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H 1 Operational Mode

Connect the 35-seconds timers to the scoreboard according to Appendix 1 (Layout of Waterpolo System WP2000). Connect the remote control button for the 35s timers with the control panel. Last, but not least, connect the control panel with the scoreboard. The power-on indicating LED and the scoreboard LED should light up.

The text "WATERPOLO" appears on the LCD screen of the control panel. The version number is shown on the first line.

```
=====
                WATERPOLO 1.0
                W A T E R P O L O
                W A T E R P O L O
=====
```

There are two possibilities of text which can appear 5 seconds after the *Waterpolo* logo.

Possibility 1.

```
=====
                HOME    PLAY-TIME: 3.45  VISITORS
                SCORE: 12                SCORE: 9
                T1: 20    PERIOD: 1    T1: 20
                T1: 20    SEC: 35    T1: 20
=====
```

This is the standard display field of a water polo game in Operational Mode. The numbers may differ. The values shown are the values which existed at shut-down on last use.

To start a new game the system has to be reset.

Every time a key is pressed a beep signal is produced. If a wrong key, or an impossible key, is pressed a double beep signal results and the correct key should be pressed.

By pressing the **FUNCTION** key and the **6** key (Reset system) you automatically enter the second possibility.

Possibility 2. After the text "**WATERPOLO**" appears on the LCD screen of the control panel the following text appears.

```
=====
                ***** FUNCTION *****
                PRESET PLAY-TIME PERIOD 1 = 7 MIN
=====
```

Before setting up for a game it is useful to know the presets which exist.

The system asks for the play time for each period to be preset. In the example shown the **7** will blink (for 5 seconds if no key is pressed). Use the **+/-** keys to change the value for 1st period. Confirm the value by pressing the **E** key (Enter). The times for the subsequent periods are set next.

If extra time is permitted then periods 5 and 6 should be set to **3** minutes. Strictly speaking extra time interval is 1 minute not 2 which is standard for all intervals. For 4-period game with no extra time the value of period 5 is of course **0** minutes.

When the control panel is disconnected the preset play-times of the last game are saved.

If the next game is of the same duration then these times do not have to be installed and this routine can be escaped with the **ESC** key. To check the presets simply confirm with the **E** key (Enter).

HOME	PLAY-TIME: 7:00	VISITORS
SCORE: 0		SCORE: 0
T1: 20	PERIOD: 1	T1: 20
T2: 20	SEC: 35	T2: 20

The control panel shows the standard (operational mode) display of a game as follows: -

Every time and value of the game is available at a glance in a manner compatible with the **scoreboard display**.

The game can now be started.

A short summary of the use of several keys follows

START	Start the match-time
STOP	Stop the match-time
HOME	
1	Start exclusion time 1 (home)
2	Start exclusion time 2 (home)
7	Reset both exclusion times (home)
SCORE	Increment/Decrement score (home)
VISITORS	
1	Start exclusion time 1 (visitors)
2	Start exclusion time 2 (visitors)
7	Reset both exclusion times (visitors)
SCORE	Increment/Decrement score (visitors)
SIGNAL	Generate an audible signal

Score is incremented by pressing the **SCORE** key.

To decrement the score, for home or visitors

hold down the **▣** key and press the appropriate **SCORE** key

At the end of a game the connection between control panel and scoreboard can be broken.

If there is a failure of power supply the values of the scoreboard will be saved. On starting over again the system comes back with the same values.

To start a new game the system has to be reset.

H 2 Function Mode

The **FUNCTION** key enters the function mode. During the game the system has not to be operated in this mode. Only in case of doubt or some other special reason should this mode be selected.

After pressing the **FUNCTION** key the following text is displayed on the LCD screen.

```
=====
***** FUNCTION *****
 1 Preset Play-Time    4 Preset Count Mode
 2 Period              5 Preset Day-Time
 3 Reset Play-Time    6 Reset System
=====
```

When other text is printed, during an interval or when a game has just ended there are less functions available.

In FUNCTION MODE keys have other meanings which are summarised below.

- 1 Preset Play-Time per period
- 2 Jump to the beginning of another period
- 3 Reset play-time
- 4 Preset count-up/count-down mode
- 5 Preset day-time
- 6 Reset system

Values are installed as before. Confirm change with the **E** key or exit without change with the **ESC** key.

As mentioned there are other functions available when an interval is running and the **FUNCTION** key is pressed.

```
=====
***** FUNCTION *****
 1 Preset Play-Time
 2 Preset Count Mode
 3 Escape Pause-time
=====
```

It is possible to change the run-down of a game and the choice of count-up/count-down of the control panel and/or scoreboard.

Interval time starts automatically at the end of a period. It is not possible to stop the interval using the **STOP** key. Selecting function 3 (Escape pause time) will do so jumping to the beginning of the next period.

When a game is ended it is possible to change the run-down of a subsequent game, for example in a tournament. With **Preset Play-Time** function some periods can be adjusted.

When a game is ended and a new game will be started the system has to be reset with the function **Reset System**.

PRESET DAY-TIME CLOCK

It is possible to display the time-of-day on the scoreboard. First install the time-of-day with the function **Preset Day-time**.

In Operational Mode, press the **FUNCTION** key followed by the **5** key. The scoreboard blanks and then the following text appears

```
=====
***** FUNCTION *****
          Blanking Scoreboard, please wait
=====
```

After 2 seconds the next text appears

```
=====
***** FUNCTION *****
          DAY-TIME: 0: 0
=====
```

The hours of the time-of-day starts blinking and the correct value can be selected with the **+** or **-** key. Confirm the hour setting with the **E** key.

The minutes starts blinking and the correct value is selected and confirmed as before.

The following text appears

```
=====
***** FUNCTION *****
          DAY-TIME: 11:37
          Press<START> to Start or <ESC> to Exit
=====
```

If the time-of-day entered is incorrect you can press **ESC** key and try again. When the time is correct the time-of-day can displayed on the scoreboard by pressing the **START** key.

If the connection between scoreboard and control panel is broken the scoreboard continues to display the time-of-day. All other information disappears.

When you turn back to the game with the **ESC** key the last stored values appear.

If the Control Panel is not used for 15 minutes the time-of-day appears on the Scoreboard and all other information disappears.

To go back to the game (in Operational Mode) press **FUNCTION** key then **ESC** key. When the time is correct the time-of-day can displayed on the Scoreboard by pressing the **START** key.

As long as power to the Scoreboard is maintained time-of-day will be displayed.

The time-of-day can only be synchronised by means of the Control Panel.

H3 TRAIN MODE

As an option this system possesses a **Train Mode**. This can be used for several purposes, the formation of the system remains the same. The 35s timers are used to display a count-down interval clock with a Continuous Mode. The scoreboard is not used in Train Mode.

Pressing the **FUNCTION** key from the Function Mode gets you into Train Mode.

```
=====
***** TRAIN MODE *****
      1  Enter Train Timer
      2  Preset Train Timer
=====
```

The **Train Clock** can be preset with key **2**.

The **interval time** of the clock can be set first then the **interval time of the train signal** can be preset. The **type of train signal** and its **duration** can also be preset.

Start the **train timer** with the **1** key.

H4 MASTER MODE

If in the future the default values, for instance 35s possession or 20s exclusion change it is possible to change these once in the Master Mode.

In order to guard against every user entering this mode its **access is protected**.

Similarly to Function Mode there must be a reason to enter and operate in this mode.

For example there may be a tournament with special rules and this would be an appropriate reason to enter this mode.

Pressing the **FUNCTION** key from the Operational Mode and then the D key is the first step and the following text appears.

```
=====
***** P A S S W O R D *****

Enter Master Password:

=====
```

Entering the **correct password** (*note: 1234 works although manufacturers say no password was set*) allows access to **Master Mode** and the next text appears as follows

```
=====
***** M A S T E R M O D E *****

1 Seconds Timer      4 Signal
2 Time-Out Timer    5 Master Test Mode
3 Pause Timer       6 Reset System

=====
```

A short summary of the key functions follows:

- 1 Preset possession timer (default 35 seconds)
- 2 Preset exclusion time (default 20 seconds)
- 3 Preset interval time (default 2 minutes)
- 4 Preset lengths and types of signals
- 5 Test digits of scoreboard and signals
- 6 Reset system

** 29 Aug 2005 - Possession time changed to 30s but this only worked for that game and needed to be changed again for subsequent game. Eraton to be contacted*

H5 FUNCTIONS

USER FUNCTIONS

Start/Stop Match Time

Reset Match Time

Reset System

Start/Reset exclusion timers (home and visitors)

Increment Score (home and visitors)

External Start 35s timer.

Automatically stop exclusion timer and 35 s timer after stop of match time

Automatically stop exclusion timer and 35 s timer after a goal

Automatically signal End of Play in period

Automatically signal End of Interval

Automatically signal End of 35s

Key for Extra Signal

Install one game; preset Play-Time per period

Install the Counting Modes of Control Panel and Scoreboard

Install Time-Of-Day

MASTER FUNCTIONS

Install Possession Time (default 35 seconds)

Install Exclusion Time (default 20 seconds)

Install Interval Time (default 2 minutes)

Install kinds of Signals (buzzer, siren, bell or none)

On/Off automatic reset of Possession Time after goal

On/Off automatic reset of Exclusion Times after goal

Install Length of Signals

Create a Train Timer

H6 SPECIFICATIONS

SCOREBOARD

Voltage	220/240 Volts AC 10% tolerance
Frequency	50Hz
Power consumption	150 watts maximum
Control	by computer
Digits	electromagnetic with plastic bearings
Maintenance	none
Housing	aluminium
Front	non-reflective acrylic

CONTROL PANEL and POSSESSION TIMERS

Housing	aluminium
Front	non-reflective acrylic
Voltage	12 Volts DC
Control	by computer
Weight	5Kg (Control Panel) 10Kg (Possession Timers)

H7 TROUBLE SHOOTING

It is always possible to make contact by telephone during normal working hours.

The digits of the scoreboard as well as the audible signals can be tested in the Master Mode of the system.

Some problems can be solved temporarily. For example, when the bell will not ring, another type of signal can be selected in Master Mode as a temporary solution.

In case of a greater problem the following sequence should be carried out to try to locate the nature and source of the fault:

1. Check that power is reaching the Scoreboard.
2. Check that all connections are making good contact.
3. Check that the 2 indicator LEDs on the Control Panel are lit up.
4. Check if the 4 indicator LEDs in the Scoreboard are lit up (the front right cover has to be removed). If an LED is not lit replace the appropriate fuse.
5. Check if the 2 indicator lights on the 2 lowest cards of the card rack are lit.
6. Check if all the cards are pushed firmly home in the rack.

When the Control Panel display (LCD) is not good the power to the Control Panel has to be restarted (disconnect the Control Panel for 1 minute then reconnect). It may be necessary to disconnect the Scoreboard for 1 minute then reconnect.

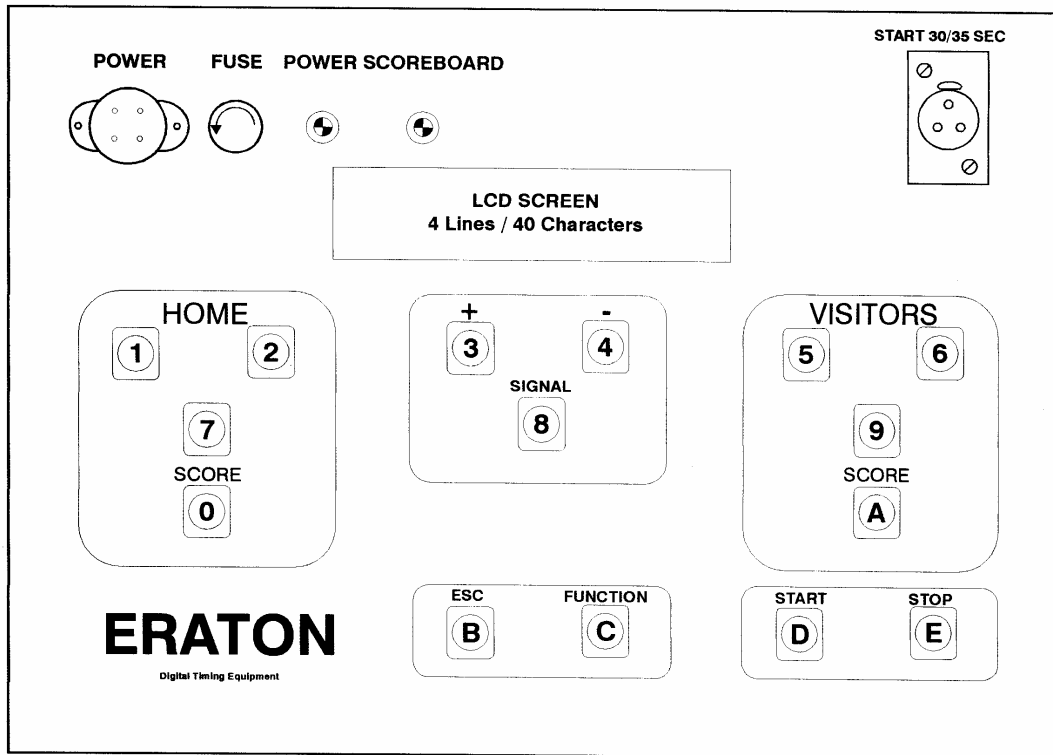
In the case of recurring problem contact supplier (Epson).

H8 UPDATE

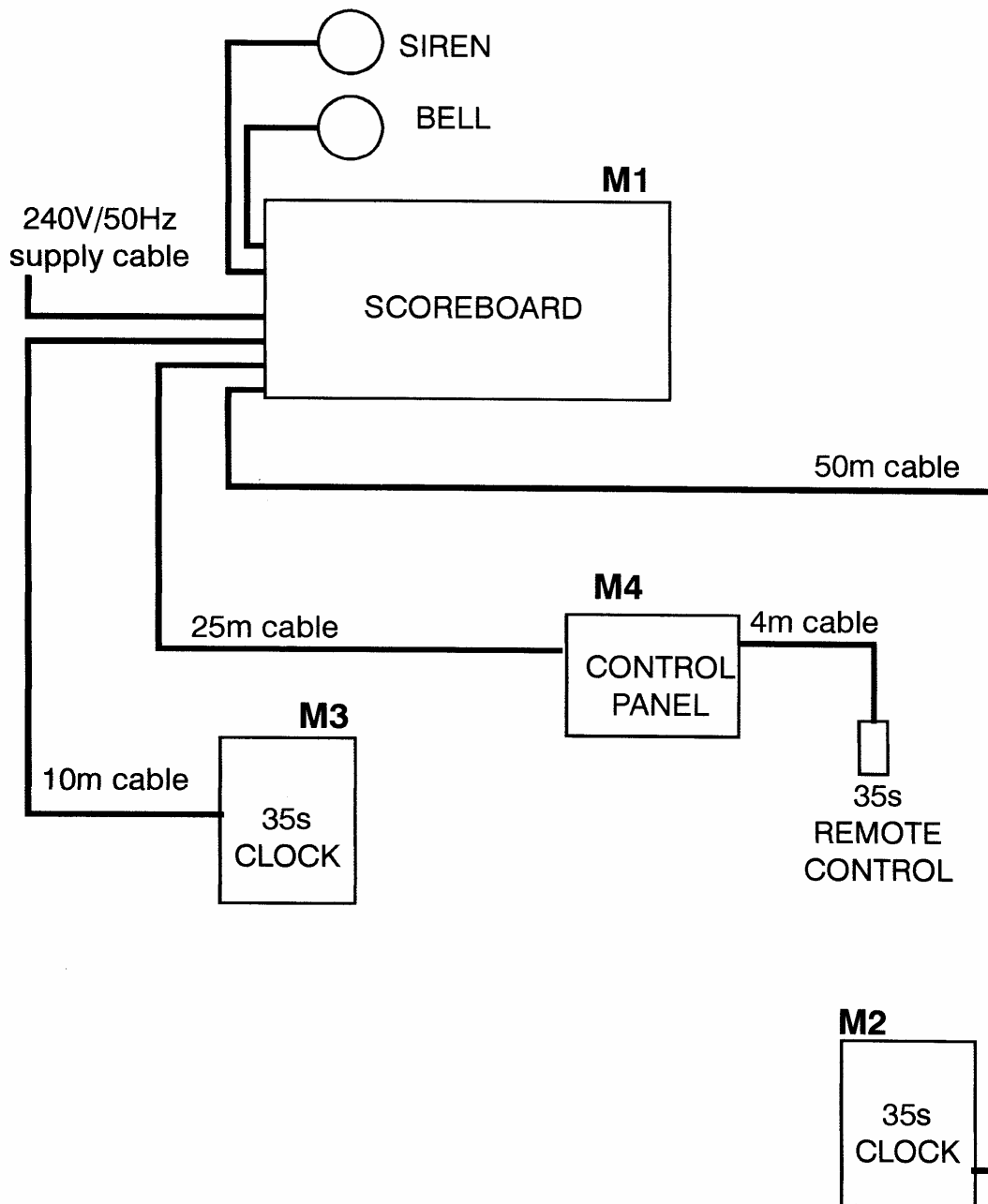
There are some new features in Version 3 of the Waterpolo Program

1. Changing the score is direct
2. Automatic reset of Possession timers after score has changed can be set ON/OFF in Master Mode
3. Automatic reset of Exclusion timers after score has changed can be set ON/OFF in Master Mode
4. Automatic start of Possession timers after start of Match Time can be set ON/OFF in Master Mode

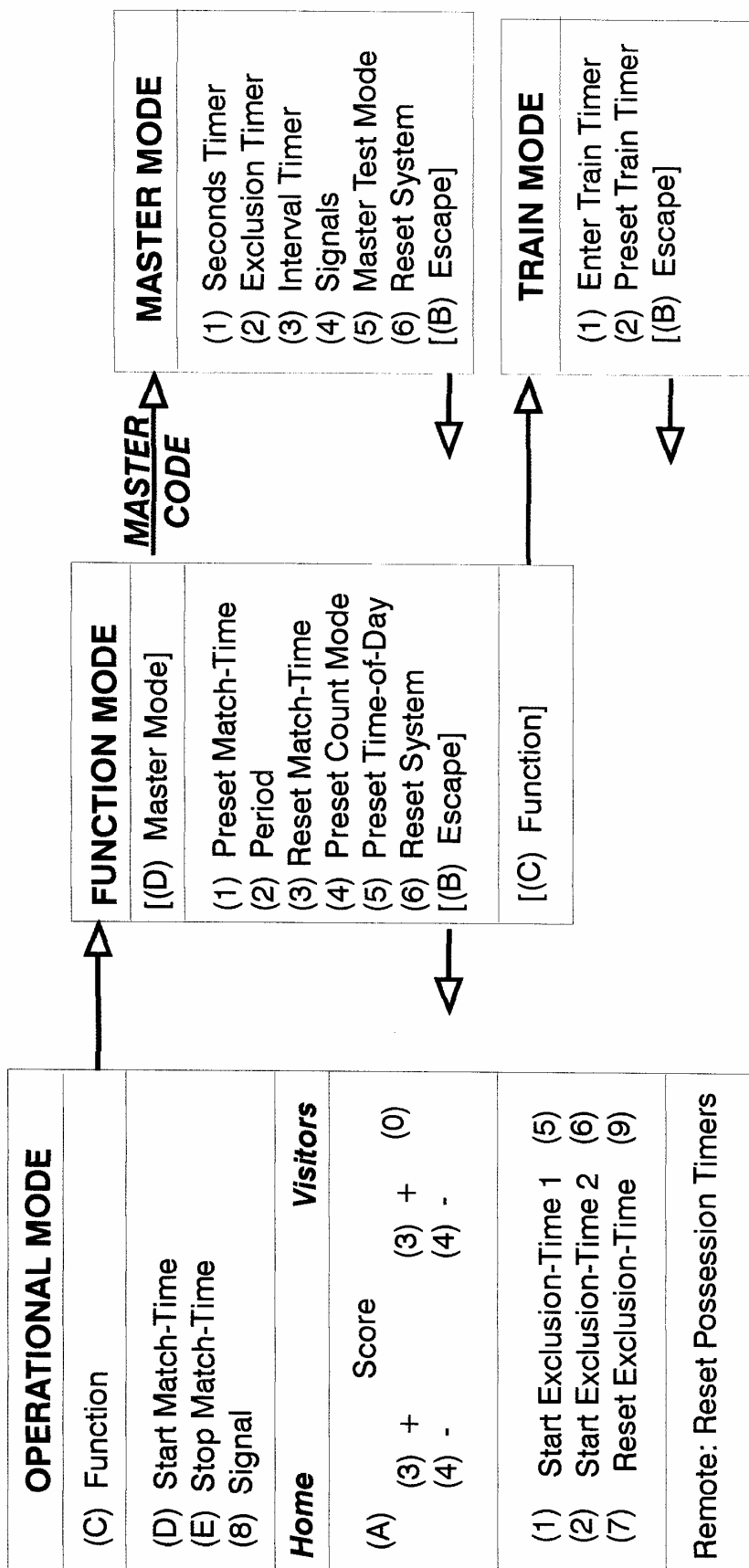
ERATON WATERPOLO TIMING EQUIPMENT CONTROL PANEL LAYOUT



ERATON WATERPOLO TIMING EQUIPMENT WIRING LAYOUT



WATERPOLO PROGRAM - Schematic

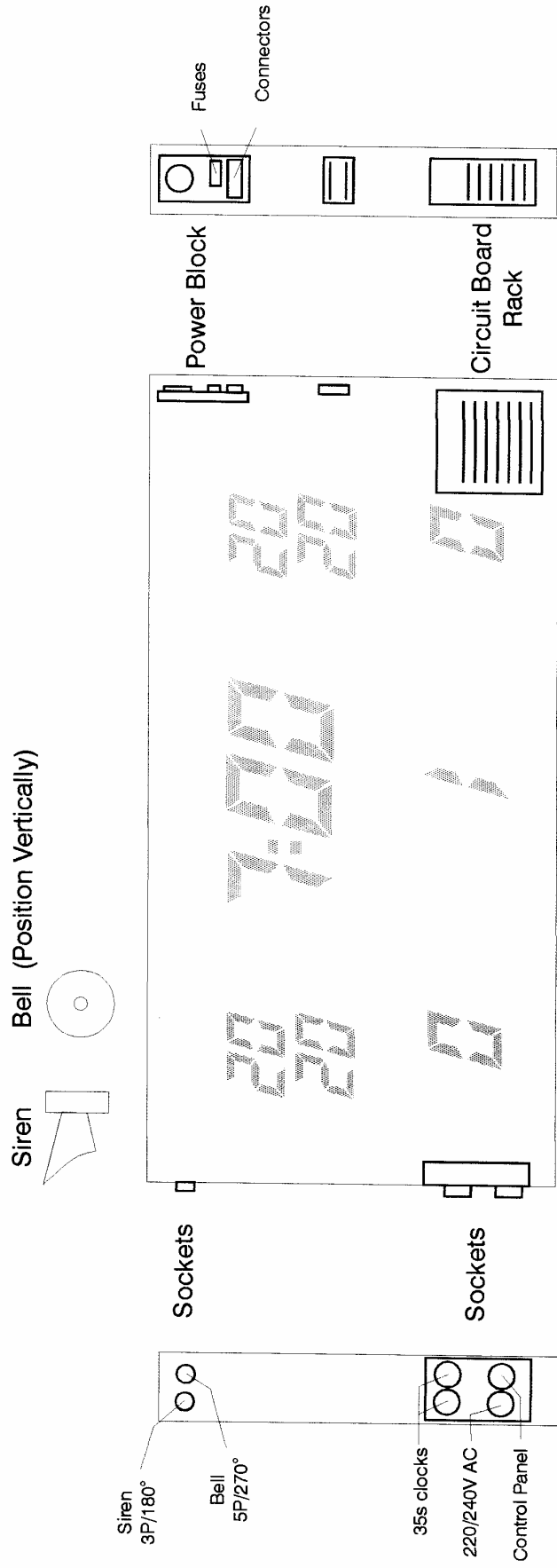


ERATON WATERPOLO SCOREBOARD

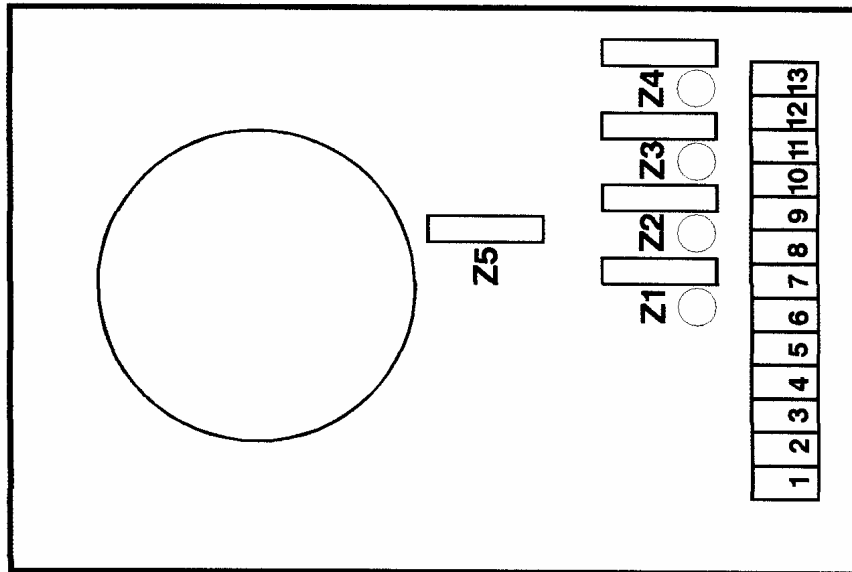
END VIEW
Left Hand

FRONT VIEW

END VIEW
Right Hand



Power Block



Z1 Scoreboard Fuse 8A (Fast)

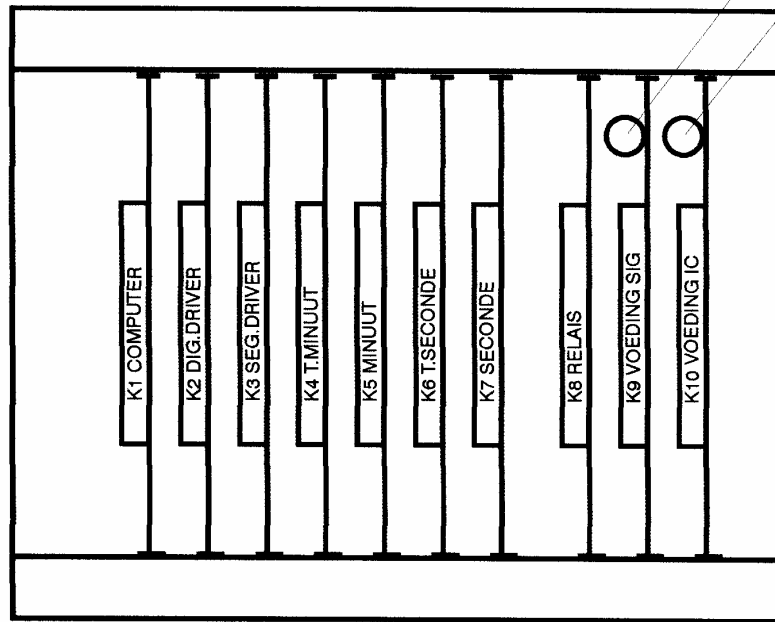
Z2 Control Panel Fuse 2A (Fast)

Z3 35s Clock Fuse 5A (Fast)

Z4 35s Clock Fuse 5A (Fast)

Z5 Signal Fuse 500mA (Fast)

Circuit Board Rack



- K1** Computer card - Scoreboard
- K2** Digit Select Driver (scores + period + dots)
- K3** Segment Driver (scores + period + dots)
- K4** Tens of Minutes Driver
- K5** Units of Minutes Driver
- K6** Tens of Seconds Driver
- K7** Units of Seconds Driver
- K8** Signal Driver
- K9** Power Signal (12V)
- K10** Power IC (5V)

Signal Power Indicator Lamp

Power IC Indicator Lamp