Real-time timer
Project for PR200-24.2

Project overview

The example explains the use of a real-time timer. The project contains 1 data processing block and 3 screens.
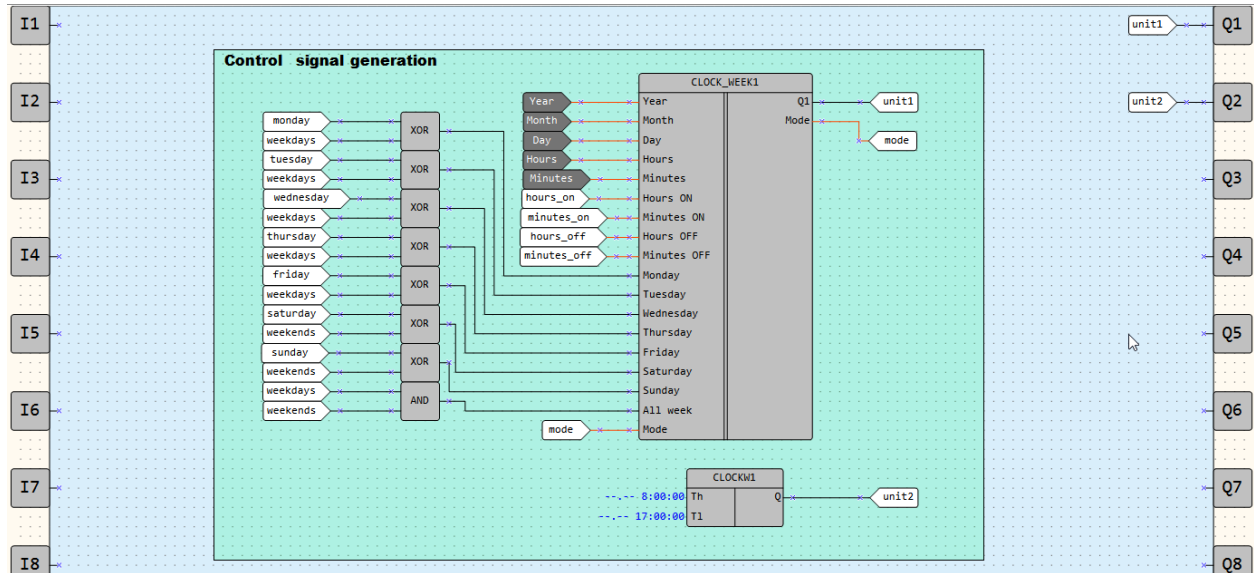

Fig. 1. Program workspace

Data processing blocks:

- Control signal generation

Screens:

- *Light*
- *On/off time (Front yard)*
- *Days of week (Front yard)*

Table 1. Device inputs/outputs

Name	Type	Description
Q1	BOOL	1st unit (Front yard light)
Q2	BOOL	2nd unit (Back yard light)

Table 2. Project variables

Name	Type	Description
unit1	BOOL	1st unit
unit2	BOOL	2nd unit
monday	BOOL	Mondays active
tuesday	BOOL	Tuesdays active
wednesday	BOOL	Wednesdays active
thursday	BOOL	Thursdays active
friday	BOOL	Fridays active
saturday	BOOL	Saturdays active

sunday	BOOL	Sundays active
weekdays	BOOL	Weekdays active
weekends	BOOL	Weekends active
hours_on	INT	Switch-on time, hours
hours_off	INT	Switch-off time, hours
minutes_on	INT	Switch-on time, minutes
minutes_off	INT	Switch-off time, minutes
mode	INT	Mode

Control signal generation

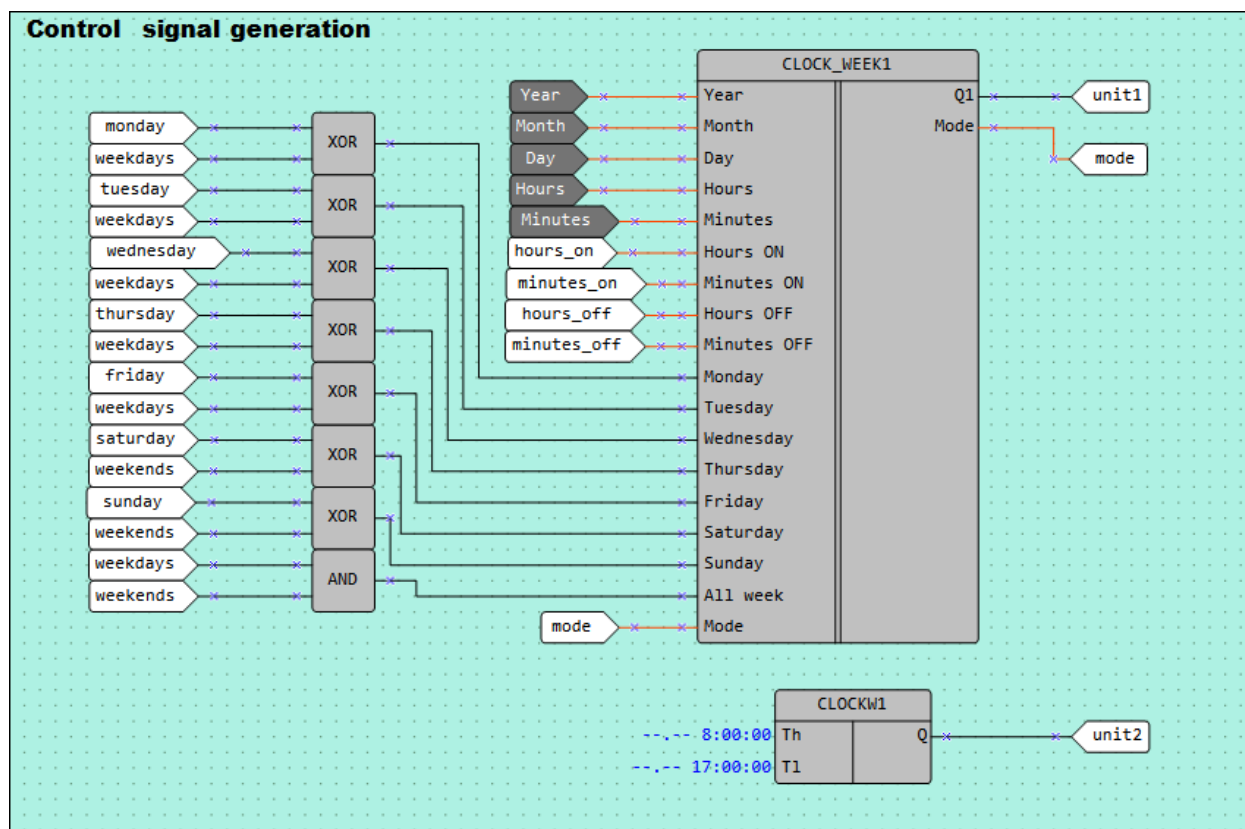Fig. 2. Control signal generation

The 1st unit is controlled by *CLOCK_WEEK* user macro that enables setting the time of switching the equipment on and off, as well as selection of the days of the week on which the equipment is active. All parameters are displayed on the screens and can be changed using the function buttons.

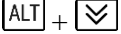The macro works in three modes:

- 0 - the output is inactive
- 1 - operates cyclically according to the set time and days of the week
- 2 - operates once for the set time, then switches to mode 0

Any combination of the days of the week, weekdays or weekends can be used when selecting the operating days of the equipment.

The 2nd unit is controlled by standard *CLOCK WEEK* macro (*CLOCKW*) available in Library Box. The function block is configured via the Property Box. Unlike the first block, the last one cannot be configured via the screen.

Screens

Table 3. Function buttons

Function buttons	Action
⩔	Scroll down through screen rows
⩓	Scroll up through screen rows
ALT + ⩔	Switch to the next screen
ALT + ⩓	Switch to the previous screen
ESC	Switch to the first screen

Initially, the screen *Light* is displayed (Fig. 3). It shows the status of the equipment (*ON/OFF*).

```
FRONT   YARD:      OFF
BACK   YARD:       OFF
```

Fig. 3. Screen *Light*

The next screen *On/off time* (Fig. 4) shows the switch on and off time in hours and minutes for the 1st unit which can be set using the function buttons.

```
        ON - TIME
HRS:    00    MIN:    00
        OFF - TIME
HRS:    00    MIN:    00
```

Fig. 4. Screen *On/off time*

On the third screen *Days of week* (Fig. 5) the days of the week can be selected on which the 1st unit should operate. The selected days are marked with "+", the remaining days with "-".

```
Mo | Tu | We | Th | Fr
-     -     -     -     -
Sa | Su | Weekd | Wknd
-     -       -       - -
```

Fig. 5. Screen *Days of week*