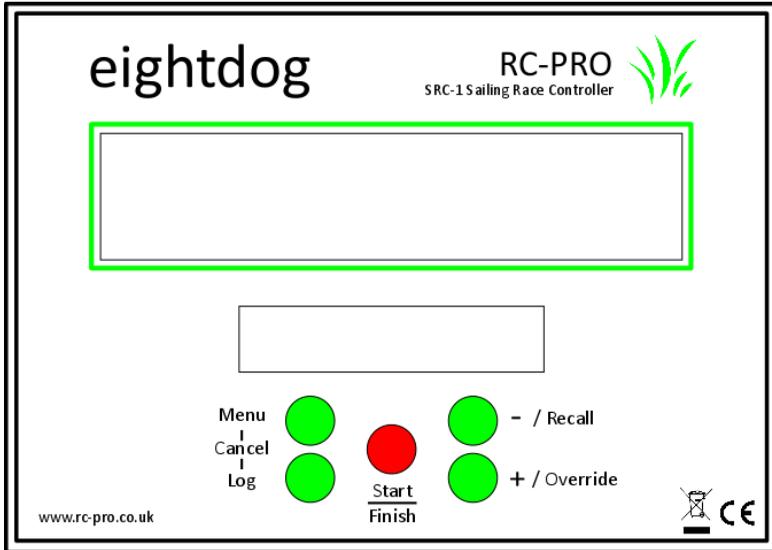RC-PRO
by eightdog

SRC-1
sailing timer and controller

User Guide for firmware V1.60

Figure 1: SRC-1 Front Panel

Features

- Dual large 7-segment displays for concurrent timer and finish time display.

- 80 Position non-volatile finish log.

- Single button 'Go' for repetitive race events.

- Up to 20 automatic split fleet starts.

- Remote boat finish option available with 2m cord.

Contents

1.0 Running a Race

When powered on the SRC-1 will briefly display the firmware version number, and then progress to the start display. This alternates between the selected start sequence and the number of fleets.

1.1 Starting a Race

If the correct start sequence and fleet number is shown, simply press the red 'start' button. This will start the countdown timer with an additional 'preparation' minute on top of the start sequence. If the start sequence and/or number of fleets needs changing then please refer to Section 2.0.

During the countdown (and if more than one fleet is selected, the count up phase too), the secondary display will indicate which fleet is about to start, for example:

'Flt 01' on the secondary display during the 10s countdown indicates that the next start is for fleet 1.

If the fleet about to start has been recalled in a 'general recall' then the display will indicate this with:

'rcl' followed by the number of fleet starts so far as to give indication that the next race start is in fact a recall from earlier.

1.2 Finishing a Race

Press the red 'finish' button or optional remote trigger for each boat crossing the line. This will sound the horn for as long as the button is depressed.

It will also show the finish time on the secondary display while the primary display continues counting.

The finish times are stored to memory for later retrieval. These times are stored even if the unit is powered down. They are cleared when a new race is started. Please see Section 3.0

1.3 Cancelling/Returning to Start

The race timer can be cancelled at any time by pressing and holding 'menu' and 'log' together for approximately 5s.

- This will not affect any finish time logs which have been stored.

1.4 Manual Override

The horn may be triggered at any time without affecting the timer in any way. Press 'override' to activate the horn/relay. This is useful for single recalls and course shortening.

1.5 General Recall

The '-/Recall' button can be used to perform a general recall. This works as follows:

1) General Recall can be pressed immediately after a fleet start, and up to 15s before the next start sequence interval. So for example, if the start sequence is 5,4,1,0 then the recall button can be pressed between 0s and 45s after the race start as the next start sequence interval would be at 1m. If the start sequence is 9,6,3,0, then the recall button can be pressed between 0s and 2m45s as the next interval would be at the 3m mark. This applies after any fleet start.

2) When Recall is pressed, the relay will automatically trigger twice to indicate a general recall, and an extra fleet start will be added to the end of all existing fleet starts. If Recall is pressed again during the same start sequence, the relay will still activate twice, but no fleet starts will be added. This allows for a recall to be sounded twice if need be without affecting the number of recalls added.

3) All recalled starts will still start as per the start sequence. For example, if the start sequence is 5,4,1,0 then all starts, recalled or not, will start at 5 minute intervals. If there is just one fleet, then a recalled fleet will start at 5 minutes up on the timer, if it is recalled again, it will start at 10 minutes and so on.

4) The secondary display shows, during the 10s countdown, the start number and whether or not it is a normal fleet start or one which has been recalled from earlier. See Section 1.1 – Starting a Race.

2.0 Configuring a Race

There are just two options to consider when configuring a race on the SRC-1: the start sequence and the number of fleet starts. This sections describes how to set these two properties.

2.1 Change Start Sequence

When the SRC-1 is powered up, the last used start sequence will be loaded and displayed. To change the start sequence press 'menu' and then '+' and '-' to select the desired sequence. Press 'menu' again to save and progress to the next menu item. Please refer to Table 2.1 and Figure 2.1.

1	5,4,1,0	Timer begins at 6 minutes. Split fleets will follow 5,4,1,0 sequence with start of one fleet being the 5 minute mark of the following fleet.
2	5,4,1,0,1	Timer starts at 6 minutes. Split fleets every 1 minute instead of 5 minutes.
3	9,6,3,0	Timer starts at 10 minutes. Split fleets every 3 minutes.
4	10,5,0	Timer starts at 11 minutes. Split fleets every 5 minutes.
5	3,2,1,0	Timer starts at 4 minutes. Split fleets will follow 3,2,1,0 sequence with start of one fleet being the 3 minute mark of the following fleet.
6	1,0	No relay at 1min, instead, relay at 30s for training. Split fleets every 1 minute.

Table 2.1: Start Sequences

2.2 Change Number of Fleets

When the SRC-1 is powered up, the last used 'number of fleets' will be loaded and displayed. The number of fleets is simply the total number of starts required. If there is only one start then the option should be set to one. To change the fleet number, first set the start sequence described above, and then use '+' and '-' to select the desired number of fleet starts. A maximum of 20 fleet starts can be selected. Press 'menu' again to save and return to the start. Please refer to Figure 2.1.
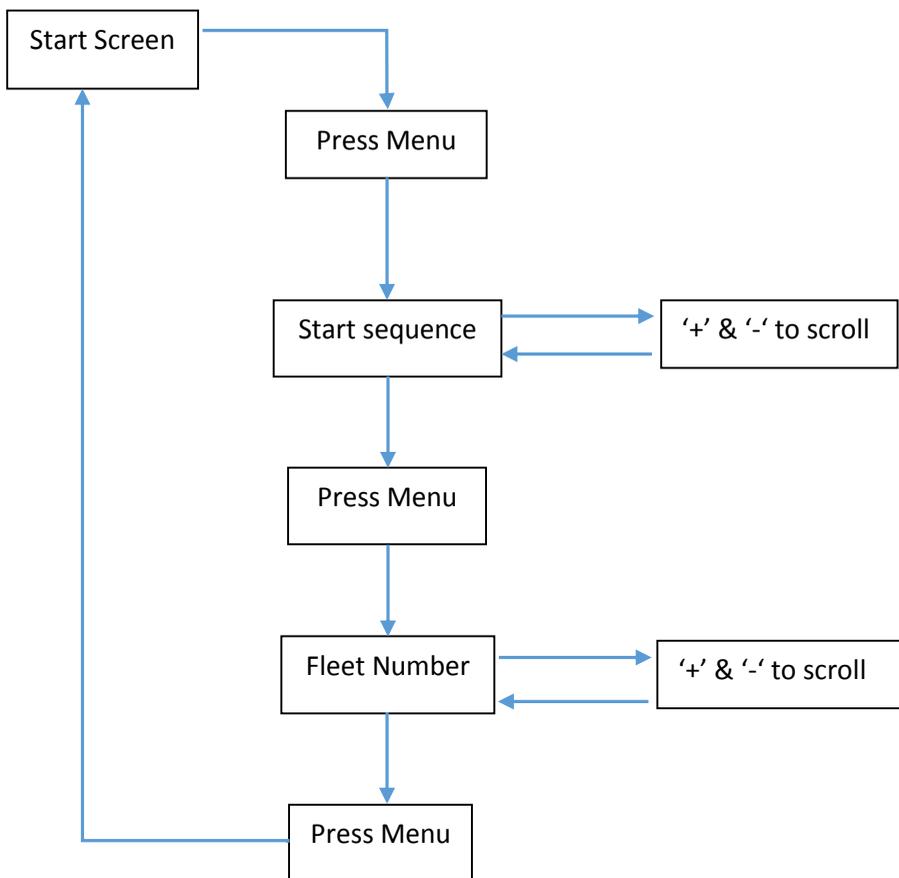
With more than one fleet start, the unit will automatically trigger the relay during the counting up phase in accordance with the start sequence selected. For example:

i) When sequence 1 is selected with number of fleets set to 2 the relay will trigger at these intervals:

Counting Down: 5,4,1,0 and Counting Up: 1,4,5,6,9,10

With 0m, 5m and 10m being the actual race starts.

Figure 2.1: Menu Flow

```
┌──────────────┐
│ Start Screen │──────────┐
└──────────────┘          │
       ▲                  ▼
       │          ┌──────────────┐
       │          │  Press Menu  │
       │          └──────────────┘
       │                  │
       │                  ▼
       │          ┌───────────────┐      ┌────────────────────┐
       │          │ Start sequence│─────▶│ '+' & '-' to scroll │
       │          │               │◀─────│                    │
       │          └───────────────┘      └────────────────────┘
       │                  │
       │                  ▼
       │          ┌──────────────┐
       │          │  Press Menu  │
       │          └──────────────┘
       │                  │
       │                  ▼
       │          ┌───────────────┐      ┌────────────────────┐
       │          │  Fleet Number │─────▶│ '+' & '-' to scroll │
       │          │               │◀─────│                    │
       │          └───────────────┘      └────────────────────┘
       │                  │
       │                  ▼
       │          ┌──────────────┐
       └──────────│  Press Menu  │
                  └──────────────┘
```

3.0 Finish Time Log

Up to 80 finish times can be logged. These logs are retained even when the unit is powered off. The log is automatically cleared when a race is started.

3.1 Retrieve the Log

To retrieve the finish time log, from the start screen:

Press 'log' followed by '+' and '-' to scroll through the times.

Pressing log again will return to start screen.

4.0 Additional Information

1. When counting down, the unit will start bleeping 10s before the start sequence interval.

2. In accordance with ISAF, the 1 minute warning (when present in the selected start sequence) is longer than the other warning times: 4s as opposed to 3s.

2. The unit will give a 10s warning when approaching every hour of race time.

3. The unit can count for 17h50s before automatically stopping.

4. When finishing a race, the display will blink quickly to indicate that the finish time is stored to memory. If more than 80 finish times are triggered, then the unit will stop blinking to indicate the log is full.

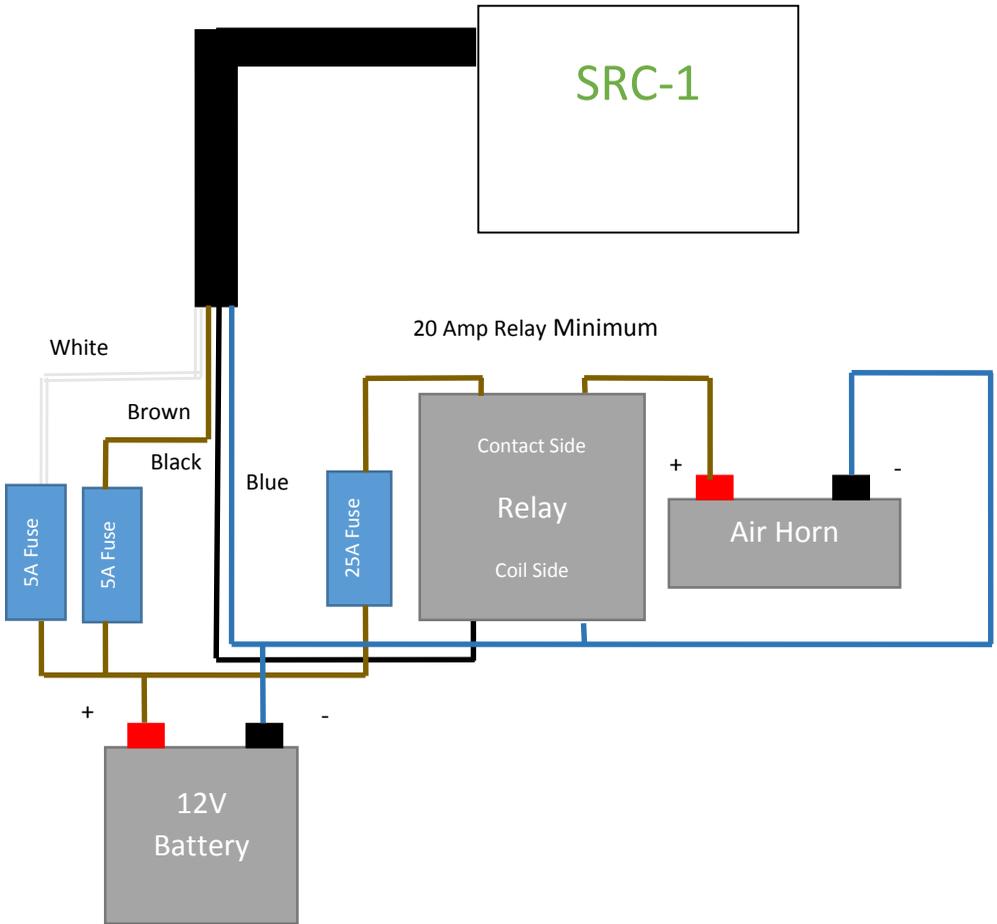5. The unit uses accurate crystal technology for precise timing.

5.0 Wiring

The SRC-1 comes with a 4-core cable used for supplying +12VDC power as well as the two relay contacts. Please refer to Table 5.1

Wire Colour	Function	Description
Brown	+12VDC	Connect this to a 12V DC source such as a car battery, or power adaptor. Minimum 1A supply required.
Blue	0V	Connect this to the Ground/Negative side of your chosen supply.
White	Relay 1	Relay 1 and Relay 2 act as a switch and will connect together when the SRC-1 triggers.
Black	Relay 2	Relay 1 and Relay 2 act as a switch and will connect together when the SRC-1 triggers.

Table 5.1: Wiring

Although the SRC-1 contains a 20 amp relay for switching loads such as lights and horns, it is recommended that this built-in relay is used only for switching another more appropriately located relay close to the load. The reason for this is twofold: switching large inductive loads such as horn air compressors can cause high voltage spikes along the length of cable connecting the equipment. It is always best to keep these cables as short as possible to avoid interfering with other equipment or causing unnecessary heating of the conductors; secondly, it is far more convenient and cheaper to replace an externally mounted simple automotive relay than the one included in the SRC-1. Please refer to Figure 5.1 for an example of wiring.

Figure 5.1: Typical Application

SRC-1

20 Amp Relay Minimum

White

Brown

Black

Blue

5A Fuse

5A Fuse

25A Fuse

Contact Side

Relay

Coil Side

+   -

Air Horn

+   -

12V
Battery

6.0 Electrical Specification

Input Voltage: 12V DC (Min 1A)

Relay: 20amps maximum load single-pole-single-throw

Display 1: 25.4mm 7-segment display, colour: red

Display 2: 14.22mm 7-segment display, colour red

Dimensions: 220x145x52mm

7.0 Contact

For the latest information please visit

www.rc-pro.co.uk

8.0 Notes