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## PCZ-525.4-PLUS

1-channel astronomical time switch PLUS

Index: PCZ-525.4-PLUS

Astronomical timer is used for switching on and off the lightning or other electrical receivers in accordance to sunset and sunrise with an option to program a night break, which means a temporary switching off of the receivers for savings purposes.

With a programmable night break.

Configuration for iOS and Android phone.



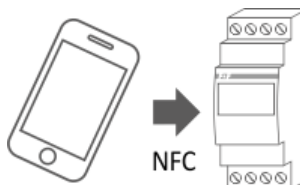
5 902431 678030 >

## FUNCTIONING

### DESCRIPTION

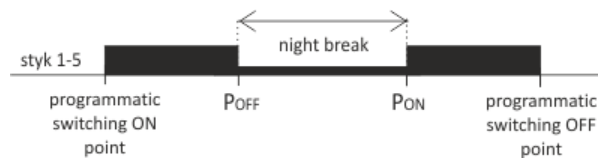
#### NEW FUNCTION IN THE 4-SERIES CLOCK

In the 4-Series, the device can wirelessly read and save the clock's configuration via an Android or iOS phone equipped with an NFC communication module.



We invite you to watch the film:

<https://www.youtube.com/embed/NWG7zHZoek4?enablejsapi=1&origin=https%3A%2F%2Fwww.fif.com.pl>



## Operation

On the basis of information about the current date and the geographical coordinates of its location, the astronomical timer automatically sets daily, scheduled points of lightning switching. The exact time of switch on and off is determined on the basis of the calculation of the position of the sun relative to the horizon and allows you to select one of the four control options (the moment the lights go on and off is set independently):

1. Astronomical sunset and sunrise
2. Civil twilight/dawn
3. Correction - individual correction of program switch on and off points by the user: angular or time
4. Time - setting of the „rigid” hours of switching independently from the cycle of sunrise and sunset

Night break, which means a temporary switching off of the receivers for savings purposes, can be programmed between the programmatic points of switching.

## Timer functions

**AUTOMATIC MODE** - automatic operation by programmatic points of contact switching [highlighted icon on the left side of the display].

**SEMI-AUTOMATIC MODE** - the ability to manually close and open contact during automatic operation. The change will be effective until the switch on/off resulting from the automatic mode [flashing symbol on the display on the left side]

### PLEASE NOTE!

In semi-automatic mode the contact position is opposite to that which results from the program cycle (which means that the contact is opened at night and closed during the day). Semi-automatic operation works only until the end of the current cycle of automatic operation, for example entering semi-automatic mode during the day will turn on the lights until the time of the scheduled switch resulting from the astronomic cycle. Then, the clock returns to automatic operation (and the light is still switched on until dawn). Mode switching is done using the +/- buttons on the main level.

**MANUAL MODE** - [ON] permanently closed contact (position 1-5) or [OFF] permanently open contact (position 1-6) when the AUTOMATIC MODE is off [no icon on the left side of the display].

**ASTRONOMICAL SUNRISE AND SUNSET** - moments when the center of the solar disk touches the horizon (parameter  $h = -0.583^\circ$ ). Due to the simplification of calculations, the deviation of a few minutes in relation to data designated by „HM Nautical Almanac Office” is acceptable.

### PLEASE NOTE!

The advantage of setting the point of switch on/off as a function of the position of the sun disk is that this feature is immune to change of the duration of the dusk/dawn for the different seasons of the year, so that the switch on/off occurs always for the same level of brightness.

**CIVIL TWILIGHT AND DAWN** - including the calendar - the phase of the sunset, in which the center of the solar disk will be no more than 6 angular degrees below the horizon (solar disk viewed from Earth has a diameter of approximately half a degree). During this time brightest stars and planets („Evening star”, „first star” on Christmas Eve) appear in the sky (with good air clarity). Due to the scattering of light in the atmosphere there is still generally sufficient sunlight for normal operation in the open space without artificial light sources. Civil dawn (and calendar) - the time before sunrise, when the center of the solar disk is already higher than  $6^\circ$  below the horizon line.

**SCHEDULED POINT OF SWITCH ON/OFF** - times of contact switching on (position 1-5) and off (position 1-6) determined based on the selected control option: astronomical sunrise/sunset or civil twilight/dusk and location.

**NIGHT BREAK** - user-settable temporary switching between the program points of switching on and off.

**CONFIGURATION** - designation of the LOCATION and setting the SCHEDULED POINTS OF SWITCH ON/.

**LOCATION** - the geographical coordinates and time zone of a place relatively close to the place of the timer installation. Locations and time zones of approx. 1500 cities from 51 countries of the world are defined in the memory of the device. You can enter your personal settings as geographical location and time zone (UTC).

**COORDINATE CODE** - geographical coordinates assigned for specified cities to help provide the location (cities and their associated codes are shown in the table).

**CORRECTION** - acceleration or deceleration of the switch on/off times in relation to astronomical time points of sunrise and sunset:

$\pm 15^\circ$  - angular correction for the point of switching relative to the position of the center the sun disk to the horizon;

$\pm 180$  min. - time correction for the point of switching as a shift of time relative to sunrise/sunset.

**DST** - Daylight Saving Time - international name of summer time (free translation: the sunlight acquisition time). Disables automatic time changes.

**AUTOMATIC TIME CHANGE** - change from winter to summer time. It can be set to work with or without automatic change. The controller is equipped with a function to select the time zone so that the switching time is consistent with the local time.

**DATE PREVIEW** - preview of the set date (OK).

**PREVIEW OF THE SCHEDULED POINT OF SWITCH ON/OFF and LOCATION** - the ability to view the current time of switch the contact open and close and the set locations (geographic coordinates are displayed) and the UTC time zone (subsequent pressing of the +/- buttons in the date preview mode).

**NFC WIRELESS COMMUNICATION** - wirelessly read and write timer configuration from an Android phone equipped with the NFC module.

**PCZ Configurator APP** - free application for Android mobile phones and tablets equipped with the NFC module for wireless communication.

Features:

- \* timer configuration in Offline mode (without the connection with the timer);
- \* coordinates settings by selecting the preset location (code coordinates), a direct indication of the location on a map on your phone or copying the current position recorded by the GPS in your phone;
- \* read and write the configuration of the controller;
- \* quick programming of multiple controllers using a single configuration;
- \* read and write the configuration from and to a file;
- \* sharing the configuration via e-mail, Bluetooth, network drives...
- \* identification of the connected timer and the ability to name individual devices;
- \* automatic backups of the configuration. Along with a unique identifier for each timer, user can easily restore previous configuration;
- \* set the time and date according to the clock in mobile phone

The app is available on Google Play!

**CLOCK TIME CORRECTION** - set monthly adjustment of the seconds of the system clock.

**BATTERY INDICATOR** - the controller comes with built-in control system of the backup timer battery used in case of main power supply failure. If the battery is low, user will receive information that the battery needs to be replaced.

**LCD BRIGHTNESS ADJUSTMENT** - change the contrast of the display to get a clear LCD read-out from different viewing angles.

**RELAY STATE MEMORY** - the relay state in manual mode will be remembered even after power supply failure.

**Note!**

Currently sold clock is PCZ-525 series 3.

This is an index indicating the version of the software clock.

Check what version of software is your clock, and download the appropriate instructions.

Depth	65 mm
Height	90 mm
Width	35 mm
Width in number of modular spacings	2
Max. switching power LED	250 W
Nominal switching current at 250 V AC	16 A
Number of memory locations	500
Shortest switching time channel 1	1.00000007 min
Number of contacts	1
Accuracy per day	1 s
Autonomy in years	6
Number of channels	1
Supply voltage	24-265 V
Text guidance in display	No
External programming	Yes
With memory card	No
60 min program	No
24 h program	No
Weekly program	No
Annual program	No
Holiday program	No
Impulse program	No
Cycle program	Yes
Astro program	Yes
Random program	No
Hour meter	No
Mains synchronous	No
Quartz controlled	Yes
Radio-controlled	No
Radio-controlled (DCF77)	No
GPS (global positioning system)	No

Automatic switching summer/winter time	Yes
Suitable for manual operation	Yes
External push button input	Yes
Switching preselection	No
Potential free switch contact	Yes
Mounting method	DIN rail
Voltage type (supply voltage)	AC/DC
Contact type	Change-over contact (NO/NC)
Degree of protection (IP)	IP20
Shortest switching time channel 2	0 min
Autonomy in hours	0

Manual

CE Declaration