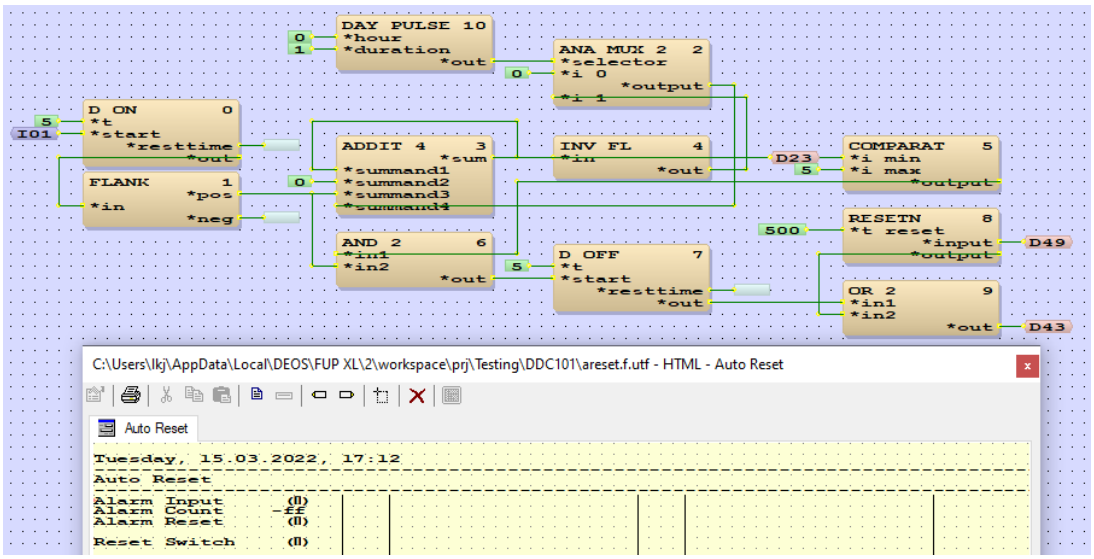
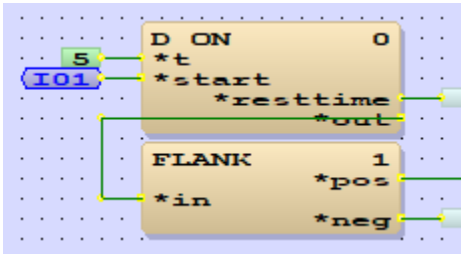
TT220402 – FUP - Automatic Alarm Reset

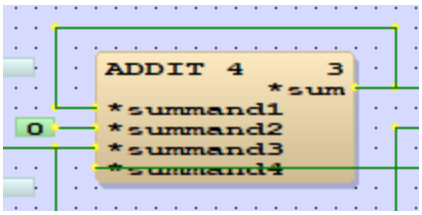
1. Some equipment has a reset alarm input for you to reset the alarm (e.g. trip alarm), so that the equipment can start up again. This is normally done through HMI by operator manually.
2. Sometimes operator want it to be done automatically, so that the equipment can start up again quickly, without manual intervention. However, this may cause problem in some situations where the equipment may trip again after restart.
3. So, to solve the problem, user wants it to be smart enough that the alarm will be reset at most 5 times per day automatically. After that, if the equipment is trip again, then user need to check the equipment and reset the alarm manually.
4. In this document, we will show you how to do it (see below).



5. "I01" is the alarm input. The "D_ON" module add a delay of 5 seconds (t = 5), and after that the "FLANK" module will send a "1" pulse to the output "pos".

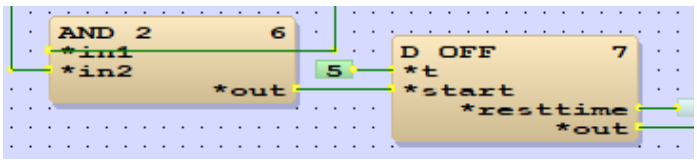


6. The "ADDIT" module will add the 1 to the Display "D23", and it the use to count the number of alarms occurred.

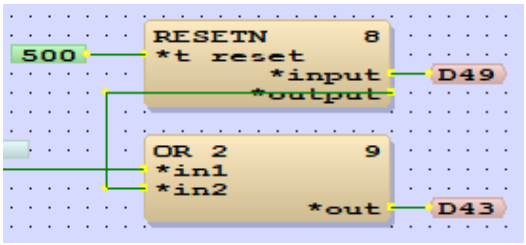


7. The "COMPART" module check if the number of alarms is less than 5 (i_max = 5), so that we can reset the alarm automatically.

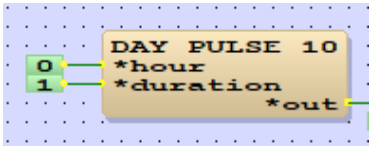
8. The “AND_2” module check if the alarm occur, and if it is less than 5 times, then we sent the reset signal to the output for 5 seconds (t = 5) via the “D_OFF” module.



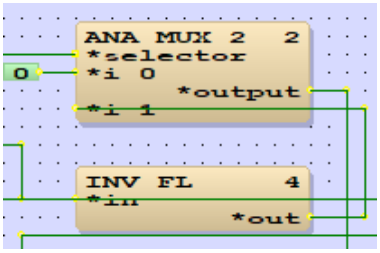
9. The “RESETN” module allows the user to reset the alarm manually using “D49” as the Input in the HMI. The “OR_2” module let the system to reset the alarm either automatically or manually.



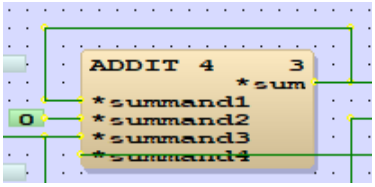
10. The “DAY_PULSE” module will send a pulse of “1” for 1 seconds (duration = 1) every day, at “00:00”. This is used to reset the number of alarms to 0 every day at midnight.



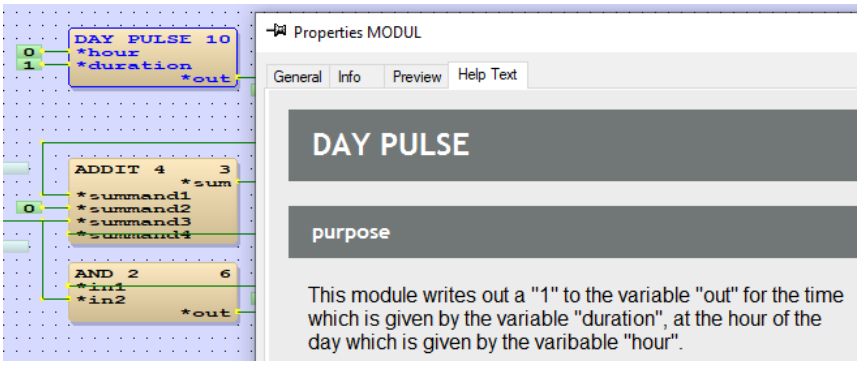
11. The “INV_FL” invert the number of alarms to negative number, and then send it to the “ADD_IT” module every day at midnight via the “ANA_MUX_2” module.



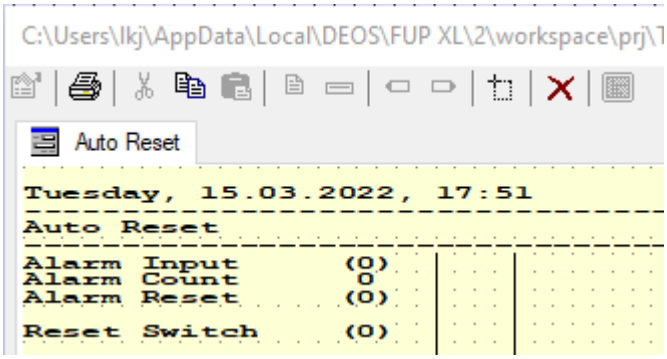
12. Again, the “ADD_IT” module will add the negative “number of alarms” to the ““number of alarms”, and therefore the “number of alarms” will reset to 0 every day at midnight.

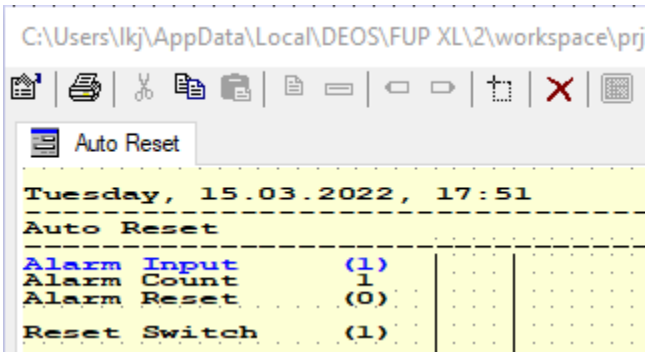


13. To understand how each module works, the meaning of each inputs and outputs, you can look at the “Help Text” of each module, by double clicking on it and select “Help Text” tab.

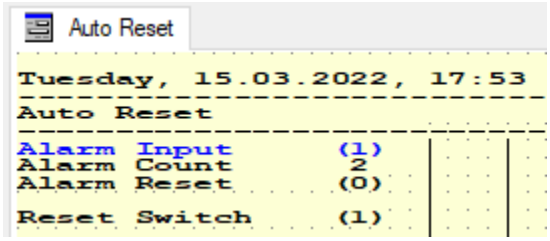


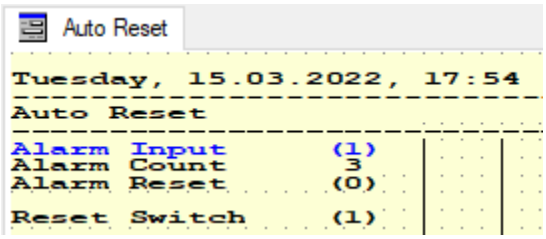
14. Now, let's do a simulation test and see if the logics work correctly. When there is an alarm the first time, after 5 second, the program will send out the reset signal for 5 seconds and the alarm count will increase to 1.



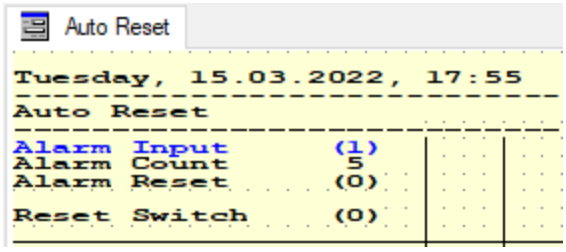


15. The same will continue for the next alarms, and the alarm count will go up automatically.

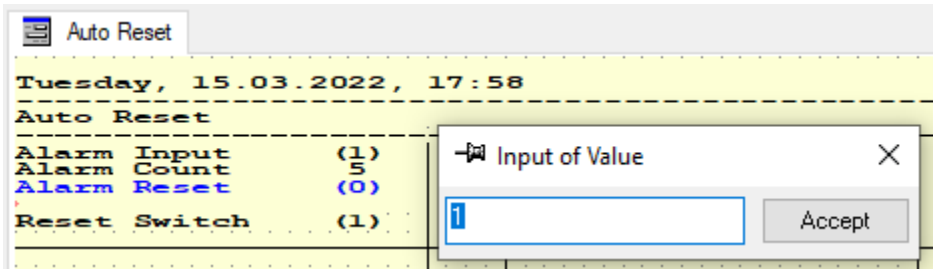




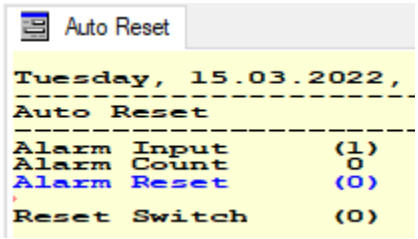
16. When the alarm count reach 5, no more reset signal will be sent after that.



17. Now, the user needs to reset the alarm manually by using the "Alarm Reset" function.



18. When the time reach midnight, the alarm count will reset to 0 automatically. So, alarms will be reset automatically for 5 times again in the next day.



19. You can easily adjust the constants for all the timings in the FUP page. You can also use "Input" in the FUP page so that the operator can change them as well.