DAJO Solutions

Developing and exploiting machine intelligence

CODESYS Beginner Tutorial V

Alarm management Part 1

Version: 1.0

Last updated: 17/09/2019

Author: Ethan Bull

DAJO Solutions
Developing and exploiting machine intelligence

CODESYS Beginner Tutorial V index

CODESYS
Beginner
Tutorial V

Version: 1.0

Index

Introduction

These tutorials are designed for aspiring programmers who wish to learn more about industrial and physical computing using the open source platform; CODESYS®. Each tutorial follows on from the last, with the list of planned and produced tutorials so far being:

- Beginner Tutorial: Getting started with CODESYS
- Beginner Tutorial II: Visualising with CODESYS
- Beginner Tutorial III: Sequential actions and Timers
- Beginner Tutorial IV: Resets and Interrupts

More information about CODESYS can be gained from the Smart Software Solutions (3S) website www.codesys.com.

Objectives

In the course of this tutorial you will learn how to:

- Create an alarm configuration
- Create an alarm
- Create a table of alarms
- Creating a banner of alarms

The aim of this tutorial is to add an alarm list to the existing tutorial to show both error and warning messages to the user

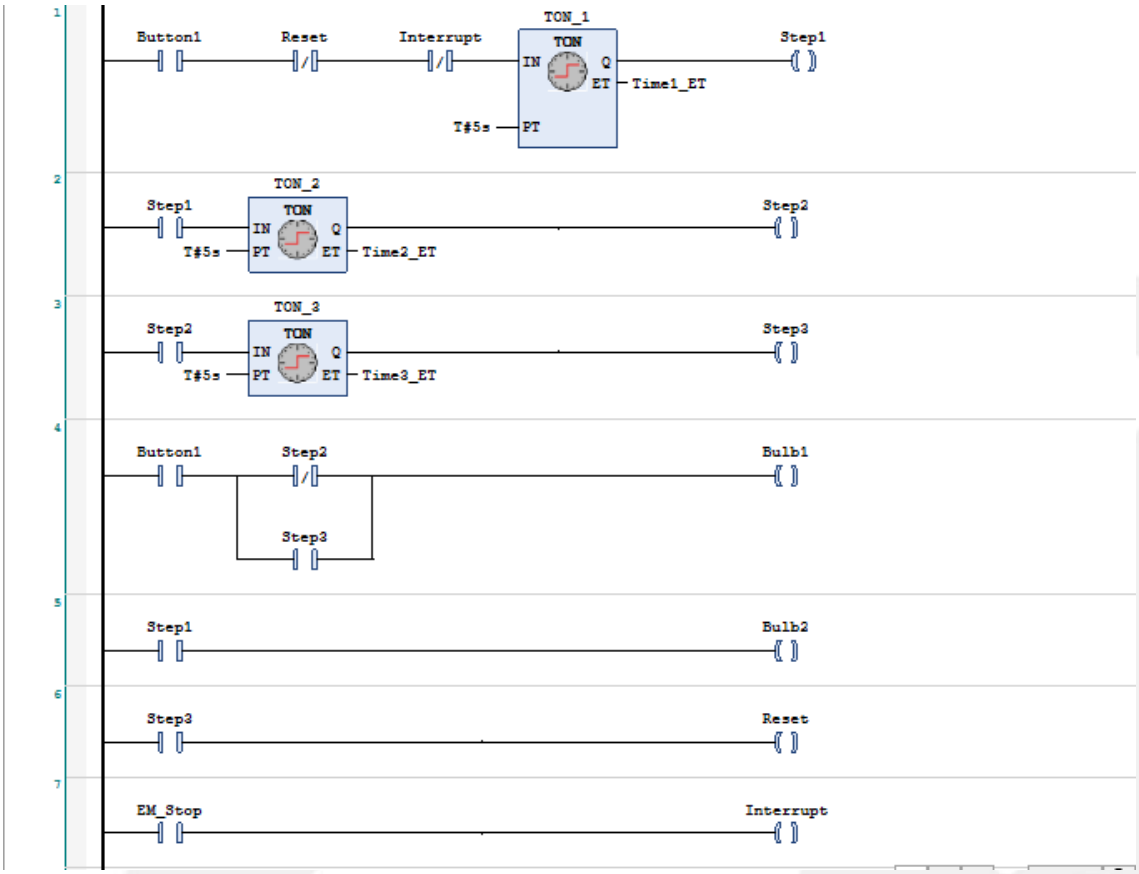
Prerequisites

There is no need for previously proven software development skills in order to successfully complete this tutorial. All that is required is a licenced (including a Demo licence) copy of CODESYS version 3.5 or higher, and basic computer literacy. In addition, as this tutorial follows on from the previous Getting Started with CODESYS tutorial.

Create warning and errors with XSoft – CODESYS 3

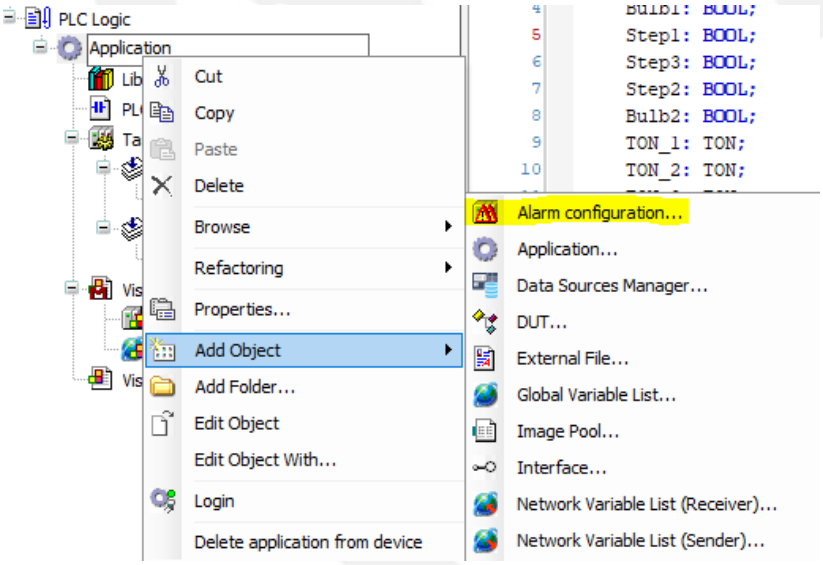
Step 1: Open the program from the Fourth tutorial

As before, this tutorial will be continuing on from the last program. Your project should look the same as or similar to the one below:

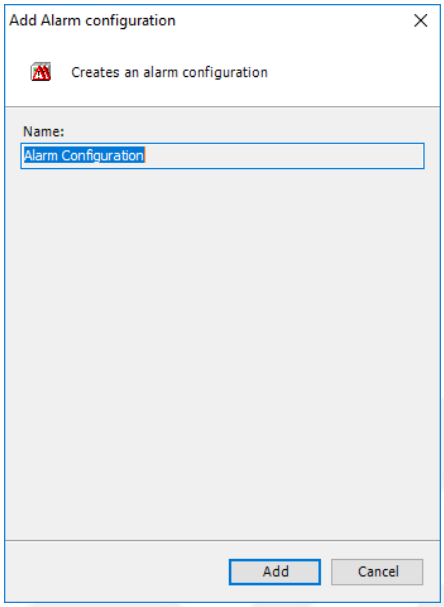


Step 2: Adding an alarm manager

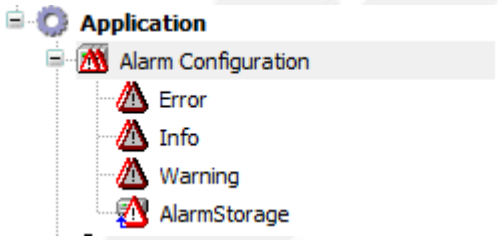
In the device tree select the application branch and right click and navigate to add object alarm configuration



You will see the following below, give the alarm configuration a name or leave it and select add



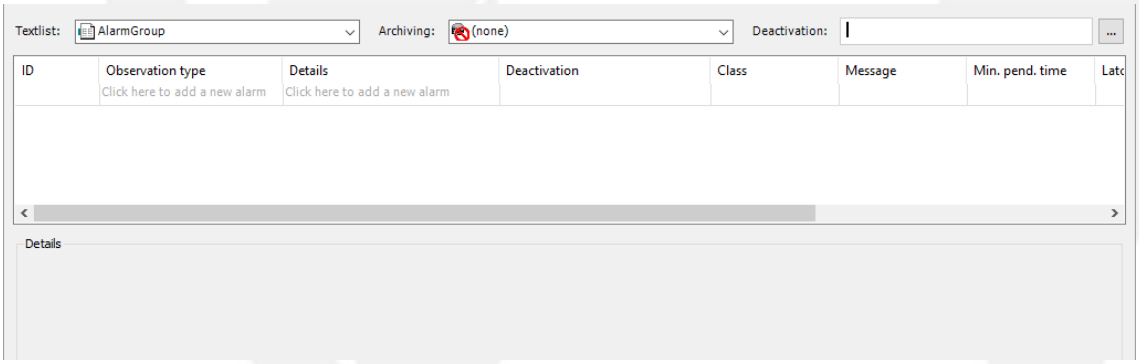
You should now have the alarm configuration added like below



The default alarm configuration comes with 3 Alarm classes already defined and an alarm storage which can be used to record alarms and store on the devices you have downloaded to.

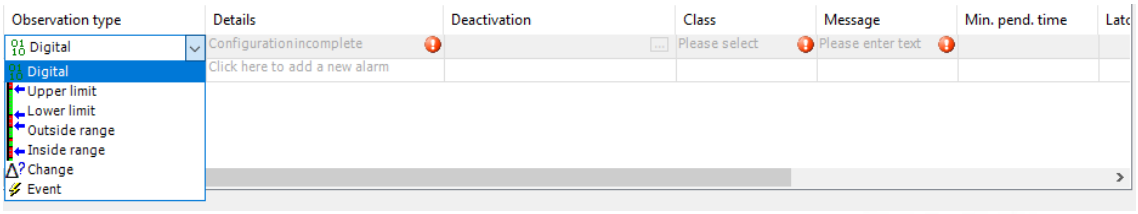
Step 3: Adding an alarm group

Go to the device tree and right click on the alarm configuration and navigate to add object → Alarm group an add the new alarm group double click on the group and you should see the following

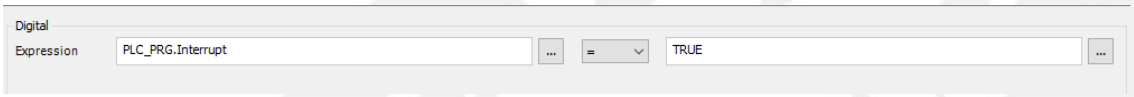


Step 4: Adding an alarm

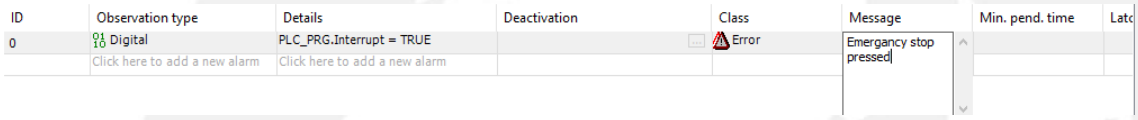
To set an alarm first click the observation. For this tutorial we are going to use digital.



Now there should be the following below the table this is where you can enter the statement to make the alarm go high/True. We are going to use the Interrupt variable as our error for the tutorial



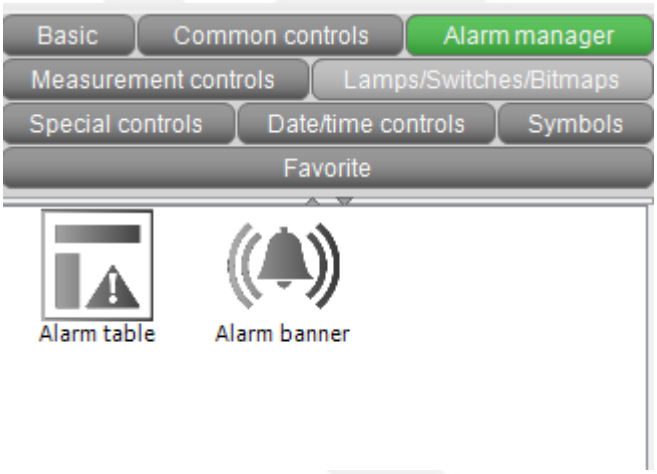
Now we can add a class and a message to go with the error for the user to have more information.



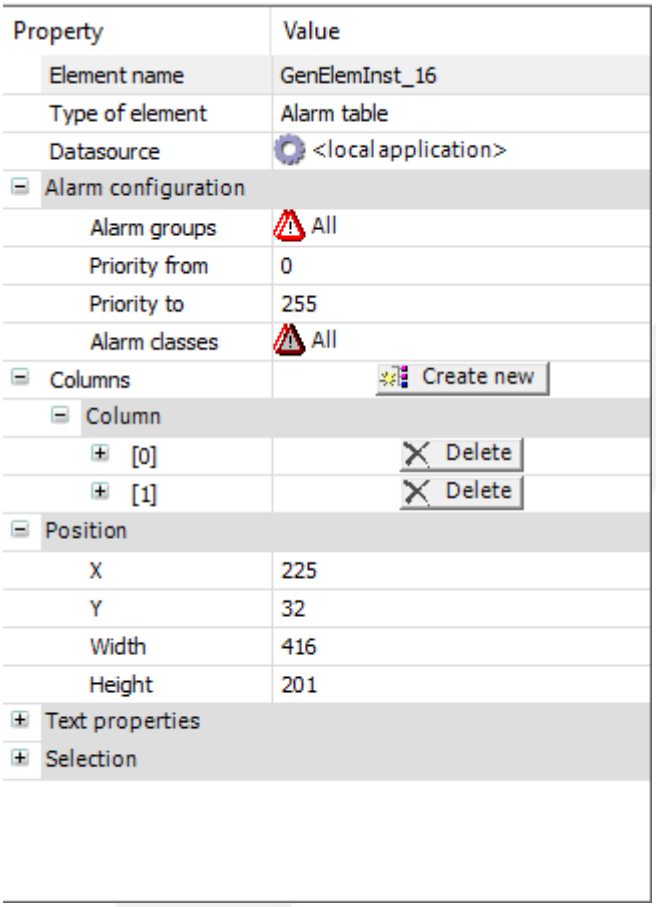
We can also do this for the reset and add it to the warning class

Step 5: Adding a table to the Visualisation

Go to the visualisation screen and in the tool box select the alarm manger tab and you can see the two types of alarm visuals



You can add these to your project and they will link to alarm list automatically and you can edit the some of the properties. In the alarm configuration you can change the groups and classes that show up within the table. You can add more columns to give more information as default it can show the timestamp and the message.



Step 6: Run the program

Now when you run the project whenever the emergency stop is pressed the alarm will go high and you will see the alarm and the latest active time. Since this time we havent created a storage for the alarm list it only shows the most recent time the alarm has gone high.