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PCZ-526.2 Z

PROGRAMMABLE CONTROL TIMERS
astronomic type

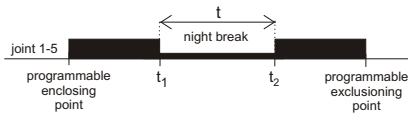


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PURPOSE

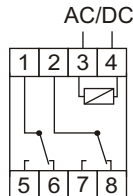
Astronomical control timers is as for enclosing and switching off of illumination or according to other electric receivers 24 hours, astronomical points of west and sunrise



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	±1s/24h
schedule time accuracy item	1min
corection activation and deactivation time	±0+99min
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



Chanell 1:
joint 1-5 "ENCLOSE" [ON]
joint 1-6 "EXCLUSION" [OFF]
Chanell 2:
joint 2-7 "ENCLOSE" [ON]
joint 2-8 "EXCLUSION" [OFF]

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 austerly energy).

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)

Kod	Miasto	*N	*E	City	Kraj	
1	Praga	50 08	14 25	Prague	CZECH REPUBLIC	
2	Pilzno	49 47	13 22	Pizen		
3	Budejovice	48 58	14 29	Ceske Budejovice		
4	Brno	49 10	16 37	Brno		
5	Olomouc	49 35	17 15	Olomouc		
6	Ostrava	49 51	18 19	Ostrava		
7	Hradec Kralowe	50 13	15 49	Hradec Kralove	SLOVAKIA	
8	Bratislava	48 08	17 05	Bratislava		
9	Zylina	49 13	18 44	Zilina		
10	Banska Bystrica	48 44	19 08	Banska Bystrica		
11	Poprad	49 03	20 17	Poprad		
12	Koszyce	48 43	21 15	Kosice		HUNGARY
13	Budapeszt	47 30	19 04	Budapest		
14	Debrecen	47 33	21 37	Debrecen		
15	Szeged	46 15	20 08	Szeged		
16	Szombathely	47 13	16 37	Szombathely		
17	Gyor	47 40	17 38	Gyor	LITHUANIA	
18	Wilno	54 42	25 17	Vilnius		
19	Kowno	54 54	23 53	Kaunas		
20	Klajpeda	55 41	21 08	Klaipeda		
21	Poniewiez	55 43	24 21	Panevezys		
22	Szawle	55 56	23 18	Siauliai		LATVIA
23	Ryga	56 57	24 06	Riga		
24	Lipawa	56 30	21 00	Liepaja		
25	Dyneburg	55 52	26 32	Daugavpils		
26	Aluksne	57 26	27 01	Aluksne	ESTONIA	
27	Talin	59 25	24 42	Tallin		
28	Kuressaara	58 13	22 29	Kuressaare		
29	Mamawa	58 22	24 29	Parnu		
30	Tartu	58 22	26 43	Tartu		UKRAINE
31	Kijow	50 26	30 32	Kiev		
32	Lwow	49 51	24 01	Lvov		
33	Charkow	50 00	36 12	Kharkiv		
34	Dniepropietrowsk	48 29	35 01	Dnipropetrovsk		
35	Doniec	48 03	37 45	Donetsk		
36	Kamieniec Podolski	48 40	26 31	Kamenets Podol'skiy	BELARUS	
37	Zaporozze	47 52	35 08	Zaporizhzhya		
38	Krzywy Rog	47 54	33 20	Krivoy Rog		
39	Symferopol	44 58	34 04	Simferopol		
40	Odessa	46 29	30 40	Odessa		
41	Kirovohrad	48 31	32 16	Kirovohrad		
42	Chmielnicki	49 25	26 59	Chmelnytsky		
43	Minsk	53 55	27 32	Minsk		
44	Grodno	53 40	23 49	Grodno		

48	Moskwa	55 46	37 33	Moscow	
49	Petersburg	59 56	30 14	St Petersburg	
50	Nizny Nowgorod	56 20	43 53	Nizhniy Novgorod	
51	Smoleńsk	54 47	32 02	Smolensk	
52	Rastow	47 13	39 42	Rostov	
53	Wolgograd	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	Murmansk	
58	Archangielsk	64 32	40 33	Archangel	
59	Kazań	55 50	49 03	Kazan	
60	Perm	58 01	56 13	Perm	
61	Ekaterinburg	56 51	60 35	Yekaterinburg	
62	Ufa	54 50	56 06	Ufa	
63	Celjabinsk	55 09	61 25	Chelyabinsk	
64	Syktwykar	61 38	50 52	Syktvar	
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 Petropawłowski	53 02	158 38	Petropavlovsk Kamchatskiy	
73	Habarowski	48 25	135 06	Khabarovsk	
74	Alma-ata	43 15	76 53	Almaty	
75	Zezkazgan	47 46	67 39	Dzhezkazgan	KAZACHSTAN
76	Aterau	47 07	51 53	Atyrau	
77	Erewan	40 12	44 32	Yerevan	ARMENIA
78	Tybilisi	41 42	44 47	Tbilisi	GRUZJA
79	Warszawa	52 15	21 00	Warsaw	POLSKA
80	Baku	40 22	49 49	Baku	AZERBEJDZAN
81	Taszkent	41 20	68 07	Toshent	
82	Nukus	42 27	59 36	Nukus	UZBEKISTAN
83	Biszkek	42 53	74 32	Bishkek	KIRGISTAN
84	Aszchabad	37 57	58 21	Ashgabat	TURKMENISTAN
85	Duszanbe	38 35	68 45	Dushanbe	TADZYKISTAN
86	Polożenie Użytkownika	52 15	21 00	wartości ustawione	

ROSSIA

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 ☺ on the left of display]

HANDIWORK- [ON] - enduring connection of joint (position 1-5) or **[OFF]** - enduring switch off joint (position 1-6) by activated AUTOMATIC WORK [lack of sign ☺ 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 $\pm 1+12$ relatively to universal time greenwich UT (00). For poland + 1 hour. Points of time east and sunset they undergo parallel slip about served value .

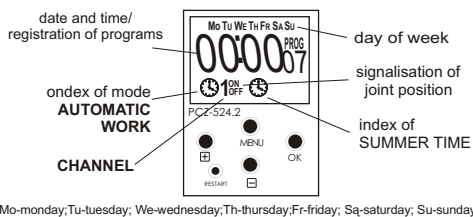
TIME CORRECTION - acceleration or delay of time of enclosure or relatively to astronomical time points of east exclusion (switching off) and sunset. Setups in range ± 99 min for point of west and sunrise are performed in apart.

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 NIGHT BREAK steering a enclosure joint.

DESCRIPTION OF DISPLAY AND PANEL STEERING



Mo-monday, Tu-tuesday; We-wednesday, Th-thursday, Fr-friday; Sa-saturday; Su-sunday

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 podgląd ustawień PROGRAMMABLE POINTS OF ENCLOSURE AND EXCLUSION

+:

- change setting position by +1 in choosen programable position (preesing a button make intensitive 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 programable position (preesing a button make intensitive 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).

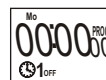
PROGRAMMING

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.



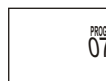
1.3 in order to change of settings, preesing MENU >3sec. (see p.2.1)

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 Timmer 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 preivoused 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.

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

Change CONFIGURATION by prees MENU >3sec.

ATTENTION! Changes of CONFIGURATION mode are preivoused 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.

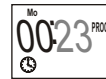
ATTENTION!

Check coordinatates 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).

3.2 Timer pass to setting mode of hour.



By buttons ↑/↓ set a hour.

*By button OK enter a hour .Timer automaticly 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 preivoused by checking or changing a date (see p2.1) and time (see p3.1).

4.1 Timer pass to configuration mode of DST.



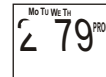
By button +/- set to :

ON - automatic change time function

OFF - lack of automatic change time function

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

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



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 automaticly 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 prees MENU >3sec.

ATTENTION! Out of settings from NIGHT BREAK is preivoused by checking and changing of date (see p2.1), time (see p3.1), option DST (seep 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.
 Timer pass to setting mode of start minutes of NIGHT BREAK..



By buttons +/- set to a hour and enter OK.
 6.2 Timer pass to setting mode of end minutes of NIGHT BREAK.
 (sign 1 ON on right side).

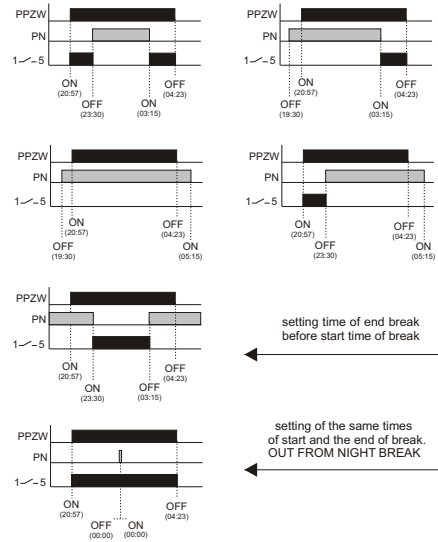


By buttons +/- set to a hour and enter OK.
 *Timer again pass to setting mode of date. (see p.2.1)
 *By button MENU accept allow registry and out of programming mode.

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 2 OFF on right side). Repeat action p6.1 and p6.2 to
 channel 2.



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



setting time of end break
 before start time of break

setting of the same times
 of start and the end of break.
 OUT FROM NIGHT BREAK

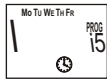
PPZW - programmable points of enclosing and excusioning
 PN - night break
 ~ - joint position (■ - joint enclosed)

7. HANDIWORK SETTING GEOGRAFICAL COORDINATES

7.1 Pass to handiwork setting mode of geografical coordinates is
 previoused 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

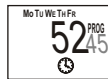
ATTENTION!
 Standarts setting coordinates for Warsaw (52°15'N 21°00'E)

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



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

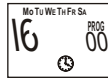
7.3 Timer pass to of setting mode of geografical coordinates.



ATTENTION!
 Value up than "zero" mean north of geografical width coordinates.
 Value down than "zero" mean south geografical width coordinates.

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

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



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

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



ATTENTION!
 Value up than "zero" mean east of geografical lenhgt coordinates.
 Value down than "zero" mean west of geografical lenhgt coordinates

By buttons +/- set to value and enter OK.
 Timer pass to setting mode of HOUR SLIP (see p5.4).

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

AUTOMATIC FUNCTION OF TIME CHANGE !

Changes time from winter time to summer time is autmaticly 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 displaing a set date
 (dd-mm-yy). After 5 sec timer automaticly 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 seetings in configuration:

- programmable point of enclosure foe 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 automaticly pass t o central level

Example table with enclosure and exclusion points on 22.06.2006 for choosen settings of CONFIGURATION				
ASTRONOMICAL POINT	SUNSET	19:59		
	SUNRISE	3:16		
TIME CORRECTION	ENCLOSURE	+20min		
	EXCLUSION	-15min		
HOURL SLIP		+01	00	-02
PROGRAMMABLE POINTS	ENCLOSURE	21:19	20:19	18:19
	EXCLUSION	4:01	3:01	1:19