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PCZ-524.2 (Z)

PROGRAMMABLE CONTROL TIMERS astronomic type



www.fif.com.pl

F&F products are covered by an 24 months warranty from date of purchase.

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

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). Furthermore, there is an option to shift the preset activation/deactivation time for ± 99 min. for sunrise and sunset times separately.

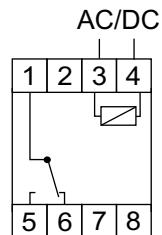
ASSEMBLY

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 1) and time (see p 3.4)
5. Set to user configuration (see p4)

TECHNICAL DATA

supply	24÷264VAC/DC
current load	<16A
contacts	1P
display maintenance time	non
timer maintenance time	6 years
indication accuracy item	1sec
time deviation	±1s/24h
schedule time accuracy item	1min
correction 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 "ACTIVATE" [ON]
joint 1-6 "DEACTIVATE" [OFF]

Kod	Miasto	°N	°E	City	Kraj
1	Praga	50 08	14 25	Prague	CZECHY
2	Pilzno	49 47	13 22	Plzen	
3	Budejowice	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 Kralowé	50 13	15 49	Hradec Kralove	
8	Bratislawa	48 08	17 05	Bratislava	SLOWACJA
9	Zylina	49 13	18 44	Zilina	
10	Banska Bystrica	48 44	19 08	Banska Bystrica	
11	Poprad	49 03	20 17	Poprad	
12	Koszecy	48 43	21 15	Kosice	
13	Budapest	47 30	19 04	Budapest	
14	Debrecen	47 33	21 37	Debrecen	
15	Szeged	46 15	20 08	Szeged	WĘGRY
16	Szombathely	47 13	16 37	Szombathely	
17	Gyor	47 40	17 38	Gyor	
18	Wilno	54 42	25 10	Vilnius	
19	Kowno	54 54	23 53	Kaunas	
20	Klajpeda	55 41	21 08	Klajpeda	
21	Poniewież	55 43	24 21	Panevežys	
22	Szawle	55 56	23 18	Szialiai	LITWA
23	Ryga	56 57	24 06	Riga	
24	Lipawa	56 30	21 00	Liepaja	
25	Dyneburg	56 52	26 32	Daugavpils	
26	Aluksts	57 26	27 01	Aluksts	
27	Talinn	59 25	24 42	Tallinn	ESTONIA
28	Kuressaare	58 13	22 29	Kuressaare	
29	Marnawa	58 22	24 29	Parnu	
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	Charkiv	
34	Dniepropetrowsk	48 29	35 01	Dnipropetrowsk	
35	Doniec	48 03	37 45	Donetsk	
36	Kamieniec Podolski	48 40	26 31	Kamenets Podol'skiy	
37	Zaporoże	47 52	35 08	Zaporizhzhya	
38	Krzywy Róg	47 54	33 20	Krivoy Rog	UKRAINA
39	Symferopol	44 58	34 04	Symferopol	
40	Odessa	46 29	30 40	Odessa	
41	Kirovohrad	48 31	32 16	Kirovohrad	
42	Chmielnicki	49 25	26 59	Chmielnystkyy	
43	Minsk	53 55	27 32	Minsk	BIAŁORUŚ
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	Nizny Nowgorod	56 20	34 53	Nizhniy Novgorod	
51	Smoleńsk	54 47	32 02	Smoleńsk	
52	Rastow	47 13	39 42	Rostow	
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	Murmański	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	56 51	60 35	Yekaterinburg	
62	Ufa	54 50	56 06	Ufa	
63	Czelabińsk	55 09	61 25	Czelabińsk	
64	Syktikwar	61 38	50 52	Syktikwar	
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	Iruck	52 20	104 12	Irkutsk	
71	Jakuck	62 02	129 42	Yakutsk	
72	Kamczacki Petropawłowsk	53 02	158 38	Petropawłosk Kamczacki	
73	Harabowsk	48 25	135 06	Khabarovsk	
74	Alma-ata	43 15	76 53	Almaty	
75	Zezkazgan	47 46	67 39	Dzhezkażgan	KAZACHSTAN
76	Aterau	47 07	51 53	Atyrau	
77	Eryewan	40 12	44 32	Yerevan	ARMENIA
78	Tbilisi	41 42	44 47	Tbilisi	GRUZJA
79	Warszawa	52 15	21 00	Warsaw	POLSKA
80	Baku	40 22	49 49	Baku	AZERBEJDZJAN
81	Taszkent	41 20	69 07	Toszhen	
82	Nukus	42 27	59 36	Nukus	UZBEKISTAN
83	Biszkek	42 53	74 32	Bishkek	KIRGISTAN
84	Azschabad	37 57	58 21	Ashgabat	TURKMENISTAN
85	Duszanbe	38 35	68 45	Dushanbe	TADZYKISTAN
86	Polożenie Użytkownika	52 15	21 00	wartości ustawione fabrycznie	

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 \ominus 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 \ominus 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)

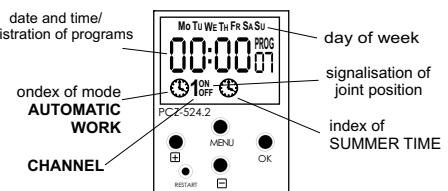
COORDINATES CODE - for detailed cities assign city geographic facilitating inscription localization (coordinates and assign serve codes in table memorial)

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.

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.

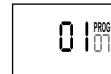
OK:

- approve of registration and passage to next position
- to prep settings podglad ustawien **PROGRAMMABLE POINTS OF ENCLOSURE AND EXCLUSION**

+

- change setting position by +1 in choosen programable 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 programable position (preesing a button make intensive changes in settings by +1 in loop)

2.2 Timer pass to setting mode 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 \ominus on the right side of display

WINTER TIME-lack a sign \ominus 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 date.



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 CONFIGURATION 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.

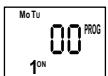
Change CONFIGURATION by prees MENU >3sec.

ATTENTION! Changes of CONFIGURATION mode are previoused 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 a value of delay and enter OK.

*Timer return to configuration mode of date, (see p2.1)

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

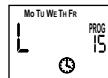
6. HANDIWORK SETTING GEOGRAFICAL COORDINATES

6.1 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!

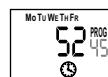
Standarts setting coordinates for Warsaw (52°15'N 21°00'E)

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



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

6.3 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...

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

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 p.6.2).



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

5.4 Timer pass to HOUR SLIP mode..

ATTENTION!

Standard setting for POLAND +01. Range from -12 hours. to +12 hours. 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 minutes and enter OK..

6.5 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 p5.4).

7. 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.

8. 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 automatically made 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** press 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 press a button **OK**. see a next settings in configuration:

-programmable point of enclosure
-programmable point of exclusion
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	WEST	19:59
	EAST	3:16
TIME CORRECTION	ENCLOSURE	+20min
	EXCLUSION	-15min
HOUR SLIP	+01	00
PROGRAMMABLE POINTS	ENCLOSURE	21:19 20:19 18:19
	EXCLUSION	4:01 3:01 1:19

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