Addendum Sheet for the EDS O2D1-2G & O2D2-2G units.

New EDS O2D1 & O2D2-2G user experience features with firmware release 3.43/0.94 and later. Manufacture date 24-April-2017 ensuing.

Extended range to the delivery protocol.

Allowable respiration rates

The EDS units now allow a breathing rate up to 60 bpm. Once a person breathes faster than this rate, the unit will start to deliver oxygen only on every other breath to help inform the user of over- respiration. This provides a behavior more to the expectations of the user.

Station RED LED flash with breaths

There is now a feature where the station(s) LED will show a short red flash each time the unit has detected a breath during times when the unit is not scheduled to deliver a pulse of oxygen. This will occur when the unit is on and in a D-mode setting where the altitude is not yet at, or past, the current D-mode setting.

Due to customer requests, this red led flashing feature was added so the user would be assured the unit is operating and detecting breaths at pre-flight check outs at altitudes lower than the current selected D-mode settings.

More accurate battery condition monitoring

The EDS units have a fast real-time battery power monitoring mechanism with improved marginal battery condition warning. This helps ensure proper flow-fault alerts during depleted battery conditions.

There are two distinct low battery alert/warnings.

1. Low battery Alert/Warning (1)

The first low battery alert/warning can be seen on the system LED, located next to the battery icon, flashing red once a second suggesting that the batteries need to be replaced as soon as possible. However, the unit will attempt to utilize all available power from the batteries as to not shut down unexpectedly.

2. Low battery Alert/Warning (2)

The second alert/warning adds an annoying beep once each second along with the system LED flashing red. You will need to replace the batteries (or utilize the external power port on the O2D2). Again, the unit will attempt to utilize all available power from the batteries in an adaptive way so as to not shut down unexpectedly. However, Flow-Fault alerts with some or all breaths will likely ensue as the batteries fail to have the power to deliver oxygen during the full complement of scheduled oxygen.

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Used Battery Cautionary

It is possible to have batteries appear to rejuvenate their energy reserves while resting after they have actually been depleted. This can result in a more optimistic voltage during initial turn-on of the unit. The new firmware has a more aggressive initial power-on battery stress-test that should catch this. However, you may experience only the first alert/warning. Any low battery alert/warning during pre-flight check indicates fresh batteries are required NOW!. Keep in mind that at times newly purchased batteries may be faulty, partially depleted or prone to leak for reasons not yet understood.

Control Switch Feedback

The control switch on the new O2Dx units is a rotary- type in place of the older push-button type. This allows the user to make rapid, sweeping switch settings. The firmware has an improved switch setting decoding mechanism that has a low-tone beep for change dynamics and a final high-beep acknowledging the final setting. Therefore, the user will experience a 'Boo-Beep' sound along with the system green LED flash for each control switch change.

Adaptive Apnea Alert times

The EDS O2Dx units now have an automatically adaptive time-to-alert for Apnea conditions as a function of altitude. The higher you are the sooner the unit will let you know you are not breathing. This is particularly important for operations at flight levels 180 and above.

At a pressure altitude of ~10,000 ft. the Apnea time- to- alert is ~25 seconds.
At a pressure altitude of ~15,000 ft. is ~ 22 seconds.
At a pressure altitude of ~26,000 ft. is ~ 16 seconds.

Adaptively allowable respiration rates

The EDS O2Dx units automatically adapt to higher pressure altitude with lower allowable respiration rates. The unit will inform you that you are breathing too fast by skipping an oxygen pulse and flashing the station's red LED during a breath. This very quick flash of the red station LED should not be confused with the much longer Flow Fault alarm.