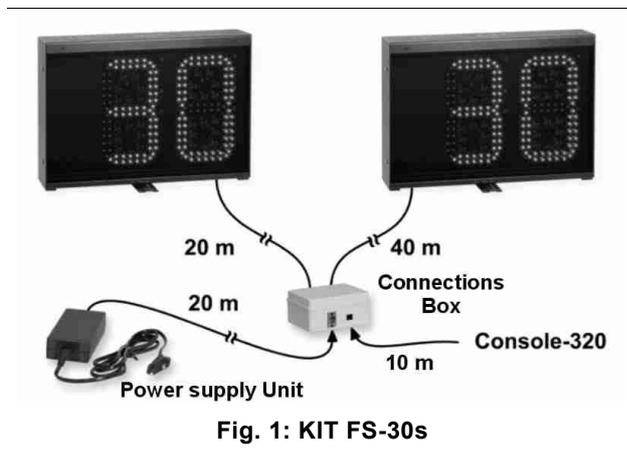


KIT FS-30s

Art.259: Displaying 30-seconds shot clock

Installation and service manual



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1. INTRODUCTION

This manual covers all the aspects of normal installation and maintenance of the **KIT FS-30s**, used for displaying 30-seconds shot clock. It is extremely important that the panels are installed correctly: please read the manual carefully before attempting to install your board.

2. ELECTRICAL POWER SUPPLY SYSTEM

2.1 SAFETY WARNING



The installation of this product and of the electrical system should be carried out by a qualified technician and conform with the current regulations established by the country in which the device will be installed. The system must be equipped with ground connection and protective devices. In particular, a residual current device (RCCB or GFCI) with rated current $I_{dn} = 30\text{mA}$ must be used to protect each of the devices (scoreboards and consoles).

2.2 POWER SWITCH AND SOCKET

The **KIT FS-30s** is composed of two 30-seconds display panels, a connections Box and a 24V power supply (Fig. 1) unit which secures isolation of the electrical power supply. The power supply unit comes with a 20m cable for connection from points far from the pool.

We suggest that a **power supply socket** be positioned near the power supply unit; the socket can then be controlled by a general switch for the various scoreboards: this will facilitate switching off the system when not in use and help save energy and prevent unnecessary wear and tear.

1.1 TECHNICAL CHARACTERISTICS

Power supply: 100-240Vac, 47-63Hz, 60VA.

Dimensions and weight of each display panel: 41 x 29 x 8,5cm, 5.1kg.

3. INSTALLATION



Before installing the panels we suggest first running a preliminary check test (chapter 4.3) by temporarily connecting the **KIT FS-30s** to the Command Console and to the mains power supply.

3.1 SELECTING THE CORRECT POSITION

Place the scoreboards near the pool edge as specified by the game regulations using the rotating rectangular base at the bottom as a stand. Be reminded that the FS series scoreboards are resistant to damage from balls (Complies with DIN 18032-3) and therefore require no additional front protection cover.

4. FINAL CONNECTION AND TEST

4.1 CONNECTING TO THE ELECTRICAL POWER SUPPLY

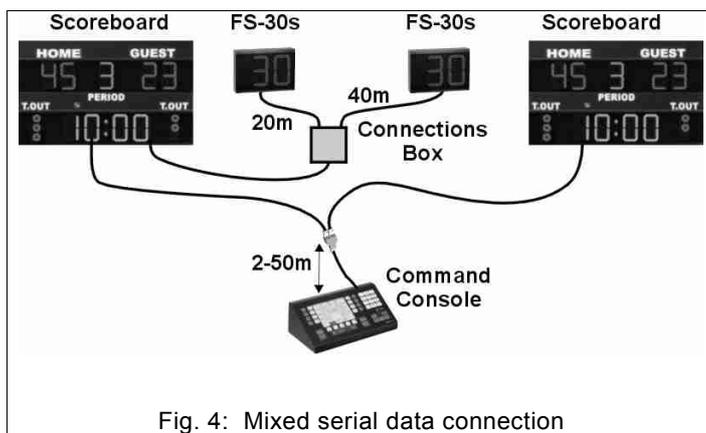
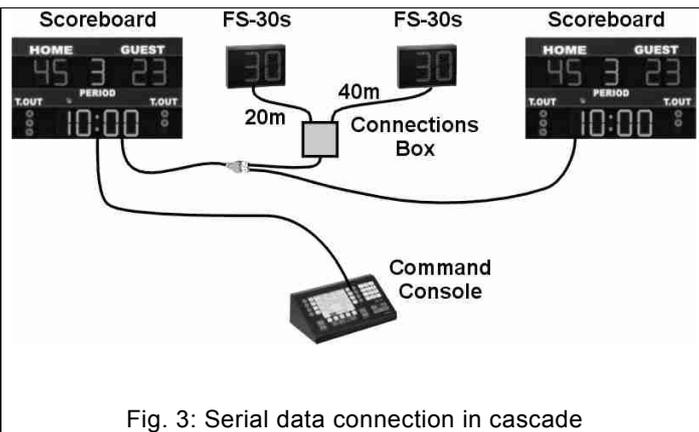
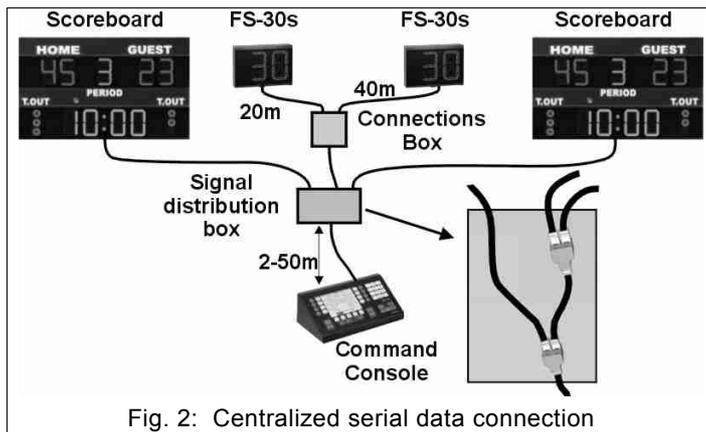
To connect to the electrical power supply use the proper power supply socket, as described in paragraph 2.2.

4.2 CONNECTING THE SERIAL DATA CABLE

A maximum of 8 scoreboards/panels can be directly connected to the same serial data port of the Command Console; if more than 8 scoreboards need to be connected, the serial data output ports located on the central scoreboard can be used. However, creating a bifurcation of the serial cable is easy to do by using a 3-way coupler. Connecting the serial data cable among the Command Console and the various scoreboards can be done in several ways: select the method that is most suited to the needs of the facility and to the available cable conductors. Here are some examples.

1. **Centralized connection** (see Fig. 2). In an easily accessible location, a signal distribution box is placed, from which diverges a cable for each scoreboard. The advantage of this method is that it has a single point of connection; therefore, if one of the cables is interrupted, only one display scoreboard is compromised.
2. **Distributed connection** (see Fig. 3). Connections are carried out in cascade, from one scoreboard to the next. Please note that the interruption of a cable will cause some scoreboards to switch off.
3. **Mixed connection** of methods 1 and 2 above. An example is shown in Fig. 4, where the serial data output ports of the scoreboards are used for connecting to the 30-seconds shot clocks.

If you use a radio connection system, please refer to the Radio Receiver Manual.



4.3 TESTING THE PANELS

Once the panels have been installed you can make an overall test to see if all information is displayed correctly.

1. The first test should be made when you first switch on the panels: all display panels should remain illuminated for circa 1 second, even if the Command Console is turned off or disconnected. If a panel does not remain illuminated for circa 1 second, see paragraph 5.1.1.
2. The next step is to connect the serial data cable to the Command Console; after switching on the Console, the screens should light up to display the proper information. If the screens do not light up, see paragraph 5.1.2.
3. Once you have checked that the data connection works properly, you can make a complete start-up test of all display panels; from the Command Console press the buttons **Setup Menu** → **SYSTEM**, then with the buttons **↑** and **↓** select the parameter "Scoreboard Test". Lastly, with the buttons **⊕** and **⊖**, modify the parameter in order to activate and deactivate the complete start-up of the scoreboards. If you encounter problems, consult the Command Console manual.

For incomplete display of panels, see chapter 5.1.

5. MAINTENANCE

This chapter contains information on how to quickly resolve the principal problems that may occur with the **KIT FS-30s** over time. For problems with other models of the FS series, consult the relative manuals. If you have further problems that cannot be solved herein, please contact us.

5.1 MALFUNCTIONS

For all malfunctions, the following is a list of operations, ranked according to priority, that should be carried out to re-establish the panel's proper functioning.

→ 5.1.1 The panel does not light up when switched on.

When the panel is supplied with electricity, all the display panels light up for circa 1 second, even if the Command Console is turned off or disconnected; if this does not occur, proceed as follows:

1. Check that there is power supply at the socket of the power supply unit.
2. Make sure that the panel's cable plugs are properly inserted as shown Fig. 1.
3. Have a qualified technician conduct the following operations:
 - a) check that there is a continuous +24Vdc voltage output from the power supply;
 - b) open the panel, as described in chapter 5.2, points 1-3;
 - c) locate the connectors board inside the panel (Fig. 9) and check that there is a continuous +24Vdc voltage to the power supply connector (the red LED on the connectors board should be illuminated); if this voltage is not present then check the cables and the connections Box, otherwise check the fuse near the connector where the 16-way flat cable from the control board has been inserted; replace the fuse if it has ruptured, otherwise replace the connectors board (chapter 5.4).

→ 5.1.2 The panel lights up for 1 second but then switches off completely.

1. Check that the game time and the 30-second shot clock are displayed on the Command Console.
2. Check that the serial data cable is properly connected to the connections Box and Command Console and that it shows no signs of abrasions, cuts or damage. Also check the other connectors located along the cable.
3. Try using the other data output port of the Command Console.
4. Temporarily connect the connections Box directly to the Console with a normal 8-way telephone cable with RJ-45 modular connectors, or with a standard straight-through network cable (EIA/TIA-568A/B); if the panel functions correctly, replace the permanent system's serial data cable.
5. Have a qualified technician conduct the following operations:
 - a) open the panel, as described in chapter 5.2, points 1-3;
 - b) connect the Console directly to the serial data connector of the connectors board (Fig. 9) by means of a properly functioning serial cable. Supply power to the panel;
 - c) if the panel still does not light up, disconnect the power supply and replace the electronic connectors board (chapter 5.4), otherwise replace the interior, thin, serial data cable that was previously connected to the board.

→ 5.1.3 Part or all of a LED display board does not light up.

1. Replace the relative LED board (chapter 5.3).
2. Change the connection cable between the display board and the control board (Fig. 9).
3. Replace the control board (chapter 5.2).

→ 5.1.4 The board is not bright enough.

1. On the Command Console press the buttons  →  and check the level of brightness [0 to 9] found under the item "Scoreboard brightness".

→ 5.1.5 The acoustic signal does not work.

1. On the Command Console press the buttons  → , then select level 4 from the line "Sound volume".
2. Check the sound and volume by pressing the button  "Shot clock sound" found in the menu  → .
3. Have a qualified technician conduct the following operations:
 - a) open the panel, as described in chapter 5.2, points 1-3;
 - b) identify the acoustic transducer (Buzzer, Fig. 9) and disconnect the cables; try supplying power directly with a continuous voltage of +24 Vdc, paying attention that the polarity is correct (red cable: +);
 - c) if still no sound is emitted, replace the Buzzer (chapter 5.5), otherwise replace the electronic connectors board (chapter 5.4).

5.2 REPLACING A CONTROL BOARD

1. Disconnect the panel's power supply.
2. Unscrew the 2 screws showed on Fig. 5 and remove the transparent front panel (Fig. 6).
3. Unscrew the 4 lateral screws showed on Fig. 7, lift the metal support of the LED display boards (Fig. 8) and place it on a desk as in Fig. 9.
4. Identify the control board housed inside the metal support structure (Fig. 9). Keeping in mind their original positions, remove all connectors from the control board.
5. With a 5.5 mm wrench, unscrew the 4 end nuts from the control board and remove it (Fig. 9).
6. Set the DIP-switches of the new control board to the same settings of those of the replaced control board (chapter 6) and screw the new board into the casing.

7. Reinsert the control board's connectors into their original positions; reposition the metal support structure of the LED display boards and fasten it with the screws. Reposition the front transparent panel.
8. Supply power to the panel again to check if the new control board works properly.

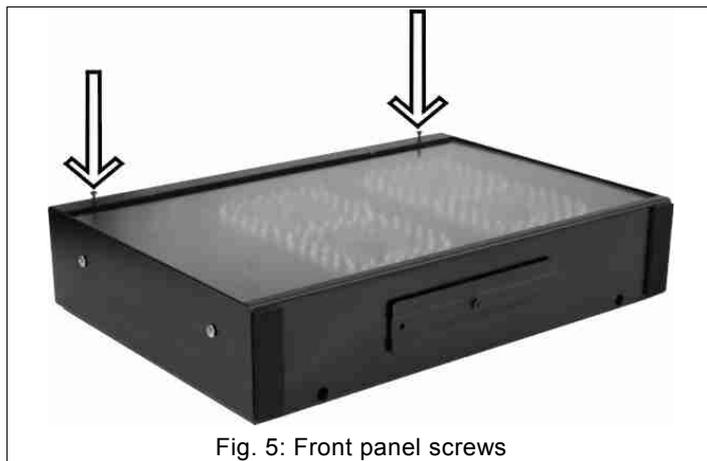


Fig. 5: Front panel screws

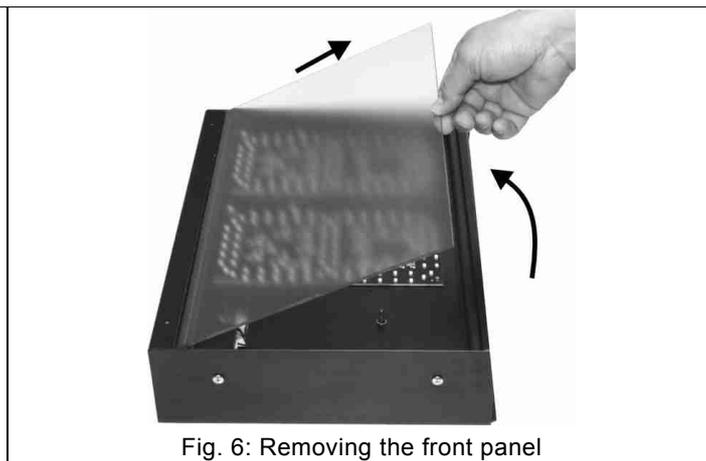


Fig. 6: Removing the front panel

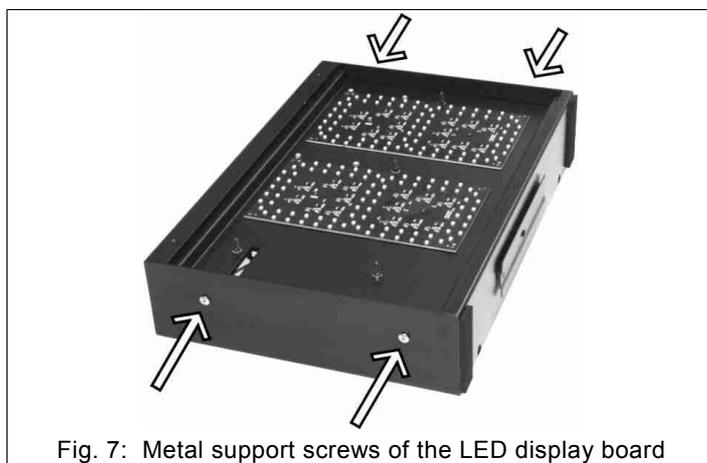


Fig. 7: Metal support screws of the LED display board

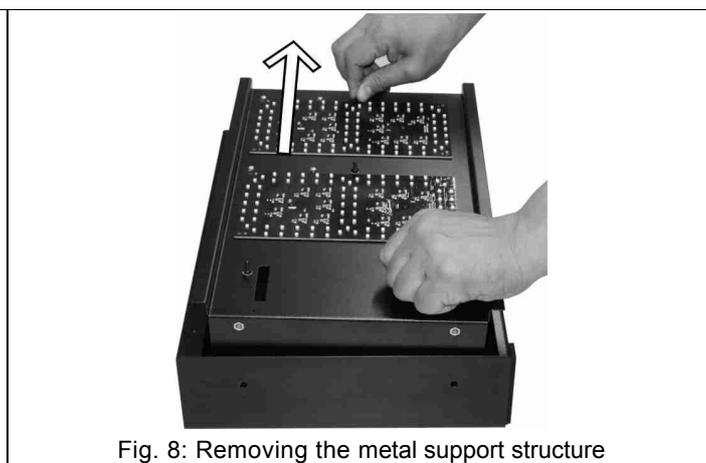


Fig. 8: Removing the metal support structure

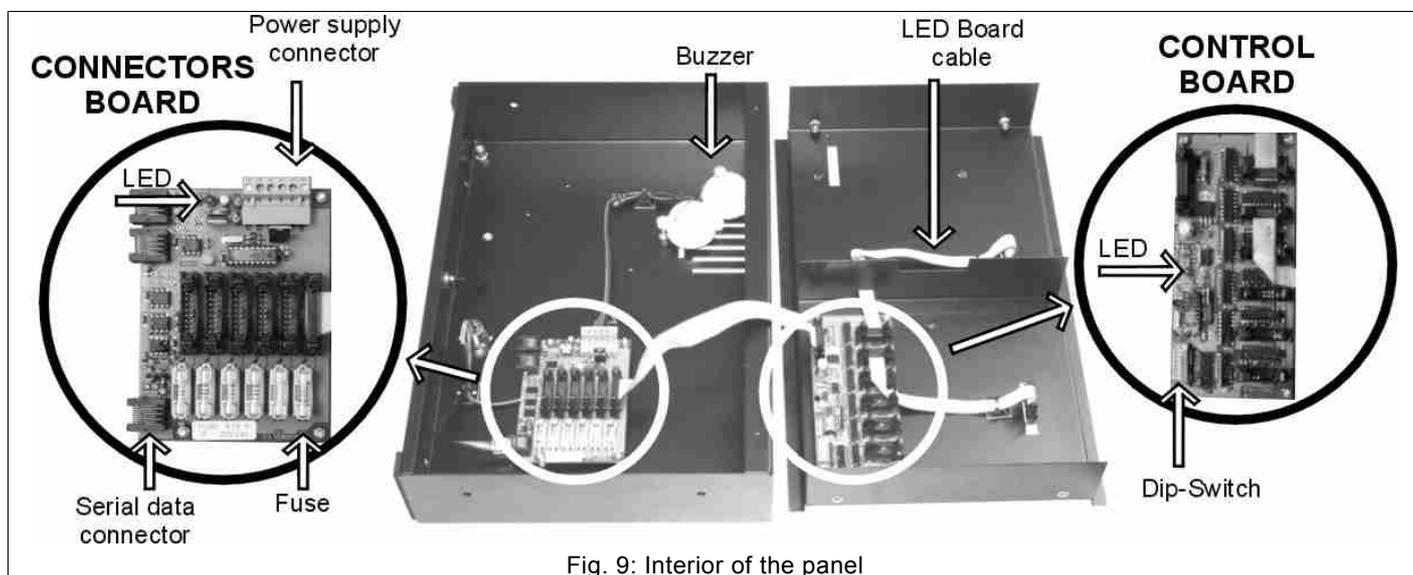


Fig. 9: Interior of the panel

5.3 REPLACING A LED DISPLAY BOARD

1. Disconnect the panel's power supply.
2. Unscrew the 2 screws showed on Fig. 5 and remove the transparent front panel (Fig. 6).
3. With a screwdriver, remove the screws from the LED display board in need of replacement; slightly distance the board from its position in order to remove the flat cable connector.
4. Insert the flat cable connector in the new board and then tighten the screws.
5. Supply power to the panel again to check if it works properly.

5.4 REPLACING A CONNECTORS BOARD

1. Remove the transparent front panel and open the support structure of the LED display board, as described in chapter 5.2, paragraphs 1-3.
2. Identify the connectors board (Fig. 9); keeping in mind their original positions, remove all the connectors from inside the

board.

3. With a 5.5 mm wrench unscrew the 4 end nuts from the connectors board, and remove the board from its casing. Insert the new connectors board.
4. Reinsert the board connectors in their original positions and then fasten the metal support of the LED display board with the screws.
5. Supply power to the panel again to check if the new connector board works properly.

5.5 REPLACING THE BUZZER

1. Remove the transparent front panel and open the support structure of the LED display board, as described in chapter 5.2, paragraphs 1-3.
2. Identify the Buzzer in need of replacement (Fig. 9); disconnect the cables (red: +, black: -) from the connectors.
3. Remove the nut and then remove the Buzzer.
4. Place the new Buzzer in the proper position and fasten it with the nut. Connect the horn to the cables.

6. CONFIGURATION OF MODULE DIP-SWITCHES

A with DIP-switches is located on each 30-seconds shot clock panel (Fig. 9), on the control board; the DIP-switches must have the following configuration.

