

DAZON bv



Zon EL08

User Manual

General

The Zon EL08 is a fully electronic propane gas cannon to scare away birds and wildlife. It is developed to help farmers optimize their harvest results, for airports helping them in their never ending efforts to protect the engines of airplanes from any damage caused by birds, for fishing boats, oil industry and a lot more.

The only moving part on the Zon EL08 is the valve that controls the gas flow.

The electronic gas cannon Zon EL08 is able to produce 1, 2, 3 or 4 shots series, with approximately 5 seconds between each shot.

The time-interval between consecutive series can be configured electronically between 1 and 60 minutes. The equipment provides three different possibilities to choose random intervals between shots series, in which case the Zon EL08 selects a different time-interval after each series.

The Zon EL08 is equipped with a 24-hours clock. No less than 4 periods can be configured, during which the Zon EL08 will operate.

Always wear ear-protection near cannons in operation!!

1 Contents of the box

- 1 Zon EL08, fully electronic gas cannon with pressure regulator and hose fracture protection valve.
- 2 Left base frame.
- 3 Right base frame.
- 4 Bag with 4 butterfly nuts, 4 caps and a user manual.

Needed but not included in the package are a 12V battery (like a car battery) and a gas tank.

2 Installation

- 1 Unpack the box.
- 2 Place the 4 caps into the open ends of the left and right base frames.
- 3 Attach the left and right base frames to the cannon, using the 4 butterfly nuts. Right (R) and Left (L) are marked at the centre of the base frames. After attaching the frames the megaphone should be pointing slightly upwards.
- 4 Loosen the clamping bolt from the inner megaphone. Adjust the telescopic megaphone to the desired length and secure it with the clamping bolt. To ensure that the clamping bolt is correctly positioned above a fixing hole, line up the next fixing hole with the end of the outer megaphone.
- 5 Connect the pressure regulator to the gas tank. Make sure connections are clean and that the regulator has a sealing ring (fitted with a female thread) and that the ring is clean as well.
- 6 Tighten the coupling nut (counter-clockwise) on the gas tank with a suitable spanner. Never use force when assembling the device.
- 7 Connect the battery cable of the Zon EL08 to a 12V battery. The red or brown wire should be attached to the + of the battery. The blue wire should be attached to the -. When attached properly, a red control will light up, to show the device is active. Check the connections when this does not happen. The Zon EL08 consumes 0.53 ampere per day. A fully loaded car battery of 30Ah, will operate the Zon EL08 for approximately 60 days, a 7.2 Ah battery for approximately 14 days.
- 8 Put the battery preferably above the ground on an elevated spot and protect it from rain and extreme heat. The electronics of the Zon EL08 are splash waterproof and heat resistant to at least 190°F/70°C.
- 9 You have finished installation and the Zon EL08 is ready to be configured.
- 10 Wait with opening the valve of the gas tank until ready with the configuration of the Zon EL08. **After opening the valve of the gas tank always push the red button of the hose fracture protection valve, to make sure an unobstructed gas flow is guaranteed.**

3 Operating the Zon EL08

The number of shots in a series and the time interval between consecutive series are configured on the Zon EL08 with DIPSWITCHES. There are 6 of them, white in a red block, numbered 1 to 6, like in the next picture. Dipswitches 1 and 2 are used for configuring the number of shots in a series and dipswitch 3 to 6 are used to configure the time interval between consecutive series.



Block with 6 dipswitches

A dipswitch is ON when it is pushed fully to the ON-side of the red block. It is OFF when it is pushed fully to the side of the red block with the numbers 1 through 6 on it. In above example dipswitches 2 and 5 are ON, the others are OFF. With this configuration there are 3 shots in a series and 7 minutes between series. **These are our factory settings.**

The current time and the periods, during which the Zon EL08 should operate, can be configured with the 5-figure display and the 4 push buttons. All times are in a 24-hour time notation. 00:00 is 12 o'clock at midnight. The 1-figure display to the right shows the Mode. The 2-figure display in the middle shows the minutes belonging to the displayed mode. The 2-figure display on the left shows the hours belonging to the displayed mode.

Hours Minutes Mode



5-figure display, with 4 push buttons



Pushbutton Hours



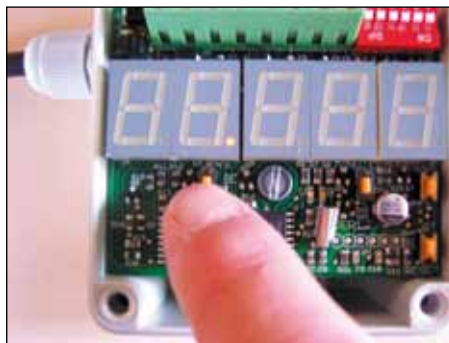
Pushbutton Minutes



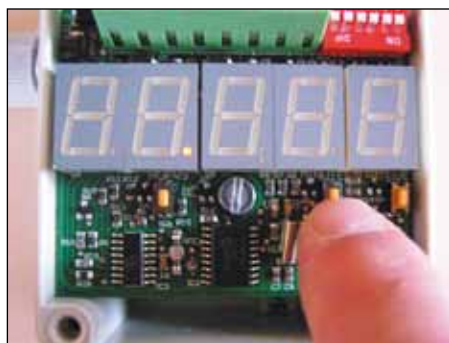
Pushbutton Mode



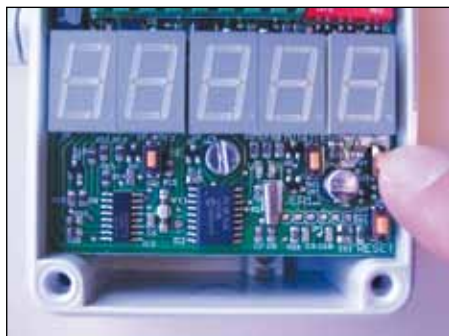
Pushbutton Reset



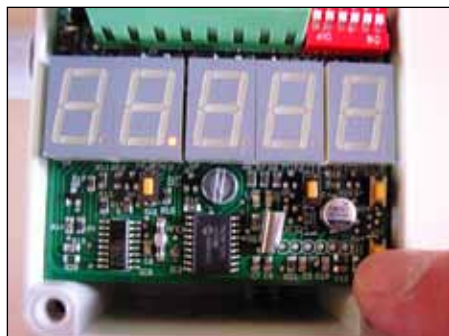
Setting hours



Setting minutes



Selecting Mode



Reset

4 Configuring the number of shots in a series

The electronic gas cannon Zon EL08 can be configured to produce 1, 2, 3 or 4 shots in a series, with approximately 5 seconds between each shot. The number of shots in a series is controlled with dipswitch 1 and 2.

Series	Dipswitch 1	Dipswitch 2
1 shot	Off	Off
2 shots	On	Off
3 shots	Off	On
4 shots	On	On

ON

1

2

3

4

5

6

DIP

ON

1

2

3

4

5

6

DIP

ON

1

2

3

4

5

6

DIP

ON

1

2

3

4

5

6

DIP

5 Configuring the time between consecutive series

The time, that has to pass between consecutive shots series, is controlled with dipswitch 3 through 6. These are the possible settings:

Interval	Dipswitch 3	Dipswitch 4	Dipswitch 5	Dipswitch 6
1 minute	Off	Off	Off	Off
2 minutes	On	Off	Off	Off
3 minutes	Off	On	Off	Off

ON

1

2

3

4

5

6

DIP

ON

1

2

3

4

5

6

DIP

ON

1

2

3

4

5

6

DIP

Interval	Dipswitch 3	Dipswitch 4	Dipswitch 5	Dipswitch 6	
5 minutes	On	On	Off	Off	
7 minutes	Off	Off	On	Off	
10 minutes	On	Off	On	Off	
13 minutes	Off	On	On	Off	
16 minutes	On	On	On	Off	
20 minutes	Off	Off	Off	On	
25 minutes	On	Off	Off	On	
30 minutes	Off	On	Off	On	
45 minutes	On	On	Off	On	
60 minutes	Off	Off	On	On	
Random 5	On	Off	On	On	
Random 10	Off	On	On	On	
Random 15	On	On	On	On	

Random 5 the time after a shots series is randomly chosen by the Zon EL08 between 1 and 5 minutes.

Random 10 the time after a shots series is randomly chosen by the Zon EL08 between 1 and 10 minutes.

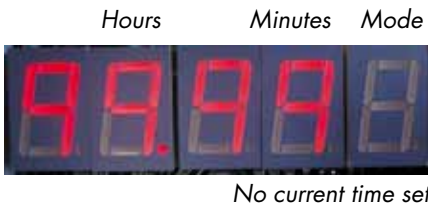
Random 15 the time after a shots series is randomly chosen by the Zon EL08 between 1 and 15 minutes

6 Setting the current time

When the display is not lit, it will light by pushing one of the push buttons for the Hours, Minutes or Mode and show the current time.

When the display is already lit, the current time is displayed at the moment the Mode display is empty. When the Mode display shows one of the figures 1 through 8, it does not show the current time, but one of the starting or ending-times. To show the current time, push the Mode button several times until the Mode display is empty. Now it shows the current time and this can be set or changed.

If no current time is set, the hours and minutes both contain the value 99. The current time is a continuously changing value that can't be stored into memory. After each power interruption the current time will contain 99:99. When no current time is set, the Zon EL08 will operate continuously, regardless of the periods of operation being set.



By pushing the Hours button or the Minutes button, the displayed current time can be altered. Keeping the button pushed down, will speed-up the changing of hours or minutes.

By pushing the Reset button for 1 second, the current time will be set to 00:00, this is 12 o'clock at midnight.

Opposite from starting and ending-times, the current time has not got to be confirmed by pushing the Mode button again, it's not stored into memory.

7 Setting starting-times and ending-times

4 periods can be set, by means of a starting-time and an ending-time, for a day. During these periods the Zon EL08 will operate according to the chosen configuration. Outside of these periods it will do nothing.

To set or change a starting or ending-time, first the time you want to set or change has to be displayed. Push the Mode button repeatedly until the value in the Mode display is the one belonging to the time you want to modify.

Mode = 1	Starting-time	period 1
Mode = 2	Ending-time	period 1
Mode = 3	Starting-time	period 2
Mode = 4	Ending-time	period 2
Mode = 5	Starting-time	period 3
Mode = 6	Ending-time	period 3
Mode = 7	Starting-time	period 4
Mode = 8	Ending-time	period 4

Hours Minutes Mode



Starting-time period 1 is 6:45 hr

Hours Minutes Mode



Ending-time period 1 is 8:15 hr



Starting-time period 2 is 12:10 hr



Ending-time period 2 is 13:30 hr

Hours Minutes Mode



Starting-time period 3 is 15:30 hr

Hours Minutes Mode



Ending-time period 3 is 17:15 hr



Starting-time period 4 is 19:00 hr



Ending-time period 4 is 21:45 hr

By pushing the Hours button or the Minutes button, the displayed starting or ending-time can be altered. Keeping the button pushed down, will speed-up the changing of hours or minutes.

By pushing the reset button for 1 second, the shown time will be set to 00:00, this is 12 o'clock at midnight. If the time is set, it has to be activated and written to memory by pushing the Mode button again. After a power interruption the value will still be intact.

Not all 4 periods have to be set, you only have to set the ones you want. In case no period is set, all starting-times and ending-times contain the value 00:00, the Zon EL08 will operate continuously according to the dipswitch settings.

8 In operation

When everything is installed and configured, the Zon EL08 will operate according to your chosen settings. Each time power is set to the Zon EL08, the first action will be starting a shots series. Wait with opening the valve of the gas tank until you have finished configuration.

After opening the valve of the gas tank always push the red button of the hose fracture protection valve, to make sure an unobstructed gas flow is established.

On the circuit board of the Zon EL08 you'll find 2 LED's. The led with the character V beside it, will light during the time gas is injected into the cannon. The led with the character B beside it, will light when the electronic ignition is activated. **Be careful, this is the moment of the explosion!!**



Led V (Gas inspuiten)



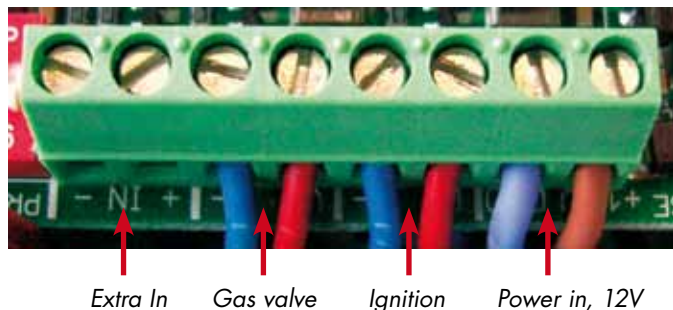
Led B (ontsteking)

When the Zon EL08 is powered on and the display is not lit, pushing the reset button shortly will light the display and show the remaining time until the next shots series. This time is descending and will be shown for 15 seconds.

During the time the display is lit, the Zon EL08 will never produce shots. Pay attention, if the display should turn to unlit at the moment a time interval to the next series is passed, it will start firing the next series of shots immediately.

9 Connections on the PCB (printed circuit board)

On the PCB 4 inputs are provided. Ex factory 3 are used.



Power in, is used for the connection of a 12V battery. The Ignition input is used to connect the electronic ignition of the Zon EL08 to. The magnetic valve, that controls the flow of gas, is connected to the Valve input.

The extra IN input, is meant for the connection of optional equipment, like a wired or wireless remote control. When equipment is connected to the + and – of this input and short-circuits these, the Zon EL08 will immediately begin firing the configured number of shots, regardless of the periods of operation being set.

In case the Zon EL08 should operate only on commands received through the extra IN input, it is necessary to configure at least one of the periods, in which the Zon EL08 is allowed to operate. Set the starting-time and ending-time at exactly the same time, for instance starting-time 08:00 and ending-time 08:00 as well.