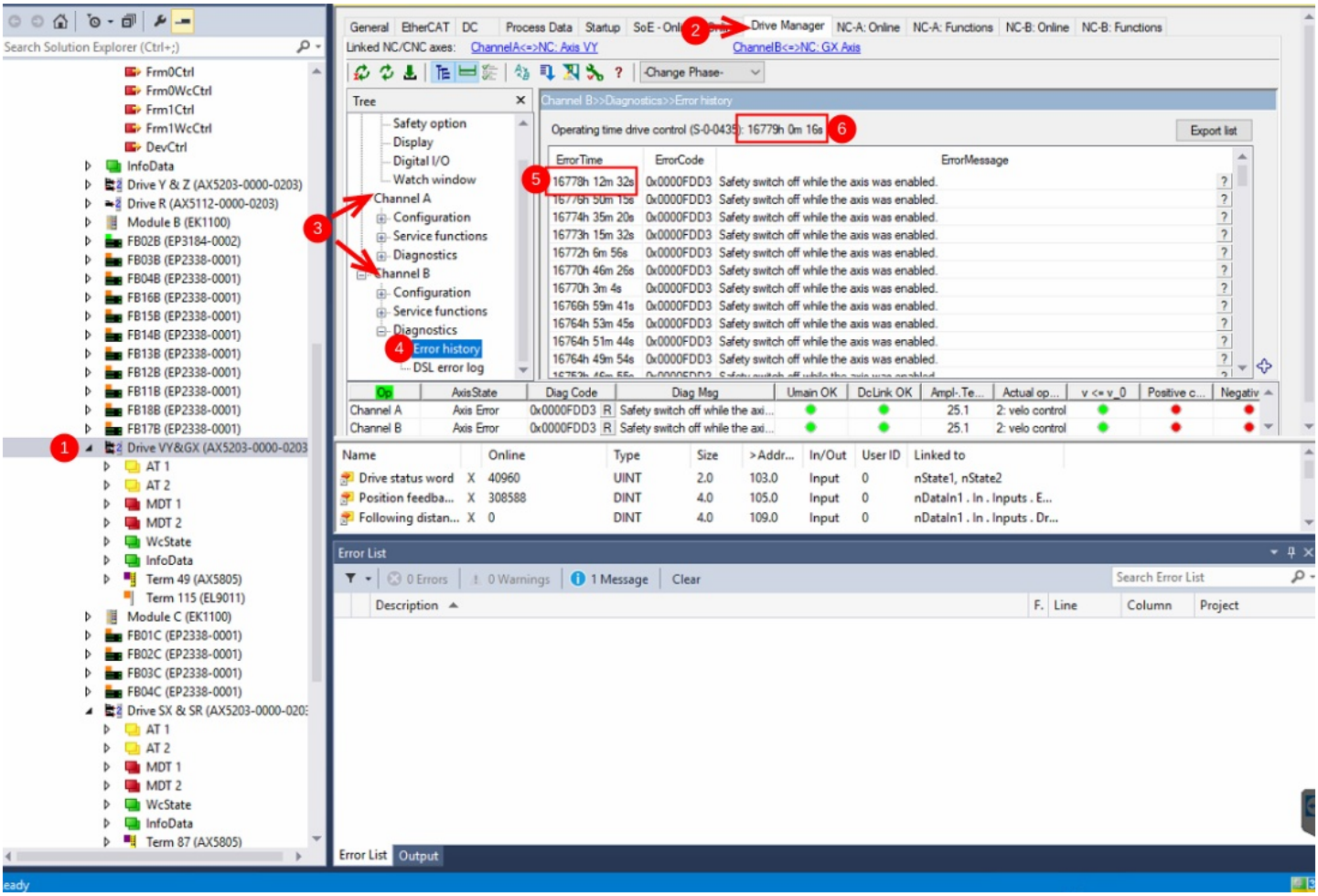
TC3 puts the system manage inside a TwinCAT3 "Project" which also includes the PLC code

Connecting to the Correct Project

See Loading TwinCAT Projects

Drive Errors: Navigate to the Drive Manger Diagnostics

> ...This part is the same on both TC2 and TC3



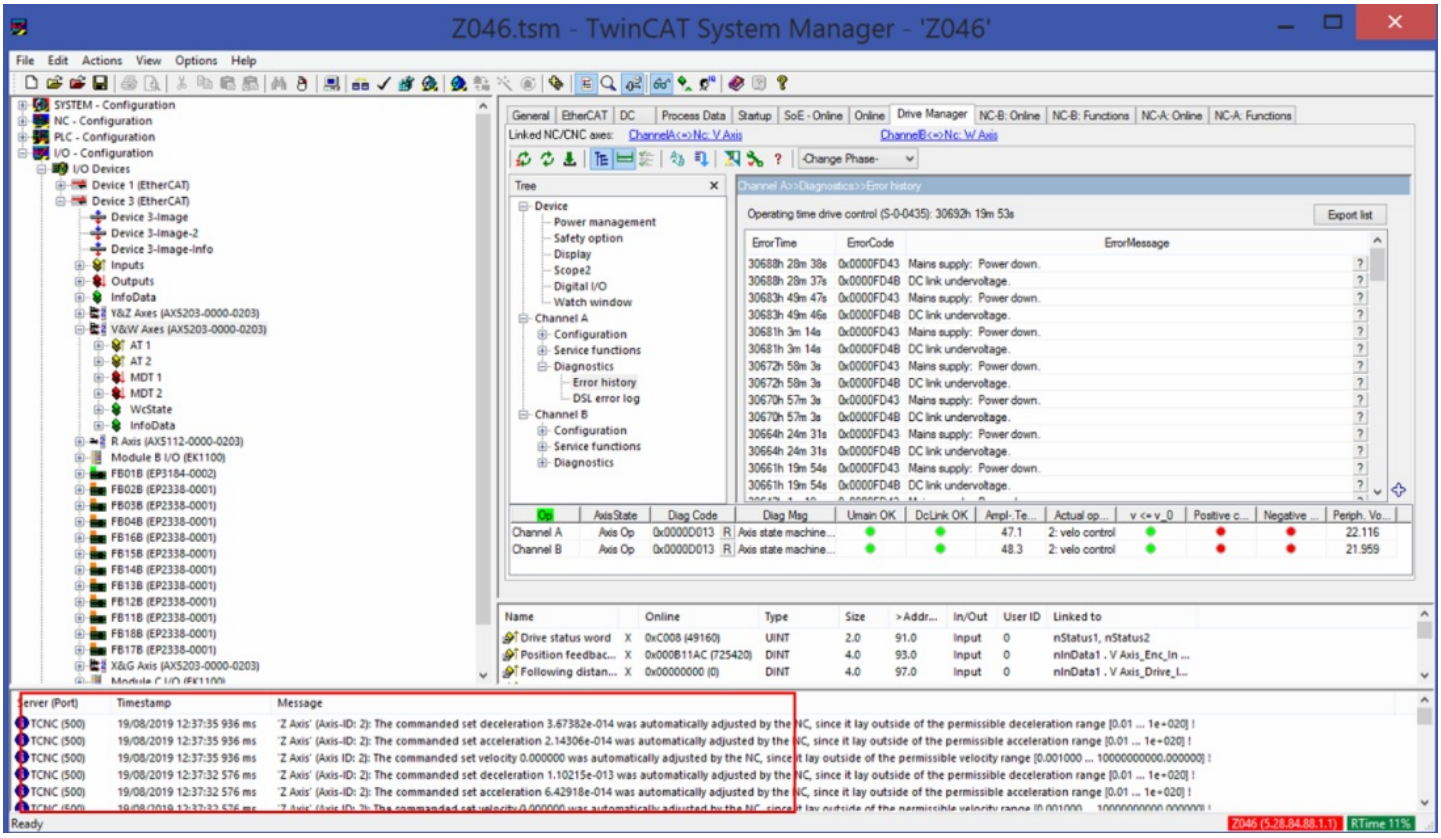
1. Select the drive you want to diagnose (dbl click)
2. Click on the drive manager tab
3. Drives come in 2 variants - Single or Dual. Dual drives have a channel A and B, you should be able to tell from the drive naming which axis is which
4. Click on Error History to view all the stored errors
5. The time of the error is quoted in hours from when the drive was first energised. To work out how long ago the error was, you need to subtract this from:-
6. The drive operating time

Axis Errors: The Error List or Watch Window

> ...This only shows errors from after the app is opened, not historical errors, so System Manager needs to run in the background to capture the error

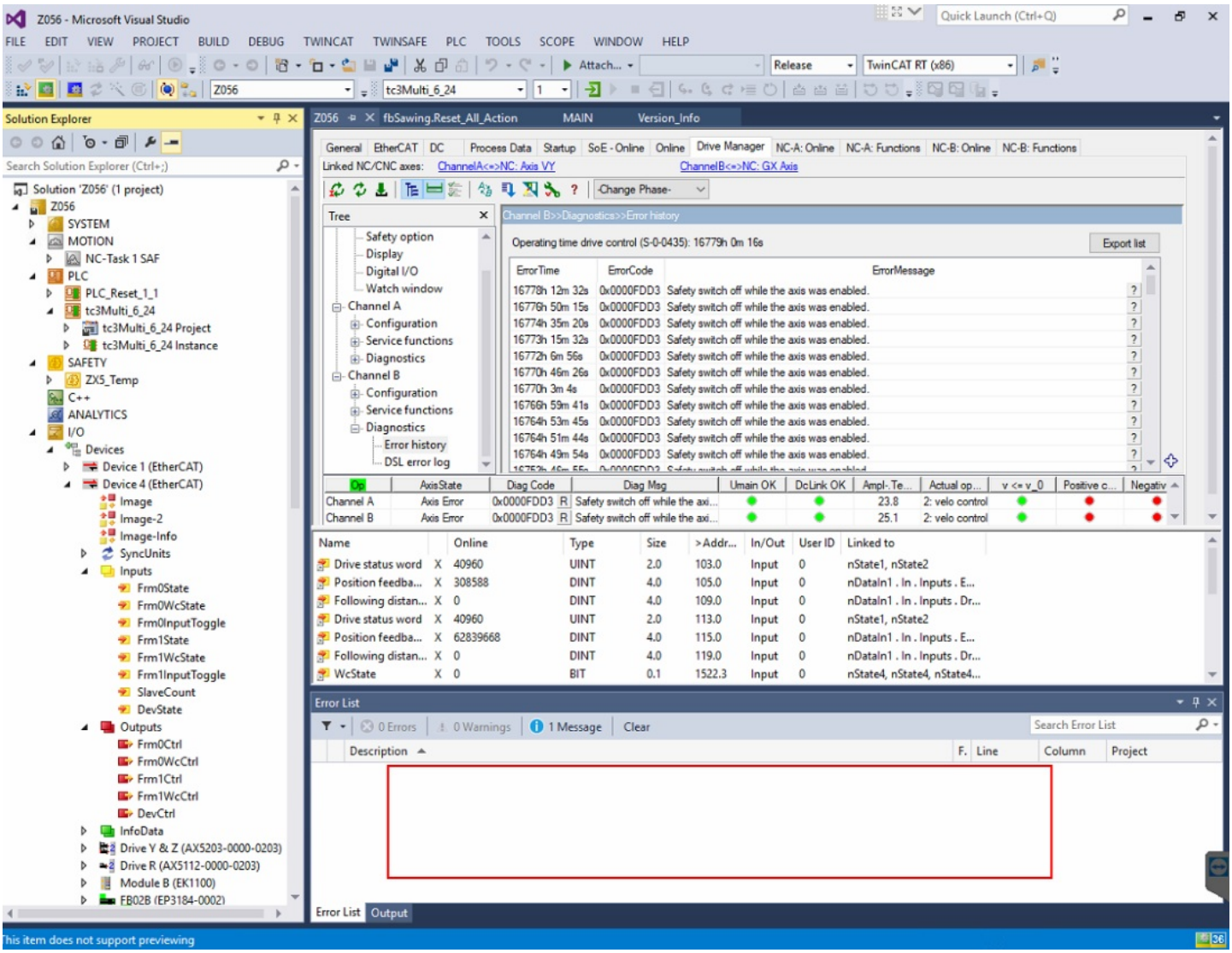
TC2

Axis errors are reported at the bottom of the screen. if this window is not available, use View->Show Logger Output



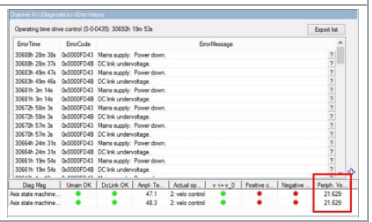
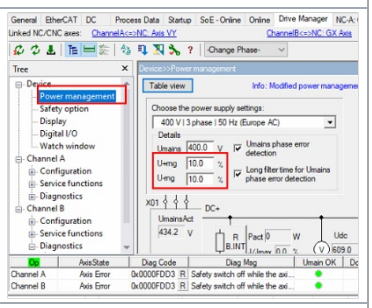
TC3

Axis errors are reported at the bottom of the screen. if this window is not available, use View->Error List



Common Errors, Meanings and Actions

Drive Errors

Error Code	Error Name	Possible Root Causes	Action
	Peripheral Voltage Low Control Voltage Error: Undervoltage	The 24v supply to the drives is too low. Adjust it to be at least 24v	
	DC Link Undervoltage Mains Supply: Power Down	Mains missing - could be overload relay trip or a phase missing	Reset Trip, check voltages
	Mains Supply U main too high /low	Mains is outside of the normal +/-10 voltage range (360-440v) You can safely change this on the Power Management parameters U+mg and U-mg to 15% to give a broader range with no ill effect