



All pictures Siemens AG

Saving time in testing

LOGO! Soft Comfort engineering software is a core element of the LOGO! product range. It enables easy process simulation and parameter adjustment during online testing.

Simplified program and application development is very important for users in the micro-automation sector. With its "Simulation" and "Online Test" functions, this is precisely what

LOGO! Soft Comfort provides. The following briefly outlines how users can force signal states and adjust parameters directly online – resulting in significant time savings.

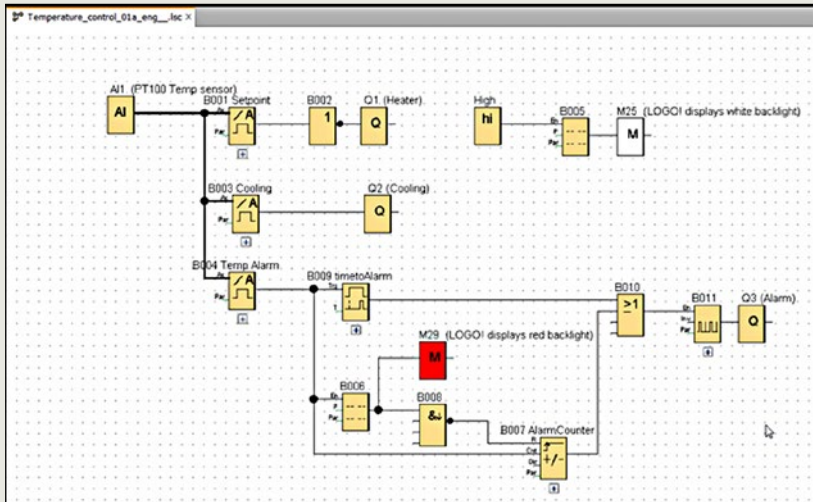


Figure 1

In the forcing process, the output of a function block is preassigned fixed values. This enables specific scenarios to be programmed, and the programmed functions to be tested.

Let's use an analog value analysis as a programming example. The temperature in a tank is measured by a Pt1000 sensor (-50 to 200°C) and the setpoint temperature is 20°C. A heater is activated below 15°C and switches off at 20°C. If the temperature exceeds 25°C, a cooling fan is activated which will then switch off when the temperature drops below 23°C. If the temperature reaches 30°C, an alarm message is indicated in red on the display. The message is canceled when the temperature drops below 28°C. This message must be reset on the LOGO! controller when the alarm is no longer active.

Sporadically recurring alarms are counted, and the number of alarms since the last reset is indicated in the current message. The date and time when the alarm first occurred are also indicated, and if the alarm remains active for longer than five minutes – or if it occurs more than five times – a siren is activated. (Figure 1)

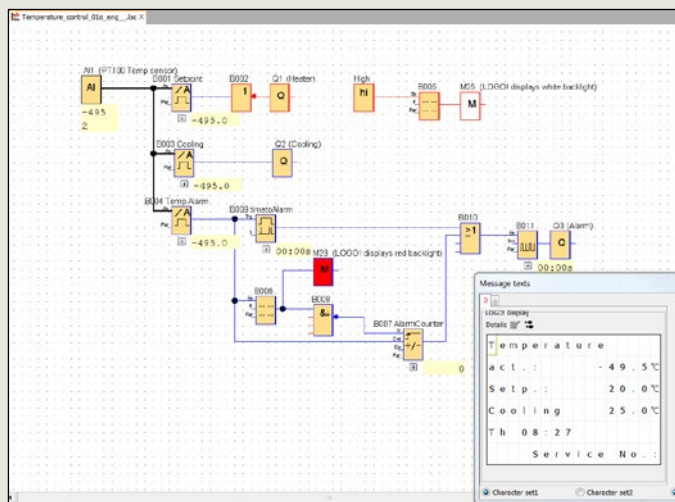



Figure 2

Simulation

The program is first tested by simulation.

In order to do this, click the  icon or switch on by pressing the F3 key. (Figure 2)

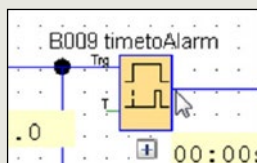


Figure 3

Here you can test the circuit on the PC as usual, without LOGO! hardware.

With more complex circuits, it may be difficult to generate the signal sequences required to attain a specific switching state.

This is where forcing the output signal of a function block is helpful. (**Figure 3**)

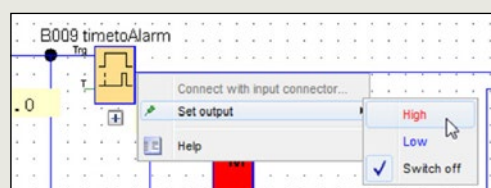


Figure 4

Right-click on the output pin of the function block to open a dialog box. Within it, choose "Set output" and select the desired High or Low state. (**Figure 4**)

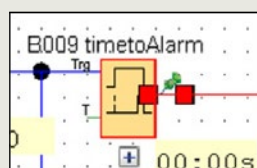


Figure 5

The output signal of the function block is then set to that value, regardless of the state of the input signals. The fixed state is clearly indicated by a pin icon. (**Figure 5**)

Forcing is canceled in the same way. When you exit simulation mode, all fixed outputs are released.

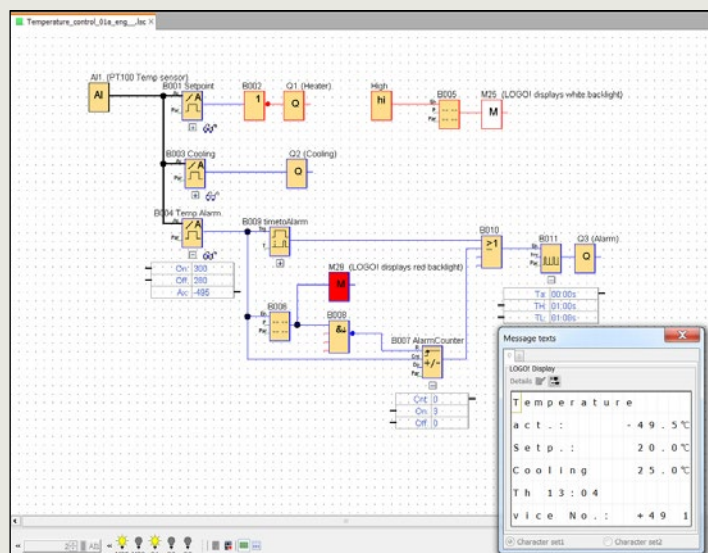


Figure 6

Online Test mode

If you have connected a LOGO! hardware unit, you can also test the program in online mode. When doing so, the current signal states are determined from LOGO!. Forcing is not possible in this mode, however, you can adjust parameters directly in online mode in LOGO!. This eliminates the need to switch to programming mode, download the program, and then reactivate test mode.

Additionally, LOGO! text messages can now be viewed in Online Test mode. When you run the mouse over a function block with actual parameters while Online Test mode is active, an 'eye-glasses' icon appears next to the block. When you click on it, the actual value is displayed. If you leave enough space between blocks when programming, you can also display the switching parameters. (**Figure 6**)

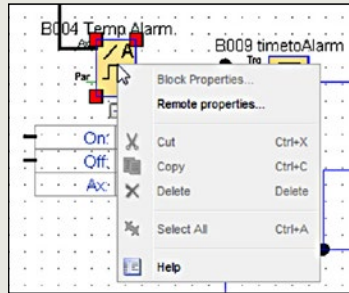


Figure 7

If you then want to change a switching parameter, right-click on the desired function block. In the dialog box, click on "Remote properties" and the block properties dialog box appears.

Within it, you can set the values you want and they will be adjusted directly in LOGO!. (Figure 7 and Figure 8)

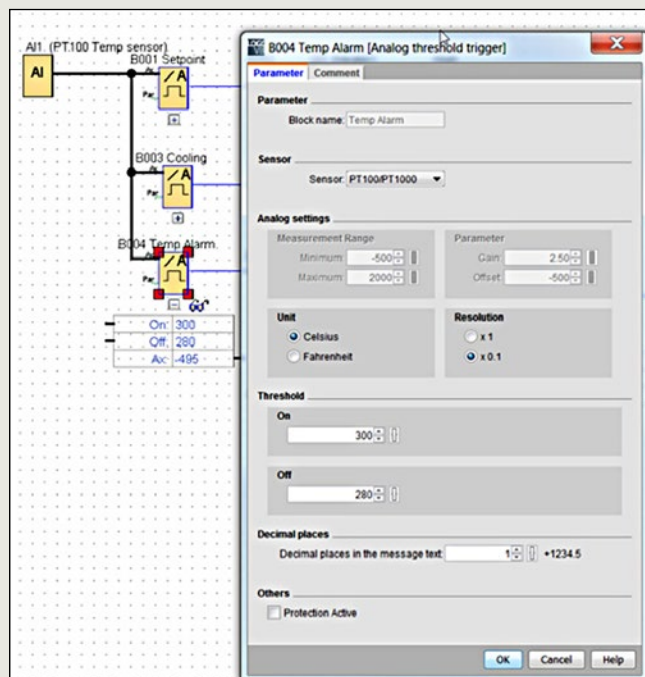


Figure 8

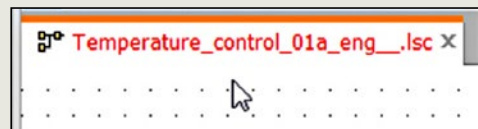


Figure 9

The software indicates that the program has been changed and prompts you to save your settings. (Figure 9) ■

This program example was created using LSC software V8.1.1 with LOGO! version FS:04.