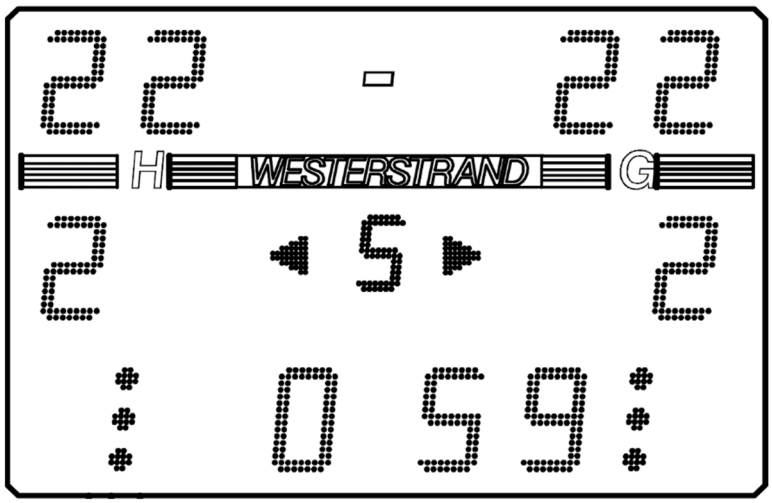
Operation Instructions
LED190/250 BASIC



Important Safeguards 2
System Overview 3
Sports 4
Remote Control 4
Scoreboard Layouts 5
Module 1 5
Module 2 7
Module 7 7
Installation 8
Assembly of Scoreboards 8
Mounting of Shot Clock LED-stripes 9
Connections 10
Time and ID Settings 13
Startup and Configuration 16
Technical Specifications 17
Troubleshooting 18
Cable Layings 18

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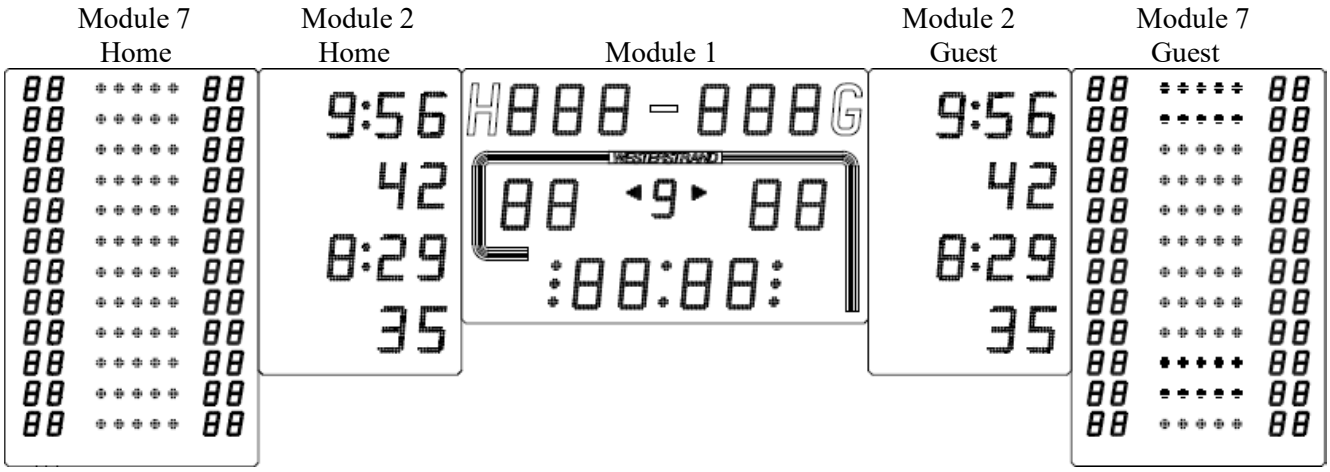
Important Safeguards

Read all these instructions and save them for later use

- Do not place this product on an unstable cart, stand or table. The product may fall, causing serious damage to the product and/or person.
- Slots and openings in the cabinet and the back are provided for ventilation to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. This product should never be placed near or over a heat source. This product should not be placed in a built-in installation unless proper ventilation is provided.
- Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock.
- If installation is required, it must only be done by appropriately skilled personnel. For permanently installed equipment, a certified electrician must perform the installation.
- Except as explained elsewhere in the operating manual, do not attempt to service this product yourself. Removing covers may expose you to dangerous voltage points or other risks. Refer all servicing in those compartments to a service technician.
- Product that intents to be connected to mains as a permanent installation shall be connected by a readily accessible safety switch.
- If the product is equipped with a plug (grounding type) this shall be connected to an outlet that is intended for the product. The plug must be easy to disconnect without moving or dismantle the product.

System Overview

The BASIC system consists of a number of different modules that can be can be set up in different combinations. The scoreboards are meant for indoor use. The most common add on modules are the penalty module (Module 2), the foul module (Module 7) and the shot clocks (Module 4).



Module 4

Remote Control

- Module 1 and the remote control are the base of the system. The remote control is delivered with preprogrammed rules for each sport. The scoreboard usually has an internal piezo siren but can also be delivered with an external siren (Option). The system can be hardwired or controlled via radio.

- Module 2 is used to show penalties in sports like handball and ice hockey. Some versions can also be used to show set results in sports like volleyball.

- Module 7 shows player number and foul dots for each player. There is also a version that shows player results.

- Module 4, the shot clock, can be ordered with or without match clock. Shot clocks with match clock (FIBA version) can also be connected to a LED-stripe. The shot clock is controlled by a handle that is connected to the remote control.

Sports

The remote control can be programmed with several sports, listed below. The sports are described in separate manuals.

- Handball
- Basketball
- Basketball with player score
- Volleyball
- Futsal
- Tennis
- Table tennis
- Badminton
- Floorball
- Indoor Football
- Ice hockey
- Korfball
- Mini-Football

Remote Control

The remote control can be hardwired or control the scoreboard via radio.

The radio remote has an internal rechargeable lithium ion battery which can be charged with the included battery eliminator. When the battery is being charged, a red LED is lit next to the power connector. When the battery is fully charged, the LED turns green.

Never try to replace the battery on your own. The battery must always be replaced by a service technician and only with a battery of the same type.

Note! Installing the wrong type of battery can result in a damaged product and/or fire.

When the battery is discharged below a certain level, the remote will automatically be turned off. To restart the remote, the charger must be connected.

After the remote is turned off by the software due to low battery charge, it might be possible to restart it without connecting the charger. In this case, it will be turned off again in a few minutes. If this is done several times, the battery might be discharged to a level where the remote will not start at all, until the battery has been recharged to a certain level. This can take up to 30 minutes. During this time, both LED:s might be on for some time.

What happens when the remote is turned off?

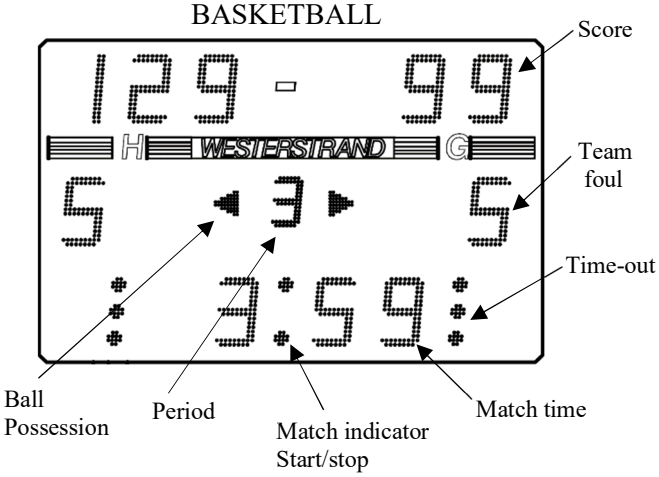
The remote control is continuously saving all information in an internal memory. When it is turned off or unplugged, the data is saved and can be restored when the remote is restarted. If a match was running when the remote was turned off, the question “Restore Data?” will be shown at startup. Press [Yes] to restore the match or [No] to go to the start menu.

Scoreboard Layouts

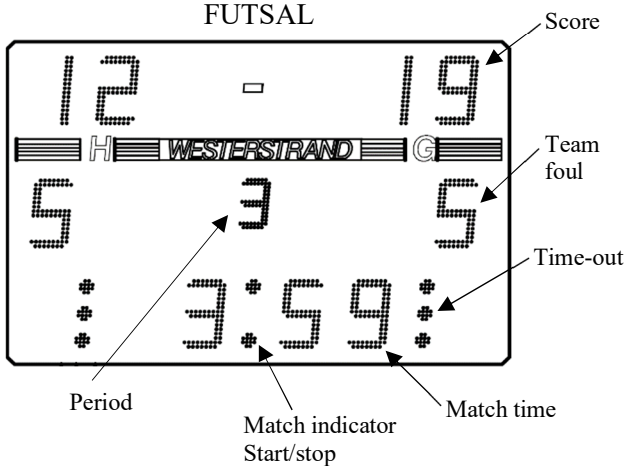
Different sports are shown in different ways on the scoreboards. This is described in the pictures below.

Module 1

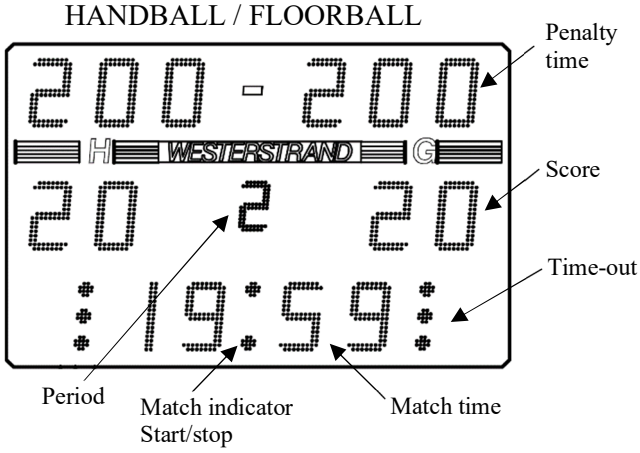
BASKETBALL



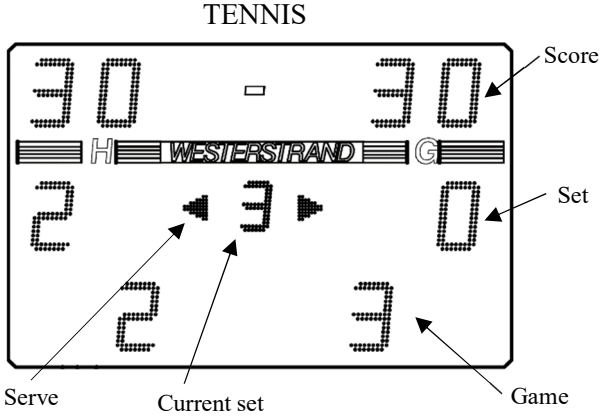
FUTSAL



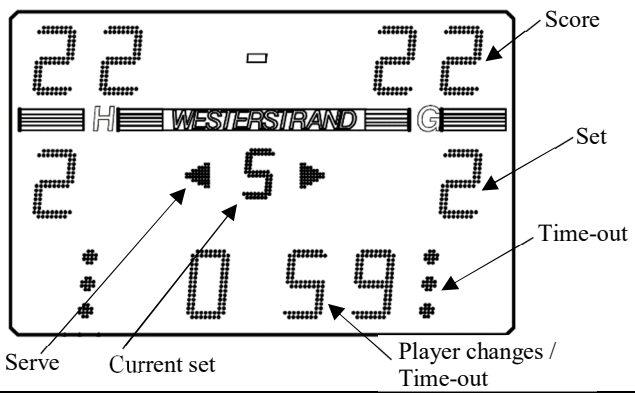
HANDBALL / FLOORBALL



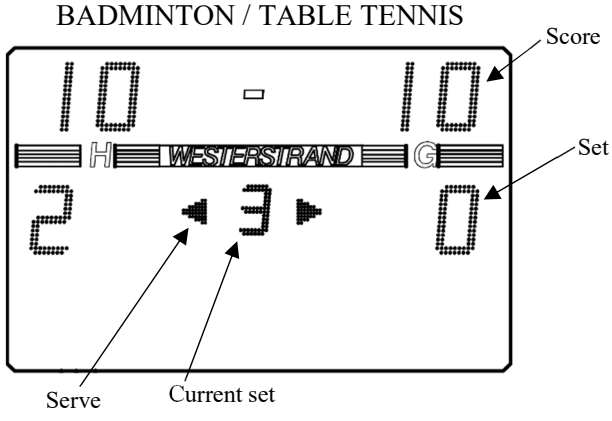
TENNIS

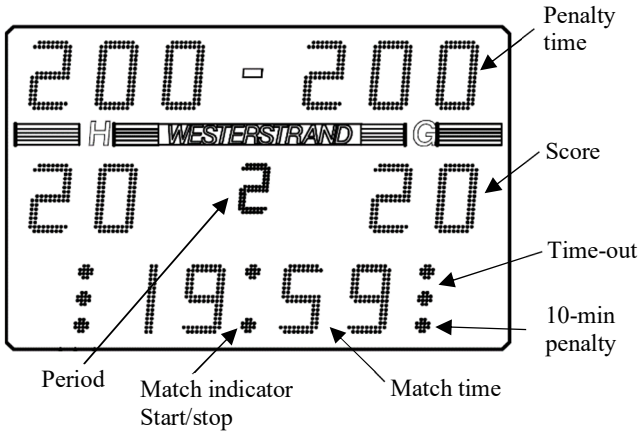


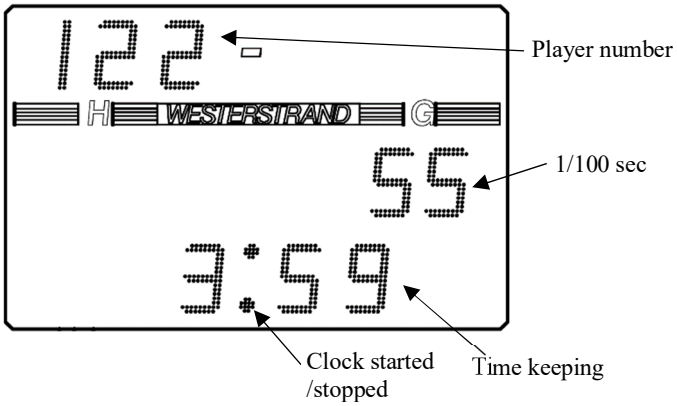
VOLLEYBALL

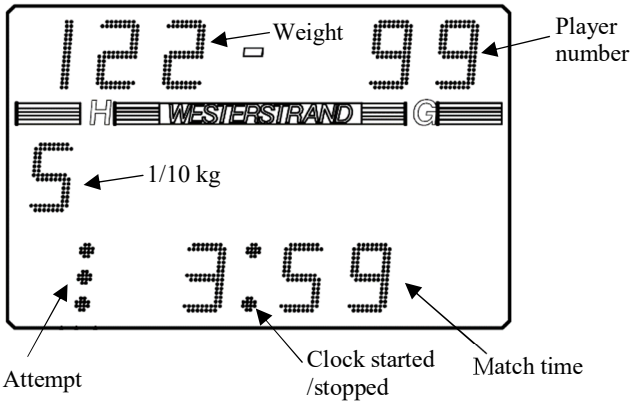


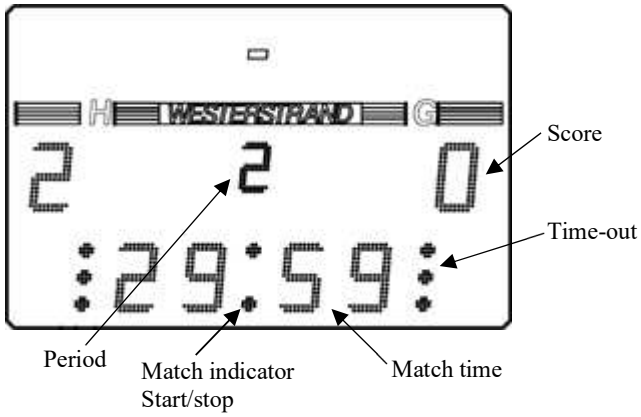
BADMINTON / TABLE TENNIS

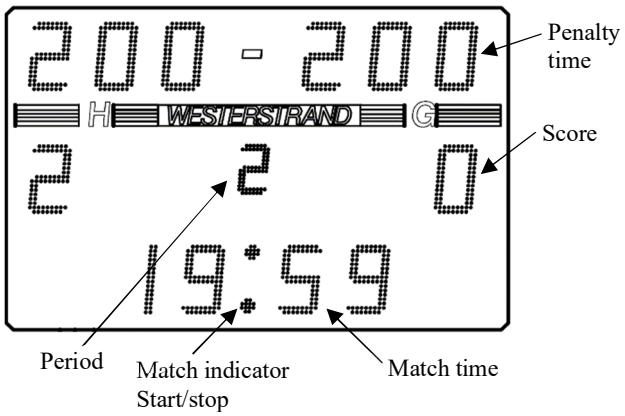


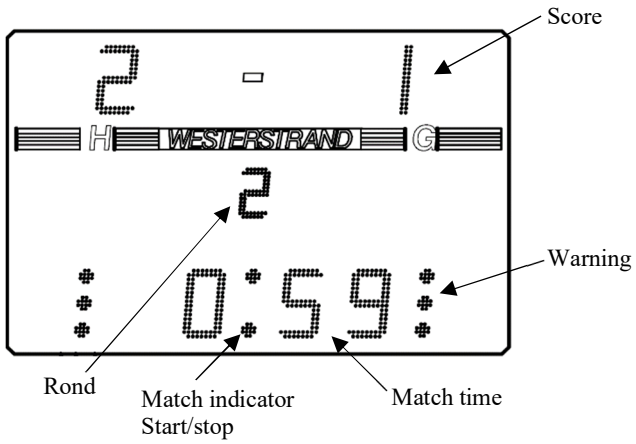












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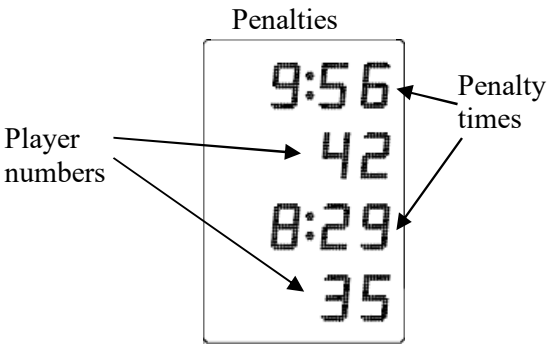
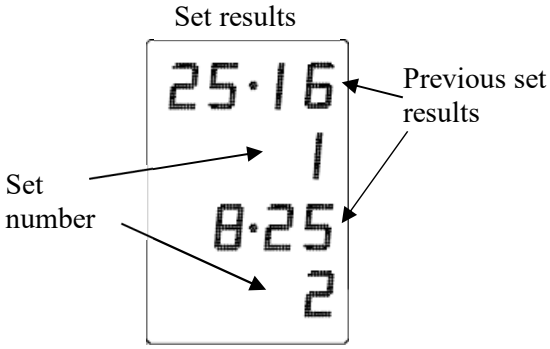
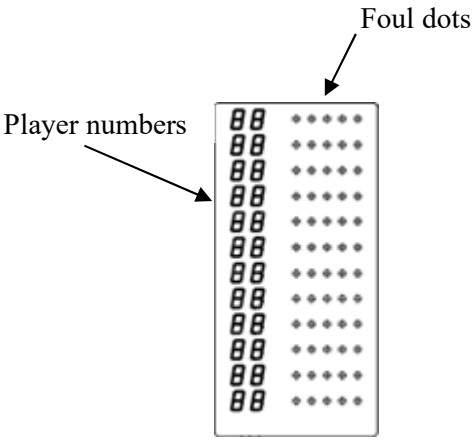
Module 2

Module 2 exists in two versions, one for multisport and one for ice hockey. The multisport version can display both penalties and results from previous sets. The ice hockey version only has three digits for showing time and can only show penalties.

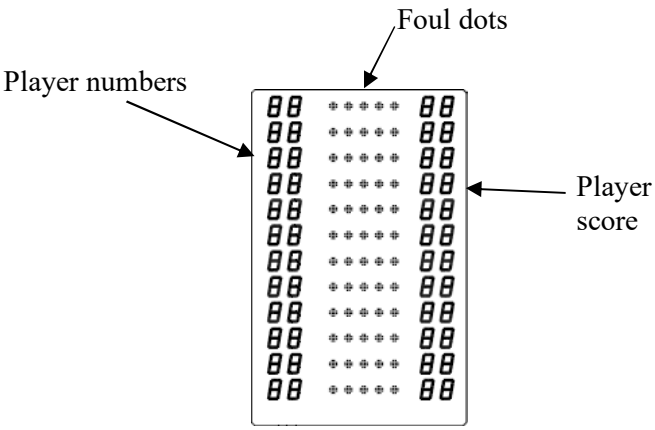




Module 7



Variant 1



Variant 2

Variant 1: Individual foul with variable player numbers
Variant 2: Individual foul with variable player numbers and score per player.

Installation

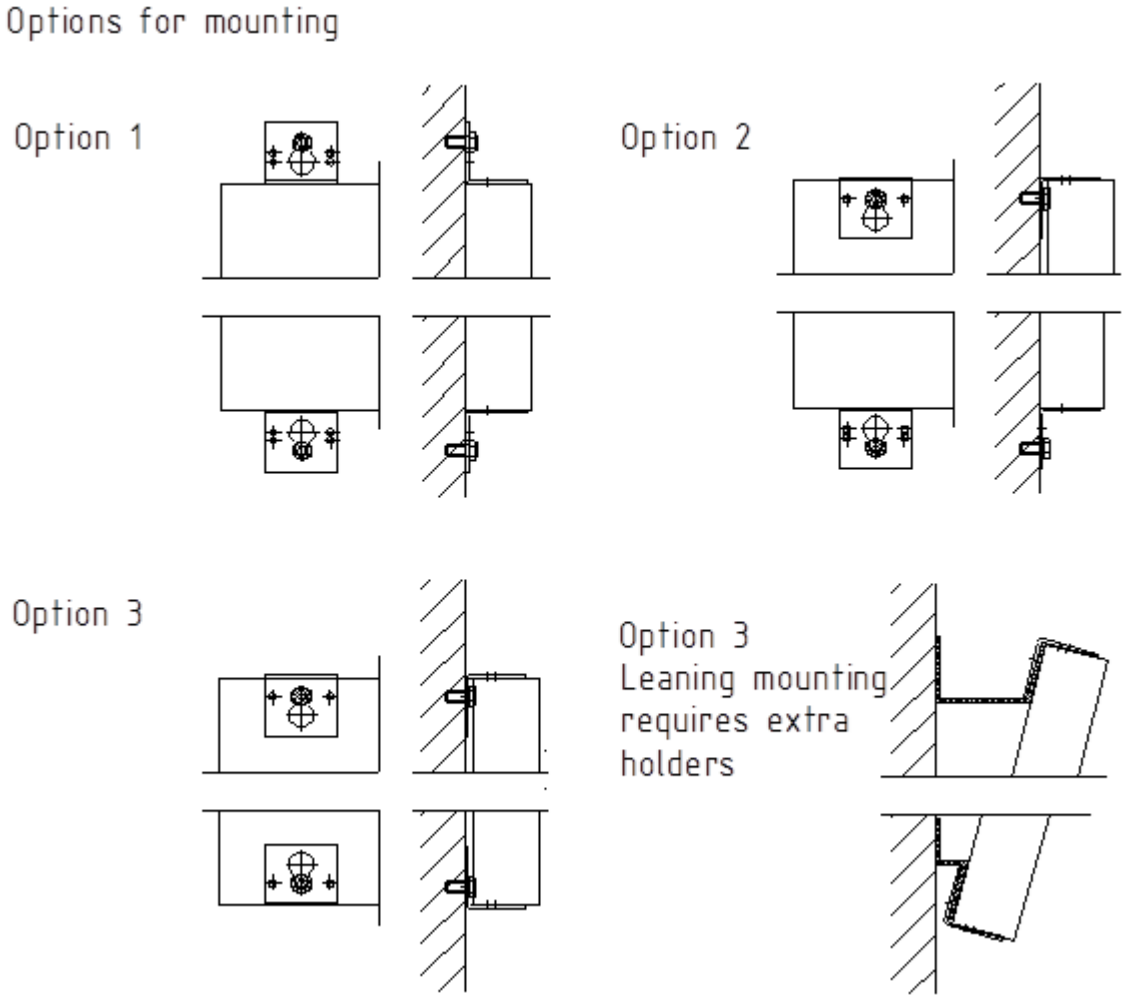
Assembly of Scoreboards

IMPORTANT! The front glass must NOT be removed when the scoreboard is mounted.

On radio controlled system, attach the included antennas both on top of the scoreboard and on the remote control unit.

For scoreboards in 110-housing intended for mounting outdoor or in ice rinks: Install the scoreboard according to drawing 081716-00.

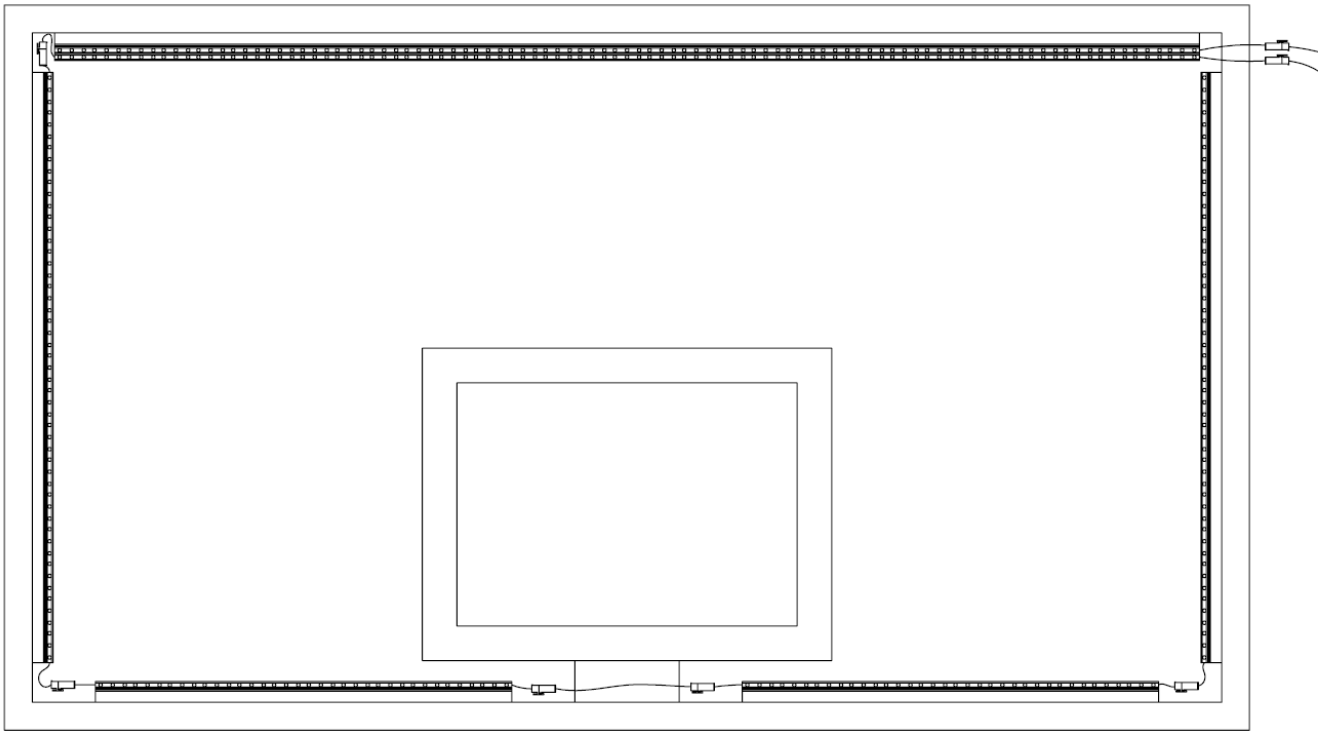
For scoreboards meant for indoor wall mounting, see the picture below for mounting options. Holders are included in the delivery.



Mounting of Shot Clock LED-stripes

The LED-stripes for the FIBA shot clocks are delivered as strips of 30cm and are placed and connected to fit the backboard. They are attached to the backboard by included double sided tape. The strips are connected to each other with attached connectors, see the picture below. The LED-stripe that has both red and yellow LED:s is placed on the top of the backboard and is connected with two connectors. The stripe with only red LED:s is placed around the rest of the backboard and is only connected with one connector.

See chapter “Connections” for instructions on how to connect the LED-stripe to the shot clock.



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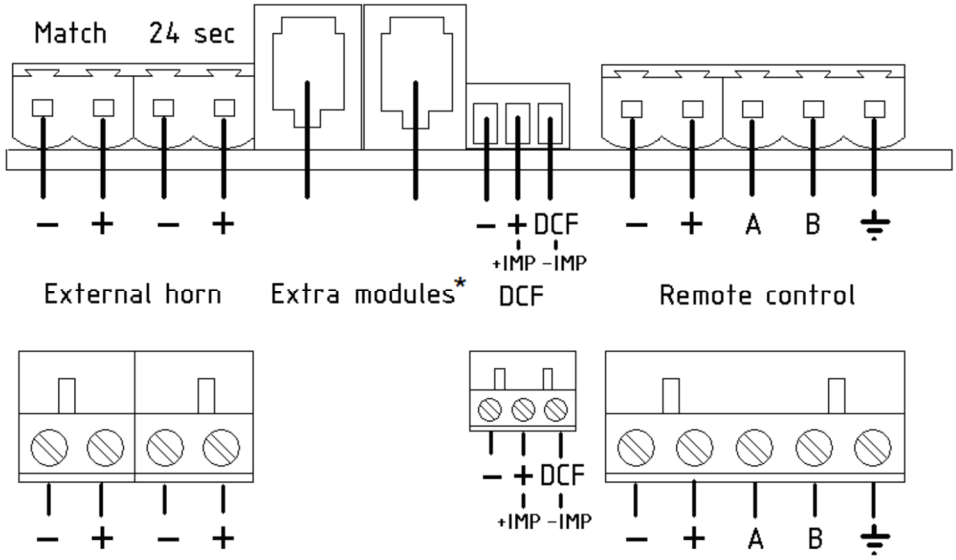
Connections

Document 4287 shows cable specifications and layouts for the most common sport systems.

Note: For service purpose, all connected cables should have a spare length of at least 40cm.

The power is connected to the supply cord on the scoreboard. All other connections are made on the circuit board according to the picture below. The connections are usually located in the bottom left of the scoreboard.



External Horn

The scoreboard is normally delivered with a built in piezo siren. When an external siren is used, connect the 12V signal to one of the "External horn" outputs in the picture. Connect + to + and – to –. Connect the power supply cord to 230VAC.

Add-On Modules

Add-on modules, such as penalty and foul modules, are connected to the main scoreboard using the "Extra modules" connectors. Any of the connectors can be used. If more than two extra modules are used, they can be connected to the closest module with an unused connector.

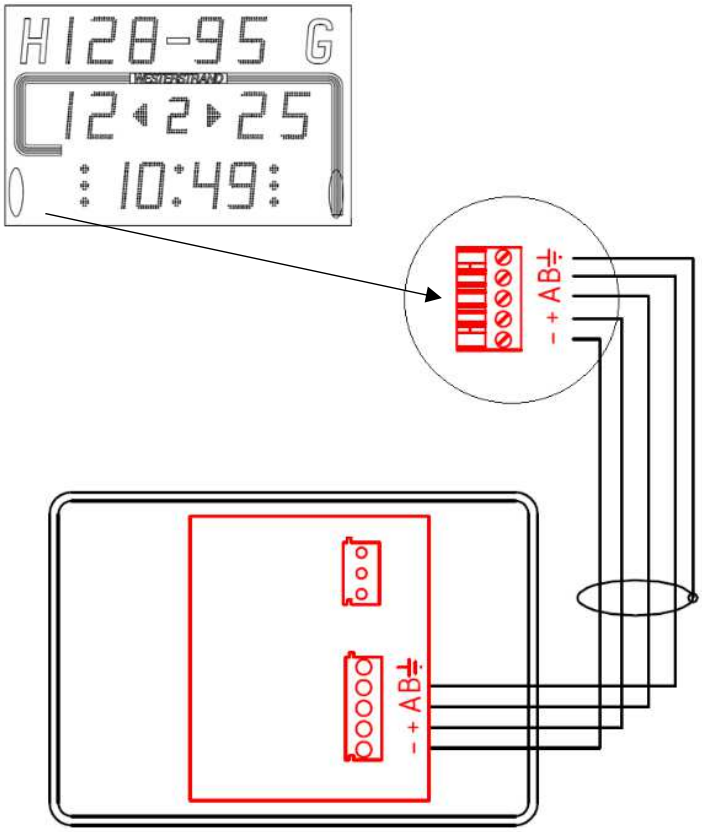
DCF, WL-receiver and Time code (TC)

DCF and WL-receiver: Attach the DCF-antenna according to the figure above. – to –, + to + and DCF to DCF. See section "Time and ID Settings" for DIP and jumper settings.

TC: Connect +IMP to +IMP and –IMP to –IMP. See the next page for DIP and jumper settings.
Note that DCF has a limited range and will not work in all regions.

Remote Control, Hardwired Version

Connect the remote control connection box to the scoreboard according to the picture below. The shield must only be connected in the scoreboard end. If the scoreboard will be controlled from more than one location, several connection boxes can be connected in parallel.



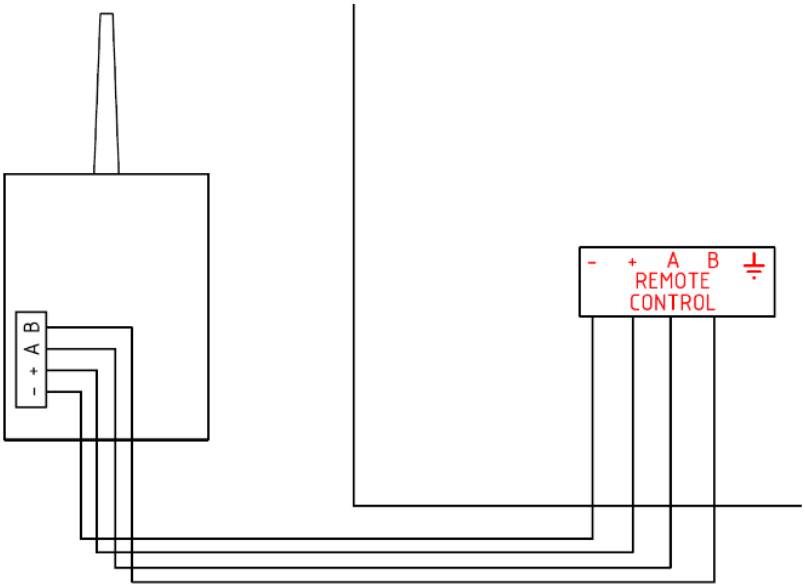
Remote Control, Radio Version

Make sure that antennas are connected to both the scoreboard and the remote control. Connect the power supply to the remote control. First, connect the power to the scoreboard. Then turn the remote on by using the on/off switch on the back of the remote.

If the main scoreboard is not on when the remote is started, a message “Error: Radio out of range” will be shown. If this is the case, turn the remote off, start up the scoreboard and then restart the remote control.

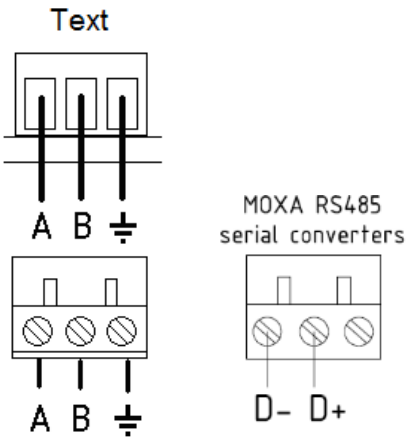
External Radio Receiver

Normally the radio is placed inside the scoreboard and is connected at delivery. If an external receiver is used, connect it according to the picture below.



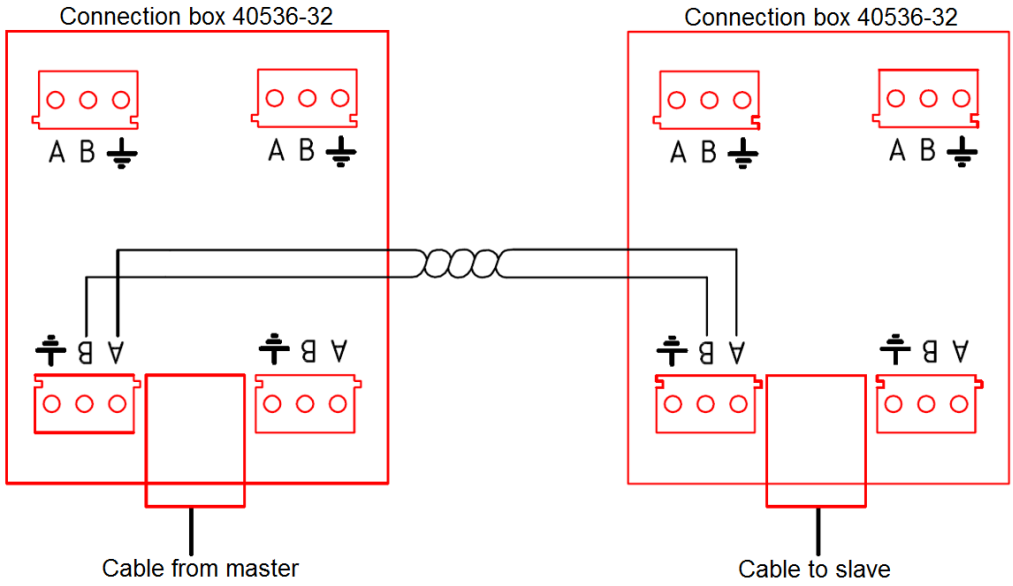
Scoreboards with Text Matrix

If a PC is used to display text on the scoreboard, connect RS485 to a separate connection terminal according to the pictures below. Note that the polarity of ‘A’ and ’B’ can differ between different manufacturers of RS485 modems. When using Moxa modems, always connect ‘D-‘ to ’A’ and ’D+’ to ’B’.



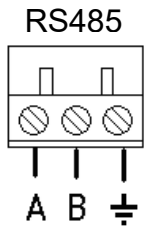
Slave Scoreboards

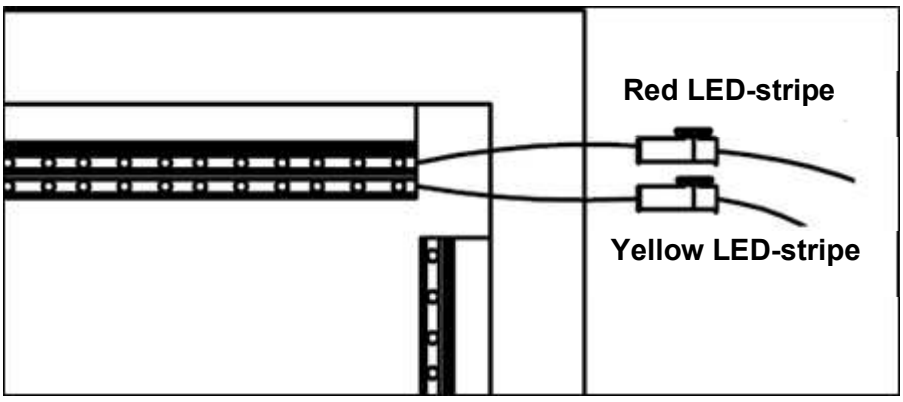
When using more than one Module 1, connect the slave to the master using connection boxes 40536-32 according to the picture below. Any of the four screw terminals can be used. More than one slave board can be connected in parallel.

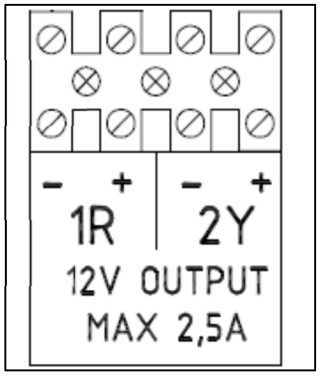


FIBA / Shot Clocks and LED-stripes

On FIBA modules and shot clocks, the connections are sometimes placed on the backside of the display. Connect RS485 and the LED-stripes according to the pictures below. Connect the red LED-stripe to the output labelled “1R” and the yellow LED-stripe to the output labelled “2Y”.







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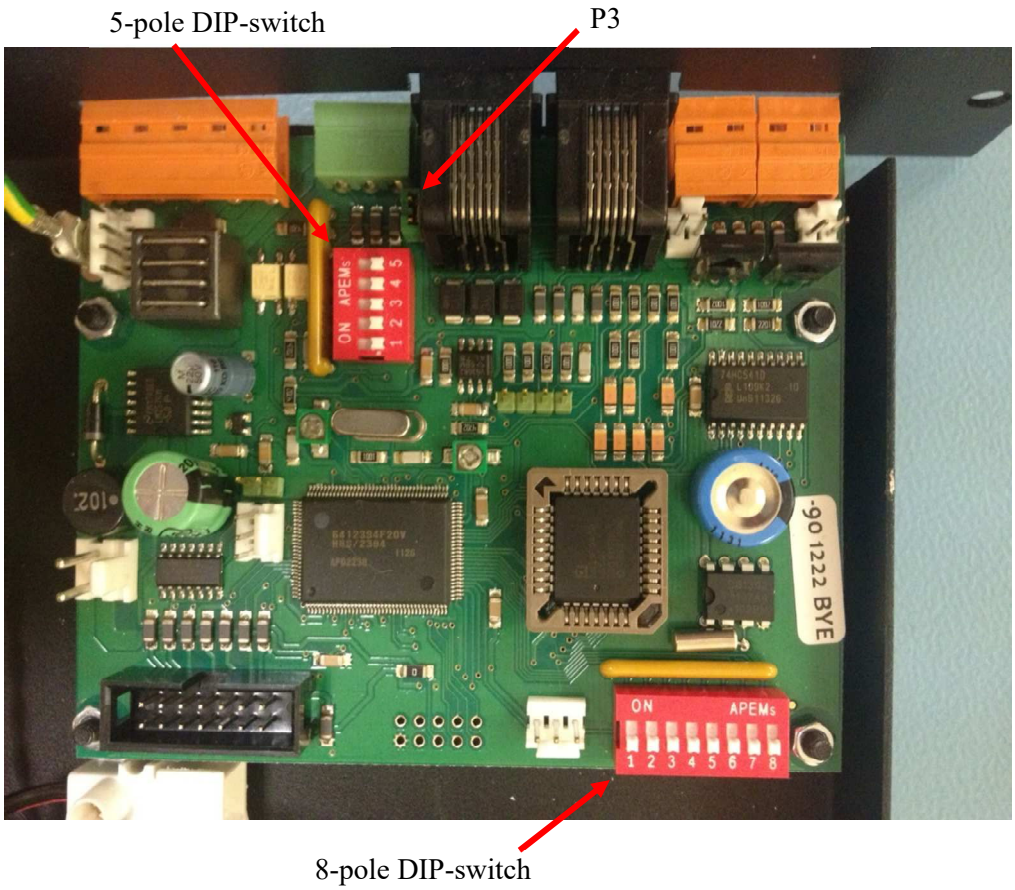
Time and ID Settings

Time synchronization and ID settings are usually configured at delivery and don't need to be changed. They are set using jumpers and DIP-switches on the circuit board.



Time Synchronzation

Jumper 'P3' is used to select the type of time synchronization.

Synchronization Type	Jumper P3	Software Version
DCF and WL receivers	Mounted	>=121
TC	Not mounted	>=122
TC-pol.	Not mounted	>=147

ID Settings

When using radio, the scoreboards can be set to different ID:s so that more than one remote control can be used. DIP 1 and 2 on the 5-pole DIP-switch is used for this, according to the table below. This is usually set at delivery and the scoreboards marked with the set ID:s.

DIP	ID
xxx--	1
xxx-1	2
xxx2-	3
xxx21	4

To change the ID:s in the remote control, press [Menu] from the start screen and then [Radio Address]. The digits shown on the screen are the scoreboard ID:s that the remote control will send data to. Five different ID:s can be selected. Activate or deactivate an ID by pressing the corresponding numeric button.

Example:
The radio remote control should send data to scoreboards with ID1 and ID2, but shows ”12345”. Deactivate ID 3, 4 and 5 by pressing the [3], [4] and [5] buttons. Now only “12” will be shown on the display.

Startup and Configuration

Turn on power to the scoreboard. Connect the wired remote control to the connection box or turn on the radio remote control. At startup, the available sports are shown in the remote control display. If more than 8 sports are available, a button named [Next] will be shown. Press [Next] to show the next 8 sports.

There is also a [Menu] button in the start screen. Press [Menu] to change the settings of the remote control.

Select Extra Modules

If there are extra modules to show penalties, fouls or player scores, they must be activated in the remote control. This is normally set at delivery. Select [Modules] to activate or inactivate a module. The following modules exist:

- Penalty Module – Module for showing individual penalties.
- Foul Module – Module for showing individual fouls.
- Player Stats Module – Boards for showing player score in basketball and handball. If player score shall only be shown in basketball, the module can be inactivated in the sport settings for handball by selecting [Menu] → [Sport Settings] → [Handball] → [Player Stats Module].

Depending on which modules are activated, different functions are available in the remote control.

Under the modules settings, the system type, ”Basic LED190/250” or ”Basic LED300”, can be set. This is set at delivery and should not be changed.

Real-Time

Press the [Real-Time] button to change the settings for real-time. The following choices are shown:

- Set Real-Time: Press to set the real-time.
- Show: Show the real-time on the scoreboard.
- Hide: Remove the real-time from the scoreboard.
- Automatic display on: The real-time will automatically be shown on the scoreboard 8 seconds after the remote control has been turned off or unplugged.
- Automatic display off: Inactivates the automatic display of real-time.

Change Language

To change the language, press button [Change Language] and then select the correct language. This is normally set at delivery.

Technical Specifications

Common specifications:

Operation temperature	0°C - +40°C
Transmit frequency (Radio):	868,95 MHz
Range (Radio):	Max 100m
Power supply	100-240VAC, 50/60 Hz

Part number	Description	Weigh t (kg)	Dim. (WxHxD) (mm)	Power (W)	Digit size (mm)	Read-ability (m)
117601-02	LED190-BASIC - hardwired	14	1400x900x50	75	190/140	75
117601-04	LED190-BASIC - radio	14	1400x900x50	75	190/140	75
117601-12	LED190-BASIC Ice hockey - hardwired	13	1400x900x50	45	190/140	75
117601-14	LED190-BASIC Ice hockey - radio	13	1400x900x50	45	190/140	75
117601-22	LED190-BASIC Ice hockey/shot - hardwired	13,5	1400x900x50	65	190/140	75
117601-24	LED190-BASIC Ice hockey/shot - radio	13,5	1400x900x50	65	190/140	75
117602-02	Module 2 Penalty/Set LED190	2 x 7	2 x 650x900x50	2 x 50	140	65
117602-12	Module 2 Penalty LED 190	2 x 7	2 x 650x900x50	2 x 50	140	65
117607-02	Module 7 Variable player numbers	2 x 10	2 x 620x125 x50	2 x 100	60	50
117621-02	LED250-BASIC - hardwired	30	2000x1250x50	100	250/190	120
117621-04	LED250-BASIC - radio	30	2000x1250x50	100	250/190	120
117621-12	LED250-BASIC Ice hockey - hardwired	28	2000x1250x50	80	250/190	120
117621-14	LED250-BASIC Ice hockey - radio	28	2000x1250x50	80	250/190	120
117621-22	LED250-BASIC Ice hockey/shot count - hardwired	29	2000x1250x50	110	250/190	120
117621-24	LED250-BASIC Ice hockey/shot count - radio	29	2000x1250x50	110	250/190	120
117622-02	Module 2 Penalty/Set LED250	2 x 15	2 x 900x1250x50	2 x 65	190	75
117622-12	Module 2 Penalty LED 250	2 x 14	2 x 900x1250x50	2 x 60	190	75
117627-13	Module 7 Variable player numbers	2 x 25	2 x 900x1950x50	2 x 100	120	50
117627-18	Module 7 Variable player numbers/Goals	2 x 30	2 x 1100x1950x50	2 x 200	120	50
117604-02/-78	Module 4 Shot clock	2x 3,3	2 x 500x300x95	2 x 20	190	75
117604-04	Module 4 Shot clock	2 x 5	2 x 460x280x44,5	2 x 20	190	80
117604-22	Module 4 Shot clock	2 x 5	2 x 460x280x44,5	2 x 20	190	80
117624-02/-78	Module 4 Shot clock FIBA	2 x 9	2 x 900x700x110	2 x 40	250/140	120/65
117624-04/-22	Module 4 Shot clock FIBA	2 x 9	2 x 630x560x70	2 x 40	250/140	120/65

Troubleshooting

If there are radio disturbances

- Check that the antennas are correctly mounted on all scoreboards and on the remote control and that there are no visible damages.
- One scoreboard is always set to "server" and must be powered for the radio to work.
- If there are several Westerstrand sport systems in adjacent sport halls, they might interfere with each other. In this case, the solution is to set the systems to different ID:s.

If the information on the board is blinking

If two remote controls are set to the same ID, the scoreboard will alternate between the information from each remote, causing it to blink. In this case, make sure that only one remote with a specific ID is on.

Nothing is Shown on the Scoreboard

- Check that the power is connected to the scoreboard.
- Check that the correct radio address is set in the remote control.

Cable Layings

For indoor scoreboards, cables for connecting the different add-on modules are included in delivery. Cables for connection of shot clocks, remote control, slave scoreboards and LED-stripes are not included.

For scoreboards in 110-housing, intended for outdoor use or in ice rinks, no cables are included.

Cable specifications and cable laying drawings for the most common system types are shown in document 4287.