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PCZ-526.2 (Z)

PROGRAMMABLE CONTROL TIMERS astronomic type

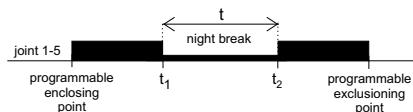


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PURPOSE

Astronomical control timers is as for enclosing and switching off of illumination or according to other electric receivers 24 hours, astronomical points of west and sunrise



ATTENTION!

It touches east and they are defined sunset as moment, when it touches center of sunny disk horizon it (parameter $h = -0,583^\circ$). Deviation of row several minute commits from the point of view of simplification of account relatively to data by indicated „HM Nautical Almanac Office”.

DESCRIPTION OF WORK AND FUNCTIONS

AUTOMATIC WORK - according to program points of enclosures and switching off joint [sign \odot on the left of display]

HAND/WORK- [ON] - enduring connection of joint (position 1-5) or [OFF] - enduring switch off joint (position 1-6) by activated AUTOMATIC WORK [lack of sign \odot on the left of display]

PROGRAMMABLE POINT OF ENCLOSURE - time of enclosure in foothold about astronomical point of sunset indicated joint (position 1-5) and HOUR SLIP by user program and TIME CORRECTION.

PROGRAMMABLE POINT OF EXCLUSION - time of exclusion in foothold about astronomical point of sunset indicated joint (position 1-6) and HOUR SLIP by user program and TIME CORRECTION.

CONFIGURATION - application of LOCALIZATION and assignment of POINT OF PROGRAM ENCLOSURE and EXCLUSION

LOCALIZATION - application of CODE COORDINATES or manual optional setups geographic coordinates (for CODE COORDINATES 86 - SITE USER)

COORDINATES CODE - for detailed cities assign city geographic facilitating inscription localization (coordinates and assign serve codes in table memorial)

HOUR SLIP - assignment of geographic time zone in range $\pm 1\text{--}12$ relatively to universal time greenwich UT (00). For poland +1 hour. Points of time east and sunset they undergo parallel slip about served value .

TIME CORRECTION - acceleration or delay of time of enclosure or relatively to astronomical time points of east exclusion (switching off) and sunset. Setups in range $\pm 99\text{min}$ for point of west and sunrise are performed in apart.

DST - Daylight Saving Time - global name of summer time (free translation time of winning sunny light). Function enabling exclusion automatic change time.

NIGHT BREAK - set by user time of programming points of enclosure and exclusion.

CHANNEL - user programming line with sets in KONFIGURATION MODE and NIGHTBREAK setting a enclosure joint.

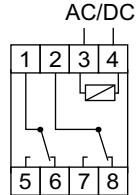
FUNCTIONING

The astronomical timer activates and deactivates a device at certain hour, i.e. at sunrise and sunset. Should more settings that are precise be required for locations of different geographical co-ordinates, there is an option to set a given longitude and latitude or select a special code which entails automatic setting of these co-ordinates for a given place in Europe (list of locations and their codes may be found in the manual). Time points of enclosing and exclusion are set by user by HOUR SLIP MODE or TIME CORRECTION MODE it means , possible is speed up or delay a programmable time points of enclosing or exclusion for sunrise and sunset. Possible is programming a night break between enclosure and exclusion programming points (take off the power for hour to austerity energy).

TECHNICAL DATA

supply	24-264VAC/DC
current load	2x(<16A)
contacts	2x1P
display maintenance time	non
timer maintenance time	6 years
indication accuracy item	1sec
time deviation	$\pm 1\text{s}/24\text{h}$
schedule time accuracy item	1min
correction activation and deactivation time	$\pm 0\text{--}99\text{min}$
power consumption	1,5W
working temperature	-20+50°C
connection	screw terminals 2,5mm ²
dimensions	2 modules (35mm)
fixing	on the rail TH-35

WIRING DIAGRAM



Channell 1:

joint 1-5 "ENCLOSE" [ON]

joint 1-6 "EXCLUSION" [OFF]

Channell 2:

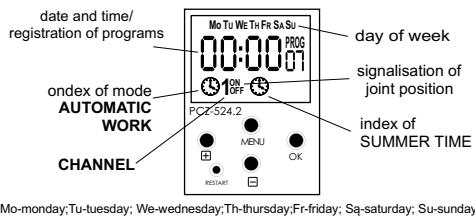
joint 2-7 "ENCLOSE" [ON]

joint 2-8 "EXCLUSION" [OFF]

ASSEMBLY

1. Take OFF the power.
2. Put on the control timer on the rail in the switchgear box.
3. Connect the power cables with wiring diagram.
- 4 Connect the receivers with wiring diagram.
5. Set a correct date (see p. 2) and time (see p3)
6. Set to user configuration (see p4)

DESCRIPTION OF DISPLAY AND PANEL STEERING



DESCRIPTION OFF BUTTONS FUNCTION

MENU:

- passing from **AUTOMATIC WORK** to **HANDIWORK** and inversely (preeser <2sec)
- passing in **CONFIGURATION** mode (preeser >3sec). Time must be in **AUTOMATIC WORK** mode
- acceptance of settings **DATE, TIME AND DST** and the rest of settings of **CONFIGURATION** mode.
- OK:**
 - approve of registration and passage to next position
 - to peep settings podglad ustawien **PROGRAMMABLE POINTS OF ENCLOSURE AND EXCLUSION**
 - +**:
 - change setting position by +1 in choosen programmable position (preesing a button make intensive changes in settings by +1 in loop)
 - in **HANDIWORK** mode:permanent enclosure **ON** and exclusion **OFF** a joint
 - in **AUTOMATIC WORK** mode:to peepserting of date (dd-mm-yy)
 - : change setting position by +1 in choosen programmable position (preesing a button make intensive changes in settings by +1 in loop)

RESET:

- to reset a processor - in case of hook-up of function of work indispensable of timer. It does not erase setups of dates and time and registration settings.

-+ **MENU** ("hard"reset) simultaneously prees:

-delete of all settings of date and time and all registration from memory (preesing >3sec two buttons simultaneously).

PROGRAMMING

1. START

1.1 Take on the **POWER**

1.2 Timer started count time from hour. 00:00

ATTENTION! If after took the power timer show another time and date then it means, in memory timer are earlier setting.



1.3lin order to change of settings, preesing MENU>3sec.(see p2.1)

ATTENTION! If timer have got in memories earlier settings, they could be deleted by "hard" reset (-+ MENU simultaneously prees >3sec.).

ATTENTION! All earlier configuration will be delete. Timer autoamticly go to setting mode of date (see 2.1).

2. DATE

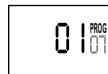
Prees a button **MENU**>3sec.

2.1 Timer pass to setting mode of year.



By buttons +/- set actual year and enter **OK**.

2.2 Timer pass to setting mode of month.



By buttons +/- set actual month and enter **OK**.
2.3 Timer pass to setting mode a day of month.



By buttons +/- set to actual day of month
*by button **OK** pass to configuration mode of hour (see p3.1)
*by button **MENU** accept to registry and out of programming mode.

ATTENTION! Change from winter time to summer time and inversely is make automatically. Choose a date definite a time (winter time or summer time).

SUMMER TIME-added a sign **⌚** on the right side of display

WINTER TIME-lack a sign **⌚** on the right side of display

ATTENTION! Possible is turn OFF automatic function of change a time (see p.4).

3. TIME

Changes of time (hour;minute) make by prees **MENU**>3sec.

ATTENTION! Changes of TIME mode are previoused by checking or changing a date (see p2.1)

3.1 Timer pass to setting mode of minutes.



By buttons +/- set to minutes and enter **OK**.

3.2 Timer pass to setting mode of hour.



By buttons **↑/↓** set a hour.

*By button **OK** enter a hour .Timer automatically pass to configuration mode of DST (see p4.1)

*By button **MENU** accept all of registry and out of programming mode.

4. DST - automatic change of time winter/summer.

Changes in option DST prees **MENU** >3sec.

ATTENTION! Changes of DST mode are previoused by checking or changing a date (see p2.1) and time (see p3.1).

4.1 Timer pass to configuration mode of DST.



By button +/- set to :

ON - automatic change time function

OFF - lack of automatic change time function

*Enter to option by button **OK**. Timer automatically pass to CONIGURATION mode (see p5.1).

*By button **MENU/DELETE** accept settings and out of programming mode.

5. CONFIGURATION - set to CORRECTION OF TIME, LOCALIZATION AND HOUR DELAY.

Change CONFIGURATION by press MENU >3sec.
ATTENTION! Changes of CONFIGURATION mode are previewed by checking or changing a date (see p2.1), time (see p3.1) and option.

5.1 Timer pass to CORRECTION MODE for sunset point.

ATTENTION!
 Range from -99min to +99min. Value "-" (minus) to speed up to enclose by put number of minutes. Value "+" (plus) delay to enclose by put number of minutes.



By buttons +/- set to number of minutes and enter OK.

5.2 Timer pass to CORRECTION TIME mode for sunrise point

ATTENTION!

Range from -99min to +99min. Value "-" (minus) to speed up switching off by put number of minutes. Value "+" (plus) to delay switching off by put number of minutes.



By buttons +/- set to number of minutes and enter OK.

5.3 Timer pass to configuration mode of LOCALIZATION.

ATTENTION!

Check coordinates code table and find a city which is near your localization and put suitable code. Standard set code is code 79 for Warsaw

ATTENTION!

Choose and accept of code 86 (USER COORDINATES) cause to pass to handiwork mode (see p7.2).



By buttons +/- set to code and enter OK.
 5.4 Timer pass to HOUR SLIP mode..

ATTENTION!

Standard setting for POLAND +01. Range from -12hours to +12hours.
 Value "-" (minus) to move "for rear" parallel astronomical points of sunrise and sunset time by put of number hours.
 Value "+" (plus) to move "forward" parallel astronomical point of sunrise and sunset time by number of put hours.



By buttons +/- set to a value of delay and enter OK.

*Timer automatically pass to setting mode of NIGHT BREAK. (see p6.1)

*By button MENU accept allow registry and out of programming mode.

6. NIGHT BREAK

Change in option of NIGHT BREAK mode press MENU >3sec.

ATTENTION! Out of settings from NIGHT BREAK is previewed by checking and changing of date (see p2.1), time (see p3.1), option DST (sleep 4.1) and KONFIGURATION (see p5.1).

ATTENTION!

If timer have to work out from NIGHT BREAK set the same value of start and end times.

6.1 Timer pass to setting mode of start minutes of NIGHT BREAK P1 for channel 1(sign 2OFF on the right side).



By buttons +/- set to a minutes and enter OK.

6.2 Timer pass to setting mode of end minutes of NIGHT BREAK.

(sign 1ON on right side).



By buttons +/- set to a hour and enter OK.

*Timer again pass to setting mode of date.(see p2.1)

*By button MENU accept allow registry and out of programming mode.

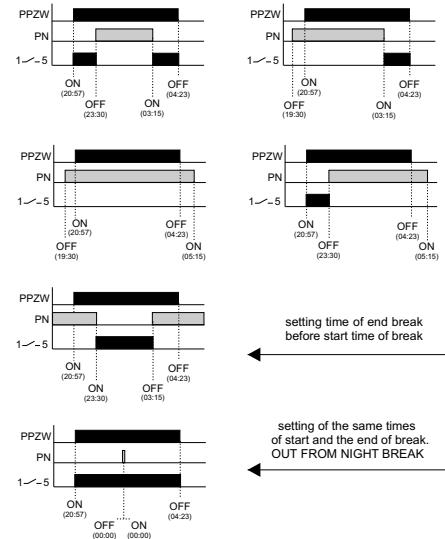
By buttons +/- set to a minutes and enter OK.

Timer pass to setting mode of hour of end of NIGHT BREAK P2 for channel 2 (sign 2OFF on right side). Repeat action p6.1 and p6.2 to channel 2.



ATTENTION!

* Set a time of NIGHT BREAK make a enclosing and exclusion of joint. They are treat as orders and realized in chronology of set time. Possibility of setting of enclosing and exclusion time of joints with accordance PROGRAMMING ENCLOSING AND EXCLUSION POINTS with NIGHT BRAK times are ilustrate by following diagrams.



PPZW - programmable points of enclosing and exclusion

PN - night break

/ - joint position (■ - joint enclosed)

7. HANDIWORK SETTING GEOGRAFICAL COORDINATES

7.1 Pass to handiwork setting mode of geografical coordinates is previousied by pass of CONFIGURATION MODE (see p5). In setting mode of COORDINATES CODE set to code of number 86 (USER COORDINATES) and enter OK. Timer pass to setting mode of geografical coordinates

ATTENTION!

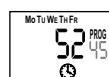
Standarts setting coordinates for Warsaw (52°15'N 21°00'E)

7.2 Timer pass to setting mode of width minutes (sign L on the left).



By buttons +/- set to minutes and enter OK..

7.3 Timer pass to of setting mode of geografical coordinates.

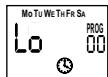


ATTENTION!

Value up than "zero" mean east of geografical lenght coordinates.
Value down than "zero" mean west of geografical lenght coordinates.

By buttons +/- set to value and enter OK..

7.4 Timer pass to of setting mode of minutes of geografical lenght coordinates.



By buttons +/- set to minutes and enter OK..

7.5 ZTimer pass to of setting mode of minutes of geografical lenght coordinates..



ATTENTION!

Value up than "zero" mean east of geografical lenght coordinates.
Value down than "zero" mean west of geografical lenght coordinates.

By buttons +/- set to value and enter OK..
Timer pass to setting mode of HOUR SLIP (see p.4).

8. DELETED MEMORIES - "hard" reset

If you want to delete all settings of DATE, TIME and CONFIGURATION you must together preesing a buttons MENU and - for >3sec.

9. RESET

Restart of processor is needed when all function of timer are to stoped. Don't delete settings of DATE, TIME and CONFIGURATION MODE from memories. Press a button RESET for <1sec.

AUTOMATIC FUNCTION OF TIME CHANGE !

Changes time from winter time to summer time is automatically make at the last sunday of march at 2 a.m. (add 1 hour to actual time).

ATTENTION! Possible is take OFF automatic function of time change (see p.4).

PEEP TO A DATE

In AUTOMATIC WORK prees a button +. Timer displaying a set date (dd-mm-yy). After 5 sec timer automatically pass to central level.

PEEP TO A PROGRAMMABLE POINT OF ENCLOSURE AND EXCLUSION

In AUTOMATIC WORK mode next preeser a button OK. see a next settings in configuration:

- programmable point of enclosure for channel 1
- start of night break P1
- end of night break P1
- programmable point of exclusion for channel 1
- programmable point of exclusion for channel 2
- start of night break P2
- end of night break P2
- programmable point of exclusion for channel 2

After 5 sec. timer automatically pass to central level

Example table with enclosure and exclusion points on 22.06.2006 for chosen settings of CONFIGURATION			
ASTRONOMICAL POINT	SUNSET	19:59	
	SUNRISE	3:16	
TIME CORRECTION	ENCLOSURE	+20min	
	EXCLUSION	-15min	
HOUR SLIP		+01	00
PROGRAMMABLE POINTS	ENCLOSURE	21:19	20:19
	EXCLUSION	4:01	3:01
		18:19	

Kod Miasto	°N	°E	City	Kraj
1 Praga	50 08	14 25	Prague	CZECHY
2 Pilzno	49 47	13 22	Pizen	
3 Budziejowice	48 58	14 29	Ceske Budejovice	
4 Brno	49 10	16 37	Brno	
5 Olomouc	49 35	17 15	Olomouc	
6 Ostrawa	49 51	18 19	Ostrava	
7 Hradec Kralove	50 13	15 49	Hradec Kralove	
8 Bratysława	48 08	17 05	Bratislava	SŁOWACJA
9 Żylinia	49 13	18 44	Zilina	
10 Banská Bystrica	48 44	19 08	Banska Bystrica	
11 Poprad	49 03	20 17	Poprad	
12 Koszyce	48 43	21 15	Kosice	
13 Budapeszt	47 30	19 04	Budapest	
14 Debrecen	47 33	21 37	Debrecen	WEŁGRY
15 Szeged	46 15	20 08	Szeged	
16 Szombathely	47 13	16 37	Szombathely	
17 Györ	47 40	17 38	Györ	
18 Wilno	54 42	25 17	Vilnius	LITWA
19 Kowno	54 54	23 53	Kaunas	
20 Klaipeda	55 41	21 08	Klaipeda	
21 Poniewież	55 43	24 21	Panevezys	
22 Szawle	55 56	23 18	Siauliai	
23 Ryga	56 57	24 06	Riga	
24 Lipawa	56 30	21 00	Liepaja	ŁOTWA
25 Dyneburg	55 52	26 32	Daugavpils	
26 Aluksne	57 26	27 01	Aluksne	
27 Tallin	59 25	24 42	Tallin	ESTONIA
28 Kuressaara	58 13	22 29	Kuressaare	
29 Marnawa	58 22	24 29	Pamu	
30 Tartu	58 22	26 43	Tartu	
31 Kijów	50 26	30 32	Kiev	UKRAINA
32 Lwów	49 51	24 01	Lvov	
33 Charków	50 00	36 12	Kharkiv	
34 Dniepropietrowsk	48 29	35 01	Dnipropetrowsk	
35 Doniec	48 03	37 45	Donetsk	
36 Kamieniec Podolski	48 40	26 31	Kamenets Polodol'skiy	
37 Zaporoże	47 52	35 08	Zaporizhzhya	
38 Krzywy Róg	47 54	33 20	Krivoj Rog	
39 Symferopol'	44 58	34 04	Symferopol	
40 Odessa	46 29	30 40	Odessa	
41 Kirovohrad	48 31	32 16	Kirovohrad	BIELORUŚ
42 Chmielewski	49 25	26 59	Khmelnystkyj	
43 Minsk	53 55	27 32	Minsk	
44 Grodno	53 40	23 49	Grodno	
45 Witebsk	55 12	30 11	Vitebsk	
46 Mazyr	52 03	29 14	Mazyr	
47 Brześć	52 06	23 38	Brest	
48 Moskwa	55 46	37 33	Moscow	ROSJA
49 Petersburg	59 56	30 14	St Petersburg	
50 Niżny Nowgorod	56 20	43 53	Nizhniy Novgorod	
51 Smoleńsk	54 47	32 02	Smolensk	
52 Rastow	47 13	39 42	Rostov	
53 Wołgograd	48 45	44 24	Volgograd	
54 Kursk	51 43	36 08	Kursk	
55 Uhta	63 36	53 47	Ukhta	
56 Vorkuta	67 31	63 59	Vorkuta	
57 Murmańsk	68 58	33 05	Murmańsk	
58 Archangielsk	64 32	40 33	Archangel	
59 Kazan	55 50	49 03	Kazan	
60 Perm	58 01	56 13	Perm	
61 Ekaterinburg	66 51	60 35	Ekaterinburg	
62 Ufa	54 50	56 06	Ufa	
63 Czelabińsk	55 09	61 25	Chelyabinsk	
64 Syktywkar	61 38	50 52	Syktynkar	
65 Samara	53 12	50 07	Samara	
66 Omsk	54 58	73 22	Omsk	
67 Tomsk	56 30	84 58	Tomsk	
68 Abaka	53 43	91 26	Abakan	
69 Norylsk	69 18	88 12	Noril'sk	
70 Irkuck	52 20	104 12	Irkutsk	
71 Jakuck	62 02	129 42	Yakutsk	
72 Kamczacki Petropawłowsk	53 02	158 38	Petropavłowsk Kamczacki	
73 Habarowsk	48 25	135 06	Khabarovsk	
74 Alma-ata	43 15	76 53	Almaty	KAZACHSTAN
75 Zekazgan	47 46	67 39	Dzhezkażgan	
76 Aterau	47 07	51 53	Atyrau	ARMENIA
77 Erewan	40 12	44 32	Yerevan	
78 Tbilisi	41 42	44 47	Tbilisi	GRUZJA
79 Warszawa	52 15	21 00	Warsaw	
80 Baku	40 22	49 49	Baku	AZERBEJDZAN
81 Taszkiert	41 20	69 07	Toszkiert	
82 Nukus	42 27	59 36	Nukus	UZBEKISTAN
83 Biszkek	42 53	74 32	Biszkek	
84 Aszchabad	37 57	58 21	Ashgabat	TURKMENISTAN
85 Duszanbe	38 35	68 45	Dushanbe	
86 Położenie Użytkownika	52 15	21 00	wartości ustwione fabrycznie	