

All About - Radio Clocks (MSF) Info

THE BASICS...What is the MSF Time Signal?

The MSF Radio Time Signal is a dedicated standard-frequency and time broadcast that provides an accurate and reliable source of UK civil time, transmitted from Cumbria. It is a data stream signal sent every minute of the day which contains the seconds minutes, hours, day, month and year, and other information.

How Do You Receive it?

The transmission is a low frequency, but high power signal, which ensures that the signal travels far and wide. The signal is easily capable of being picked up over the entire UK and even Northern Europe, however there is always the possibility of local geographic features that can cause a reduced signal or even complete loss.

So, What Do You Do With The Signal?

As a user, absolutely nothing. The devices and transmissions are all automated so you just need to sit back and relax. Provided the signal is not being reduced as a result of local environment, or being effected by interference, then the device will receive the time, establish its synchronisation, and then adjust to display the correct time. Any changes including annual leap seconds or the British Summer Time changes will happen automatically and need no intervention from the user.

What Do You Need To Do To Get Your Radio Clock Working?

All you need to do is put a battery in and make sure the hands are clear to rotate around the whole clock face. After you insert a battery, the second hand will do a full rotation and then stop when it gets back to 12. The minute and hour hand will then complete a rotation until they also stop at twelve. If any of the hand do not settle at 12, this means the hands have been turned on the shaft and need to be placed back at twelve. Once all the hands are back at 12, the clock will stop. At this point the clock will start trying to receive the MSF signal. Assuming that the signal is available and being clearly received, the clock will decode the signal and establish what the time is. Once this has been achieved, the hands will 'quick-speed' round to the actual time, and then return to normal working speed. The clock will then regularly check the time signal to ensure it is correct.

There may be times when you notice the hands suddenly do a quick speed rotation again. This is usually a result of the clock picking up a significant difference between its own time and the MSF signal time, and the way it corrects larger differences, which is to jump to 12 o'clock, and then run the routine from the beginning again to get to the correct time. It is normal for radio controlled clocks to synchronise several times a day, however, this should not normally be noticed.

Having Problems Receiving The Signal?

- o The first item on the checklist is to check that the signal is being transmitted. There are a few short periods throughout the year, and one longer period of two weeks in the summer, when the transmitter is shut down for maintenance. These can be found on the NPL site Service Status page - <https://www.npl.co.uk/msf-signal>
- o Try rotating the clock. Most radio-controlled clocks have an internal antenna that picks up the signal most effectively when it is facing directly towards or away from Anthorn.
- o If this does not change anything, try moving your clock to a different location. Objects such as televisions, electric motors and fluorescent lights can interfere with the signal. A steel-framed or reinforced concrete building, or large metal objects such as metallic window frames, will reduce the signal inside. Externally, pylons, scaffolding or overhead power cables can also screen the signal.

The signal is occasionally taken off-air to allow maintenance work on the masts and antennas at Anthorn Radio Station to be carried out in safety. A radio-controlled clock will not be able to pick up the MSF signal during these periods, so may drift off from the correct time. To find out when these periods are due, please visit the MSF website or visit our web Store 'Info Pages' for more information.

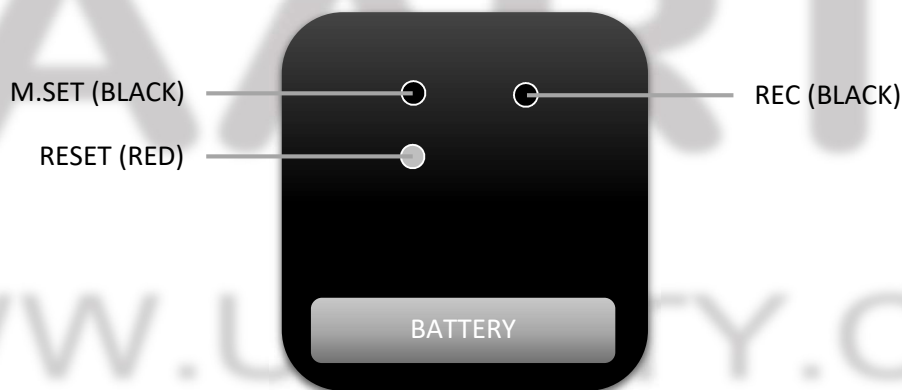
See other side for setup instructions

Your Radio Clock – Getting It Working

Follow the instructions below for the first use of your clock.

DO NOT PLACE BATTERY INTO CLOCK YET!

- 1) When you first receive your clock, ensure all hands are pointing at 12. If not, and without going to the step where you remove the pin, gently rotate the hands on the shaft until they are pointing at 12. Now move to the next step.
- 2) Locate the pin on the rear of the clock (usually taped over with masking or sticky tape) and **remove pin**. Keep this pin in case you need to re-adjust the hands for any reason at a later point in time.
- 3) **NOW Place a single LR6 (AA) battery into the clock mechanism.**
- 4) The hands should now start to rotate in the order of second hand first, and the minute and hour hand together.
- 5) Once the hour hand has completed a full rotation, the hands will wait until a time signal is received.
- 6) If after 20-30 minutes the clock has not received a time signal, it may start to run from the 12 o'clock position. This can be left to allow the clock to receive a signal over the next few hours and then automatically correct itself.
- 7) Alternatively, press and hold the 'M.SET' button on the back to start rotating the hands on command. Keep pressing the button until you reach the correct time and then release (you can press and release as required until you reach the correct time, it does not have to be a single press). Then press the 'REC' button once, to allow the signal to be received and correct the clock automatically when available.
- 8) If at any time you want to reset the clock back to 12 o'clock (to check hand positions etc.) press the red RESET button. If you are to carry out step 9, then once the hands have all rotated round to 12, remove the battery, otherwise after a short time, the hands will start moving again.
- 9) If you require to adjust the hands, place the pin back into the clock first. After you have finished adjustments, start from the top of this list to use the clock again.



If the clock does not appear to be updating or synchronising with the transmitted signal after 24 hours, please read the other side of this leaflet for possible causes/solutions.