





24HR/7 DAY YEARLY
4 CHANNEL
(4 MODULE) 16A
DIGITAL TIMESWITCH
Cat. No TR644S



INSTALLATION & OPERATING
INSTRUCTIONS

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1.0 Description of the Product

- 1 Display DCF 77 reception (**only TR 642S/ TR 644S/ TR 686/ 4 DCF**)
- 2 Display data exchange with Obelisk
- 3 Display hours
- 4 Interface Obelisk
- 5 Cursor for program selection
- 6 Display date day
- 7 Display date month
- 8 Display year
- 9 Random indicator /P 1 .. 9 / Manual ON (H  / Manual OFF (H 
- 10 Display status ON =  OFF = 
- 11 Permanent switching OFF-AUTO-ON
- 12 Buttons 0 – 9 for program entry
- 13 Battery compartment
- 14 Button for entry of date switchings
- 15 Button for entry of priority programs/changes
- 16 Button for cancellation of programs and program steps
- 17 Connection terminal for DCF 77 antenna (**only TR 642S/ TR 644S DCF**)
- 18 Button for entry of input
- 19 RES = Reset / the micro-processor makes a defined new start
- 20 Program selection button for menu selection
- 21 Display for pulse programming
- 22 Cursor for display of days of the week 1 = Monday, 2 = Tuesday..
- 23 Display **1 x** shows single switchings
- 24 Interface for infrared communication
- 25 LED lights up, if polarity has to be changed

2.0 Features

- Yearly Time Switch
- Time switch programming or PC programming using Windows from WIN 95 / WIN 98 / WIN NT with **Obelisk** software
- The time switch can be programmed up to 364 days in advance
- Data transfer and security possible with Obelisk storage card
- Data can be transferred from time switch to time switch, from time switch to PC and vice versa
- The **Obelisk** memory card allows you to prevent operation of the device by unauthorized persons.
- 324 switchings for free block formation of channels and week days
- Permanent switching times by means of EEPROM
- Day/Week/Year program
- Random program
- Pulse program
- Switching times: ON or OFF delay
- 1x-function for all date-related switching times
- 10 priority programs consisting of 10 individual weekly programs per channel
- Time limited permanent switching ON/OFF
- Approx. 1,5 years battery reserve by means of exchangeable environmentally friendly lithium cell
- **Option:** TR 642S / TR 644 S radio controlled
- Up to 10 timers can be connected to the antenna

3.0 Application / Installation

Time switches switch ON, OFF and over connected electrical units, depending on time, on a daily or weekly cycle and related to date.

- ⚠ – The time switch may only be used in dry areas
- Time switches are suitable for use in environmental conditions with normal pollution.
- The time switch (TR 642 S – TR 644 S) is suitable for mounting on the 35 mm top-hat rail (DIN EN 50022)
- TR 686/4 DCF timer is suitable for wall mounting
- Wall mounting with installation kit **907 0 053** (only TR 642S-TR 644S)

3.1 Safety Instruction

- ⚠ **The connection and installation of electrical equipment may be effected only by a qualified electrician. National regulations and any valid safety conditions should be observed. Interference with and changes to the product will result in cancellation of the guarantee.**

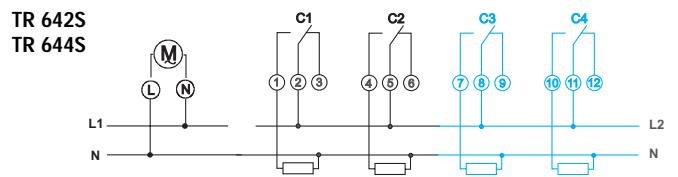
3.2 Installation Instructions

In spite of expensive protection measures, exceptionally strong magnetic fields can lead to the destruction of the micro-processor controlled time switch.

We therefore recommend attention be given to the following points before installation:

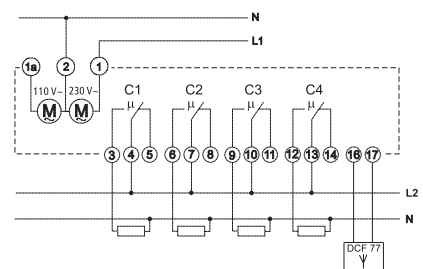
- Use separate lead for the mains voltage supply.
- Suppress inductive loads with suitable RC filters.
- Do not mount product in direct proximity to sources of interference as e. g. transformers, contactors, PCs and TV and communication equipment.
- After suffering interference, we recommend, before re-setting, a RESET with a new initial set up (chapter 5.3).
- Strongly heat-generating products on the right side of the product shorten the life of the battery.

3.3 Electrical Connection TR 642 S / TR 644 S



TR 686/4 DCF

National regulations and any valid safety conditions must be observed.



3.4 Technical Data TR 642 S – TR 644 S/ DCF

Description:	Time-Switch with Year-program
Program Type:	Day/ Week/ Year
Supply Voltage:	230 V~ ± 10 %
Nominal Frequency:	50 – 60 Hz
Power Consumption:	Approx. 3 VA
Switching Capacity TR 642S/ DCF:	2 x 16 (10) A, 250 V~
Switching Capacity TR 644S/ DCF:	4 x 16 (10) A, 250 V~
Contact Material:	AgSnO ₂
Contact Type:	Change-Over
Time Base:	Quartz
Memory Locations:	324
Minimum Switching Time:	1 second/minute
Minimum Pulse:	1 second
Switching Accuracy:	Accurate to the second
Accuracy:	± 1 sec./day at 20° C
Power Reserve TR 642S/ TR 644S:	Lithium Cell 1,5 years at 20° C
Permissible Ambient Temperature:	- 10° C ... + 50° C (-10T50)
Protection Class:	II if installed according to EN 60335
Enclosure Type:	IP 20 in accordance with EN 60529
Type:	1 BSTU in accordance with EN 60730-1, -2, - 7
For timers TR 642S -TR 644S DCF	power supply 907 0 182 is necessary
Time Base:	Radio exact (with power reserve quartz operated)
Max. Distant of the radio antenna:	200 m
Enclosure Type:	IP 54 in accordance with EN 60529
Max. Loading:	10 products.
Note deviating technical data on the rating plate Rights to technical improvements are reserved.	

Technical Data TR 686/ 4 DCF

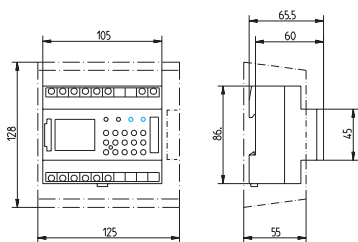
Description:	TR 686/ 4 DCF
Program Type:	Day/ Week/ Year
Supply Voltage:	110/ 230 V~ ± 10 %
Nominal Frequency:	50 – 60 Hz
Power Consumption:	Approx. 8 VA
Switching Capacity:	4 x 8 (2) A, 250 V~
Contact Material:	AgSnO ₂
Contact Type:	Change-Over
Time Base:	Quartz
Memory Locations:	324
Minimum Switching Time:	1 second/minute
Minimum Pulse:	1 second
Switching Accuracy:	Accurate to the second
Accuracy:	± 0,5 sec./day at 20° C
Power Reserve:	Lithium Cell 2,5 years at 20° C
Permissible Ambient Temperature:	- 10° C ... + 50° C (-10T50)
Protection Class:	II if installed according to EN 60335
Enclosure Type:	IP 20 in accordance with EN 60529
Type:	1 BSTU in accordance with EN 60730-1, -2, - 7
TR 686/ 4 DCF	
Time Base:	Radio exact (with power reserve quartz operated)
Max. Distant of the radio antenna:	200 m
Enclosure Type:	IP 54 in accordance with EN 60529
Note deviating technical data on the rating plate Rights to technical improvements are reserved.	

Note

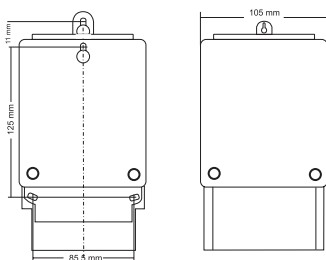
The time switches conform to the European Regulations 73/23/EWG (low voltage rules) and 89/336/EWG (EMV-Regulations).
If the time switches are used with other products in one installation, attention must be given to ensure that the whole installation does not cause radio interference.

3.5 Illustration of Dimensions

TR642S
TR644S
TR642S DCF
TR644S DCF



TR684/ 4 DCF



4.0 Power Reserve

In the event of a power failure, the battery back-up provides for the maintenance of correct time (approx. 1.5 years). Even without power and with a drained battery, the switching times remain permanently stored.

4.1 Battery Loading

1. Note the polarity of the lithium battery.
2. Insert the lithium battery into the holder (see diagram 1).
3. Push the battery holder into the battery compartment
TR 642S / TR 644S see diagram 2 / TR 686/ 4 DCF see diagram 4.
4. Press the battery holder down, until it audibly locates.

dia. 1



4.2 Battery Changing TR 642 S – TR 644 S/ DCF


Important Instructions

Battery changing with mains voltage

All memorised program data is maintained

Battery changing without mains voltage

Note: date and time are lost.

1. Lift the battery draw with a suitable screw driver (see diagram 2).
2. Remove the lithium battery from the holder (see diagram 3).
3. Note the polarity of the new lithium cell.
4. Insert the Lithium battery into the holder (see diagram 1).
5. Push the battery holder into the battery compartment (see diagram 2).
6. Press the battery holder down until it audibly locates.
7. Dispose of lithium battery in an environmentally friendly way. 

TR 642S - TR644S/ DCF

Fig. 2

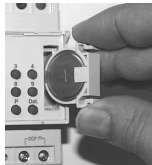


Fig. 1



Fig. 3



Battery changing TR 686/ 4 DCF


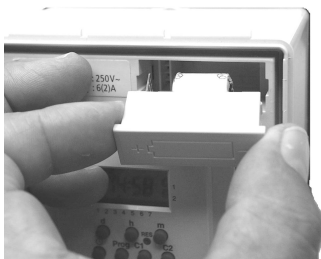
1. Insert new battery holder into battery compartment
2. Press battery holder down until it audibly locates
3. Dispose of lithium battery in an environmentally friendly way 



Fig. 4





5.0 Initial Operation






Ensure that the lithium battery is located (Chapter 4.1)

5.1 Overview of menu selection

Press the  button to move the cursor .
The cursor moves each time a menu item button is pressed.

Cursor below symbol:

Auto	(Automatic Program) – Programmed switching times determine the switching program – Switching override (Manual ON/OFF) – Random ON/OFF
	– Set / change date and time
?	– Interrogate, change, cancel, completely cancel
Prog	– Programming of date, weekly and 1x switching times
	– Programming of date, weekly pulses, 1x pulse, ON and OFF switching delays
P	e.g. public holiday, vacation, or holiday program
/	– Programming and change of Summer/Winter time switching

Ending Programming: use  button, and place cursor  into following position **Auto**  **?** **Prog**  **P**  .
▲

5.2 Entry Adjustment

The time switch contains a prompt facility. Follow the flashing symbols they show the programming sequence.

Entry Adjustment:

What to do when a wrong value has been entered in error?

Cancel the program step again:

- press button **CL** = one step back
- press button **CL** repeatedly = repeated steps back

When wrong value flashes:

- enter correct value with buttons **0 .. 9**

or when programming channels or week-days:

- or in the event of a wrong entry:
- press the same button again

The wrong selected channel would be deactivated.

Note:

Only the last entry will be cancelled

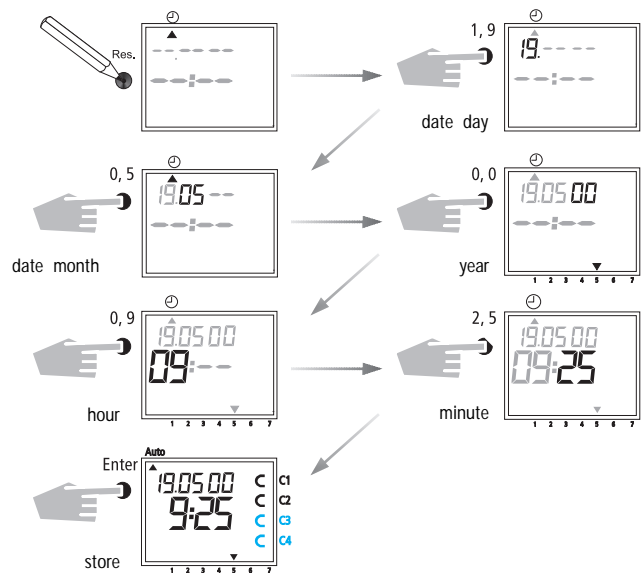
5.3 Setting Date and Time

On initial operation press button **RES** with a pointed object e.g. pencil, and afterwards release it.



Initial operation of the Radio controlled Time switch see chapter 5.9.

Example:

The time switch is to be set up on 19.05.2000 at 9.25



Setting of automatic summer-/ wintertime change over

-  Select the adjustment rule for automatic summer-/ wintertime change over from table 5.4.
-  Activating see chapter 5.4.

5.4 Selection Schedule for Automatic Summer/Winter Time

Setting	Commen- cement	Commen- cement	Area
dat 0	no change	no change	Use for radio controlled version
dat 1	last Sunday in March 2 AM → 3 AM	last Sunday in October 3 AM → 2 AM	EU
dat 2	last Sunday in March 1 AM → 2 AM	4th Sunday in October 2 AM → 1 AM	UK
dat 3	1st Sunday in April 2 AM → 3 AM	last Sunday in October 3 AM → 2 AM	North America
dat 4	individual Summer/Winter time table, programmable only with Obelisk software		

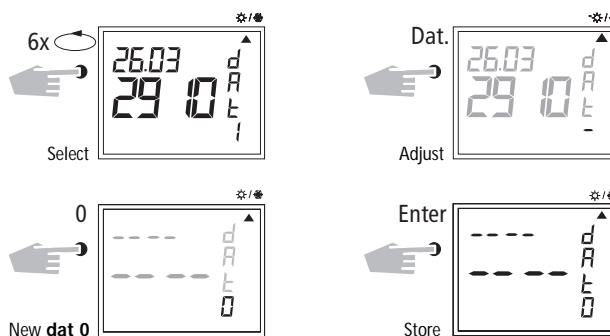
5.5 Changing Automatic Summer/ Winter Time


Default: **TR 642S/ TR 644S/ TR 686/4 DCF: dat 0**

Default: **TR 642S/ TR 644 S: dat 1**

Select the new switching time (Chapter 5.3)

Example: basic setting **dat 1** (radio controlled version)
Change to: Summer-/ Wintertime adjustment for EU **dat 0**



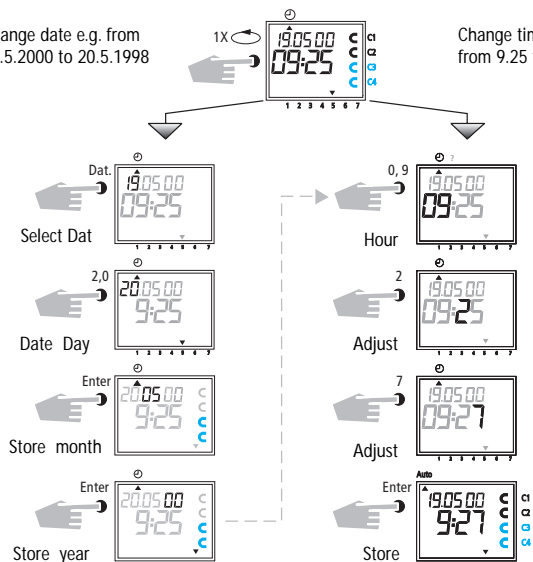
With button  return to the automatic programme.

5.6 Changing Date / Time

With the cursor in Pos. ⌚, any flashing value, the actual time or date, can be changed with the buttons 0 .. 9.

Change date e.g. from 19.5.2000 to 20.5.1998

Change time only e.g. from 9.25 to 9.27



- press **Enter** repeatedly, until the cursor is below Auto
- or follow the line and change the actual time

5.7 Radio Time Switch

The operation of the radio time switch is exactly the same as with the TR 644. The correct time, date and Summer-/Wintertime change-over set themselves automatically with the DCF 77 radio receiver.

Interesting Details:

- Accuracy of the radio receiver +/- 1 sec. in 1,000,000 years
- Transmitter location is Mainflingen near Frankfurt
- Transmitting radius of the transmitter approx. 1000 km
- Synchronisation is effected after initial setting-up and then daily at night.

5.8 Connection and Adjustment of the Radio Antenna

We recommend the following mounting positions:

- outside the control box (at least 4 m away)
- under the roof
- or in a protected position out of doors

Avoid mounting positions near:

- radio transmitting installations
- radiological equipment
- television and personal computers

TR 642S - TR 644S DCF

A. Operation without DCF 77 radio reception

In this case, set the summer-/ winter change to the correct changeover standard, see chapter 5.3/ 5.4

B. Operation with DCF 77 radio reception

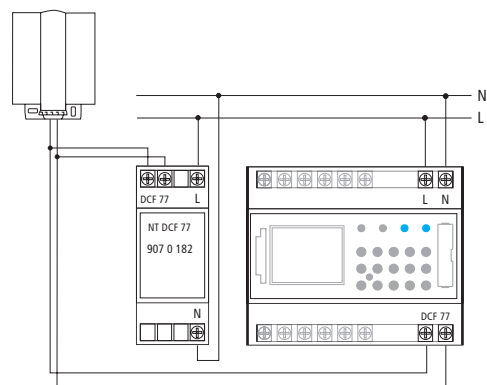
In this case, set the summer-/ winter change to the correct changeover standard, see chapter 5.3/ 5.4

C. Adjustment of one time switch to the radio antenna

1. Use only **theben** antenna No: **907 0 243** to the radio controlled time switch
2. Use a 2 lead cable for connection
3. Attach antenna cable to the terminal, connect power supply **NT DCF 77**.

D. Adjustment of up to 10 time switches to the radio antenna

1. Connect first one time switch to the operating voltage 230 V~.
2. Connect radio antenna to this time switch, polarity does not matter.
3. The connection of the other devices to **theben** DCF antenna **907 0 243** may take the form of star, bus or tree topology.
4. Connect the other time switches to radio antenna.
5. However the LED lights up, polarity of this antenna connection must be changed.
6. Connect the other time switches to the operating voltage 230 V~.



D. Adjustment of the radio antenna

Adjust the radio antenna in the direction of Frankfurt a.M. until the built in LED flashes every second.

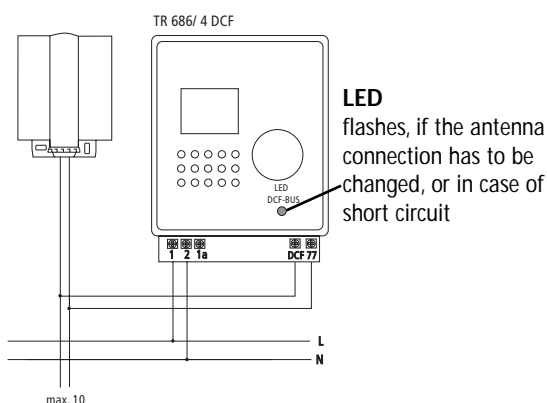
TR 686/ 4 DCF

A. Operation without DCF 77 radio reception

In this case, set the summer-/ winter change to the correct changeover standard, see chapter 5.3/ 5.4

B. Operation with DCF 77 radio reception

In this case, set the summer-/ winter change to the correct changeover standard, see chapter 5.3/ 5.4



C. Adjustment of one time switch to the radio antenna

1. Use only **theben** antenna No: **907 0 243** to the radio controlled time switch
2. In this case the polarity does not matter.
3. The antenna signal is a SELV voltage
4. National regulations and any safety conditions had to be observed
5. Connect the time switch to the operating voltage 230 V~ or 110 V~.

D. Adjustment of up to 10 time switches to the radio antenna

1. Connect first one time switch to the operating voltage 230 V~ or 110 V~.
2. Connect radio antenna to this time switch, polarity does not matter.
3. The connection of the other devices to **theben** DCF antenna **907 0 243** may take the form of star, bus or tree topology.
4. Connect the other time switches to radio antenna.
5. However the LED lights up, polarity of this antenna connection must be changed.
6. Connect the other time switches to the operating voltage 230 V~ or 110 V~.

E. Adjustment of the radio antenna

Adjust the radio antenna in the direction of Frankfurt a.M. until the built in LED flashes every second.

5.9 Initial Operation of the Radio Time Switch

A. Setting-Up Automatically

Note: During synchronisation press **no** buttons!

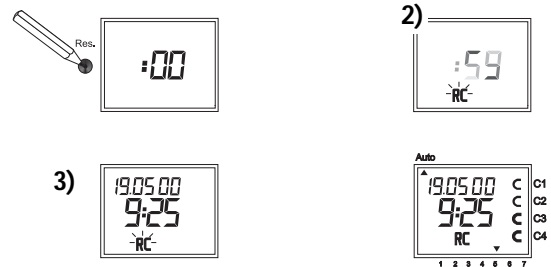
The synchronisation test would be discontinued immediately. To obtain a new start after this, **RES** button must be pressed again.

1. The display counts from **00** to **59** (see illustration 2)
Depending on the reception quality of the DCF 77 signal, this procedure can be repeated several times.
2. If the time switch has received the whole of signal, **RC** goes on flashing.
Only after a further signal is received, does the **RC** symbol stop.
The status of the channels are displayed (see illustration 3).
The clock is now ready.

B. Setting-Up Manually

Tip: If the clock, on the initial set-up, does not synchronise even after several attempts, possibly because of a disturbed reception signal, we recommend setting-up as described in Chapter 5.3. The clock will then try once more to synchronise itself on the signal, during the night.

Example: The time switch has synchronised itself on 19.5.2000 at 9.25.



5.10 Forced Transmitter Call

The synchronisation of the time switch is effected after the initial setting-up, then daily between 1.58 and 3.13.

A radio synchronisation can be called up manually during the day (transmitter call).

Start of the Transmitter Call

1. Press **Dat** Button for approx. 3 secs.
2. then release

The timeswitch synchronises itself on the DCF 77 signal.

In the LCD display can be seen:

The **RC** symbol flashes only during a DCF 77 synchronisation!

If the time switch has synchronised itself, a program review takes place.

The channels take on, afterwards, the specified switching positions, from the individual program.

The **RC** symbol is permanently in the LCD display.

6.0 Manual Intervention in the Program

6.1 Automatic Operation (standard setting)



The channels take in the switching condition provided the stored time program.

6.2 Permanent ON



Each channel can be manually switched in each menu to permanently **ON**. A permanent switching has highest priority. The channel remains in the permanently **ON** switching position until manually cancelled.

The status display in the LCD (**C** / **Ⓢ**) is not adjusted.

6.3 Permanently OFF



Each channel can be manually switched in each menu to permanently **OFF**. A permanent switching has highest priority. The channel remains in the permanently **OFF** switching position until manually cancelled.

The status display in the LCD (**C** / **Ⓢ**) is not adjusted.

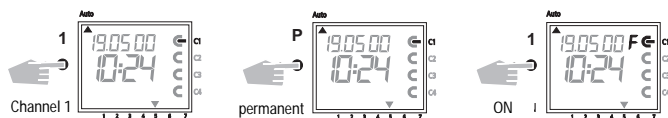
Time limited permanent switchings **ON/OFF** (see Chapter 8.3)

Manual Intervention in the Program TR 686/ 4 DCF

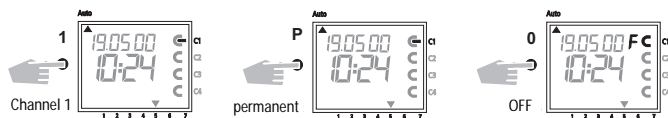
Permanent ON

Each channel can be manually switched in each menu to permanently **ON** or **OFF**. A permanent switching has highest priority. The channel remains in the permanently **ON** or **OFF** switching position until manually cancelled.

Example: Channel 1 permanent ON.



Permanently OFF



Resetting manual programs

Once the setting has been cancelled by pressing button **CL**, the time switch performs a program review, which involves checking the stored program and then setting the correct switching status.

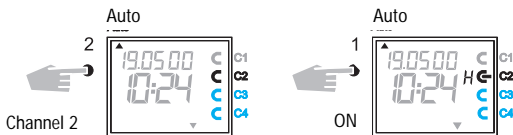
6.4 Manual ON (override switching)

Each channel can be switched **ON** manually in the automatic program. In which case, the symbol **H = hand** appears in the display. An override switching is cancelled again by the next switching command. The **H** display is turned off.

Select Channel: e.g. Button **1** = Channel C1, Button **2** = Channel C2 etc.

Select Status: Button **1** = Switch ON, Button **0** = Switch OFF

Example: Switch ON Channel **C2** manually, press button **2**, once (press 1).



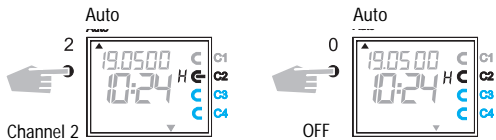
6.5 Manual OFF (override switching)

Each channel can be switched OFF manually in the automatic program. An override switching in the automatic program is corrected again by the next switching command. (The **H** symbol is turned off).

Select Channel: e.g. Button **1** = Channel C1, Button **2** = Channel C2 etc.

Select Status: Button **1** = Switch ON, Button **CL** (reset channel) = Switch OFF

Example: Switch OFF Channel **C2** manually, Button **2**, press.




6.6 Locking/ unlocking the keyboard

Effect:


The **Obelisk** memory card allows you to prevent operation of the device by unauthorized persons.


In this case time switch query and programming are impossible without the **Obelisk** card.

Locking the keyboard:


1. Insert the **Obelisk** memory card into the data interface.
2. Press key **8** for approx. 3 secs until the **Obelisk** icon  is flashing.

Operating the time switch

If after a button is pressed and the Symbol  is blinking, the keyboard is locked.

1. Insert the **Obelisk** memory card into the data interface.
2. You can select the desired program using the  key.
3. Now you can remove the memory card in order to continue programming. When the time switch returns to auto mode, the keyboard is locked.

Canceling the keyboard lock

1. Insert the memory card into the data interface.
2. Press key **8** until the icon  appears.
3. Press key **8** for approx. 3 secs until the icon disappears.
4. Remove the memory card.

Now the time switch can be operated again without obstruction.

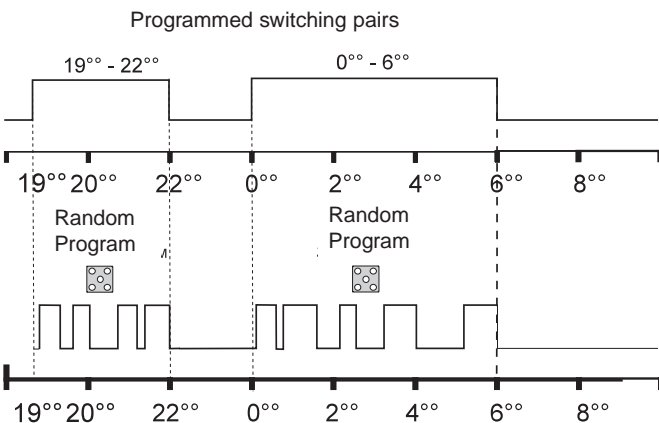
6.7 Random Program

General Comment

A random program causes the time switch to switch ON or OFF at random between one or more pairs of switchings (ON and OFF switching time). Duration of the random ON and OFF switching time approx. **10 – 120 minutes**. The random program can be selected individually for each time channel.

Example:

Between 19.00 and 22.00 random ON (display:r)
Between 0.00 and 06.00 random ON (display:r)

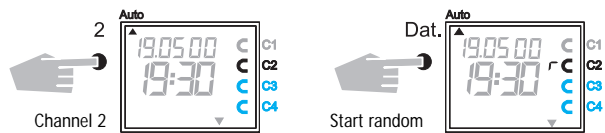


6.8 Random Program Start

A random program can be switched ON manually in the automatic program (Auto) at any time. It remains active until switched OFF (chapter 6.9).

Note: If the random program is active in a channel, the symbol **r** (random) appears beside the channel.

Example: Switch ON random program in Channel C2.



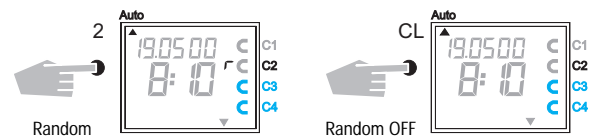
6.9 Stop Random Program / override switching

A random program override switching can be interrupted at any time.

After cancellation of the random program override switching, the time switch carries out a program review. This causes the time switch to inspect the stored program and then take up the correct switching status.

Example: Stop random program Channel C2

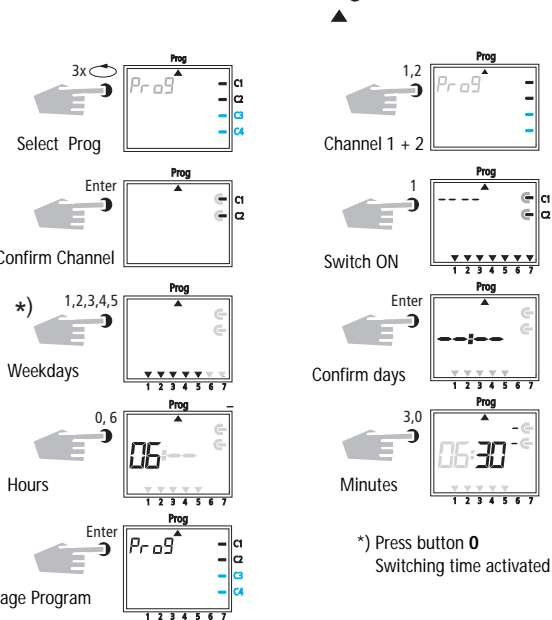
Note: The symbol **r** turns OFF



7.0 Programming

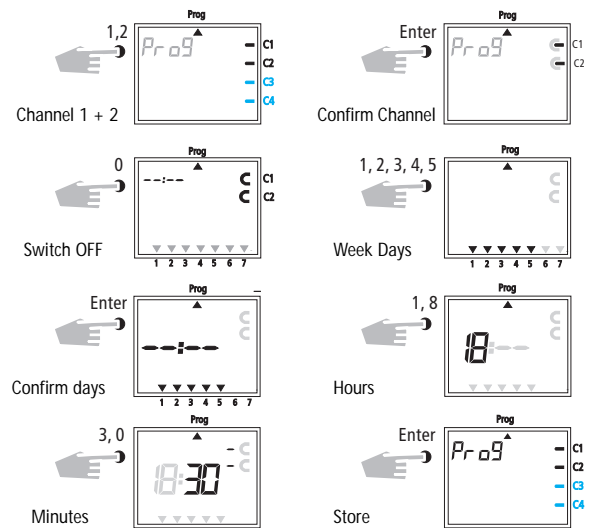
7.1 Weekly program, set switch ON time

e.g.: Channels **C1** and **C2** are to switch on at 6.30 from Mon to Fri



Example 2: Weekly program – set switch OFF time

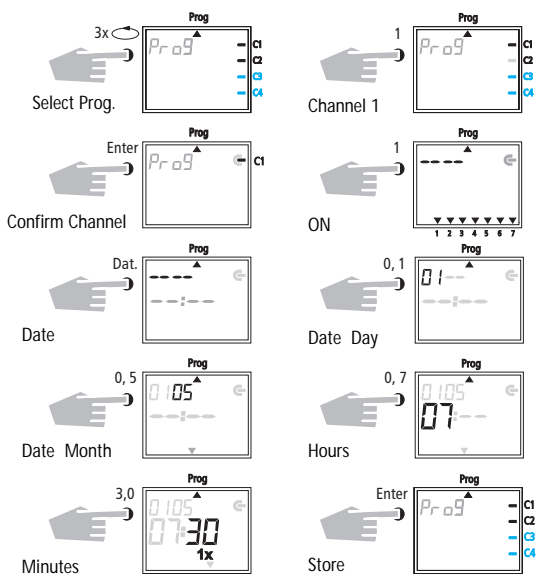
– Channels **C1** and **C2** are to switch OFF at 18.30 from Mon to Fri



Additional programming as described, or back into the automatic program with button

7.2 Programming Date Program

Example.: Channel C1 is to switch ON yearly on the 1.5 at 7.30
Place cursor ▲ in pos. **Auto** ☉ ? **Prog** ⏏ P ✱ / ⚙

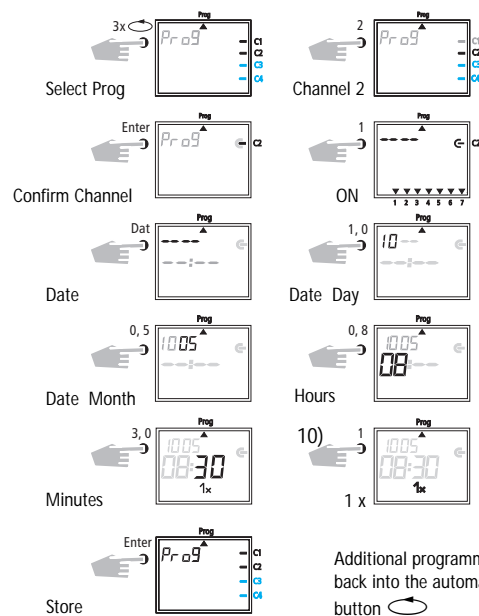


Additional programming as described or back into the automatic program with button ☉.

7.3 Programming Single Switching Time

Example: Channel C2, 1 switch ON on the 10.5 at 8.30

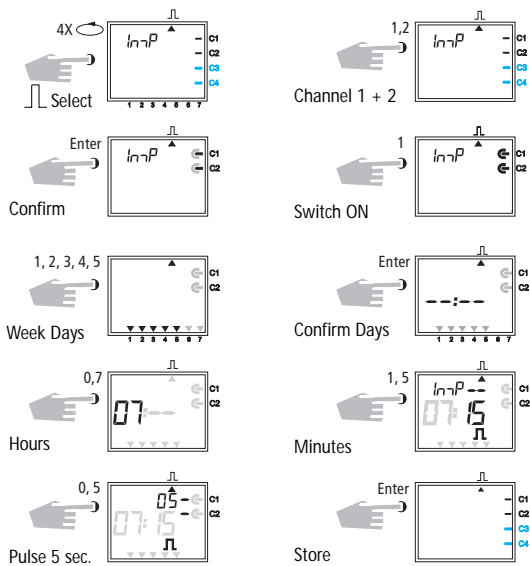
Note: Only date related switching times can be programmed with the function 1x see illustration 10. Once the switching time is effected, it cancels itself automatically at mid-night.



Additional programming as described or back into the automatic program with button ☉.

7.4 Programming Pulse Program

Example: Channels **C1** and **C2** pulse duration: 5 secs from Mon to Fri at 7.15.
Place cursor ▲ in pos. **Auto** ☉ ? **Prog** ⏏ **P** ☀ / ☀



Note After a time adjustment, pulses are only effected, which are programmed at least one minute after the time adjustment.

8.0 Priority Program

With the Time Switch up to 9 different weekly programs can be performed in addition to the normal weekly program. A firm weekly program **P1 ... P9** can be requested at any fixed periods of time.

That is, the programming consists of:

1. Setting the weekly program (see Chapter 8.1)
2. Setting commencement and completion date (see Chapter 8.2)

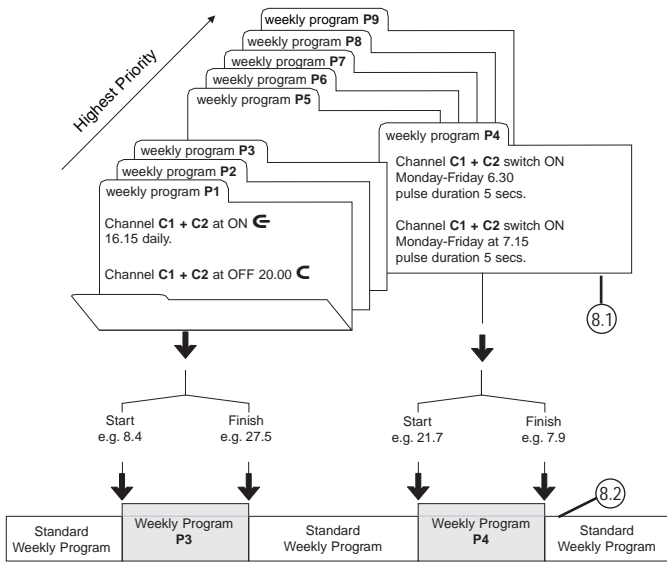
If the time period of several weekly programs cut across one another, the program with the highest index number prevails e.g. weekly program **P9** prevails over weekly program **P3**.

In order to maintain control, we recommend that the various weekly programs are noted in the table at the end of the user instructions.

Switching times are executed in the following order:

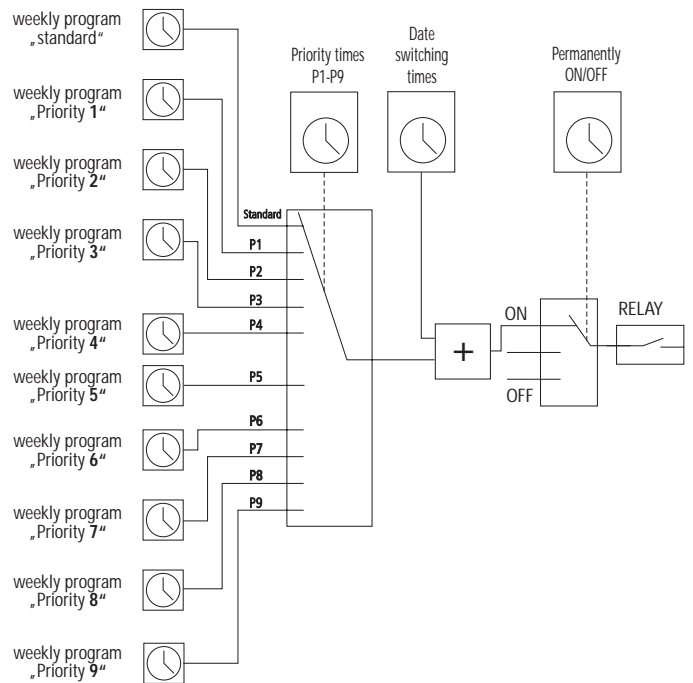
- Permanent switching 6.0
- Time limited permanent switching. Chapter 8.3 (out priority over ON).
- 1x switching times. Chapter 7.3.
- Date switching times. Chapter 7.3 (out priority over ON).
- Weekly program with priority. Chapter 8.2/8.3 (P9 priority over P1).
- Weekly program. Chapter 7.1/7.2.
- etc.

Weekly Program Schedule with Priority



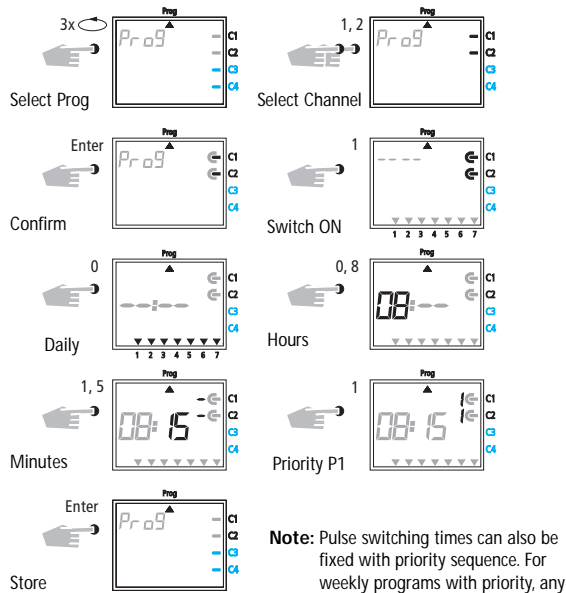
When changing to a **new** weekly program (e.g. on 8.4 at 0.00 hr), all channels in questions are switched as if the new weekly programme makes a review of the program.

Overview TR 642 S – TR 644 S



8.1 Programming Weekly Program with Priority P1 .. P9

Example Channel C1 and C2 switch on daily at 8.15
Weekprogram get priority sequence P1.



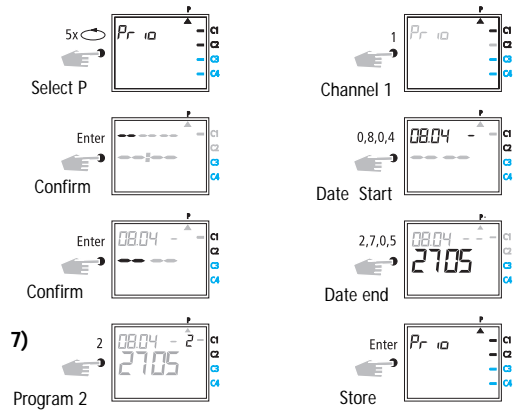
Note: Pulse switching times can also be fixed with priority sequence. For weekly programs with priority, any number of ON/OFF switching commands can be specified.

8.2 Setting Time Period for Weekly Program P1 .. P9

A. Recurring annually

The time period of a weekly program P1 .. P9 is fixed by entering a commencement and finishing date. The weekly program begins at 0.⁰⁰ on the commencement date and ends at 24.⁰⁰ on the finishing date.

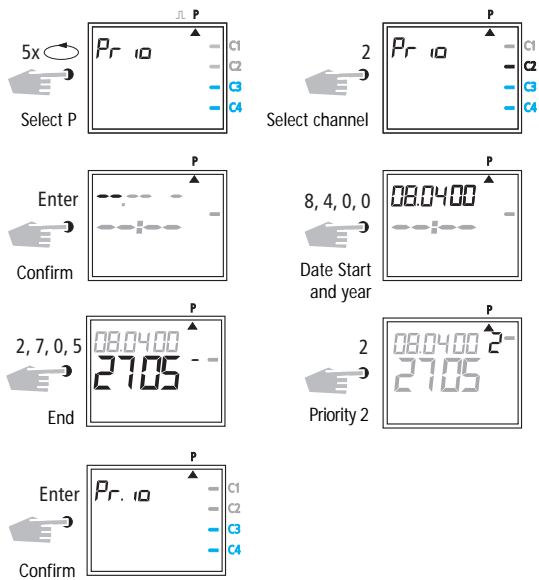
Example: As opposed to the normally active program on Channel C1 from **8 April** until **27 May**, the individual priority program with index **P2** is to become effective. In the fixed time period with priority sequence **P1 .. P9**, the whole standard program (without priority sequence) is suppressed.



Additional programming as described or with button back into the automatic program.

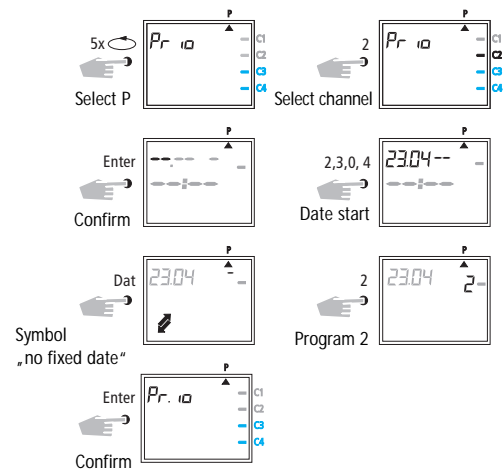
B. Weekly program only in one specified year

Example: Only in year 2000 from 8th April to 27th May, e.g. the weekly program **P2** activated.



C. Stipulating public holidays without a fixed date

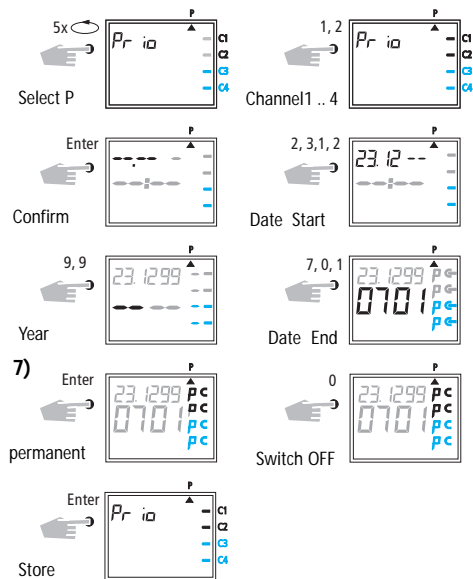
Example: Following this measure, a public holiday such as Easter 2000 (not a fixed date) will be activated automatically and will execute, e.g., program **P2**.



Note: Programming of public holidays without fixed dates only needs to be carried out once, e.g. following initial start-up. This applies to holidays connected with Easter such as Ascension, Whitsun, Corpus Christi, Ash Wednesday, Good Friday etc. Program the date of **all** of these holidays that do not have a fixed date **once** only for the **current** year.

8.3 Time Limited Permanent Switching ON or OFF

E.g.: All connected equipment is to remain switched OFF during the Christmas holidays between **23 December 1999** and the **7 January 2000**.



Additional programming as described or with button back into the automatic program.

9.0 Programe Interrogation

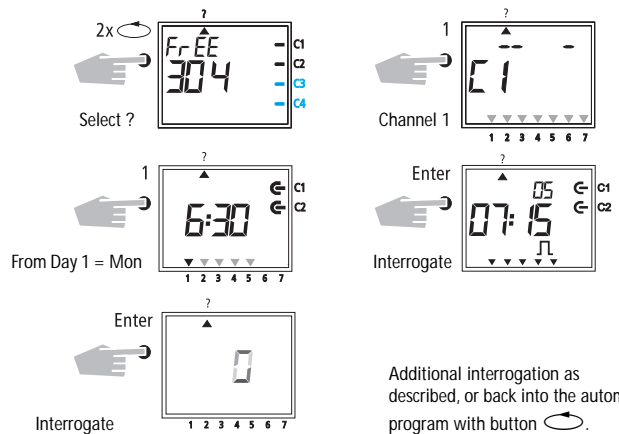
9.1 Whole Program Interrogation

Menu Selection cursor under ?

By pressing **ENTER** button (several times) interrogate whole program.

9.2 Interrogating Only Designated Switching Times

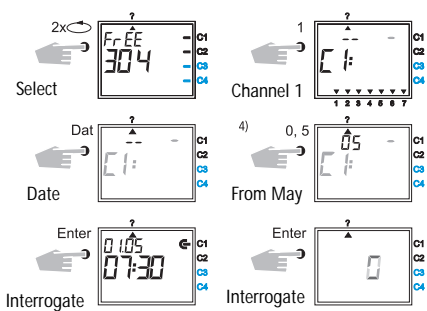
- Illustration:** menu selection and display of the free memory locations e.g. 304
- Illustration:** e.g. select channel 1 (press button 1).
- Illustration:** begin interrogation e.g. from Mondays: button 0, 1 press. (C2 is displayed likewise, as jointly programmed as a block).



Additional interrogation as described, or back into the automatic program with button .

9.3 Interrogation of Channel Related Date Program

- Illustration 1:** Menu selection and display of the free memory locations e.g. 304
Illustration 2: Select Channel e.g. C1, press button 1
Illustration 3: Select date program, press button **Dat**
Illustration 4: Begin interrogation e.g. from May Button **0**, press 5 (interrogation from February Button **0**, press **2** etc.)
Illustration 5: Search for the desired switching time press **Enter** Button e.g. on 1.5 Channel **C1** ist urned on at 7.30
Illustration 6: Example, memory searches for additional switching times



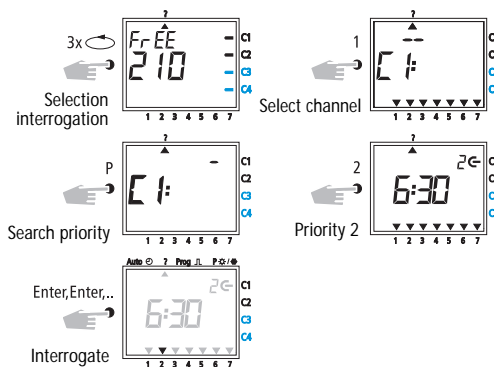
With Button back into the automatic program (Auto)

9.4 Complete Interrogation of Date Program

The complete interrogation of the date program is effected as described in 9.3. The entry step in illustration 4 (button 0,5) must be omitted in this case. All stored date related switching times will be shown one after the other from January (01).

9.5 Interrogating weekly program with priority

- Fig. 1:** Display of available memory space 210
Fig. 2: Select: Channel C1
Fig. 3: Only have priorities displayed
Fig. 4: Priority selection, have everything displayed with priority 2
Fig. 5: Press **Enter** to have further programs with priority 2 displayed



Note: If, while in interrogation mode, a date, the year and the symbol are displayed, then this indicates a public holiday without a fixed date.

To cancel: Press button to return to the automatic program.

9.6 Interrogation of version number / features of measurement impuls

Example:

Interrogation:

Press button **9** for approx. 4 secs., until fig. 2 appears.

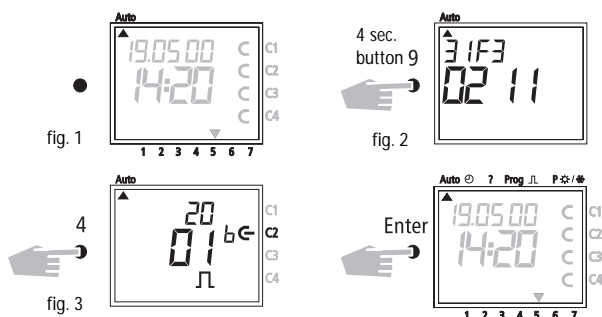
fig. 1: automatic mode

fig. 2: displaying versionnumber of software (e.g. 0211)

fig. 3: 20 sec. duration of impuls measurement

01 min. = measurement every minute

fig. 4: back to automatic mode



10.0 Changing Stored Program

Any program already stored, whether weekly or yearly can be changed depending on individual requirements.

Condition: Cursor must be in the interrogation menu (?).

Example:

Illustration 1: example: free memory locations **304**

Illustration 2: Button **1** of selected Channel **C1**

Illustration 3: By repeatedly pressing the **Enter** Button, call up the switching time to be changed

Illustration 4: Button **P** = adjustment

Illustration 5: e.g. Channels **C2, C4 ON**

– **change channel sequence:** with **Button 1, 2, 3, 4**

– afterwards store with **Enter** Button

– retain channel sequence: progress with **Enter** Button

Illustration 6: Store channel selection

Illustration 7: Switching status e.g. switch **ON**

– **change switching status:** with **Button 0,1**

– **retain switching status:** progress with **Enter** Button

Illustration 8: Programmed weekdays

– switching times are effected on the day, **Mo to Fr (1 – 5)**

– **changing weekdays:** e.g.: **not** Wed, Sat, Sun

press **Button 3, 6, 7**

– **retain weekdays:** progress with **Enter** Button

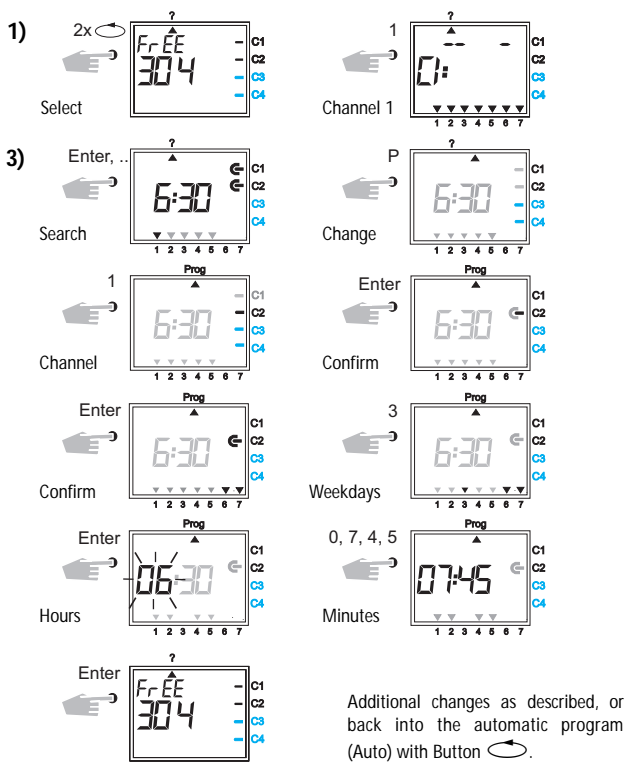
Illustration 9: Store change

Illustration 10: **Change switching time:** e.g. 7.45 press **Button 7, 4, 5**

– afterwards store with **Enter** Button

– **retain switch time:** progress with **Enter** Button

Illustration 11: Search for additional switching times, press **Enter** Button



11.0 Cancellation

11.1 Cancellation of Individual Switching Times

Illustration 1: Menu selection ? and display of free memory locations e.g. 304.

Illustration 2: Select channel, e.g. C1, press Button 1.

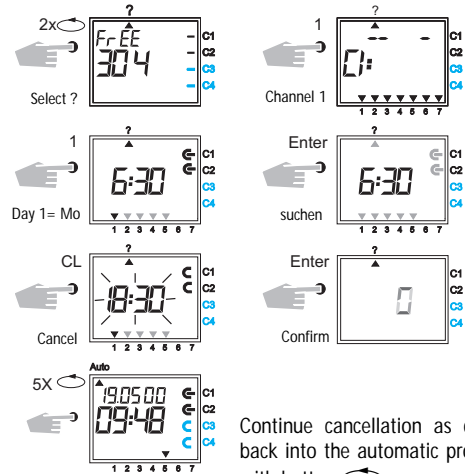
Illustration 3: Commence search from day 1 = Monday, press Button 1.

Illustration 4: Search for switch times: press Enter Button.

Illustration 5: Cancel: press CL Button and then Enter Button.

Discontinue cancel procedure: press CL instead of Enter Button.

Illustration 6: Enter Button: memory searches for additional switching times.



11.2 Cancellation of Dat Program

Illustration 1: Menu selection ? and display of free memory locations e.g. 304

Illustration 2: Select channel e.g. C1, press Button 1

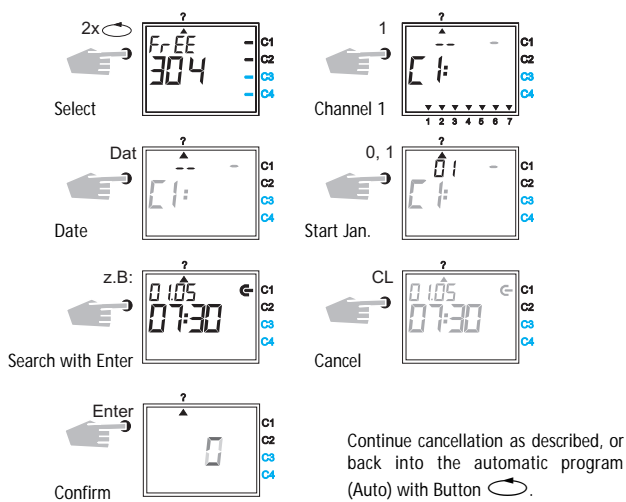
Illustration 3: Select date switching times, press **Dat** Button

Illustration 4: Begin interrogation from January; press Button **0, 1** (February **0, 2** etc.)

Illustration 5: Search for the switching time to be cancelled, press **Enter** Button.

Illustration 6: Cancellation of the switching time: press **CL** Button and afterwards **Enter**.

Illustration 7: **Enter** Button: memory searches for additional switching times.



11.3 Cancellation of the Whole Priority Program

Illustration 1: Menu selection ? and display of free memory locations e.g. 304

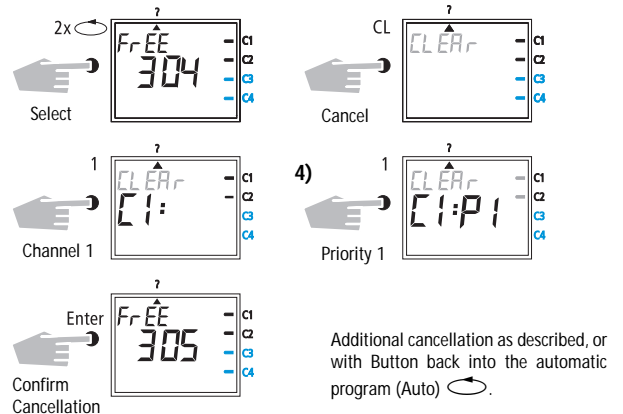
Illustration 2: Initiate the cancellation procedure, press **CL** Button

Illustration 3: Select channel e.g. C1, press Button 1

Illustration 4: Select the priority program for cancellation e.g. P1, press Button 1

Discontinue cancellation procedure, press **CL** Button again

Illustration 5: Confirm cancellation procedure, press **Enter** Button



11.4 Complete Program Cancellation of One Channel

The program of one channel can be cancelled completely.

The cancellation is effected as described in Chapter 11.3. The entry step in Illustration 4 (Button 1) must be omitted in this case.

11.5 Cancel Everything

Illustration 1: Menu selection ? and display of free memory locations e.g. 304

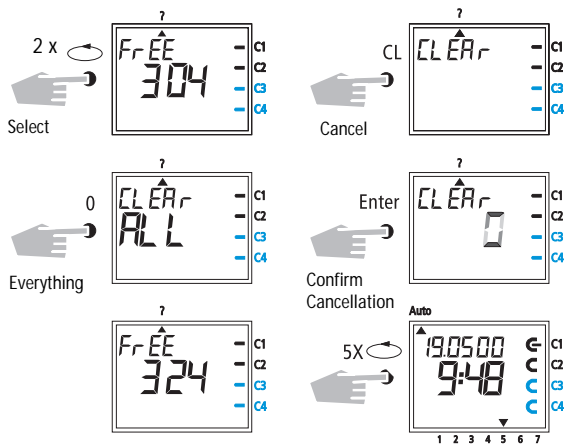
Illustration 2: Cancel program, press Button CL

Illustration 3: Cancel everything, press Button 0

Discontinue cancellation, press CL Button again

Illustration 4: Confirm cancellation, press Enter Button

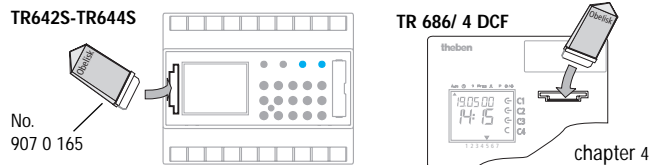
Illustration 5: Display 324 memory locations, all switching times are cancelled



With Button back into the automatic program (Auto)

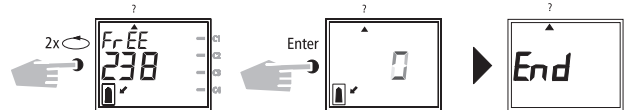
12.0 Data Exchange / Security

Switching times of time switch can be stored externally with the memory card. The data can be filed or transferred from time switch to time switch.



12.1 Entering Data from Timeswitch onto Obelisk Memory Card

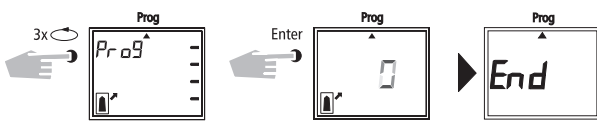
Push the memory card into the data interface (Illus. 4). Select menu ?. Enter data on the memory card: press **Enter** button. The data is transferred when the **End** symbol is displayed in the LCD. Remove memory card. Back into the **Auto** menu with **Enter** button.



Note: If the program card Obelisk is removed too early, all programmed on/off times are erased from the time switch (see table in chapter 16).

12.2 Reading Data from Obelisk Memory Card into Time Switch

Push the memory card into the data interface (illus. 4). Select menu **Prog**. Read data in, press **Enter** button. The data is transferred, when the **End** symbol is displayed in the LCD. Remove memory card. Back into the **Auto** menu with **Enter** button.



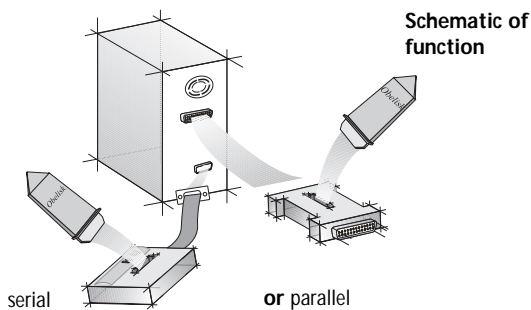
12.3 Preview Programming with Obelisk Software

As an option, the possibility exists for preparing a program on the computer with the software program. The prepared program can be written onto the memory card and also be printed out. The memory card can now be as secure data or for reading into another time switch of the type TR 686/ 4 or TR 641S .. 644S DCF.

Condition:

- PC from 486 free hard disk storage capacity approx. 1 MB
- from WIN 95 / WIN 98 / WIN NT

Order No. 907 0 230 contains:
Obelisk software program + system adapter + Obelisk memory card.



13.0 Tips and Additional Possibilities

1. Priority Program with Random Switching

Possibility for starting a random program automatically during public or annual holiday times.

1. Program weekly program with the desired ON and OFF switching times and priority sequence **P1 .. P9** (Chapter 8.1)
2. Specify the time period for the weekly program (Chapter 8.2).
3. Activate random program once manually (Chapter 6.7).

2. Special Program for holidays

Procedurally during holidays to switch ON and OFF connected units at different times:

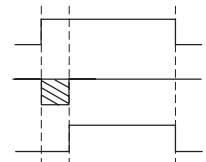
1. Program your desired holiday program. The ON and OFF switching times must occur daily. A priority sequence **P1..P9** must be assigned to the switching times (Chapter 8.1).
2. Specify the time period for the weekly program
e.g. only for the 1st May → begin 01.05 finish 01.05 (Chapter 8.2).

3. Pulse Program for Time delayed Switch-ONS

A switch-ON time e.g. at 7.0 and 10 secs can be achieved by:

1. programming a switch-ON time e.g. 7⁰⁰ ON (☞) (Chapter 7.1)
2. Additional pulse program (Chapter 7.4) with same switch-ON time.

1. Switch-ON time e.g. 7⁰⁰ ☞
2. Additionally at 7⁰⁰ pulse OFF (☐) for the duration of 10 secs
3. Effective at 7⁰⁰ 10 secs switch ON



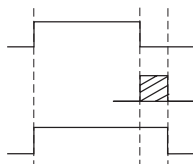
Note: After a time adjustment, only pulses, which are programmed at least 1 minute after the time adjustment, are carried out.

4. Pulse Program for Time Delayed Switch-OFF

A switch-OFF time e.g. at 8.0 and 10 secs. can be achieved by:

1. Programming a switch-OFF time e.g. 8⁰⁰ (Chapter 7.1)
2. Additional programming of a simultaneous pulse switching time of 10 secs. duration.

1. Switch-OFF time e.g. 8⁰⁰ OFF **C**
2. Additional pulse ON (**C**) at 8⁰⁰ for 10 secs duration
3. Effective at 8⁰⁰ 10 secs. switch OFF.



Note: After time adjustment, only pulses, which are programmed at least 1 minute after the time adjustment are carried out.

5. Channel Block Formation

If not all memory locations are to be used, we recommend you dispense with channel block formation when programming switching times. This provides advantages when changing or cancelling individual switching commands.

14.0 Glossary

What does automatic operation (Auto) mean?

The cursor is below **Auto**. Current time is displayed. The switching sequence of the time switch is determined by the stored switching times. (Note: permanent switching has priority see Chapters 6.2 and 6.3).

What is automatic return?

When in the interrogation or programming mode, if no button is used for a long time, the display reverts automatically, after approx. 40 secs. to automatic operation. The product then takes up the switching status specified by the program.

Program recan?

This results in the time switch checking the stored program and implementing the correct switching condition.

What does entry correction mean?

In the event of wrong entry during programming, by pressing the **CL** button, the entry can be cancelled and immediately corrected.

What does weekday block formation mean?

Simultaneous programming at one switching time e.g. 6⁰⁰ ON on several days of the week e.g. Monday, Tuesday and Friday. Only one memory location is used.

What does channel block formation mean?

Simultaneous programmed switching times, which are effective in several channels, take up only **one** memory location.

Advantage: Faster programming of the switching times.

What does memory card mean?

Mobile data carrier can be used for:

- security of the programmed time program
- duplication of the programmed time program
- faster programming of additional time switches with the same program

Option only with software:

- programming on the PC, store on memory card
- read program into time switch(es)
- program print out possible

What does RESET mean?

By pressing the RESET button, a defined new start for the time switch is effected. The current time and date are cancelled. The stored switching times are maintained permanently.

What does EEPROM mean?

An EEPROM is an electronic memory, which can store memorised data even without current (without battery back up) for a period of approx. 40 years.

What is an LCD?

An LCD display is a liquid crystal display, with which current time and stored data (switching times) can be shown.

15.0 Table of errors

In order to increase the reliability of operation, several internal tests are run by the time switch. If any error appears during these tests, the LCD will display the following error numbers.

Error no. 4, 5, 6, 7:

Error in the transmittance of data memorized in the memory card.

1. Transfer program once again onto program card.
2. Repeat transaction.
3. Wrong type of time switch, e.g. memory card Obelisk is programmed for TR 642S, you try to read into a TR 644S.

Error no. 3:

Program card has been withdrawn prior to end of data transfer.

Repeat transaction.

Error no. 1, 2, 8:

Program memory defect.