

Astronomical clock with offset

Approach

With the new LOGO! 8 the parameters of the function block „astronomical clock“ have been expanded and it is possible now to set an offset for the sunrise and the sunset.

Example 1: Automatic lighting with shaded space

Task

In a building an automatic lighting control is used. When sunset begins it is often the case that certain building areas are shaded earlier.

Solution

For the shaded building areas it is advisable to switch on the lighting in the evenings earlier. In addition it is advisable to delay the switching off of the lighting for the shaded spaces at sunrise.

With the new functionality “offset” of the astronomical clock this requirement can be solved simply.

Settings in the LOGO! program



Note:

Further information, how you can load a program into LOGO! 8 and which settings you have to make, can you find in the application example “Migration of older programs to LOGO! 8” under “New examples for LOGO! 8” on the LOGO! Homepage (www.siemens.de/logo).

Open with LOGO!Soft Comfort V8 the already existing diagram „astronomical_clock_time_offset“ or create a new diagram.

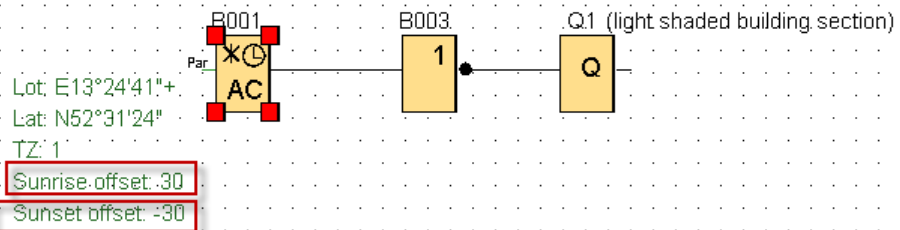
For the lighting Q1 of the shaded space a function block „astronomical clock“ is used.

In the block properties has been set for the sunrise an offset of +30 minutes, so that the shaded space is being lighted another 30 minutes, when normally at sunrise the lighting is automatically switched off.

For the sunset has been set an offset of -30 minutes so that in the evening the lighting for the shaded space is switched on 30 minutes before sunset.

Abgeschatteter Gebäudebereich, z.B. Rückseite

Shaded section of building, e.g. backside



Screenshot of the B001 [Astronomical clock] parameter dialog box. The dialog box has two tabs: "Parameter" and "Comment". The "Parameter" tab is active.

Parameter

Block name:

Location Info

Location:

Longitude:

Latitude:

Time Zone:

Time offset

Sunrise offset:

Sunset offset:

Others

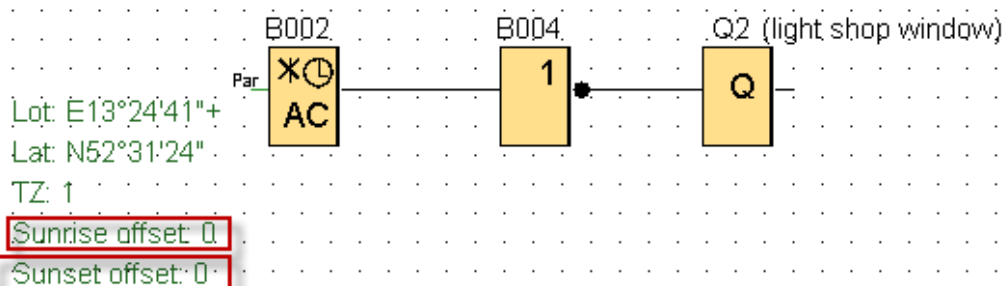
☐ Protection Active

OK Cancel Help

For the window lighting Q2 a separate function block „astronomical clock“ is used. As here no problems with shades exist, there was not set an offset both for the sunrise and the sunset.

Gebäudebereich ohne Schatten, z.B. Schaufenster

Section of building without shadow, e.g. shop window



Example 2: Animal breeding

Task

In animal breeding with free running chicken an outlet flap is opened and closed automatically at sunrise and sunset. When at sunset the outlet flap starts closing a signal sounds. Often it is the case that not all chicken achieve to be back in the stable on time.

Solution

It is advisable to let the signal for the closing of the outlet flap sound before sunset arrives.

With the new functionality „offset“ of the astronomical clock this requirement can be solved simply.

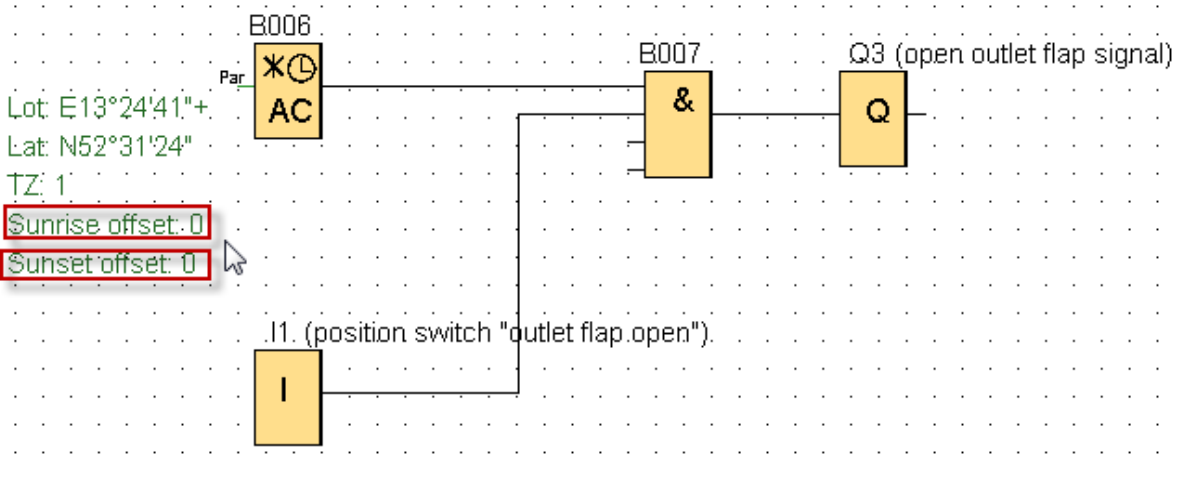
Settings in the LOGO! program

Open with LOGO!Soft Comfort V8 the already existing diagram „astronomical_clock_time_offset“ or create a new diagram.

For the opening and closing of the outlet flap in each case a function block “astronomical clock” is used.

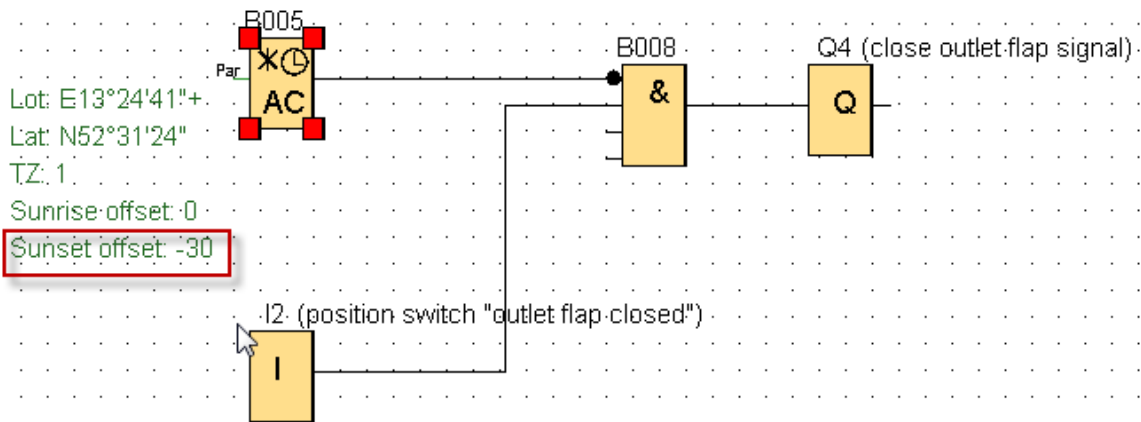
When running out of the stable at sunrise no problems exist for the chicken. For that reason for the opening of the outlet flap there is not defined an offset for the astronomical clock

Signal für das Öffnen der Auslaufklappe vom Stall bei Sonnenaufgang Signal for opening the outlet flap of the stable at sunrise



For the closing of the outlet flap of the stable was set for the sunset an offset of -30 minutes in the block properties of the function block astronomical clock. With this the signal for the closing of the outlet flap sounds 30 minutes before sunset and the chicken has more time to get back to the stable on time.

Signal für das Schließen der Auslaufklappe vom Stall bei Sonnenuntergang Signal for closing the outlet flap of the stable at sunset



B005 [Astronomical clock]

Parameter	Comment
Block name: <input type="text"/>	
Location Info	
Location:	Germany - Berlin
Longitude:	E 13 24 41 "
Latitude:	N 52 31 24 "
Time Zone:	GMT(+1)
Time offset	
Sunrise offset:	0 Minutes
Sunset offset:	-30 Minutes
Others	
<input type="checkbox"/> Protection Active	
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/>	