Stratomaster Maxi Single

RTC-1

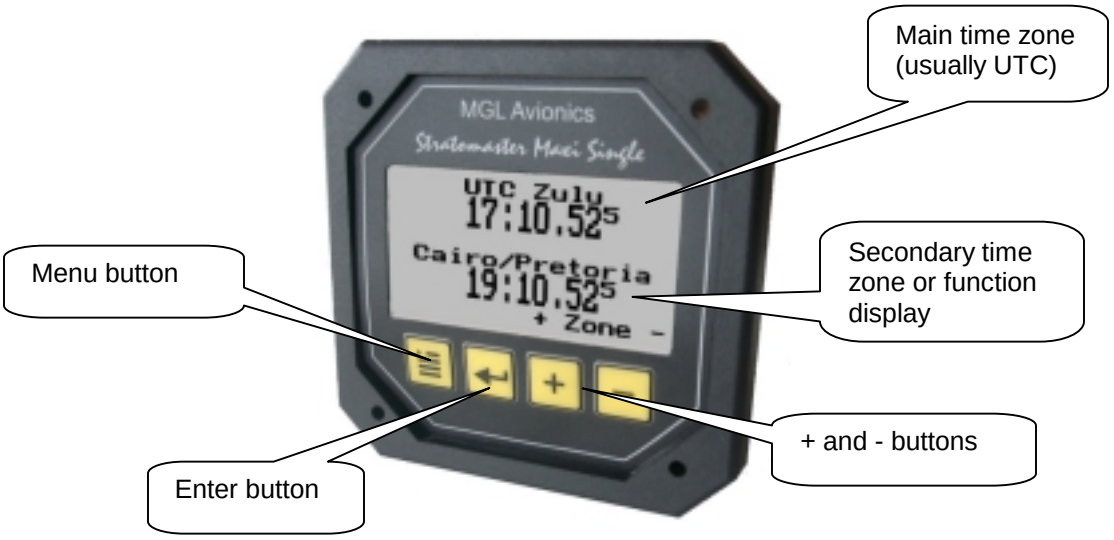
Aviation UTC Real time clock

The RTC-1 is a 3.5” format aviation Real Time Clock featuring a two time zone system, stopwatch, timer and alarm.
It is primarily intended to show UTC time (also known as Greenwich Mean Time, GMT or Zulu time) together with a local time to facilitate ordinary ATC time reporting.
Each time zone may be programmed with an additional hour offset to allow for summer time or similar variances. Local offsets may be added or subtracted.

Stopwatch and Timers can be operated simultaneously to a programmable alarm, making the RTC-1 particularly suitable for sport flying competitions.

Time is maintained by an internal 10 year lithium battery which can be replaced by the user.

The main display and function buttons



RTC-1 functions

Use the Enter key to switch between functions.

Normal display showing two independent time zones.
The top display is normally used to display UTC time but this can be changed using the “Main time zone” selection.

This screen shows the stopwatch. The stopwatch can be started and stopped at any time and reset to zero.

This screen shows the timer. The timer is loaded from a value that can be adjusted in the menu. Once loaded the timer can be started and counts down. It can be stopped and restarted at any time.

This screen shows the alarm time. The alarm time is set in the menu.

Setting up the RTC-1

Press the Menu key to enter the menu. You can move forward and backwards in the menu by using the + and – keys. To change or select a menu item, move the highlight to the desired item and then press the Select (Enter) key. To end an edit or function, press the Menu key again.

To exit the menu and continue normal operation, press the Menu key.
Note, all changes you have initiated during your session will only be remembered by the instrument if you exit the menu.

Contrast …

This function allows you to change the display contrast to your liking. You can select values from about 20 to 45. (can vary depending on display type).

Backlight …

This function allows you to switch the display backlight on or off.

Set UTC time

This function is used to set the internal real time clock. The time to be entered must be UTC in order for the system to operate correctly. Do not enter local time (unless it is the same as UTC). UTC is the same as Greenwich Mean Time (GMT) or Zulu time.

Use the + and – keys to adjust the item indicated by the ^^. Use the enter key to move the ^^. Press the menu key when you have finished.

Timer preset

Enter the timer preload value. In the above picture it is shown as 5 minutes. This is the value that it loaded into the timer when you perform a timer load. The timer counts down to zero when started, starting from this value.

Use the + and – keys to adjust the item indicated by the ^^. Use the enter key to move the ^^. Press the menu key when you have finished.

Alarm preset

Enter the local time that will activate the alarm.
Note: Alarms are based on the time of your selected local time zone.

Main time zone

Select the main time zone that is to be displayed on the top section of the display. Normally this should be set to UTC.

Local offsets

Each of the time zones can be individually modified by adding or subtracting one or more hours from its ordinary time.
The above picture shows that the London time zone has one hour added. This would set this time zone to “summer time”.
Offsets can range from –12 to +12 hours.
For normal operation of the time zone this value should be set to zero.

Use the + and – keys to select the time zone to change.
Once you have selected the time zone, press the enter key to highlight the offset value. Now the + and – keys can be used to change the offset value. Once you have finished you can press the enter key again to end the edit.

Press the menu key to leave this function.

The Stopwatch

Stopwatch is halted.
Press “+” (GO) to start the stop watch.
Press “-“ (Zero) to set the stop watch to zero.

Stopwatch is running.
Press “-“ to halt the stop watch.

The stopwatch is not connected to the alarm output of the RTC-1. The maximum time that the stopwatch will operate is 99:59:59.

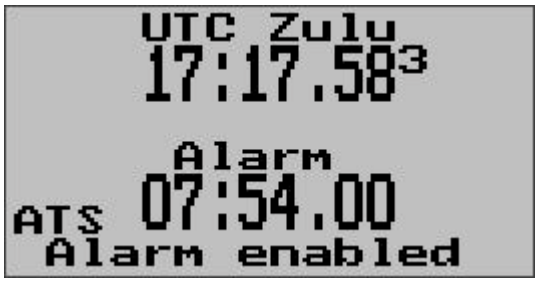
The Timer

Timer halted, loaded to 5.00 minutes.
Press “+” to start the timer.
Press “-“ to load the timer.

Timer running.
Press “-“ to stop the timer.

The timer is connected to the external alarm output of the RTC-1.
The alarm will be activated if the timer reaches 00:00.00. In this case the timer will be shown flashing. Should the display be showing any other function when the timer reaches zero, it will change to display the timer (Menu excluded).
The external alarm will be deactivated if you press any button.

The local time Alarm



Use the enter key to select the above alarm display. You can use the “+” and “-“ buttons to enable or disable the alarm. The alarm time is entered in the menu.
The alarm time is always “local time”.
When the local time matches the alarm time, the alarm is activated and the alarm time will flash. Should the display be showing any other function when the alarm activates, it will change to display the alarm time (Menu excluded).
The external alarm will be deactivated if you press any button.

Technical specifications:

Display temperature range (operational): -20 to +80 degrees C
Supply voltage: +8 to +18V. +24/28V with optional pre-regulator.
Supply current: 40mA/60mA (backlight off/on)
Battery type: CR2032
Alarm output: Open collector transistor switch to ground. Maximum rating 0.5A DC only.

Weight: 180 grams.

Warranty:
MGL avionics warrants their products for a period of one year from date of purchase against faulty workmanship. Warranty is limited to the replacement of faulty components and includes the cost of labor. Shipping costs are for the account of the purchaser.

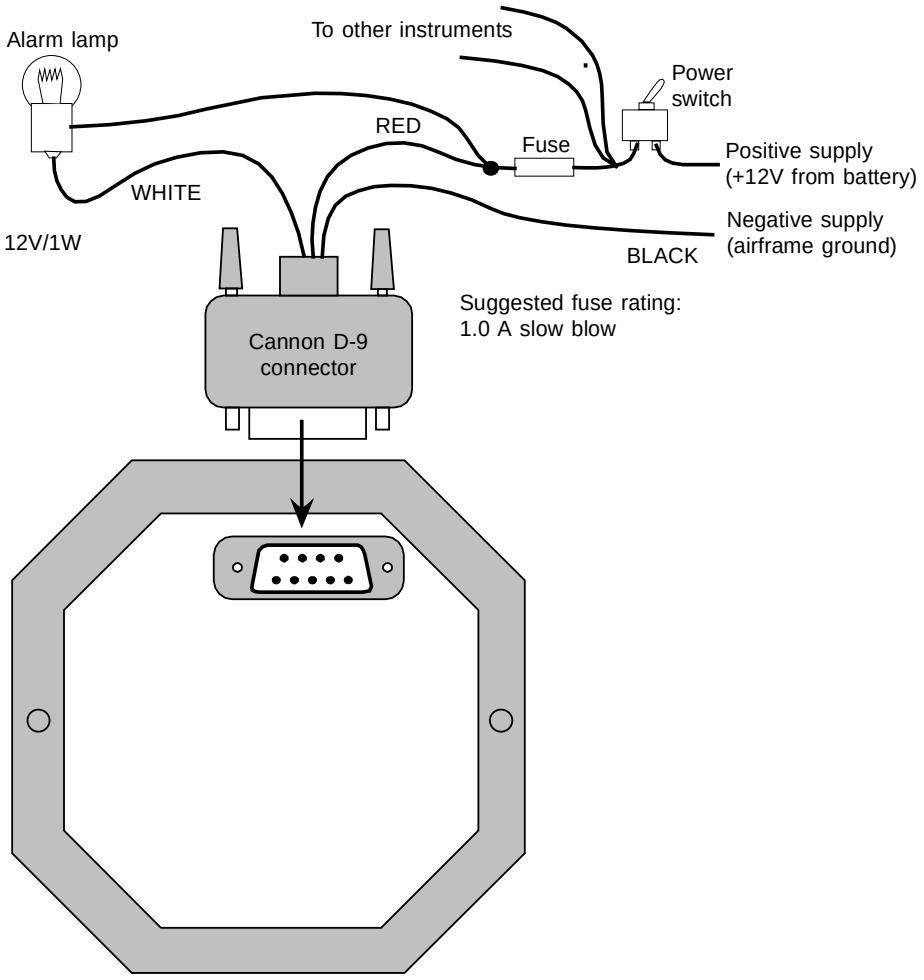
Note for operation on supplies with inductive loads:

Any operation of electronic instrumentation on power supplies that are subject to high voltages caused by operation of inductive loads (starter motors, solenoids, relays) are required to be fitted with suitable protection.
All Smart Singles are guaranteed to withstand temporary over voltage up to 40V without additional protection. We recommend that measures are taken to prevent voltage transients in excess of this limit.
MGL Avionics recommends the fitment of a fuse in line with a 33V transorb (available from MGL Avionics at low cost) to protect electronic instruments, radios and intercom systems. Only one such arrangement is required for a cluster of instruments.
Please note that product warranty excludes damages caused by unprotected, unsuitable or incorrectly wired electrical supplies.

This instrument is not certified by the FAA. Fitting of this instrument to certified aircraft is subject to the rules and conditions pertaining to such in your country. Please check with your local aviation authorities if in doubt.
This instrument is intended for ultralight, microlight, homebuilt and experimental aircraft.

Operation of this instrument is the sole responsibility of the pilot in command (PIC) of the aircraft. This person must be proficient and carry a valid and relevant pilots license. This person has to make him/herself familiar with the operation of this instrument and the effect of any possible failure or malfunction. Under no circumstances does the manufacturer condone usage of this instrument for IFR flights.

Installing the RTC-1



Changing the battery.

The RTC-1 maintains an internal Lithium battery to supply power to run the internal clock. This battery typically lasts for up to ten years.
If you find the RTC-1 looses time when you switch off main power you should replace the battery. This battery is of type CR2032. It is used in many calculators and similar equipment and is easy to obtain.
Unscrew the two screws at the back of the unit and then press out the assembly from behind. The battery holder can be located on the front PCB, behind the display.
Use your finger or a small object to press the metal tag that holds the battery onto the holder backwards (away from the battery). This releases the old battery and the new one simply clips into its place. Observe correct polarity. The side marked “+” faces towards the back of the RTC-1.