

User Manual ENGLISH



Sylvia VFD Tube Clock Revision 2

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1. Safety Instructions

Read instructions: All the safety and operating instructions should be read carefully and completely before the clock is operated.

Heed warnings: All warnings on the appliance and in the operating instructions should be adhered to.

Retain Instructions: The safety and operating instructions should be retained for future reference.

- If one of the tubes is broken or damaged, immediately pull the power plug out of the clock and contact the customer support.
- The tubes are made of glass and are consequently very easy to break. Because of their fragility, it is important that you keep the clock in a safe place free from the possibility of being struck inadvertently.
- No part of the clock may be swallowed or inserted into body openings.
- The power supply may not be swallowed or inserted into body openings.
- No part of the clock or the power supply may be used for other purpose other than described in this user manual.
- Water and moisture: The clock should be kept in a dry room free from humidity and dust. The clock should not be used near water – for example, near a bath tub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool, in a sauna, etc. In addition the clock should be kept out of direct sunlight and high temperatures.
- Object and liquid entry: Care should be taken so that the clock does not fall into liquids or have them spilled over the clock.
- Do not use this appliance for anything other than the intended use as described in the manual.
- Immediately pull the power plug out of the clock and contact the customer support if the appliance does not appear to operate normally or exhibits a marked change in performance. In this case do not run the clock again!
- This clock is not a toy! Keep this clock out of the reach of children.
- Pay attention that this clock shall only be touched by people who have completely read and understood the user manual.

2. Unpacking the Clock

Carefully take the clock out of its packing. Check the clock and in particular the tubes for damage incurred during transport.

Check also, if all 6 VFD tubes sit tight in their sockets. Press the tubes down carefully make sure that the tubes are correctly mounted in the sockets.

Take the power supply out of its packing and check for any apparent physical damage. If you recognize any damage do not power the clock and contact the customer support.

3. Positioning the Clock

The clock should be kept in a dry room free from humidity and dust. The clock should not be used near

water or humidity – for example, near a bath tub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool, in a sauna, etc. In addition the clock should be kept out of direct sunlight and high temperatures.

Keep the unit's operation area well ventilated. The unit should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances that produce heat.

Case and tubes shall become slightly warm while operation; this is not a malfunction.

Never cover the clock with any kind of hoods, foils, boxes, paper, clothes or other items.

4. Connecting the Clock

The line voltage and the line frequency in your country must fit to the power supply of the clock.

Check if the specifications printed on the power supply fit to the line power in your country. The power outlet must be grounded.

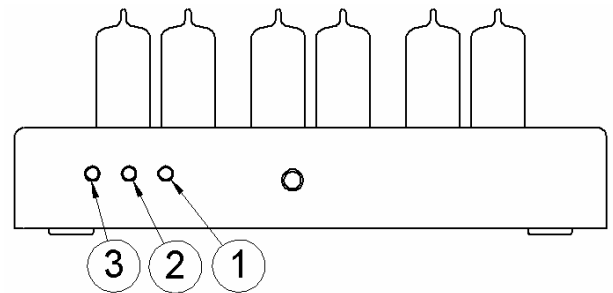
If you have other line power data as specified, please contact the customer support.

Put the power plug of the power supply into the connector at the back of the clock.

Connect the power supply to the power outlet.

5. Operating Functions

After powering the clock, the software gets time, date and all stored settings out of the memory cache. The internal power supply is automatically switched on. Clock switches to display mode. On the back of the clock you shall find 3 button switches. The left one (seen from front) is button 1, the one in the middle is button 2 and the right one is button 3.



6. Display Mode

In display mode tubes show the time. Also, you can set the clock to alternate between time and date. These settings will be explained in chapter 9.

If button 3 is pressed, date is displayed compulsorily for 3 seconds no matter which settings were made before.

If button 2 is pressed time is displayed compulsorily for 3 seconds.

7. Button Beep

If a button is pressed you shall hear a short beep.

8. Menu Navigation

There are 2 main menus.

- Main menu 1: Setting time and date
- Main menu 2: Setting operating functions

If in display mode, **button 1 is pressed long time (1 second)**, **main menu 1** shall be entered.

If in display mode, **button 1 is pressed shortly main menu 2** shall be entered

9. Enter and Navigate Submenus

Main menus can be entered as described above. Once a main menu has been entered, submenus can be switched through **upward by pressing button 2** and **downward by pressing button 3**. At the end of a menu line it switches to the first entry.

This is the menu tree:

- Main menu 1
 - 1.1 Setting time
 - 1.2 Setting date
- Main menu 2
 - 2.1 Setting alarm time
 - 2.2 Setting duration time is displayed
 - 2.3 Setting duration date is displayed
 - 2.4 Setting cross fade
 - 2.5 Setting different display variants (time 12/24h and date DD.MM.YY / MM.DD.YY)
 - 2.6 Setting switch off time for night power-down mode
 - 2.7 Setting switch on time for night power-down mode
 - 2.8 Setting the drift compensation
 - 2.9 Blanking of the leading zero

Going through the submenu by pressing button 2 or 3 you can reach the value you want to alter. To **enter and edit a submenu** button 1 must be pressed shortly. The chosen value can now be stepped up by pressing button 2 and down by pressing button 3. The value will be set by leaving the submenu.

To leave a submenu, button 1 must be pressed long time (1 second) and you will return to the main menu.

To then leave a main menu, button 1 must be pressed long time (1 second) and the clock shall switch back to display mode.

10. Editing the Parameters

Submenu 1.1: Setting Time

If this menu is entered, the display shows the preset time.

If the clock is set up to AM/PM mode, nevertheless the display shall show the time in 24-h mode.

Using button 2 and 3 the chosen digit can be set. To switch to the next position, button 1 must be pressed.

To confirm this step shifting from digit to digit, the following digit flashes. After the last digit, the first digit shall be enabled again.

The time of the day shall exactly be written into the memory, when the submenu 1.1 is left. Therefore the clock can be set exactly on the dot.

Setup Example:

- The time shall be set to 05:25:30 PM = 17:25:30 o'clock.
- Clock is in display mode.
- Press button 1 long time (1 second) to enter the main menu 1.
- Clock stops and displays the current set time.
- Press button 1 (short) to enter the submenu 1.1.
- Press button 2 (to count up) and button 3 (to count down) to set the first digit (to '1')
- Press button 1 (short) to jump to the second digit
- Press button 2 and button 3 to set the second digit (to '7')
- Press button 1 (short) to jump to the third digit
- Press button 2 and button 3 to set the third digit (to '2')
- Press button 1 (short) to jump to the fourth digit
- Press button 2 and button 3 to set the fourth digit (to '5')
- Press button 1 (short) to jump to the fifth digit
- Press button 2 and button 3 to set the fifth digit (to '3')
- Press button 1 (short) to jump to the sixth digit
- Press button 2 and button 3 to set the sixth digit (to '0')
- Press button 1 long time (1 second) to leave the submenu 1.1.
- Press button 1 long time (1 second) to leave the main menu 1.
- Clock starts running in display mode with the set time.

Submenu 1.2: Setting Date

This submenu is similar to submenu 1.1 except that current date shall be displayed and edited.

During setting date in this menu the clock shall always display date in the arrangement DD.MM.YY.

If a corrupt date is set (e.g. 31.02.2008) the clock would accept that date. But at the next change of a day, the date shall be corrected to any correct one (e.g. 01.03.2008).

Setup Example:

- Date shall be set to December, 24th 2008.
- Clock is in display mode.
- Press button 1 long time (1 second) to enter the main menu 1.
- Clock stops and displays the current set time.
- Press button 2 once to reach submenu 1.2
- Press button 1 (short) to enter the submenu 1.2.
- Press button 2 (to count up) and button 3 (to count down) to set the first digit (to '2')
- Press button 1 (short) to jump to the second digit
- Press button 2 and button 3 to set the second digit (to '4')
- Press button 1 (short) to jump to the third digit

- Press button 2 and button 3 to set the third digit (to '1')
- Press button 1 (short) to jump to the fourth digit
- Press button 2 and button 3 to set the fourth digit (to '2')
- Press button 1 (short) to jump to the fifth digit
- Press button 2 and button 3 to set the fifth digit (to '0')
- Press button 1 (short) to jump to the sixth digit
- Press button 2 and button 3 to set the sixth digit (to '8')
- Press button 1 long time (1 second) to leave the submenu 1.2.
- Press button 1 long time (1 second) to leave the main menu 1.
- Clock starts running in display mode.

Submenu 2.1: Setting Alarm Time

In this submenu alarm time can be set.

Display shows current alarm time at which alarm shall ring.

If clock is set to AM/PM mode, nevertheless display shows time in 24h mode.

Using button 2 and 3 the chosen digit can be set. To switch to the next position, button 1 must be pressed.

To confirm this step shifting from digit to digit, the following digit flashes. After the last digit, the first digit shall be enabled again.

Setup Example:

- Alarm time shall be set to 07:30:00 o'clock.
- Clock is in display mode.
- Press button 1 (short) to enter the main menu 2.
- Clock stops and displays the current set alarm time.
- Press button 1 (short) to enter the submenu 2.1.
- Press button 2 (to count up) and button 3 (to count down) to set the first digit (to '0')
- Press button 1 (short) to jump to the second digit
- Press button 2 and button 3 to set the second digit (to '7')
- Press button 1 (short) to jump to the third digit
- Press button 2 and button 3 to set the third digit (to '3')
- Press button 1 (short) to jump to the fourth digit
- Press button 2 and button 3 to set the fourth digit (to '0')
- Press button 1 (short) to jump to the fifth digit
- Press button 2 and button 3 to set the fifth digit (to '0')
- Press button 1 (short) to jump to the sixth digit
- Press button 2 and button 3 to set the sixth digit (to '0')
- Press button 1 long time (1 second) to leave the submenu 2.1.
- Press button 1 long time (1 second) to leave the main menu 2.
- Clock starts running in display mode.

Submenu 2.2: Setting Duration Time is Displayed

If this submenu is entered, the display shows 02:00:xx whereas 'xx' indicates the duration the time is displayed. This value can be set from 00 to 59 seconds.

The value 00 means: Time shall not be displayed. Accordingly, only date would appear in display mode.

Using button 2 and 3 the chosen digit can be set. To switch to the next position, button 1 must be pressed.

To confirm this step shifting from digit to digit, the following digit flashes. After the last digit, the first digit shall be enabled again.

Setup Example:

- Value in this menu shall be set to 10 seconds.
- Clock is in display mode.
- Press button 1 (short) to enter the main menu 2.
- Clock stops and displays current set alarm time.
- Press button 2 once to reach submenu 2.2
- Press button 1 (short) to enter the submenu 2.2.
- Press button 2 (to count up) and button 3 (to count down) to set the fifth digit (to '1')
- Press button 1 (short) to jump to the sixth digit
- Press button 2 and button 3 to set the sixth digit (to '0')
- Press button 1 long time (1 second) to leave the submenu 2.2.
- Press button 1 long time (1 second) to leave the main menu 2.
- Clock starts running in display mode.

Submenu 2.3: Setting Duration Date is Displayed

If this submenu is entered, display shows 03:00:xx whereas 'xx' indicates duration date is displayed. This value can be set form 00 to 59 seconds.

Value 00 means: Date shall not be displayed. Accordingly, only time would appear in display mode.

Using button 2 and 3 the chosen digit can be set. To switch to the next position, button 1 must be pressed. To confirm this step shifting from digit to digit, the following digit flashes. After the last digit, the first digit shall be enabled again.

Setup Example:

- Value in this menu shall be set to 05 seconds.
- Clock is in display mode.
- Press button 1 (short) to enter main menu 2.
- Clock stops and displays current set alarm time.
- Press button 2 twice to reach submenu 2.3
- Press button 1 (short) to enter submenu 2.3.
- Press button 2 (to count up) and button 3 (to count down) to set fifth digit (to '0')
- Press button 1 (short) to jump to sixth digit
- Press button 2 and button 3 to set sixth digit (to '5')

- Press button 1 long time (1 second) to leave submenu 2.3.
- Press button 1 long time (1 second) to leave main menu 2.
- Clock starts running in display mode.

Submenu 2.4: Setting Cross Fade

If this submenu is entered display shows 04:xx:yy.

'xx' indicates the cross fade value.

Digits 'yy' show the crossfading as example. You can watch the different settings at 'yy' and chose your preferred cross fading at 'xx'.

The cross fade settings at position 'xx' mean the following:

- 00: no crossfading, the digits jump from one to the next.
- 01: very fast crossfading from digit to digit
- 02: fast crossfading from digit to digit (standard value)
- 03: middle fast crossfading from digit to digit
- 04: slow crossfading from digit to digit
- 05: very slow crossfading from digit to digit

Setup Example:

- The value in this menu shall be set to 04.
- Clock is in display mode.
- Press button 1 (short) to enter the main menu 2.
- Clock stops and displays the current set alarm time.
- Press button 2 three times to reach submenu 2.4
- Press button 1 (short) to enter the submenu 2.4.
- Press button 2 (to count up) and button 3 (to count down) to set the value to '04'
- Press button 1 long time (1 second) to leave the submenu 2.4.
- Press button 1 long time (1 second) to leave the main menu 2.
- Clock starts running in display mode.

Submenu 2.5: Setting Different Display Variants (time 12/24h and date DD.MM.YY / MM.DD.YY)

If this submenu is entered, the display shows 05:00:xx whereas 'xx' indicates the following:

- 00: Display mode shows time in 24h mode and date in arrangement: DD.MM.YY
- 01: Display mode shows time in AM/PM (12h) mode and date in arrangement: DD.MM.YY
- 02: Display mode shows time in 24h mode and the date in arrangement: MM.DD.YY
- 03: Display mode shows time in AM/PM (12h) mode and date in arrangement: MM.DD.YY

Setup Example:

- The value in this menu shall be set to 03.
- Clock is in display mode.
- Press button 1 (short) to enter the main menu 2.
- Clock stops and displays the current set alarm time.
- Press button 2 four times to reach submenu 2.5
- Press button 1 (short) to enter the submenu 2.5.

- Press button 2 (to count up) and button 3 (to count down) to set the value to '03'
- Press button 1 long time (1 second) to leave the submenu 2.5.
- Press button 1 long time (1 second) to leave the main menu 2.
- Clock starts running in display mode.

Submenu 2.6: Setting Switch off Time for Night Power-Down Mode

The display (internal power supply) can be automatically switched off for a user defined time. In this menu the display shows the entered time the display shall switch off. If the clock is set up to AM/PM mode, nevertheless the display shall show the time in 24h mode.

Using button 2 and 3 the chosen digit can be set. To switch to the next position, button 1 must be pressed.

To confirm this step shifting from digit to digit, the following digit flashes. After the last digit, the first digit shall be enabled again.

The alarm function shall work even if the clock is in night power-down mode as the alarm function activates the clock for 30 minutes.

Use the night power-down mode in order to save energy and increase the live expectancy of the tubes.

Setup Example:

- The clock shall automatically switch off at 11:45:00 PM = 23:45:00 o'clock
- Clock is in display mode.
- Press button 1 (short) to enter the main menu 2.
- Clock stops and displays the current set alarm time.
- Press button 2 five times to reach submenu 2.6
- Press button 1 (short) to enter the submenu 2.6.
- Press button 2 (to count up) and button 3 (to count down) to set the first digit (to '2')
- Press button 1 (short) to jump to the second digit
- Press button 2 and button 3 to set the second digit (to '3')
- Press button 1 (short) to jump to the third digit
- Press button 2 and button 3 to set the third digit (to '4')
- Press button 1 (short) to jump to the fourth digit
- Press button 2 and button 3 to set the fourth digit (to '5')
- Press button 1 (short) to jump to the fifth digit
- Press button 2 and button 3 to set the fifth digit (to '0')
- Press button 1 (short) to jump to the sixth digit
- Press button 2 and button 3 to set the sixth digit (to '0')
- Press button 1 long time (1 second) to leave the submenu 2.6.
- Press button 1 long time (1 second) to leave the main menu 2.
- Clock starts running in display mode.

Submenu 2.7: Setting Switch on Time for Night Power-Down Mode

This submenu is similar to submenu 2.6 but it shows the time the display is switched on.

If you do not want to use the night power-down mode, set both times (submenu 2.6 and 2.7) equal. Accordingly, the display shall never switch off.

Setup Example:

- The clock shall automatically switch on at 06:45:00 o'clock
- Clock is in display mode.
- Press button 1 (short) to enter the main menu 2.
- Clock stops and displays the current set alarm time.
- Press button 2 six times to reach submenu 2.7
- Press button 1 (short) to enter the submenu 2.7.
- Press button 2 (to count up) and button 3 (to count down) to set the first digit (to '0')
- Press button 1 (short) to jump to the second digit
- Press button 2 and button 3 to set the second digit (to '6')
- Press button 1 (short) to jump to the third digit
- Press button 2 and button 3 to set the third digit (to '4')
- Press button 1 (short) to jump to the fourth digit
- Press button 2 and button 3 to set the fourth digit (to '5')
- Press button 1 (short) to jump to the fifth digit
- Press button 2 and button 3 to set the fifth digit (to '0')
- Press button 1 (short) to jump to the sixth digit
- Press button 2 and button 3 to set the sixth digit (to '0')
- Press button 1 long time (1 second) to leave the submenu 2.7.
- Press button 1 long time (1 second) to leave the main menu 2.
- Clock starts running in display mode.

Submenu 2.8: Setting the drift compensation

Every RTC chip (RTC=Real Time Clock) does have a drift. This drift depends to the ambient temperature, buffer battery voltage, aging and other factors. This clock has a feature called "drift compensation" which allows to compensate that drift nearly to zero. The value for the drift compensation is set in this submenu. If this submenu is entered, display shows 08:0x:xx whereas 'x:xx' indicates the seconds per 50 days the time is corrected. Since the RTC circuit is designed so that it runs faster in every case, only a negative correction is necessary. The standard value is 191 – what means that the time automatically will be corrected minus 191 seconds in 50 days. If you want to adjust the clock to a better accuracy you should let it run for exact 50 days and count the seconds it runs too fast or too slow and add or subtract it to the setting in this submenu. For example if the clock runs 2 seconds too fast in 50 days, the setting in this submenu must be

increased 2 seconds. Example: If the setting was 191 – the new setting must be $191+2=193$ – then the time will be corrected 193 seconds in 50 days instead of 191 seconds and the clock runs slower. You can use an atomic or radio controlled clock to measure the drift.

Setup Example:

- The value in this menu shall be set to 193.
- Clock is in display mode.
- Press button 1 (short) to enter the main menu 2.
- Clock stops and displays the current set alarm time.
- Press button 2 seven times to reach submenu 2.8
- Press button 2 (to count up) and button 3 (to count down) to set the fourth digit (to '1')
- Press button 1 (short) to jump to the fifth digit
- Press button 2 and button 3 to set the fifth digit (to '9')
- Press button 1 (short) to jump to the sixth digit
- Press button 2 and button 3 to set the sixth digit (to '3')
- Press button 1 long time (1 second) to leave the submenu 2.8.
- Press button 1 long time (1 second) to leave the main menu 2.
- Clock starts running in display mode.

Submenu 2.9: Blanking of the Leading Zero

The leading zero of the time display (example: 01:00:00) can be disabled. This means that instead of showing '0' the first tube is completely switched off.

If this submenu is entered, the display shows 09:00:xx whereas 'xx' indicates the following:

- 00: Blanking is not active (first '0' will be displayed)
- 01: Blanking is active (first '0' will not be displayed). This setting does not influence the way the date is displayed. (example: The date '01.01.05' will be displayed completely)

Setup Example:

- The value in this menu shall be set to 01.
- Clock is in display mode.
- Press button 1 (short) to enter the main menu 2.
- Clock stops and displays the current set alarm time.
- Press button 2 eight times to reach submenu 2.9
- Press button 1 (short) to enter the submenu 2.9.
- Press button 2 (to count up) and button 3 (to count down) to set the value to '01')
- Press button 1 long time (1 second) to leave the submenu 2.9.
- Press button 1 long time (1 second) to leave the main menu 2.
- Clock starts running in display mode.

11. Setting Alarm Clock

The alarm function can be switched on and off in display mode.

If the alarm function is switched off and button 2 is pressed long time (1 second), the alarm function shall be switched on. In this case the display changes to the actual set alarm time and the buzzer beeps twice. After 1 second (button 2 is not pressed) the display switches back to display mode.

If the alarm function is switched on, and button 2 is pressed long (1 second), the alarm function shall be switched off. In this case the display changes to the actual set alarm time and the buzzer beeps once. After 1 second the display switches back to display mode.

If the alarm clock function is switched on and the alarm time is reached, the alarm tone shall beep.

In the event the alarm starts while the clock is in power-down mode, it automatically switches to display mode. After 30 minutes the clock shall switch back to night power-down mode (in case the switch on time of the night power-down mode is not already reached).

If button 3 is pressed while the alarm sounds, the alarm signal gets switched off.

If the alarm is not switched off by pressing button 3 it automatically switches off after 30 minutes.

Setting example:

- The alarm function shall be switched on.
- The clock is in display mode.
- Press button 2 long time (1 second)
- The display changes to the set alarm time and the buzzer beeps either once or twice.
- If the buzzer has only beeped once, then the alarm function would be switched off now, and button 2 would have to be pressed once again. Then the buzzer beeps twice and the alarm function is switched on.
- After one second the display returns to display mode.

12. Factory Presets

Main menu 2:

00:00:00 (Alarm time)
 02:00:05 (display mode of time: 5 seconds)
 03:00:00 (display mode of date: 0 seconds)
 04:02:xx (Cross fade setting: 2)
 05:00:00 (time display in 24h mode and date display in DD.MM.YY arrangement)
 00:00:00 (switch off time for night power-down mode)
 00:00:00 (switch on time for night power-down mode)
 08:01:91 (RTC drift compensation minus 191 seconds per 50 days)
 09:00:00 Leading zero suppression not active
 Alarm clock function is switched off.

13. Memory

All settings (including time) are stored internally while no power line is available.

14. Life Expectancy of the Battery

The life expectancy of the internal battery is more than 10 years.

15. Replacing the Internal Battery

If the clock does not store time while no power is available the internal battery is probably weak. Replacement lithium button cells of the type CR2032 can be purchased at your local battery dealer. Observe the safety instructions of the battery manufacturer.

To replace battery pull the power plug out of the clock.

Put the clock on a smooth surface to protect tubes from damage. Put the clock on the front in order to reach the screws on the bottom of the clock. Remove the 4 outer screws on the bottom of the clock. Remove the bottom plate with the board. Remove the 4 screws which hold the PCB. Remove the PCB. Remove the weak lithium battery out of its holder and replace it with the new one. Note that the plus pole of the battery must point to the bottom of the clock.

Make sure you do not forget any tools inside the clock.

Mount the PCB. Mount the bottom plate with the 4 screws.

Check all functions of the clock and then check if the clock stores the time by pulling the power plug out of the connector.

If you have problems with this process contact customer support.

16. Battery Disposal

Do not dispose batteries to the household waste.

Only dispose your old batteries to appropriate points of acceptance.

Ask your battery dealer for a professional battery disposal.

17. Cleaning Clock and Tubes

For safety reasons unplug the clock before cleaning.

Clean the clock by gently wiping with a clean, dry cloth. Never use harsh or abrasive cleaners or organic solvents or any liquids on the clock or any of its parts.

18. Malfunction and Troubleshooting

Problem:

No display

Reasons and Solution:

- a) No line power: Check the outlet for correct voltage. Check if the power cord is connected correctly to the power supply and if the power plug is connected to the clock.
- b) The clock is in night power-down mode. Read the corresponding submenus 2.6 and 2.7.

Problem:

The clock doesn't store time and date while no power line is available.

Reason and solution:

Probably, the internal battery is weak.

See '15. Replacing the Internal Battery' on how to replace the internal battery.

Other problems:

Please contact the customer support.

19. Customer Support

Chronotronic

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D-95707 Thiersheim

Germany

Email: info@chronotronic.com

Internet: www.chronotronic.com