



Oil Quality Sensor OQS Serial Lead and Normalisation Software

For users who need to adjust the zero point of the OQS sensor or change the oil type, the probe is usually shipped with a USB to serial cable and switchbox and the OQS Normalisation software. These will allow the sensor to be connected to a PC and the relevant parameters adjusted quickly and easily.

The serial cable plugs into the USB port of any PC or laptop and the software should operate on any machine running Windows 2000 or XP. The software is supplied as a distribution kit, and is installed by double clicking on the "setup.exe" file, which will start the installation process.

The default selections should be accepted in all cases unless you wish to install the software in a location other than the default folder, which is "c:\Program Files\RMF Systems\OQS".

On the first installation on a PC which has not previously had the software installed you must shut down and restart the PC before the first use, and then start the program "Oil Quality Sensor.exe" in the selected folder, after connecting the cable to a OQS probe. The USB port will power the probe so that it is fully operational.

Using the Normalisation Software

The software can be used to check the function of the probe and configure the temperature normalization for the specific oil in which it is to be used. Start the software as described above and you should see the "Oil Quality Sensor" window appear on the PC screen, with various graphical displays and buttons. Immediately a second window will open with a progress bar and the message "Please wait - Fetching Parameters from Instruments".

This should remain on the screen for up to 10 or 15 seconds and then disappear, and the three "Live Readings" displays should now be updating regularly - about every two seconds - and showing the Oil Temperature, Ambient Temperature (inside the probe) and Oil Condition. If the probe is in air, the Oil Condition is usually negative and between 0% and -25%.

Note: if the progress bar remains on the screen for a long time and the live readings stay at zero and do not update, the probe is not communicating with your PC. The most likely explanation is that your PC has allocated a non-standard COM Port to the USB converter inside the switch box, so go to the "Changing the COM Port" section below before proceeding.

If the oil type is to be changed, click on the "Oil Type" indicator and choose the oil that most closely matches your oil from the drop-down list by clicking on it. Then click on the "Send to OQS" button and an "Enter Password" window will appear. Enter the password (the default is "supervisor" and is not case sensitive) and hit the ENTER key or click on "FINISHED", and a further window will appear asking you if you want to save the change of oil type to the probe. You can use the ABORT button now if you do not want to change the probe, otherwise click on SAVE.

Now three things should happen: the "Send to OQS" button and the "Finish" button should become dimmed and another window should open with a progress bar and the message "Sending Coefficients". This will increment from zero up to four as each coefficient is written to the probe and will then disappear. The "Send to OQS" button and the "Finish" button should return to bright colours and the probe is now normalized to the selected oil.

You can now exit the software using the "Finish" button, or continue to normalize further probes to their appropriate oil types.



Note that if the coefficients for the oil that you have selected are the same as those for which the probe is already normalized, you will see the SAVE/ABORT window but no progress bar, as no changes need to be made and no coefficients written.

Changing the COM Port

If the software does not communicate successfully with the probe, the most likely reason is that your PC's has allocated a non-standard COM port to the USB converter inside the switch box. You will need to identify the COM port that has been allocated, which can usually be done by using

Control Panel|System|Hardware|Device Manager and opening the Ports (COM & LPT) item. This should list the COM ports currently installed, one of which will be the USB device, and may be labeled "Prolific USB". If you are unsure as to which one is which, unplug the USB cable and the one in question should disappear – usually dynamically although you may need to close the window and re-open it if nothing changes.

When you have identified the COM port, go back to the software, click on Configure|Comm Port and select the port from the list if it is COM1 to COM4, or choose Other and then enter the number in the window which pops up. Then use "Finish" to exit the software and reply "Yes" to the query which asks you if you want to save the changes you have made, and then save the config file in the default location as recommended. The new COM port should be active the next time you start the software.

Zeroing the OQS Sensor

The OQS sensor is zeroed on clean, new oil by applying a sequence of slow pulses to the SWITCH pin on the sensor, usually the white wire on the cable. When using the USB serial cable, this is done using the blue pushbutton on the switch box which is part way down the cable.

Note that this must only be done when the probe is inserted into a sample of new, clean oil of the type in which the probe is to be used, as it will change the zero point of the probe. The old zero point cannot be recovered, except by re-zeroing the probe on the oil in which it was originally zeroed! Do not zero the probe in air, as it will not then work properly in oil until it has been re-zeroed!

To zero the OQS sensor, connect it up to a PC as described above, wait for the readings to stabilize and then execute the following sequence:-

- 1) Press and hold the blue button for between 1 and 2 seconds,
- 2) Release the blue button for between 1 and 2 seconds,
- 3) Press and hold the button again for between 1 and 2 seconds,
- 4) Release it again for between 1 and 2 seconds,
- 5) Press and hold once more for between 1 and 2 seconds,
- 6) Release the button, wait for 2 seconds and the process is complete.

You should now see the Oil Condition value fall to near zero and the probe is zeroed and ready for use.

Note that this process can be carried out without the software running (simply using the USB to power the probe) but it is important to plug in the probe, insert it into the oil and wait several minutes for the values to settle down fully before executing the sequence as described. This will ensure that the zero value is stable for future readings.