

Can the Aladin Air X O2 work with a Closed Circuit Rebreather?

There are limitations:

The facility of a CCR to maintain a set point makes forward prediction of decompression incorrect. The computer will not forward predict the greatly increased O2 fraction in shallow water i.e. in ascent phase. The Air X O2 takes the highest O2% gained at the beginning of the dive and logs the information for comparison. This information is required to compare to actual inspired O2% and calculate both the CNS clock and Nitrogen diffusion rate based on the oxygen consumption. With the CCR the information would be based on 100% oxygen. When the workload values compare the highest value of 100% with the worst value for the dive...maybe 21%, the workload reading will warn and require you to terminate the dive very quickly due to overexertion. Oxygen fraction value is transmitted to the wrist computer every 5 seconds. Whilst this is not a problem for SCR's the CCR is capable of a large oxygen spike or dip through manual injection of either gas. As this is not a gradual change the new data value would not be accepted and it would send the computer into a "not receiving data" message. It would not be able to monitor a set point alteration made at depth, say from the bottom set point of 1.3 bar to a travel set point of 0.7 bar. The information change is faster than predictable information change with SCR's. When this situation arises a "not receiving data" message will appear on the Air X O2. CCR manufacturers, will of course, make their own assessment of the interaction of the Aladin Air X O2 and their rebreather but until such guidelines are forthcoming it is advisable to keep to current practice for decompression planning as laid down by the manufacturer.

Uwatec & Dave Crockford DDRC