

ASSEMBLY AND PROGRAMMING MANUAL FOR THE AUTONOMOUS INS-ZS CODE LOCK

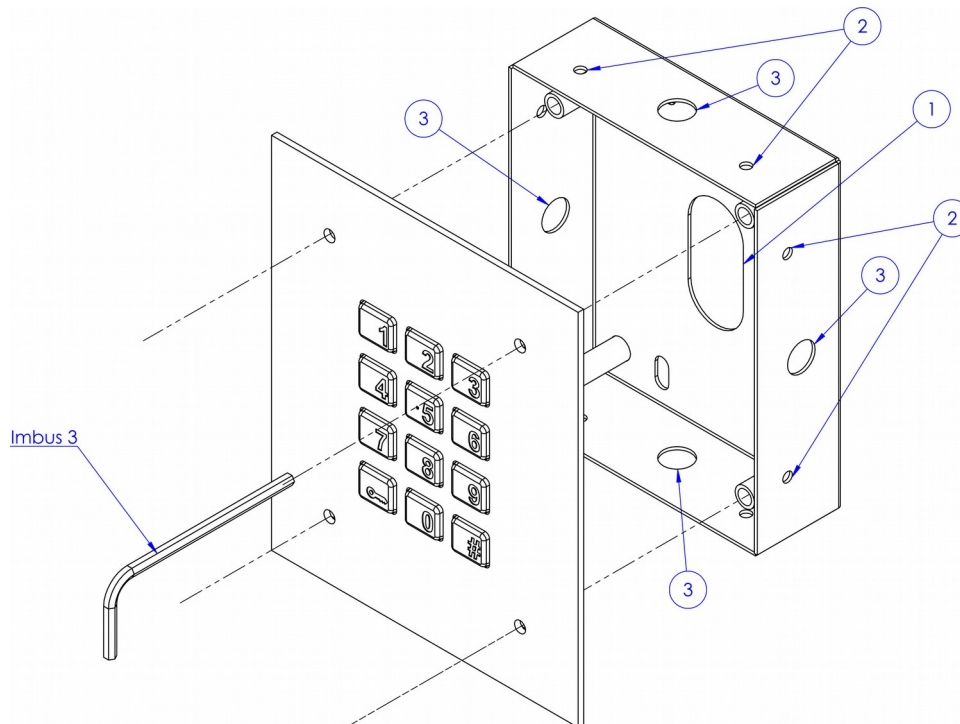


The autonomous INS-ZS code lock is a microprocessor device which serves the purpose of controlling one or two outputs independently, by means of the proper code for the given output. The outputs may control outdoor devices e.g. an electric door strike, reversible electric striker (only output 1) or optional relay, with which we can control any other device, e.g. an electromagnetic jumper, barrier, etc.

INS-ZS has maximum 255 opening codes created on the basis of the Table of Codes compatible with other ACO products.

The code lock can be fully programmed using the keyboard or via computer software ("INS-ZS") to be downloaded free of charge from www.support.aco.com.pl (to connect the lock with a computer by cable CDN-USB, which is to be purchased separately).

1. INSTALLATION



The base of the INS-ZS lock is flush-mounted and fixed by means of expansion bolts. The wires are put through hole 1. The lock is connected according to schedule placed in the further part of the manual. The enclosure is locked using the Allen key with the size of 3, by means of 4 screws. Holes No. 2 serve the purpose of temporary installation of the lock by means of e.g. nails, in case of placing the device in soft materials, e.g. polystyrene. Holes No. 3 facilitate the installation in case of using the assembly foam. The autonomous code lock can also be surface-mounted with a surface-mounted box, which must be purchased separately (commercial symbol: INS-P-XS NT).

2. METHOD OF OPERATION

Depending on the mode of operation, the activation of one of the two outputs consists in:

- in the classic mode (mode 0) - selecting the code sequence number with the keypad, confirming the selection with (key) and entering the appropriate four-digit code from the enclosed Code Table.
- in the mode of 255 codes – selection of the code ordinal number by means of the keypad, approval of the selection by push-button (key) and entry of the proper four-digit code from the attached Table of Codes.- In mode 1 to 8 – selection of the proper four-digit code by means of the keypad. The first of the codes is code No. 1 in the Table of Codes, the second code is code No. 2, etc.

According to the factory settings, all the codes activate **only Output 1** (activity time of **Output 2** = "0").

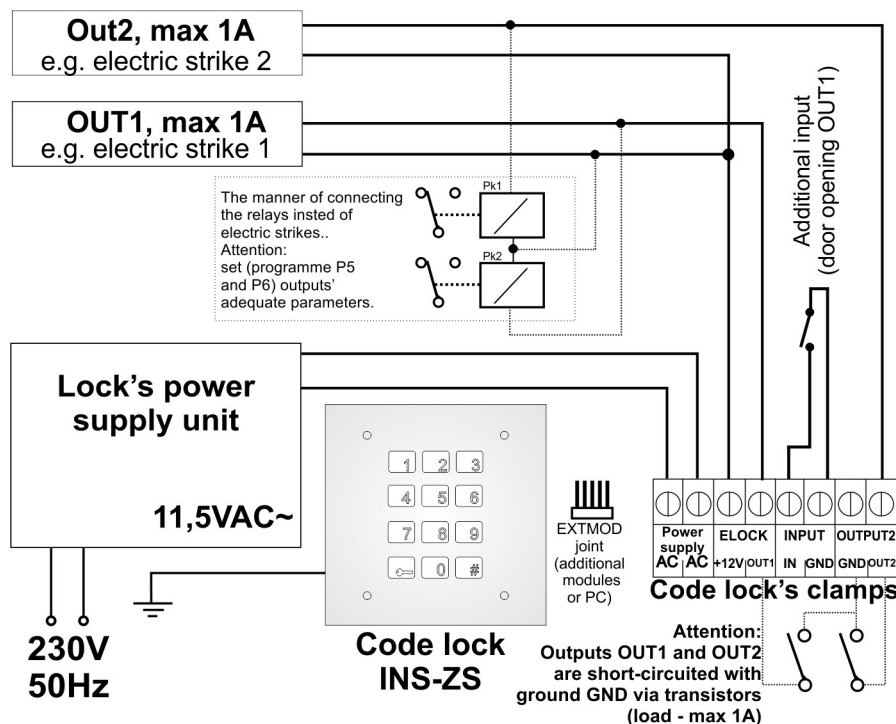
When the activity time of **Output 2** is other than "0", the codes with uneven ordinal numbers (1, 3, 5,...) activate only **Output 1**, and those with even ordinal numbers (2, 4, 6,...) only **Output 2**.

There is also a possibility to switch on the so called "Double Key" mode, which makes the control of two outputs (only in the mode of 255 codes) possible with the use of the same code. The operation of the mode consists in selection of the code ordinal number from the keypad, then, depending on whether we press the push-button (key) once or twice, after the proper four-digit code is entered, output 1 or output 2 will switch on (output 1 – we press 1 x [key]; output 2 = we press 2 x [key]).

The codes entered by the manufacturer are included in the attached "Table of Codes" (items from 1 to 255), and each code can be changed (programme 2 in the setting programming function). It is also possible to set the so called code "Shifts" known from other ACO products (among other things, doorphone control unit), which causes the addition of the numerical value (from 1 to 998) to the code ordinal number (only for the mode of 255 codes). Owing to setting, the same shift value and the same Table of Codes, we can reproduce the codes and exactly the same method of their selection as in the ACO panels / control units.

The lock has the INPUT, which causes the activation of **Output 1** by shorting with the use of an optional push-button. The input is protected from continuous short-circuit.

DIAGRAM OF CONNECTIONS



Note!

For proper operation and safety in use, the device should be connected to the ground by connecting the "grounding" terminal on the body of the metal mounting frame with a suitable protective installation (PE). The connection between the device and the power supply is recommended using a 1 mm² cable (e.g. LY1.0). The length of the cable should not exceed 7m in case of the electric door strike circuit and 15m in case of the power supply circuit. Too little power supply, too small cross-section of wires and too long connections (voltage drops) may cause disturbances in the device operation (e.g. activation of the reset system and restarting the device, especially when opening the electric lock). The supply voltage of 11,5V AC should be connected to the 12V~ terminals, while in case of using the DC power supply unit, connect it accordingly: +DC of the power supply unit to the AC terminals (regardless of which one), while -DC to the GND terminals. Connect the electric door strike without a specific polarity to the "ELOCK" terminals at will: +12V and OUT1 or OUT2, using the reversing electric striker, solder the Z4 jumper (left side of the board)! When working with the reversing electric striker at the "ELOCK" output (+12V) voltage appears depending on the power supply or transformer used - appropriate reversing electric striker should be used. It is also possible to use the MOD-DC12V module, which will provide 12VDC voltage to the reversing door strike when the intercom is powered from a 15VDC power supply or a transformer.

3. PROGRAMMING OF THE LOCK SETTINGS – installation programming

It is possible to change the operating parameters of the lock by means of programming. The access to the programming mode of lock settings is protected by an installer password. All the settings are saved in the read-only memory and are not subject to loss after switching off and on the power supply.

In order to enter the programming mode of the lock settings (installation programming) press push-button **[key]** and enter an eight-digit password [1507xxxx] – it is confirmed by a sound signal modulated upward. The first four digits of the password [1507] are a fixed value, and the following ones [xxxx] are a four-digit installer password (0000 – factory setting). The activity time of the programming mode of the settings is limited to 10 sec., counting from the last change, the exit from the programming mode takes place by means of push-button **[#]**.

According to the factory-settings, the installer password is set to “0000” and after completion of the installation, it must be changed to a different one (P7 programme).

After entering the lock programming function, specify the programme number, which corresponds to the given settings. After entering the programme number, the lock will count the appropriate (depending on the programme number) number of short sound signals and will confirm the entry into a given programme by means of a short sound signal modulated upward. At any moment we can interrupt the programming and exit the given programme by pressing push-button **[#]** – the changes will not be saved then.

The numbers of the respective programmes and the functions which they perform:

1_1 – service activation of output 1 – causes activation of output 1 in accordance with the pre-set parameters in programme 5 (time, beeper, generator). After completion of this programme, the automatic exit from the programming function occurs. In order to call out the programme, select: **[key][1507xxxx][11]**.

1_2 – service activation of output 2 – causes activation of output 2 in accordance with the pre-set parameters in programme 6 (time, beeper, generator). After completion of this programme, the automatic exit from the programming function occurs. In order to call the programme, select: **[key][1507xxxx][12]**.

2 – Shift value setting (only in the mode of 255 codes). The function enables deduction or addition of shift value codes from 1 to 998 to the code ordinal numbers, which will enable the selection of codes with ordinal numbers greater than 255 (the maximum number of codes does not change and still amounts to 255). For instance, for the negative shift setting 500, we can select [502][**[key]**code No. 2 from Table of Codes] from the keypad. We can set (in programme 10), the positive or negative direction of shift, which enables the addition or deduction of the ordinal number of codes. Owing to these settings, we can reproduce the codes and the method of their selection accurately, in the same way as in ACO doorphone control units. In order to change the shift value, select:

[key][1507xxxx][2][shift value from 1 to 998] [key] (if this is a one- or two-digit value).

3 – the change in the 4-digit opening code. For instance, if we want to change code No. 9 to 4444, the following is necessary: enter digit 3 (programme number) in the programming mode, the control unit will confirm the acceptance with three short sound signals, and then digit 9 (code ordinal number ranging from 1 to 255), confirm with push-button **[key]** and enter the new code value – 4444. If the shift is set, specify the code number together with the added shift. In order to change the code, select **[key][1507xxxx][3][code ordinal number 1-255] [key]** [new 4-digit code].

4 - selection of the lock operating mode – method of opening by means of a code.

- Mode [0] – available 255 codes (before selection of the code, it is necessary to enter its ordinal number).

- Simplified mode [1-255] – available (depending on the entered value) from 1 to 255 codes selected directly without specifying the code ordinal number. The respective codes correspond to the codes from the table of codes with order numbers 1, 2, ..., 255. Upon entering the mode, the automatic exit from the programming function will take place. In order to change the lock operating mode, select: **[key][1507xxxx][4][y]**, where [y] means the operating mode: y = [0] for the operating mode of 255 codes

y = [number from 1 to 255] for the mode from 1 to 255 codes

NOTE!!!

If Output 2 is switched off (activity time equal to zero) **all** the codes switch on **Output 1**

If Output 2 is switched on (activity time other than zero), the codes with uneven ordinal numbers switch on **Output 1**, and those with even number switch on **Output 2**

5 – Output 1 parameter setting

The output parameters are entered as a three-digit number [xyz], where the respective digits mean:

x – [0 or 1] – activation / deactivation of the sound signal (beeper) during the output activity (0 – on, 1 – off),

y – [0 or 1] – method of shorting the output to ground (0 – pulse, 1 – permanently),

z – [number from 1 to 9] output activity time from 1 to 9 seconds (opening time e.g. electrical door strike)

For instance, if the setting of the electrical door strike opening time to 3s is required (pulse-controlled output), as the sound signal is heard, enter number [003] in programme 5.

In order to change the parameters of Output 1, select **[key][1507xxxx][5][xyz]**.

NOTE!!!

In order to control the electrical door strike, use the pulse control (y=0), and for relay control, use the permanent control (y=1).

6 – Output 2 parameter setting

The setting is identical as for Output 1 apart from controlling reversing electric strike. **Output 2** is switched on, setting its activity time as other than zero.

7 - a change in the installer code. In order to change the installer code: enter digit 7 (programme number) in the programming mode, the control unit will confirm the acceptance by means of seven short sound signals, and then enter four digits of the new code. After entering the last digit, the code will be saved and the exit from the programming function will take place. The order of procedure:

[key][1507xxxx][7][a new 4-digit installer code].

8 – limitation of the maximum number of available codes (only for the lock operating mode “0”!). In order to limit the number of active codes, enter digit 8 in the programming mode (programme number), the control unit will confirm the acceptance by means of eight short sound signals, and then specify the ordinal number from 1 to 255 of the last active code (without taking into account the shift). After entering the single or double digit, confirm it by means of push-button [key], and after entering the third digit, the automatic exit from the programming function will take place. The order of the procedure is as follows:
[key][1507xxxx][8][ordinal number of the last active code from 1 to 255] [key].

9 – entry of the number of the table of codes. The lock includes the tables of codes from number 0000 to 9999. In order to change the number of the table of codes, enter digit 9 in the programming mode (programme number), and then enter four digits specifying the number of the new table of codes. After entering it into the memory, the automatic exit from programming function will take place. The order of the procedure is as follows: [key][1507xxxx][9][4-digit number of the table of codes].

10 – setting of the so called “Double key” mode and the shift direction. The “double key” mode enables the activation of output 2 after specifying the same code as for exit 1, with the difference that the **key** push-button must be pressed twice (an active function only for the mode set to [0] in programme 4, and for the appropriate output 2 parameters set in programme 6 – time other than “0”!). The direction of shift determines whether the shift value (set in programme 2) is supposed to be added or deducted from the code ordinal number. The deduction is set as the factory setting. It determines the method of code selection (an example for shift 100): we press [102][key][code No. 2 from the Table of Codes]; the addition determines the method of code selection: we press [2][key][code No. 102 from the Table of Codes]. In order to change the settings, enter **digit 0** (programme 10) in the programming mode, and then enter digit 1 to switch on the “Double Key” mode or digit 0 to switch off the “Double Key” mode, or digit 2 to set the negative shift, or digit 3 to set the positive shift. After entering it into the memory, the automatic exit from programming will occur. The order of the procedure is as follows:

[key][1507xxxx][0][y]. where [y] means: y = [0] deactivation of the “double key” mode
y = [1] activation of the “double key” mode
y = [2] negative shift (-)
y = [3] positive shift (+)

Resetting the lock – restoration of the factory settings or in case of failure:

1. We switch off power supply voltage, 2. We wait for about 10s, 3. We press the push buttons [2,5,8], 4. We switch on power supply, and when we hear a sound signal, we release the push-buttons. After this activity, all the settings will be deleted and replaced by factory settings.

- **Table of codes with the factory-set or recently entered number**
- **Installer code “1507 0000” – a change is required!!!**
- **Output 1 parameters: opening time 4s, beeper switched on, pulse-shorting**
- **Output 2 parameters: opening time 0s. – inactive output (all the codes switch on only Output 1)**
- **Mode of 255 codes,**
- **Activated double key mode**
- **Shift value = 0, a negative shift**

During the first activation, change the installer code (programme 7)

4. TECHNICAL PARAMETERS

- Power supply: 11.5V ± 0.5V AC or 12V-15V DC; min. 100mA (not including output load)
- standby power consumption: 20mA
- Output load capacity for 10 s – max. 1 A
- Method of output control: shorting to ground – pulses or on a permanent basis
- Number of codes: 255, selected in two ways:
 - preceded by the sequence number of the code,
 - directly, without specifying the sequence number

Instructions and more information also available on: www.support.aco.com.pl and www.aco.com.pl

IMPORTANT! When disinfecting panels made of stainless steel, use only alcohol-based cleaners. All types of chlorides (which are present in the composition of common cleaners) are harmful to the steel surface, because they abrade its natural protective coating and increase the risk of corrosion marks.

THE RULES OF STORAGE OF THE USED ELECTRICAL EQUIPMENT

It is not allowed to store the electrical equipment with other waste. It must be stored at sites intended for this purpose. Therefore, please address the responsible institutions or companies dealing with waste recycling. – Directive 2002/96/WE dated January 27th, 2003