



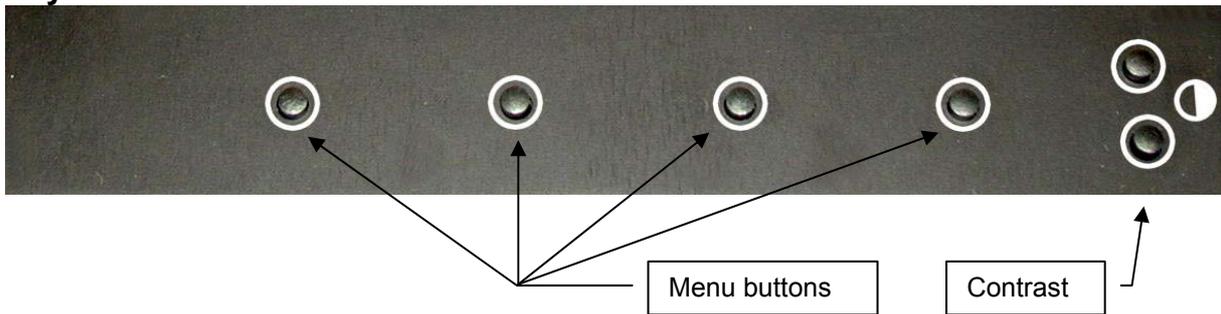
# Monitor

## User Manual

# THE MONITOR



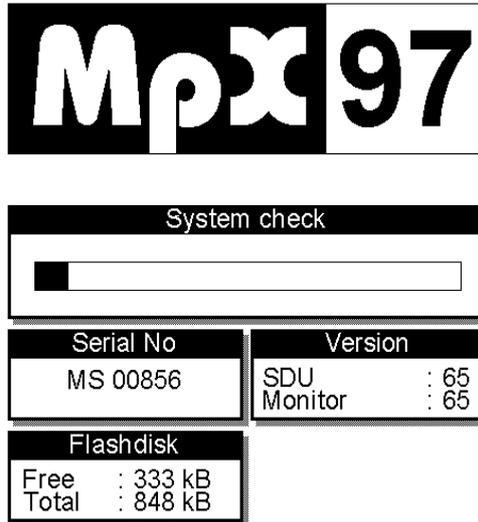
## Keyboard



## Normal start-up

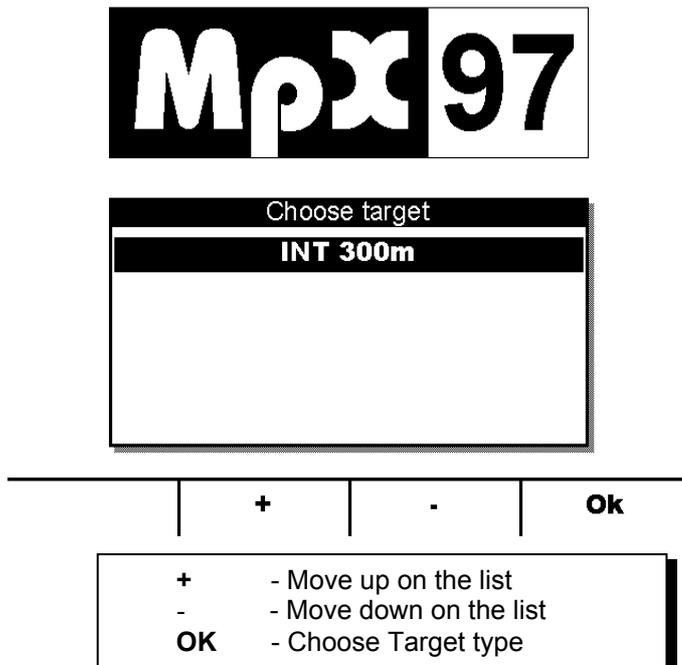
### System check

The first that happens, after the monitor is turned on, is a system check. This check makes sure that the system units in the monitor are working and that the communication with the rest of the system is working.



### Choose Target type

Each SDU contains a target-menu that is unique for each system. Any additional targets-types can be ordered by contacting vendor.



# How it works - summary screen

**1**

1	X.2
2	X.3
3	9.8
4	9.5
5	9.5
6	9.0
7	8.8
8	9.6
9	8.8
10	8.6
8.6	
SUB	89
TOT	0
Xm	-31.1
Ym	13.4

**John Ohlsen** | **INT 300m**

**MENU 1** | **New series** | **Zoom** | Next 10 shot

Shot no.  
Shot value  
Shot direction compared to target center  
Last shots value  
Series sum  
Sum all series  
Average hit point x and y in mm  
Target type  
Optional info-field. Here shown with shooters name

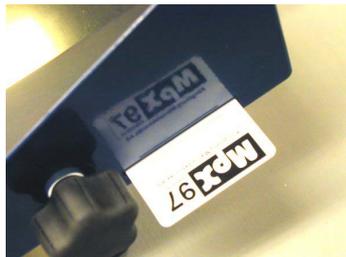
Displays menu shown (1-3)  
Menu choice for Menu 1

Left button is a menu selector that makes the other three switches changes function. The system consists of three menus (*Menu 1, Menu 2 and Menu 3*).

If personal smart-cards (User-Card) are used, a greeting will be displayed when the card has been inserted. On this greeting, it will also say how many shots are left in the card if it has been programmed for a limited number of shots. If access control is not used, this info will not be displayed.



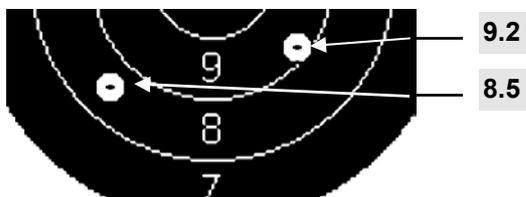
## Smart-card



The Smart-card is inserted in the slot on the right side of the display. Make sure that the contact points are turned towards the back of the monitor.

## Shots value and hit marking

In the column to the right, the shots value is displayed. Each value is divided into 10 levels (the number after the period), where .9 is in the inner rim of the circle and .0 is in the outer rim of the circle. Usually the outer-10 and the inner-10 will be combined on the decimals, so that the outer-10 goes from X.0 to X.4 and the inner-10 goes from \*.5 to \*.9. The best inner-10 value is \*.9.



The following symbols are used to display the shots value:

Symbol	Value of shot fired
1-9	Shot value 1 to 9
X	Outer-10
*	Inner-10

**NB!**

These values are only valid for the most common 10-divided targets. Targets with other level-dividing and figures have different rules when it comes to decimals and center-hits.

**NB!**

If "Show shot" is set to "Fixed", there is no connection between the size of the hit-marking (the drawing of the shot) and the gauge that is used for calculating the shots value. The size is selected to give a best possible visual image regardless of the gauge-size. If "Display hit" is set to "Fixed" the visual image of the shot will be displayed in the same size as the gauge – with respect to the target size.

## Average hit point

The average hit point is displayed as a square with a cross in the centre.



The coordinates for the average hit point will be displayed in the lower right corner as Xm and Ym.

<b>Xm</b>	<b>63.4</b>
<b>Ym</b>	<b>47.3</b>

## Menu 1

<b>MENU 1</b>	<b>New series</b>	<b>Zoom</b>	Next 10 shot
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This is the “Main menu” where the most frequently used functions are.

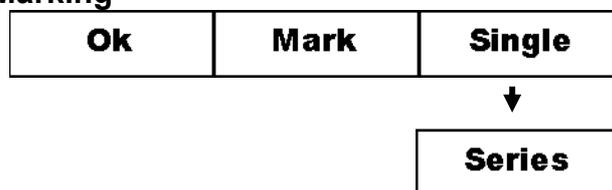
### New series

A new menu will appear when “New series” are selected:

<b>Ok</b>	<b>Mark</b>	<b>Single</b>
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In the “New Series” menu, several settings are possible: “Mark shots”, “Sighting shots” and “Position”. Settings are changed with button no. 3 on the display-panel.

#### Marking



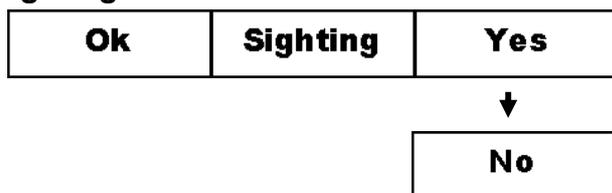
*Single* Each shot is marked consecutively

*Series* The shots are marked after the series are shot. When the first shot has been fired, the menu will change to:

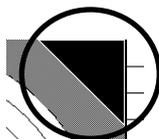
<b>Mark</b>	<b>Mark</b>	<b>Mark</b>
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After all shots are fired, one of the buttons is pushed to mark the series.

#### Sighting shots



*Yes* The shots will not be summed up and a triangle will be displayed in the upper right corner that indicates test shots.



*No* The shots will be summed up in the sum- and total-field.

**NB!**

The total value will increase for each counting series. To null out the totals, the monitor must be logged out.

## Zoom

The number of zoom-levels will vary from target to target. “Normal” targets will have three zoom-levels.

## Next 10 shots

There is only room for 10 shots values in the list to the right on the display. If there are more than 10 shots in the series, this button can be used to select which 10 + 10 shots to show (ex. shots no. 1-10 or shots no. 11-20).

***NB!***

The Hit-markings will display all the shots that are fired. Use the “Mark series” choice on “Menu 2” to display only the shots that are displayed in the list.

## Menu 2

<b>MENU 2</b>	<b>Mark series</b>	<b>Print series</b>	<b>Save series</b>
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### Mark series

The series that is shot will be marked again, with a small pause between each shot.

**NB!**

It is only the shots that are listed to the right that will be displayed. To display other shots, "Next 10 shots" on "Menu 1" must be used to select the next shots.

### Print series

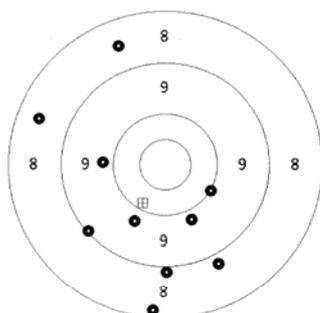
A new menu will be displayed:

<b>Cancel</b>	<b>Last series</b>	
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**Cancel** Cancel printing and returns

**Last series** Prints out the last series

1	Ola Nordmann 07. 02. 1980 21. 33	1/1
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S-S 260  
H 258  
B 172  
X-MID -22.1  
Y-MID -37.9

TOT 86

DFS 200m

1	9.8 ←	-59.9	2.4	6	8.4 ↖	-121.3	45.2
2	8.9 ↓	1.6	-104.7	7	8.8 ↘	51.3	-96.3
3	9.8 ✓	-29.3	-55.2	8	8.2 ↓	-12.1	-142.4
4	9.8 ↘	25.2	-53.4	9	X.0 →	43.4	-25.4
5	9.1 ↙	-73.8	-65.2	10	8.5 ↗	-45.8	116.2

*Print out example*

## Save series

A new menu will be displayed:

<b>Cancel</b>	<b>Last series</b>	
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**Cancel** Cancel saving and returns

**Last series** Saves the series in the monitor memory. To save the series on a floppy disk, the shooter must bring a floppy disk and the User-Card to the SDU. On the SDU, the user must first insert the floppy disk, and then insert the User-Card into the Smart-Card reader. When the card is inserted, the series will be transferred from the monitor (or monitors, if the user has used more than one) to the floppy disk. After a while the SDU will give several beeps, to inform that the transfer is finished and the floppy disk and the card can be removed. Just one "Ok"-beep will inform that no series was found.

***NB!***

The series will only be saved in the monitor and then deleted when the monitor is turned off. So the monitor must not be turned off until the series are saved on a floppy disk.

***NB!***

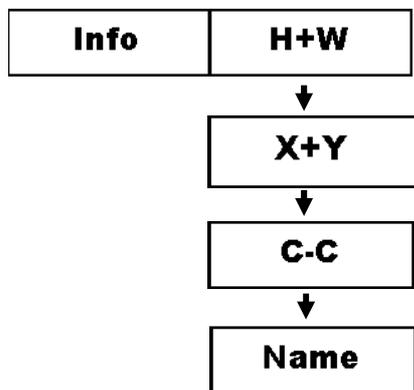
It will not be possible to save series when not logged on with Smart-Card.

## Menu 3



In "Menu 3" there are several settings that can be changed: "Info", "Show shot" and "Target light". What setting to change, is selected with the second key on the display-panel.

### Info



On the line above the menu there is an information field where the user can choose what to display.

**H+W** Height- and width dispersal. The height-dispersal is the distance between the two shots in the series that is the highest and lowest. The width-dispersal is the distance between the two shots furthest to the right and left. Both measures in mm.

**H = 221.0    W = 210.0**

**X+Y** X and Y coordinate on the last shot (mm).

**Xs = 79.0    Ys = -37.0**

**C-C** Centre-centre dispersal, i.e. the distance between the two shots furthest apart from each other (mm).

**C-C = 236.1**

**Name** The shooters name is displayed (programmed into the User-Card)

**John Ohlsen**

## Show shot



Since the system can handle different calibres, gauges, target types and target models it is possible to choose between two different sizes on the graphical drawing of the shot.

**Fixed** The shot is drawn up so it is easy to see on all zoom-settings. The drawing of the shot can be both larger and smaller than the gauge. This setting is recommended for targets at 100 meters and up.

**Gauge** The shot is drawn up with the same size as the gauge.

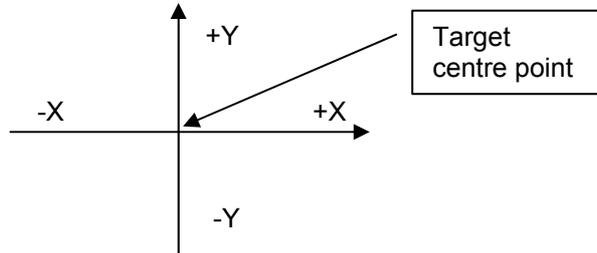
## Log off

After having finished shooting, the shooter should log out to make the system ready for the next shooter. Even if not every shooter uses a Smart-Card, it is recommended to log off to reset the monitor for the next shooter.

**NB!**  
Even if the Smart-Card is removed, the monitor will not log off.

## Target zero point

It is possible to move the electronic centre point of the target with 1mm steps. To do this centre adjustment, the monitor must first be started up in training-mode and the info-field set to display X and Y on the last shot. Put for instance a millimetre-paper on the target where you mark on the paper where the centre of the aiming point should be. Fire a shot and find the shots coordinate on the paper.



Also make a note of the shot's position (X and Y values) given on the monitor. The Target Centre Point (the correction factor) that shall be inserted is calculated with these formulas:

$$\begin{aligned} \text{Target centre point X} &= \text{Monitor X} - \text{Paper X} \\ \text{Target centre point Y} &= \text{Monitor Y} - \text{Paper Y} \end{aligned}$$

Please ensure that the correct sign is displayed for the X and Y coordinates.

**NB!**

The electronic centre point correction is stored in the monitor, so that if the monitor is moved between several shooters stands, the target centre point should not be set.