# 1-CHANNEL, ASTRONOMICAL DIGITAL TIME PROGRAMMER ZCM-31, ZCM-31P/U

## MANUAL INSTRUCTION

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## DESCRIPTION

ZCM-31 digital time programmers are used to realize time functions in automation and control systems. Switching on / switching off the device is related to sunset and sunrise (official dawn and dusk). The following information on geographic coordinates of the clock's installation place, current date, and time difference with regard to the universal time (GMT) is used to calculate the time of sunrise and sunset. The system calculates the so-called official time of sunrise and sunset and this is the phase when the upper edge of the Sun touches the horizon. Additionally, the system has the function of a programmable night break and a possibility to change the calculated sunrise/sunset time in the range of ±120 min. The device casing construction allows the system to be installed on a TH35 rail and additionally the casing can be sealed. The system structure guarantees battery backup of the settings in case of power supply failure.

**CAUTION:**

**To protect the programmer's battery during storage time, the ZCM-31 series has a 'storage mode' default setting with a minimum current consumption.**

## FEATURES

- control depending on current time in the astronomical cycle,
- double modular casing with a protective cover,
- IN control input,
- LCD with backlight,
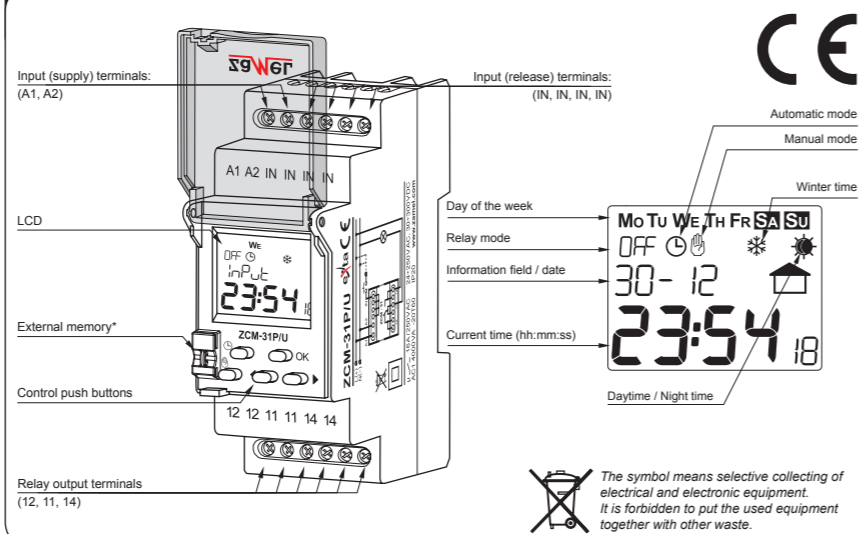- mounting on a TH35 rail.

**CAUTION!** The device is designed for single-phase installation and must be installed in accordance with standards valid in a particular country. The device should be connected according to the details included in this manual instruction. Installation, connection and control should be carried out by a qualified electrician staff, who act in accordance with the service manual and the device functions. In case of casing dismantling, the guarantee is lost and an electric shock may occur. Before installation make sure the connection cables are not under voltage. Improper transport, storage, and use of the device influence its wrong functioning. It is not advisable to install the device in the following cases: if any device part is missing or the device is damaged or deformed. In case of improper functioning of the device contact the producer.

The symbol means selective collecting of electrical and electronic equipment. It is forbidden to put the used equipment together with other waste.

## TECHNICAL DATA

| | |
|---|---|
| Input (supply) terminals: | A1, A2 |
| Nominal supply voltage: | ZCM-31: 230 V AC~(-15 ÷ +10 %) |
| | ZCM-31P/U: 24 ÷ 250V AC, 30 ÷ 300 V DC |
| Nominal frequency: | 50 / 60 Hz |
| Nominal power consumption: | ZCM-31: 1,5 W / 16 VA – stand-by / switched on relay |
| | ZCM-31P/U: 0,8 W / 1,4 VA – stand-by |
| | ZCM-31P/U: 1,5 W / 2,9 VA - switched on relay |
| Number of channels: | 1 |
| Programme: | astronomical (official dawn and dusk) |
| Operation modes: | manual, automatic |
| Summer/winter time change: | automatic, manual |
| LCD backlight colour: | amber |
| External input: | yes |
| Cooperation with external memory: | ZCM-31: no |
| | ZCM-31P/U: yes |
| Time measuring accuracy: | max. ± 1 s / 24 h for 25°C |
| Clock battery backup: | 3 years |
| Programme battery backup: | 10 years |
| Input (release) terminals: | IN, IN, IN, IN |
| Output (load) terminals: | 11, 12, 14 |
| Relay contact parameters: | 1 NO / NC 16 A / 250 V AC1 4000 VA |
| Number of connection terminals: | 12 |
| Cross-section of connection cables: | 0,2 ÷ 2,50 mm² |
| Operating temperature range: | -20 ÷ +60°C |
| Operating position: | free |
| Casing mounting: | TH35 rail (acc. to EN 60715) |
| Casing protection degree: | IP20 (EN 60529) |
| Protection class: | II |
| Overvoltage category: | II |
| Pollution degree: | 2 |
| Dimensions: | double modular (35 mm) 90 x 35 x 66 mm |
| Weight: | 0,17 kg |
| Reference standard: | EN 60730-1; EN 60730-2-7, EN 61000-4-2,3,4,5,6,11 |

## APPEARANCE**



Input (supply) terminals: (A1, A2)
Input (release) terminals: (IN, IN, IN, IN)
LCD
Automatic mode
Manual mode
Winter time
Day of the week
Relay mode
Information field / date
Current time (hh:mm:ss)
Daytime / Night time
External memory*
Control push buttons
Relay output terminals (12, 11, 14)

The symbol means selective collecting of electrical and electronic equipment. It is forbidden to put the used equipment together with other waste.

## DESCRIPTION
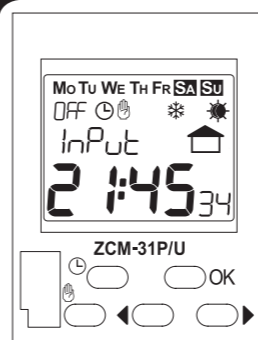
### Description of elements and messages displayed



ZCM-31P/U

**Mo Tu We Th Fr Sa Su** - days of the week
On OFF - relay mode
⏲ - automatic mode
✋ - manual mode
❄ - winter time
☀ - summer time
▶ - external input
dRY - day
YEAR - year
PAUSE - night break setting
dELAY - time correction setting
timE - current time setting and summer / winter time change
dREE - current date setting

Coord - geographical position setting
InPut - external input setting
PEn - external memory operation **
SAVE - write to external memory **
rERd - read from external memory **
bUSY - external memory usage**
Err - reading / saving error**
Sr ISE / S SEt - sunrise / sunset time
LAt It / LonG - latitude / longitude
Auto - automatic, USEr - user
On OFF - switched on /switched off

### Description of buttons

| | |
|---|---|
| ⏲ | • in the main window - enter the automatic mode;<br>• in other windows – go up one level without saving the entered data; |
| ✋ | • in the main window – enter the manual mode or change the relay mode if the clock is in the manual mode;<br>• in other windows - go up one level without saving the entered data; |
| OK | • in the main window –enter the main menu;<br>• in other windows – enter the submenu or confirm the settings; |
| ◀ ▶ | • switching between windows / menu options or increasing /decreasing the pre-set parameters;<br>• right cursor (▶) in the main menu – sunrise and sunset time display. |

## STORAGE MODE

- • The ZCM-31 programmers have a 'storage mode' default setting to protect the battery during storage.
- • During battery backup operation, the first programmer activation is realised by means of pressing the (✋) button shortly which causes the storage mode is changed, next it is required to set the date and time.
- • During rated voltage operation, the first programmer activation is realised by setting the time and date.
- • The programmer can be readjusted to the storage mode by means of carrying out a device reset
- in order to do it press the (✋) and (⏲) buttons simultaneously for a shorter time in the main menu.

## MAIN MENU
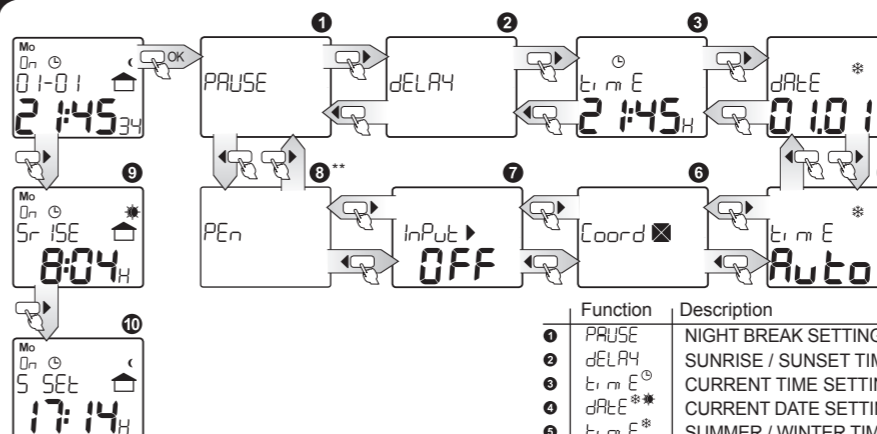


Press OK to enter from the main menu to the menu; use cursors (◀ ▶) to move in the menu. It is possible to enter the main menu again by pressing the (⏲) or (✋) button. From the main window you can also enter windows displaying the calculated sunrise/sunset time by pressing the (▶) cursor. Return is automatic after 10 s.

| | Function | Description |
|---|---|---|
| ❶ | PAUSE | NIGHT BREAK SETTING |
| ❷ | dELAY | SUNRISE / SUNSET TIME CORRECTION SETTING |
| ❸ | timE ⏲ | CURRENT TIME SETTING |
| ❹ | dREE ❄☀ | CURRENT DATE SETTING |
| ❺ | timE ☀ | SUMMER / WINTER TIME SETTING |
| ❻ | Coord ✕ | GEOGRAPHICAL POSITION AND TIME ZONE SETTING |
| ❼ | InPut ▶ | EXTERNAL INPUT SETTING |
| ❽ | PEn | EXTERNAL MEMORY SETTING** |
| ❾ | Sr ISE | CALCULATED SUNRISE TIME |
| ❿ | S SEt | CALCULATED SUNSET TIME |

## OPERATION MODE CHANGE (AUTOMATIC, MANUAL)
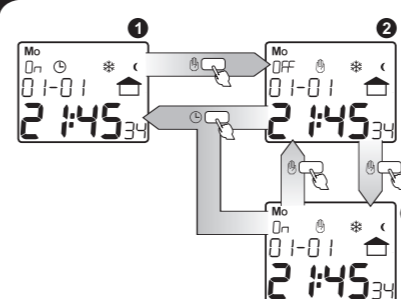


❶ MODE CHANGE INTO MANUAL - if the system is in the main window and the automatic mode (⏲) is active, press the (✋) button to change the system into the manual mode with a simultaneous change of the relay mode;

❷❸ Subsequent pressing of the (✋) button causes the relay switches to the opposite mode, but the operation mode does not change;

❷❸ MODE CHANGE INTO AUTOMATIC - if the system is in the main menu and the manual mode is active, press the (⏲) button to change the system into the automatic mode with a simultaneous change of the relay mode.
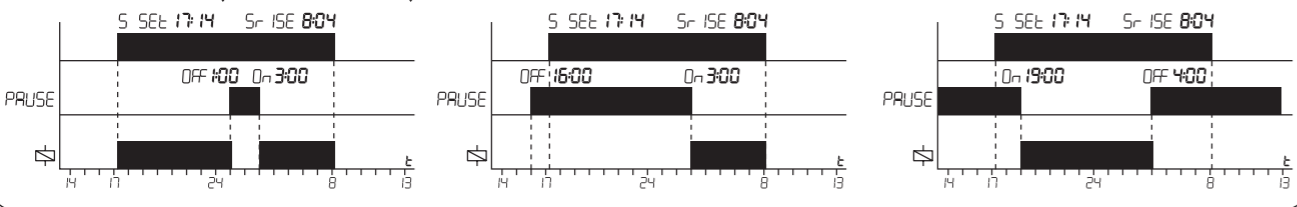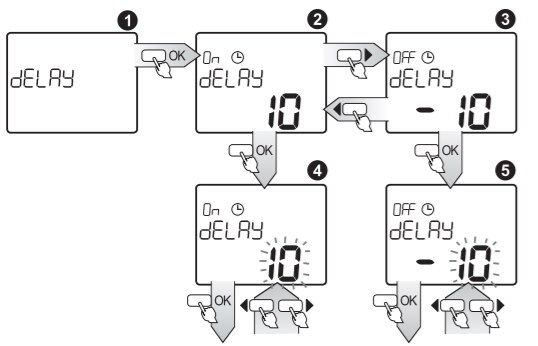
## NIGHT BREAK SETTING
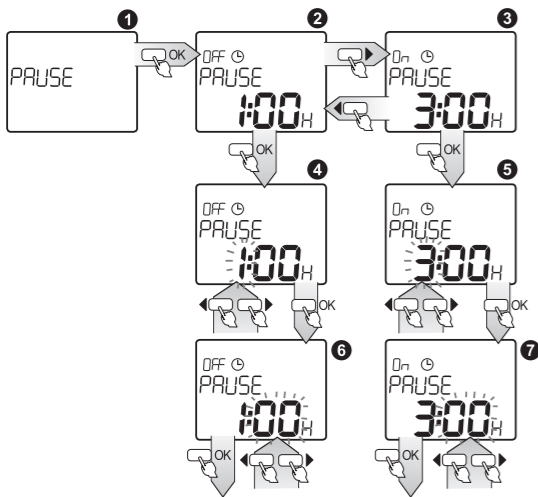
❶ *PAUSE* – setting the time of a night break; press OK to enter the setting view; by means of (◀ ▶) cursors choose the time to be changed whereas:
  ❷ The start time of the night break; press OK to enter the edition mode,
  ❸ The end time of the night break; press OK to enter the edition mode,
❹ ❺ Choose an appropriate hour by means of (◀ ▶) cursors, and confirm with OK;
❻ ❼ Choose an appropriate minute by means of (◀ ▶) cursors, and confirm with OK;

**CAUTION!!!**
**The clock will work without a night break, if the start and end time of the night break are the same.**

It is possible to exit every sub-menu window in any moment without saving entered settings by pressing the (☉) or (🌙) button.
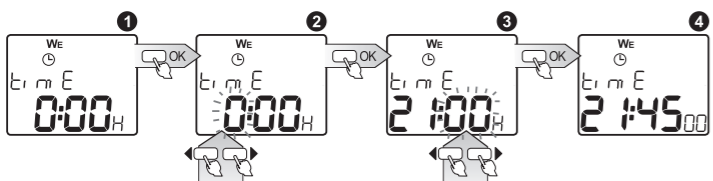
## TIME CORRECTION SETTING

❶ *dELAY* – setting time correction; press OK to enter the setting view; by means of (◀ ▶) cursors choose the time to be changed whereas:
  ❷ Correction of dusk time; press OK, press OK to enter the edition mode;
  ❸ Correction of dawn time; press OK, press OK to enter the edition mode;
❹ ❺ Correct the time within the range of -120 ÷ 120 min. By means of (◀ ▶) cursors, choose an adequate value and confirm the choice with OK.

Example:
If you want the lighting to switch on 30 minutes earlier than the calculated time of sunset, then the *dELAY* parameter in the *On* tab must be set to „-30".

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

## TIME CORRECTION SETTING

❶ *tim E*☉ – setting time correction; press OK to enter the setting view; by means of (◀ ▶) cursors choose the time to be changed whereas:
❷ Correction of dusk time; press OK, press OK to enter the edition mode;
❸ Correction of dawn time; press OK, press OK to enter the edition mode;
❹ Correct the time within the range of -120 ÷ 120 min. By means of (◀ ▶) cursors, choose an adequate value and confirm the choice with OK..

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

## DATE SETTING
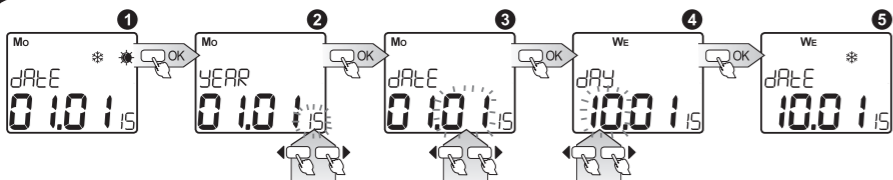
It is possible to exit every sub-menu window in any moment without saving entered settings by pressing the (☉) or (🌙) button.

❶ *dAtE***\* - setting the current date; press OK to enter;
❷ YEAR - choose a year by means of (◀ ▶) cursors, confirm the choice with OK; setting value: 2000÷2099;
❸ MONTH - choose a month by means of (◀ ▶) cursors, confirm the choice with OK;
❹ DAY – choose the day of the month by means of (◀ ▶) cursors; confirm the choice with OK; the system has a safety device to prevent the entry of an incorrect day parameter for a particular month (it includes the leap years) and it automatically calculates the day of the week on the basis of the set date);
❺ By confirming the above the system changes to a date and current summer/ winter time setting window - if the *Auto* option is adjusted.
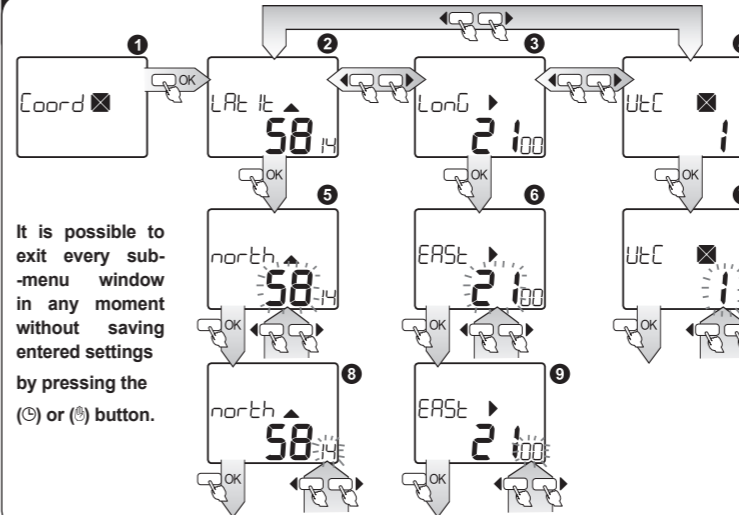
## WINTER / SUMMER TIME SETTING
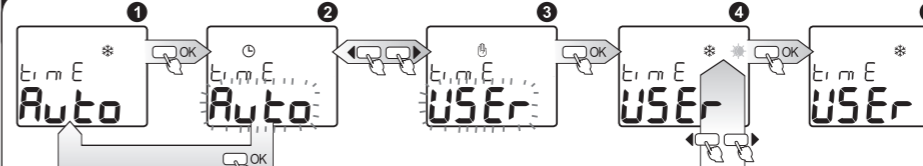
❶ *tim E*\* - the selection of one of two modes where the winter and summer time change will occur: *Auto* – the change will take place in automatically, on the last Sunday of March at 2.00 (into summer time), and on the last Sunday of October at 3.00 (into winter time), *USEr* - a user chooses between winter/ summer time, press OK to enter;
❷ ❸ MODE SETTING - choose *Auto* or *USEr* mode by means of (◀ ▶) cursors, press OK to confirm; after choosing the AUTO mode, the clock automatically sets the time into summer or winter time depending on the adjusted date; after choosing the USER mode you enter another window;
❹ Choose winter/ summer time by means of cursors where (◀ ▶) depicts winter time and (◀ ▶) depicts summer time, if the icon changes the system will change the current time by adding or subtracting 1 hour, press OK to confirm;
❺ After this selection the system enters the window of the summer / winter time change.

## GEOGRAPHICAL POSITION SETTING

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

❶ *Coord* ✕ – COORD – setting longitude, latitude and a time zone; press OK to enter the view and setting edition; by means of (◀ ▶) cursors choose parameters to change, whereas:
❷ *LAt It* – latitude;
❸ *LonG* – longitude;
❹ *UtC* – time zone with reference to UTC;

For window ❷ (latitude); press OK to enter the edition:
❺ Choose latitude parameters in the range of 90 South ÷ 90 North by means of (◀ ▶) cursors; press OK to confirm;
❽ By means of ◀ ▶ cursors choose latitude minutes (if in step ❺ the chosen latitude was 90, this step is omitted).

For window ❸ (longitude); press OK to enter the edition:
❻ Choose longitude parameters in the range of 180 West ÷ 180 East by means of (◀ ▶) cursors; press OK to confirm;.
❾ By means of (◀ ▶) cursors choose longitude minutes (if in step ❻ the chosen longitude was 180, this step is omitted).

For window ❹ (time zone); press OK to enter the edition:
❼ Choose hour time zone change in the range of -12 ÷ 12; press OK to confirm.

## EXTERNAL INPUT SETTING
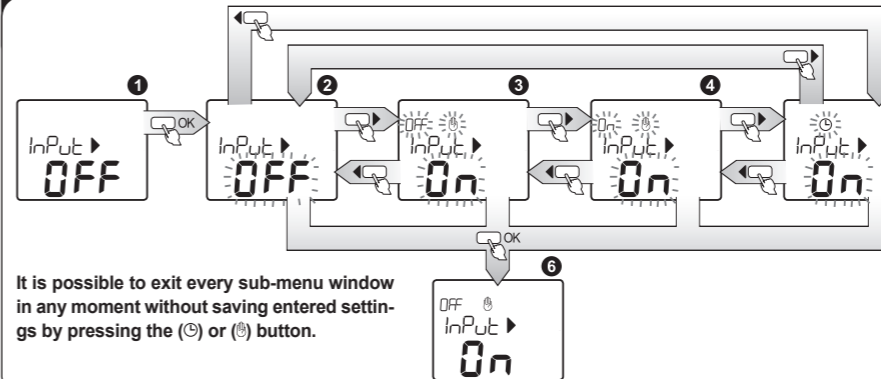
It is possible to exit every sub-menu window in any moment without saving entered settings by pressing the (☉) or (🌙) button.

❶ *InPut* ▶ - setting a mode the system should operate in after external input IN release; press OK to enter the edition; choose an appropriate mode for the external input by means of (◀ ▶) cursors, whereas:
❷ *OFF* - the external input function is switched off;
❸ 🌙 *OFF* - manual mode with a permanently switched off relay;
❹ 🌙 *On* - manual mode with a permanently switched on relay;
❺ - automatic mode, the system realizes the relay switching on / switching off function according to the adjusted programmes;
❻ Press OK to confirm the selected mode; confirmation allows to enter the external input setting window.

## EXTERNAL MEMORY OPERATION**
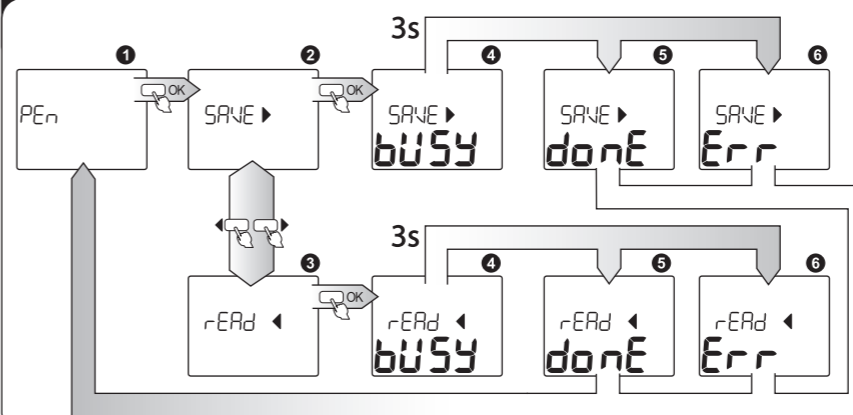
The external memory allows to save / read easily the programmes set in the external memory, in this way they can be quickly moved to other programmes. It is very convenient in case we want to programme more ZCM programmers or archive the already set programmes.

❶ *PEn* – sub-menu for the external memory operation.
❷ *SAVE* – programme saving.
❸ *rEAd* – programme reading from the external memory and writing to the programmer's memory.
❹ *bUSY* – memory usage status during saving / reading.
❺ *donE* – correct saving / reading.
❻ *Err* – wrong saving / reading.

# GEOGRAPHICAL POSITION OF LARGER CITIES

| | | | | | | |
|---|---|---|---|---|---|---|
| **Albania** Tiranë | 41:20:00 °N | 019:49:00 °E | | **Italy** Rome | 41:53:00 °N | 012:30:00 °E |
| **Algeria** Algiers | 36:50:00 °N | 003:02:00 °E | | **Italy** Taranto | 40:28:00 °N | 017:15:00 °E |
| **Andorra** Andorra | 42:30:00 °N | 001:30:00 °E | | **Italy** Turin | 45:04:00 °N | 007:40:00 °E |
| **Austria** Graz | 47:05:00 °N | 015:22:00 °E | | **Italy** Venice | 45:26:00 °N | 012:20:00 °E |
| **Austria** Innsbruck | 47:17:00 °N | 011:25:00 °E | | **Latvia** Riga | 56:53:00 °N | 024:08:00 °E |
| **Austria** Leibnitz | 46:48:00 °N | 015:33:00 °E | | **Luxembourg** Luxembourg | 49:37:00 °N | 006:08:00 °E |
| **Austria** Linz | 48:19:00 °N | 014:18:00 °E | | **Macedonia** Skopje | 42:00:00 °N | 021:26:30 °E |
| **Austria** Salzburg | 47:54:00 °N | 013:03:00 °E | | **Monaco** MonteCarlo | 43:44:00 °N | 007:25:00 °E |
| **Austria** Vienna | 48:13:00 °N | 016:22:00 °E | | **Netherlands** Amsterdam | 52:21:00 °N | 004:54:00 °E |
| **Belarus** Minsk | 53:51:00 °N | 027:30:00 °E | | **Netherlands** Apeldoorn | 52:13:00 °N | 005:57:00 °E |
| **Belgium** Antwerp | 51:13:00 °N | 004:25:00 °E | | **Netherlands** Maastricht | 50:51:00 °N | 005:42:00 °E |
| **Belgium** Brugge | 51:12:00 °N | 003:14:00 °E | | **Netherlands** Nijmegen | 51:50:00 °N | 005:52:00 °E |
| **Belgium** Brussels | 50:50:00 °N | 004:21:00 °E | | **Netherlands** Rotterdam | 51:55:00 °N | 004:29:00 °E |
| **Belgium** Liège | 50:38:00 °N | 005:35:00 °E | | **Netherlands** TheHague | 52:05:00 °N | 004:16:00 °E |
| **Bosnia** Sarajevo | 43:52:00 °N | 018:26:00 °E | | **Norway** Bergen | 60:23:00 °N | 005:20:00 °E |
| **Croatia** Dubrovnik | 42:40:00 °N | 018:07:00 °E | | **Norway** Oslo | 59:56:00 °N | 010:17:00 °E |
| **Croatia** Split | 43:31:00 °N | 016:28:00 °E | | **Norway** Stavager | 58:58:00 °N | 005:45:00 °E |
| **Croatia** Zagreb | 45:48:00 °N | 015:58:00 °E | | **Norway** Trondheim | 63:36:00 °N | 010:23:00 °E |
| **Cyprus** Nicosia | 35:10:00 °N | 033:22:00 °E | | **Portugal** Lisbon | 38:44:00 °N | 009:08:00 °E |
| **CzechRep** Prague | 50:05:00 °N | 014:25:00 °E | | **Portugal** Pôrto | 41:09:00 °N | 008:37:00 °E |
| **Denmark** Aalborg | 57:03:00 °N | 009:51:00 °E | | **Romania** Bacau | 46:32:00 °N | 026:59:00 °E |
| **Denmark** Copenhagen | 55:43:00 °N | 012:34:00 °E | | **Romania** Bucharest | 44:25:00 °N | 026:07:00 °E |
| **Denmark** Odense | 55:24:00 °N | 010:25:00 °E | | **Russia** Irkutsk | 52:18:00 °N | 104:15:00 °E |
| **Finland** Helsinki | 60:08:00 °N | 025:00:00 °E | | **Russia** Moscow | 55:45:00 °N | 037:35:00 °E |
| **Finland** Inari | 68:54:00 °N | 027:05:00 °E | | **Russia** Murmansk | 68:59:00 °N | 033:08:00 °E |
| **Finland** Tampere | 61:32:00 °N | 023:45:00 °E | | **Russia** Novosibirsk | 55:04:00 °N | 082:51:30 °E |
| **Finland** Turku | 60:27:00 °N | 022:15:00 °E | | **Russia** Omsk | 55:00:00 °N | 073:22:00 °E |
| **France** Bordeaux | 44:50:00 °N | 000:34:00 °E | | **Russia** Smolensk | 54:49:00 °N | 032:04:00 °E |
| **France** Cherbourg | 49:40:00 °N | 001:35:00 °E | | **Russia** StPetersburg | 59:55:00 °N | 030:25:00 °E |
| **France** Grenoble | 45:11:00 °N | 005:43:00 °E | | **Russia** Vladivostok | 43:09:00 °N | 131:53:00 °E |
| **France** LeChesnay | 48:50:00 °N | 002:07:00 °E | | **Russia** Volgograd | 48:45:00 °N | 044:30:00 °E |
| **France** LeHavre | 49:30:00 °N | 000:06:00 °E | | **Slovakia** Bratislava | 48:10:00 °N | 017:10:00 °E |
| **France** LeMans | 48:00:00 °N | 000:12:00 °E | | **Slovenia** Ljubljana | 46:40:00 °N | 014:30:00 °E |
| **France** Lyon | 45:46:00 °N | 004:50:00 °E | | **Spain** Barcelona | 41:25:00 °N | 002:10:00 °E |
| **France** Marseille | 43:18:00 °N | 005:22:00 °E | | **Spain** Gibraltar | 36:09:00 °N | 005:21:00 °E |
| **France** Nancy | 48:42:00 °N | 006:12:00 °E | | **Spain** Madrid | 40:25:00 °N | 003:43:00 °E |
| **France** Nantes | 47:14:00 °N | 001:35:00 °E | | **Spain** Malaga | 36:43:00 °N | 004:25:00 °E |
| **France** Nice | 43:42:00 °N | 007:16:00 °E | | **Spain** Santander | 43:28:00 °N | 003:48:00 °E |
| **France** Paris | 48:52:00 °N | 002:20:00 °E | | **Spain** Seville | 37:24:00 °N | 005:59:00 °E |
| **France** Rennes | 48:06:00 °N | 001:40:00 °E | | **Spain** Valencia | 39:29:00 °N | 000:24:00 °E |
| **France** Strasbourg | 48:35:00 °N | 007:45:00 °E | | **Sweden** Goteborg | 57:45:00 °N | 012:00:00 °E |
| **France** Toulouse | 43:42:00 °N | 001:28:00 °E | | **Sweden** Malmö | 55:35:00 °N | 013:00:00 °E |
| **Germany** Berlin | 52:30:00 °N | 013:26:00 °E | | **Sweden** Stockholm | 59:20:00 °N | 018:05:00 °E |
| **Germany** Bonn | 50:44:00 °N | 007:06:00 °E | | **Switzerland** Basel | 47:33:00 °N | 007:36:00 °E |
| **Germany** Dortmund | 51:32:00 °N | 007:27:00 °E | | **Switzerland** Geneva | 46:13:00 °N | 006:09:00 °E |
| **Germany** Dresden | 51:03:00 °N | 013:45:00 °E | | **Switzerland** Luzern | 47:02:00 °N | 008:17:30 °E |
| **Germany** Dusseldorf | 51:13:00 °N | 006:47:00 °E | | **Switzerland** Zürich | 47:23:00 °N | 008:33:00 °E |
| **Germany** Frankfurt | 50:06:00 °N | 008:41:00 °E | | **Turkey** Ankara | 39:55:00 °N | 032:50:00 °E |
| **Germany** Freiburg | 48:00:00 °N | 007:52:00 °E | | **Turkey** Istanbul | 41:02:00 °N | 028:59:00 °E |
| **Germany** Hamburg | 53:33:00 °N | 010:00:00 °E | | **UK** Birmingham | 52:30:00 °N | 001:50:00 E° |
| **Germany** Hannover | 52:23:00 °N | 009:44:00 °E | | **UK** Brighton | 50:50:00 °N | 000:10:00 °E |
| **Germany** Karlsruhe | 49:00:00 °N | 008:24:00 °E | | **UK** Bristol | 51:28:00 °N | 002:35:00 °E |
| **Germany** Kassel | 50:19:00 °N | 009:30:00 °E | | **UK** Cardiff | 51:30:00 °N | 003:12:00 °E |
| **Germany** Leipzig | 51:20:00 °N | 012:20:00 °E | | **UK** Edinburgh | 55:56:00 °N | 003:14:00 °E |
| **Germany** München | 48:08:00 °N | 011:35:00 °E | | **UK** Glasgow | 55:52:00 °N | 004:18:00 °E |
| **Germany** Nurenberg | 49:27:00 °N | 011:05:00 °E | | **UK** Leeds | 53:50:00 °N | 001:34:00 °E |
| **Germany** Rostock | 54:06:00 °N | 012:09:00 °E | | **UK** Leicester | 52:40:00 °N | 001:09:00 °E |
| **Germany** STUTTGART | 48:47:00 °N | 009:12:00 °E | | **UK** Liverpool | 53:24:00 °N | 002:58:00 °E |
| **Germany** Wurzburg | 49:48:00 °N | 009:57:00 °E | | **UK** London | 51:30:00 °N | 000:10:00 °E |
| **Greece** Athens | 38:00:00 °N | 023:44:00 °E | | **UK** Manchester | 53:27:00 °N | 002:15:00 °E |
| **Greece** Thessalonika | 40:38:00 °N | 022:58:00 °E | | **UK** Middlesborough | 54:34:00 °N | 001:10:00 °E |
| **Hungary** Budapest | 47:30:00 °N | 019:00:00 °E | | **UK** Newcastle | 55:00:00 °N | 001:30:00 °E |
| **Iceland** Reykjavik | 61:09:00 °N | 021:58:00 °E | | **UK** Nottingham | 52:58:00 °N | 001:10:00 °E |
| **Ireland** Dublin | 53:20:00 °N | 006:15:00 °E | | **UK** Oxford | 51:45:00 °N | 001:14:00 °E |
| **Ireland** Galway | 53:16:00 °N | 009:03:00 °E | | **UK** Sheffield | 53:24:00 °N | 001:27:00 °E |
| **Ireland** Limerick | 52:40:00 °N | 008:38:00 °E | | **UK** Southampton | 50:55:00 °N | 001:23:00 °E |
| **Ireland** Waterford | 52:15:00 °N | 007:06:00 °E | | **Ukraine** Kiev | 50:28:00 °N | 030:29:00 °E |
| **Italy** Cagliari | 39:13:00 °N | 009:08:00 °E | | **Ukraine** L'vov | 49:50:00 °N | 024:00:00 °E |
| **Italy** Florence | 43:47:00 °N | 011:15:00 °E | | **Ukraine** Odessa | 46:30:00 °N | 030:46:00 °E |
| **Italy** Milan | 45:28:00 °N | 009:12:00 °E | | **Ukraine** Sevastopol | 44:36:00 °N | 033:31:00 °E |
| **Italy** Naples | 40:50:00 °N | 014:15:00 °E | | **Yugoslavia** Belgrade | 44:45:30 °N | 022:29:30 °E |
| **Italy** Palermo | 38:08:00 °N | 013:23:00 °E | | | | |

## MOUNTING

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 the connection cables by means of a special measuring equipment.**
3. Install the device on a TH35 rail in the distribution board.
4. Connect the device cables with the terminals in accordance with the installing diagram.
5. Switch on the power supply from the mains.

## INNER DIAGRAM
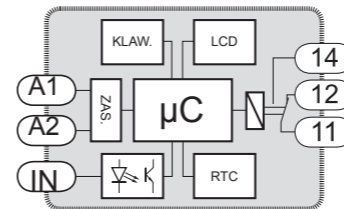


## CASING DIMENSIONS
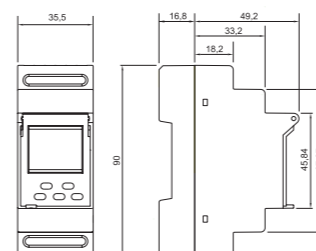


## PRODUCT FAMILY

ZCM-31 programmer belongs to the ZCM product family.

**ZCM-xx/U**

Power supply voltage:
ZCM-XX    - 230 V AC
ZCM-XX/U   - 24-250 V AC
              30-300 V DC

Programmer type:
11 - weekly (1 channel)
12 - weekly (2 channels)
21 - annual
31 - astronomical (1 channel)
32 - astronomical (2 channels)
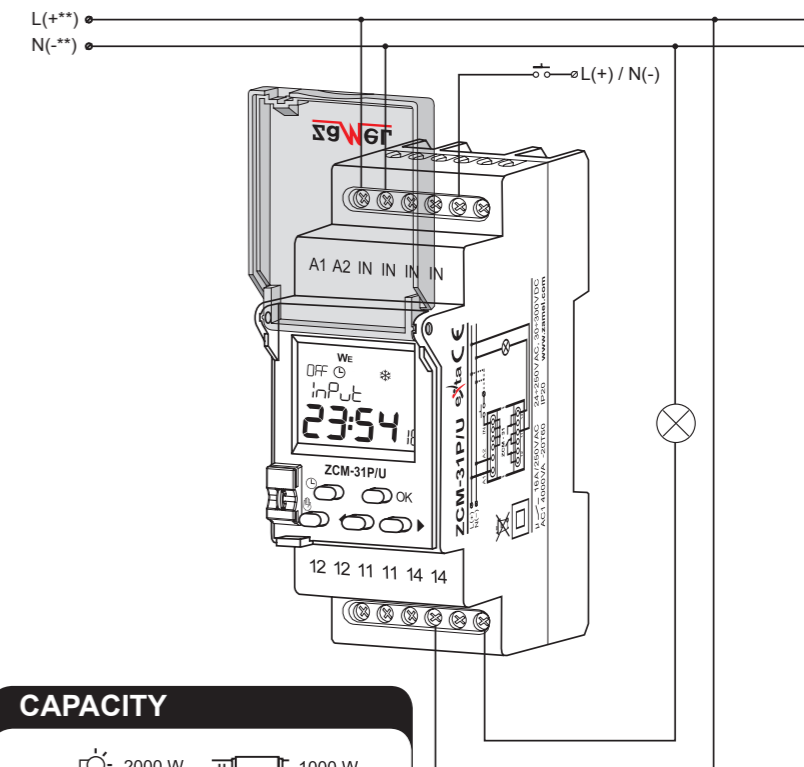XXP – with external memory
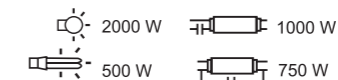
Device symbol

## WARRANTY CARD

There is a 24 month guarantee on the product

Salesman stamp and signature, date of sale

## CONNECTION



L(+**)
N(-**)
⌁ L(+) / N(-)

## CAPACITY

☼ 2000 W    1000 W
500 W    750 W

## ADVANTAGES

**Intelligent calendar** - the system has an in-built calendar, which automatically includes leap years. The above prevents from entering a non existent date and it also calculates the day of the week with reference to the date and remembers about the summer / winter time change.

**Universal external input** - the system is equipped with an external input that can be used by a user to change the clock work mode without the necessity of interfering in a distribution board, it can be done by means of a remote control button.

**Cooperation with the external memory**\*\*- a user has a possibility to quickly write / read the clock settings to / from the external memory and to transfer them to other programmes.

## MAIN RESET
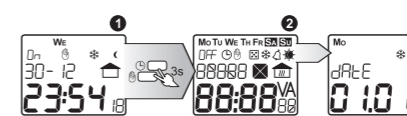


❶ In order to cancel the clock settings (time, date, function activity, etc.) press the (🕐) and (🔅) buttons in the main window simultaneously for **3 seconds**;
❷ Each display field will light up;
❸ After a while, the clock will automatically change to the date and time setting window.

**CAUTION: In order to restore factory settings, press the OK button for a while.**

\* not applicable to ZCM-31
\*\* applicable to ZCM-31P/U