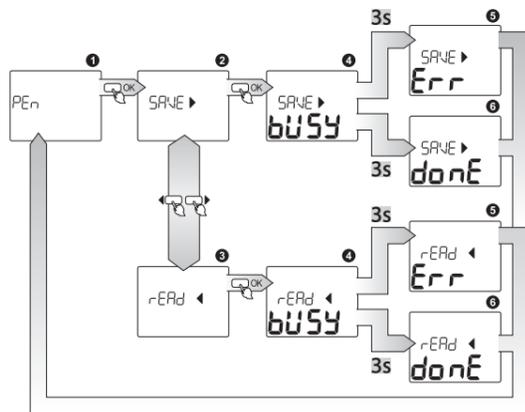


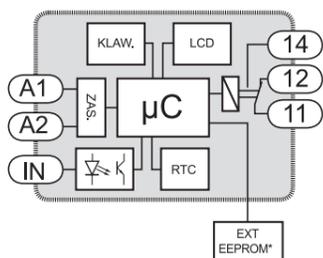
EXTERNAL MEMORY OPERATION*



External memory allows for an easy record / reading of the adjusted programs into the external memory, so they can be easily copied to other programmers. It is very convenient in case if we want to program more ZCM programmers or archive the adjusted programs.

- 1 PE_n – sub menu to the external memory operation
- 2 SAVE – programs recording
- 3 rERd – programs reading from the external memory and storage in the programmer's memory
- 4 BUSY – the state of memory „busy” during a record / reading
- 5 done – correct record / reading
- 6 Err – record / reading error

INNER DIAGRAM

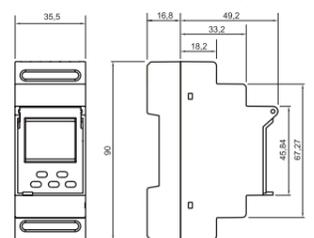


MOUNTING, OPERATION

1. Disconnect power supply by the phase fuse, the circuit-breaker or the switch- disconnector combined to the proper circuit.
2. Check if there is no voltage on connection cables by means of a special measure equipment.
3. Install the ZCM-22 on the TH 35 DIN rail in the switchboard.
4. Connect the cables with the terminals in accordance with the installing diagram.
5. Switch on the power supply from the mains.

The contact will be ON at 00:00:00. The contact will be OFF the previously set day during an hour changing from 23:59:59 into 00:00:00 (the next day). If the contact is to be ON only one day, the same data should be set for ON and OFF date, e.g. ON - 02.02, OFF - 02.02. The lower program no. the higher program priority. The ON state has higher priority than the OFF state within the given program.

DIMENSIONS



PRODUCT FAMILY

ZCM-22 Programmer belongs to ZCM family of products.

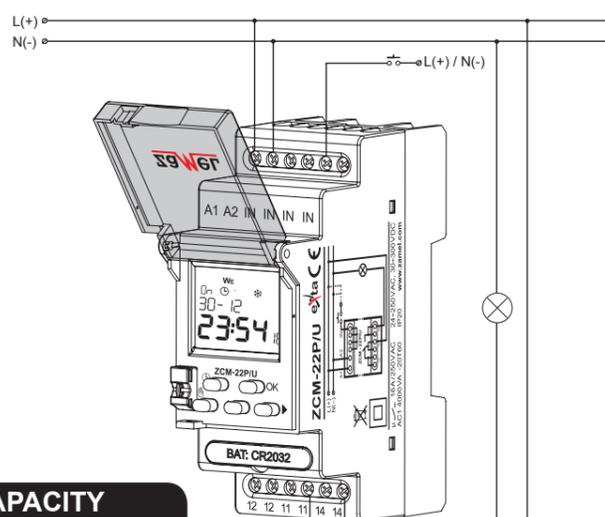
ZCM-xx/U

Power supply:
ZCM-xx - 230 V AC
ZCM-xx/U - 24 + 250 V AC
30 + 300 V DC

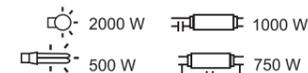
Programmer type:
11 - week (1 channel)
12 - week (2 channel)
22 - weekly - year
31 - astronomical

Device type

CONNECTION*



RELAY CAPACITY



WARRANTY CARD

There is 24 months guarantee on the product

1. ZAMEL provides a two-year warranty for its products.
2. The ZAMEL warranty does not cover:
 - a) mechanical defects resulting from transport, loading / unloading or other circumstances
 - b) defects resulting from incorrect installation or operation of ZAMEL products;
 - c) defects resulting from any changes made by CUSTOMERS or third parties, to products sold or equipment necessary for the correct operation of products sold;
 - d) defects resulting from force majeure or other aleatory events for which ZAMEL is not liable;
 - e) power supply (batteries) to be equipped with a device in the moment of sale (if they appear);
3. All complaints in relation to the warranty must be provided by the CUSTOMER in writing to the retailer after discovering a defect.;
4. ZAMEL will review complaints in accordance with existing regulations.;
5. The way a complaint is settled, e.g. replacement of the product, repair or refund, is left to the discretion of ZAMEL.
6. Guarantee does not exclude, does not limit, nor does it suspend the rights of the PURCHASER resulting from the discrepancy between the goods and the contract.

Salesman stamp and signature, date of sale

ZCM-22, ZCM-22P/U TIME PROGRAMMER ANNUAL, SINGLE-CHANNEL

INSTRUCTION MANUAL



ZAMEL sp. z o.o.

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tel. +48 (32) 210 46 65, fax +48 (32) 210 80 04
www.zamel.com, e-mail: export@zamel.pl



DESCRIPTION

Digital control time switch ZCM-22 is used to realise the time functions in automation and control systems. The programmer realises the output relay control operations according to program adjustments (day, month, hour, minute). All systems are equipped with a control input function, which is used to change the operating mode of a system by means of an external push-button. The design of the casing allows the system to be mounted on a TH-35 rail and eventually to seal the device. The design of the system provides a battery back-up system for all adjustments in case of no voltage supply.

In order to protect the battery during storage, the ZCM series programmers have a default setting, the so-called storage mode in which the battery power consumption is limited to a minimum.

FEATURES

- Control depending on current date, hour and minute,
- double-module casing with a protection flap,
- additional control input IN,
- many programmes enabling various applications,
- LCD display illumination,
- mounted on TH 35 rail,
- a possibility to copy and read programs from the external memory*.

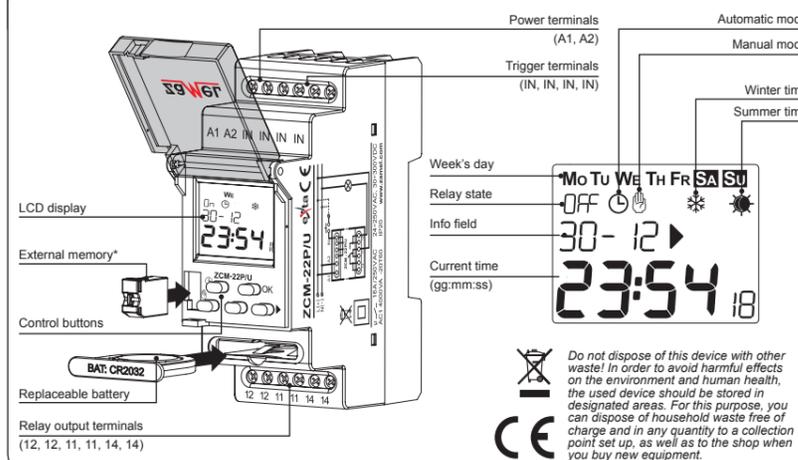


The device should be connected to a singlephase system according to current standards. The device connections will be described in this manual. Only qualified electricians are allowed to mount, connect and adjust the device. It is necessary to read this manual and know the unit functions before the device mounting. Do not disassembly the device casing or you will lose any warranty rights and expose yourself to the electric shock hazard. Before mounting operation make sure of disconnecting the connection wires from the electric network. Use a cross-head screwdriver of 3.5 mm diameter to mount the device. The relay should be carried, stored and used in an appropriate way. Do not mount the device in case of any device parts lack, damage or deformation. In case of malfunction please notify the manufacturer.

TECHNICAL DATA

ZCM-22, ZCM-22P/U	
Power supply clamps:	A1, A2
Rated voltage:	ZCM-22: 230 V AC (-15 + +10 %) ZCM-22P/U: 24 + 250 V AC, 30 + 300 V DC
Rated frequency:	50 / 60 Hz
Rated power consumption:	ZCM-22: 1,6 W /17 VA ZCM-22 P/U: 1,5 W /3 VA
Number of channels:	1
Program quantity:	400 (200 On/Off pairs)
Programme:	weekly - annual
Mode of work:	manual, automatic
Change of season summer/ winter:	automatic, manual
Colour of LCD panel lighting:	amber
Input:	yes
Accuracy of time measurement:	max. ±1 s / 24 h at temp. 25 °C
Time of clock maintenance:	3 years
Time of programme maintenance:	10 years
Clamps of release system:	IN, IN, IN, IN
Clamps of receiver power supply:	11, 12, 14
Parameters of transmitter contacts:	1NO/NC-16 A/250 V AC1 4000 VA
Number of terminating clamps:	12
Intersection of terminating conductors:	0,2 + 2,50 mm ²
Temperature of work:	-20 + +60 °C
Position of work:	any
Fixing of casing:	TH 35 rail (PN-EN 60715)
Level of protection of casing:	IP20 (PN-EN 60529)
Protectivity class:	II
Overvoltage category:	II
Level of pollution:	2
Measurements:	two-module (35 mm) 90x35x66 mm
Weight:	0,14 kg
Compatibility with norms:	PN-EN 60730-1; PN-EN 60730-2-7; PN-EN 61000-4-2,3,4,5,6,11

APPEARANCE*



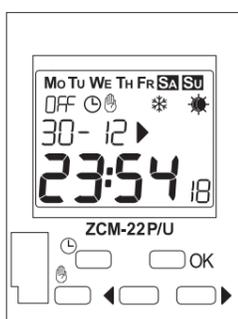
Do not dispose of this device with other waste! In order to avoid harmful effects on the environment and human health, the used device should be stored in designated areas. For this purpose, you can dispose of household waste free of charge and in any quantity to a collection point set up, as well as to the shop when you buy new equipment.



*apply to the product ZCM-22P/U

*apply to the product ZCM-22P/U

DESCRIPTION



Description of elements and messages displayed

Mo Tu We Th Fr Sa Su - days of week
 On OFF - relay status
 ☉ - automatic mode
 ☿ - manual mode
 ▶ - external input
 ❄ - winter time
 ☀ - summer time
 dAY - day, YEAr - year
 PrOb - program setting

tImE - current time setting and summer/winter time shift
 dAtE - current date setting
 InPut - EXTERNAL INPUT SETTING
 PEr - external memory operation*
 SPe - external memory record*
 rEAd - external memory reading*
 bUSy - external memory busy*
 Err - reading / record error*

Auto - automatic, USEr - user's
 On OFF - switched on / switched off

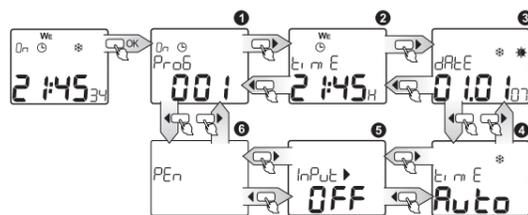
Button description

- ☉ in the main window – the automatic mode enter or relay state changeover, if the timer already in the automatic mode;
- ☿ the other windows – exit to a higher level without changes saving;
- ▶ in the main window – the manual mode enter or the relay state changeover, if the timer already in the manual mode;
- ☿ the other windows – exit to a higher level without changes saving;
- OK in the main window – the main menu enter;
- ☿ the other windows - a submenu enter or setting acknowledgement;
- ◀▶ the window / option toggle or the set value increase / decrease.

STORAGE MODE / BATTERY REPLACEMENT

- ZCM series programmers have a default setting, the so called storage mode in order to protect the battery during storage.
- In case of battery backup operation the storage mode is switched off during the first use of the programmer. It is done by means of a short pressing of the ☉ push-button and subsequent date and time adjustment.
- In case of a nominal power supply the storage mode is switched off during the first use of the programmer by means of date and time adjustment.
- Adjusting the programmer into the storage mode is realised by means of a reset - in order to carry it out press at the same time the ☉ and ☿ push-buttons in the main window.
- ZCM series programmers have the option to replace the clock maintenance battery. Before replacing the battery, disconnect the programmer from the external power supply. Please pay the attention to correct battery polarity when replacing.

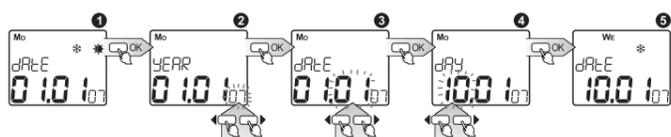
MAIN MENU



Menu enter by pressing OK;
 menu items scrolling by means of cursors ◀ ▶.

Function	Description
1 PrOb	PROGRAM SETTING
2 tImE ☉	CURRENT TIME SETTING
3 dAtE**	CURRENT DATE SETTING
4 tImE*	TIME SETTING (SUMMER/WINTER SEASON)
5 InPut ▶	EXTERNAL INPUT SETTING
6 PEr	EXTERNAL MEMORY ADJUSTMENT*

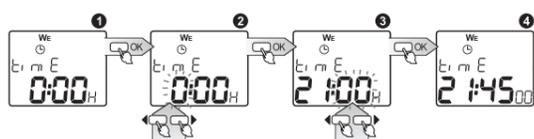
DATE SETTING



It is possible to exit every sub-menu window in any moment without saving settings by pressing the button ☉ or ☿.

- dAtE** - Current date setting; entry after pressing OK;
- YEAr - choose adequate year with cursors ◀ ▶ confirm with OK, range of years: 2000+2099;
- MONTH - choose month with cursors ◀ ▶ confirm with OK;
- DAY - choose day with cursors ◀ ▶ confirm with OK; the system has a protection against introducing incorrect parameter of a day for a given month (it takes into account leap years and it automatically calculates the day of the week on the basis of an arranged date);
- Confirmation causes movement to a date setting window and set-up of current summer/ winter time - if the option Auto is arranged.

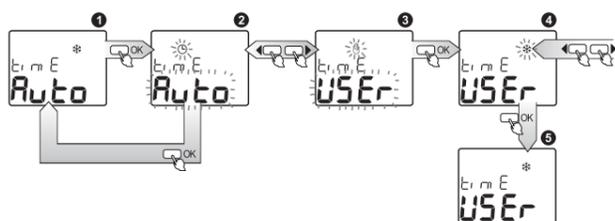
TIME SETTING



- tImE ☉ - setting the current clock time; entry after pressing OK;
- HOUR - choose adequate hour with cursor ◀ ▶ which you can set in 1-24 H or 1-12 P (AM) and 1-12 P (PM) format; confirm with OK;
- MINUTES - choose adequate parameter of minutes with cursors ◀ ▶ confirm with OK;
- Confirmation of the parameter of minutes causes simultaneous nullification of the parameter of seconds and movement to the window of time setting.

It is possible to exit every sub-menu window in any moment without saving settings by pressing the button ☉ or ☿.

WINTER / SUMMER TIME SETTING



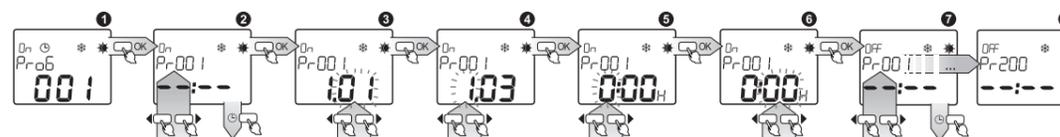
- tImE* - choice of one of the two modes in which switching between winter and summer season time will occur. Auto - switching will take place in an automatic way, on the last Sunday of March, at 2.00 (for summer time) and on the last Sunday of October, at 3.00 (for winter time), USEr - a user chooses between winter/ summer time, entry after pressing OK;
- ☉ setting the mode - choose mode Auto or USEr with cursors ◀ ▶, confirm with OK; after choosing the mode Auto, the clock automatically sets the time as winter or summer one, depending on the arranged date; after choosing the mode USEr you go to another window;
- Choose time for winter/ summer one with cursors ◀ ▶ where ❄ is winter time and ☀ is summer time, if change of marker has happened the system will change the current time by adding or subtracting 1 hour, confirm the operation with OK;
- After choosing the system moves to winter/ summer time shift window.

OPERATING MODE CHANGE (AUTOMATIC, MANUAL)



- AUTOMATIC MODE TOGGLE - if the main window is open and the timer is in the manual mode ☉ pressing key ☉ will force the unit to toggle into the automatic mode and the relay state changeover;
- Successive ☉ key pressing will force the relay state changeover without the op mode toggle;
- MANUAL OP MODE TOGGLE - if the main window is open and the timer is in the automatic mode ☉ pressing key ☉ will force the unit to toggle into the manual mode and the relay state changeover;
- Successive ☉ key pressing will force the relay state changeover without the op mode toggle;

PROGRAM SETTING

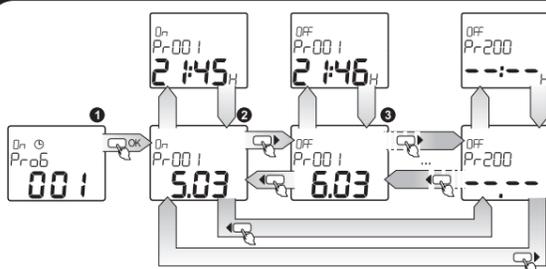


- PrOb - defining ON-times and OFF-times for the given week's days for the given programs running in the automatic mode; messages on busy ON and OFF programs quantities are being showed alternatively in the current window: On OFF (e. g. 00 1); edition entering by pressing OK; the programs are numbered as pairs (On / OFF). Max programs quantity is equal to 200 On / OFF pairs;
- With ◀ ▶ cursors select a program (e.g. Pr-00 1 On) for its parameters editing and enter edition with OK;
- MONTH - with ◀ ▶ cursors select the month, acknowledge with OK;
- DAY - with ◀ ▶ cursors select the day, acknowledge with OK;
- The next stored program will be displayed (e.g. Pr-00 1 OFF) - Press OK, to enter edition; in order to select the other program use ◀ ▶ cursors, to exit programming press ☉ or ☿;
- The last program is Pr-200 OFF.

ATTENTION

If in mode of editing of minutes ☉ button POK will be pushed and hold for 3 s time programmer will go to edition of next programm where the field will be primarily filled with settings from previous programm. This is to shorten the programming time in case that the next programm follow after each other in short periods of time (for example the same month, day, hour, minute).

PROGRAM VIEWING

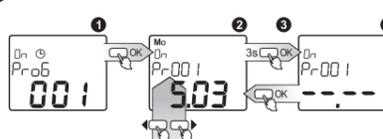


- PROGRAM VIEWING - viewing settings for the switching programs (On / OFF) i.e. hours, minutes; enter viewing with OK;
- In order to scroll the programs press successively cursors ◀ ▶; cursor ▶ increases the program number; ◀ cursor decreases the program no.;
- The programs are numbered in the form of ON / OFF (On / OFF) pairs, where every program may be treated independently; there are 400 programs (200 pairs On / OFF).

If the time programmer works in automatic mode then during checking the programs there is a possibility to proof which program will come as next one. This information is signalised by ☉ icon next to this program.

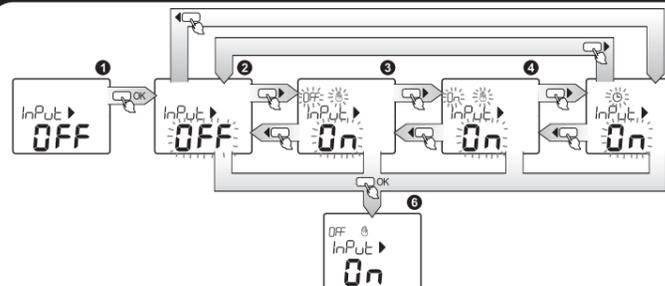
It is possible to exit every sub-menu window in any moment without saving settings by pressing the button ☉ or ☿.

PROGRAM CANCEL / RESTORE



- PROGRAM CANCEL / RESTORE - the option is used during program setting and viewing for program cancelling (inactivation) and restoring; enter by pressing OK;
- With ◀ ▶ elect the program to be cancelled / restored;
- Press and hold OK for 3 seconds - if the program is active it will be cancelled (inactivated) and will not be checked during the timer operating in the automatic mode (however it will be saved in the storage and it will be possible to restore the program); horizontal lines will be displayed;
- In order to restore the cancelled program press OK (the saved settings will be displayed).

EXTERNAL INPUT SETTING



- InPut ▶ - setting the unit mode after the IN external input triggering; enter edition by pressing OK; with ◀ ▶ cursors select an appropriate external input mode, where:
- OFF - the external input function is OFF;
- ☉ OFF - the manual mode with the relay continuous switch-OFF;
- ☉ On - the manual mode with the relay continuous switch-ON;
- ☉ - the automatic mode, the relay is being switched ON / OFF according to the preset programs;
- Acknowledge selection with OK; after acknowledgement the external input settings window will be entered.

It is possible to exit every sub-menu window in any moment without saving settings by pressing the button ☉ or ☿.

MAIN RESET



- In order to cancel the clock system (time, date, activity of given functions etc.) you should hold buttons ☉ and ☿ simultaneously in the main menu for 3 sec;
- All the display fields will light up;
- After a while, the clock will automatically set date and time.