

Guide for PC Software V3.8

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1 Introduction

Using the software it is possible to create programs and settings on a PC for your device, save them as a project and transfer them to the device via the memory card. As long as the memory card is inserted in the device you can use the switching program on the memory card without having to delete the switching program on the device.

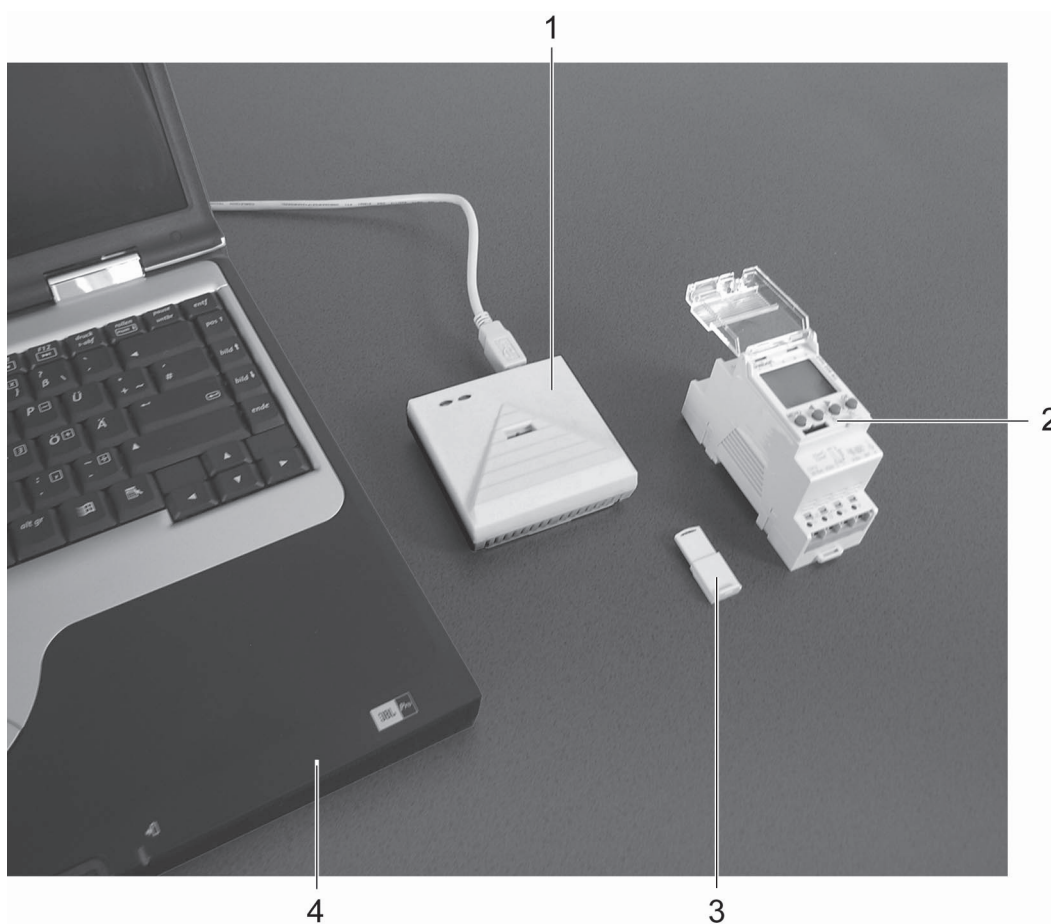




Fig. 1: Structure

1	Programming interface
2	Device
3	Memory card
4	PC

2 Manual Information

The following symbols are used in this help manual:

Symbol	Meaning
	Information, comments and tips
	Important information which must be followed
1)	Indicates that an action includes several steps
●	Indicates that an action includes only one step
→	The result of action

Tab. 1: Symbols in these guidelines

3 Start program

- 1) Install the program by double-click on the file *setup.exe*.

The program opens with

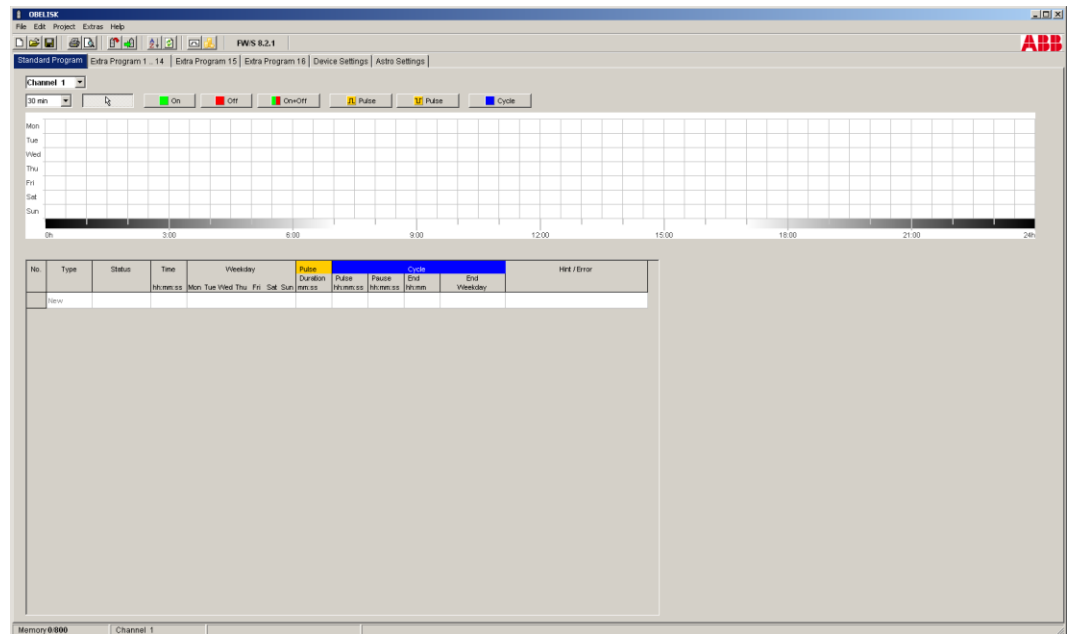


Fig. 2: Example of device selection

→ A project is created for the selected device type.



You can use projects to store programs and device features that can be transferred to the devices using the memory card.

4 User interface

The following menus, buttons and display fields appear after starting the program:

4.1 Menu bar

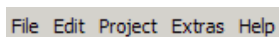













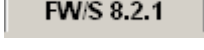
Fig. 3: Menu bar

Menu	Command
File	Open, save or print project; read or program memory card
Edit	Undo action; copy times, insert, delete
Project	Sort or optimise project; set options
Extras	Create language; set language and first day of the week; set public holidays
Help	Help; program information

Tab. 2: Menu bar

The menu commands are explained in chapter 10 "Menu commands".

4.2 Toolbar

Button	Command	Short command
	Create new project	Ctrl + N
	Open project	Ctrl + O
	Save project	Ctrl + S
	Print project	Ctrl + P
	Retrieve print preview	
	Read memory card	
	Program memory card	
	Sort switching program	
	Optimise switching times	
	Simulation	
	Evaluation	
	Create new project (button has the same name as the selected device)	Ctrl + N

Tab. 3: Toolbar with channel selection

4.3 Register

As device features vary according to device group and device type, different lists are displayed, see chapter 11 "Device features".

Register	Function
Standard program	- Weekly program settings
Extra program 1-16	<ul style="list-style-type: none"> - Additional program for defined date ranges (e.g. public holidays) - Extra programs take precedence over the standard program. The lowest numbered extra program has the lowest priority.
Device settings	<ul style="list-style-type: none"> - Settings that can be stored on the memory card and transferred to the device (e. g. time/date format; summer/winter time rule; holidays; options; settings channel)
Astro settings	<ul style="list-style-type: none"> - Astro time settings (offset, sunrise and sunset) for the astro program - Position setting based on city list or coordinates - Setting favourites position

Tab. 4: Register

4.4 Graphical display

It is possible to enter a switching program in the graphical display using the following buttons. Various buttons (e.g. on, pulse) are visible according to the type of device.

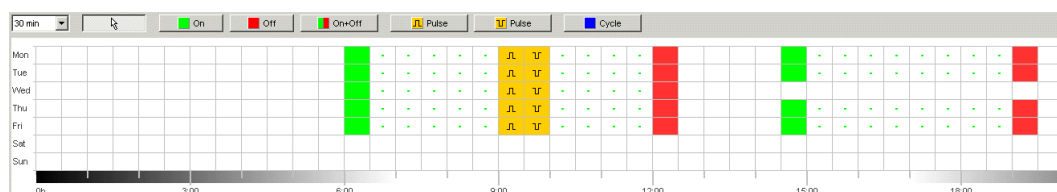


Fig. 4: Example of graphical display of switching times

A description of the buttons for the graphical display can be found in the relevant chapters. Details on how to copy, move or delete buttons can be found in chapter 6.5 "Change switching time."

4.5 Tabular display

The tabular display allows direct input of the switching program in a table:

No.	Type	Status	Time hh:mm:ss	Weekday							Pulse Duration mm:ss	Cycle				Hint / Error
				Mon	Tue	Wed	Thu	Fri	Sat	Sun		Pulse hh:mm:ss	Pause hh:mm:ss	End hh:mm	End Weekday	
1	Switch	On	06:00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
2	Switch	Off	12:00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
3	Switch	On	14:30	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
4	Switch	Off	19:00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
5	Pulse	On	09:00:00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	01:00					
6	Pulse	Off	09:30:00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	00:01					
New																

Fig. 5: Example of tabular display of switching times

4.6 Status bar

The status bar contains the following information:

- Occupied, as well as maximum possible number of, memory locations
- Channel number (if more than one channel is available)
- Operating hours per channel and per week
- Error messages

Memory 0/84	Channel 1	C1 On/Week: 0 h 0 min 0 s
-------------	-----------	---------------------------

Fig. 6: Status bar

5 Program settings

Carry out the following settings prior to programming the switching program if required:

5.1 Set grid

The grid for the graphical presentation can be adjusted via the following selection field:

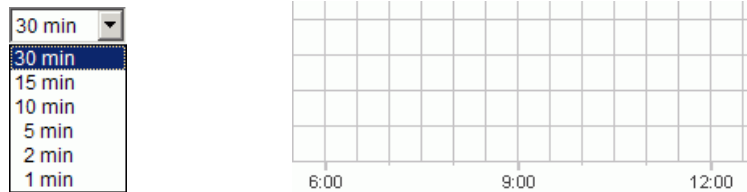


Fig. 7: Grid selection

5.2 Set language

Proceed as follows if you wish to change the set language for the PC software:

- 1) Click on PC software settings under Extras and select the Language tab.
- 2) Select a language and click OK to confirm.

5.3 Change PC software display

The following details are factory-set:

- First day of the week: Monday
- Date format: 31.12.00
- Currency: EUR



All changes made in Extras, PC software settings only effects the appearance of the PC software and are retained after the program has been closed. They are **not** transferred to the memory card or the device.

Only changes made in Device settings will be stored on the device after transfer, see chapter 6.8 "Change device setting".

Proceed as follows if you wish to change the appearance of the PC software:

- 1) Click on PC software settings under Extras and select the Display tab.
- 2) Enter the required changes.
- 3) Confirm the entry by clicking OK.

5.4 Public holidays

- Click on Public holiday in the Extras menu. The window opens

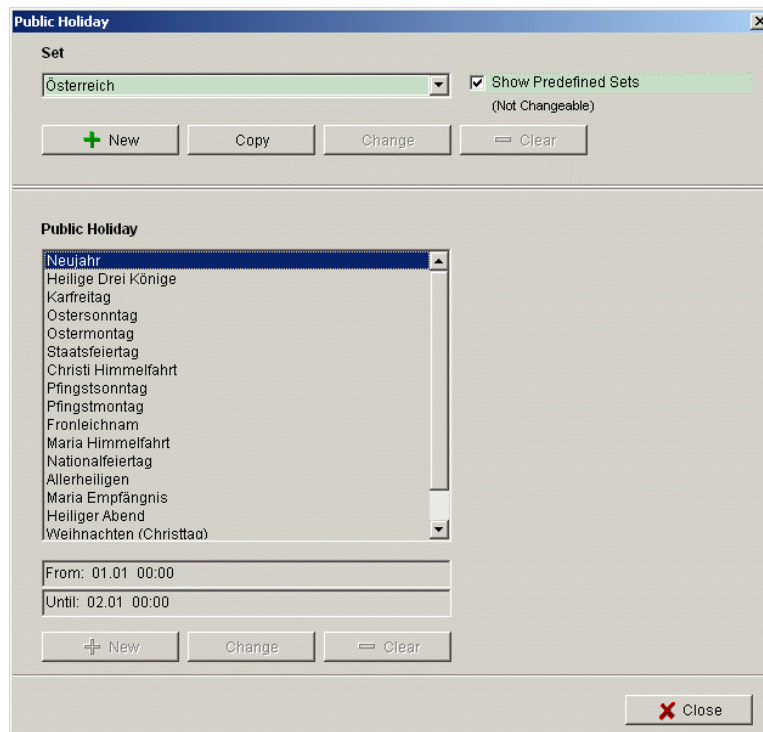


Fig. 8: Select public holidays

You can choose from predefined public holiday settings (green background). These settings cannot be changed.

5.4.1 Create your own settings

You can create your own public holiday settings (white background). If you want to enter new settings:

- 1) Click on New (in Settings window).
- 2) Enter a name for the new settings.

Fig. 9: Create own settings

If you want to copy existing settings:

- 1) Select the required public holiday setting.
- 2) Click on Copy (in Settings window).
- 3) Enter a name for the new settings.

Some public holiday settings can be deleted or renamed.

5.4.2 Edit own settings

You can only edit the settings you have entered.

Fig. 10: Edit own setting

- 1) Click on New (in public holiday window).

The window opens

Add Public Holiday

Name of the public holiday

Type of the public holiday

☒ Fixed Yearly

☐ Relativ To Eastern

☐ Free

☐ Relativ To CNY

☐ Fixed Once

From 01.01 00:00 hh:mm

Until 02.01 00:00 hh:mm

Edit Name

Save Close

Fig.11: Enter name of public holiday

- 2) Enter the name of the public holiday.
- 3) Select the type of public holiday (fixed annual date, relative to Easter, non-fixed date, relative to CNY (Chinese New Year), single fixed date) and the duration of the public holiday.

6 Digital time switch with yearly and astronomical program

Various device features are available according to the type of device used. See chapter 11 "Device features".

6.1 Select channel

- First, select just one channel for devices with several channels.

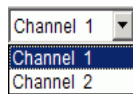


Fig. 12: Channel selection

6.2 Set switching times

Switching times can be programmed graphically or in tabular form. Details on how to change, move or delete switching times can be found in the chapter 6.5 "Change switching time."

6.2.1 Graphical

Graphical programming occurs via the following buttons:


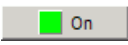
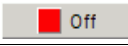
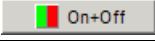
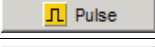
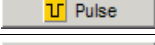
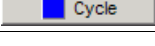
Button	Command
	Cursor to select or move a switching program
	Set on times
	Set off times
	Set on and off times
	Set switch-on pulse
	Set switch-off pulse
	Set cycle

Fig. 13: Buttons for graphical presentation

Example: Shop lighting

To switch shop lighting on during business hours (Monday to Friday 9am – 8pm, Saturday 9am – 6pm) program the PC software as follows:

- 1) Click on the On+Off button.
- 2) Press the left mouse button and drag the cursor from top to bottom in the 9:00 column (when shop opens) (Monday to Saturday). Each line corresponds to a day of the week.
- 3) Release the left mouse key.

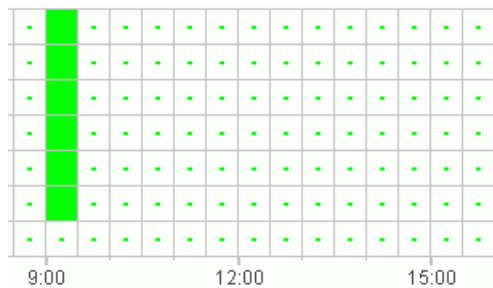


Fig. 14: Switch on shop lighting

- 4) Subsequently press the left mouse button and drag the cursor down the 20:00 column from Monday to Friday.
- 5) Click on the Off button and then click on the 18:00 column of the Saturday line.

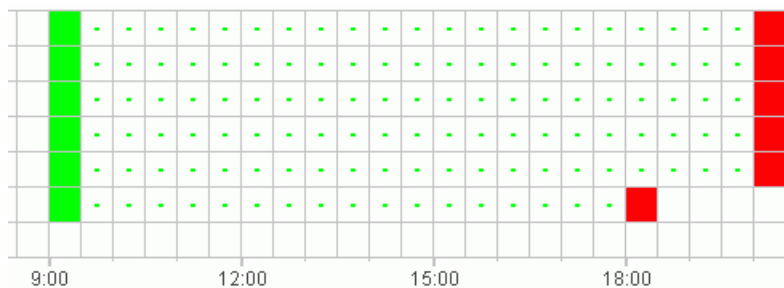


Fig. 15: Switch shop lighting on and off Monday to Saturday



If two switching times are so close together that the symbols overlap (irrespective of the grid setting), the box with the two symbols is black.



Fig. 16: Overlapping switching time symbols

6.2.2 Tabular

The switching times can also be programmed as a table.

Example: Shop lighting

Proceed as follows to program shop lighting Monday to Friday from 8.45am to 8.15pm:

- 1) Click on New in the table.

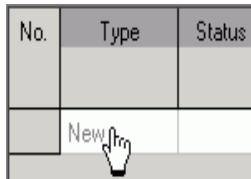


Fig. 17: New switching time

- 2) Select On or Switch.
- 3) Enter a switch-on time.

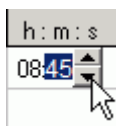


Fig. 18: Select time

- 4) Select the weekdays.



Fig. 19: Check weekdays

- 5) Proceed in exactly the same way for the switch-off time.



Fig. 20: Weekdays for switching on and off

6.3 Pulse programming

Pulses for pause signals, ventilation, etc. can be programmed as a graph or table. The pulse duration can only be entered as a table.

6.3.1 Graphical

Graphical programming occurs via the following buttons:



Fig. 21: Button for "Pulse on"

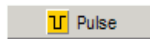


Fig. 22: Button for "Pulse off"

Example: Pause signal

The pulse start time can be set to the second. Proceed as follows to switch on a pause signal at 9am and at 12.15pm Monday to Friday for 5 seconds:

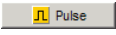
- 1) Set the grid to 15 min.
- 2) Click on the button. .
- 3) Press the left mouse button and drag the cursor from top to bottom in the 9:00 column from Monday to Friday.



Fig. 23: First pulse

- 4) Repeat step 3 in the 12:15 column.

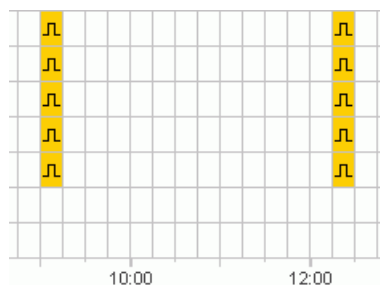


Fig. 24: First and second pulse

- 5) Enter the 5 second pulse duration via the table.

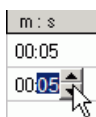


Fig. 25: Set pulse duration

6.3.2 Tabular

Pulse settings can also be programmed in tabular form.

Example: Pause gong

Proceed as follows to program a pause gong Monday to Friday at 12.15pm:

- 1) Click on New in the table.

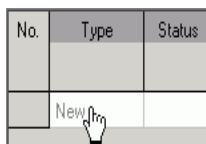


Fig. 26: New pulse time

- 2) Select Pulse.
- 3) Enter the time for the pulse.

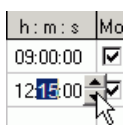


Fig. 27: Enter pulse time

- 4) Select the weekdays.



Fig. 28: Check weekdays

- 5) Enter the pulse duration 5 seconds.

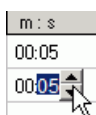


Fig. 29: Set pulse duration

6.4 Cycle programming

Cycle programming is only available for certain types of device: See 11 "Device features" chapter.




The cycle can be programmed graphically or in tabular form. Always enter the cycle pulse and the cycle pause via the table.

6.4.1 Graphical

Use the following button for graphical programming .

Example: Watering a garden

A garden is to be watered for 10 minutes each hour during the day. Proceed as follows to enter this cycle:

- 1) Click on the button. .
- 2) Click on the field for 8am and then on the field for 6pm in the Monday line of the graph.

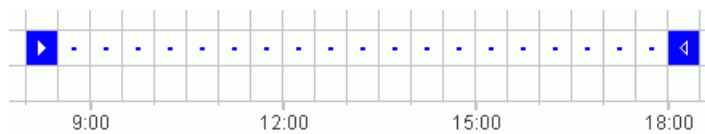


Fig. 30: Graphical display of the cycle

- 3) Enter the cycle pulse (10 min) and the cycle pause (50 min) via the table.

h:m:s	h:m:s	h:m
00:10:00	00:50:00	18:00

Fig. 31: Tabular display of the cycle

- 4) Repeat steps 2 and 3 for other weekdays.

Continuous cycle

- In order to program a continuous cycle, click on the same box twice.



Fig. 32: Continuous cycle

6.4.2 Tabular

A cycle can also be programmed as a table.

Example: Watering a garden

Proceed as follows to water a garden for 10 minutes each hour during the day:

- 1) Click on New in the table.

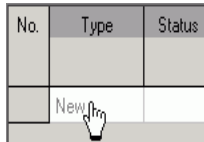


Fig. 33: New cycle

- 2) Select cycle.
- 3) Enter the start time for the cycle.



Fig. 34: Enter the cycle start time

- 4) Select a weekday for the start time.
- 5) Enter the cycle pulse (10 min) and the cycle pause (50 min).

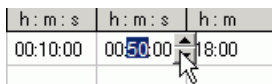


Fig. 35: Tabular display of the cycle

- 6) Repeat steps 1 to 5 for other weekdays.

Continuous cycle

A continuous cycle can be set via the weekday column:

- Click on the column End Weekday and select Continuous.



Fig. 36: Select continuous cycle

6.5 Change switching time

It is possible to copy, move or delete a switching program in the graphical display. Switching times can be deleted or overwritten in the table.

6.5.1 Copy the switching times

Switching times can be copied in the graphical or table display from one channel or project to another channel or project.



A switching time that is unavailable in the new project cannot be copied. This means that if you try to copy a cycle into a project in which cycle programming is not possible, an error message appears. All other switching times are transferred.

Graphical

- 1) Click on the button and  mark the switch blocks.

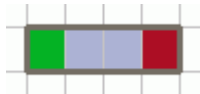


Fig. 37: Selected switch block

- 2) Click on Copy under Edit.
- 3) Select a new channel or a new project.

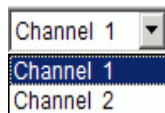


Fig. 38: Select channel



Fig. 39: New project

- 4) Click on Insert under Edit.



A switching time can also be copied by selecting and then moving it with the Ctrl key pressed.

Tabular

- 1) Click on the number of the switching time you wish to copy.



Fig. 40: Switching time number

- 2) Click on Copy under Edit.
- 3) Select a new channel or a new project.

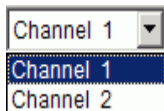


Fig. 41: Select channel



Fig. 42: Create new project

- 4) Click on Insert under Edit.

6.5.2 Move switching times

- 5) Click on the button  and mark the switch block.

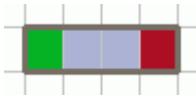


Fig. 43: Selected switching time

- 6) Click on the selected switching program and move it using the mouse.

6.5.3 Delete switching times

- 7) Click on the button  and mark the switch block.

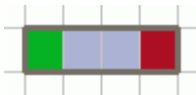



Fig. 44: Selected switching time

- 8) Click on Delete under Edit.

6.6 Sort and optimise project

A switching program can be sorted according to the time, weekday, status or type.

6.6.1 Sort switching times

- 1) Click on the Sort the switching times  button.
→ The Sort dialogue window appears.
- 2) Select the sort criteria (time, weekday, status) and the order (ascending/descending), and click on OK to confirm.

6.6.2 Optimise switching times


The following occurs at all the channels:

- Identical switching programs on different weekdays are compiled
- Double switching programs are deleted
- Switching program is sorted according to the time and weekday

Initial status:

No.	Type	Status	Time	Weekday						
				h : m : s	Mon	Tus	Wed	Thu	Fri	Sat
1	Switch	On	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Switch	Off	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Switch	On	09:00	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Switch	Off	12:00	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Switch	On	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Switch	Off	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Switch	On	08:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Switch	Off	13:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Fig. 45: Project prior to optimisation


- Click on the button Optimise switching times  and confirm the message window with Yes.

No.	Type	Status	Time	Weekday						
				h : m : s	Mon	Tus	Wed	Thu	Fri	Sat
1	Switch	On	08:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Switch	On	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Switch	Off	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Switch	Off	13:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Fig. 46: Project after optimization

6.7 Simulation

All the switching processes can be displayed graphically in the simulation. This shows which switching time caused a change in the switching status.

1. Click the Simulation  button.
The dialogue window appears.

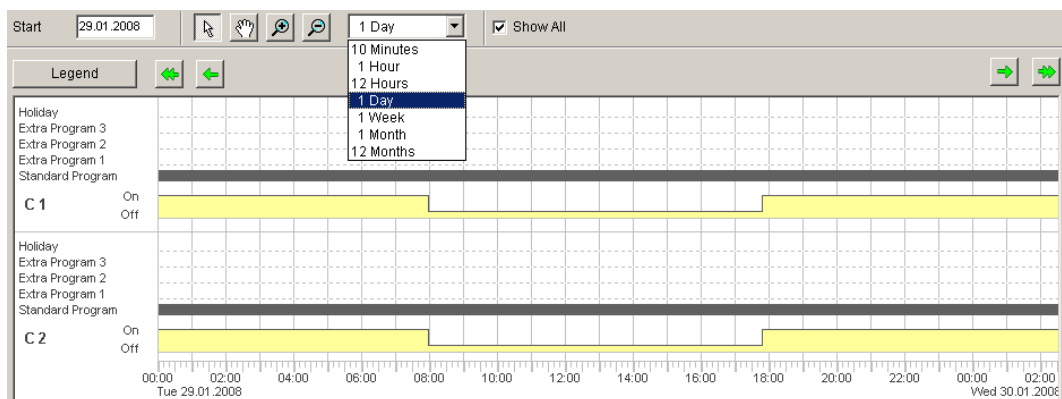



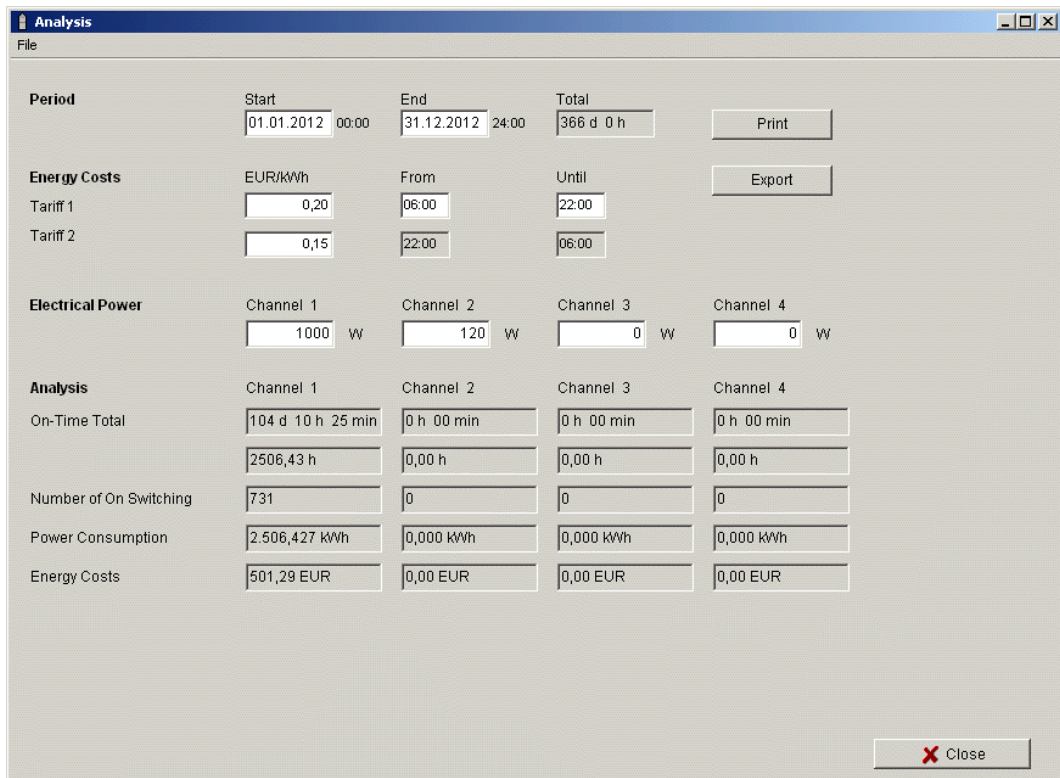
Fig. 47: Simulation display

2. Select both the starting time and the resolution.

6.8 Evaluation

You can calculate the energy costs for a specified time period in the evaluation.

1. Click the Evaluation  button.
The Evaluation dialogue window appears.
2. Select the Chosen timescale: start and end.
3. Enter the kWh price under Energy costs. You can specify a second tariff (e.g. for day and night). Various times can be specified for tariff 1.
4. Enter the output of the Consumer.



Period		Start	End	Total	
		01.01.2012 00:00	31.12.2012 24:00	366 d 0 h	Print

Energy Costs		EUR/kWh	From	Until	
Tariff 1		0,20	06:00	22:00	Export
Tariff 2		0,15	22:00	06:00	

Electrical Power	Channel 1	Channel 2	Channel 3	Channel 4
	1000 W	120 W	0 W	0 W

Analysis	Channel 1	Channel 2	Channel 3	Channel 4
On-Time Total	104 d 10 h 25 min	0 h 00 min	0 h 00 min	0 h 00 min
	2506,43 h	0,00 h	0,00 h	0,00 h
Number of On Switching	731	0	0	0
Power Consumption	2.506,427 kWh	0,000 kWh	0,000 kWh	0,000 kWh
Energy Costs	501,29 EUR	0,00 EUR	0,00 EUR	0,00 EUR

Close

Fig. 48: Evaluation display

You can print the data or export as a CSV file.

6.9 Project options

Project description, customer details, author details etc. can be entered under Project options and in the project file.



Project options are stored exclusively in the project file and **not** transferred to the memory card.

- 1) Click on Options under Project.
- 2) Select a register and enter the titles.
- 3) If you wish to name the channels, enter a new title in the Channel register. This title subsequently appears in the toolbar for the channel selection.

6.10 Change device setting

The possible settings in the Device settings register vary according to the type of device, see chapter 11 "Device features".



The settings in the Device settings register are stored in the project file and transferred to the device via memory card. They do not effect the display in the PC software.

Time/date

The time/date format and the first day of the week can be adapted to individual countries.

The so-called Easter rule is used to calculate religious holidays, by which the date of Easter and all the religious holidays for the year (e.g. Whitsun, Ascension) that are dependent on the Easter date are calculated.

The setting of the Easter festival is made in the Easter rule selection field. There is a choice of the standard rule for the Catholic and Protestant churches as well as the Orthodox rule.

Time/Date	
Time Format	24h
Date Format	31.12.00
First day of the week	Monday
Easter Rule	Standard
Timezone	UTC

Fig. 49: Device settings: time/date

Summer/winter rule

Various options are available for the summer/winter rule:

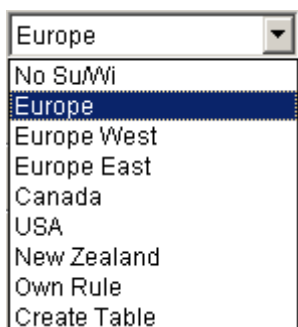


Fig. 50: Device settings: summer/winter rule, selection field

Summer/winter rule	Meaning
Europe, Western Europe, Eastern Europe, Canada, USA, Iran etc.	Country specific rules are preset ex works
Own rule	Time changeovers always fall on the preset day of the week (e.g. fourth Sunday in October).

Tab. 5: Summer/winter rule selection fields

Options

In the selection field Options you can find LCD lighting:

- You can set the LCD lighting on the device. You can choose between: Off after 1 minue or Always on.

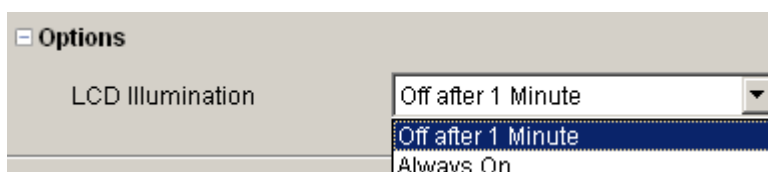


Fig. 51: Device settings: Options

Channel settings

The following selection fields are available in the Settings channel range:

The screenshot shows a software interface titled 'Settings Channel'. It contains three main settings:

- A dropdown menu labeled 'Channel 1'.
- A label 'Channel Function' next to a dropdown menu currently showing 'Switching Program'.
- A label 'Holiday' next to a dropdown menu currently showing 'Not active'.

Fig. 52: Device settings: Settings channel

- Channel Function: This allows you to choose between time switch program or Astro program. Changing the channel function deletes the entered program.
- For Holiday you can choose between:

Holiday	Meaning
Inactive	No holiday program active
Off	Channel always off
On	Channel always on



The settings in the Holidays have priority over all other programs.

- **Overview**: The Overview button allows you to review the entered data.

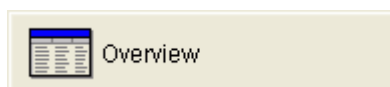


Fig. 53: Channel settings: Overview

6.11 Time switch programs and astro programs

With the time switch (8 channel time switches) you have the option of programming and switching time or Astro programs for each channel.

6.11.1 Time switch programs

The time switch programs allow you to choose between standard and extra programs:

- 1 standard program P0 (weekly program with switching times, pulse and cycle times)
- 16 extra programs consisting of:
 - 14 extra programs P1-P14 (weekly programmes with switching times, pulse and cycle times, with variable date ranges (fixed date range, date depending on Easter etc.), plus
 - extra program P15 (Continuous On) and
 - extra program P16 (Continuous Off) (with adjustable date ranges)

6.11.2 Astro programs

The time switch function can be activated for each channel instead of the Astro function. The Astro programs allow you to select from:

- 1 Astro standard program P0 (weekly program with fixed On/ fixed Off times)
- 16 extra programs consisting of:
 - 14 Astro extra programs P1-P14 (weekly program with Fixed On / Fixed Off times) with variable date ranges (fixed date range, date dependant on Easter etc.), with
 - extra program P15 (Continuous On) and
 - extra program P16 (Continuous Off) (with adjustable date ranges)

6.12 Setting a standard program (for astro program)

The switching times that are repeated on a weekly basis can be set via the Standard program register.

- Select the Standard program register.

If an Astro program is set (in the Settings device/channel function), the following appears

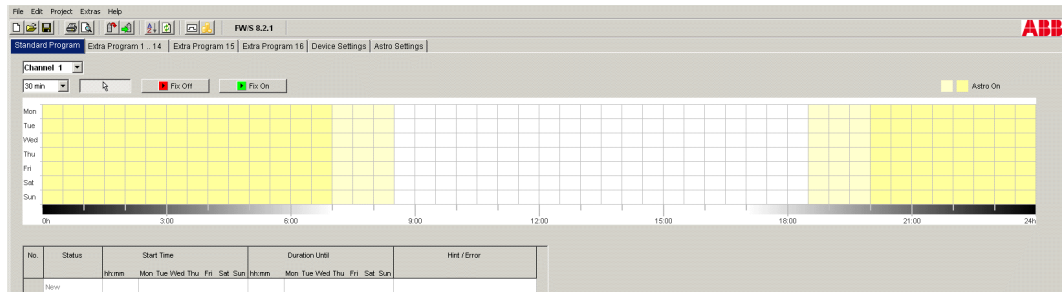


Fig. 54: Standard program: Astro program

6.12.1 Graphical

Graphical programming of switching times is completed via the following buttons:

Button	Command
	Cursor to select or move a switching program
	Set night switch-off
	Set day switch-on

Tab. 7: Buttons for graphical display

Details on how to change, move or delete switching times can be found in the chapter 6.5 "Change switching time".

Example: Street lighting

To switch street lighting off at night (Monday to Friday 00.30 – 4.30 am, Saturday and Sunday 01.30 – 5am) program the PC software as follows:

- 1) Select the Standard program register.
- 2) Click on the Fix Off button.
- 3) With the left mouse key pressed down move from top to bottom in the 00.30 column (street lighting switch-off) and to the right as far as the 04.30 column (end of switch-off).
- 4) Release the left mouse key.

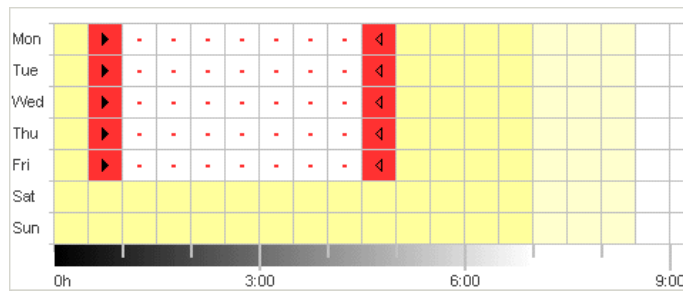


Fig. 55: Street lighting switch-off weekdays

- 5) With the left mouse key pressed down, move to the 01.30 column (street lighting switch-off) from top to bottom (Saturday to Sunday) and to the right as far as the 05.00 column (end of switch-off).
- 6) Release the left mouse key.

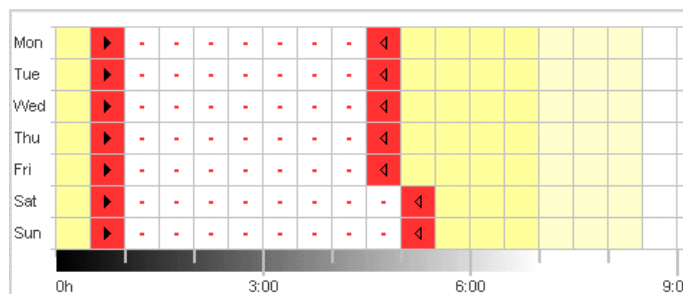


Fig. 56: Street lighting weekend switch-off

6.12.2 Tabular

The switching times can also be set in tabular form.

Example: Street lighting (see chapter 6.12.1 Graphical)

Graphical)

- 1) Select the Standard program register.
- 2) Click on New in the table.

No.	Status
	New

Fig. 57: New switching time

- 3) Select Fix Off.
- 4) Enter the Start time (00.30).

No.	Status	Start Time							Duration Until								
		hh:mm	Mon	Tue	Wed	Thu	Fri	Sat	Sun	hh:mm	Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	Night Off	00:30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	00:01	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	New																

Fig. 58: Standard program start time

- 5) Select the weekdays (Monday to Friday)
- 6) Enter Lasts until (04.30).

No.	Status	Start Time							Duration Until								
		hh:mm	Mon	Tue	Wed	Thu	Fri	Sat	Sun	hh:mm	Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	Night Off	00:30	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	04:30	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	New																

Fig. 59: Night switch-off period

- 7) Repeat steps 1 to 5 for the weekend switching times.

No.	Status	Start Time							Duration Until							Hint / Error		
		hh:mm	Mon	Tue	Wed	Thu	Fri	Sat	Sun	hh:mm	Mon	Tue	Wed	Thu	Fri		Sat	Sun
1	Night Off	00:30	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	04:31	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	Night Off	01:30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	05:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Fig. 60: Monday to Sunday switching-times

6.12.3 Night switch-off and day switch-on

The following example contains a night switch-off and a day switch-on. The remaining time is controlled by a light sensor.

Example: Lighting display windows

On weekdays display window lighting should be switched on from 6.30 to 8 am and from 4 to 6 pm. On weekdays, night switch-off should be from 8 pm to 6.30 am. The lighting should also be switched off at weekends (from Friday 8 pm to Monday 6.30 am). The light function is active for the remaining times, i.e. switching follows independent of the set lux values.

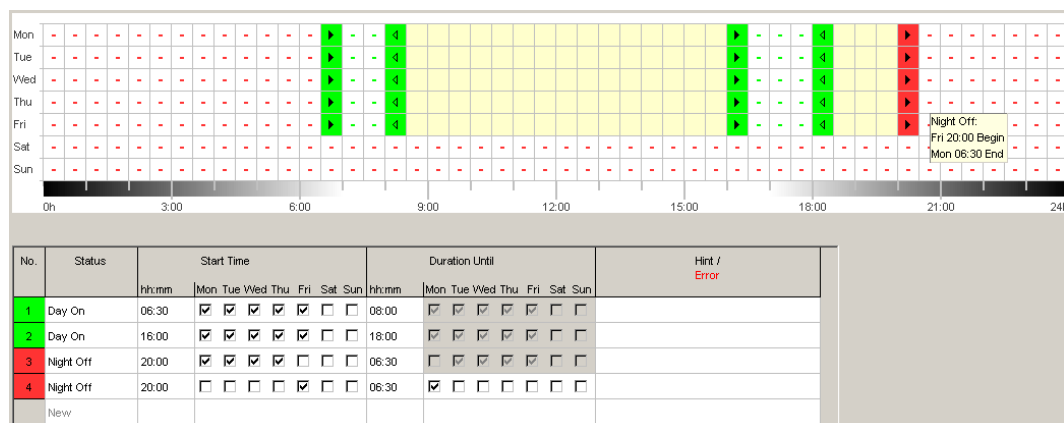


Fig. 61: Switching times in the example of display window lighting



How to change, sort and optimise switching times can be found in chapter 6.5 "Change switching time " and chapter 6.6 "Sort and optimise project".

6.13 Setting a standard program (for time switch program)

The standard program P0 is always active but has the lowest priority and can be overridden by special programs P1-P16.

- Select the Standard Program register.
See chapter 6.2 ff. for programming switching times.

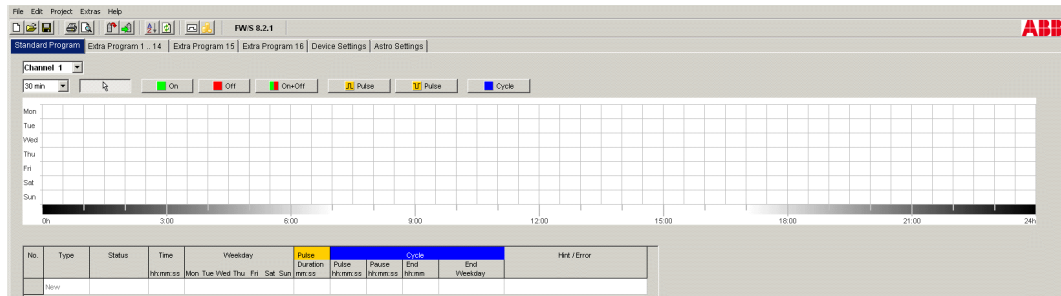


Fig. 62: Standard program: time switch program

6.14 Extra programs

Extra programs 1, 2 and 3 offer programs that differ from the standard program by defining a date range, e.g. for bank holidays, holidays etc.

The extra programs (extra program 1 = astro function, extra program 2 = continuous ON function, extra program 3 = continuous OFF function) have priority over the standard program. The lowest numbered extra program has the lowest priority.

The date range allows you to define the scope of the extra program. It is possible to make entries for a Fixed date, Fixed date each year, the Easter rule or Transfer public holiday settings.

See chapter 5.4 for creating and editing public holiday settings.

The settings for the extra program are entered in tabular form.

6.14.1 Setting the extra program without night switch-off

In the following program, the night switch-off in the standard program is left out. Exterior lighting is therefore exclusively controlled by the light sensor.

Example: External lighting of a church

On the Easter weekend and at Christmas the external lighting is switched on earlier and stays on throughout the night.

- 1) Select the Extra program register.
- 2) Click on the New selection field and select Easter rule.

No.	Type
1	Easter Rule
	New
	Fix Date
	Easter Rule

Fig. 63: Easter rule switching type

- 3) Click on the Easter Sunday selection field selection field and select the start of the first date range (e.g. "3 days before Easter Sunday").

No.	Type	Every Year	Date	Start	Hour hh:mm
1	Easter Rule	<input checked="" type="checkbox"/>	3 day(s) before Easter Sunday		00:00
	New		3 day(s) before Easter Sunday		
			2 day(s) before Easter Sunday		
			1 day(s) before Easter Sunday		
			Easter Sunday		
			1 day(s) after Easter Sunday		
			2 day(s) after Easter Sunday		
			3 day(s) after Easter Sunday		
			4 day(s) after Easter Sunday		

Fig. 64: Start date

- 4) Enter the starting time (Hour).

No.	Type	Every Year	Date	Start	Hour hh:mm
1	Easter Rule	<input checked="" type="checkbox"/>	3 day(s) before Easter Sunday		17:00
	New				

Fig. 65: Start time

- 5) Repeat steps 4 and 5 in the same way for the end of the date range.

No.	Type	Every Year	Date	Start	Hour hh:mm	Date	End	Hour hh:mm	Duration Days Hours
1	Easter Rule	<input checked="" type="checkbox"/>	3 day(s) before Easter Sunday		17:00	1 day(s) after Easter Sunday		20:00	4d 03h
	New								

Fig. 66: First date range (Easter)

- 6) Click on the New selection field and select Fixed date.

No.	Type
1	Easter Rule
	New
	Fix Date
	Easter Rule

Fig. 67: Fixed date switching type

- 7) Fill in the Every year, Start Date/Hour and End Date/Hour columns in the same way.

No.	Type	Every Year	Start		End		Duration Days Hours
			Date	Hour hh:mm	Date	Hour hh:mm	
1	Easter Rule	<input checked="" type="checkbox"/>	3 day(s) before Easter Sunday	17:00	1 day(s) after Easter Sunday	20:00	4d 03h
2	Fix Date	<input checked="" type="checkbox"/>	24.12.	12:00	26.12.	22:00	2d 10h
	New						

Fig. 68: Second date range (Christmas)

6.14.2 Setting the extra program with night switch-off

In the following extra program the night switch-off for the defined period of time begins 2 hours earlier than in the standard program.

Example: Street lighting during a town festival

During a two day town festival the street lighting is not switched off until 3 am and switched on again at 5 am at the earliest depending on the set lux values and the prevailing daylight.

Night Break <input checked="" type="checkbox"/>		Light On <input type="checkbox"/>							
Start Time	03:00 hh:mm	Start Time	--:-- hh:mm						
Duration Until	05:00 hh:mm	Duration Until	hh:mm						
Date Range									
No.	Type	Every Year	Date	Start	Hour hh:mm	Date	End	Hour hh:mm	Duration Days Hours
1	Fix Date	<input type="checkbox"/>	14.09.2007		20:00	16.09.2007		12:00	1d 16h
	New								

Fig. 69: Street lighting during a town festival

6.15 Setting extra programs 1-14

Extra programs 1-14 allows you to choose programs that differ from the standard programming for one or more date ranges, e.g public holidays, holidays etc.

The following applies to the extra programs: The higher the number, the higher the priority. Extra program 16 has the highest, extra program 1 the lowest, priority. An extra program becomes active if at least one date range is set and it is not overridden by another extra program with a higher priority in this time range.

The following calendar-dependent date ranges can be set:

Fixed date (once, example: Start on 02.04. at 4pm, end on 24.04. at 10am)

Fixed date each year (Example: Christmas every year: Start on 24.12. at 6pm, end on 26.04. at 11pm)

Easter rule (Easter-dependent date range: 81 days before and 174 days after Easter, example: Whit Sunday and Whit Monday each year: Start 49 days after Easter at midnight, end 51 days after Easter at midnight)

Specimens (Date series, example: Every 2 weeks from November 2012: Start on Monday 01.11.2012 at midnight, end on Monday 08.11.2012 at midnight, repeat start after 14 days)

Day of the week rule (Example: Every month on the first weekend from Saturday 6am until Sunday 6pm: Start on the first Sunday each month at 6am, duration 36 hours)

Chinese New Year (date range dependent on Chinese New Year: 20 days before and 20 days after Chinese New Year)

Transfer public holiday settings: The public holidays entered in the public holiday setting can be transferred to the date range.

Example of programming standard and extra programs

Switch on street lighting at midday 30 April to midday 1 May

The **standard program** switches on street lighting depending on Astro times. A night-time interruption is programmed from 11pm to 4am.

The **extra program 1** is active in the date range from midday 30 April to midday 1 May. Night-time interruption is not programmed so that the street lighting is not on all night.

- Select the Extra program 1..14 register.

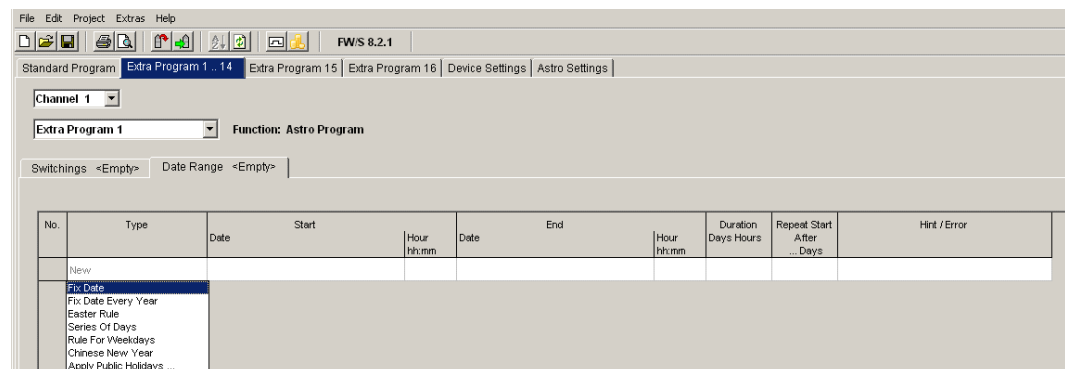


Fig. 70: Extra programs 1 -14: Date ranges

6.16 Set extra program 15 (On)

Extra program 15 (continuous On function) allows you to set a date range where the channel is always switched on.

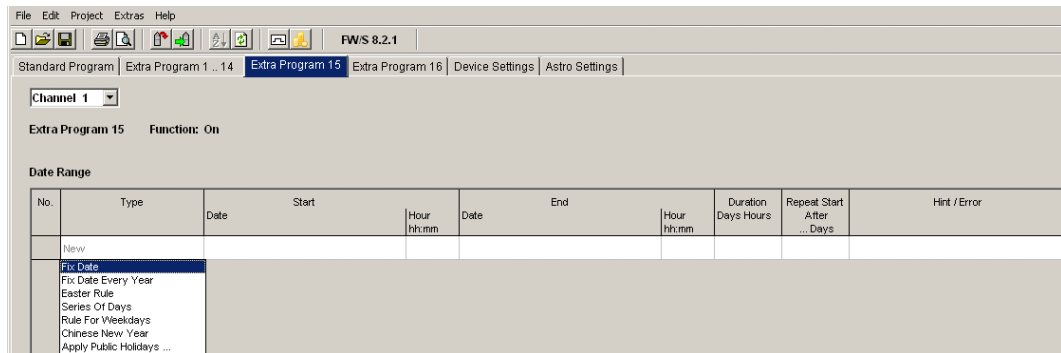


Fig. 71: Extra program 15

6.17 Set extra program 16 (Off)

Extra program 16 (continuous Off function) allows you to set a date range where the channel is always switched off.

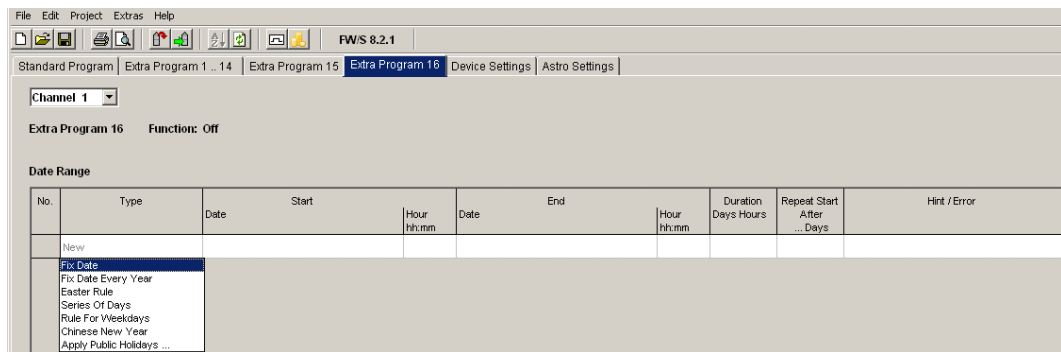


Fig. 72: Extra program 16

Example: Car park lighting

The standard program switches on the car park lighting at set times from Monday to Friday according to Astro times. The extra program ensures that the lighting is not switched on every public holiday.

6.18 Setting the astro function

The relevant data for determining the astro time are set in the Astro register. They are offset, astro mode and the position.

1. Select the Astro register.
2. If required, enter the offset values for sunrise and sunset.

Offset Sunrise		Offset Sunset	
C 1	5 min	C 1	0 min
C 2	0 min	C 2	0 min

Fig. 73: Astro settings: Offset

3. Under astro mode you can choose between ON at sunset + AUS at sunrise, OFF at sunset + ON at sunrise, astro inactive.

Astromode	
C 1	On at sunset + Off at sunrise
C 2	On at sunset + Off at sunrise

Fig. 74: Astro settings: Astro mode

4. Furthermore set your position: either by selecting the country and city or by entering longitude/latitude and time zone.

Location	
Countrylist	
Country	Great Britain
City	London
Coordinates	
Latitude	51 ° North
Longitude	0
Timezone	UTC
Summer/Winter Rule	Europe

Fig. 75: Astro settings: Position: Coordinates

The time zone can be determined using the provided time zone card.

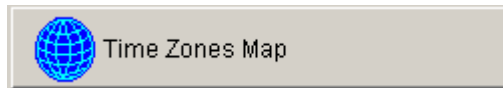


Fig. 76: Time zones display

Entering the position is an absolute requirement for the exact calculation of the astro time.

The Display astro times button allow you to see all the astro times for the selected location. You can print them off or export as a CSV file.

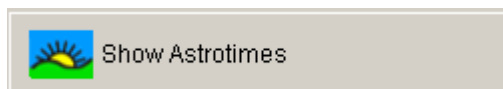


Fig. 77: Astro times display

Edit favourites

One click on this button allows you to set up to ten preferred cities as favourites. You must enter the name of the city, longitude and latitude as well as time zone. These then appear in the city list under favourites.

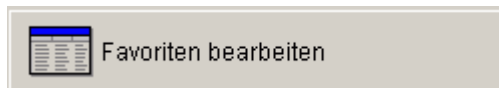


Abb. 78: Einstellungen Astro: Favoriten bearbeiten

You can enter the relevant data for entering the Astro time or create your own Astro table.

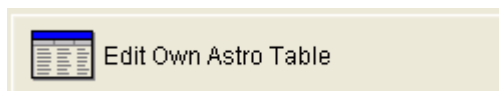


Fig. 79: Astro settings: Edit own Astro table

You can enter your own time for sunrise and sunset for every day of the year. These times must be entered as winter time for the whole year.

If the **Own Astro table** function is selected then the sunrise and sunset times in the table are used.

These times are corrected according to the summer/winter time rule for the switching time of the relay. Functions are available to complete this table automatically.

6.19 KNX settings

With the time switch, the **KNX sub menu appears in the main menu** with the following setting options:

Settings – Read – Send Program– Send All

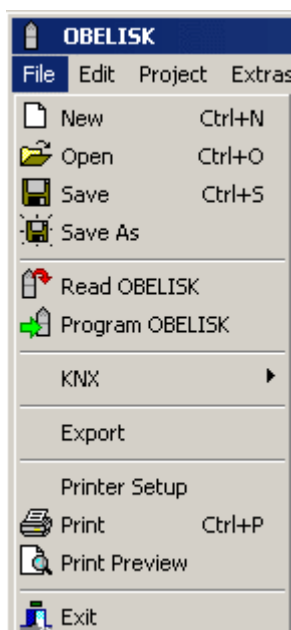


Fig. 80: Main menu

Settings

1. Enter the **Physical address** of the time switch (e.g. evident in the ETS software etc.).

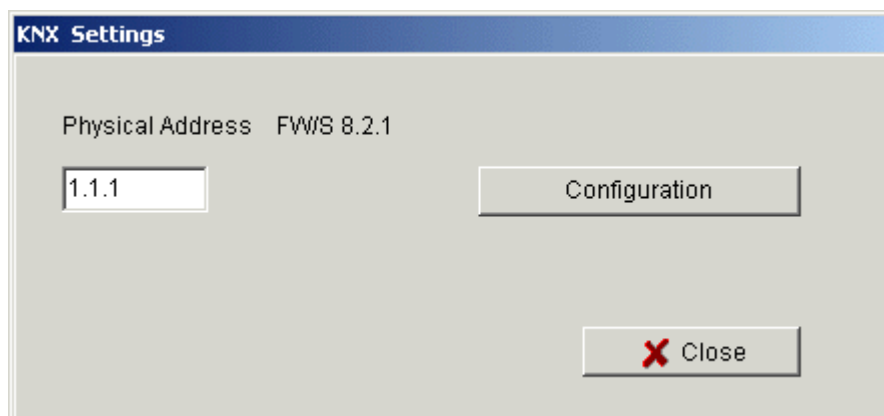


Fig. 81: Enter physical address

2. Then click on Configuration.
3. Select USB in Configured connections. for example .
4. Connect USB interface to computer.
5. Select the USB Type in Features plus the standard connection.
KNX USB interface now appears on connection field (if connected).
6. Confirm your selection and close the window.

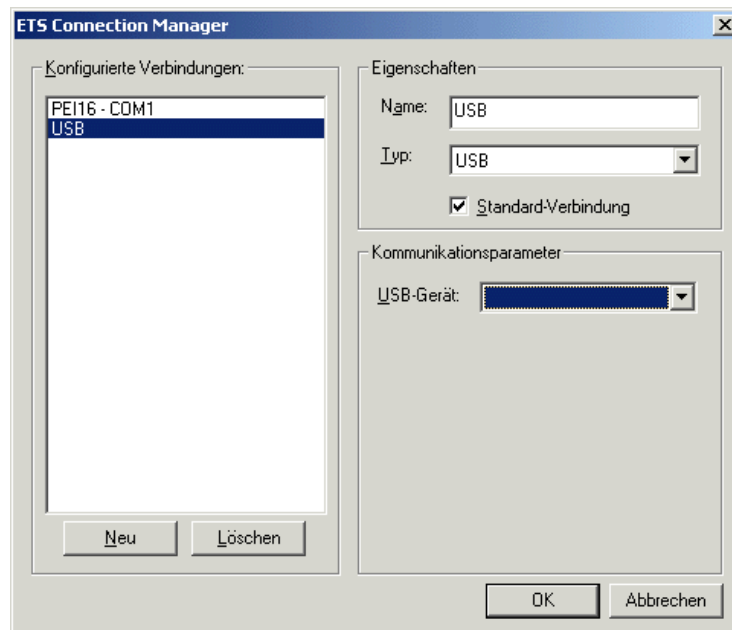


Fig. 82: ETS connection manager

Read

The entered switching times and programs, which are programmed on the time switch, are transferred to the OBELISK computer program. "KNX access" appears on screen.

Send program

The switching times and programs produced with the OBELISK software are sent to the time switch. "KNX access" appears on screen.

Send all

Switching times, programs and settings (Date/time, holidays, summer/winter time etc.) are sent to the time switch.

Requirements for KNX program transmission

For bus communication, the Falcon driver (*FalconRuntime_V20_ObeliskKNX.msi*) must be installed. This program is installed in the "Driver" directory.

➤ Windows 7 and Vista

No further software required.

➤ Windows XP

Absolutely essential to the Falcon driver installation under Windows XP is a **Microsoft .NET Framework 2.0 SP2*** or **.NET Framework 3.5 SP1** (see Settings à System control à Software).

If neither software is available, install Version 3.5 Service Pack 1 (see below).
Version 4 and higher are not suitable.

Download Links

.NET Framework 3.5 Service Pack 1 Download (Internet setup German 2.8 MB):

<http://www.microsoft.com/de-de/download/details.aspx?id=22>

or:

.NET Framework 3.5 Service Pack 1 Download (Internet Setup English 2.8 MB):

<http://www.microsoft.com/en-us/download/details.aspx?id=22>

Please read the **instructions** on the aforementioned websites carefully. The installation file is available as a **complete package** (231 MB) for download.

*.NET Framework 2.0 SP2 is automatically installed with the ETS 4.

7 Program memory card


When programming the memory card, your project (programs and settings) is saved on the memory card. All switching programs are automatically optimized.



The programs and settings for all the channels are saved on the memory card and the existing data on the memory card is deleted.


The entries in the project options are not saved on the memory card.

Proceed as follows when programming the memory card:

- 1) Insert the memory card into the programming interface and then insert the interface into your PC's USB port.
 - 2) Click on the Program OBELISK  button.
 - 3) Confirm the message window with Yes.
- The programs and settings are saved on the memory card and can be subsequently transferred to the device.

8 Read memory card

Programs and settings saved on the memory card are imported to the PC software.

- 1) Insert the memory card into the programming interface and then insert the interface into your PC's USB port.
 - 2) Click on the Read OBELISK  button.
- The programs and settings on the memory card are transferred to the software.

9 Export

Project data, programs and settings can be saved in a CSV file and opened and edited with a spreadsheet or other program (e. g. Editor).

- 1) Click on Export in the File menu.
- The dialogue window Export CSV file appears.
- 2) Select a memory location and enter a file name.
 - 3) Click on Save.

10 Menu commands

This chapter contains short explanations of all the menu commands.

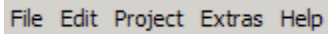


Fig. 83: Menu bar

Menu	Command	Meaning
File	New	Create new project
	Open	Open existing project
	Save	Save project
	Save As	Save project as new name
	Read OBELISK	Transfer programs and settings from the memory card
	Program OBELISK	Save programs and settings to the memory card
	Export	Save programs and settings in a CSV file
	Printer Setup	Change printer settings
	Print	Print project
	Print Preview	Display print preview
	Exit	Exit software
Edit	Undo	Undo the last actions in the current register (max. 10 actions)
	Redo	Redo undone actions
	Cut	Move selected data to the intermediate memory
	Copy	Copy selected data
	Paste	Insert cut/copied data
	Select All	Select all data or date ranges
	Delete	Delete selected data
	Copy program Add program	Copy and add programs or channels
Project	Simulation	Simulate data
	Evaluation	Evaluate data
	Sort	Sort data
	Optimise	Optimise data
	Options	Enter further data for the project (title, customer, creator, etc.)

Menu	Command	Meaning
Extras	PC software settings	Set the language and the first day of the week
	Public holiday	Edit public holiday settings
Help	Help F1	Open the software help
	About...	Open information about the software

Tab. 7: Menu commands

11 Device features

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Channels	8
Memory locations	800
Switching time On/Off	•
Programming astro times	•
Pulse	•
Cycle	•
Extra programs	16
External antenna	•

Tab. 8: Device yearly time switch

12 Imprint

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