31343 Introduction to Programmable logic Controllers
Exercise 10 : “ex10_alarms”

Introduction:
The purpose of this exercise is to give an introduction to the alarm handling features of ABBs CoDeSys development tools. Implementing appropriate alarm boundaries is a very important feature of safety critical control systems.

Task 1:
Implement a test program that is able to test the following table of signals for the specified alarm conditions.

Signal Name	Type	Alarm Condition
A	Boolean	TRUE
f1	Integer	> 10
f2	Integer	< –15
g1	Float	10 % deviation from 20
g2	Float	Rate of change > 0.5

- Each alarm should trigger a message being displayed in CoDeSys.
- Create a visualisation with a list of buttons to trigger each of the alarms above individually and to display an alarm table of the program.
- Add logging capability to the program so all alarm instances are logged to a file.

Task 2:
Add alarms to your solution of exercise “ex8_serial”. This should include alarms on to high or to low temperature as well as an alarm if the light has been on for more than 1 minute. All alarms should be logged into a file.

Hand in:
The hand in should include the project file (*.pro) from both task. In addition a commented listing of a typical log-file from task 1 and 2 should be included. The hand in should be uploaded to Campusnet in the usual way.