



Zon 4MT08

User Manual

DAZON by



General

The conversion kit Zon 4MT08 creates the possibility to convert a fully mechanical gas cannon into a semi-electronic gas cannon.

The electronic control-unit MT08 makes the propane gas cannon 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 control-unit selects a different time-interval after each series.

The control-unit is equipped with a 24-hours clock. No less than 4 periods can be configured, during which the control-unit will operate the propane gas cannon.

Always wear ear-protection near cannons in operation!!

1 Contents of the conversion kit

1	MT08, electronic control-unit	1x
2	SBBV, hose fracture protection valve	1x
3	NH14, hose clamp	3x
4	User manual	1x

2 Aansluiten

- 1 Close the valve of the gas tank. **Do not open this until you have finished installation and configuration of the MT08!!**
- 2 Disconnect the pressure regulator from the gas tank.
- 3 Disconnect the hose from the precise regulator.
- 4 Unscrew the precise regulator from the pressure regulator (unscrew is clockwise).



Pressure regulator (Shell type) ←→ Precise regulator

- 5 Screw the hose fracture protection valve onto the pressure regulator (on is counterclockwise). Secure a no-leak connection by using Loctite or teflon tape on the wire of the hose fracture protection valve. The precise regulator only allows a small amount of gas flowing through in a relatively long period. To produce a series of shots, it's necessary to allow a large amount of gas in a short period, that's why the precise regulator has to be disconnected. The hose fracture protection valve provides extra security, by closing the gas flow at the moment the counter-pressure disappears. For instance when the hose detaches on either side of the equipment, or when it is accidentally run over and severely damaged. **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.**



Pressure regulator ←→ Hose fracture protection valve

- 6 Connect the hose to the hose fracture protection valve and secure it with one of the supplied hose clamps NH14.
- 7 Cut the hose so the MT08 can be installed between the gas fracture protection valve and the propane gas cannon.
- 8 Connect both ends to the electronic control-unit MT08 and secure these with the remaining 2 clamps NH14. The arrow on the magnetic valve in the control-unit indicates the direction of the gas flow. Connect the gas cannon on the side to which the arrow points out.



- 9 Connect the pressure regulator to the gas tank.
- 10 Connect the battery cable of the control-unit MT08 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 control-unit consumes 0.53 ampere per day. A fully loaded car battery of 30Ah will operate the control-unit for approximately 60 days, a 7.2 Ah battery for approximately 14 days.
- 11 Position the battery and the control-unit preferably above the ground on an elevated spot and protect them from rain and extreme heat. The control-unit is splash waterproof and heat resistant to at least 190°F/70°C. A careful positioning and protection will increase the lifespan of the equipment significantly.
- 12 You have finished installation and the MT08 is ready to be configured.

3 Operating the MT08

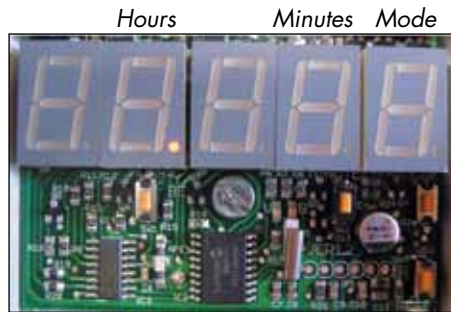
The number of shots in a series and the time interval between consecutive series are configured on the MT08 with DIPSWITCHES. There are 6 of them, white in a red block, numbered 1 to 6, like in the next picture. Dipswitches 1 and 2 are used for configuring the number of shots in a series and dipswitch 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 control-unit should operate the propane gas cannon, 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.



← 5-figure display, with 4 push buttons



Pushbutton Hours



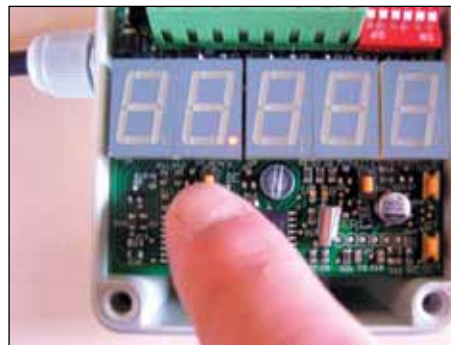
Pushbutton Minutes



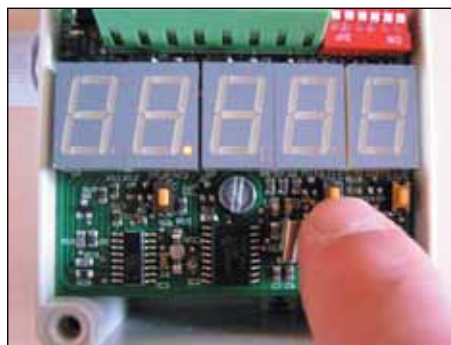
Pushbutton Mode



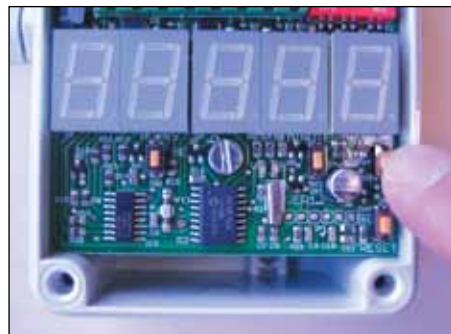
Pushbutton Reset



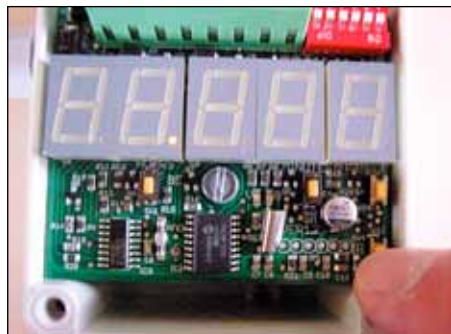
Setting hours



Setting minutes



Selecting Mode



Reset














4 Configuring the number of shots in a series




The electronic control-unit MT08 can be configured to operate the gas cannon and let it 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	DIP
1 shot	Off	Off	
2 shots	On	Off	
3 shots	Off	On	
4 shots	On	On	

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	
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	

Interval	Dipswitch 3	Dipswitch 4	Dipswitch 5	Dipswitch 6	
Random 10	On	Off	On	On	
Random 20	Off	On	On	On	
Extra In.	On	On	On	On	

Random 10 the time after a shots series is randomly chosen by the control-unit between 1 and 10 minutes.

Random 20 the time after a shots series is randomly chosen by the control-unit between 1 and 20 minutes

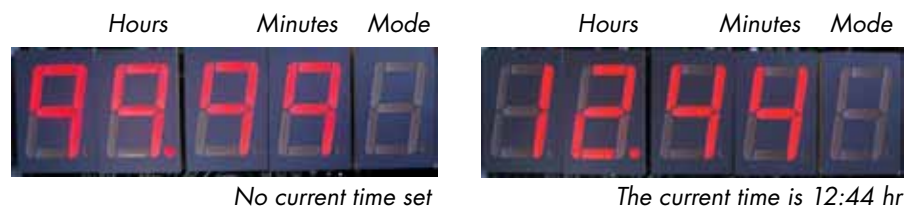
Extra In the control-unit is operated by the Extra In (p14) only.

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 control-unit will operate the gas cannon 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 control-unit will operate the gas cannon according to the chosen configuration. Outside of these periods the control-unit 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





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 control-unit will operate the gas cannon continuously according to the dipswitch settings.

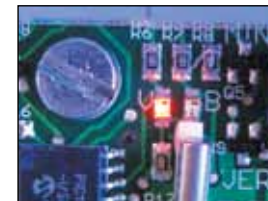
8 In operation

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

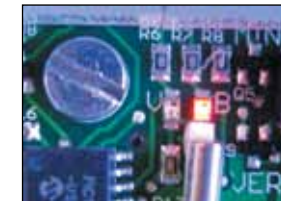
After opening the valve of the gas tank always push the red button of the hose fracture protection valve, to make sure an unobstructed gas flow is established.

On the circuit board of the control-unit 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 control-unit activates the electronic ignition (this ignition will only be used on the Zon EL08).

Be careful, the explosion will follow in less then 2 seconds!!



Led V (open gas valve)



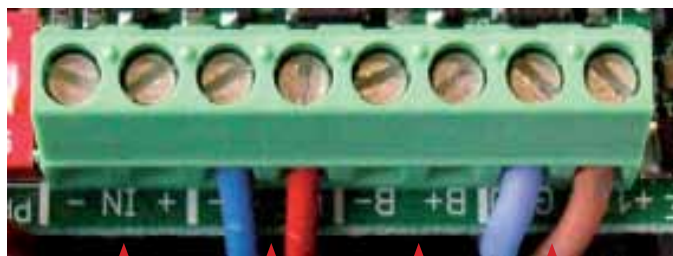
Led B (ignition)

When the control-unit 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 control-unit will never operate the gas cannon. Pay attention, if the display should turn to unlit at the moment a time interval to the next series is passed, it will start operating the gas cannon immediately.

9 Connections on the PCB (printed circuit board)

On the PCB 4 inputs are provided. Ex factory 2 are used.



Extra In Gas valve Ignition Power in, 12V

Power in, is used for the connection of a 12V battery. The Ignition is not used for the MT08, it is meant for the Zon EL08. To the Valve the magnetic valve, that controls the flow of gas, is connected.

The extra IN input, is an auxiliary input 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 control-unit will immediately begin to operate the gas cannon and let it produce the configured number of shots, regardless of the periods of operation being set.

In this example a common push button is connected to the extra IN input. Pushing the button will activate the control-unit immediately and let it generate a series of shots. When finished it will automatically switch back to the configured program.



Declaration of conformity

Declaration of conformity of the product with the essential requirement of the EMC directive,

Directive : 2006/95/EG

Product description

Product name : Zon
Product type : 4MT08
Manufacturer : Dazon B.V.

Product environment

This product is intended for use in residential and light industrial environments.

Emission standard : EN 61000-6-3:2007/A1:2011

: EN 55022:2010/AC:2011

Immunity standard : EN 61000-6-1:2007

Report

Report number : MATAS/EMC/Zon 4MT08-EL08

This declaration was issued by

Date : 28-11-2012

Name : F. Berlo

Signature :



Declaration of conformity

We confirm that the version of the device below which is marketed by us satisfies the requirement of and is in accordance with the EU directives, the EU safety norm and the specific product standard. This certificate becomes invalid if any modifications are made to the device without our approval.

Description of the unit: Timer for scarecrow device

Type: ZON TIMER

Art.no.: 4MT08

EU Directive: Machinery Directive (2006/42/EC)


Harmonised EN: EN ISO 12100:2010

National standards: DIN 17660-2:2006-12

W.G.M. Timmers

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