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PROGRAMMABLE CONTROL TIMER 1-channel PCZ-521.3 PLUS

WARRANTY. The F&F products are covered by a warranty of the 24 months from the date of purchase. Effective only with proof of purchase. Contact your dealer or directly with us. More information how to make a complaint can be found on the website: www.fif.com.pl/reklamacje

Do not dispose of the device to a garbage bin with other unsorted waste! In accordance with the Waste Electrical and Electronic Equipment Act any household electro-waste can be turned in free of charge and in any quantity to a collection point established for this purpose, as well as to the store in the event of purchasing new equipment (as per the old for new rule, regardless of brand). Electro-waste thrown in the garbage bin or abandoned in the bosom of nature pose a threat to the environment and human health.

CE

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Purpose

Programmable control timer PCZ-521.3 is used to time control the devices in home or industrial automation systems by an individual time program set by the user.

Functioning

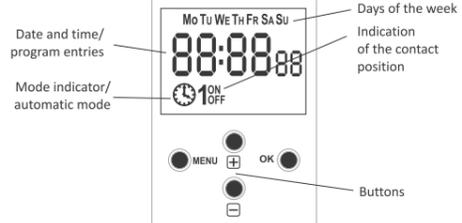
Timer activates and deactivates the device or electrical circuit on the programmed hours in cycles: daily, weekly, working days (Mon-Fri) or weekend (Sat, Sun).

- Operating modes and functions**
- **ON-OFF COMMAND** – program entry for enabling or disabling the receiver.
 - **500 MEMORY CELLS** – internal memory for individual program entries, allowing to program 250 pairs of ON/OFF commands.
 - **AUTOMATIC MODE** – operation by ON/OFF commands programmed by the user in the timer memory. [ON icon on display].
 - **SEMI-AUTOMATIC OPERATION** – the ability to manually switch the contact during automatic operation. The change will be effective until the next switching resulting from the automatic operation cycle. Switching between automatic and semi-automatic mode is done by pressing the external button connected to terminal 4 of the clock or by pressing the +/- button located on the facade of the clock. Semi-automatic operation is indicated by a blinking clock symbol at the bottom left of the display.
 - **MANUAL MODE** – [ON] permanently closed contact (position 1-5) or [OFF] permanently open contact (position 1-6) when the AUTOMATIC MODE is off. [no ON icon on display].
 - **CYCLE MODE** – adjustable, weekly cycle (7 days from Monday to Sunday) of the receiver switching in accordance with the programmed ON/OFF commands:
 - » single day of the week: Mo; Tu; We; Th; Fr; Sa or Su;
 - » working days: Mo; Tu; We; Th; Fr (Monday to Friday);
 - » weekend: Sa, Su (Saturday and Sunday);
 - » daily: Mo; Tu; We; Th; Fr; Sa; Su (Monday to Sunday).
 - **EXTERNAL CONTROL** – the ability to connect an external button for manual control of the clock.
 - **SCREEN BACKLIGHT** – backlight LCD for clock and time configuration and operating status indication.
 - **AUTOMATIC TIME CHANGE** – change from winter time to summer time with options to change automatically or not. User can set the time zone so that the switching time is consistent with the local time.
 - **PREVIEW DATE** – the ability to preview the set date (OK).
 - **PREVIEW OF THE CURRENT PROGRAM** – pressing the +/- keys in the date preview mode displays information about the number and details of the current program.
 - **NFC WIRELESS COMMUNICATION** – wirelessly read and write timer configuration from an Android phone equipped with the NFC module.
 - **PCZ KONFIGURATOR 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);
 - » read and write the setup from and to 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 configuration backups. 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 system clock.
- **BATTERY INDICATOR** – the controller comes with built-in control system of the backup timer battery used in the case of main power supply failure. If the battery is low, user will receive information that the battery needs to be replaced. Battery life depends on the ambient temperature and the degree of the battery wear.
- **LCD BRIGHTNESS ADJUSTMENT** – change the contrast of the display to get a clear LCD read-out in different viewing angles.
- **RELAY STATE MEMORY** – the relay state in manual mode will be remembered even after power supply failure.

Display and control panel description



MO – Monday; **TU** – Tuesday; **WE** – Wednesday; **TH** – Thursday; **FR** – Friday; **SA** – Saturday; **SU** – Sunday.

User control function summary

- **MENU**
 - » enter the program menu;
 - » return to the previous position (back).
- **OK**
 - » move to the next setting;
 - » accept setting;
 - » preview of the date and the current program.
- **“+” [PLUS]**
 - » change the setting by one position up for the selected programming option (holding down the button continuously changes the setting by one position up in a loop);
 - » in **MANUAL MODE**: permanent **ON** and **OFF** contact switching.
- **“-” [MINUS]**
 - » change in the setting by one position down for the selected programming option (holding down the button continuously changes the setting by one position down in a loop);
 - » in **MANUAL MODE**: permanent **ON** and **OFF** contact switching.

Programming

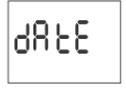
1. START
Connect the power supply.
The clock will start at the root level and the display will show set hour.



In the absence of any program entries timer will automatically run in manual mode. If the previous entries are present, timer will execute the program.

To erase all previous settings, see section 8.6.
Set individual timer program with internal configuration menu or using the "PCZ Konfigurator" app for mobile devices.

2. DATE
Press **MENU**. The clock will enter program menu.
Using the +/- buttons select the mode for date setting **DATE**.



Confirm with **OK**.
Clock will show settings for the next parameters: year, month, and day. Use the +/- keys to set the parameters; move to the next parameter with the **OK** button. Go back to the previous item by pressing **MENU**.



Press **OK** to accept date entry. The clock will automatically exit from the date setting mode and go to the program menu.
The date setting is tantamount to time determination: winter or summer.

The automatic time change can be turned off (see section 8.1).

3. HOUR
Press **MENU**. The clock will enter program menu.
Using the +/- buttons select the mode for time setting **HOUR**.



Clock will show settings for the next parameters: hour and minutes. Move to the next parameter with the **OK** button. Go back to the previous item by pressing **MENU**.



Press **OK** to accept time entry. The clock will automatically exit from the date setting mode and go to the program menu.

4. ON/OFF COMMAND (SETTING THE PARAMETERS)
Using the +/- buttons select the mode for time setting **PROG**.



Press **OK** to accept. The clock will enter the memory cell number selecting mode. The display will automatically show the number of the first empty memory cell.



Press **OK** to accept (or select another number using the +/- keys).
Clock will enter the single ON/OFF command parameters setting mode.

A. Operation cycle



- Set **OPERATION CYCLE** using +/- keys:
- single day of the week: Mo; Tu; We; Th; Fr; Sa or Su.
 - working days: Mo; Tu; We; Th; Fr (Monday to Friday).
 - weekend: Sa; Su (Saturday and Sunday)
 - daily: Mo; Tu; We; Th; Fr; Sa; Su (Monday to Sunday).
- Press **OK** to accept.

B. Hour and minutes

Clock will show setting for the next parameters: **HOUR** and **MINUTES**.
Set the values using +/- keys; move to the next parameter with the **OK** button. Go back to the previous item by pressing **MENU**.



C. ON/OFF

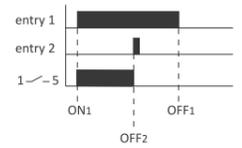
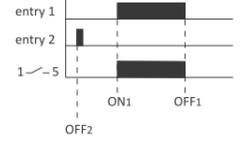
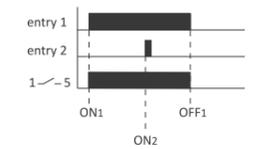
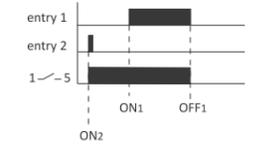
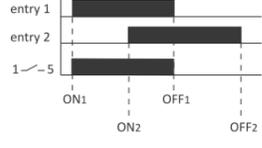
Clock will allow to choose **[ON]** or **[OFF]** option.



Set **ON** or **OFF** using +/- keys; confirm with **OK**. Clock will automatically enter the next ON/OFF command parameter input mode.
Go back to the previous item by pressing **MENU**.

The entered ON/OFF commands do not constitute solid pairs of commands for switching on and switching off a contact. They are treated as individual commands and executed in accordance with the specified time chronology.

Cases of overlapping contact closing times from two pairs of ON/OFF commands are illustrated in the following diagrams:



Switch-on time of contact established by a pair of ON/OFF commands can be longer than 24 hours, which means that ON command can be set to any time and any day of the week (e.g. Tuesday, 1:45 PM) and OFF command to any hour of another day of the week (e.g. Thursday, 5:05 PM).

5. EDITION OF ON/OFF COMMANDS
Using the +/- keys select the parameter edit mode **EDIT**.



Press **OK** to accept.
The clock will enter the memory cell number selecting mode. Select the cell to edit and accept by pressing **OK**.

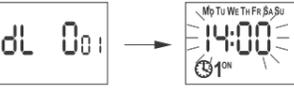


Proceed as with ON/OFF command parameters setting (see section 4).

6. CLEARING A PROGRAM (REMOVING ENTRIES)
Using the +/- keys select ON/OFF commands reset mode – **DEL**.



Press **OK** to accept. The clock will enter the memory cell number selecting mode. Select the cell to be deleted and accept by pressing **OK**. The clock will be waiting for confirmation of deletion. This is indicated by alternating flashing of the number of the selected cell and its set parameters.



Confirm by pressing **OK**.
The cell will be deleted. The clock will display the next programmed cell number.
Pressing **MENU** will take you to the root level.

To erase all previous ON/OFF commands settings see section 8.6.

7. OPERATION MODE
Using the +/- keys select **MODE**.



Accept by pressing **OK**.
The clock will enter work mode menu **AUTO/HAND**.
With +/- keys select desired operation mode:



AUTO – automatic,
HAND – manual
Accept by pressing **OK**. The clock will automatically exit the operation mode selection and go to the program menu. Pressing **MENU** one more time will take the clock back to the root menu.

To change the contact position in the **MANUAL** mode use the +/- keys at the root level. In the absence of any program entries timer will automatically run in **MANUAL** mode (there is no option to set **AUTOMATIC** mode).

8. SYSTEM SETTINGS
Press **MENU**. The clock will enter the program menu.
Using the +/- keys select system settings **SYST**.



Confirm with **OK**.
The clock will enter the System Settings submenu (**DST/UTC/BATT/CAL/LCD/CLEAR/INFO**).
Using +/- keys select the parameter and confirm with **OK**.
Pressing **MENU** will take you to the upper level.

8.1. AUTOMATIC TIME CHANGE (DST)



DST (Daylight Saving Time) – international name of summer time.
Confirm with **OK**.
The clock will enter the menu with the option to disable automatic time change (**AUTO OFF**).
With +/- keys select desired mode:
• **AUTO** – with **AUTOMATIC TIME CHANGE**
• **OFF** – without **AUTOMATIC TIME CHANGE**



8.2. TIME ZONE (UTC)



Confirm with **OK**.
The clock will display current parameter for time zone (+12/-12).
Pressing +/- keys set time zone for the clock.
Confirm with **OK**.

Time zone for Poland is +1.



8.3. BATTERY CHARGE INDICATOR



Confirm with **OK**. The clock will display information about battery charge level.



- **HIGH** – fully charged, new battery
- **GOOD** – in good condition, provides long-term operation
- **LOW** – low battery level, recommended replacement
- **EMPTY** – discharged, it must be replaced immediately

8.4. SYSTEM CLOCK TIME ADJUSTMENT (CAL)

Time adjustment is the number of seconds by which the system clock is adjusted per month. Setting range: ±300 seconds.
For example:
If the clock is fast 4 seconds per month, set the parameter value -4.



Confirm with **OK**. The clock will display current parameter of time adjustment.
Pressing +/- keys keys to set desired number of seconds.
Confirm with **OK**.



8.5. DISPLAY CONTRAST

Contrast setting allows you to adjust the display method to the location of installation – liquid crystal displays have a low viewing angle and by modifying the contrast level, you can ensure that the digits are correctly visible from the top (high contrast setting), front and bottom (low contrast setting). To change the contrast, enter the **SYST** menu (p. 8) and then use the +/- buttons to select **CONTR**. Confirm your selection by pressing **OK**.



Confirm with **OK**. The clock will display the current contrast parameter.
Pressing +/- keys to set the contrast parameter.
Confirm with **OK**.



A preview of the changes is visible already during editing. To confirm the changes, press the **OK** button, to exit the edit mode without making changes – press the **MENU** button.

8.6. BACKLIGHT (ACTIVE)

Each time you press a button on the panel of the controller, the backlight of the display gently brightens to the active level.
To set the brightness level for active backlight, enter the **SYST** menu (6.7) and use the +/- buttons to select **LCD ON**.
Confirm your selection by pressing **OK**.



Use the +/- buttons to set the required brightness level.



The preview of changes is already visible during editing. To confirm the changes, press the **OK** button. To exit the edit mode without making changes – press the **MENU** button.

The display remains active for 60 seconds from the last press of the button.

8.7. BACKLIGHT (STANDBY)

The standby backlight level is maintained throughout the entire operation of the clock (except when the button on the facade is pressed).
To set the brightness level of the backlight in standby mode, enter the **SYST** menu (6.7) and use the +/- buttons to select **LCD ON**.
Confirm your selection by pressing **OK**.



Use the +/- buttons to set the required brightness level.



The preview of changes is already visible during editing. To confirm the changes, press the **OK** button. To exit the edit mode without making changes – press the **MENU** button.

8.8. RESETTING THE COMMANDS, PARAMETER SETTINGS AND ERRORS (CLEAR)



Confirm with **OK**. The clock will enter the submenu (**PROG/SYS/ERROR**).
Use the +/- keys to select reset option.



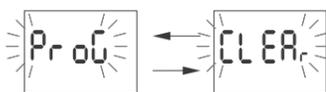
Confirm with **OK**. The clock will enter the submenu (**PROG/SYS/ERROR**).
Use the **+/-** keys to select reset option:

- **PROG** – deleting **ON/OFF** entries
- **SYS** – resetting the system settings

 Confirm with **OK**.

A. Prog

Confirm selected option by pressing **OK**. The clock will enter standby mode awaiting for deletion confirmation. This is indicated by alternating flashing of **PROG** and **CLEAR** on display.

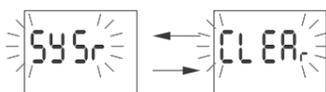


Confirm with **OK**. The clock will start deleting entries. The display will count off consecutive numbers of deleted entries (from 1 to 500). Upon completion the display will show **PROG**.

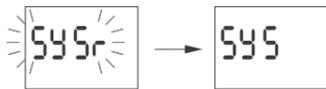


B. Sys

Confirm selected option by pressing **OK**. The clock will enter standby mode awaiting for deletion confirmation. This is indicated by alternating flashing of **SYSR** and **CLEAR** on display.



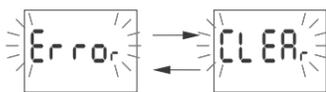
Confirm with **OK**. The clock will start deleting entries. Upon completion the display will show **SYS**.



C. Error

If the timer system detects an error, the display will show **ERROR** message at the root level. At the same time in the **CLEAR** section the extra **ERROR** item will appear. Error reset is possible only through the menu (**MENU/SYST/CLEAR/ERROR**).

Confirm the **ERROR** option by pressing **OK**. The clock will enter standby mode awaiting for deletion confirmation. This is indicated by alternating flashing of **ERROR** and **CLEAR** on display.



Confirm with **OK**. The clock will reset the error. The display will show **ERROR**. The clock will return to standard operation mode.

8.9. SYSTEM INFORMATION (INFO)



Confirm with **OK**. The clock will enter the information menu.

Browse the information by pressing **+/-** keys:

- clock type
- software version



Low battery



The **LOW BATT** message indicates that the battery backup clock is too low after a power outage. In this case, battery replacement is recommended. The user can replace the battery by himself with a new, type 2032 lithium coin cell battery. A film demonstrating how to replace the battery is shown below the product code (scan the QR code):



The low battery level is no obstacle during normal clock operation. However, if the clock is not powered, it may result in loss of date and time settings.

All settings, except for time and date, are saved in non-volatile memory and are not lost in the event of a power outage and low battery.

Under proper operating conditions, a new, charged battery is sufficient for approx. 6 years of operation. Low temperatures or long periods of operation without AC power can shorten this period.

Technical data

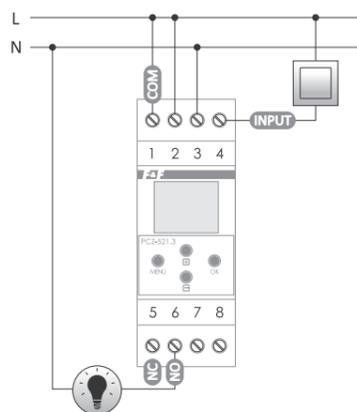
power supply	24÷264 VAC/DC
maximum load current (AC-1)	16 A
contact	separated 1xNO/NC
backup time clock operation	6 years*
battery type	2032 (lithium)
backup time display operation	none
accuracy of the clock	1 s
error time	±1 s / 24 h
time program setting accuracy	1 min.
program memory cells	500
	(250 pairs ON/OFF commands)
power consumption	1.5 W
terminal	2.5 mm ² screw terminals (cord)
	4.0 mm ² screw terminals (wire)
tightening torque	0.5 Nm
working temperature	-20÷50°C
dimensions	2 modules (35 mm)
mounting	on TH-35 rail
protection level	IP20

* battery life addicted to weather conditions and frequency of mains failure

Installation

- 1) Turn off the power.
- 2) Mount the timer on the TH-rail in the distribution box.
- 3) Connect wires according to the diagram.
- 4) Connect receivers according to the diagram.
- 5) Set the correct date (see section 2) and time (see section 3).
- 6) Set individual switch-on time programs for receivers.

Connection scheme



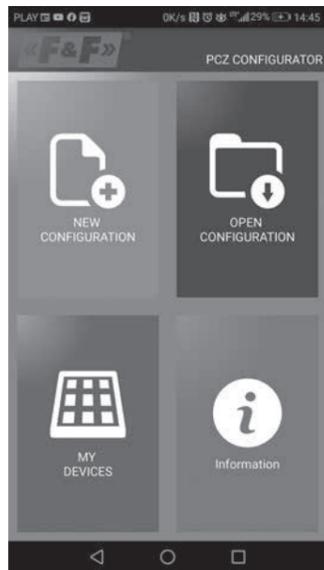
- 1 COM contact input
- 2-3 clock power supply
- 4 ON/OFF button
- 5 NC contact output ("normally closed" position)
- 6 NO contact output ("normally open" position)

CE declaration

F&F Filipowski sp. j. declares that the device is in conformity with the essential requirements of Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonization of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC. The CE Declaration of Conformity, along with the references to the standards in relation to which conformity is declared, can be found at www.fif.com.pl on the product page.

PCZ Konfigurator app

- **NEW CONFIGURATION** – opens window creation configuration.
- **OPEN CONFIGURATION** – opens window for loading the program configuration stored as a file in the phone memory.
- **MY DEVICE** – gives access and support for all backup copies of configurations assigned to specific devices.
- **INFORMATION** – application user guide.



NEW CONFIGURATION

- **NEW** – creates new, empty configuration file (without any programs).
- **LOAD FROM PC** – new configuration is created based on a program saved in the PCZ controller. Select this option and bring the phone closer to the timer to load the program phone.
- **LOAD FROM FILE** – new configuration is created based on a file saved by the user. Opens a window with a list of files previously saved by the user.
- **RESTORE** – a new configuration is created based on a backup copy of one of the previous configuration. Tapping this icon opens window with a list of backups split into controllers in which they were written. Select a new configuration option opens another window.



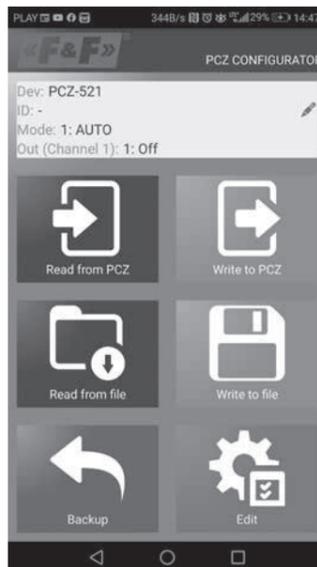
The function window allows to edit program as well as to load and save configuration to a PCZ controller. It appears automatically when we bring the phone closer to the controller, or when we create a new configuration. In the upper part of the screen the application displays a frame with following information:

- **DEV** – supported controller type.
 - **ID** – unique identifier of connected controller (appears only when the application is connected with the controller. In the Offline mode that field remains empty). Icon of a pencil on the right-hand side allows you to enter your own name for the controller.
 - **OPERATING MODE** – displays the current operating mode for the controller (manual or automatic). Applies only to operating in Online Out mode – Output relay status (enabled or disabled). Applies only in online mode.
- Keys:
- 1) Read the timer configuration.
 - 2) Save the current configuration to the timer.
 - 3) Load configuration from file.
 - 4) Save the current configuration to file.
 - 5) Restore configuration from backup copies.
 - 6) Edit the current configuration.

EDIT

Editing window allows you to edit current configuration (new, loaded from file or from PCZ). Editing window consists of three tabs:

- **LIST** – a list of all programs (in the order in which they are stored in the memory).
- **FILTER** – a list of programs that will be executed on the selected day (in chronological order by program execution).
- **SETTINGS** – system settings configuration



LIST

Main part of the screen is taken by the list of PCZ programs. Programs are displayed sorted by the time they are written in the controller memory. Each program is symbolized by:

- **ACTION ICON** – the green "v" means that the specific program will activate relay. Red "x" means deactivation of relay.
- **DATE AND TIME** – show days of programs activation and their start time.
- **PROGRAM NUMBER** – program position in the controller memory. Bold font marking represents a program that is (or should be) executed. Pressing the trash bin icon next to the program entry deletes program. To add a new program select **ADD PROGRAM**. To edit an existing program tap into the edited program.

The three icons at the bottom of the screen allow you to:

- **SAVE TO FILE** – saves the current configuration to a file.
- **SAVE TO PCZ** – saves the configuration to a timer.
- **BACK** – returns to the function window.

Upon returning to the function window, current configuration is stored in application memory.



FILTER

Filter tab performs a similar function to **LIST**. In this case, at the top of the screen appears addition frame for choosing the day and time interval for which the application displays a list of programs active during that time. Programs are displayed in chronological order, sorted by the time of their actual execution.



ADDING AND EDITING PROGRAMS

Add or edit program displays a window with following options:

- **OPERATION** – selects whether the program will turn the relay on or off.
- **DAY** – selects the days of program execution. You can select a single day, Monday - Friday, Saturday - Sunday, all week.
- **TIME** – selects the time of program execution.



Programming scheme

The programming scheme for the timer is available for download on the product's subpage. Website address: www.fif.com.pl.