Scoreboard User Manual
for Hockey/Lacrosse/Netball

Setting up the scoreboard

The maximum range from the remote control unit to the scoreboard is 300 meters so you can position the scoreboard wherever you want. On windy days, it is advisable to position it at an angle to the wind direction so that it cannot be blown over.

Switch on the scoreboard by the switch on the side / front.

When power is applied, the scoreboard goes through a power-up sequence:

1. All digits are shown at 888888888 so that you can see all flaps 'on'.
2. All digits are shown as blank so that you can see all flaps 'off'.
3. The version number is displayed on the time digits. This is typically H04 or similar.
4. The scoreboard will then be set to the start position of 35:00 minutes (or less if set) and zero scores. It is now ready to operate.

Operating the scoreboard using the remote control unit.

The maximum range of the remote control unit is approximately 300 meters.
The unit has 6 buttons. **Note that most actions happen when you press and then immediately take your finger off the button**. Do not hold a button down unless you are trying to correct a mistake.

START Starts the clock running. If you make a mistake, you can hold down this button for 3 seconds to subtract an extra 10 seconds from the time. **Before** the start of a match, holding down this button for 3+ seconds will reduce the start time by 5 minutes so that any length of period is possible; 35,30, 25, etc down to 5 minutes. Holding the button at 5 minutes resets it back to a start time of 35:00. For times such as 13½ minutes, set the start time at 10 minutes then hold the STOP button to go back up to 13½ in 30 second increments.

STOP Stops the clock. If you make a mistake, you can hold down this button for 3 seconds to add 10 seconds to the time.

← + SCORE Pressing once will add one to the left hand score (as you look at the scoreboard). If you make a mistake, you can hold down this button for 3+ seconds to reduce the score by one (hold the button down until the score changes).

+ → SCORE Pressing once will add one to the right hand score (as you look at the scoreboard). If you make a mistake, you can hold down this button for 3+ seconds to reduce the score by one (hold the button down until the score changes).

NEXT PERIOD This button only works when the clock is stopped. Pressing the button will set the scoreboard for the next period. The time will be reset back to 35:00 minutes (or whatever the start time is set to). After 5 minutes of the end of the first half, the bell will optionally sound to denote the end of time out.

RESET This button only works when the clock is stopped. Pressing the reset button will set up the scoreboard for the next match. The time will be reset to 35:00 minutes (or whatever the start time is set to) and both scores set to zero. If you make a mistake, hold down this button for about 3 seconds. In this case, the scoreboard will revert to all the values before you pressed the button.

Holding down the STOP button and pressing the RIGHT SCORE button will display the actual time in hours and minutes. You can only select this at the end of a match when the clock is reset. You can correct the hours by pressing the left score button. The right score button corrects the minutes. To return to normal scoreboard operation hold down the STOP button and pressing the RIGHT SCORE button again.

Holding down the STOP button and pressing the RESET button will sound the horn whilst you hold the buttons. This only works before the beginning of the match when the RESET button has been pressed. The use of this is to hurry on the players for the next match.

Hockey Corner Time (hockey mode only). Press START and then immediately press NEXT PERIOD.

To display the actual time in hours and minutes. At the end of a match you can display the actual time in hours and minutes by holding down the STOP button and pressing the right score button.

To correct the hours, press the left score button.
To correct the minutes, press the right score button.
To revert to normal operation, hold the STOP button and press the right score button again.

Changing the configuration.

Changeable values

There are a number of values which may be changed by the user. These values are stored permanently even if the scoreboard is powered down. It is also possible to revert to 'factory' settings which are shown in the list below under the column 'Factory'. Earlier versions of the software may not have all of these values.

To change any settings:
1. Power off the scoreboard.
2. Power up the scoreboard. When all the digits go blank, press and hold the 'NEXT PERIOD' button.
3. After a few seconds, the 3 time digits will show CHA (for change). Release the NEXT PERIOD button.
4. The first value will be shown. The left score shows the value number (1). The time digits show USE and the right score shows the number for the scoreboard use (1P=Outdoor polo; 2A for Arena; 3H for Hockey etc (note that later versions use 2 letters eg PO, AR, HO etc)). Press the LEFT SCORE button to go down and the RIGHT SCORE button to go up. The setting is permanently changed immediately.
5. Press the NEXT PERIOD to step onto the next value. Use the LEFT SCORE and RIGHT SCORE buttons to increment or decrement the value. See the table below for all the values.
6. Some of the timer settings are in tenths of seconds (a value of 35 means 3.5 or 3½ seconds) – see table below.
7. At any time you can power down / up the scoreboard to use the new values or continue to press NEXT PERIOD button through all the values.

Value no.	Display at top	Factory settings	Range	
1	USE	1(PO)	See->	Scoreboard type where:-

		V62	V63+	
		1P	PO	= Outdoor polo
		2A	AA	= Arena polo
		3H	HO	= Hockey
		41	R1	= Running race (mins/secs)
		52	R2	= Running race (hrs/mins/secs)
		6R	RU	= Rugby
		7S	SO	= Soccer
		8S	SH	= Show jumping
		---	PC	= Polo Cross.
		---	LA	= Lacrosse.
		---	NE	= Netball.

Value no.	Display at top	Factory settings	Range	
2	CHU	4	4-6	Only used for polo
3	BEL	30	0-99	Time (in tenths of seconds) the bell sounds for towards the end of a period. (30 = 3.0 seconds)
4	HOR	30	0-99	Time (in tenths of seconds) the horn sounds for at the end of a period. (30 = 3.0 seconds)
5	DIS	1	0-1	Display time to end of time-out at half time (1=Yes; 0=No)
6	BE2	30	0-99	Time (in tenths of seconds) the bell sounds for at the end of time-out between periods.
7	APO	10	0-99	Time before scoreboards powers down if idle. In hours (10=10 hours)
8	PS1	7	0-99	Start time (minutes) for periods for outdoor polo to start.
9	PSS	0	0-50	Start time (seconds) for periods for outdoor polo to start.
10	AS1	6	0-99	Start time (minutes) for periods for arena polo to start.
11	ASS	30	0-50	Start time (seconds) for periods for arena polo to start.
12	EN1	7	0-50	First bell time (minutes) when in count up mode
13	EN2	30	0 / 30	First bell time (seconds) when in count up mode
14	ENR	0	0 / 30	Repeat bell time (0 means every minute; 30 means every 30 secs) when in count up mode

Value no.	Display at top	Factory settings	Range	
15	FL1	100	100 +	Flap ON pulse time (ms). 100 is subtracted so 00 means 100; 99 means 199. Only adjust on instructions from Sporting Designs
16	FL0	5	5 +	Flap off gap time. There is a minimum of 5 ms. Only adjust on instructions from Sporting Designs.
17	HS1	35	5-95	Start minutes for Hockey/Rugby/Soccer (may also be adjusted by holding down the START button before the match starts)
18	BEE	0	0-99	Beep time. Beeps the horn when the operator start/stops/increments a score. 0=Off. 40 is approx 1/2 second
19	HS2	0	0-30	Stop minutes for Hockey/Rugby/Soccer. If > 0 will automatically stop the clock at this so that the umpire can use his own clock to decide when to say the match is over. If 0, does not stop.
20	SEC	50	0-99	Time correction in seconds to adjust timer accuracy. Subtract a value of 50 to get the actual adjustment value. A resultant of +9 means add 1 second every 9 minutes. A value of 45 (means -5) means subtract 1 sec every 5 mins
21	POF	1	0-9	Flap position when scoreboard does auto-power off. 0 means set to all - - - - - - . 1 means set to all black.
22	POB	0	0-1	Power off beep. If set to 1, the scoreboard beeps every hour (whatever the timer is) if no power off circuit exists and the scoreboard should have powered off (parameter 7 (APO) > 0).
23	SPC	6	1-8	Start minutes for Polo Cross (mode PC in parameter 1). Start seconds are always zero.
24	SE2	0	0-99	Time correction in 10 times seconds to adjust timer accuracy. A value of 9 means add 1 second every 90 minutes
25	SE3	0	0-99	Time correction in 100 times seconds to adjust timer accuracy. A value of 9 means add 1 second every 900 minutes
26	FLE	0	0-99	Flap exercise time. A value of 24 means exercise all the flaps every 24 hours (assuming power is on). This timer gets reset whenever the clock is running.
27	SOU	0	0-2	Sounds. 0=normal; 1=always sound horn; 2=always sound bell.
28	RCD	0	0-1	Real time clock counts down if = 1
29	LS1	15	0-35	Lacrosse start time – Minutes
30	LSS	0	0-30	Lacrosse start time - Seconds
31	12B	0	0-50	Beep horn ½ way through each chukka for this time (30 = 3.0 seconds). 0 means don't sound.
32	PUL	0	0-20	Pulse sound on/off time. 5=1/2 sec on 1/2 sec off.

Value no.	Display	Factory settings	Range	
33	LE1	20	0-99	LED minimum brightness (in %) where 99=full brightness. For LED scoreboards only
34	LE2	50	10-99	ADC value divided by 10 where LED is at maximum brightness. Typical value is 540/10 = 54.
35	LE3	0	0-99	ADC value divided by 10 where LED is at minimum brightness. Typical value is 0.
36	HC1	40	0-99	Hockey corner time (secs)
37	HC8	10	0-99	Bell time (*10) at end of corner time. (15 = 1.5 seconds)

To revert to Factory settings:

1. Power off the scoreboard.
2. Power up the scoreboard. When all the digits go blank, Press and hold the RESET button.
3. After a few seconds, all the digits will show 888888888. Release the RESET button. Factory settings will have been stored.

Powering off the scoreboard:

Some versions of the scoreboard have the optional auto-power-off function when the scoreboard powers off if not used for one hour (the time is changeable – see above). Versions 31 and later may also be powered off via the remote control (or the manual buttons). Hold down the STOP button then hold down the NEXT PERIOD button, then press the RESET button. The digits will all go blank or '-'. Release all the buttons. Note that the scoreboard must be RESET (ready for the start of a new match) for this to work. Alternatively your scoreboard may have an external on/off switch.

Resetting the scoreboard:

Later versions may also be reset (the scoreboard will go through the power-up sequence) via the remote control (or the manual buttons). Hold down the STOP button then hold down the NEXT PERIOD button, then press the RIGHT SCORE button. The digits will all go blank. Release all the buttons. Note that the scoreboard must be RESET (ready for the start of a new match) for this to work. You can then change any of the user-changeable settings once the digits have gone past 8888888888 and are blanked again (hold down the NEXT PERIOD button).

Show Jumping mode:

Later versions have a 'Show Jumping' mode (User configurable parameter no 1 = 8S / (SH)). This is where an EG Timing Show Jumping control unit sends the time to the scoreboard. Please contact Sporting Designs for further information.

Special notes for Netball:

Netball traditionally has 4 periods of 15 minutes. However, you may play for 2 longer periods in which case set the scoreboard for Hockey. If you select count-down between periods (Parameter 5), when you press NEXT PERIOD, the clock will initially go to 15:00. 2 minutes before the next period should start, the clock will be set to 2:00 and start counting down. You can press STOP to immediately set the clock to 15:00 or press START to start the next period. If the clock reaches 0:00, the bell will be sounded for a time (Parameter 6).

Corner time (hockey):

Whilst the time is running, and a corner is given, you can press START and then immediately NEXT PERIOD. The corner time will show C :40 (or the time as changed for number 36) and start to run down. When it reaches :00, the bell will sound (1.5 secs) and the time will go back to the normal time. If the corner it is hit before the corner time reaches :00 you can press START and the time will go back to the normal time and the bell will not sound.

Batteries

If your scoreboard is powered from external batteries

The scoreboard is operated from 2, 12 volt car-type batteries connected in series to provide 24 volts. These batteries are normal lead-acid 'leisure' batteries and can be re-charged with a 24 volt charger or individually one at a time with a normal 12 volt car battery charger.

The batteries will provide enough power for quite a few days without having to be re-charged.

If your scoreboard is powered from internal batteries:

Make sure the batteries are fully charged. The unit will be supplied with a 24 volt battery charger with a multi-colour LED. RED means that the charger is not connected; ORANGE means that the batteries are being charged and GREEN means that the batteries are fully charged. The charger can be left connected and charging permanently without damaging the batteries. Fully discharged batteries will take around 6-8 hours to fully charge. Remove the lead from the scoreboard if the charger isn't connected as there is a small drain from the charger when not powered up.

Some scoreboards have an optional battery low detector. At the end of a match and the RESET button has been pressed, the time digits will show LO if the batteries are low. However the scoreboard will still attempt to function normally. Re-charge the internal batteries as soon as possible.
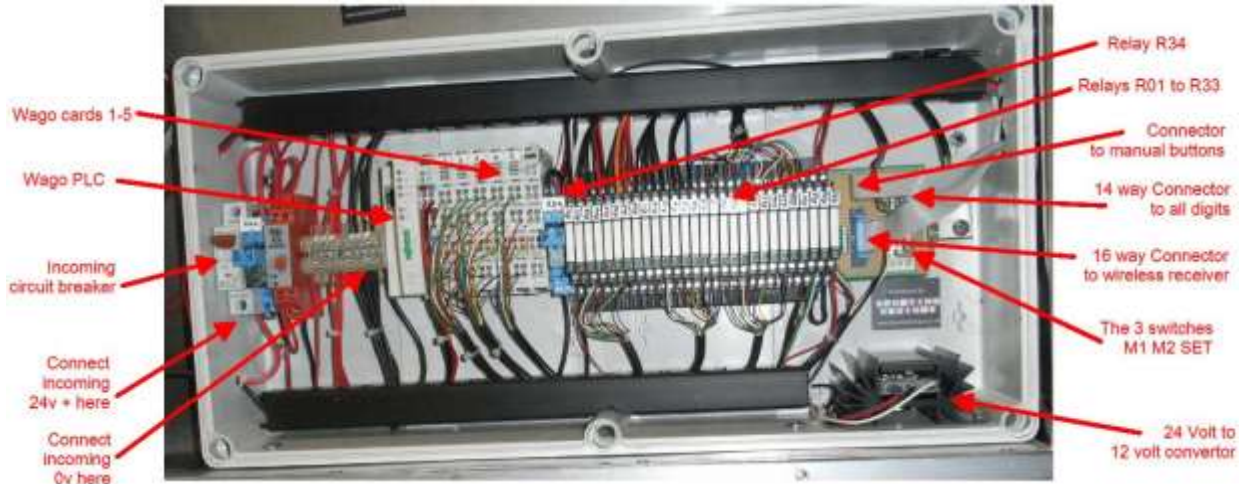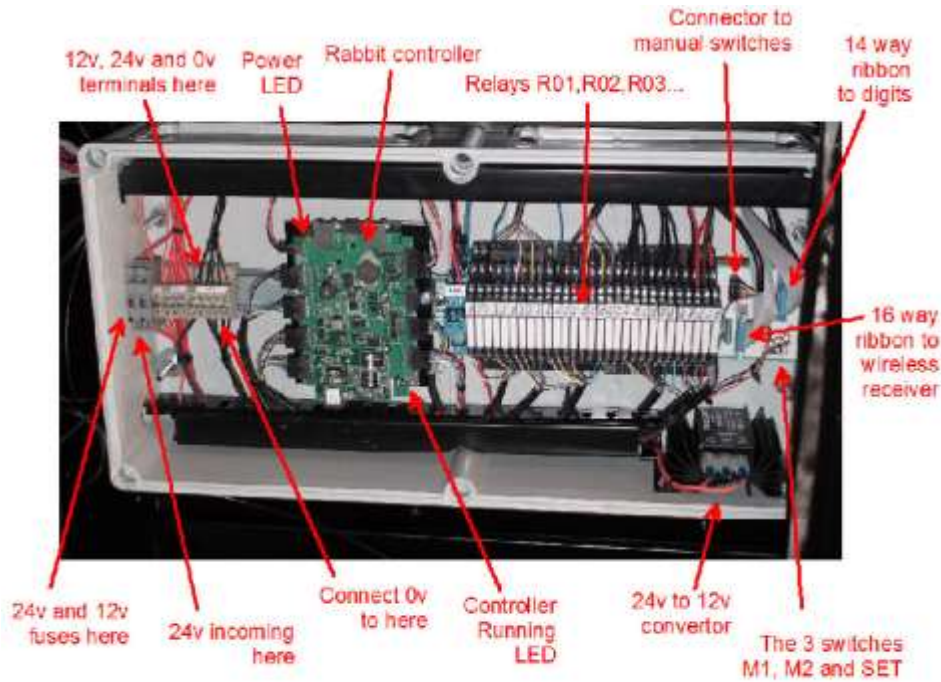
Remote control unit
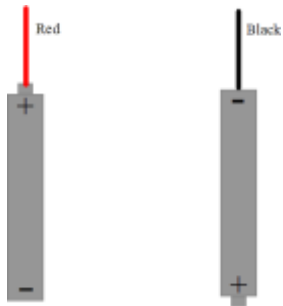
The remote control unit uses 2, AAA batteries. These are non-rechargeable and are widely available from DIY shops, supermarkets and petrol stations. When changing these batteries, be sure to insert then the correct way with the positive terminal facing the mark +. This has a red wire. The negative terminal faces the mark -. This has a black wire. See layout above.

The Control box

Control box pre 2010 (Wago)

Control box post 2010 (Rabbit)

Registering a new remote control unit.

1. Power off the whole scoreboard. Wait for 10 seconds for the power to decay.
2. Un-screw the bottom left back section from the scoreboard (when looking from the back)
3. On the receiver interface module, set the 3 switches to:-

Switch	Setting
M1	OPEN (UP)
M2	OPEN (UP)
SET	GND (DOWN)

4. Power up the scoreboard
5. After 5 seconds, press any key on the new remote control unit for one second.
6. Wait 5 seconds.
7. Power off the scoreboard. Wait for 10 seconds for the power to decay.
8. On the receiver interface module, set the 3 switches to:-

Switch	Setting
M1	GND (DOWN)
M2	GND (DOWN)
SET	OPEN (UP)

9. Power up the scoreboard.
10. After the power-up sequence is complete (it takes about 25 seconds), test the new remote control unit.

Erasing all remote control units.

11. Power off the whole scoreboard. Wait for 10 seconds for the power to decay.
12. Un-screw the bottom left back section from the scoreboard (when looking from the back)
13. On the receiver interface module, set the 3 switches to:-

Switch	Setting
M1	OPEN (UP)
M2	GND (DOWN)
SET	GND (DOWN)

14. Power up the scoreboard
15. Wait 10 seconds.
16. Power off the scoreboard. Wait for 10 seconds for the power to decay.
17. On the receiver interface module, set the 3 switches to:-

Switch	Setting
M1	GND (DOWN)
M2	GND (DOWN)
SET	OPEN (UP)

18. Now you can register a new remote control unit as per the previous section, (start at item 3).

Troubleshooting

The remote only works very close to the scoreboard. The antenna in the receiver (normally within a small box in the top of the scoreboard) has either been damaged or has pulled out of the receiver module. The antenna is a small black wire about 10 cm long. It is a push fit into the receiver module

The remote only works after a 15 second delay. If you have two remote control units, you must leave a 15 second delay before using a button on a second unit.

The flaps on some digits are not working. Check exactly what the problem is by powering off the scoreboard and powering it up again. Watch the self-test sequence when all flaps show on (all digits are 8) followed by all off (all digits are blank). There are a number of reasons why the flaps may not operate properly:

1. Can you see a mechanical reason why the flaps cannot move (is a flap fouling the Perspex? fouling something else?)
2. Is the battery voltage sufficient? Normally two 12 volt batteries are used to make 24 volts. The scoreboard **may** work when the voltage is as low as 21 volts but certainly will not work correctly if the voltage is as low as 18 volts.
3. Is the same flap on all digits not working? In this case it is likely to be a faulty relay or possibly the 14 way ribbon cable which goes from digit to digit has broken. If the same flap on all digits is set on then try replacing the 'reset' relay (and vice versa). Look at the drawings to see which relay.

   If your scoreboard has a Wago controller - The relays used to drive individual flaps are R16 to R33. You can normally swap the relay with R06 which is not normally used. R07 drives the lamp to say when a button is pressed.

   If your scoreboard has a Rabbit controller - The relays used to drive individual flaps to on (white) are R3 to R9 for A to G and to drive the flaps off (black) are R11 to R17 for A to G. You can normally swap the relay with R32 or a spare at the end which is not normally used. R33 drives the lamp to say when a button is pressed (if present).
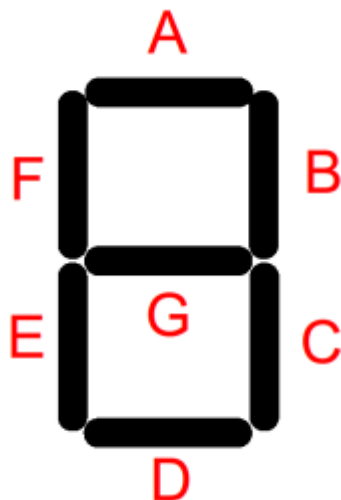
One digit is not working at all, Check that the single black wire going to the digit is still connected. If it is, check which is the relay used to drive the digit and replace this.

If your scoreboard has a **Wago** controller :- The relays used to drive individual digits are R01, R02, R03 and R08 to R15 or test by swapping with R06 or R07 or a spare.

If your scoreboard has a **Rabbit** controller :- The relays used to drive individual digits are R18, R19, R20 onwards or test by swapping with R32, R33 or a spare.
.

Digits are numbered:-
1. Seconds Units
2. Seconds Tens
3. Minutes Units
4. Minutes Tens
5. Left score Units
6. Left score Tens
7. Right score Units
8. Right score Tens
9. Period number (if exists)

The remote control unit is not working at all (but the scoreboard goes through its self-test ok). Try replacing the batteries. It takes two AAA batteries but be sure to place them + to the red wire and – to the black wire. If still faulty, check that the switches in the control box have not been changed (M1 down M2 down, SET up). Check that no wires are loose. If still not working you will have to contact Sporting Designs.

If the scoreboard does not do anything when you power it up, check that:-

1. The two, 12 volt batteries are charged.
2. The circuit breaker (or fuse) inside the scoreboard control box has not tripped. This is in the bottom left of the scoreboard when looking from the back. It should be in the up position. Your scoreboard may have an external isolator (mains powered versions only). Make sure this is on.
3. On units pre 2010 with a Wago controller:- Look at the lights on the white WAGO 'brain' The DSR light at the bottom of the left module should be flashing green once per second. Note that it only starts to flash once the start up sequence is complete.
   On units post 2010 with a Rabbit controller:- Look at the Power LED and the Controller Running LED. Both should be on.
4. Check that no wires are loose coming from the battery.

Suggestions

We are very pleased to receive **any** suggestions from you as we want to improve the operation of the scoreboard and make it easier to operate. Please contact Paul Girdham, Sporting Designs Ltd. Thank you.

Contacting Sporting Designs Ltd.

One Barkers Field,
Long Clawson,
Leicestershire, LE14 4PL
England

Tel: 07860 303 217
email: mail@SportingDesigns.co.uk
web: www.SportingDesigns.co.uk

Ref: SportingDesignsLtd\UserManualHockey.doc