Phantom Estops

Using TwinCat to Diagnose and Find Phantom Estop Faults

Difficulty **Easy** | Duration **5-20 minute(s)**

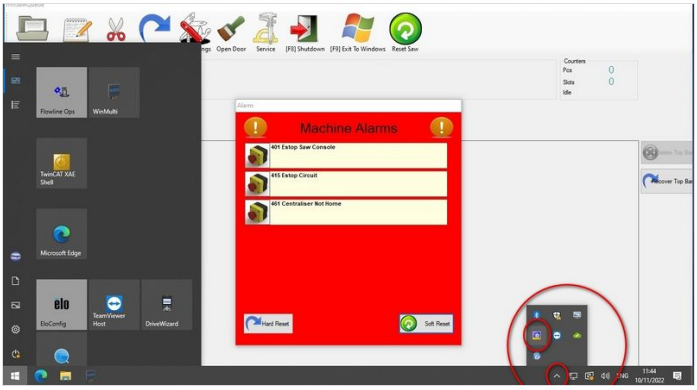
Contents

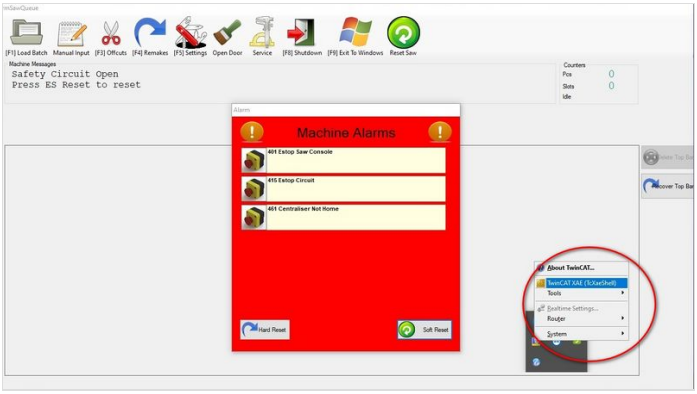
Introduction

The TweinCat system is linked together by remote modules throughout themachine. If any one of these modules loses coms or power it can show up in a n Estop/safety circuit/spindle fault. If not familiar with the system this can lead to lots of time wasted checking for the above faults when it could be a simple dropped voltage caused by a loose or damaged connection, or indeed a faulty network connection between modules. This guide will show how to use TwinCat to point you in the right direction, rather than crawling about on your hands and knees looking for blinking lights.
Thanks Glenn and Joel for stepping me through this enough times to make it eventually stick @darrenC

Step 1 - Open TwinCat

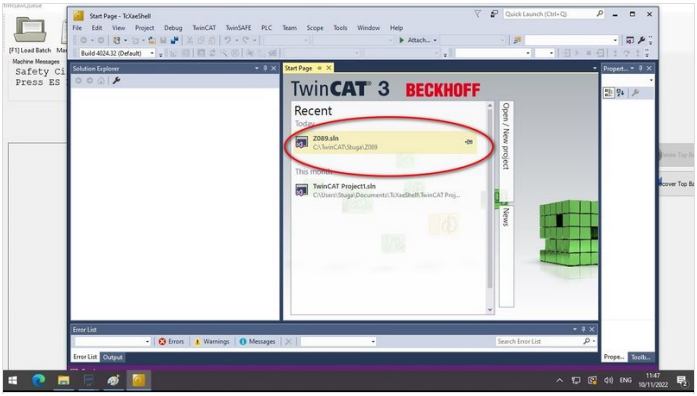
Click on the Windows button and then open the "Show Hidden Icons Button"
Navigate to TwinCAT XAE and open it.

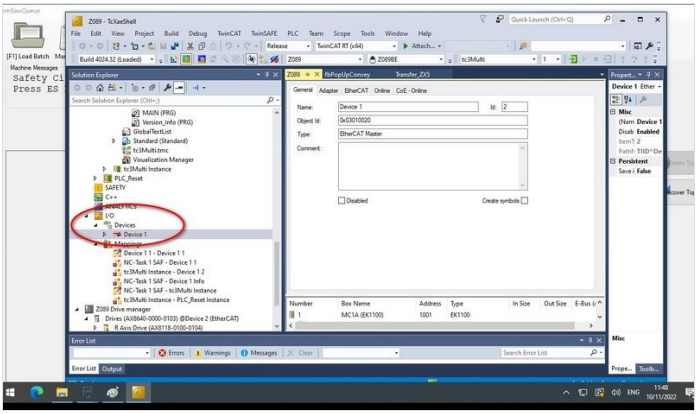


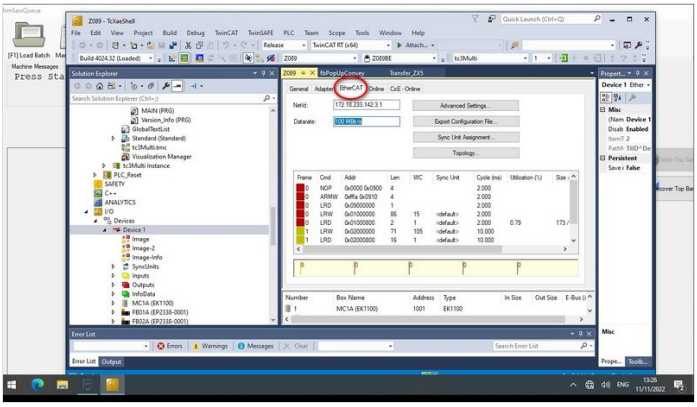


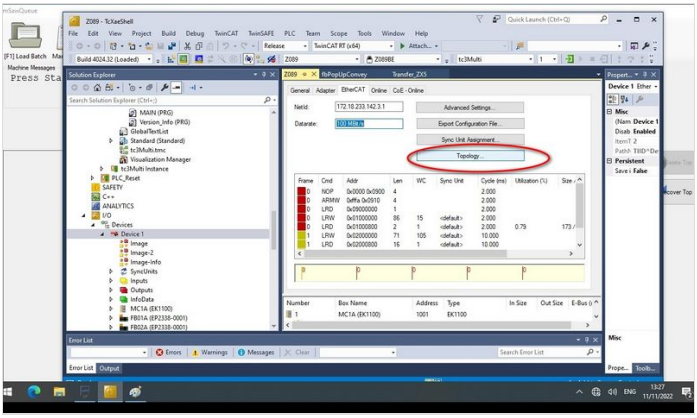
Step 2 - Load Solution

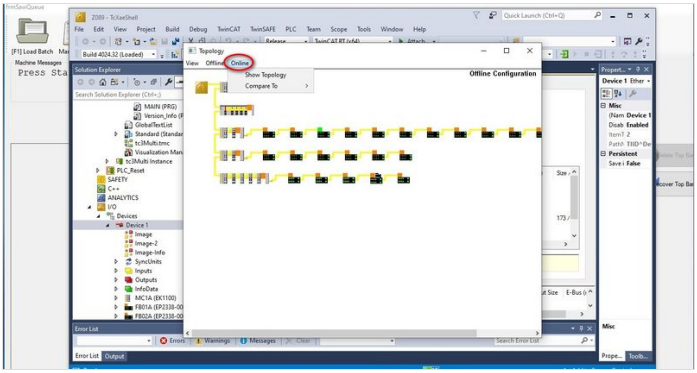
Open the SLN file for the machines project. In this case it was Z089 recently installed at Scotia Windows and Doors. In the Solution Explorer window, navigate to I/O - Devices- Device 1 and double click on it. This will then bring up another window with more options. In the tabs at the top of the new box click on "Ethercat" which will open another menu where you will need to click on "Topology"
From the Topology page now click on "Online" and then "Show Topolgy"





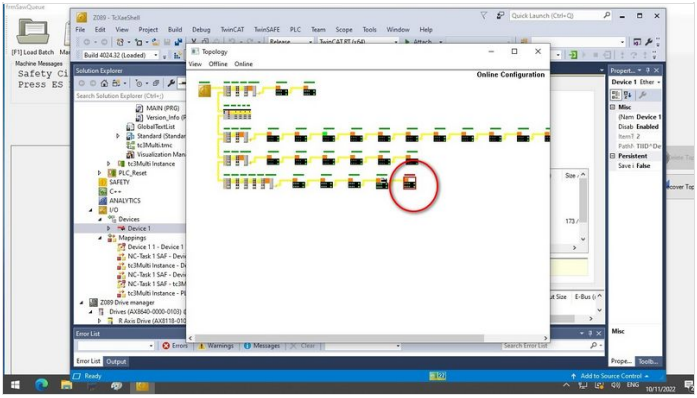


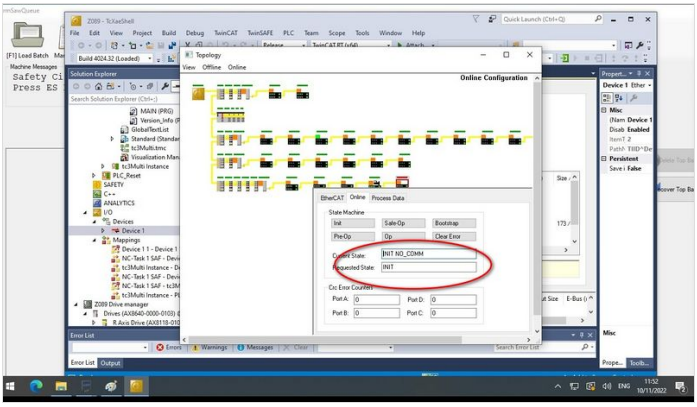




Step 3 - Finding the Real Problem

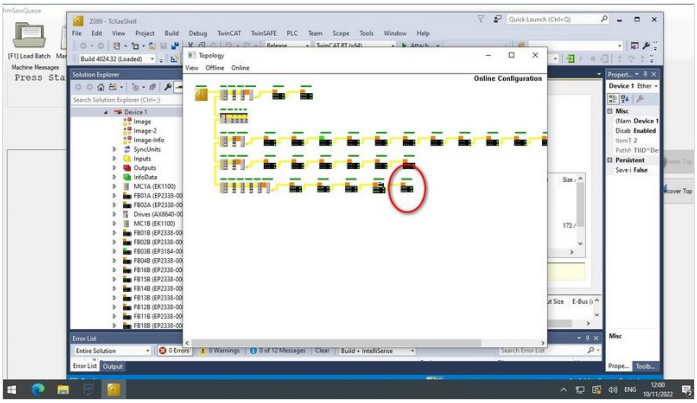
From here we can see that one of the field bus modules has a red line above it. It has either lost communication, or it has lost power. Double clicking it will bring up another box where we can click "Online". Here we can clearly see it is not functioning by the error message INIT NO_COMM. By clicking on the "View" button we can get the designated name/address of the module eg FB18B. Using the wiring diagram for the machine we can pinpoint exactly where and what the module is.

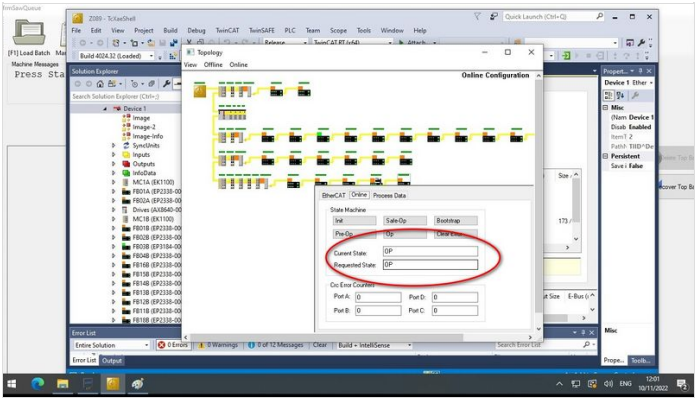


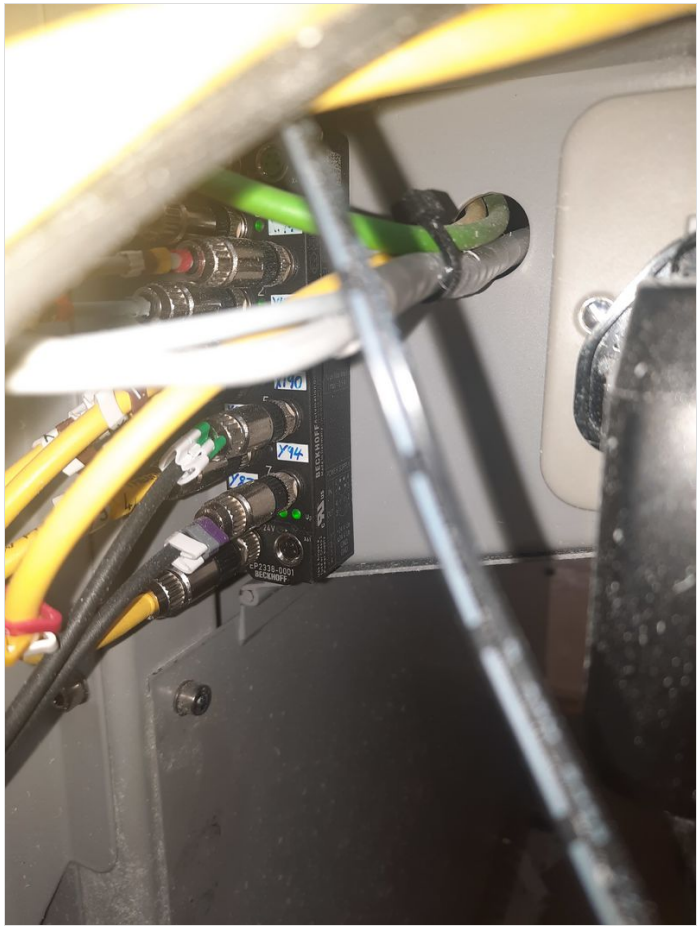


Step 4 - The Real Cause

In this case it was the FB Module at the back of the Saw unit. The 24Vdc power plug had been broken . Once repaired you can double check on the connection by repeating Step 3 and of course checking for lights on the FB module







Step 5 - Other Causes

The same symptoms can be caused by various factors.
No power or loss of coms on FieldBus Modules.
Loss of power on Beckhoff PC
Loss of power on any I/O slices
Loss of coms (ethercat) on any of the I/O slices
Loss of coms between Beckhoff pc and FE pc