



Apros® Datasheet

AUTOMATION SYSTEMS MODELLING

Apros® provides a comprehensive set of modules necessary for modelling a modern plant automation and control system. The extensive logic component library and color animation of the binary signal status, for example, facilitates vendor independent design evaluation of interlockings and sequences. In a design project, the use of dynamic simulation literally integrates the process and automation design by offering a common platform for process and control engineers to demonstrate, discuss and further elaborate the potential solutions.

MEASUREMENTS

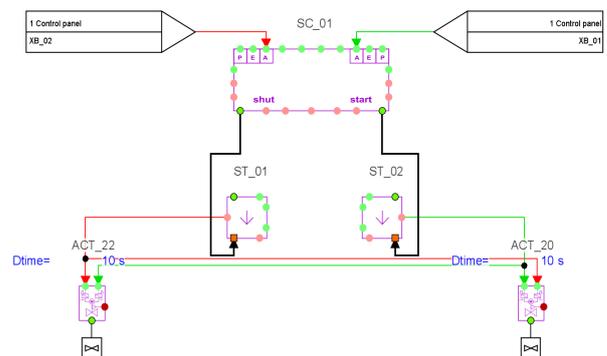
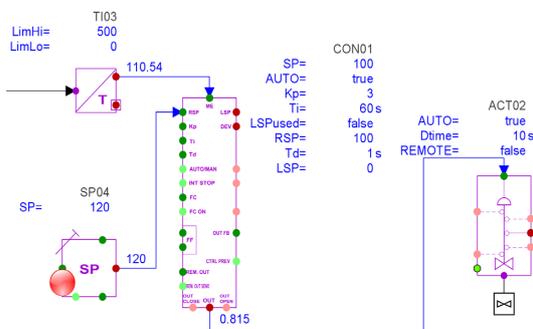
Like in real processes, measurements are used to get information from process for control system or for the user. A small amount of additional information to the control system can also come from the auxiliary electric network of the plant or via specific boundary condition modules.

It is most practical to place the measurement nearby the measured component. Then if the related automation is built in another picture, a reference flag of the measurement module is taken into that picture. Placing the control and especially the logic systems into own pictures keeps the process and automation drawings easy to read and maintain.

CONTROL AND LOGIC SYSTEM

Control and logic systems are composed of different kinds of elementary components, which are connected to each other with analogue and binary signals. These elementary components include, for example, controllers, adders, nonlinear curves, MAX/MIN-selectors, Boolean logic elements and sequence programs. Also external user specific automation blocks are possible to be integrated to the automation system calculation using a specific interface module.

▶ Apros controller modules provide extensive and accurate modelling of modern control systems' functionality.



▲ An example of a modelled sequence logic. Colour of the binary signal shows whether the value of the binary signal is true or false.

INTERFACE TO THE CONTROLLED DEVICES

Actuators and device controller modules interface the control and logic signals to the controlled process components, like pumps, fans or valves. Also manual and local commands can be used. Actuators and device controllers provide control of

- continuously controlled devices (e.g. position of control valve, speed of a pump)
- shut-off valves
- on/off devices with or without state feedback

Actuator has a special feature designed to allow on-line switching between a simulated control system and a connected real or virtual control system. The connection between the simulator and the control system is most commonly made with a standard OPC interface. The connected system offers an advanced way of testing and tuning a modern distributed automation system before it is delivered to the plant.